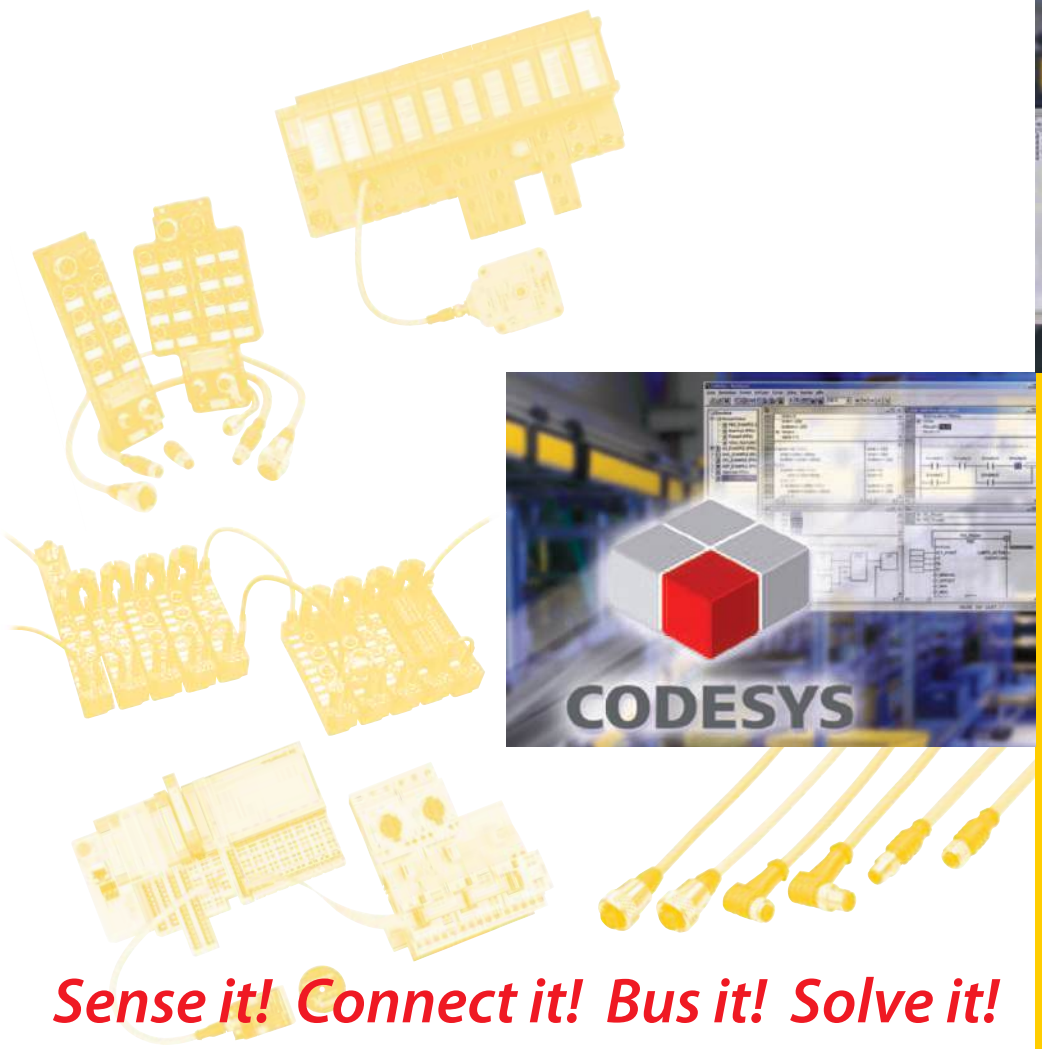
TURCK

Industrial Automation

FIELDBUS TECHNOLOGY

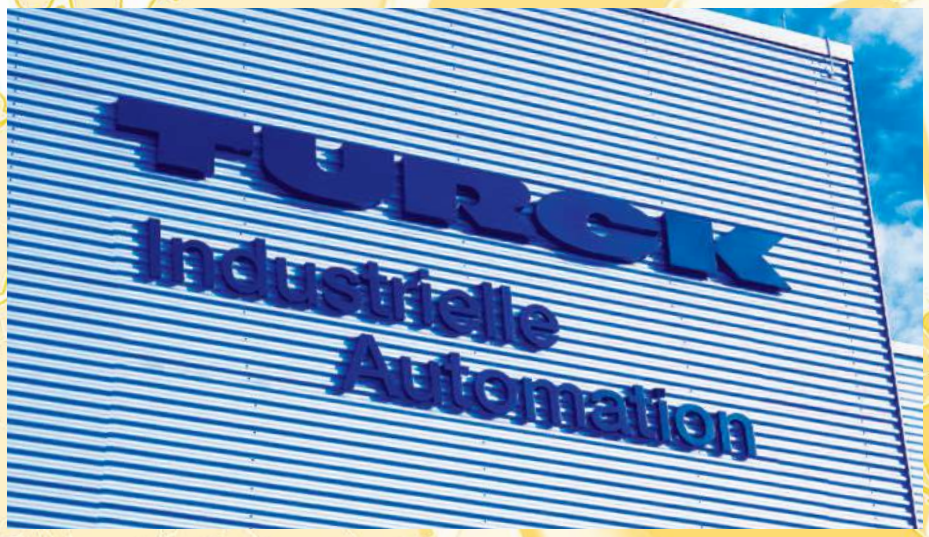
MODULAR AND COMPACT I/O SYSTEMS IN IP20 AND IP67



Sense it! Connect it! Bus it! Solve it!

The company

TURCK is one of the leading manufacturers in industrial automation. With more than 3.000 employees in 27 countries as well as sales partners in further 60 states, we are always close to you.
As a specialist in sensor, fieldbus, connection and interface technology and also human-machine interfaces (HMI) and RFID, we offer efficient solutions for factory and process automation. With our state-of-the-art production facilities in Germany, Switzerland, the USA, Mexico and China we, as a family-owned company, are able to react quickly and flexibly to the demands of local markets.



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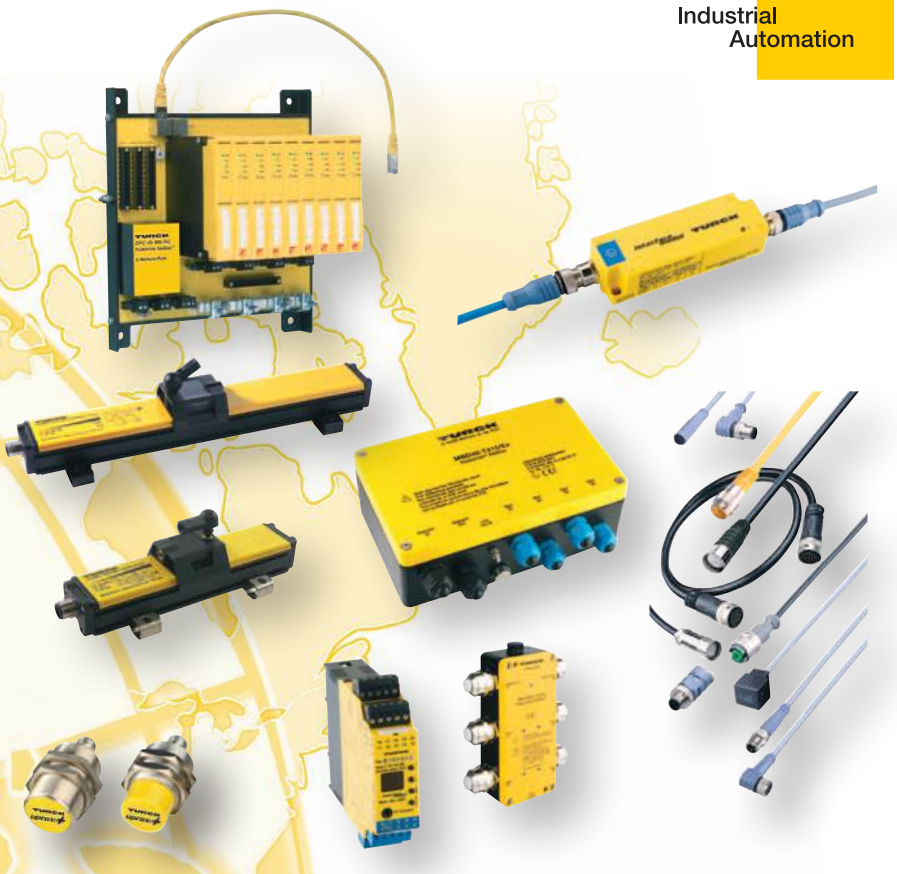
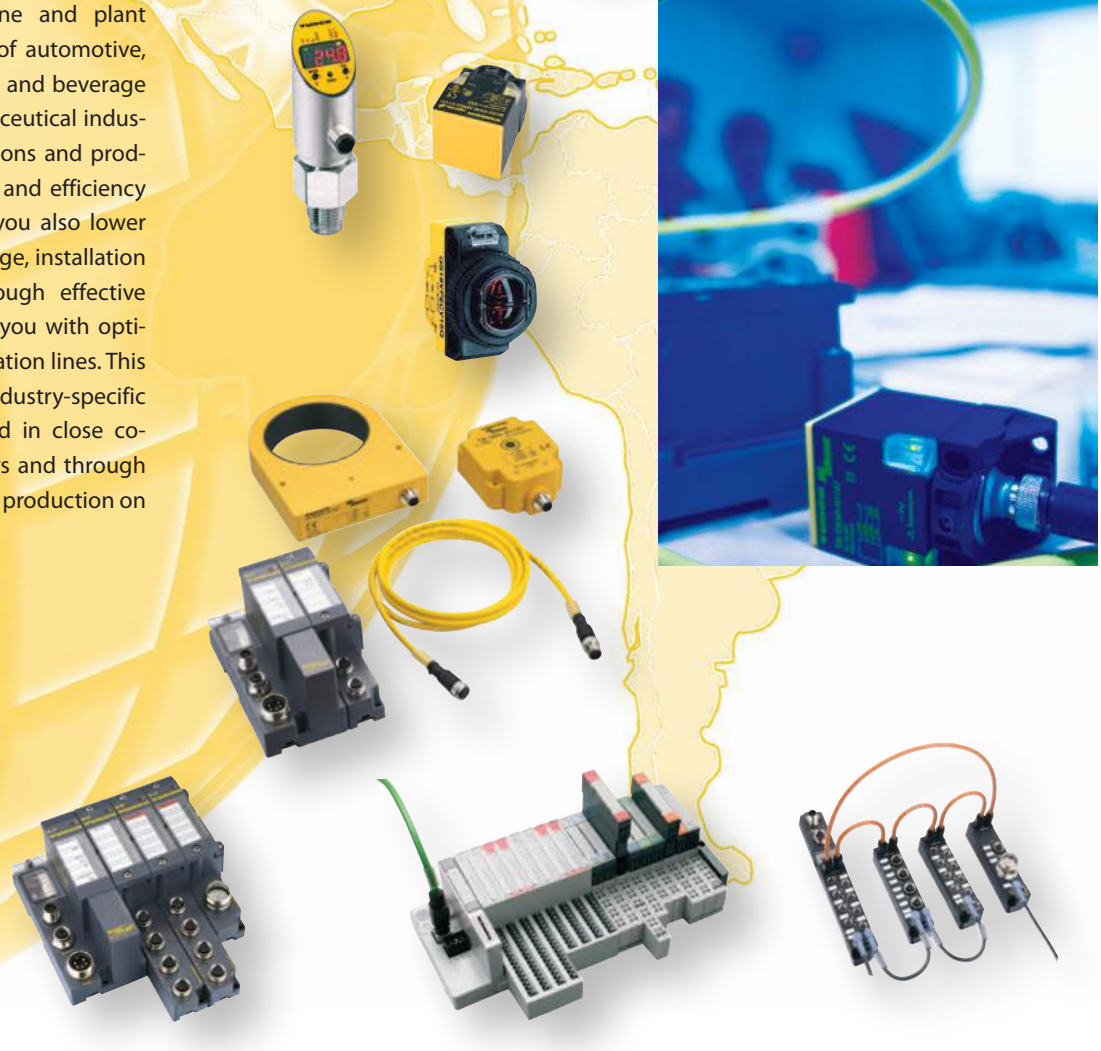


The product portfolio

Whether applied in machine and plant construction, in the sectors of automotive, transport and handling, food and beverage or in the chemical or pharmaceutical industry, TURCK automation solutions and products increase the availability and efficiency of your systems. Moreover, you also lower your costs for purchase, storage, installation and operational safety through effective standardization. We provide you with optimal solutions for your automation lines. This is possible thanks to the industry-specific know-how we have acquired in close cooperation with our customers and through electronics development and production on the highest level.



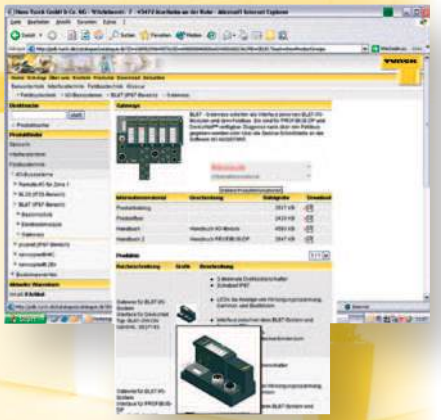
Service & Support

Our service

Based on 50 years of experience and extensive know-how, we support our customers with efficient service, from a first analysis up to tailor-made solutions and commissioning of your application. We aim at enhancing the efficiency and productivity of your production processes and machines continuously. The excellent quality of our products combined with the support of our specialists and fast delivery service guarantees you high system availability.

The product data base

Whether software tools for programming, configuration or commissioning support, our data sheets or CAD data are available in 80 export formats. Our website www.turck.com helps you to find products and solutions fast, seven days a week, at any place worldwide and in nine different languages. You have access to nearly all products and solutions – clearly structured, completely documented and free for download.



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Modular I/O systems and compact I/O modules in IP20 and IP67

Industrial Automation

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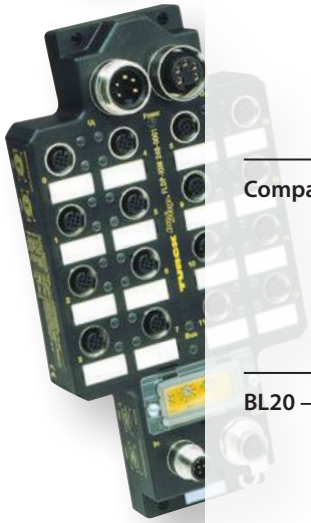
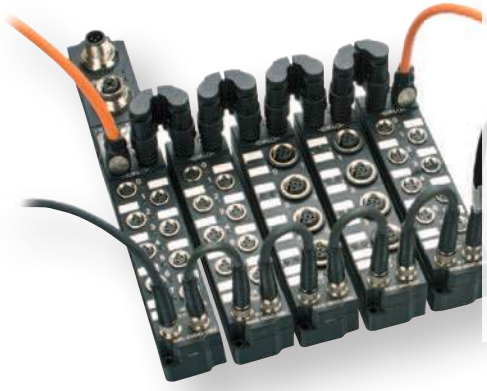
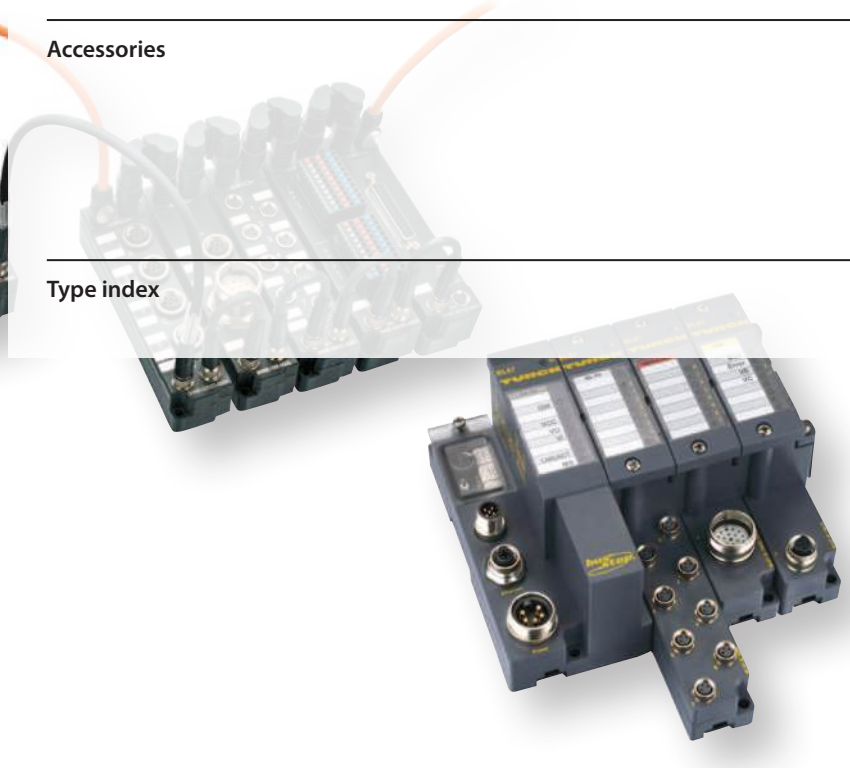


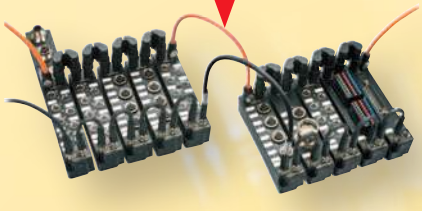




Modular I/O systems and compact I/O modules

Perfect connections – no matter which fieldbus you use; TURCK provides you with a complete range of products:

- Modular and compact I/O systems in a variety of housing styles and IP-ratings
- Optimal support for planning, commissioning and service with the I/O-ASSISTANT software tool
- Decentralised intelligence with IEC 61131



	BL67	*piconet*®
Composition		
Modular	✓	✓
Compact		✓
IP20		✓
IP67	✓	✓
Functions		
Digital I/O	✓	✓
Analogue I/O	✓	✓
Technology modules	✓	✓
Fieldbus interfaces		
PROFIBUS-DP	✓	✓
DeviceNet™	✓	✓
CANopen	✓	✓
Interbus		✓
PROFINET IO	✓	✓
EtherNet/IP	✓	✓
Modbus TCP	✓	✓
System support		
Motor starter		
RFID	✓	
Valve terminals	✓	✓
Zone 2		
Software		
CODESYS 2.3 programmable	✓	
I/O-ASSISTANT 2		✓
I/O-ASSISTANT 3 (FDT/DTM)	✓	

[1]) FXDP modules
[2]) FGEN modules

EtherNet/IP™ PROFINET® INDUSTRIAL ETHERNET Ethernet Modbus TCP

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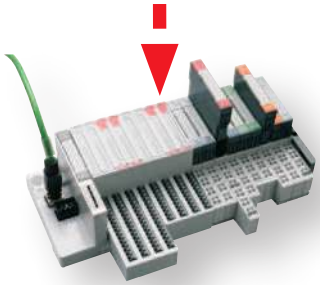
	Compact I/O modules IP67	IP20	BL20
			
			✓
	✓	✓	
		✓	✓
	✓		
	✓	✓	✓
			✓
			✓
	✓	✓	✓
	✓	✓	✓
			✓
	✓		
	✓		✓
	✓		✓
	✓		✓
			✓
			✓
	✓ [1])		✓
			✓
	✓ [2])		✓

The BL ident® modular RFID system fo HF/UHF operation
Make use of the advantages!

BL ident® is an all-in-one RFID system designed for industrial applications. The I/O systems BL67 (field application), BL20 (cabinet mounting) and *BL compact* (field application) are the basic components of the modular concept. Whether deployed in production control, logistics or automation processes: Both technologies, interference immune HF (13.56 MHz, ISO 15693) and long range UHF (840…960 MHz, ISO 18000-6C/EPCglobal Class 1 Gen 2) are available in one identification solution, in *BL ident*®, the modular RFID system from TURCK.

Data carriers, read/write heads, connection technology and interfaces (gateway and RFID modules) can be combined to a customized *BL ident*® solution. You can choose from extremely fast and almost infinitely writable FRAM data carriers, but also from high-temperature versions for paint-spray lines. *BL ident*® can be integrated in existing system configurations via gateways which are available for all standard fieldbus protocols. The TURCK RFID system operates wear-free and contactless and is insensitive to dirt, water, oils and temperature fluctuations.

Make use of the new advantages for industrial applications with RFID solutions made by TURCK.

The *BL ident*® system guarantees significant potentials for cost-saving:

- Easy integration in the existing control world
- Efficient production and increased system availability
- The short period of amortisation and a quick ROI (Return on Investment) of the system are a considerable contribution to the success of your company.

BL ident® speeds up your production and increases efficiency:

- Fast FRAM technology (0.5 ms/Byte)
- Parallel processing of data with up to 16 channels per gateway
- Read and write "on the fly"

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BL ident® offers maximum freedom and highest flexibility with respect to system integration. Your projects can thus be implemented quicker:

- Fully encapsulated, rugged HF read/write heads, rectangular and cylindrical design (M18, M30)
- UHF read/write heads designed for industrial use
- Robust IP69 tags
- Modular interfaces allow the integration of additional I/O modules
- Up to 50 m connection cable between read-write head and interface
- Extensive range of mounting accessories
- Multiple fieldbus interfaces such as PROFIBUS-DP, DeviceNet™,CANopen, EtherCAT®, EtherNet/IP™, Modbus TCP, and PROFINET IO, in IP20 and IP67
- Programmable gateways with decentralised pre-processing relieve the higher-level control and bus system

With the *BL ident*® technology, maintenance intervals can be extended, thus improving system availability:

- High safety level due to long data storage period (10 years if operated at prescribed temperature)
- EEPROM data carriers with 128 byte memory, FRAM data carriers of up to 8 kByte for high speeds and nearly unlimited write cycles
- Extremely resistant:
  The materials used for the read-write heads of the WD-series are resistant to all common acid and alkaline detergent and disinfectants. Problems caused by aggressive cleaning materials are thus reduced to a minimum.

Easy maintenance is a further contribution of the *BL ident*® system to safety and cost reduction:

- No down-times of the system due to the "Hot-Swapping" function
- Local display of the fieldbus diagnostics directly in the field by LEDs on the read-write heads and on the interface
- Connection to other fieldbuses is simply implemented by replacing the gateway – the remaining configuration is left unchanged
- Same mounting accessories as for inductive sensors – less mounting accessories are needed

System description PROFIBUS-DP (Overview)

PROFIBUS-DP

- Open fieldbus standard according to EN 50170
- Transmission medium: 2-wire cable, twisted, shielded
- Transmission technology: RS485
- Bus topology: line structure with bus termination at both ends
- Bus access mode: Master-Slave/Master-Master with "Token Passing"
- 32 stations per segment, max.126 stations.
- Repeater modules for signal regeneration
- Addressing via coding switches
- Configuration/parameterisation of devices via standardised device data base files (GSD files = Gerätestammdaten-Dateien)

PROFIBUS (**Pro**cess **F**ield **B**us) is a standardised and open communication fieldbus. It complies with EN 50170 and consists of three different protocol profiles:

- PROFIBUS-FMS (Fieldbus Message Specification) is primarily designed for data exchange between program mable logic controllers (PLCs or PCs).
- PROFIBUS-DP (Decentral Periphery) is designed for fast data exchange between the central control and the remote field devices
- PROFIBUS-PA (Process Automation) is an intrinsically safe network for the process industry.

TURCK fieldbus components support PROFIBUS-DP. Within the PROFIBUS-DP network, the central control (e.g. the PLC) communicates with the remote input and output stations via a fast serial connection.

Data are exchanged cyclically between master and slave.

PROFIBUS-DP systems excel in their fast system response times. At a transmission rate of 12 Mbps, 512 bit input and 512 bit output data can be trans-ferred, for instance, in less than 2 ms to 32 stations.

The system speed corresponds to the transmission rate set via the PROFIBUS master. The transmission speed is automatically detected by the TURCK PROFIBUS modules (auto baud).

The manufacturer provides device data base files (GSD files = Gerätestammdaten) for the individual PROFIBUS stations for configuration. TURCK additionally offers the I/O-ASSISTANT, a helpful software tool for configuration, parameterisation and set-up of the individual modules.

Transmission speed		Length of bus line (max.)	Max. numbers of repeaters [1]	Max. numbers of stations
9,6...93,75	kbps	1200 m	2	126
187,5	kbps	1000 m	2	126
500	kbps	400 m	4	126
1500	kbps	200 m	6	126
3000…12000	kbps	100 m	9	126

[1] At maximum transmission speed up to 9 repeaters of the TURCK series REP-DP 0002 can be connected in series (applicable to DP-profile bus parameters). If more repeaters are to be cascaded, the bus timing parameters must be adapted accordingly by the user.

Systemdaten PROFIBUS-DP	
Number of I/O stations	126 (incl. Repeater)
Number of I/O points	approx. 6000, depending on master
Transmission medium	shielded twisted copper cable, 2 × 0.34 mm^2

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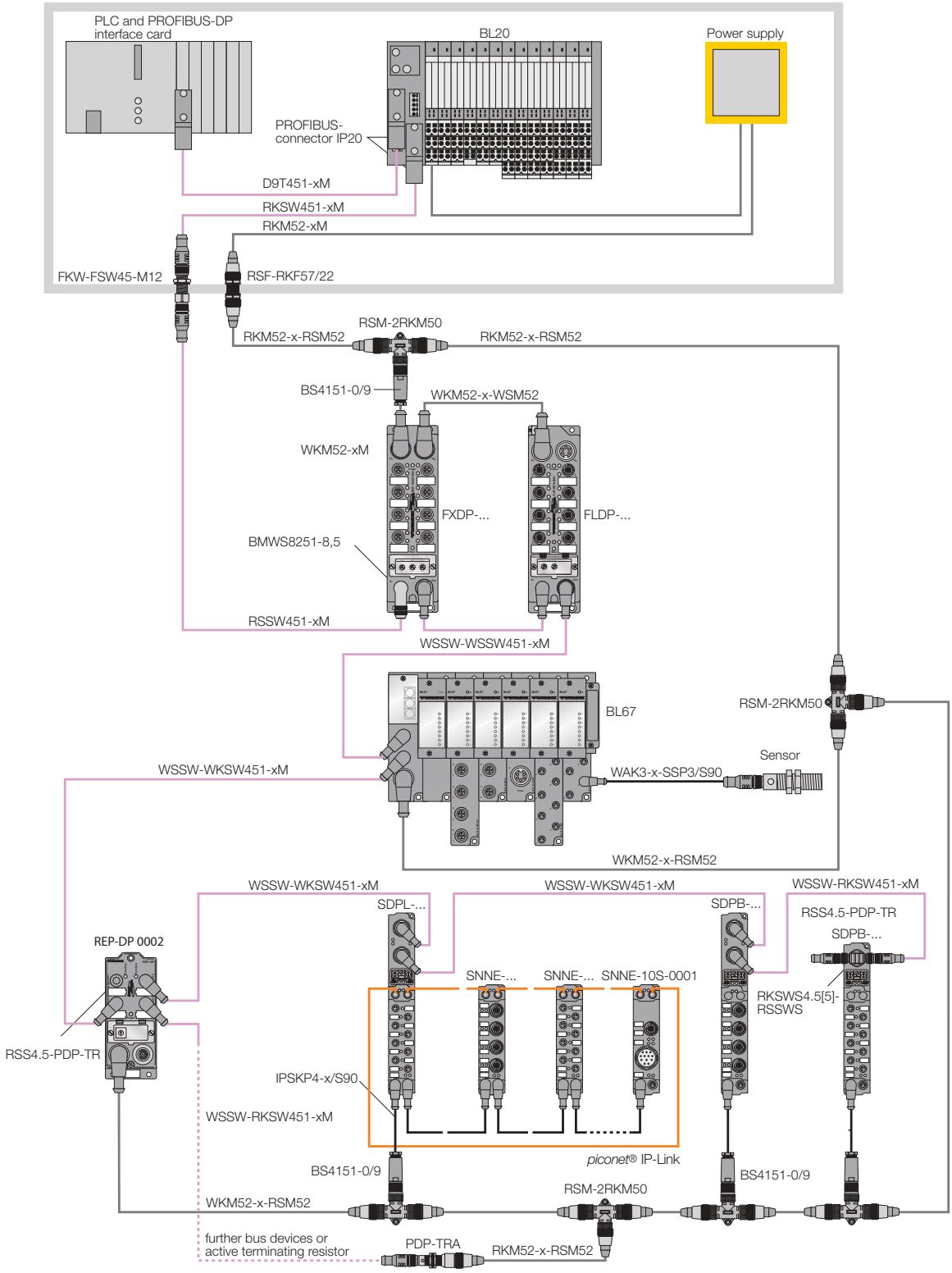
Application example: TURCK fieldbus components for PROFIBUS-DP

The schematic representation below shows a PROFIBUS-DP network based on components offered by TURCK. In addition to BL67 fieldbus stations in IP67, TURCK offers further modular bus components in IP20 (BL20) and IP67 (miniature *piconet*® modules and compact fieldbus stations) which are characterised by flexibility and a user-friendly set-up. Premoulded cables in various designs, as well as field-wireable connectors, feed-through receptacles for cabinet mounting, flange connectors, T-pieces, terminating resistors and repeaters are available for network construction.



System description DeviceNet™ (Overview)

DeviceNet™

- Open fieldbus standard according to EN 50325
- Transmission medium:
  2-pair cable, twisted shielded, for data transmission and for power supply (24 volt)
- Transmission technology: CAN
- Bus topology: Line structure (bus termination at both ends) with drop lines
- Bus access mode: Multi-master system with CSMA/CA access mode, network-wide multi/broadcasting
- Use of repeaters in order to extend the length of the trunk and drop line
- Max. 64 nodes (incl. master)
- Addressing via coding switches
- Configuration/parameterisation of the devices via standardised EDS files (Electronic Data sheets)

DeviceNet™ is an open, standardised bus system according to EN 50325 and is based on the CAN specification (Controller Area Network). As a multimaster system DeviceNet™ provides the following I/O communication modes:

- Polling: the master module cyclically sends output data to all subordinate slaves and receives input data via the response message.
- Change of state: telegrams are not sent constantly, but only if the contents has changed, i.e. the process image/mapping is only transferred when it changes.
- Cyclic: the nodes automatically send data after a certain cycle time
- Strobed: the scanner requests input data via a broadcast message to all bus nodes.

TURCK fieldbus components support all these I/O communication modes. The bus length depends on the transmission speed (125, 250 or 500 kbps) as shown in the table below. Due to this especially efficient usage of the bus capacities, it is possible to achieve short response times, particularly in the change-of-state mode (despite relatively low data rates).

The manufacturer provides EDS files (EDS = Electronic Data Sheet) for configuration of the individual DeviceNet™ nodes. DeviceNet™ devices are parameterised via acyclic services (Explicit Messaging). TURCK additionally offers the I/O-ASSISTANT, a helpful software tool for configuration, parameterisation and set-up of the individual modules.

DeviceNet™ – Transmission speed and bus lengths

Transmission speed	Bus lines – max. length				Drop lines – max. length		Number of nodes (max.)
	Flat Cable	Thick Cable	Mid Cable	Thin Cable	(per drop)	(total)	
125 kbps	420 m	500 m	300 m	100 m	6 m	156 m	64
250 kbps	200 m	250 m	250 m	100 m	6 m	78 m	64
500 Kbps	75 m	100 m	100 m	100 m	6 m	39 m	64

System data DeviceNet™	
Number of nodes	64 (incl. master)
Number of I/O points	depending on control system
Transmission medium	shielded twisted copper cable, at least 2 × 2 × 0.21 mm²
I/O communication modes	polling, change of State, cyclic, strobed

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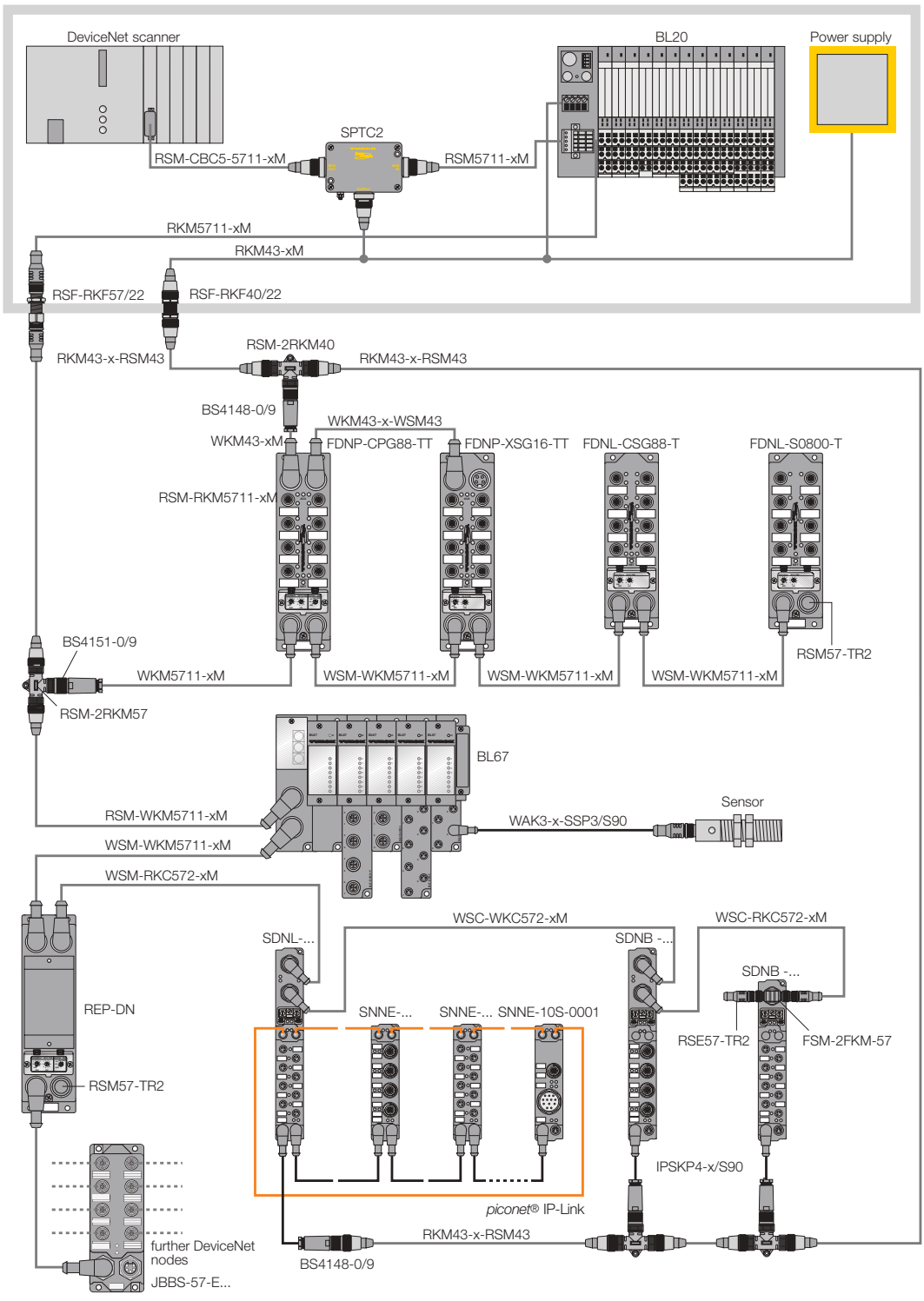
Application example: TURCK fieldbuscomponents for DeviceNet™

The schematic representation below shows a DeviceNet™ network based on components offered by TURCK. In addition to BL67 fieldbus stations in IP67, TURCK offers further modular bus components for the IP20 (BL20) and the IP67 environment (miniature *piconet*® modules and compact fieldbus stations) which are characterised by flexibility and user-friendly set-up. Premoulded cables in various designs, as well as field-wireable connectors, feed-through receptacles for cabinet mounting, flange connectors, T-pieces, terminating resistors and repeaters are available for network construction.



System description CANopen (Overview)

CANopen

- Open fieldbus standard according to EN 50325-4
- Transmission medium: 2-pair cable, twisted and shielded, for data transmission and for power supply (24 volt)
- Transmission technology: CAN
- Bus topology: Line structure (bus termination at both ends) with drop lines
- Bus access mode: Multi-master system with CSMA/CA access mode, network-wide multi/broadcasting
- Max. 127 nodes (incl. repeaters)
- Addressing via coding switches
- Use of repeaters in order to extend the length of the trunk and drop line
- Configuration/parameterisation of the devices via standardised EDS files (Electronic Data sheets)

The CAN user layer CANopen consists of device profiles, which standardise the data contents of the respective device categories, and of communication profiles. The communication profile determines the method of data exchange between the devices. In this context, one differentiates between real time data (process data objects – PDO) and parameter data (service data objects – SDO). CANopen defines different communication modes for the transmission of the process data (PDOs):

- Event-controlled: Messages are sent as soon as the content has changed.
- Therefore, the process image/mapping is not transferred permanently; only the changed signals are transmitted.
- Cyclic synchronous mode: The components are requested to accept the output data received and to send new input data via a SYNC telegram.
- Request-controlled: The components are triggered to send their input data via a CAN data request message.

CANopen devices are parameterised via SDOs. These are primarily used to transfer parameters during device configuration and to transmit longer data fields. Due to effective usage of the bus band-width CANopen offers short system response times despite a relatively low transmission speed (max. 1 Mbps).

The manufacturer provides EDS files (EDS = Electronic Data Sheet) for configuration of the individual CANopen nodes. TURCK additionally offers the I/O-ASSISTANT, a helpful software tool for configuration, parameterisation and set-up of the individual modules.

Transmission speed	Bus trunk line (max.)	Number of nodes (max.)
10 kbps	5000 m	127
20 kbps	2500 m	127
50 kbps	1000 m	127
125 kbps	500 m	127
250 kbps	250 m	127
500 kbps	100 m	127
800 kbps	50 m	127
1000 kbps	25 m	127

System data CANopen	
Number of I/O stations	127 (incl. Repeater)
Number of I/O points	depending on control system
Transmission medium	shielded twisted copper cable, at least $2 \times 2 \times 0.21$ mm²

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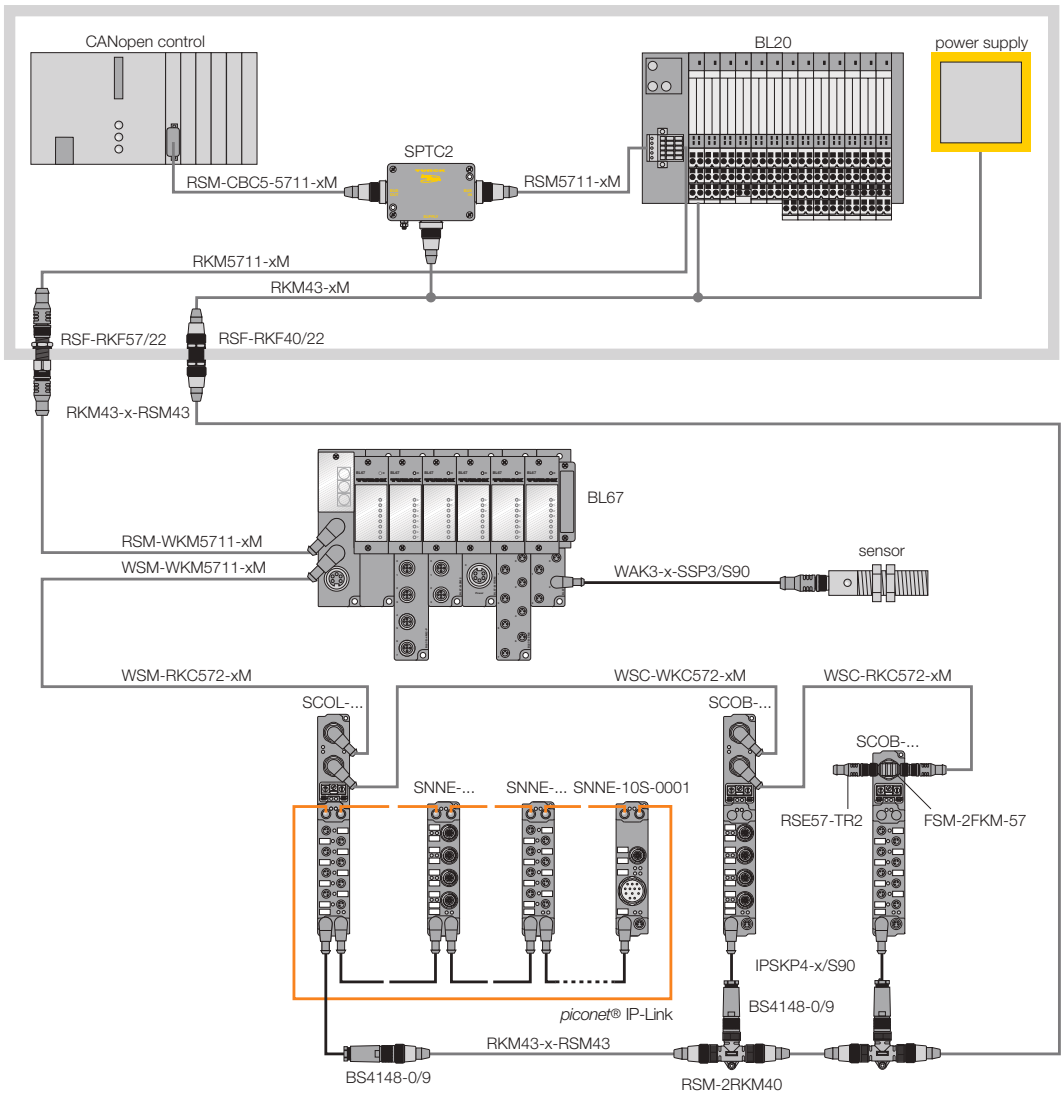
Application example: TURCK fieldbuscomponents for CANopen

The schematic representation below shows a CANopen network based on components offered by TURCK. In addition to BL67 fieldbus stations in IP67 TURCK offers further modular bus components for the IP20 (BL20) and the IP67 environment (miniature *piconet*® modules and compact fieldbus stations) which are characterised by flexibility and user-friendly set-up.

Premoulded cables in various designs, as well as field-wireable connectors, feed-through receptacles for cabinet mounting, flange connectors, T-pieces, terminating resistors and repeaters are available for network construction.



System description Ethernet (Overview)

Ethernet

- Open fieldbus standard acc. to IEEE 802.3
- Transmission medium: 2 × 2 twisted-pair copper cable, shielded, category 3 (10 Mbps), category 5 (100 Mbps)
- Bus topology: star structure/tree structure
- Switches and hubs as junction points for connection of the Ethernet nodes
- Bus access mode: multi-master system with CSMA/CD access mode, network-wide multi/broadcasting
- Number of bus nodes theoretically unlimited
- Protocols: Modbus TCP, EtherNet/IP™ und PROFINET IO

The term Ethernet generally refers to the IEEE 802.3 specification. The modules are networked within a tree or star structure and are identified using a 6-byte, worldwide and unique identification code (MAC ID). The distance between two bus nodes may not exceed 100 m when using rigid cables. If flexible cables are used, the maximum length depends on the network construction.

Switches and hubs interconnect the Ethernet nodes and are thus the nodal points within the network. Hubs always send data to and receive data from all nodes, whereas switches feature a selective data transmission mode. Switches dynamically maintain a list with the IP addresses of all connected bus nodes. This ensures that data are only sent to the relevant target address. Data collisions are avoided and the network bandwidth is increased.

The original Ethernet protocol transfers the data frame from one to a single or several other nodes. The transmission mode does not include acknowledgement messages (handshake communication) and retransfer of lost data frames. The Internet Protocol (IP) handles segmenting, routing (path finding), searching and allocation of the permanent MAC-IDs.

Just like the Ethernet protocol, the IP does not ensure secure data transport. Data frames can get lost or be disrupted in their order.

Protocols such as TCP/IP, which ensure safe data transmission, are available. The Transmission Control Protocol (TCP) is based on the IP and is a connection-orientated transfer protocol, comprising error diagnostics and error handling mechanisms. This protocol ensures that lost telegrams are re-transmitted. Based on TCP, further protocols such as Modbus TCP, EtherNet/IP™ and PROFINET IO have been developed for applications involving industrial data communication.

System data Ethernet	
Number of I/O stations	only limited through IP address area
Number of I/O points	depending on control system
Transmission medium	2 × 2 twisted-pair copper cable, shielded, category 3 (10 Mbps), category 5 (100 Mbps)
Line length	max. 100 m distance between the modules

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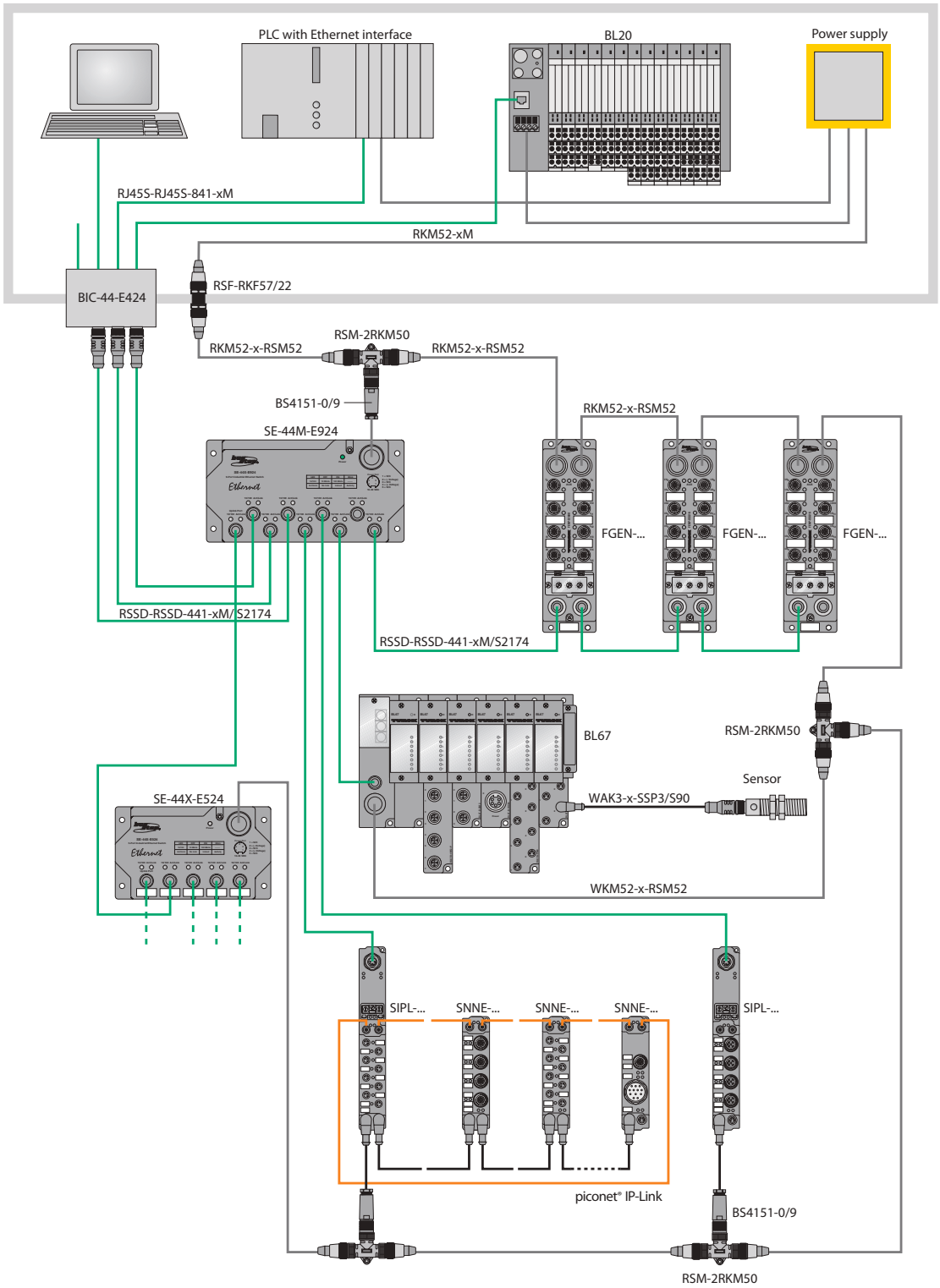
Application example: TURCK-Fieldbus components for Ethernet

The schematic representation below shows an Ethernet network based on components offered by TURCK. In addition to BL67 fieldbus stations in IP67, TURCK offers further modular bus components for the IP20 (BL20) and the IP67 environment (miniature *piconet*® modules and compact fieldbus stations) which are characterised by flexibility and user-friendly set-up. Premoulded cables in various designs, as well as field-wireable connectors, feed-through receptacles for cabinet mounting.



System description INTERBUS (Overview)

INTERBUS

- Open fieldbus standard acc. to IEC 61158
- Transmission medium: multicore cable, 6-wire, twisted, shielded
- Transmission technology: RS485
- Bus topology: active ring, each node acts as a repeater
- Bus access mode: Master/slave system, defined telegram length, deterministic
- Max. 512 nodes
- Addressing: automatic addressing according to the physical order of the nodes within the system

INTERBUS is an open and standardised fieldbus system according to IEC 61158. The system always features a ring struc-ture. All bus nodes are actively intercon-nected within a closed transmission path.

In contrast to other ring systems, the data forward and data return line of the INTERBUS system are routed in a single cable. The last node automatically terminates the ring.

Based on this construction, the physical appearance of a line or tree structure can be created. Several sub-systems for structuring the entire system can be branched off the main (trunk) line which exits the master. As a result, the bus system can be flexibly adapted to any application.

Bus access is based on the master/slave mode, in which data are sent from the master to the first node and then transferred sequentially from one node to the other. Due to its active coupling, each node functions as a repeater, which re-generates the signal.

Up to 512 nodes can be connected to the so-called "data highway". The distance between the individual nodes is specified with 400 m max., so that the total length of the "data highway" amounts to 12 km max. (copper cables).

The data transmission rate is 500 kbps. The cycle time depends on the user data volume of the respective system and increases linearly with the number of I/O points.

INTERBUS operates on the summation frame method. As the summation frame is always identical, the cycle time is also constant. Thus deterministic operation is ensured.

Addressing
Data are allocated to the individual nodes automatically according to their physical order in the ring. It is thus not required to assign a bus address to each node via coding switches.

Configuration
With INTERBUS, configuration is triggered via an identification cycle. Via this cycle the master automatically detects all connected devices. Identification is accomplished via an identification code which is stored in each node and a length code, containing the length of the data to be transferred.

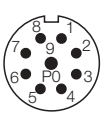
System data INTERBUS	
Number of I/O stations	depending on master (max. 512)
Number of I/O points	depending on master
Transmission medium	LiYCY 3 × 2 × 0.22 mm²
Line length	max. 400 m between the modules
Transmission speed	500 kbps
Transmission time	approx. 1 ms with 10 modules for each 32 bits inputs/outputs

piconet® modules	for coupling modules, type SIBL-…	for stand-alone modules, type SIBB-…
Number of extension modules, type SNNE-…	max. 120 with max. 64 bytes input- and 64 bytes output data	–
Digital periphery signals	max. 512 inputs and 512 outputs	according to I/O version
Analogue periphery signals	max. 28 inputs and 28 outputs	according to I/O version
Transmission speed	500 kbps	

INTERBUS bus connection

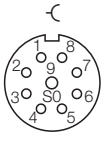
1 × M23 male connector, 9-pole
1 × M23 female connector, 9-pole

Fieldbus input (M23)



1 = D01
2 = /D01
3 = DI1
4 = /DI1
5 = GND
6 = PE
7 = +24 VDC
8 = 0 V
9 = n.c.

Fieldbus input (M23)



1 = D02
2 = /D02
3 = DI2
4 = /DI2
5 = GND
6 = PE
7 = +24 VDC
8 = 0 V
9 = /RBST

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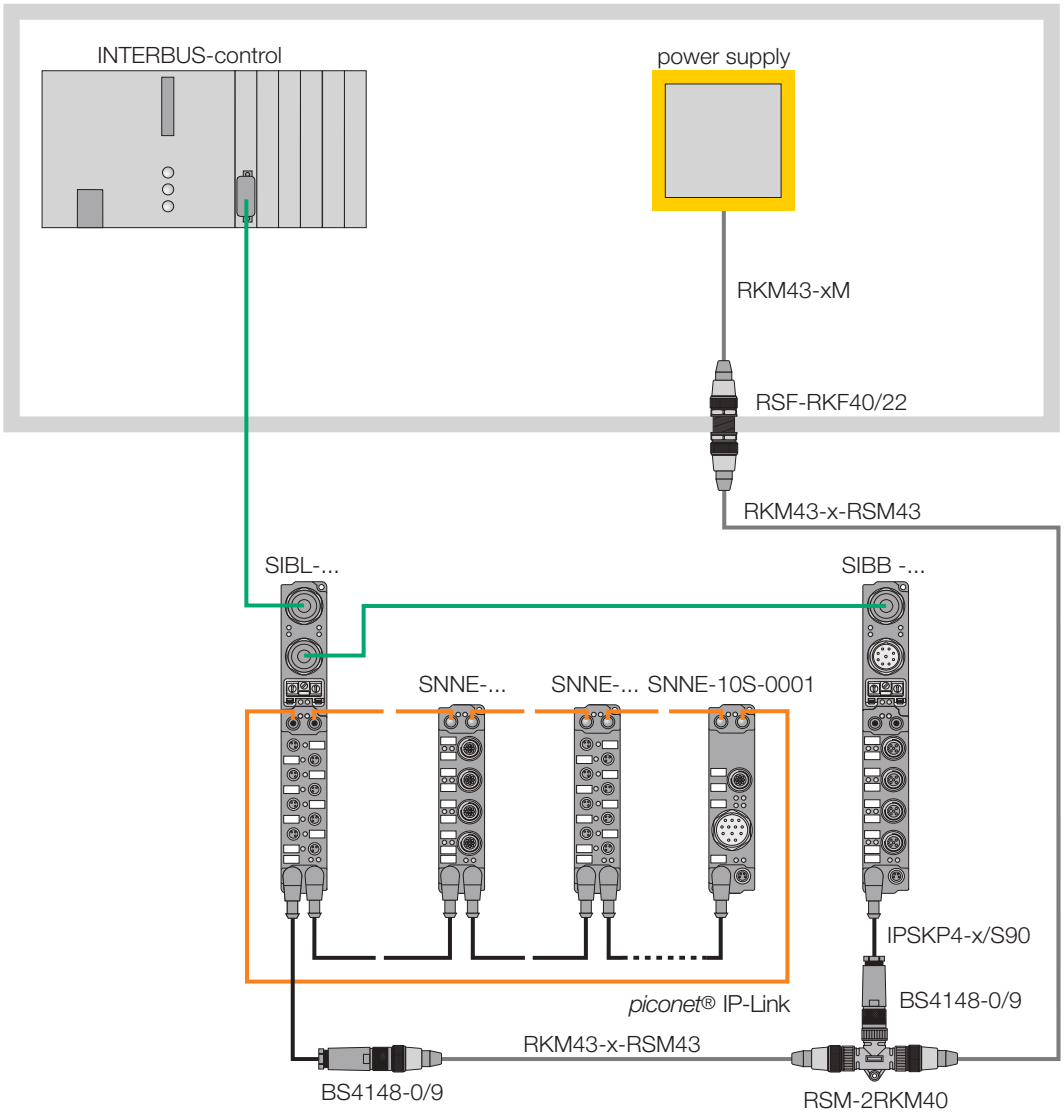
Application example: TURCK fieldbus components for INTERBUS

The schematic representation below shows an INTERBUS network based on components offered by TURCK.



DIGITAL
ANALOGUE
TECHNOLOGY
RFID

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BL67 – Modular fieldbus I/O-system in IP67

Industrielle Automation

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CANopen interface	114
BL ident® RFID modules	116

2

The BL67 I/O system – the modular I/O system in IP67

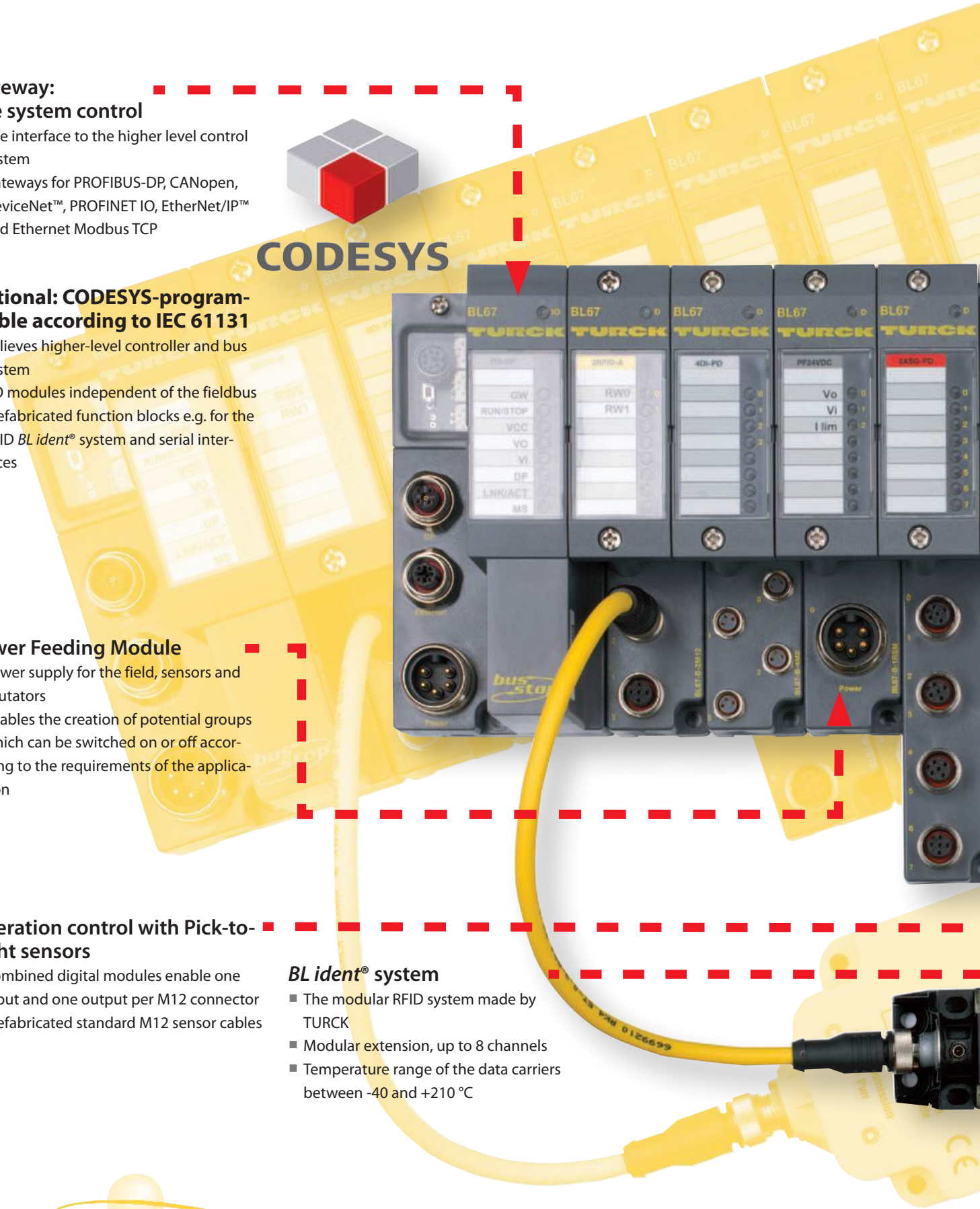
Gateway: The system control

- The interface to the higher level control system
- Gateways for PROFIBUS-DP, CANopen, DeviceNet™, PROFINET IO, EtherNet/IP™ and Ethernet Modbus TCP

CODESYS

Optional: CODESYS-programmable according to IEC 61131

- Relieves higher-level controller and bus system
- I/O modules independent of the fieldbus
- Prefabricated function blocks e.g. for the RFID *BL ident*® system and serial interfaces



Power Feeding Module

- Power supply for the field, sensors and acutators
- Enables the creation of potential groups which can be switched on or off according to the requirements of the application

Operation control with Pick-to-Light sensors

- Combined digital modules enable one input and one output per M12 connector
- Prefabricated standard M12 sensor cables

BL ident® system

- The modular RFID system made by TURCK
- Modular extension, up to 8 channels
- Temperature range of the data carriers between -40 and +210 °C

EtherNet/IP™ PROFINET INDUSTRIAL ETHERNET Modbus TCP

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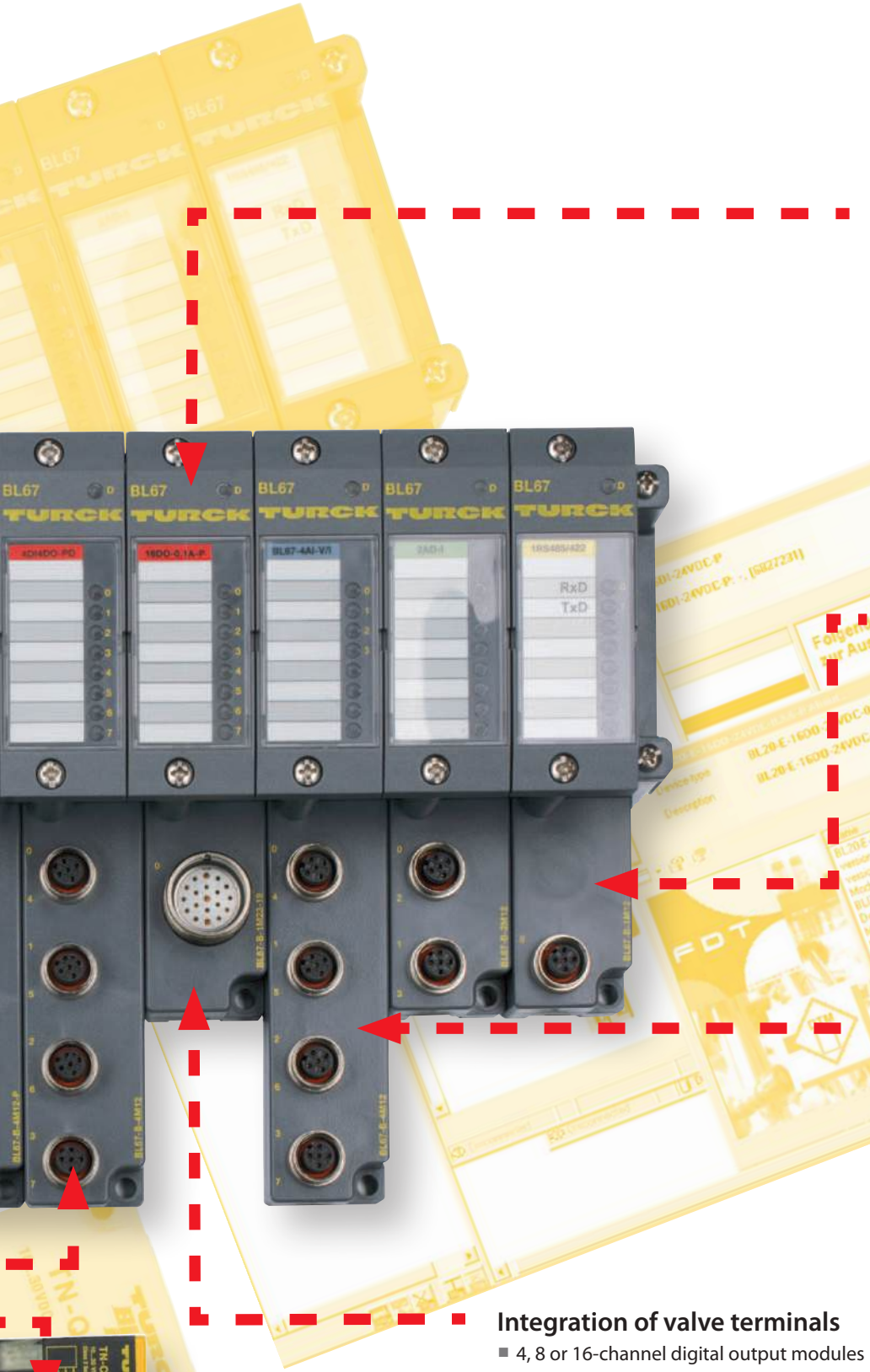


Elektronic modules

- Digital, analog, temperature, RS232, SSI, CANopen interface and more
- Independent form the applied fieldbus
- Free choice of connection technology
- Available as 2, 4, 8 or 16-channel version
- Local diagnostics and status display via LEDs
- Hot-Swapping function

Base modules

- Passive connection components for sensors and actuators
- Available as M8, M12, M23 and 7/8 connectors
- Connection of I/O modules with single, dual or multicore wiring
- Fast replacement of electronics through the use of separate connection bases

Material recognition

- Distinction of different metals or metalic compositions
- Distance independent material detection
- Inductive sensor with two analog voltage outputs

Integration of valve terminals

- 4, 8 or 16-channel digital output modules with M23 base modules for multipole valve terminals
- Up to 8 CANopen valve terminals with one CAN-valve interface connection module

I/O-ASSISTANT

- Planning, configuration, commissioning and diagnostic software
- Based on FDT/DTM technology
- Available as freeware on www.turck.com

CANopen

PROFI PROCESS FIELD BUS

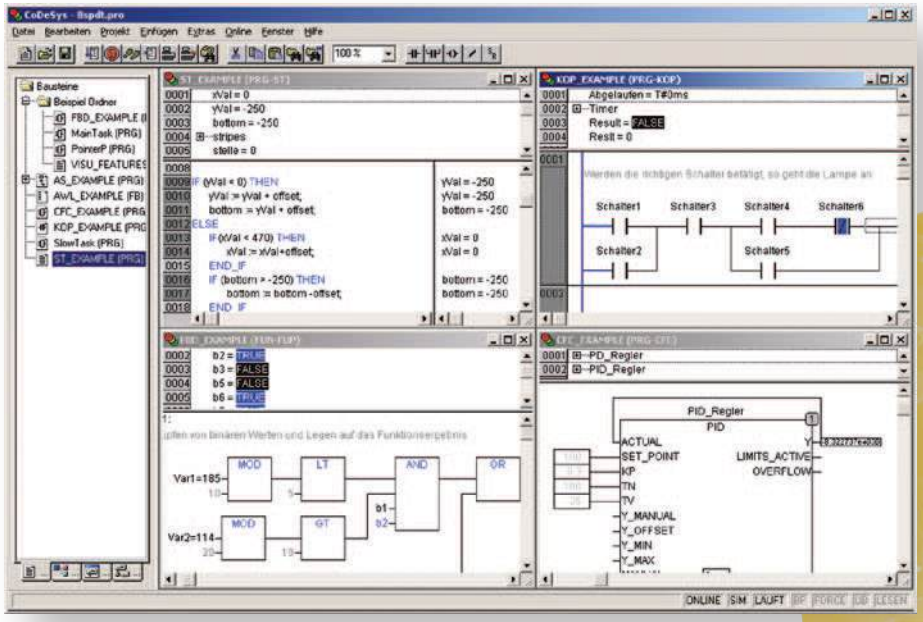
DeviceNet™

CODESYS

Easy programming with CODESYS according to IEC 61131-3

The programmable gateways become decentral control units with the CODESYS programming software. The graphical programming interface supports all IEC 61131-3 programming languages

- Statement list (STL)
- Ladder Diagram (LD)
- Continuous Function Chart (CFC)
- Structured Text (ST)
- Sequential Function Chart (AS)



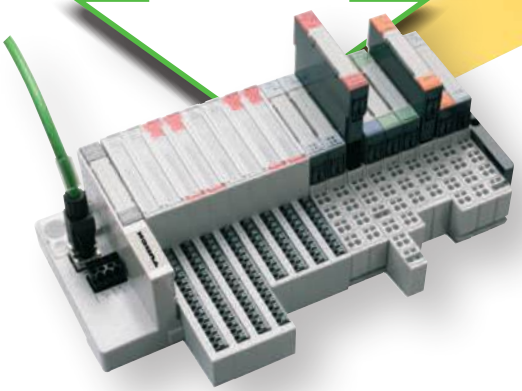
Simple connection

- Quick and simple connection of heterogeneous systems
- Standard transmission protocols such as e.g. TCP/IP and UDP/IP
- Network-global variables
- Bidirectional data exchange between CODESYS systems
- Additional programming is not required

Data exchange via Ethernet

Project planning and configuration

- Target-Support-Package as driver for the target system
- Drag and Drop function for the hard ware configuration
- Standard editor for I/O configuration and parametrization
- Symbolic display of variables for I/O addresses
- Numerous diagnostics and commissioning functions
- Funktion blocks e. g. for the RFID system *BL ident®*



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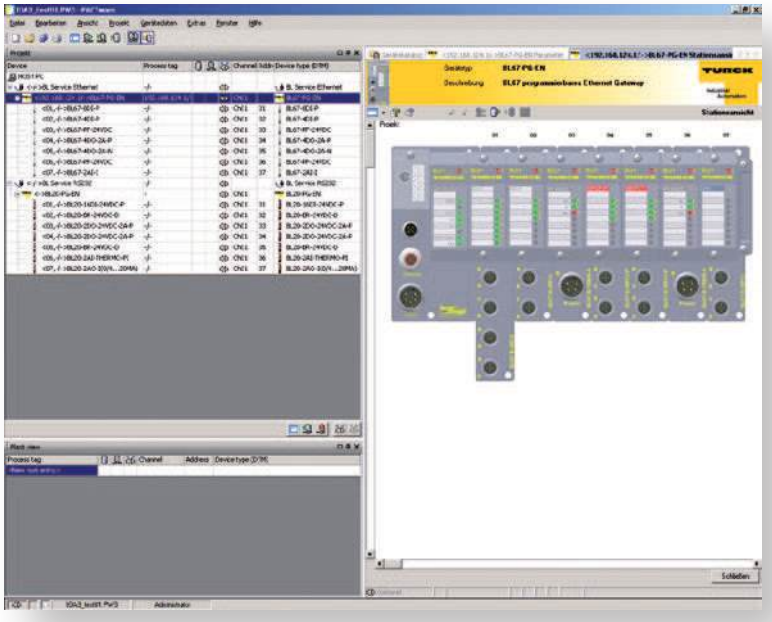
I/O-ASSISTANT

TURCK
Industrielle Automation

Easy parametrization with I/O-ASSISTANT on the basis of FDT/DTM

- System configuration, parametrization and diagnostics with a graphical interface based on FDT/DTM technology
- DTMs can be integrated in any FDT frame application for configuration, commissioning and maintenance
- I/O-ASSISTANT and DTMs are available free of charge on www.turck.com



Description

The configuration software I/O-ASSISTANT supports you in planning and implementation of an I/O system. No matter if you are online or offline, the I/O-ASSISTANT simplifies the configuration as well as the configuration and parametrization of the modules.

This software is also extremely helpful in system set-up and testing.

Functions

- Supporting software tool
- Selection of the required modules
- Offline planning and configuration of BL67 modules
- Configuration, parametrization and commissioning of individual modules
- Reading and setting of process data
- Commissioning help for testing the wiring and sensors without PLC
- Realistic display of configured BL67 components
- Automatic documentation of configured BL67 systems

BL67 – Type code

BL67 – Gateways

BL67 – GW – DPV1

Device series
(BL67) BL67 system

Gateway
(GW) Gateway
(PG) Programmable Gateway

Fieldbus

(DPV1)	PROFIBUS-DP DPV1
(DN)	DeviceNet™
(EN)	Multiprotocol Ethernet
(EN-PN)	PROFINET IO
(EN-IP)	EtherNet/IP™
(CO)	CANopen

BL67 – Elektronic modules

BL67 – 2AI – V

Device series
(BL67) BL67 system

Number of channels

Poss. add-on:

(P)	PNP
(N)	NPN
(PD)	PNP with diagnostics
(V)	Voltage
(I)	Current
(PT)	Pt100, Pt1000, Ni100 etc.
(TC)	Thermocoupler
(A/S)	RFID extension module

Signal type
AI / AO / DI / DO / XSG / SSI / CVI / CNT / PF / RS232 / RS485/422 / RFID

BL67 – Base modules

BL67 – B – 2M12 – P

Device series
(BL67) BL67 system

Base module

Number of channels
1 / 2 / 4 / 8 / 16

Poss. add-on

(P)	Paired
(4/8)	4-/8-pole
(VO)	only load voltage

Connection type
M8 / M12 / M23 / (RSM = 7/8")

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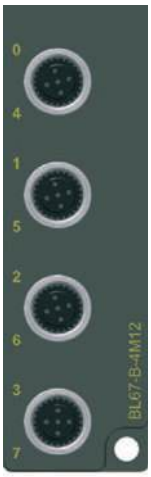
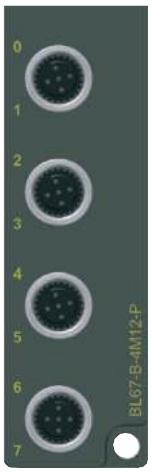
BL67 – Base module BL67-B-…M12 and BL67-B-…M12-P – Process data mapping

BL67-B-2M12 6827186	BL67-B-2M12-P 6827194	BL67-B-4M12 6827187	BL67-B-4M12-P 6827195		BL67-B-2M12	BL67-B-2M12-P	BL67-B-4M12	BL67-B-4M12-P
				Connector 0, Pin 4 Connector 0, Pin 2	bit 0 bit 2	bit 0 bit 1	bit 0 bit 4	bit 0 bit 1
				Connector 1, Pin 4 Connector 1, Pin 2	bit 1 bit 3	bit 2 bit 3	bit 1 bit 5	bit 2 bit 3
				Connector 2, Pin 4 Connector 2, Pin 2	– –	– –	bit 2 bit 6	bit 4 bit 5
				Connector 3, Pin 4 Connector 3, Pin 2	– –	– –	bit 4 bit 7	bit 6 bit 7

BL67 – Combination options

Electronic modules and base modules

Base modules / Ident-no.			6827189	6827188	6827185	6827193	6827186	6827194	6827187	6827195	6827213	6827216	6827190	6827201	6827236	6827336	6827337	6827290	6827235	
			BL67-B-4M8	BL67-B-8M8	BL67-B-1M12	BL67-B-1M12-8	BL67-B-2M12	BL67-B-2M12-P	BL67-B-4M12	BL67-B-4M12-P	BL67-B-1M23	BL67-B-1M23-19	BL67-B-1RSM	BL67-B-1RSM-4	BL67-B-1RSM-VO	BL67-B-2M12-8	BL67-B-2M12-8-P	BL67-B-1M23-VI	BL67-B-1M23-PC	Page
Power feeding modules	**Ident-no.**																			
BL67-PF-24VDC	6827182												✔	✔	✔					48
Digital input modules																				
BL67-4DI-P	6827171		✔				✔	✔	✔		✔							✔		50
BL67-8DI-P	6827170			✔					✔	✔	✔					✔	✔	✔		52
BL67-4DI-PD	6827204		✔				✔	✔	✔		✔[1]									54
BL67-8DI-PD	6827205			✔					✔	✔	✔[1]					✔[1]	✔			56
BL67-4DI-N	6827206		✔				✔	✔	✔		✔							✔		58
BL67-8DI-N	6827207			✔					✔	✔	✔					✔	✔	✔		60
Digital output modules																				
BL67-4DO-0.5A-P	6827173		✔				✔	✔	✔		✔							✔		62
BL67-4DO-2A-P	6827174		✔				✔	✔	✔		✔							✔		64
BL67-4DO-4A-P	6827308		✔				✔	✔	✔		✔							✔		66
BL67-8DO-0.5A-P	6827172			✔					✔	✔	✔					✔	✔	✔		68
BL67-16DO-0.1A-P	6827221										✔									70
BL67-4DO-2A-N	6827210		✔				✔	✔	✔		✔							✔		72
BL67-8DO-0.5A-N	6827209			✔					✔	✔	✔					✔	✔	✔		74
Relay output modules																				
BL67-8DO-R-NO	6827277									✔										76
Digital input/output modules																				
BL67-4DI4DO-PD	6827203			✔					✔	✔	✔[1]					✔	✔		✔	78
Configurable digital input/output modules																				
BL67-8XSG-PD	6827208			✔					✔	✔	✔[1]					✔	✔			80
BL67-8XSG-P	6827310			✔					✔	✔	✔					✔	✔	✔		82

1 I/O signals available, restricted diagnostic function

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Electronic modules and base modules

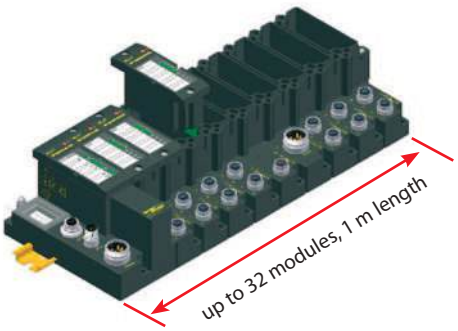
Analogue input modules	Ident-no.	Base modules	BL67-B-4M8	BL67-B-8M8	BL67-B-1M12	BL67-B-1M12-8	BL67-B-2M12	BL67-B-2M12-P	BL67-B-4M12	BL67-B-4M12-P	BL67-B-1M23	BL67-B-1M23-19	BL67-B-1RSM	BL67-B-1RSM-4	BL67-B-1RSM-VO	BL67-B-2M12-8	BL67-B-2M12-8-P	BL67-B-1M23-VI	BL67-B-1M23-PC	Page
	Ident-no.		6827189	6827188	6827185	6827193	6827186	6827194	6827187	6827195	6827213	6827216	6827190	6827201	6827236	6827336	6827337	6827290	6827235	
BL67-2AI-I	6827175					✔														84
BL67-2AI-V	6827176					✔														86
BL67-4AI-V/I	6827222							✔							✔	✔				88
BL67-2AI-PT	6827177					✔														90
BL67-2AI-TC	6827178					✔														92
BL67-4AI-TC	6827368							✔												94
Analogue output modules																				
BL67-2AO-I	6827179					✔														96
BL67-2AO-V	6827180					✔														98
BL67-4AO-V	6827333							✔							✔	✔				100
BL67-2AI2AO-V/I	6827324							✔							✔	✔				102
BL67-4AI4AO-V/I	6827312			✔				✔							✔	✔				104
Technology modules																				
BL67-1RS232	6827181				✔	✔				✔							✔			106
BL67-1RS485/422	6827192				✔	✔				✔							✔			108
BL67-1SSI	6827191					✔				✔										110
BL67-1CNT/ENC	6827224					✔				✔										112
BL67-1CVI	6827223				✔															114
***BL ident*® RFID modules**																				
BL67-2RFID-A	6827225					✔														116
BL67-2RFID-S	6827305					✔														118

BL67 – Maximum system extension/System supply

Maximum system extension

The maximum number of modules for extension depends on the respective system configuration. As the maximum current consumption of the modulbus should not exceed 1.5 A, the number of modules is restricted (see table Nominal current consumption, p. 31) . The use of modules with a high volume of process, parameter and diagnostic data might also impose restrictions to the extension of the system. The I/O-ASSISTANT takes these aspects into account and issues a warning message if appropriate.

A BL67 system can be extended to a total length of 1 m, comprising of a gateway for PROFIBUS-DP, DeviceNet™/CANopen or Ethernet and a maximum of 32 modules.



Maximum system extension PROFIBUS-DP, DeviceNet™, CANopen

	PROFIBUS		DeviceNet		CANopen	
Module type	**Number of chan.**	**Number of mod.**	**Number of chan.**	**Number of mod.**	**Number of chan.**	**Number of mod.**
Digital inputs, 4 DI	128	32	128	32	128	32
Digital inputs 8 DI	256	32	256	32	256	32
Digital outputs 4 DO	128	32	128	32	128	32
Digital outputs 8 DO	256	32	256	32	256	32
Digital outputs, 16 DO	512	32	512	32	512	32
Analogue inputs, 2AI	64	32	64	32	64	32
Analogue inputs, 4AI	112	28	124	31	124	31
Analogue inputs, 2 AI-PT	56	28	64	32	64	32
Analogue inputs, 2 AI-TC	64	32	64	32	64	32
Analogue outputs, 2 AO-I	38	19	64	32	64	32
Analogue outputs, 2 AO-V	38	19	50	25	50	25

Maximum system extension Ethernet

	Modbus TCP		EtherNet/IP		PROFINET	
Module type	**Number of chan.**	**Number of mod.**	**Number of chan.**	**Number of mod.**	**Number of chan.**	**Number of mod.**
Digital inputs, 4 DI	128	32	128	32	128	32
Digital inputs 8 DI	256	32	256	32	256	32
Digital outputs 4 DO	128	32	128	32	128	32
Digital outputs 8 DO	256	32	256	32	256	32
Digital outputs, 16 DO	512	32	512	32	512	32
Analogue inputs, 2AI	64	32	64	32	64	32
Analogue inputs, 4AI	128	32	128	32	128	32
Analogue inputs, 2 AI-PT	64	32	64	32	64	32
Analogue inputs, 2 AI-TC	64	32	64	32	64	32
Analogue outputs, 2 AO-I	64	32	64	32	64	32
Analogue outputs, 2 AO-V	50	25	50	25	50	25

System supply: General

The power supply for the BL67 system is either derived separately for PROFIBUS-DP and Ethernet gateways or directly from the DeviceNet™/CANopen cable for the DeviceNet™/CANopen gateway.

Power-Feeding modules can be inserted anywhere in the BL67 station. They provide isolated field voltage for the I/O modules mounted to their right. Thus Power-Feeding modules can also be used to create different potential groups.

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System supply via the module bus

The number of BL67 modules, which can be powered via the internal module bus, depends on the nominal current rating I_{MB} of the individual modules on the module bus. The total current consumption of the installed BL67 modules may not exceed 1.5 A.

When using the software I/O-ASSISTANT, the menu item <Station - Verify> will automatically generate an error message if the system supply via the module bus is not reliably ensured.

Nominal current consumption

The following table shows the nominal current consumption $I_{MB(5V)}$ of the various BL67 modules on the module bus, the resulting nominal current consumption $I_{MB(24V)}$ of the modules via the 24 VDC supply and the nominal current consumption I_I or I_O of the modules via the supply:

		$I_{ges.}$[5]			
Modules	**Nom. current module bus $I_{MB(5V)}$[1]**	**Nom. current module bus $I_{MB(24V)}$[2]**	+	**Nom. current input module I_I[3]**	**Nom. current Output module I_O[4]**
Gateway PROFIBUS-DP	–	≤ 150 mA			
Gateway DeviceNet™	–	≤ 150 mA			
Gateway CANopen	–	≤ 150 mA			
Gateway Ethernet	–	≤ 150 mA			
BL67-PF-24VDC	≤ 30 mA	≤ 9 mA			
BL67-4DI-P	≤ 30 mA	≤ 9 mA		≤ 40 mA	
BL67-4DI-N	≤ 30 mA	≤ 9 mA		≤ 1 mA	
BL67-4DI-PD	≤ 30 mA	≤ 9 mA		≤ 100 mA	
BL67-8DI-P	≤ 30 mA	≤ 9 mA		≤ 40 mA	
BL67-8DI-N	≤ 30 mA	≤ 9 mA		≤ 1 mA	
BL67-8-DI-PD	≤ 30 mA	≤ 9 mA		≤ 100 mA	
BL67-4DO-0.5A-P	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0)
BL67-4DO-2A-P	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0) ≤
BL67-4DO-2A-N	≤ 30 mA	≤ 9 mA			100 mA (Load current = 0)
BL67-8DO-0.5A-P	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0)
BL67-8DO-0.5A-N	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0)
BL67-16DO-0.1A-P	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0)
BL67-4DI4DO-PD	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0)
BL67-8XSG-PD	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0)
BL67-8DO-R-NO	≤ 30 mA	≤ 9 mA			≤ 100 mA (Load current = 0)
BL67-2AI-V	≤ 35 mA	≤ 10 mA		≤ 12 mA	
BL67-2AI-I	≤ 35 mA	≤ 10 mA		≤ 12 mA	
BL67-4AI-V/I	≤ 35 mA	≤ 10 mA		≤ 12 mA	
BL67-2AI-TC	≤ 35 mA	≤ 10 mA		≤ 30 mA	
BL67-2AI-PT	≤ 45 mA	≤ 13 mA		≤ 45 mA	
BL67-2AO-I	≤ 40 mA	≤ 12 mA			≤ 50 mA
BL67-2AO-V	≤ 60 mA	≤ 17 mA			≤ 50 mA
BL67-1RS232	≤ 140 mA	≤ 40 mA		≤ 50 mA	
BL67-1RS485/422	≤ 60 mA	≤ 17 mA		≤ 25 mA	
BL67-1SSI	≤ 50 mA	≤ 14 mA		≤ 25 mA	
BL67-1CNT/ENC	≤ 30 mA	≤ 9 mA		≤ 100 mA	
BL67-1CVI	≤ 30 mA	≤ 9 mA		≤ 100 mA	

[1] The nominal current consumption via the 5 VDC system supply may not exceed 1.5 A. The primary product of $V_{MB(24V)}$ and $I_{MB(24V)}$ accords to the secondary product of $V_{MB(5V)}$ and $I_{MB(5V)}$. Power losses have not been considered.

[2] The nominal current consumption via the 24 VDC field supply.

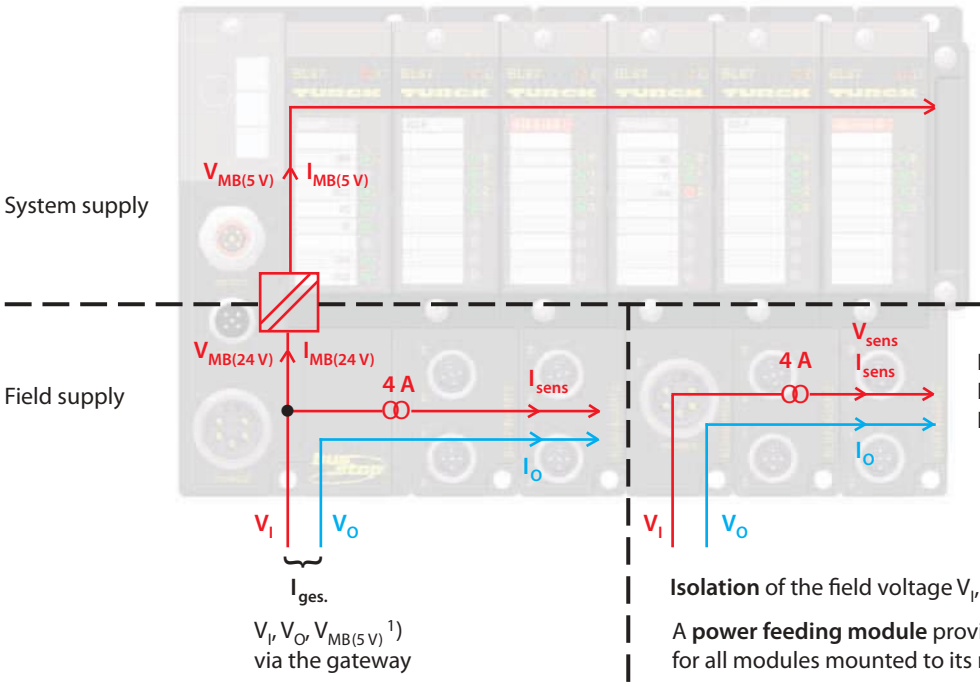
[3] Is limited to 4 A by means of the integrated short-circuit protection.

[4] The nominal current consumption via the field supply: with PROFIBUS-DP it may not exceed 10 A and with DeviceNet™ 8 A.

[5] $I_{total} = \Sigma I_{MB(24V)} + \Sigma I_I + \Sigma I_O$

BL67 – Power supply concept

PROFIBUS-DP/CANopen/Ethernet system



V_{sens} = input/ sensor supply (4 A current short-circuit limitation)
V_O = Load voltage (U_L)
$V_{MB(5\,V)}$ = System supply
V_I = Operating voltage (U_B)

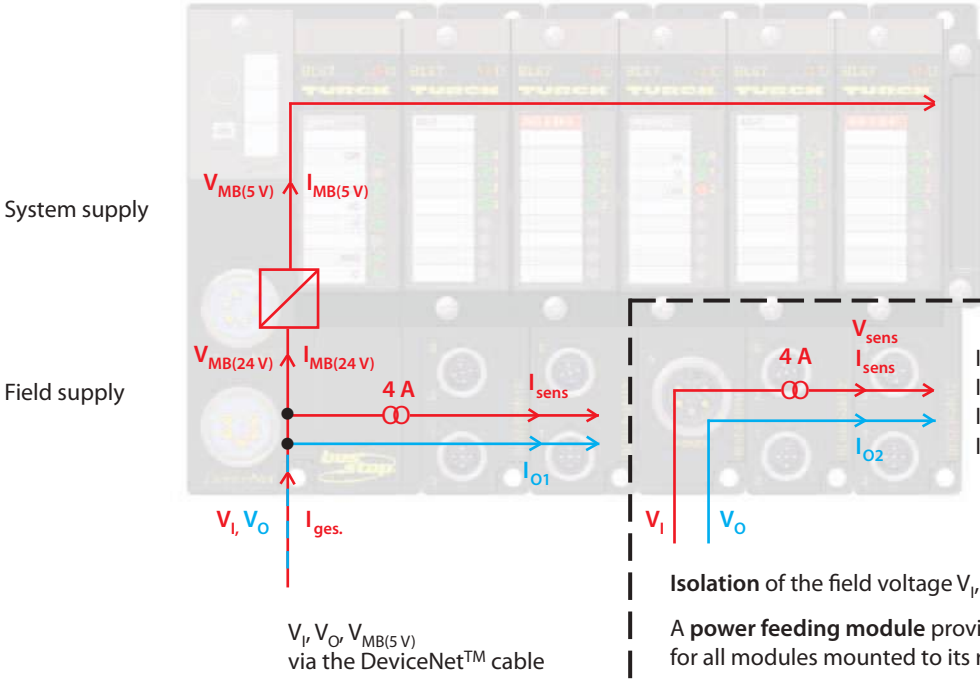
$I_{MB(5\,V)max}$ = 1.5 A
$I_{sensmax}$ = 4 A short-circuit proof
I_{Omax} = 10 A non-fused

V_I, V_O, $V_{MB(5\,V)}$ [1])
via the gateway

Isolation of the field voltage V_I, V_O

A **power feeding module** provides a **new isolated voltage source** for all modules mounted to its right.

DeviceNet™ system



V_{sens} = Input/ sensor supply (4 A current short-circuit limitation)
V_O = Load voltage (U_L)
$V_{MB(5\,V)}$ = System supply
V_I = Operating voltage (U_B)

$I_{MB(5\,V)max}$ = 1.5 A
$I_{sensmax}$ = 4 A short-circuit proof
I_{O1max} = 8 A non-fused
I_{O2max} = 10 A non-fused

V_I, V_O, $V_{MB(5\,V)}$
via the DeviceNet™ cable

Isolation of the field voltage V_I, V_O

A **power feeding module** provides a **new isolated voltage source** for all modules mounted to its right.

[1]) $V_{MB(5V)}$ is galvanically isolated from the supply. V_I and V_O are not galvanically isolated and use a common GND potential.

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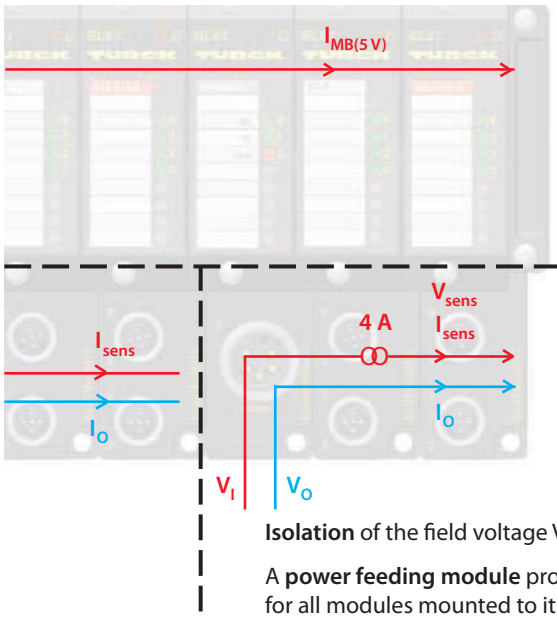
Power feeding module BL67-PF-24VDC with base module BL67-B-1RSM



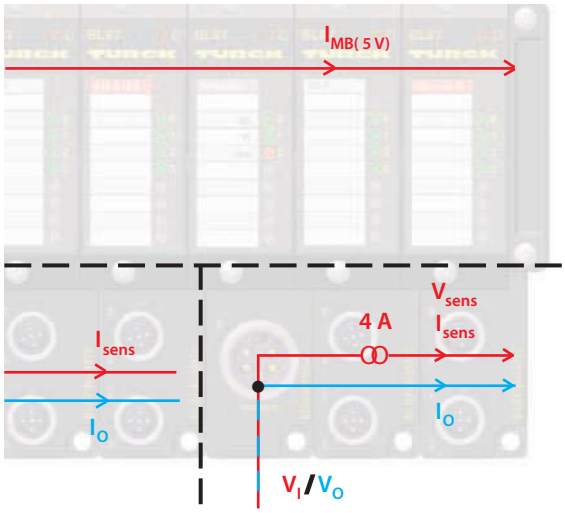
V_{sens} = Input/ sensor supply (4 A current short-circuit limitation)
V_O = Load voltage (U_L)
V_I = Operating voltage (U_B)

$I_{MB(5\,V)max}$ = 1.5 A
$I_{sensmax}$ = 4 A short-circuit proof
I_{Omax} = 10 A non-fused

Isolation of the field voltage V_I, V_O

A **power feeding module** provides a **new isolated voltage source** for all modules mounted to its right.

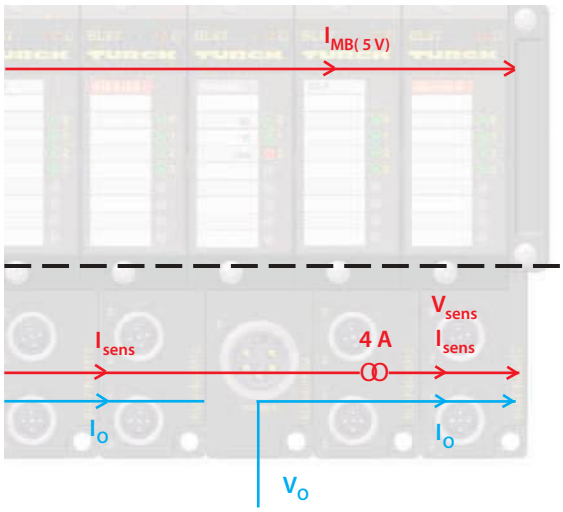
Power feeding module BL67-PF-24VDC with base module BL67-B-1RSM-4



V_{sens} = Input/ sensor supply (4 A current short-circuit limitation)
V_O = Load voltage (U_L)
V_I = Operating voltage (U_B)

$I_{MB(5\,V)max}$ = 1.5 A
$I_{sensmax}$ = 4 A short-circuit proof
I_{Omax} = 10 A non-fused

Power feeding module BL67-PF-24VDC with base module BL67-B-1RSM-VO

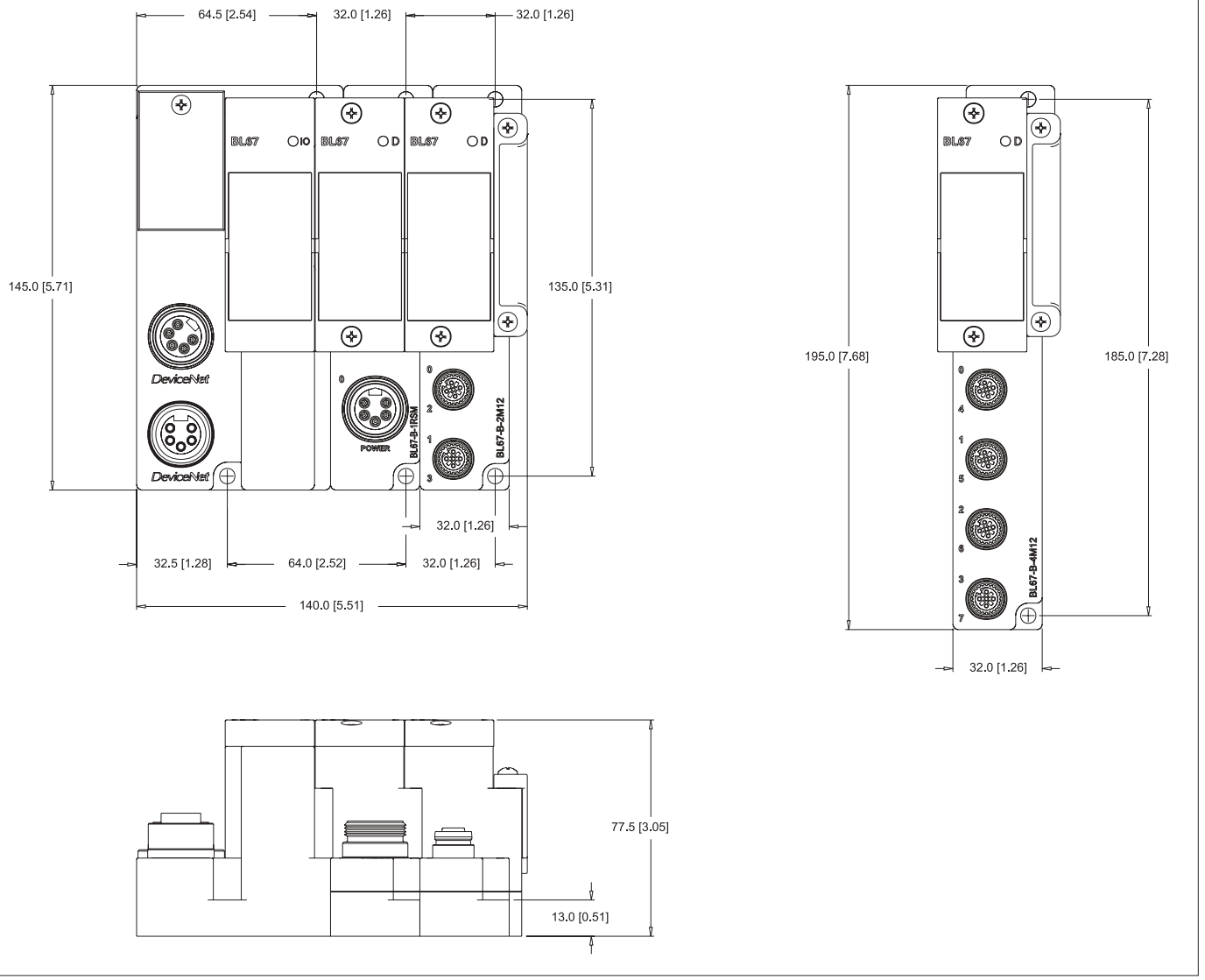


V_{sens} = Input/ sensor supply (4 A current short-circuit limitation)
V_O = Load voltage (U_L)
V_I = Operating voltage (U_B)

$I_{MB(5\,V)max}$ = 1.5 A
$I_{sensmax}$ = 4 A short-circuit proof
I_{Omax} = 10 A non-fused

BL67 – General technical data

Dimensions and mounting holes



Note:

Extended vibration resistance:

- Max. 5 g when mounted on non-perforated DIN rail acc. to EN 60715, with end brackets
- Max. 20 g when mounted on a base plate or directly on the machine.

At least the gateway and each second module has to be fixed with two screws.

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General technical data

BL67 general data	
Potential isolation	via opto-coupler
Ambient temperature	
– Operating temperature	-25 (-40)… +70 °C (possible function limitation of single modules < 0 °C or > 55 °C, see module description)
– Storage temperature	-25 up to +85 °C
Relative humidity	5 up to 95 % (inside), level RH-2, no condensation (at 45 °C storage temperature)
Corrosive gas	acc. to IEC 60068-2-42/43
– SO_2	10 ppm (rel. humidity < 75 %, no condensation)
– H_2S	1.0 ppm (rel. humidity < 75 %, no condensation)
Vibration resistance	according to EN 61131
– 10 to 57 Hz, constant ampitude 0,075 mm, 1 g	yes
– 57 to 150 Hz, constant acceleration 1 g	yes
– Vibration mode	frequency cycles with a change rate of 1 octave/min
– Vibration duration	20 frequency cycles per coordinate axis
Extended vibration resistance	(gateways VN 02-00)
– up tp 5 g (between 10 and 150 Hz)	mounting on non-perforated DIN rail acc. to EN 60715, with end brackets
– up to 20 g (between 10 and 150 Hz)	firm mounting on base plate or machine. Each second module has to be fixed with two screws.
Application conditions	according to EN 61131
Shock resistance	according to IEC 68-2-27, 18 shocks, semi-sinusoidal 15 g threshold/11 ms, each in ±-direction per space coordinate
Repetitive shock resistance	according to IEC 68-2-29, 1000 shocks, semi-sinusoidal 25 g threshold/6 ms, each in ±-direction per space coordinate
Drop and topple	according to IEC 68-2-31 and free fall according to IEC 68-2-32
– Drop height (weight < 10 kg)	1.0 m
– Drop height (weight 10 to 40 kg)	0.5 m
– Test cycles	7
Protection degree	IP67
Electromagnetic capability (EMC)	according to EN 61131-2/EN 50082-2 (Industrial)
– Static electricity according to EN 61000-4-2	
– Air discharge (direct)	8 kV
– Relay discharge (indirect)	4 kV
Housing material	PC-V0 (Lexan)

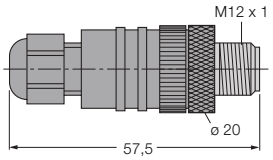
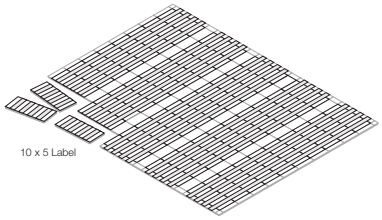
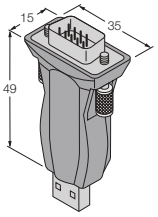
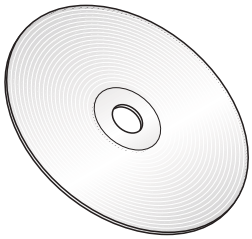
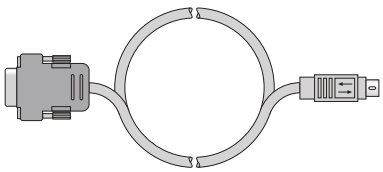
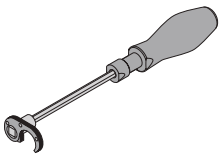
Approvals	
	CE
	cUL

The I/O system BL67 does not require mounting in an extra housing. It was specially designed for harsh industrial environments and for direct mounting on the machine and in the process. The system is extremely robust and protected against dirt, dust and most liquids through its high degree of protection. However, it is not suited for the following applications: high pressure jet cleaning, 100% humidity, outdoor installation or permanent operation in liquids.

Tightening torque BL67:

- 0.8…1.0 nm for male M12 sensor connector
- 0.9…1.2 nm for base and electronic module screws

BL67 – Specific accessories

Fig.	Description	Type	Ident. no
	For BL67-2AI-TC, M12 × 1 round connector, field wirable, screw-terminal connection, integrated Pt1000 sensor for cold junction point compensation	**BL67-WAS5-THERMO**	6827197
	for labelling of the BL67 electronic modules, DIN A4 standard paper size, perforated, 50 labels, suited for laser printers	**BL67-LABEL-DIN-A4-50STCK.**	6827196
	adapter cable USB to RS232, serial adapter SUB-D 9-pole to SUB-D 25-pole included in delivery, driver for Microsoft® 98, ME, 2000, XP, cable length 1.7 m	**USB-2-RS232**	6900426
	Planning, configuration, commissioning and diagnostic freeware for modular Fieldbus I/O systems Download on http://www.turck.com	**I/O-ASSISTANT**	–
	RS232 adapter cabel for connection of the I/O ASSISTANT, 9-pole SUB-D female connector, cable length 2.5 m	**I/O-ASSISTANT-Kabel-BL20/BL67**	6827133
	M12 mounting tools torque wrench 0.7…1.5 Nm adjusting range	**Drehmoment Schlüsselset M8/M12**	8031651

User manuals
The user manuals for BL67 systems are only available as PDF file and can be downloaded on **www.turck.com**

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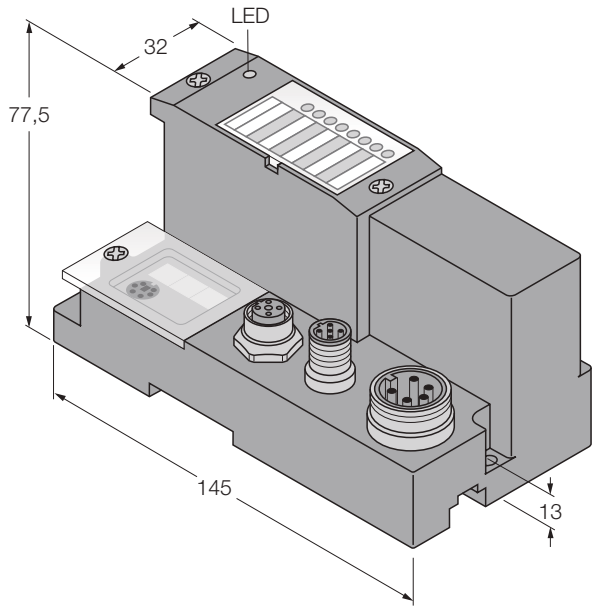
BL67 – Function principle

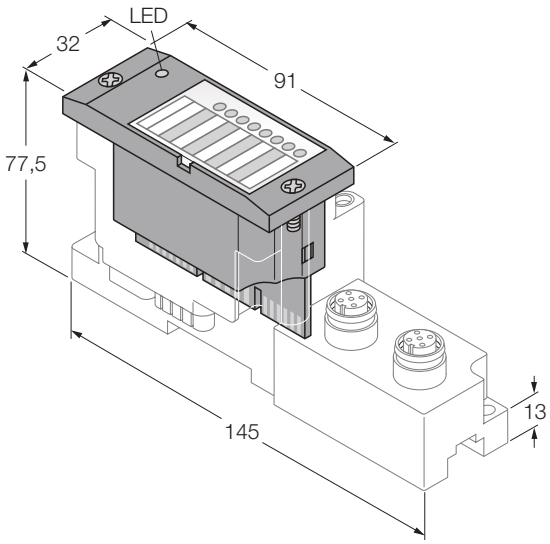
Gateway



BL67 gateways are the heart of a BL67 station. They are designed to connect the modular fieldbus nodes to the higher level fieldbus (PROFIBUS-DP, DeviceNet™, CANopen, Ethernet).

All BL67 electronic modules communicate over the internal module bus with the gateway. The gateway structures the data and sends them clustered via fieldbus nodes to the higher control system. This way all I/O modules can be configured independently of the bus system.

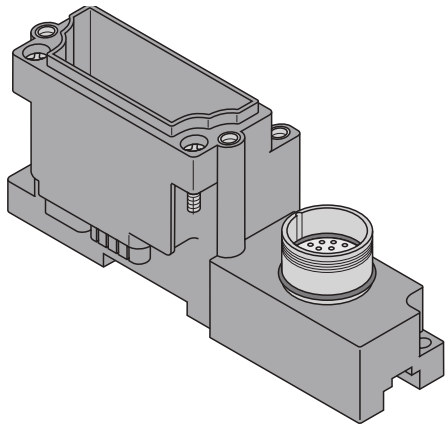
Elektronic module



BL67 electronic modules are inserted into the passive base modules from above and then simply affixed with two screws. Maintenance is extremely simplified due to the separation of connection level and module electronics.
Moreover, flexibility is enhanced because the base modules provide different types of connectors.

Voltage supply for the electronic modules is either provided via the gateway or a Power-Feeding module. Power-Feeding modules can be used to create galvanically isolated potential groups.

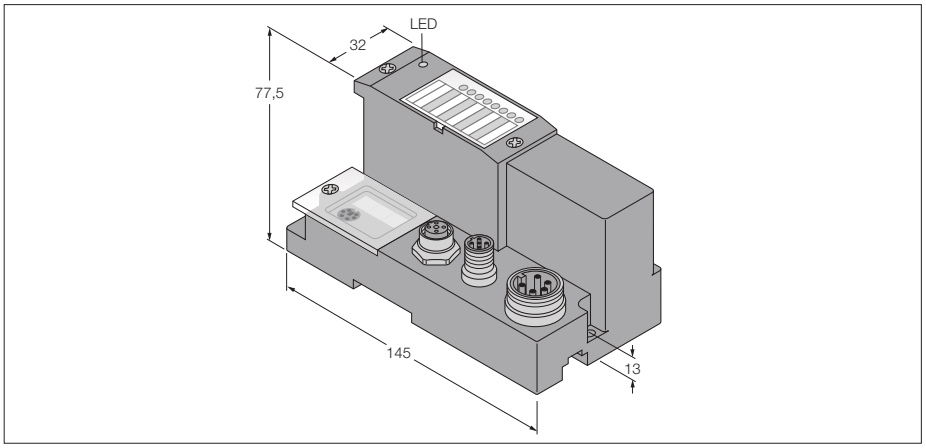
Base module



BL67 base modules are aligned one by one to the right of the gateway and are tightened each with two screws, either with the gateway or with the previous module. A DIN rail is not required. This way a compact and stable unit is created which can be mounted directly on the machine or on a DIN-rail.

The base modules serve for connection of the field devices an are available with different connection types (M8, M12, M23 und 7/8").

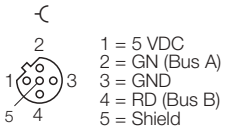
Gateway for BL67 I/O system
Interface for PROFIBUS-DP
BL67-GW-DPV1



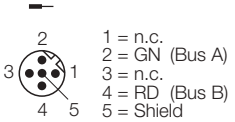
- 3 decimally coded rotary switches
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL67 system and PROFIBUS-DPV0/DPV1
- 12 Mbps
- Two 5-pole reverse-keyed M12 × 1 connectors for fieldbus connection
- One 5-pole 7/8" connector for power connection

Type	BL67-GW-DPV1
Ident-No.	6827232
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 650 mA
max. system supply current $I_{mb\ (5V)}$	1.5 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…125
Fieldbus addressing	3 decimally coded rotary switches
Service interface	RS232 interface (PS/2 socket)
Fieldbus connection technology	2 x M12, 5-pole, inversely coded
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus connection	external
Operating temperature	-40…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	I_{sens} < 3A, I_{mb} < 1A
General technical data	see page 35

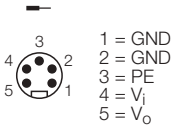
Profibus DP OUT



Profibus DP IN



Voltage supply



Accessories

6915769	RKSW-D9T451-2M	Profibus cable M12 to sub-D
6601590	RSS4.5-PDP-TR	Profibus M12 terminating resistor
6914145	RKM52-6M	power cable 7/8" unterminated end

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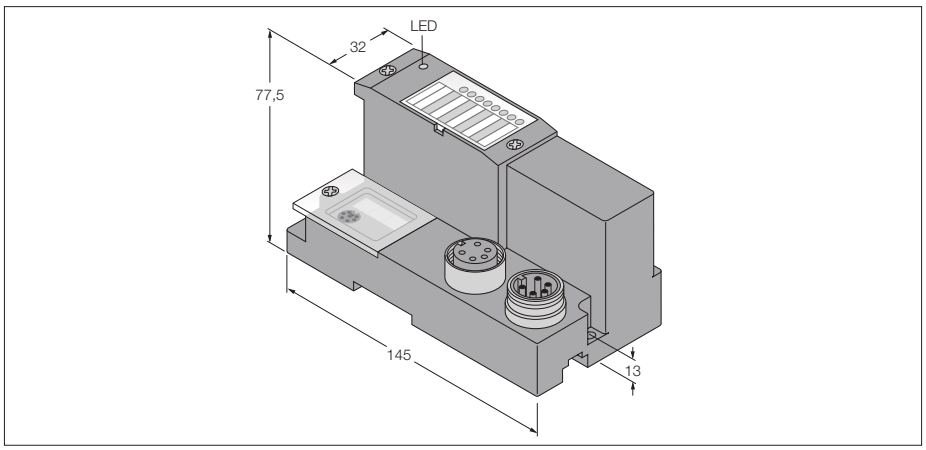
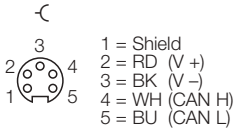
Gateway for BL67 I/O system
Interface for DeviceNet
BL67-GW-DN



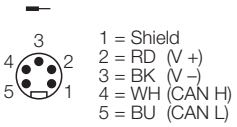
- 3 decimally coded rotary switches
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL67 system and DeviceNet™
- 125 / 250 / 500 kbps
- Two 5-pole 7/8" connectors for fieldbus connection

Type	BL67-GW-DN
Ident-No.	6827183
Supply voltage	24 VDC
Admissible range	11…26 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.5 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	8 A
Voltage supply connection	via DeviceNet cable
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing range	0…63
Fieldbus addressing	2 decimally coded rotary switches
Service interface	RS232 interface (PS/2 socket)
Fieldbus connection technology	2 x 7/8", 5-pole
Voltage supply connection	via DeviceNet cable
Fieldbus connection	external
Operating temperature	-40…+70 °C
General technical data	see page 35

DeviceNet™ OUT



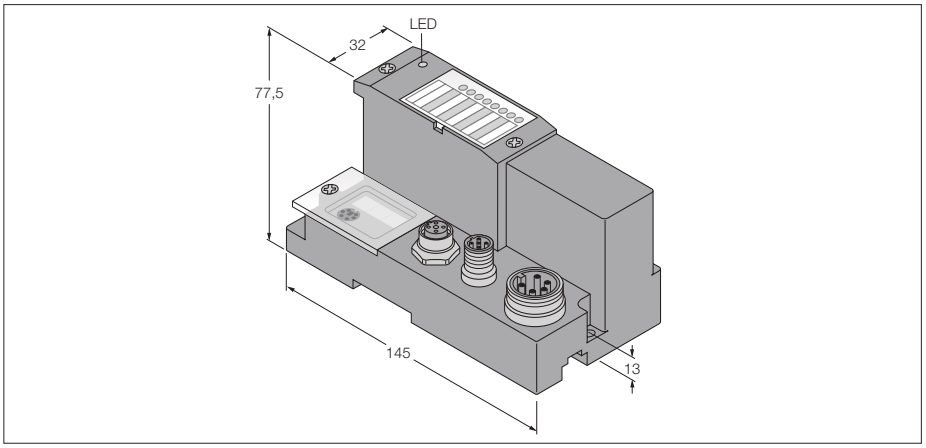
DeviceNet™ IN



Accessories

6605189	RKM5723-6M	DeviceNet cable 7/8" connector to unterminated at end
6605553	RSM-RKM5723-6M	DeviceNet cable 7/8" plug to connector
6602011	RSM57-TR2	DeviceNet 7/8" terminating resistor

Gateway for BL67 I/O system
Interface for CANopen
BL67-GW-CO



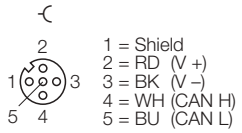
- 3 decimally coded rotary switches
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL67 system and CANopen
- 1 Mbps
- Two 5-pole M12 connectors for fieldbus connection
- One 5-pole 7/8" connector for power connection

Type	BL67-GW-CO
Ident-No.	6827200
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.3 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus transmission rate	10 kbps up to 1 Mbps
Fieldbus addressing range	1…99
Fieldbus addressing	2 decimally coded rotary switches
Service interface	RS232 interface (PS/2 socket)
Fieldbus connection technology	2 x M12, 5-pole
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus connection	external
Operating temperature	-40…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	I_{sens} < 3A, I_{mb} < 1A
General technical data	see page 35

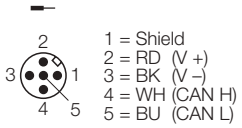
Accessories

6931034	RKC5701-5M	CAN (CANopen / DeviceNet™) cable M12 female connector with unterminated end
6602308	RSE57-TR2	CANopen M12 terminating resistor
6914145	RKM52-6M	power cable 7/8“ unterminated end

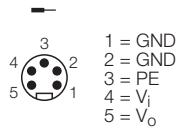
CANopen OUT



CANopen IN



Voltage supply



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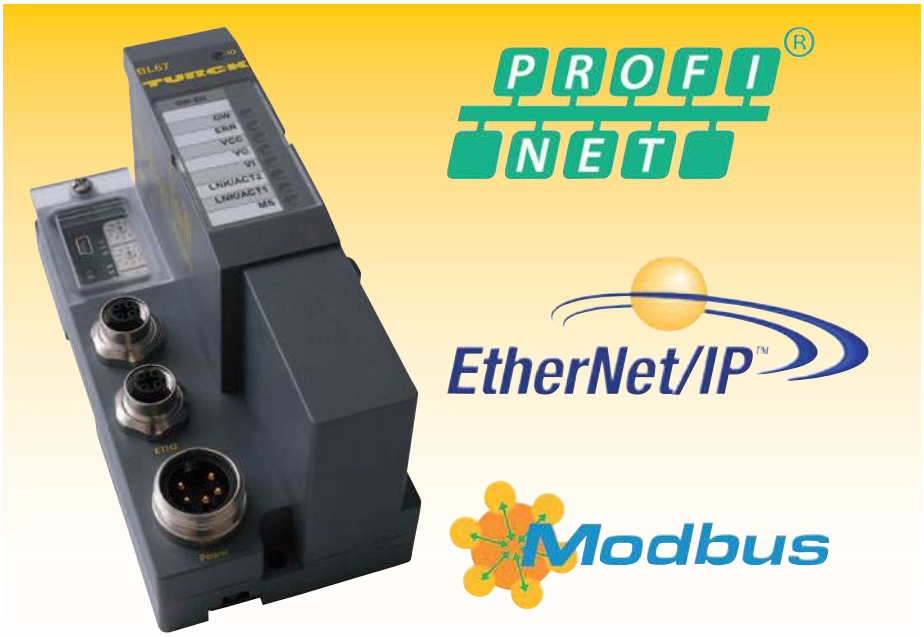
Multiprotocol interface for BL67

Multiprotocol I/O systems: One device – Three Ethernet protocols



The devices marketed by TURCK under the concept of "multiprotocol", share the same functionality:

- **Multiprotocol:**
  The gateways as well as the compact I/O modules combine the three Ethernet protocols PROFINET IO, EtherNet/IP™ and Modbus TCP in one device
- **Line topology:**
  All devices have a 3-port switch integrated, allowing a network to be arranged in line topology.
- **Prioritized start-up:**
  A lean architecture and optimized Ethernet protocol stacks enable accelerated start-up. Thanks to these features, the devices support Fast Startup (FSU) in PROFINET IO or Quick Connect (QC) in EtherNet/IP™ applications.

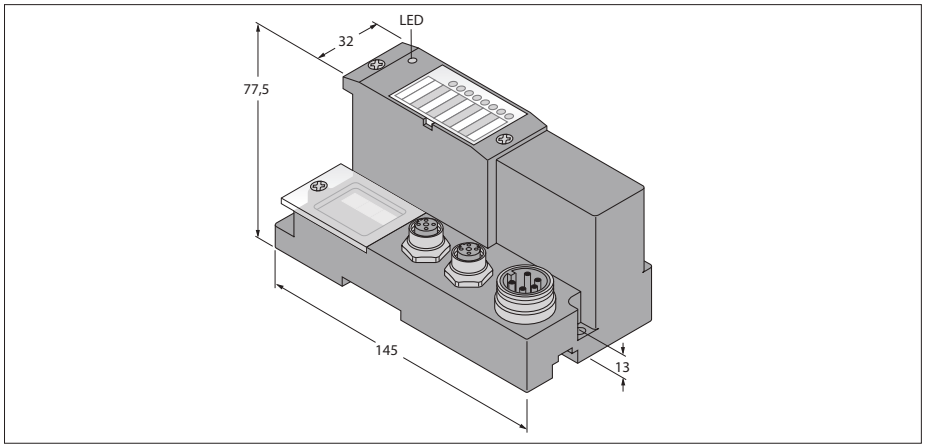
New TURCK multiprotocol platform

A TURCK multiprotocol device can be operated at a PROFINET IO, EtherNet/IP™ or a Modbus TCP system without having to be reprogrammed. After connecting the power, the integrated snooping functionality enables the device to identify the Ethernet protocol requesting for connection buildup during a predefined recognition phase. If one of the three protocols is identified, the device automatically selects this protocol and ignores the other two.

The implementation of the protocols leaves nothing to be desired: When operated as a PROFINET IO device it supports prioritized start-up, the media redundancy protocol (MRP), topology recognition as well as address allocation via Link Layer discovery Protocol (LLDP). Both, QuickConnect (QC) and Device Level Ring (DLR) are implemented in EtherNet/IP™.

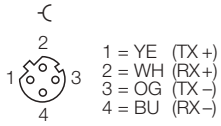
With the multiprotocol interface from TURCK, customers can now reduce the number of fieldbus variants considerably.
Multiprotocol I/O systems can thus be installed in machines and systems that are largely built with identical components but only need a customer specific control resp. master. Not only purchase and stock keeping of spare-parts profit from these obvious advantages, also electrical construction plans can just be duplicated.

Gateway for BL67 I/O system
Multiprotocol interface for Ethernet
BL67-GW-EN

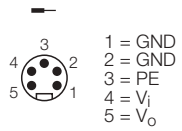


- 3 decimally coded rotary switches
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Multi-protocol interface between the BL67 system and the Ethernet protocols Modbus TCP, EtherNet/IP™ and PROFINET IO (from VN 03-00)
- The EtherNet/IP™ protocol supports QuickConnect (QC)
- PROFINET IO supports fast start-up (FSU)
- Two 4-pole M12 connector, D coding, for fieldbus connection
- One 5-pole 7/8" connector for power connection

Ethernet



Voltage supply



Type	BL67-GW-EN
Ident-No.	6827214
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.3 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	5-pole male 7/8" connector
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Fieldbus connection technology	Two female M12 × 1 connector, 4-pole, D-coded
Protocol detection/changeover	automatic
Web server	in preparation
Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of connections	6
EtherNet/IP™	
Addressing	acc. to EtherNet/IP™ specification
Quick Connect (QC)	< 150 ms
Device Level Ring (DLR)	supported
Number of connections	6
PROFINET IO	(available Q1/2013*)
Addressing	DCP
Conformance Class	B (RT)
MinCycleTime	1 ms
Fast Startup	< 150 ms
Diagnostics	acc. to PROFINET IO Alarm Handling
Topology detection	supported
Automatic addressing	supported
Operating temperature	-25…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	I_{sens} < 3A, I_{mb} < 1A
General technical data	see page 35

Accessories

6914219	RSSD-RSSD-441-6M/S2174	Ethernet cable M12 to M12 (4-pole, D-coded)
6915781	RSSD-RJ45-441-2M/S2174	Ethernet cable RJ45 to M12 (4-pole, D-coded)
6914145	RKM52-6M	power cable 7/8“ unterminated end

* The current device firmware supports Modbus TCP and EtherNet/IP™, the PROFINET IO protocol will be included in phase 2

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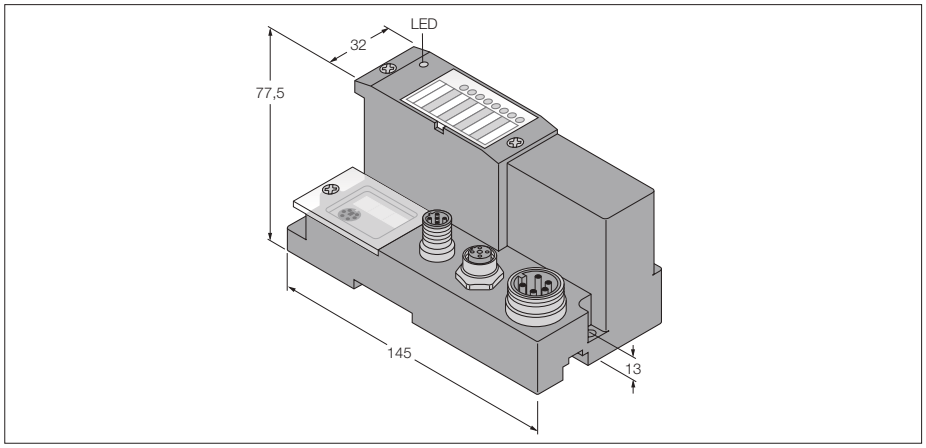
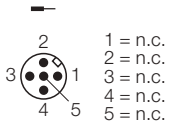
Gateway for BL67 I/O system
Interface for PROFINET IO
BL67-GW-EN-PN



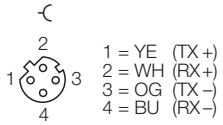
- 3 decimally coded rotary switches
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between BL67 system and PROFINET IO
- 10/100 Mbps
- One 4-pole M12 connector, D coding, for fieldbus connection
- One 5-pole 7/8" connector for power connection
- PROFINET RT

Type	BL67-GW-EN-PN
Ident-No.	6827228
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.3 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	PROFINET IO conform, rotary switch, BOOTP, DHCP, IO-ASSISTANT
Service interface	RS232 interface (PS/2 socket)
Fieldbus connection technology	female M12 x 1 connector, 4-pole, D-coded
Voltage supply connection	5-pole male 7/8“ connector
Operating temperature	-25…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	I_{sens} < 3A, I_{mb} < 1A
General technical data	see page 35

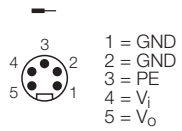
Without function



Ethernet



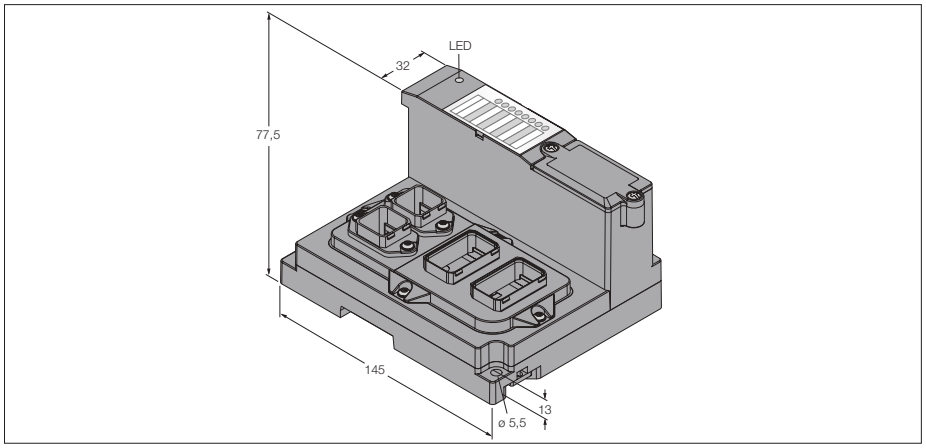
Voltage supply



Accessories

6914219	RSSD-RSSD-441-6M/S2174	Ethernet cable M12 to M12 (4-pole, D-coded)
6915781	RSSD-RJ45-441-2M/S2174	Ethernet cable RJ45 to M12 (4-pole, D-coded)
6914145	RKM52-6M	power cable 7/8“ unterminated end

Gateway for BL67 I/O system
AIDA gateway for PROFINET IO
BL67-GW-PN-AC



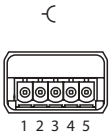
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL67 system and EtherNet/IP
- PROFINET IO supports fast start-up (FSU)
- Integrated switch 10/100 Mbps
- Two AIDA RJ45 (copper) fieldbus connections
- Two 5-pole AIDA power supply connectors
- Degree of protection IP67

Type	BL67-GW-PN-AC
Ident-No.	6827345
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.3 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	2 × AIDA power, 5-pin
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × AIDA Ethernet RJ45 (copper)
Protocol detection/changeover	automatic
Service interface	Mini USB
Web server	in preparation
PROFINET IO	
Addressing	DCP
Conformance Class	C (IRT)
MinCycleTime	1 ms
Fast Startup	< 150 ms
Diagnostics	acc. to PROFINET Alarm Handling
Topology detection	supported
Automatic addressing	supported
Operating temperature	-25…+70 °C
General technical data	see page 35

Ethernet

1 = YE (TX +)
2 = OG (TX –)
3 = WH (RX +)
4 = n.c.
5 = n.c.
6 = BU (RX –)
7 = n.c.
8 = n.c.

Voltage supply



1 = L1 (V_I)
2 = N1 (GND)
3 = L2 (V_o)
4 = N2 (GND_o)
5 = FE (FE)

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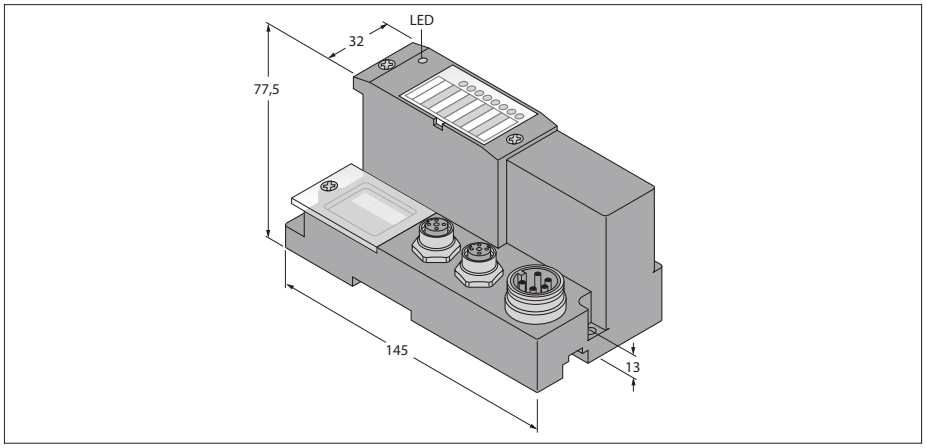
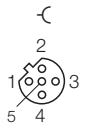
Programmable gateway for the BL67 I/O system
Interface for PROFIBUS-DP (Slave)
BL67-PG-DP



- Programmable acc.to IEC 61131-3 with CODESYS
- Ethernet and RS232 programmable interface
- 512 kByte program memory
- 32 Bit RISC processor
- < 1 ms for 1000 instructions
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Interface for PROFIBUS-DP (Slave)
- 12 Mbps

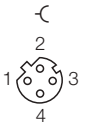
Type	BL67-PG-DP
Ident-No.	6827240
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.3 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…125
Fieldbus addressing	Adjustment via CODESYS software
Service interface	RS232 interface (PS/2 socket)
Fieldbus connection technology	female M12 x 1 connector, 5-pole, reverse-keyed
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus connection	external
PLC data	
Programming	CODESYS V2.3
Released for CODESYS version	V 2.3.6.4
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Application tasks	1
Number of POUs	1024
Programming interface	RS232 interface, Ethernet
Processor	RISC, 32 bit
Cycle time	< 1 ms for 1000 IL commands (without I/O cycle)
Program memory	512 kByte
Data memory	512 kByte
Input data	4 kByte
Output data	4 kByte
Non-volatile memory	16 kByte
Operating temperature	-25…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	I_{sens} < 3A, I_{mb} < 1A
General technical data	see page 35

Profibus DP



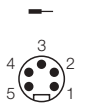
1 = 5 VDC
2 = GN (Bus A)
3 = GND
4 = RD (Bus B)
5 = Shield

Ethernet



1 = YE (TX+)
2 = WH (RX+)
3 = OG (TX–)
4 = BU (RX–)

Voltage supply

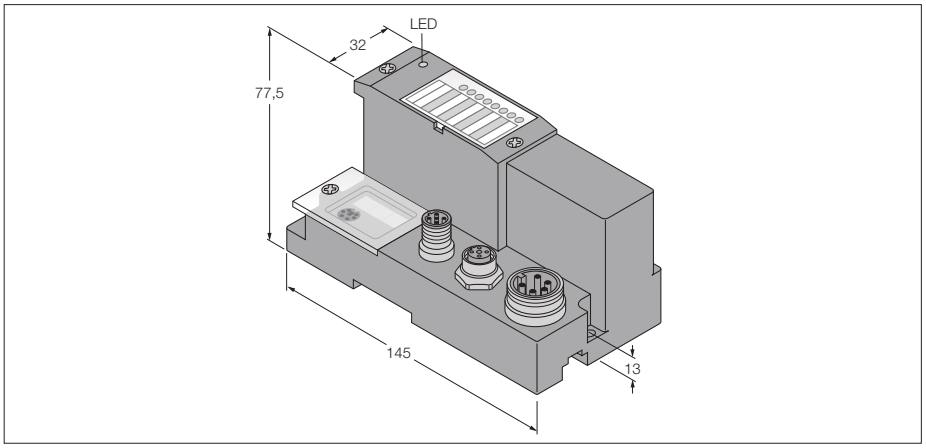


1 = GND
2 = GND
3 = PE
4 = V_i
5 = V_o

Accessories

6915781	RSSD-RJ45-441-2M/S2174	Ethernet cable RJ45 to M12 (4-pole, D-coded)
6915769	RKSW-D9T451-2M	Profibus cable M12 to sub-D
6996009	VB2-FSW-FKW-FSW-45	Profibus Y junction M12
6601590	RSS4.5-PDP-TR	Profibus M12 terminating resistor
6914145	RKM52-6M	power cable 7/8" unterminated end

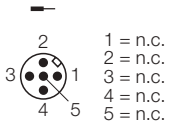
Programmable gateway for the BL67 I/O system
Interface for Modbus TCP (Slave)
BL67-PG-EN



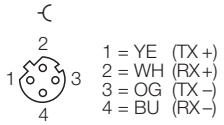
- Programmable acc.to IEC 61131-3 with CODESYS
- Ethernet and RS232 programmable interface
- 512 kByte program memory
- 32 Bit RISC processor
- < 1 ms for 1000 instructions
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Interface for Modbus TCP
- 10/100 Mbps

Type	BL67-PG-EN
Ident-No.	6827241
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.3 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	5-pole male 7/8" connector
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	rotary switch, BOOTP, DHCP, IO-ASSISTANT
Service interface	RS232 interface (PS/2 socket)
Fieldbus connection technology	female M12 x 1 connector, 4-pole, D-coded
Voltage supply connection	5-pole male 7/8" connector
PLC data	
Programming	CODESYS V2.3
Released for CODESYS version	V 2.3.6.4
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Application tasks	1
Number of POUs	1024
Programming interface	RS232 interface, Ethernet
Processor	RISC, 32 bit
Cycle time	< 1 ms for 1000 IL commands (without I/O cycle)
Program memory	512 kByte
Data memory	512 kByte
Input data	4 kByte
Output data	4 kByte
Non-volatile memory	16 kByte
Operating temperature	-40…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	I_{sens} < 3A, I_{mb} < 1A
General technical data	see page 35

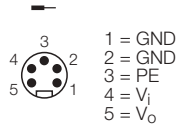
Without function



Ethernet



Voltage supply



Accessories

6914219	RSSD-RSSD-441-6M/S2174	Ethernet cable M12 to M12 (4-pole, D-coded)
6915781	RSSD-RJ45-441-2M/S2174	Ethernet cable RJ45 to M12 (4-pole, D-coded)
6914145	RKM52-6M	power cable 7/8" unterminated end

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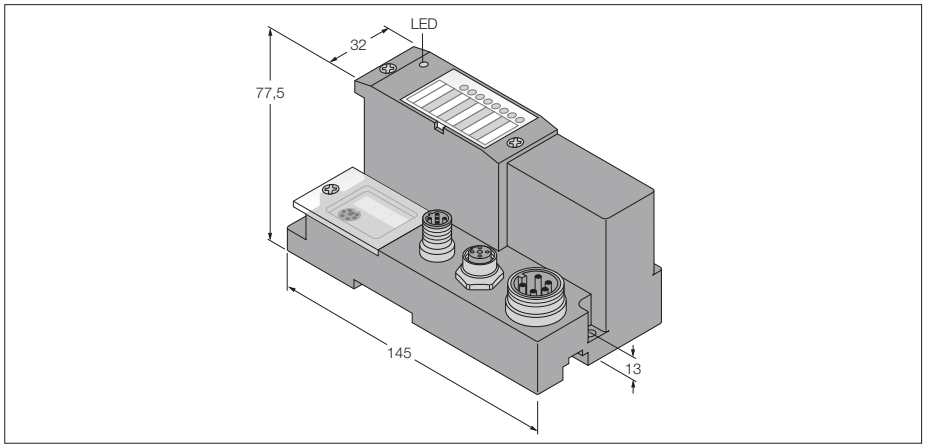
Programmable gateway for the BL67 I/O system
Interface for EtherNet/IP™ (Slave)
BL67-PG-EN-IP

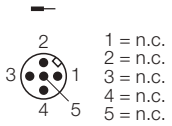
Industrielle Automation



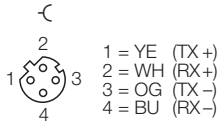
- Programmable acc.to IEC 61131-3 with CODESYS
- Ethernet and RS232 programmable interface
- 512 kByte program memory
- 32 Bit RISC processor
- < 1 ms for 1000 instructions
- Degree of protection IP67
- LEDs for display of supply voltage, common alarm and bus errors
- Interface for EtherNet/IP™
- 10/100 Mbps

Type	BL67-PG-EN-IP
Ident-No.	6827246
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 600 mA
max. system supply current $I_{mb\ (5V)}$	1.3 A
max. sensor supply I_{sens}	4 A electronically limited current supply
max. load current I_o	10 A
Voltage supply connection	5-pole male 7/8“ connector
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	rotary switch, BOOTP, DHCP, IO-ASSISTANT
Service interface	RS232 interface (PS/2 socket)
Fieldbus connection technology	female M12 x 1 connector, 4-pole, D-coded
Voltage supply connection	5-pole male 7/8“ connector
PLC data	
Programming	CODESYS V2.3
Released for CODESYS version	V 2.3.6.4
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Application tasks	1
Number of POUs	1024
Programming interface	RS232 interface, Ethernet
Processor	RISC, 32 bit
Cycle time	< 1 ms for 1000 IL commands (without I/O cycle)
Program memory	512 kByte
Data memory	512 kByte
Input data	4 kByte
Output data	4 kByte
Non-volatile memory	16 kByte
Operating temperature	-40…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	I_{sens} < 3A, I_{mb} < 1A
General technical data	see page 35

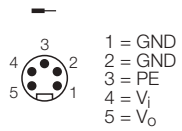
Without function



Ethernet



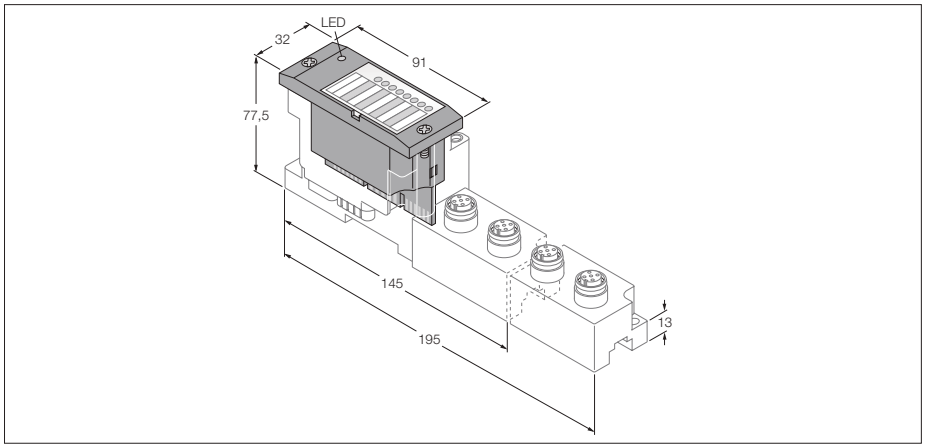
Voltage supply



Accessories

6914219	RSSD-RSSD-441-6M/S2174	Ethernet cable M12 to M12 (4-pole, D-coded)
6915781	RSSD-RJ45-441-2M/S2174	Ethernet cable RJ45 to M12 (4-pole, D-coded)
6914145	RKM52-6M	power cable 7/8“ unterminated end

BL67 electronic modules
Power feeding module with diagnostics
BL67-PF-24VDC



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of system status, field supply and diagnostic information
- Can be used to form potential groups
- Field supply featuring a rated voltage of 24 VDC

Type	BL67-PF-24VDC
Ident-No.	6827182
Nominal voltage Vi	24 VDC
Nominal voltage V_o	24 VDC
Max. system supply I_{mb}	1.5 A
Max. sensor supply I_{sens}	4.0 A
Max. load current I_o	10 A
Admissible range	18…30 VDC
Rated current from module bus	≤ 30 mA
Number of diagnostic bits	3
Operating temperature	-40…+70 °C
General technical data	see page 35

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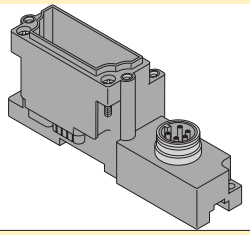
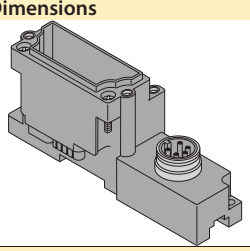
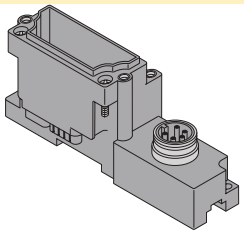
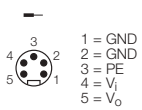
Compatible base modules

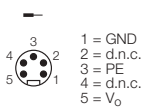
Dimensions	Type	Connection
	**6827190 BL67-B-1RSM** 1 × 7/8", 5-pole, male Matching connection cable (for example): RKM52-6M Ident no. 6914145	F131, F134
Dimensions	**Type**	**Connection**
	**6827201 BL67-B-1RSM-4** 1 × 7/8", 4-pole, male **Comments:** Total current (I_{sens} + I_o) max. 10A	F132, F135
Dimensions	**Type**	**Connection**
	**6827236 BL67-B-1RSM-VO** 1 × 7/8", 5-pole, male Matching connection cable (for example): RKM52-6M Ident no. 6914145 **Note:** Only V_o (pin 1 and 5) supply, do not connect pin 2 and 4!	F133, F136

Connection

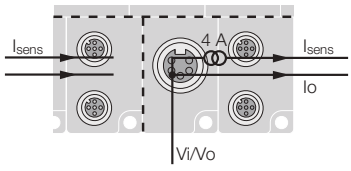
F131 - Pin configuration



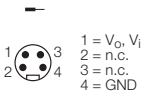
F133 - Pin configuration



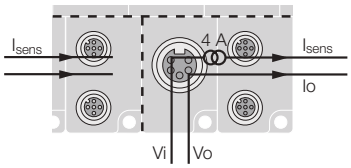
F135 - Module wiring diagram



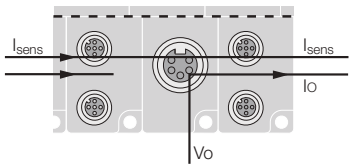
F132 - Pin configuration



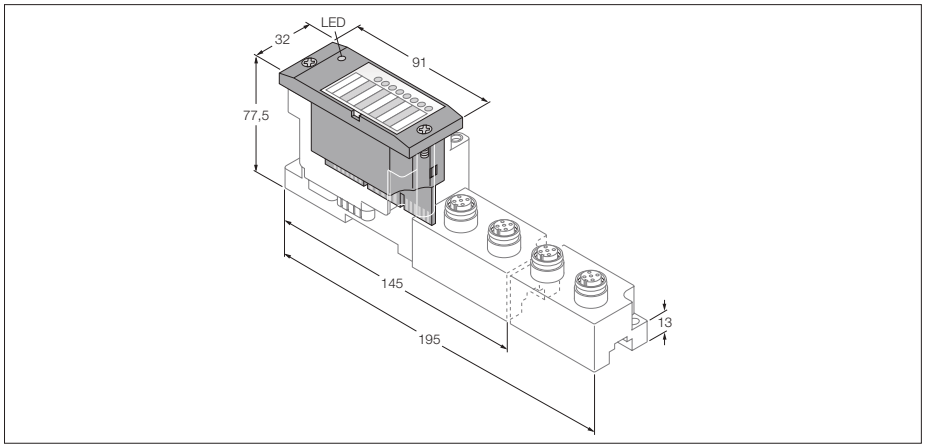
F134 - Module wiring diagram



F136 - Module wiring diagram



BL67 electronic modules
4 digital inputs
BL67-4DI-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital inputs, 24 VDC
- pnp
- From version VN 01-03 and higher, module supports accelerated run-up for Fast Start-Up (FSU) and QuickConnect (QC) applications.

Type	BL67-4DI-P
Ident-No.	6827171
Number of channels	4
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 40 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 0.25 W
Input type	pnp
Type of input diagnostics	group diagnostics
Low level signal voltage	< 4.5 V
High level signal voltage	7…30 V
Low level signal current	< 1.5 mA
High level signal current	2.1…3.7 mA
Input delay	0.25 ms
Electrical isolation	electronics for the field level
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	switching on threshold drop, 1mA < Ie < 2.5mA
General technical data	see page 35

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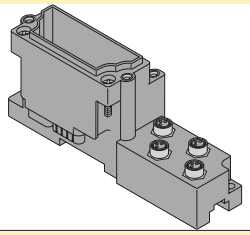
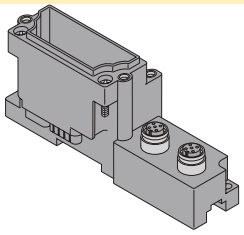
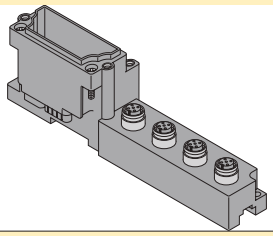
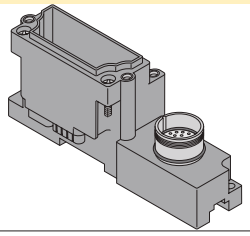
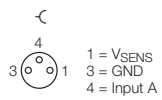
Compatible base modules

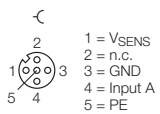
Dimensions	Type	Connection
	**6827189 BL67-B-4M8** 4 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F137, F141
Dimensions	**Type**	**Connection**
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, A-coded **6827194 BL67-B-2M12-P** 2 × M12, 5-pole, female, A-coded, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F138, F142, F144
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, A-coded Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F139, F143
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F140

Connection

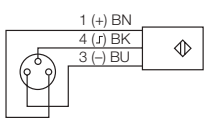
F137 - Pin configuration



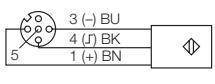
F139 - Pin configuration



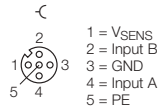
F141 - Wiring diagram



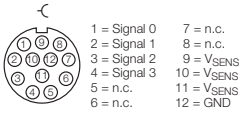
F143 - Wiring diagram



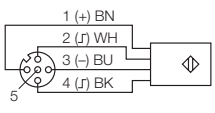
F138 - Pin configuration



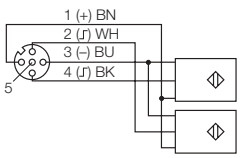
F140 - Pin configuration



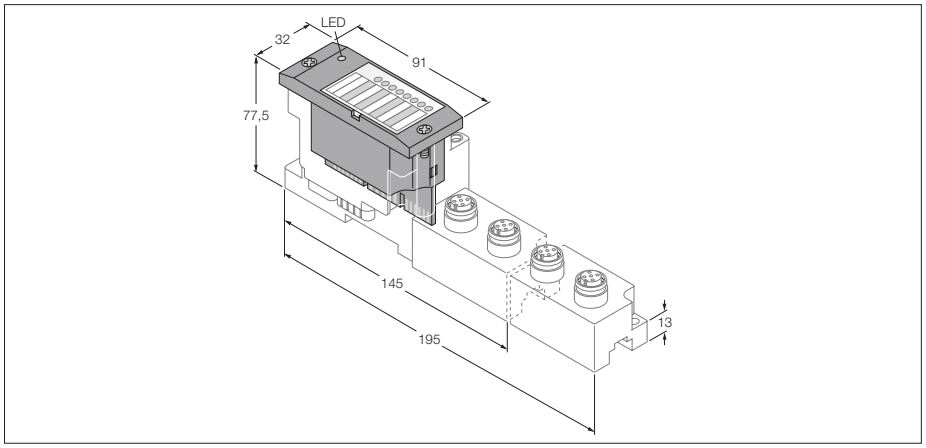
F142 - Wiring diagram



F144 - Wiring diagram



BL67 electronic modules
8 digital inputs
BL67-8DI-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 digital inputs, 24 VDC
- pnp
- From version VN 01-03 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-8DI-P
Ident-No.	6827170
Number of channels	8
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 40 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 0.25 W
Input type	pnp
Type of input diagnostics	group diagnostics
Low level signal voltage	< 4.5 V
High level signal voltage	7…30 V
Low level signal current	< 1.5 mA
High level signal current	2.1…3.7 mA
Input delay	0.25 ms
Electrical isolation	electronics for the field level
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	switching on threshold drop, 1mA < Ie < 2.5mA
> 55 °C circulating air (Ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

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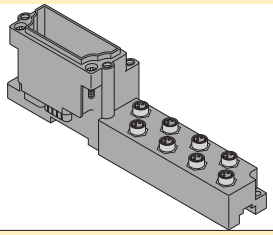
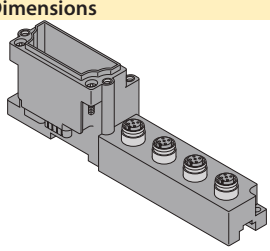
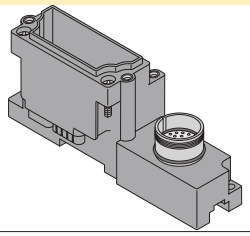
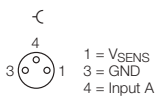
Compatible base modules

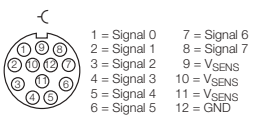
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F137, F141
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female **6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739 Y-piece for single assignment: FSM5-2FKM5.4/S55/S1874 Ident-No. 8021378	F138, F142, F144
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F145

Connection

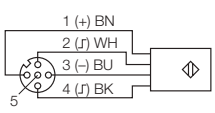
F137 - Pin configuration



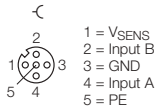
F145 - Pin configuration



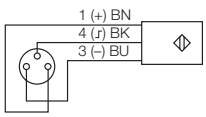
F142 - Wiring diagram



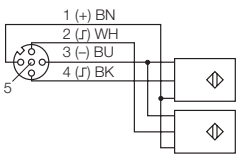
F138 - Pin configuration



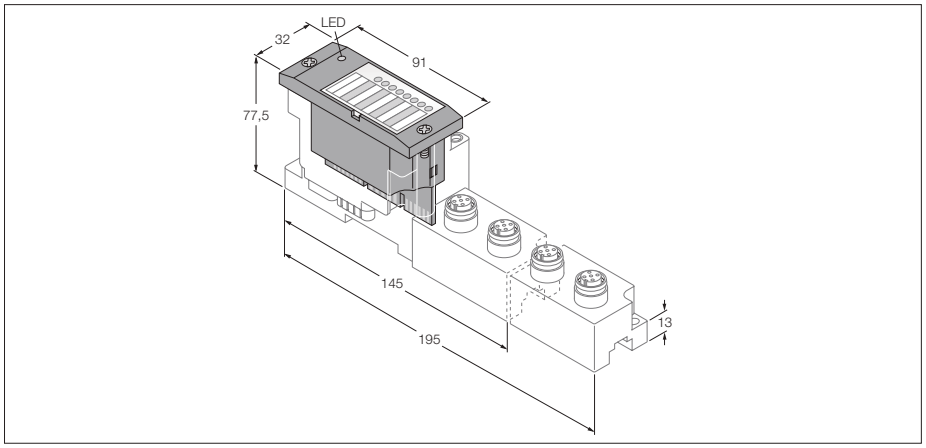
F141 - Wiring diagram



F144 - Wiring diagram



BL67 electronic modules
4 digital inputs
BL67-4DI-PD



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital inputs, 24 VDC
- pnp
- Channel diagnostics
- Wire-break monitoring
- Selection of filter times
- Input inverting possible
- From version VN 01-07 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-4DI-PD
Ident-No.	6827204
Number of channels	4
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
max. sensor supply I_{sens}	100 mA per channel, electronic short-circuit limiting
Power loss, typical	≤ 1.5 W
Input type	pnp
Type of input diagnostics	channel diagnostics
Low level signal voltage	< 4.5 V
High level signal voltage	7…30 V
Low level signal current	< 1.5 mA
High level signal current	2.1…3.7 mA
Input delay	0.25; 2.5 ms
Electrical isolation	electronics for the field level
Number of diagnostic bits	6
Number of parameter bytes	4
Operating temperature	-40…+70 °C
Function degrading operating temperature < 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
General technical data	see page 35

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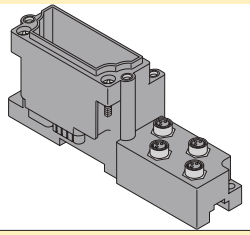
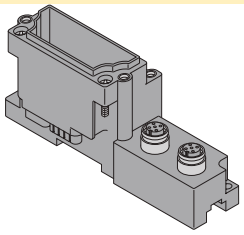
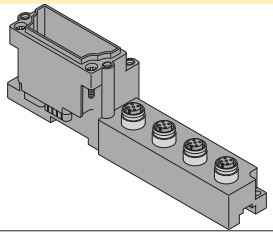
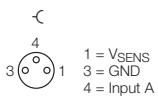
Compatible base modules

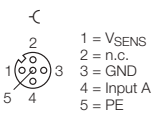
Dimensions	Type	Connection
	**6827189 BL67-B-4M8** 4 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F137, F141
Dimensions	**Type**	**Connection**
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, A-coded **6827194 BL67-B-2M12-P** 2 × M12, 5-pole, female, A-coded, paired If the wire-break monitoring has been activated, on the sensor side a jumper between pin 1 (24 V DC) and pin 2 (diagnostics input) must be implemented for monitoring of wire-breaks. Note: Wire-break monitoring only in connection with the base module BL67-B-2M12 possible!	F138, F142, F144, F146
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, A-coded Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F139, F143

Connection

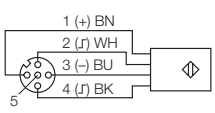
F137 - Pin configuration



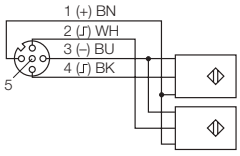
F139 - Pin configuration



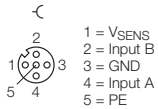
F142 - Wiring diagram



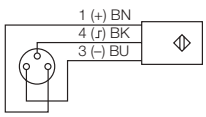
F144 - Wiring diagram



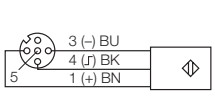
F138 - Pin configuration



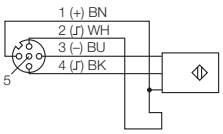
F141 - Wiring diagram



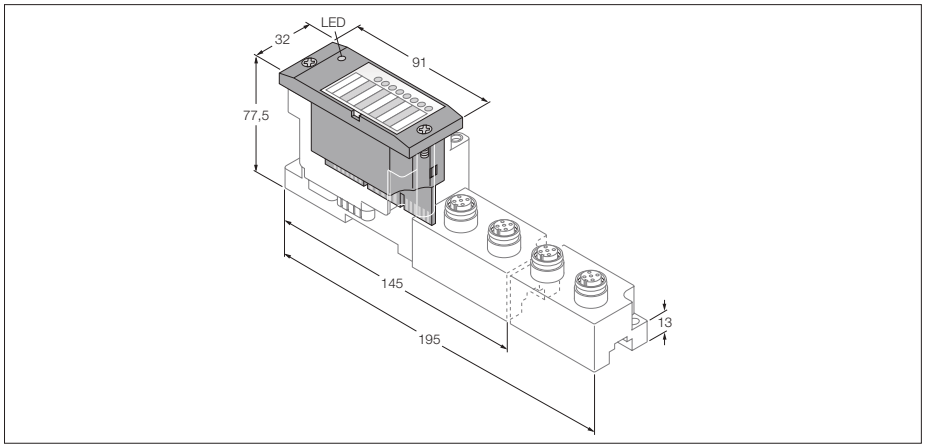
F143 - Wiring diagram



F146 - Wire-break monitoring wiring diagram



BL67 electronic modules
8 digital inputs
BL67-8DI-PD



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 digital inputs, 24 VDC
- pnp
- Channel diagnostics
- Wire-break monitoring
- Selection of filter times
- Input inverting possible
- From version VN 01-06 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-8DI-PD
Ident-No.	6827205
Number of channels	8
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
max. sensor supply I_{senss}	100 mA per channel, electronic short-circuit limiting
Power loss, typical	≤ 1.5 W
Input type	pnp
Type of input diagnostics	channel diagnostics
Low level signal voltage	< 4.5 V
High level signal voltage	7…30 V
Low level signal current	< 1.5 mA
High level signal current	2.1…3.7 mA
Input delay	0.25; 2.5 ms
Electrical isolation	electronics for the field level
Number of diagnostic bits	12
Number of parameter bytes	8
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	Support for version VN 01-03 and higher, no limitation
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

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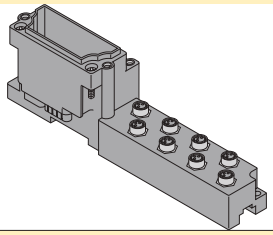
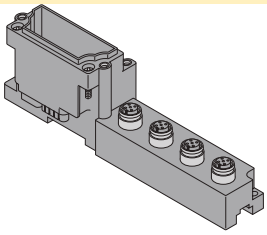
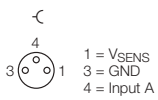
Compatible base modules

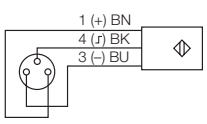
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F137, F141
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female **6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired If the wire-break monitoring has been activated, on the sensor side a jumper between pin 1 (24 V DC) and pin 2 (diagnostics input) must be implemented for monitoring of wire-breaks. Note: Wire-break monitoring only in connection with possible with the base module BL67-B-4M12!	F138, F142, F144, F146

Connection

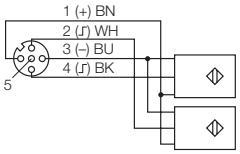
F137 - Pin configuration



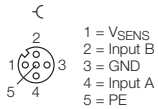
F141 - Wiring diagram



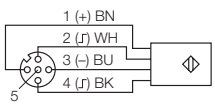
F144 - Wiring diagram



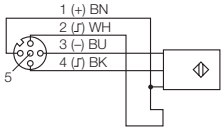
F138 - Pin configuration



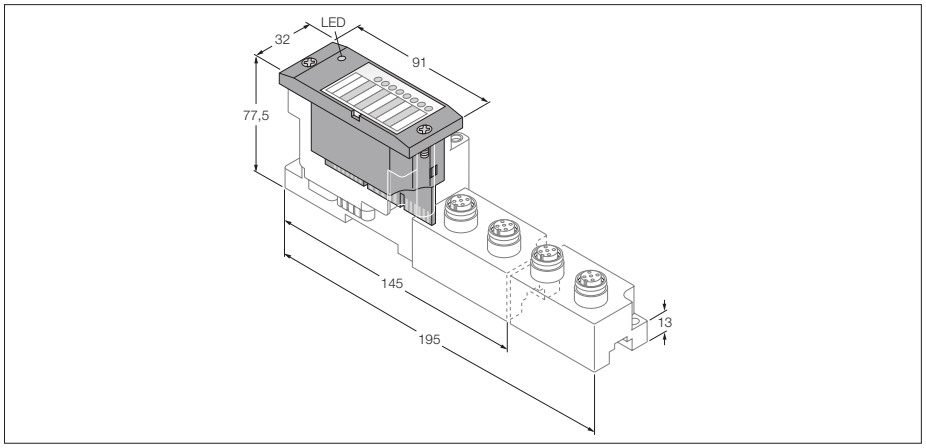
F142 - Wiring diagram



F146 - Wire-break monitoring wiring diagram



BL67 electronic modules
4 digital inputs
BL67-4DI-N



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital inputs, 24 VDC
- npn

Type	BL67-4DI-N
Ident-No.	6827206
Number of channels	4
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 1 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.3 W
Input type	npn
Type of input diagnostics	group diagnostics
Low level signal voltage	> 7 V
High level signal voltage	< 5 V
Low level signal current	< 2.5 mA
High level signal current	> 3 mA
Input delay	0.25 ms
Electrical isolation	electronics for the field level
Operating temperature	-25…+70 °C
General technical data	see page 35

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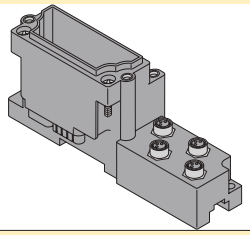
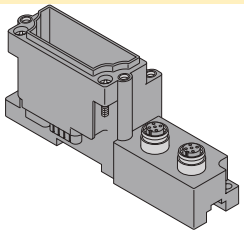
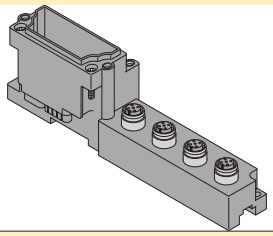
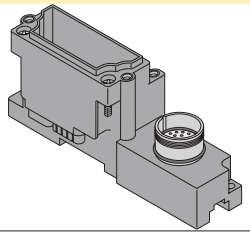
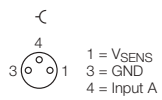
Compatible base modules

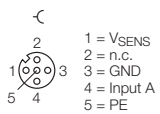
Dimensions	Type	Connection
	**6827189 BL67-B-4M8** 4 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F137, F141
Dimensions	**Type**	**Connection**
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, A-coded **6827194 BL67-B-2M12-P** 2 × M12, 5-pole, female, A-coded, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F138, F142, F144
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, A-coded Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F139, F143
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F140

Connection

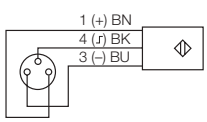
F137 - Pin configuration



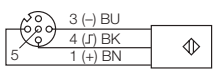
F139 - Pin configuration



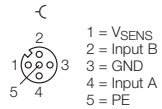
F141 - Wiring diagram



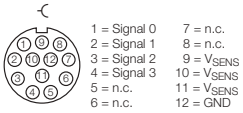
F143 - Wiring diagram



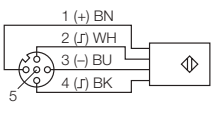
F138 - Pin configuration



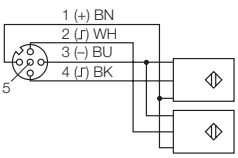
F140 - Pin configuration



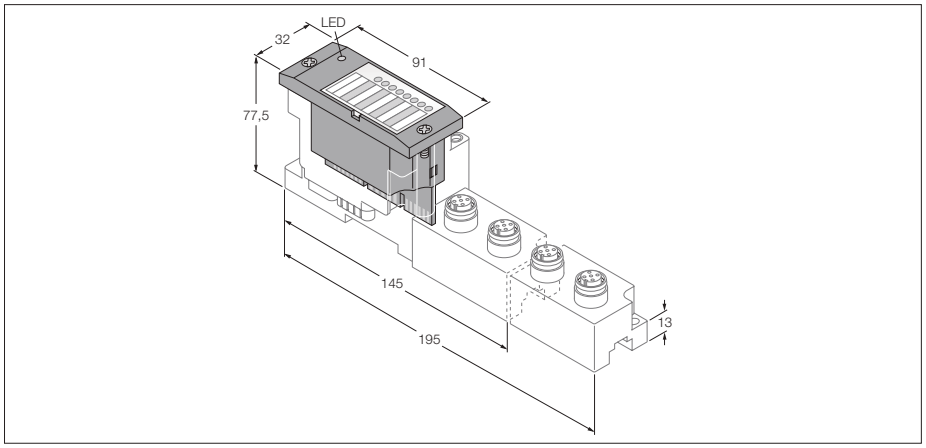
F142 - Wiring diagram



F144 - Wiring diagram



BL67 electronic modules
8 digital inputs
BL67-8DI-N



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 digital inputs, 24 VDC
- npn

Type	BL67-8DI-N
Ident-No.	6827207
Number of channels	8
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 1 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.3 W
Input type	npn
Type of input diagnostics	group diagnostics
Low level signal voltage	> 7 V
High level signal voltage	< 5 V
Low level signal current	< 1.2 mA
High level signal current	> 1.5 mA
Input delay	0.25 ms
Electrical isolation	electronics for the field level
Operating temperature	-25…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (Ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

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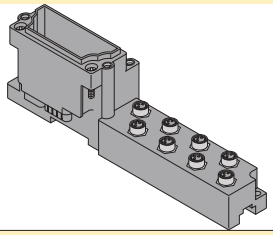
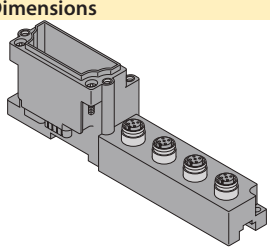
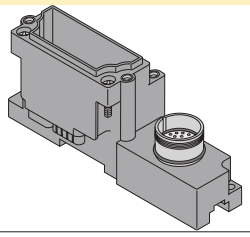
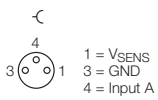
Compatible base modules

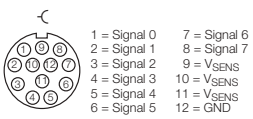
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F137, F141
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female **6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F138, F142, F144
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F145

Connection

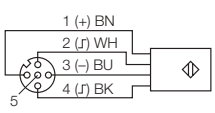
F137 - Pin configuration



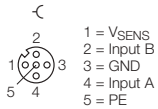
F145 - Pin configuration



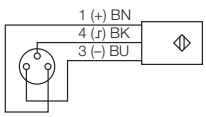
F142 - Wiring diagram



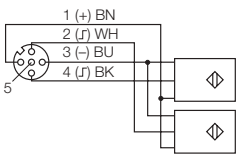
F138 - Pin configuration



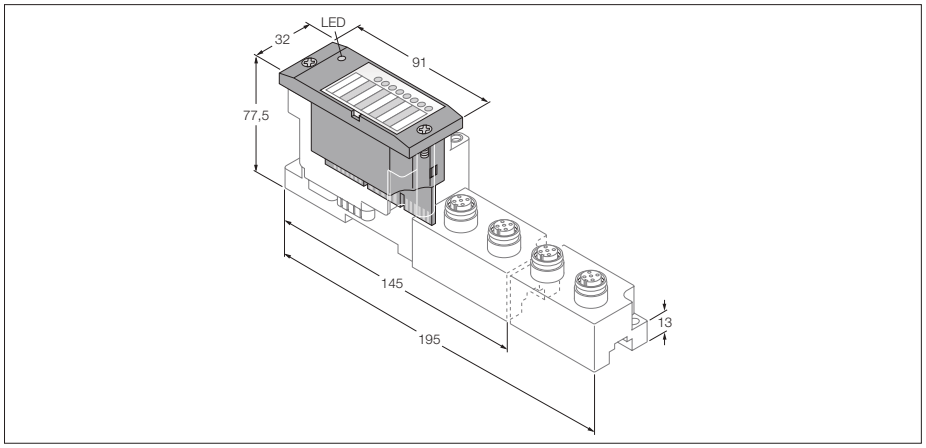
F141 - Wiring diagram



F144 - Wiring diagram



BL67 electronic modules
4 digital outputs
BL67-4DO-0.5A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital outputs, 24 VDC
- 0.5 A max.
- pnp
- From version VN 01-07 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-4DO-0.5A-P
Ident-No.	6827173
Number of channels	4
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.5 W
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	4
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
General technical data	see page 35

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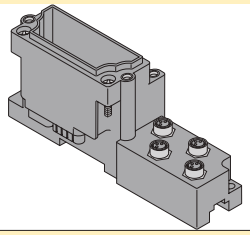
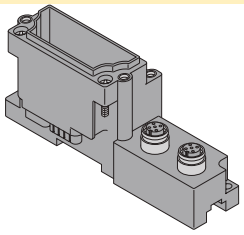
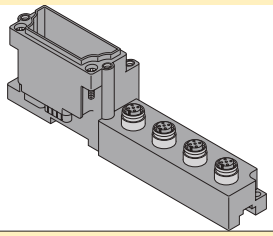
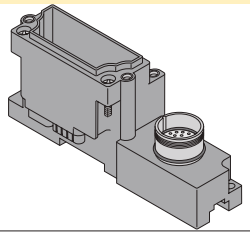
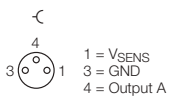
Compatible base modules

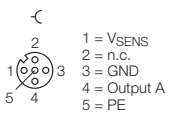
Dimensions	Type	Connection
	**6827189 BL67-B-4M8** 4 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F147, F150
Dimensions	**Type**	**Connection**
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, A-coded **6827194 BL67-B-2M12-P** 2 × M12, 5-pole, female, A-coded, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F148, F151
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, A-coded Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F149, F152
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F140

Connection

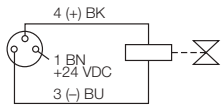
F147 - Pin configuration



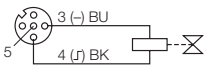
F149 - Pin configuration



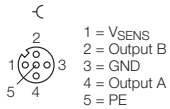
F150 - Wiring diagram



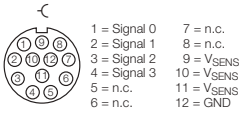
F152 - Wiring diagram



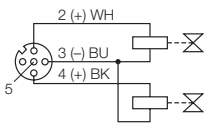
F148 - Pin configuration



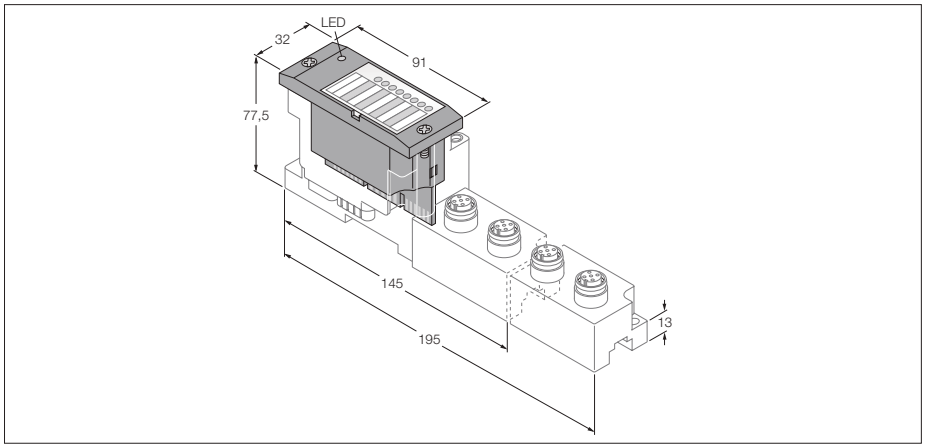
F140 - Pin configuration



F151 - Wiring diagram



BL67 electronic modules
4 digital outputs
BL67-4DO-2A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital outputs, 24 VDC
- 2 A max.
- pnp
- From version VN 01-07 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-4DO-2A-P
Ident-No.	6827174
Number of channels	4
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.5 W
Output type	pnp
Output voltage	24 VDC
Output current per channel	2.0 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 12 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 10 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	4
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
> 55 °C circulating air (Ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

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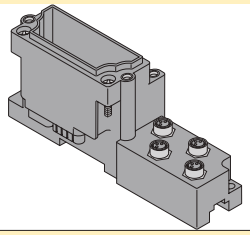
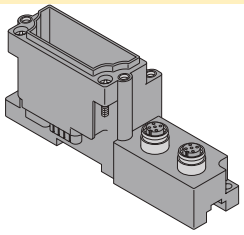
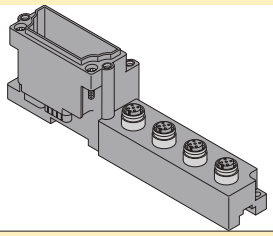
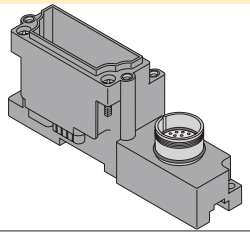
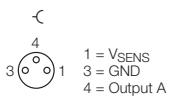
Compatible base modules

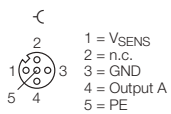
Dimensions	Type	Connection
	**6827189 BL67-B-4M8** 4 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F147, F150
Dimensions	**Type**	**Connection**
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, A-coded **6827194 BL67-B-2M12-P** 2 × M12, 5-pole, female, A-coded, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F148, F151
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, A-coded Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F149, F152
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F140

Connection

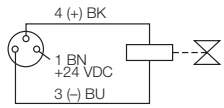
F147 - Pin configuration



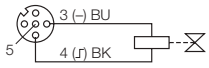
F149 - Pin configuration



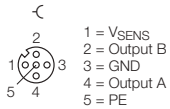
F150 - Wiring diagram



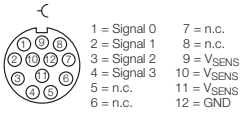
F152 - Wiring diagram



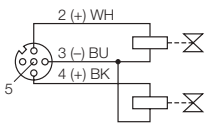
F148 - Pin configuration



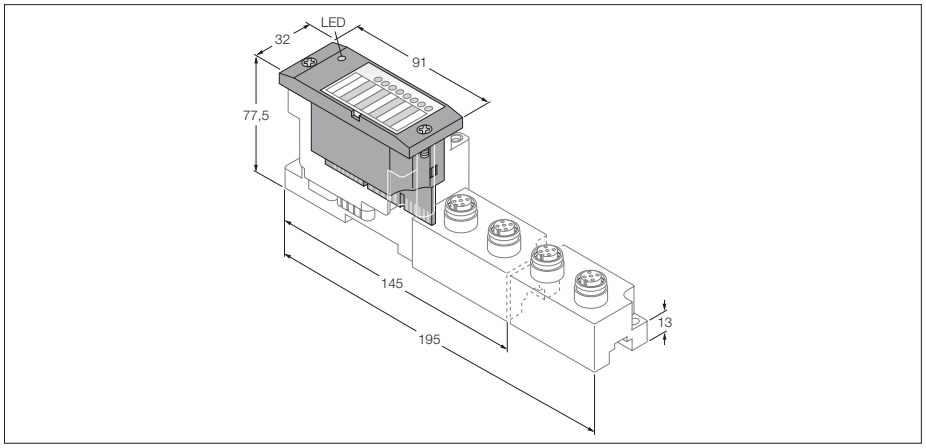
F140 - Pin configuration



F151 - Wiring diagram



BL67 electronic modules
4 digital outputs
BL67-4DO-4A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital outputs, 24 VDC
- 4 A max.
- pnp
- From version VN 01-01 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-4DO-4A-P
Ident-No.	6827308
Number of channels	4
Supply voltage	24 VDC
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
max. sensor supply I_{sens}	4 A Electronically limited current supply via gateway or power feed
Max. load current I_o	10 A via gateway or power feed
Power loss, typical	≤ 1.5 W
Output type	pnp
Output voltage	24 VDC
Output current per channel	4.0 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 12 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 10 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Short-circuit protection	yes
Simultaneity factor	0.25
Electrical isolation	electronics for the field level
Number of diagnostic bits	4
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
> 55 °C circulating air (Ventilation)	no limitation
> 55 °C steady ambient air	Simultaneity factor: 0.25 with 4 A, 0.5 with 3 A or 1.0 with 2 A
General technical data	see page 35

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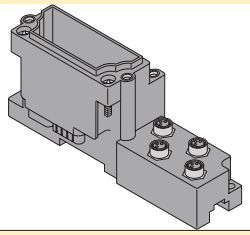
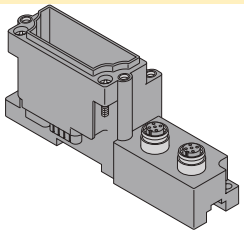
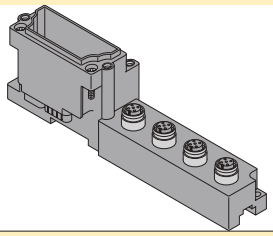
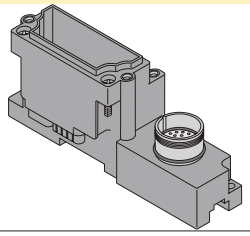
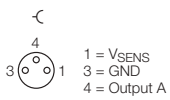
Compatible base modules

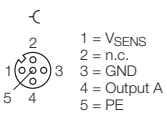
Dimensions	Type	Connection
	**6827189 BL67-B-4M8** 4 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F147, F150
Dimensions	**Type**	**Connection**
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, A-coded **6827194 BL67-B-2M12-P** 2 × M12, 5-pole, female, A-coded, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F148, F151
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, A-coded Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F149, F152
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F140

Connection

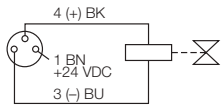
F147 - Pin configuration



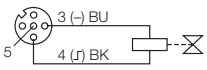
F149 - Pin configuration



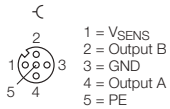
F150 - Wiring diagram



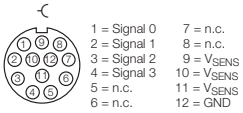
F152 - Wiring diagram



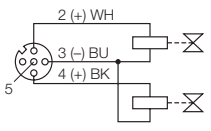
F148 - Pin configuration



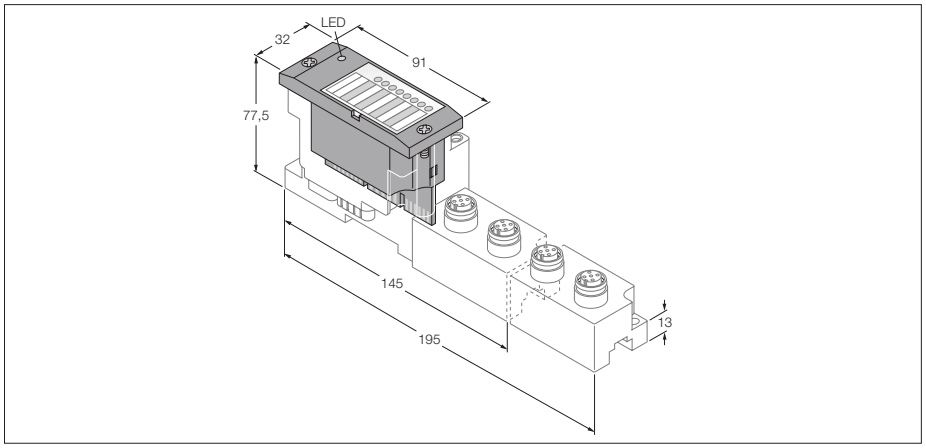
F140 - Pin configuration



F151 - Wiring diagram



BL67 electronic modules
8 digital outputs
BL67-8DO-0.5A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 digital outputs, 24 VDC
- 0.5 A max.
- pnp
- From version VN 01-07 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-8DO-0.5A-P
Ident-No.	6827172
Number of channels	8
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.5 W
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	8
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

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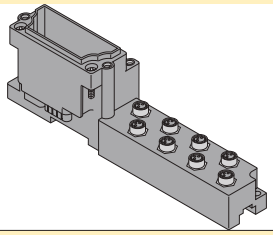
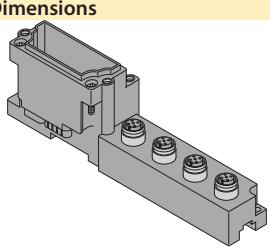
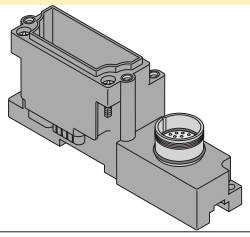
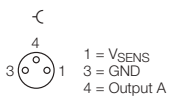
Compatible base modules

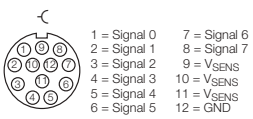
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F147, F150
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female **6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F148, F151
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F145

Connection

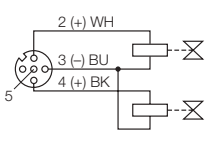
F147 - Pin configuration



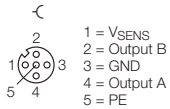
F145 - Pin configuration



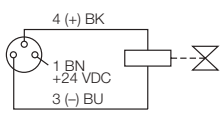
F151 - Wiring diagram



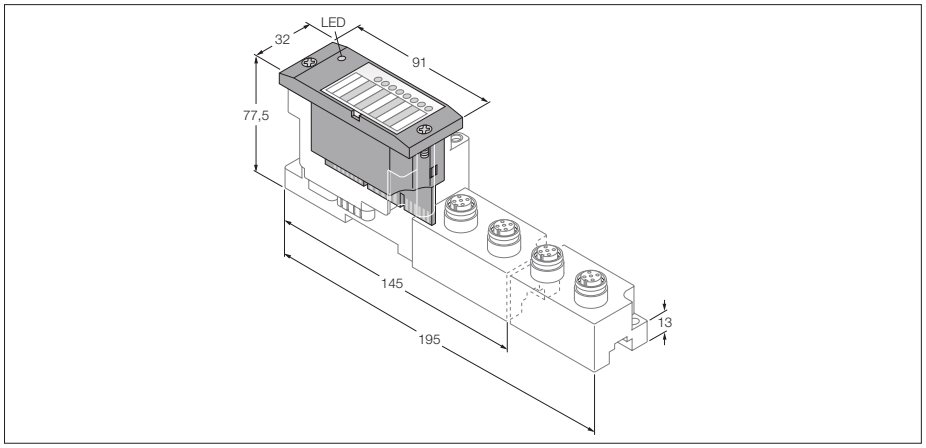
F148 - Pin configuration



F150 - Wiring diagram



BL67 electronic modules
16 digital outputs, PNP 0.1 A
BL67-16DO-0.1A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 0.1 A nominal current
- I_{max} = 180 mA per channel with 50 % simultaneity of the 16 channels
- pnp
- Channel diagnostics
- From version VN 01-07 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-16DO-0.1A-P
Ident-No.	6827221
Number of channels	16
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.5 W
Output type	pnp
Output voltage	24 VDC
Output current per channel	100 mA nominal current (I_{max} = 140 mA version VN 01-05 and higher, I_{max} = 180 mA version VN 01-06 and higher)
Output delay	3 ms
Load type	resistive, inductive
Load resistance, resistive	> 250 Ω
Load resistance, inductive	< 1.2 H
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Short-circuit protection	yes
Simultaneity factor	1 (I_{max} ≤ 120 mA), 0.5 (I_{max} ≤ 180 mA)
Electrical isolation	electronics for the field level
Number of diagnostic bits	16
Number of parameter bytes	2
Operating temperature	-40…+70 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

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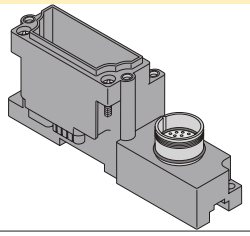
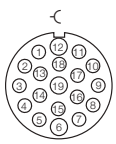
Compatible base modules

Dimensions	Type	Connection
	**6827216 BL67-B-1M23-19** 1 × M23, 19-pole, female Field-wireable connector (for example): FW-M23ST19Q-G-LT-ME-XX-10 Ident-No. 6604208	F153

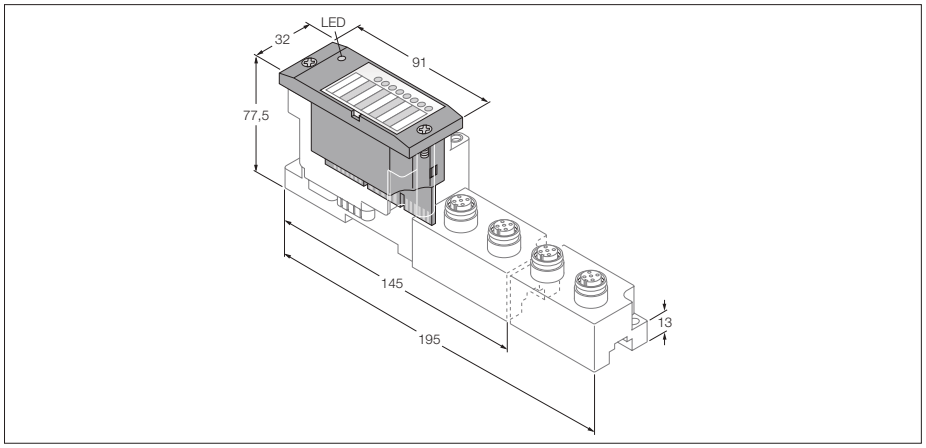
Connection

F153 - Pin configuration



1 = Output 14
2 = Output 10
3 = Output 6
4 = Output 3
5 = Output 2
6 = GND
7 = Output 1
8 = Output 5
9 = Output 9
10 = Output 13
11 = Output 12
12 = PE
13 = Output 11
14 = Output 7
15 = Output 0
16 = Output 4
17 = Output 8
18 = Output 15
19 = V_{SENS}

BL67 electronic modules
4 digital outputs
BL67-4DO-2A-N



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital outputs, 24 VDC
- 2 A max.
- npn

Type	BL67-4DO-2A-N
Ident-No.	6827210
Number of channels	4
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.5 W
Output type	npn
Output voltage	24 VDC
Output current per channel	2.0 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 12 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 6 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	4
Operating temperature	-25…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
General technical data	see page 35

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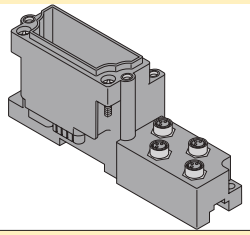
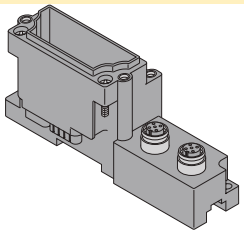
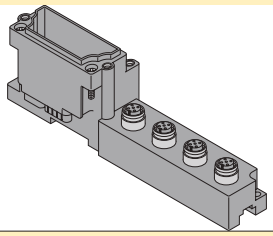
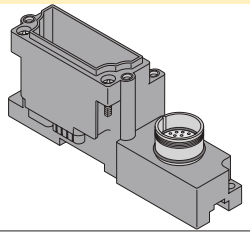
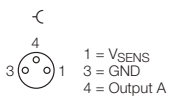
Compatible base modules

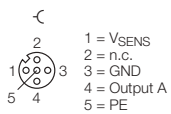
Dimensions	Type	Connection
	**6827189 BL67-B-4M8** 4 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F147, F154
Dimensions	**Type**	**Connection**
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, A-coded **6827194 BL67-B-2M12-P** 2 × M12, 5-pole, female, A-coded, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F148, F155
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, A-coded Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F149, F156
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F140

Connection

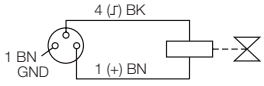
F147 - Pin configuration



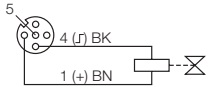
F149 - Pin configuration



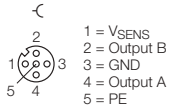
F154 - Wiring diagram



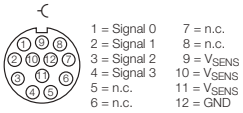
F156 - Wiring diagram



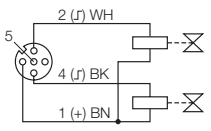
F148 - Pin configuration



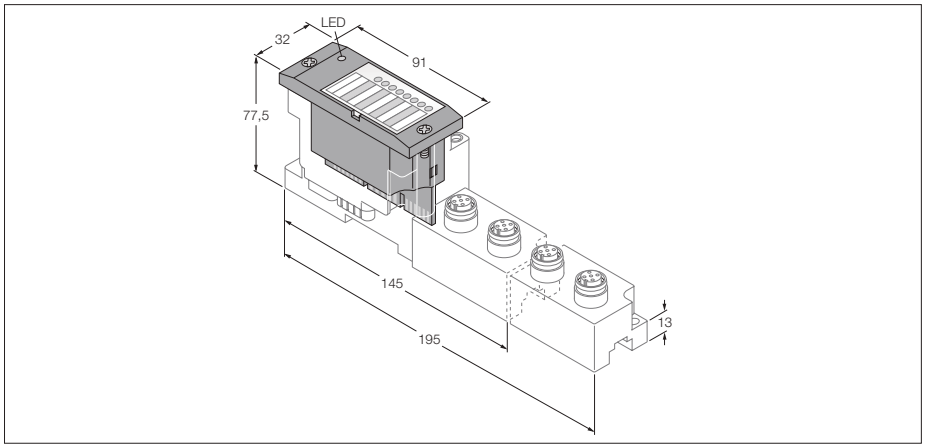
F140 - Pin configuration



F155 - Wiring diagram



BL67 electronic modules
8 digital outputs
BL67-8DO-0.5A-N



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 digital outputs, 24 VDC
- 0.5 A max.
- npn

Type	BL67-8DO-0.5A-N
Ident-No.	6827209
Number of channels	8
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.5 W
Output type	npn
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	8
Operating temperature	-25…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

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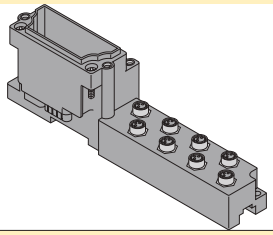
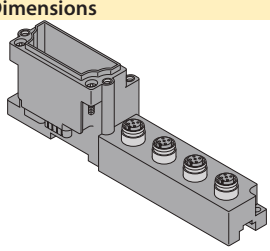
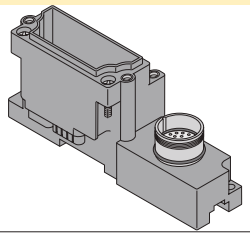
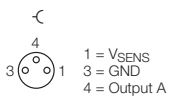
Compatible base modules

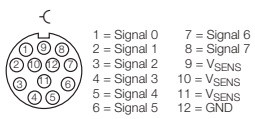
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F147, F154
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female **6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F148, F155
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	F145

Connection

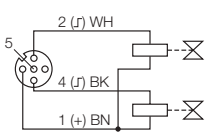
F147 - Pin configuration



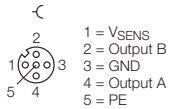
F145 - Pin configuration



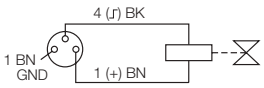
F155 - Wiring diagram



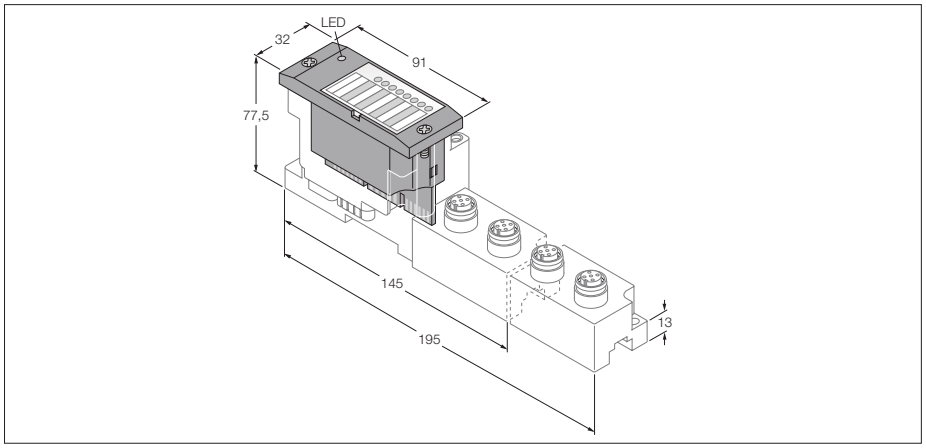
F148 - Pin configuration



F154 - Wiring diagram



BL67 electronic modules
8 isolated relay outputs, NO
BL67-8DO-R-NO



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for status display
- Electronics galvanically isolated from the field level via opto-couplers
- 8 isolated relay outputs
- Potential-free electronic relay contact (MOSFET)
- 0.1 A max.

Type	BL67-8DO-R-NO
Ident-No.	6827277
Number of channels	8
Rated current from module bus	≤ 50 mA
Power loss, typical	≤ 2 W
Output type	Potential-free electronic relay contact (MOSFET)
Switching resistor	< 31 Ω
Output voltage	max. 50 V peak-peak voltage (U_{eff} ≤ 50 VDC / 17,6 VAC)
Output current per channel	100 mA at 25 °C / 50 mA at 55 °C
Output delay	3 ms
Load type	resistive, TTL logic
Switching frequency, resistive	< 200 Hz
Short-circuit protection	no
Simultaneity factor	1
Electrical isolation	Electronics to the field level 250 VAC, channel to channel 50 VAC, channel to PE 100 VAC
Operating temperature	0…+55 °C
Function degrading operating temperature	
> 55 °C circulating air (ventilation)	max. 25 mA output current per channel
> 55 °C steady ambient air	max. 25 mA output current per channel
General technical data	see page 35

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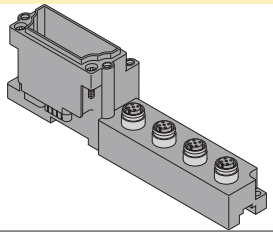
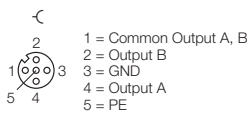
Compatible base modules

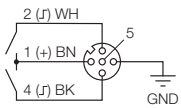
Dimensions	Type	Connection
	**6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F157, F158

Connection

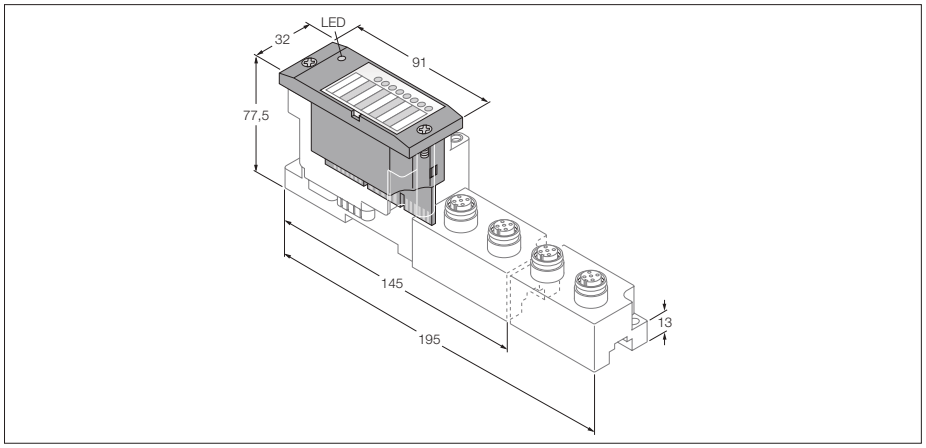
F157 - Pin configuration



F158 - Wiring diagram



BL67 electronic modules
4 digital inputs, 4 digital outputs
BL67-4DI4DO-PD



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital inputs, 24 VDC
- 4 digital outputs, 24 VDC, 0.5 A max.
- pnp
- Channel diagnostics
- Selection of filter times
- Input inverting possible
- From version VN 01-06 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-4DI4DO-PD
Ident-No.	6827203
Number of channels	8
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
max. sensor supply I_{sens}	100 mA for 2 channels, electronically limited current supply
Power loss, typical	≤ 1.5 W
Input type	pnp
Type of input diagnostics	channel diagnostics
Low level signal voltage	< 4.5 V
High level signal voltage	7…30 V
Low level signal current	< 1.5 mA
High level signal current	2.1…3.7 mA
Input delay	0.25; 2.5 ms
Electrical isolation	electronics for the field level
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	8
Number of parameter bytes	4
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
General technical data	see page 35

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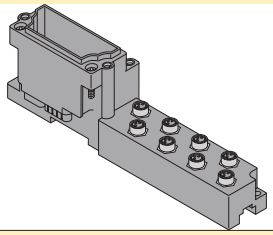
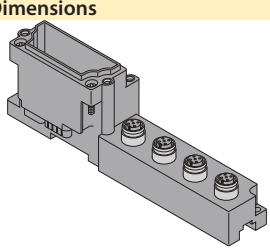
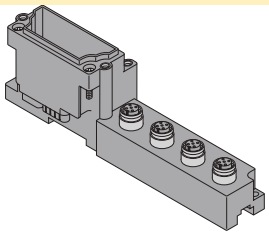
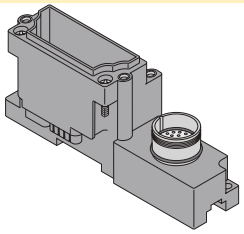
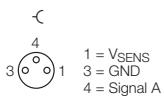
Compatible base modules

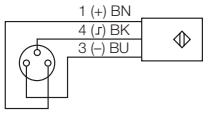
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F159, F141, F150
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739 Possible applications: Triggering light screen Pick To Light for work sequence control.	F160, F161
	**6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F160, F144, F151
	**6827235 BL67-B-1M23-PC** 1 × M23, 12-pole, female **Comments** Possible applications: Control of DE-STA-CO electric power clamps. This base module features a special pin configuration allowing the connection of electric clamps with a standard 12-pole M23 connection cable.	F401

Connection

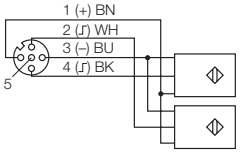
F159 - Pin configuration



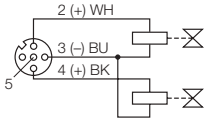
F141 - Wiring diagram, slot 0 to 3



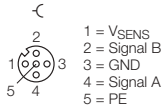
F144 - Wiring diagram, slot 0 and 1



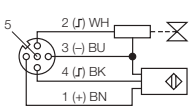
F151 - Wiring diagram, slot 2 and 3



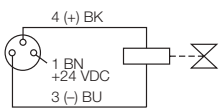
F160 - Pin configuration



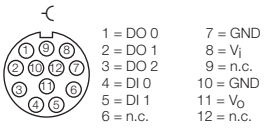
F161 - Wiring diagram, slot 0 to 3



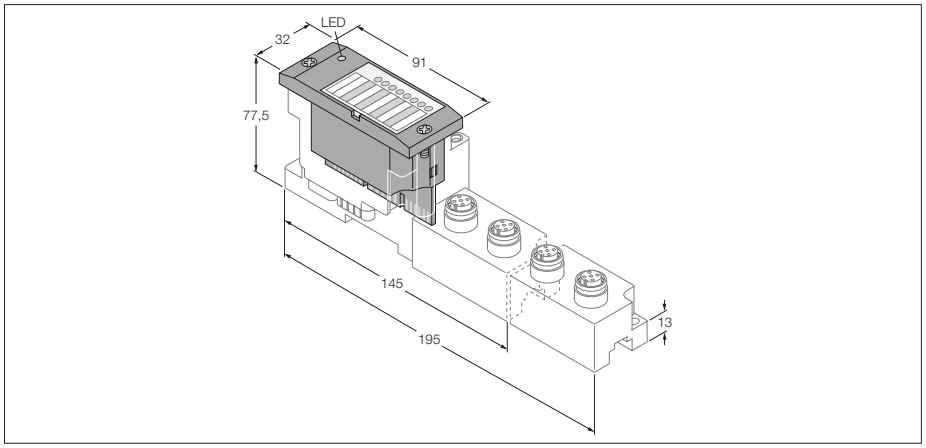
F150 - Wiring diagram, slot 0 to 3



F401 – Pin configuration



BL67 electronic modules
8 configurable digital channels
BL67-8XSG-PD



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 configurable digital channels
- 24 VDC, pnp
- 0.5 A max.
- Channel diagnostics
- Selection of filter times
- Input inverting possible
- From version VN 01-06 and higher, the module supports accelerated run-up for applications with Fast Start-Up (FSU) and QuickConnect (QC)

Type	BL67-8XSG-PD
Ident-No.	6827208
Number of channels	8
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
max. sensor supply I_{sens}	100 mA for 2 channels (=> e.g. per M12 slot), electronically limited current supply
Power loss, typical	≤ 1.5 W
Input type	pnp
Type of input diagnostics	channel diagnostics
Low level signal voltage	< 4.5 V
High level signal voltage	7…30 V
Low level signal current	< 1.5 mA
High level signal current	2.1…3.7 mA
Input delay	0.25; 2.5 ms
Electrical isolation	electronics for the field level
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	12
Number of parameter bytes	8
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	support for version VN 01-03 and higher, no limitation
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

Note

The inputs and outputs of the digital combi-module are supplied via a common GND. Therefore, we recommend not to use this module for safety or emergency stop applications.
Otherwise, it must be ensured that V_I and V_O at the gateway or power feeding module are all-pole disabled.

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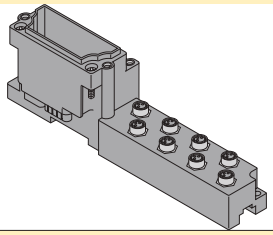
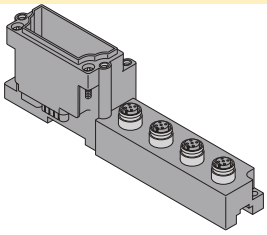
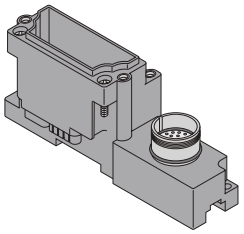
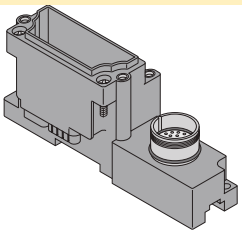
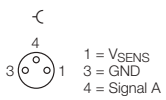
Compatible base modules

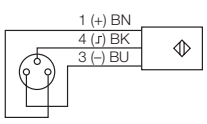
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F159, F141, F150
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female **6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F160, F161, F162, F144, F151
Dimensions	**Type**	**Connection**
	**6827290 BL67-B-1M23-VI** 1 × M23, 12-pole, female **Comments** Field-wireable (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident no. 6604070 **Note** Channel related diagnostics is not possible with this base module. 4 A current limited power supply to the sensor via gateway or power feeding module.	F145
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female **Comments** Field-wireable (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident no. 6604070 **Note** Channel related diagnostics is restricted with this base module. Current limit protection of sensor supply 3 * 100mA (pin 9, 10, 11).	F145

Connection

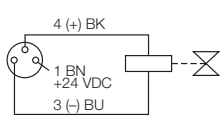
F159 - Pin configuration



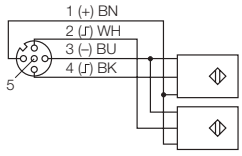
F141 - Wiring diagram



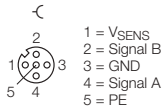
F150 - Wiring diagram



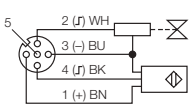
F144 - Wiring diagram



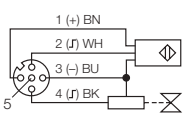
F160 - Pin configuration



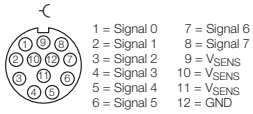
F161 - Wiring diagram



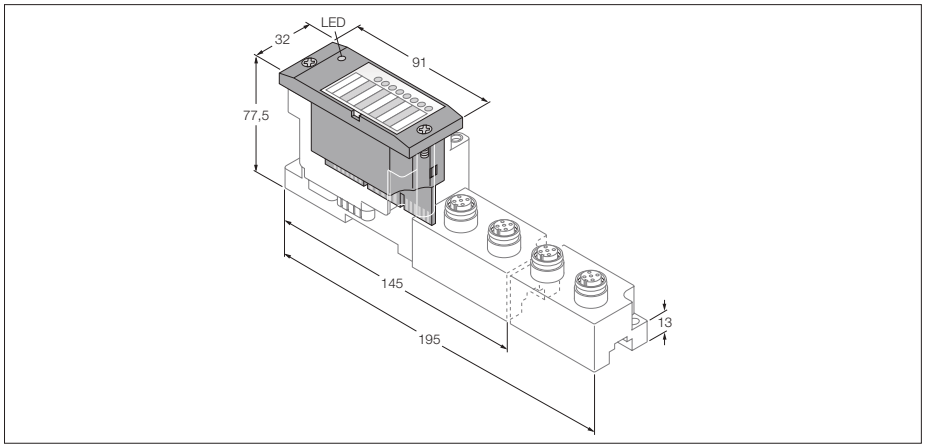
F162 - Wiring diagram



F145 – Pin configuration



BL67 electronic modules
8 configurable digital channels
BL67-8XSG-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 configurable digital channels
- 24 VDC, pnp
- 0.5 A max.
- Channel diagnostics
- Selection of filter times
- Input inverting possible
- From version VN 01-01 and higher, module supports accelerated run-up for Fast Start-Up (FSU) and QuickConnect (QC) applications

Type	BL67-8XSG-PD
Ident-No.	6827310
Number of channels	8
Nominal voltage V_o	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
max. sensor supply I_{sens}	4 A electronically limited current supply via gateway or power feed
Power loss, typical	≤ 1.5 W
Input type	pnp
Type of input diagnostics	channel diagnostics
Low level signal voltage	< 4.5 V
High level signal voltage	7…30 V
Low level signal current	< 1.5 mA
High level signal current	2.1…3.7 mA
Input delay	0.25; 2.5 ms
Electrical isolation	electronics for the field level
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 200 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 20 Hz
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	12
Number of parameter bytes	8
Operating temperature	-40…+70 °C
Function degrading operating temperature	
< 0 °C ambient temperature	no limitation
> 55 °C circulating air (ventilation)	no limitation
> 55 °C steady ambient air	simultaneity factor 0.5
General technical data	see page 35

Note

The inputs and outputs of the digital combi-module are supplied via a common GND. Therefore, we recommend **not** to use this module for safety or emergency stop applications.
Otherwise, it must be ensured that V_I and V_O at the gateway or power feeding module are all-pole disabled.

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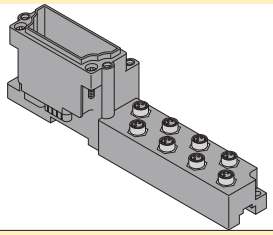
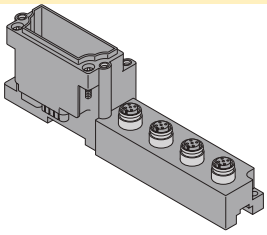
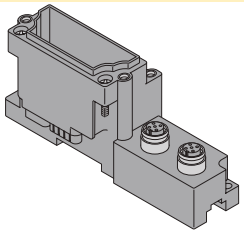
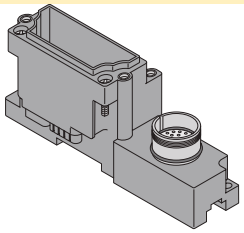
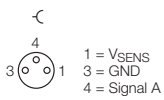
Compatible base modules

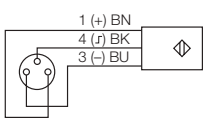
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female Matching connection cable (for example): SKP32-SSP3/S90 Ident-No. 8008685	F159, F141, F150
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female **6827195 BL67-B-4M12-P** 4 × M12, 5-pole, female, paired Matching connection cable (for example): WAK4-2-WAS4/S90 Ident-No. 8006739	F160, F161, F162, F144, F151
Dimensions	**Type**	**Connection**
	**6827336 BL67-B-2M12-8** 2 × M12, 8-pole, female **6827337 BL67-B-2M12-8-P** 2 × M12, 8-pole, female, paired	see data sheet
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female **Comments** field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident-No. 6604070	see data sheet

Connection

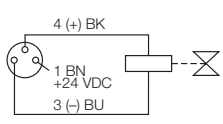
F159 - Pin configuration



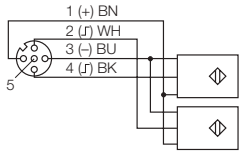
F141 - Wiring diagram



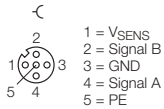
F150 - Wiring diagram



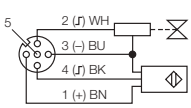
F144 - Wiring diagram



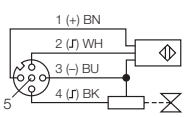
F160 - Pin configuration



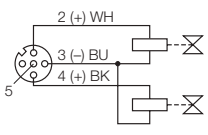
F161 - Wiring diagram



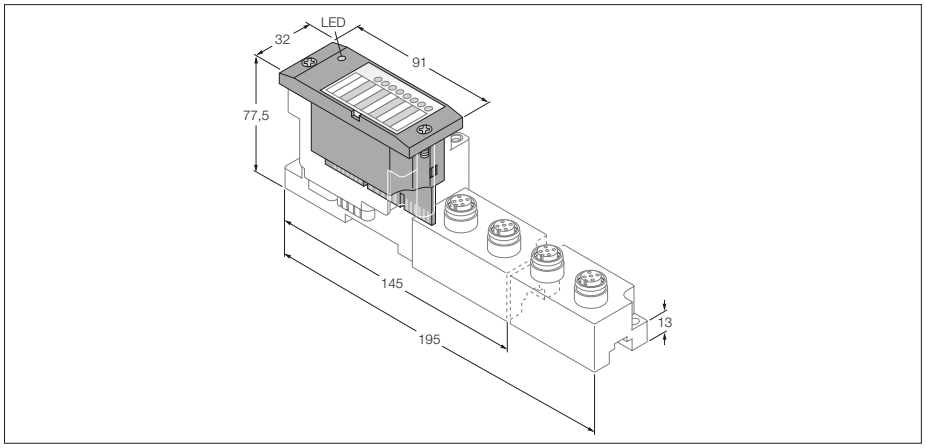
F162 - Wiring diagram



F151 – Wiring diagram



BL67 electronic modules
2 analogue inputs
BL67-2AI-I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analogue inputs 0/4…20 mA

Type	BL67-2AI-I
Ident-No.	6827175
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 12 mA
Rated current from module bus	≤ 35 mA
max. sensor supply I_{sens}	250 mA per port, not short-circuit proof
Power loss, typical	≤ 1 W
Inputs	
Input type	0/4…20 mA
Input resistance	< 0.125 kΩ
Maximum limiting frequency, analogue	< 50 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Sigma Delta
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	2
Number of parameter bytes	2
Operating temperature	-40…+70 °C
General technical data	see page 35

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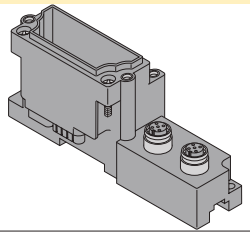
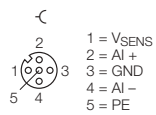
Compatible base modules

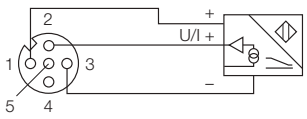
Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident-No. 8016988	F163, F164, F165, F166

Connection

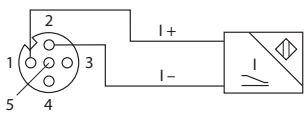
F163 - Pin configuration



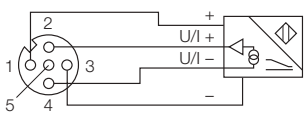
F165 - 3-wire technology



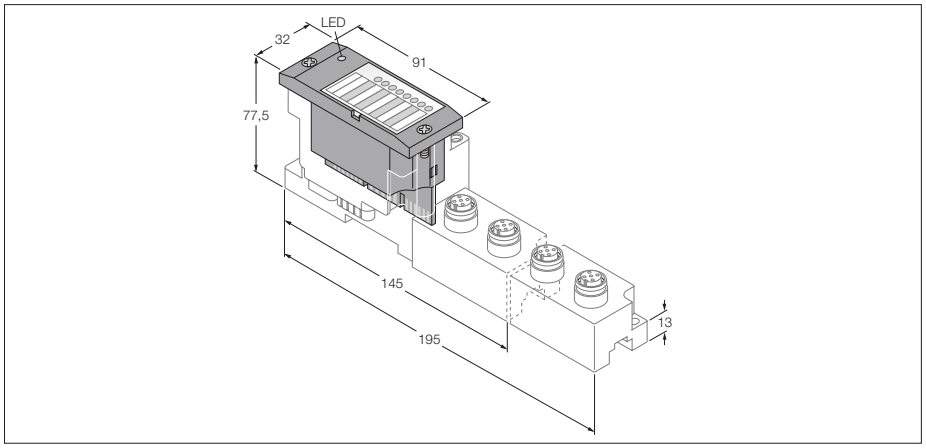
F164 - 2-wire technology



F166 - 4-wire technology



BL67 electronic modules
2 analogue inputs
BL67-2AI-V



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analogue inputs
  -10/0…+10 VDC

Type	BL67-2AI-V
Ident-No.	6827176
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 12 mA
Rated current from module bus	≤ 35 mA
max. sensor supply I_{sens}	250 mA per port, not short-circuit proof
Power loss, typical	≤ 1 W
Inputs	
Input type	-10/0…+10 VDC
Input resistance	< 98.5 kΩ
Maximum limiting frequency, analogue	< 50 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 150 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Sigma Delta
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	2
Number of parameter bytes	2
Operating temperature	-40…+70 °C
General technical data	see page 35

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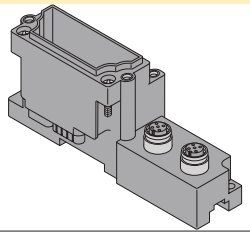
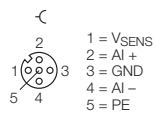
Compatible base modules

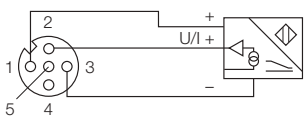
Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident-No. 8016988	F163, F164, F165, F166

Connection

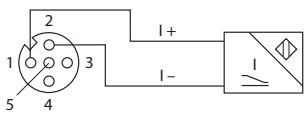
F163 - Pin configuration



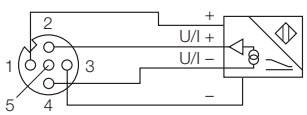
F163 - 3-wire technology



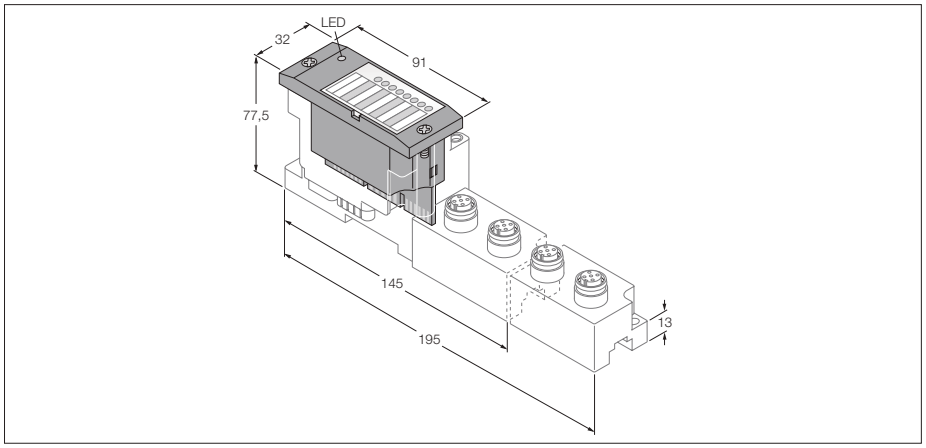
F163 - 2-wire technology



F166 - 4-wire technology



BL67 electronic modules
4 analogue inputs
BL67-4AI-V/I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 analogue inputs
- 0/4…20 mA or
- -10/0…+10 VDC
- Selectable per channel

Type	BL67-4AI-V/I
Ident-No.	6827222
Number of channels	4
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 12 mA
Rated current from module bus	≤ 35 mA
max. sensor supply I_{sens}	4 A Electronically limited current supply via gateway
Power loss, typical	≤ 1 W
Inputs	
Input type	0/4 … 20 mA or -10/0 … +10 VDC
Input resistance	0.125 or 98.5 kΩ
Maximum limiting frequency, analogue	< 20 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Sigma Delta
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	4
Number of parameter bytes	4
Operating temperature	-40…+70 °C
General technical data	see page 35

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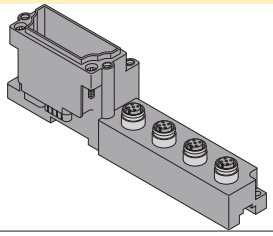
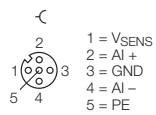
Compatible base modules

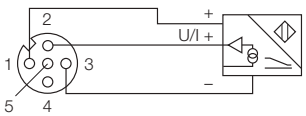
Dimensions	Type	Connection
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, a-coded Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident-No. 8016988	F163, F164, F165, F166

Connection

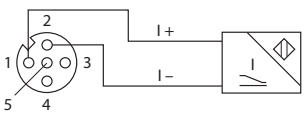
F163 - Pin configuration



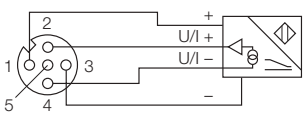
F165 - 3-wire technology



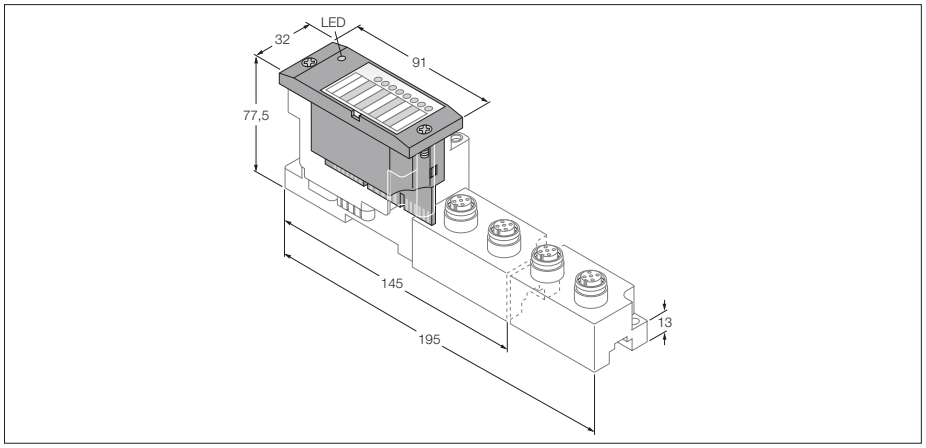
F164 - 2-wire technology



F166 - 4-wire technology



BL67 electronic modules
2 analogue inputs for Pt and Ni sensors
BL67-2AI-PT



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analogue inputs for
- PT100, PT200, PT500 and PT1000
- Ni100 and Ni1000
- 0…100, 0…200, 0…400 and 0…1000 Ω

Type	BL67-2AI-PT
Ident-No.	6827177
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 30 mA
Rated current from module bus	≤ 45 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	PT100, PT200, PT500, PT1000, Ni100, Ni1000, 0…100 Ω, 0…200 Ω, 0…400 Ω, 0…1 k Ω
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	2
Number of parameter bytes	4
Operating temperature	-40…+70 °C
General technical data	see page 35

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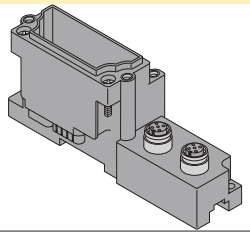
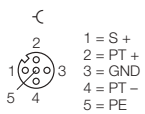
Compatible base modules

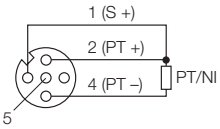
Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded **Comments** Do not connect Pin 3. Use only sensor cables without pin 3 or field-wireable connectors!	F167, F168, F169

Connection

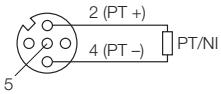
F167 - Pin configuration



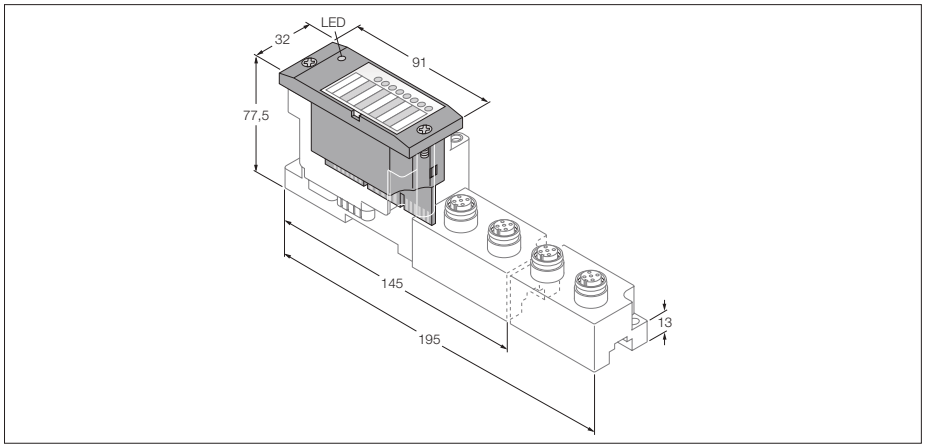
F169 - 3-wire technology



F168 - 2-wire technology



BL67 electronic modules
2 analogue inputs for thermoelements
BL67-2AI-TC



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analogue inputs for connection of thermoelements, types B, E, J, K, N, R, S and T
- Cold junction point compensation via Pt1000 probe in a special connector

Type	BL67-2AI-TC
Ident-No.	6827178
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 30 mA
Rated current from module bus	≤ 35 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	types B, E, J, K, N, R, S, T
Voltage resolution	± 50 mV: < 2 µV ± 100 mV: < 4 µV ± 500 mV: < 20 µV ± 1000 mV: < 50 µV
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	2
Number of parameter bytes	2
Operating temperature	-40…+70 °C
General technical data	see page 35

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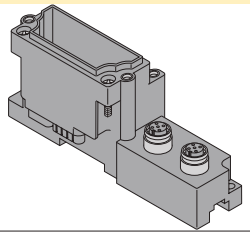
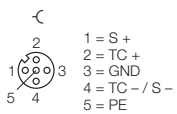
Compatible base modules

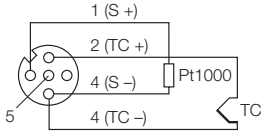
Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded Matching connection with Pt1000 probe for the cold junction point compensation: BL67-WAS5-THERMO Ident-No. 6827197	F170, F171

Connection

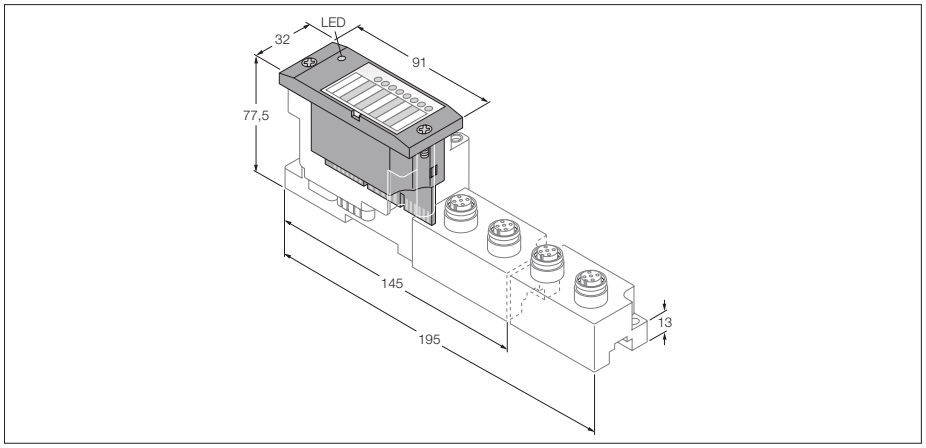
F170 - Pin configuration



F171 - Wiring diagram



BL67 electronic modules
4 analogue inputs for thermoelements
BL67-4AI-TC



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 analogue inputs for connection of thermoelements, types B, C, E, G, J, K, N, R, S and T
- Cold junction point compensation via Pt1000 probe in a special connector

Type	BL67-4AI-TC
Ident-No.	6827368
Number of channels	4
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 30 mA
Rated current from module bus	≤ 35 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	types B, C, E, G, J, K, N, R, S, T
Voltage resolution	± 50 mV: < 2 µV ± 100 mV: < 4 µV ± 500 mV: < 20 µV ± 1000 mV: < 50 µV
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 150 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	4
Number of parameter bytes	4
Operating temperature	-40…+70 °C
General technical data	see page 35

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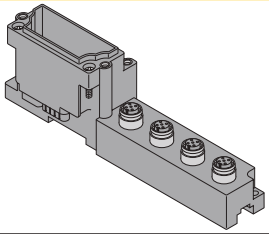
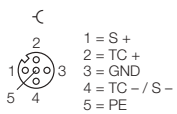
Compatible base modules

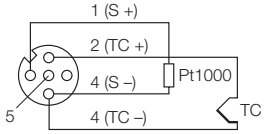
Dimensions	Type	Connection
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, a-coded Matching connection with Pt1000 probe for the cold junction point compensation: BL67-WAS5-THERMO Ident-No. 6827197	F170, F171

Connection

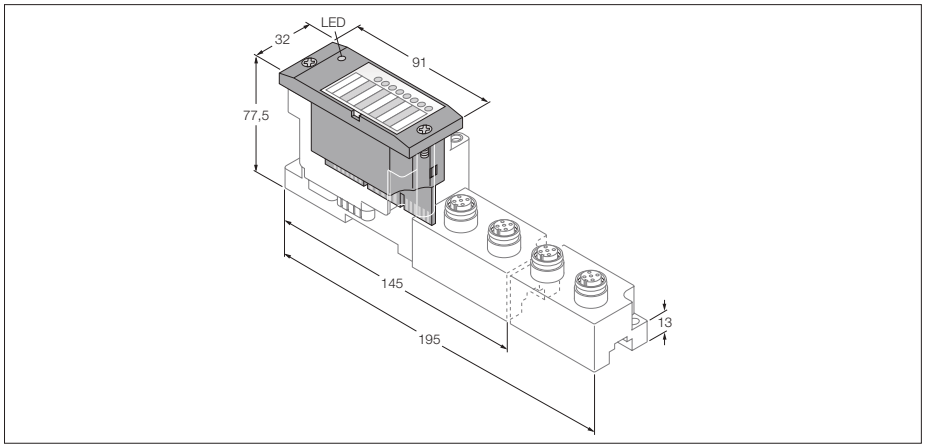
F170 - Pin configuration



F171 - Wiring diagram



BL67 electronic modules
2 analogue outputs for current
BL67-2AO-I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analogue outputs 0/4…20 mA

Type	BL67-2AO-I
Ident-No.	6827179
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 40 mA
max. sensor supply I_{sens}	250 mA per port, electronic short-circuit limiting
Power loss, typical	≤ 1 W
Outputs	
Output type	0/4…20 mA
Load resistance, resistive	< 0.45 kΩ
Load resistance, inductive	< 1 mH
Transmission frequency	< 200 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 150 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of parameter bytes	6
Operating temperature	-40…+70 °C
General technical data	see page 35

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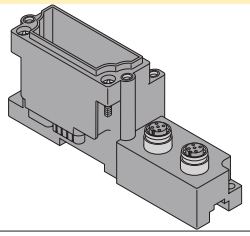
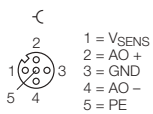
Compatible base modules

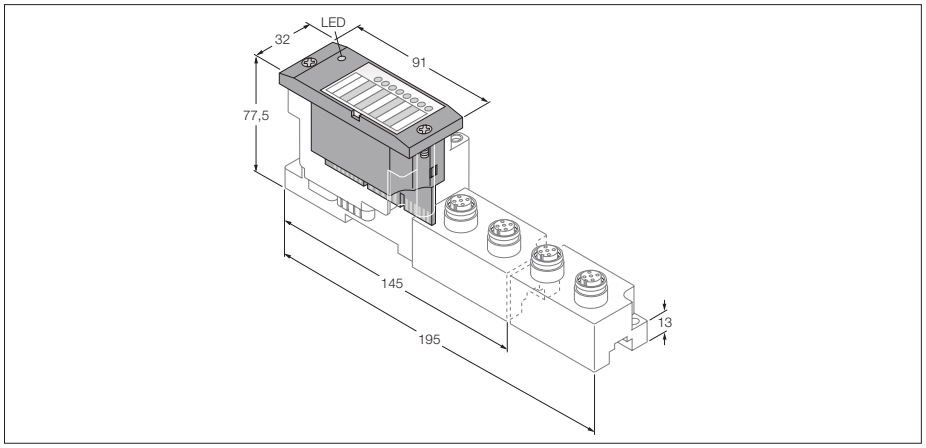
Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident-No. 8016988	F172

Connection

F172 - Pin configuration



BL67 electronic modules
2 analogue outputs for voltage
BL67-2AO-V



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analogue outputs -10/0…+10 VDC

Type	BL67-2AO-V
Ident-No.	6827180
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 60 mA
max. sensor supply I_{sens}	250 mA per port, electronic short-circuit limiting
Power loss, typical	≤ 1 W
Outputs	
Output type	-10/0…+10 VDC
Load resistance, resistive	> 1 kΩ
Load resistance, capacitive	> 1 µF
Transmission frequency	< 100 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of parameter bytes	6
Operating temperature	-40…+70 °C
General technical data	see page 35

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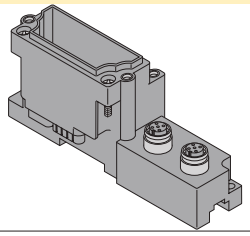
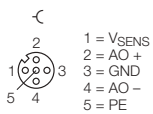
Compatible base modules

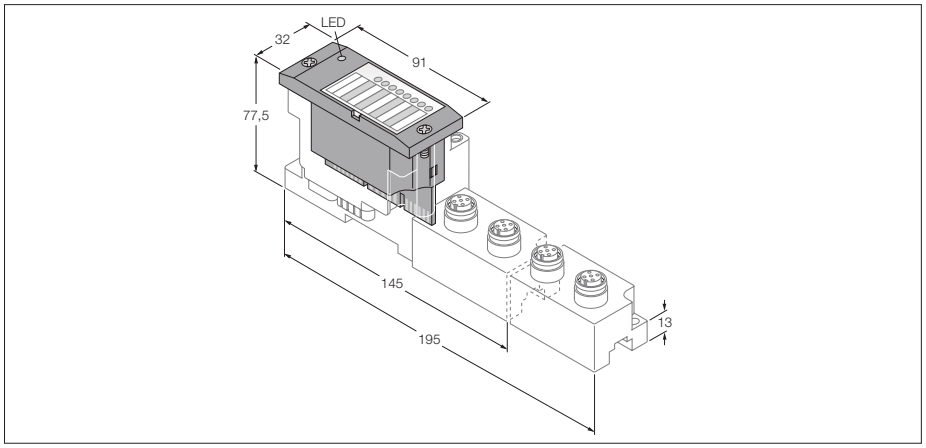
Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident-No. 8016988	F172

Connection

F172 - Pin configuration



BL67 electronic modules
4 analogue outputs for voltage
BL67-4AO-V



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 analogue outputs -10/0…+10 VDC

Type	BL67-4AO-V
Ident-No.	6827333
Supply voltage	24 VDC
Admissible range	18…30 VDC
Power loss, typical	≤ 1 W
Nominal voltage V_i	24 VDC
max. sensor supply I_{sens}	4 A
Outputs	
Output type	-10/0…+10 VDC
Sensor supply	24 VDC, 250 mA per channel
Load resistance, resistive	> 1 kΩ
Load resistance, capacitive	> 1 µF
Transmission frequency	< 100 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of parameter bytes	6
Operating temperature	-40…+70 °C
General technical data	see page 35

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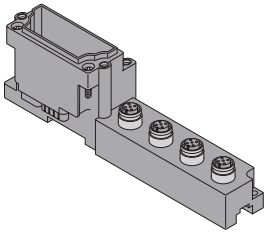
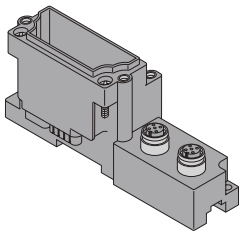
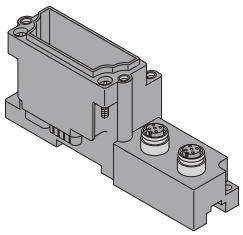
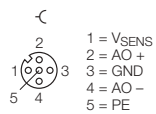
Compatible base modules

Dimensions	Type	Connection
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, **Comments:** Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident no. 8016988	F172
Dimensions	**Type**	**Connection**
	**6827336 BL67-B-2M12-8** 2 × M12, 8-pole, female **Comments:** Field-wireable connector (for example): BS8181-0 Ident no. 6901004	F280, F282
Dimensions	**Type**	**Connection**
	**6827337 BL67-B-2M12-8-P** 2 × M12, 8-pole, female, paired **Comments:** Field-wireable connector (for example): BS8181-0 Ident no. 6901004	F281, F283

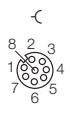
Connection

F172 - Pin configuration



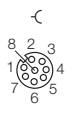
1 = V_{SENS}
2 = AO +
3 = GND
4 = AO –
5 = PE

F282 – Pin configuration slot 1



1 = AO 1 –
2 = AO 3 –
3 = AO 1 +
4 = AO 3 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

F283 – Pin configuration slot 1

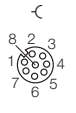


1 = AO 2 –
2 = AO 3 –
3 = AO 2 +
4 = AO 3 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

F280 – Pin configuration slot 0

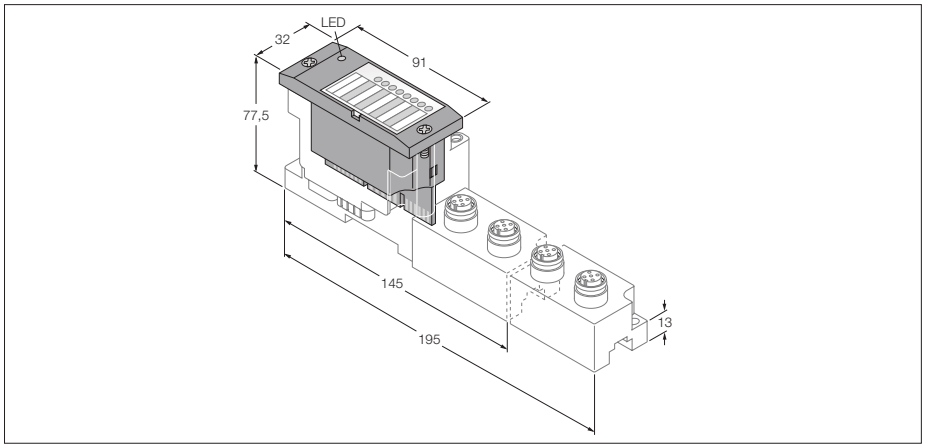
1 = AO 0 –
2 = AO 2 –
3 = AO 0 +
4 = AO 2 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

F281 – Pin configuration slot 0



1 = AO 0 –
2 = AO 1 –
3 = AO 0 +
4 = AO 1 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

BL67 electronic modules
2 analogue inputs for current/voltage and 2 analogue outputs for voltage
BL67-2AI2AO-V/I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analogue inputs 0/4…20 mA or -10/0…+10 VDC
- Selectable per channel
- 2 analogue outputs -10/0…+10VDC

Type	BL67-2AI2AO-V/I
Ident-No.	6827324
Supply voltage	24 VDC
Admissible range	18…30 VDC
Power loss, typical	≤ 1 W
Nominal voltage V_i	24 VDC
Max. sensor supply I_{sens}	4 A
Inputs	
Input type	0/4 … 20 mA or -10/0 … 10 VDC
Type of input diagnostics	channel diagnostics
Sensor supply	24 VDC
Input resistance	0.065 or 225 kΩ
Maximum limiting frequency, analogue	< 20 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Sigma Delta
Measured-value display	16 bit signed integer 12 bit full range left justified
Outputs	
Output type	-10/0…+10 VDC
Type of output diagnostics	channel diagnostics
Sensor supply	24 VDC, 250 mA per channel
Load resistance, resistive	> 1 kΩ
Load resistance, capacitive	> 1 µF
Transmission frequency	< 100 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Operating temperature	-40…+70 °C
General technical data	see page 35

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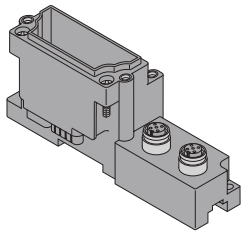
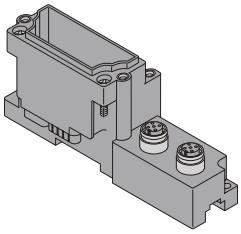
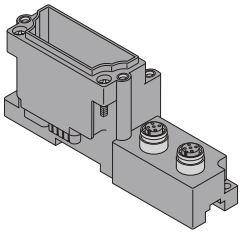
BL67 electronic modules
2 analogue inputs for current/voltage and 2 analogue outputs for voltage
BL67-2AI2AO-V/I

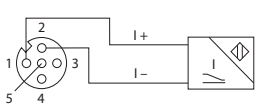
Industrielle Automation

Compatible base modules

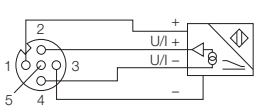
Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded **Comments:** Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident no. 8016988	F163, F164, F165, F166, F172
Dimensions	**Type**	**Connection**
	**6827336 BL67-B-2M12-8** 2 × M12, 8-pole, female **Comments:** Field-wireable connector (for example): BS8181-0 Ident. no. 6901004	F402, F403
Dimensions	**Type**	**Connection**
	**6827337 BL67-B-2M12-8-P** 2 × M12, 8-pole, female, paired **Comments:** Field-wireable connector (for example): BS8181-0 Ident. no. 6901004	F404, F405

Connection

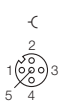
F164 – 2-wire connection technology



F166 – 4-wire connection technology

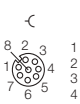


F172 – Pin configuration, slot 2 to 3



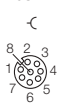
1 = V_{SENS}
2 = AO +
3 = GND
4 = AO –
5 = PE

F403 – Pin configuration slot 1



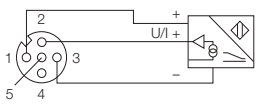
1 = AI 1 –
2 = AO 1 –
3 = AI 1 +
4 = AO 1 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

F405 – Pin configuration slot 1

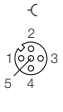


1 = AO 0 –
2 = AO 1 –
3 = AO 0 +
4 = AO 1 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

F165 – 3-wire connection technology



F163 – Pin configuration, slots 0 to 1

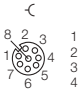


1 = V_{SENS}
2 = AI +
3 = GND
4 = AI –
5 = PE

F402 – Pin configuration slot 0

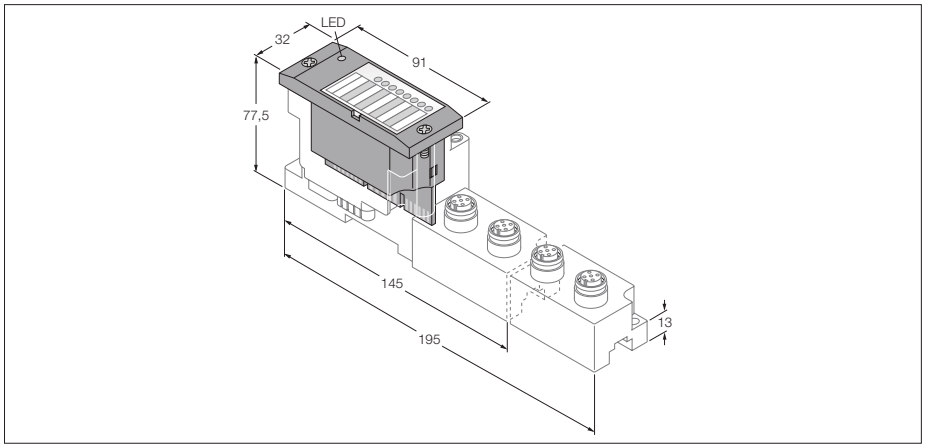
1 = AI 0 –
2 = AO 0 –
3 = AI 0 +
4 = AO 0 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

F404 – Pin configuration slot 0



1 = AI 0 –
2 = AI 1 –
3 = AI 0 +
4 = AI 1 +
5 = V_{SENS}
6 = V_{SENS}
7 = GND
8 = PE

BL67 electronic modules
4 analogue inputs for current/voltage and 4 analogue outputs for voltage
BL67-4AI4AO-V/I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 analogue inputs 0/4…20 mA or -10/0…+10 VDC
- Selectable per channel
- 4 analogue outputs -10/0…+10 VDC

Type	BL67-4AI4AO-V/I
Ident-No.	6827312
Supply voltage	24 VDC
Admissible range	18…30 VDC
Power loss, typical	≤ 1 W
Nominal voltage V_i	24 VDC
Max. sensor supply I_{sens}	4 A
Inputs	
Input type	0/4…20 mA or -10/0…10 VDC
Type of input diagnostics	channel diagnostics
Sensor supply	24 VDC
Input resistance	0.065 or 225 kΩ
Maximum limiting frequency, analogue	< 20 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	< 0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Sigma Delta
Measured-value display	16 bit signed integer 12 bit full range left justified
Outputs	
Output type	-10/0…+10 VDC
Type of output diagnostics	channel diagnostics
Sensor supply	24 VDC, 250 mA per channel
Load resistance, resistive	> 1 kΩ
Load resistance, capacitive	> 1 µF
Transmission frequency	< 100 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	< 0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Operating temperature	-40…+70 °C
General technical data	see page 35

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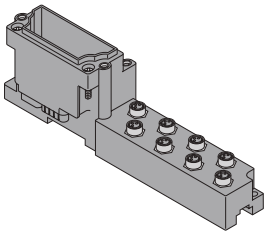
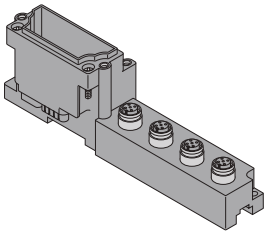
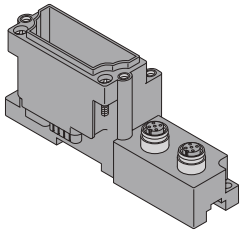
BL67 electronic modules
4 analogue inputs for current/voltage and 4 analogue outputs for voltage
BL67-4AI4AO-V/I

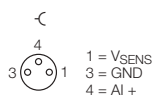
Industrielle Automation

Compatible base modules

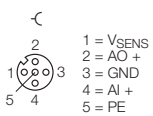
Dimensions	Type	Connection
	**6827188 BL67-B-8M8** 8 × M8, 3-pole, female	F264, F265
Dimensions	**Type**	**Connection**
	**6827187 BL67-B-4M12** 4 × M12, 5-pole, female, **Comments:** Matching connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident. no. 8016988	F263, F259, F260, F406
Dimensions	**Type**	**Connection**
	**6827337 BL67-B-2M12-8-P** 2 × M12, 8-pole, female, paired **Comments:** Field-wireable connector (for example): BS8181-0 Ident. no. 6901004	F277, F279

Connection

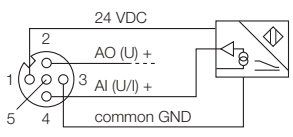
Pin configuration, slots 0 to 3



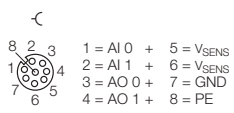
F263 – Pin configuration



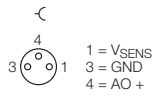
F260 – 3-wire connection technology



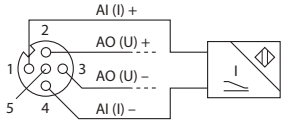
F277 – Pin configuration slot 0



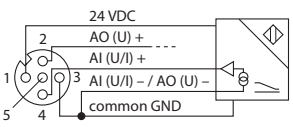
F265 – Pin configuration, slot 4 to 7



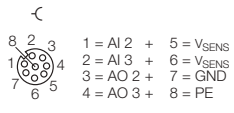
F259 – 2-wire connection technology



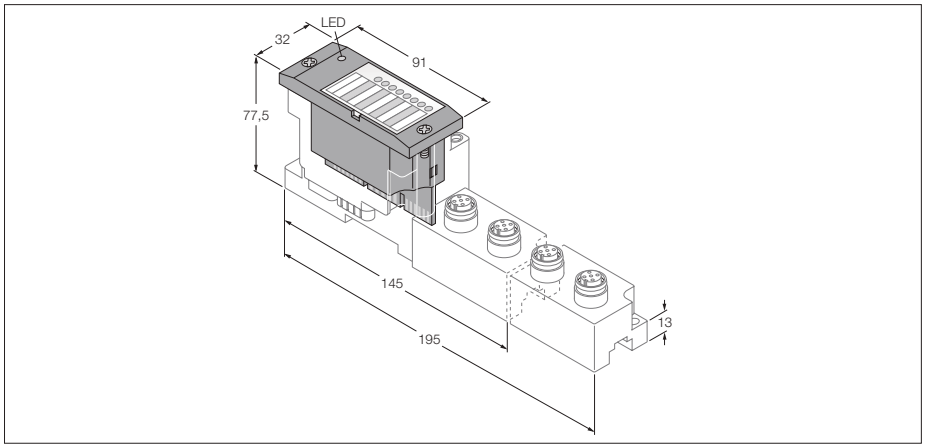
F406 – 4-wire connection technology



F279 – Pin configuration slot 1



BL67 electronic modules
RS232 interface
BL67-1RS232



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Transmission of serial data via RS232 interface
- For connection of different devices, such as printers, scanners or bar code readers

Type	BL67-1RS232
Ident-No.	6827181
Number of channels	1
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 140 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission level active (U RS1)	-15 to -3 VDC
Transmission level inactive (URSO)	3 to 15 VDC
Common-mode range (UGL)	-7 to 12 VDC
Transmission signals	RxD, TxD, RTS, CTS
Data buffer received	128 Byte
Send data buffer	64 Byte
Connection type	full duplex
Transmission rate	300 to 115200 bps
Parameter	transmission rate, diagnostics, data bits, stop bits, XON - character, XOFF - character, parity, flow control
Cable length	15 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	1
Number of parameter bytes	4
Operating temperature	-40…+70 °C
General technical data	see page 35

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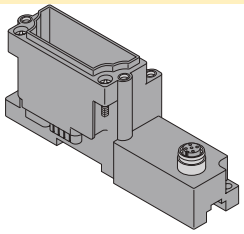
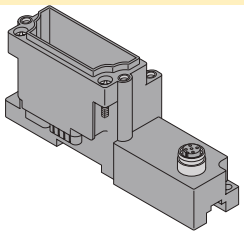
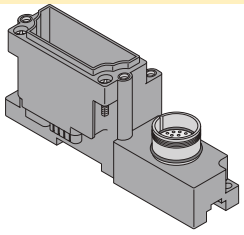
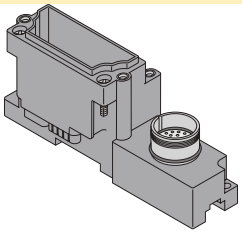
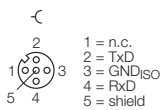
Compatible base modules

Dimensions	Type	Connection
	**6827185 BL67-B-1M12** **1 × M12, 5-pole, female** Shielded cable with unterminated end (example): WAS4.5-5/S57 Ident-No. 8016986	F173
Dimensions	**Type**	**Connection**
	**6827193 BL67-B-1M12-8** 1 × M12, 8-pole, female **Comments** Field-wireable connector (for example): BS8181-0 Ident no. 6901004	F174
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female **Comments** Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident no. 6604070	F175
Dimensions	**Type**	**Connection**
	**6827290 BL67-B-1M23-VI** 1 × M23, 12-pole, female **Comments** Additionally with 24 VDC sensor supply Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident no. 6604070	F407

Connection

F173 - Pin configuration



1 = n.c.
2 = TxD
3 = GND_{ISO}
4 = RxD
5 = shield

F175 - Pin configuration

1 = RxD	7 = n.c.
2 = TxD	8 = shield
3 = RTS	9 = n.c.
4 = CTS	10 = n.c.
5 = GND (iso)	11 = n.c.
6 = n.c.	12 = n.c.

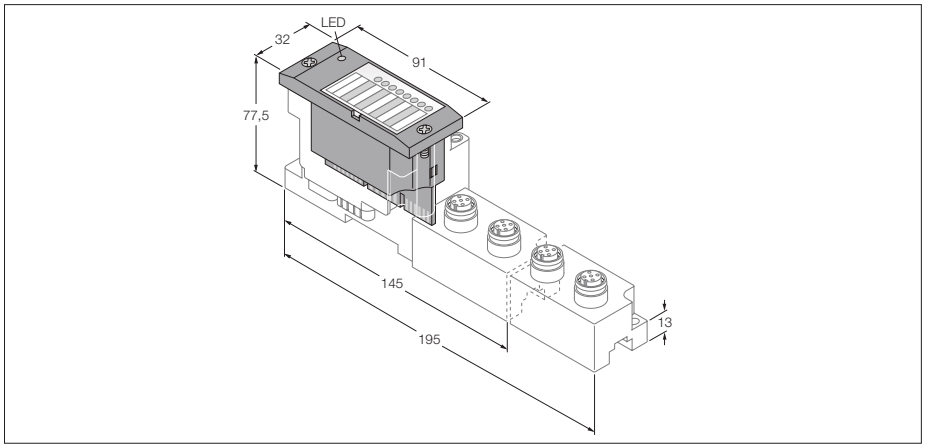
F174 - Pin configuration

1 = RxD	5 = GND_{ISO}
2 = TxD	6 = n.c.
3 = RTS	7 = n.c.
4 = CTS	8 = shield

F407 – Pin configuration

1 = RxD	7 = n.c.
2 = TxD	8 = shield
3 = RTS	9 = V_{SENS}
4 = CTS	10 = V_{SENS}
5 = GND (iso)	11 = V_{SENS}
6 = n.c.	12 = GND

BL67 electronic modules
RS485/422 interface
BL67-1RS485/422



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Transmission of serial data via RS485/422 interface
- For connection of different devices, such as printers, scanners or bar code readers

Type	BL67-1RS485/422
Ident-No.	6827192
Number of channels	1
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 60 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission signals	TxD, RxD
Connection type	2-wire half duplex or 4-wire full duplex
Transmission rate	300 to 115200 bps
Parameter	RS485/422, transmission rate, diagnostics, data bits, stop bits, XON - character, XOFF - character, parity, flow control
Cable length	1000 m
Line impedance	120 Ω
Bus termination	external
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	1
Number of parameter bytes	4
Operating temperature	-40…+70 °C
General technical data	see page 35

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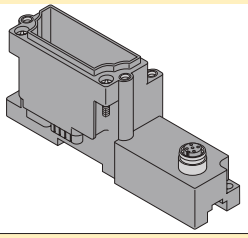
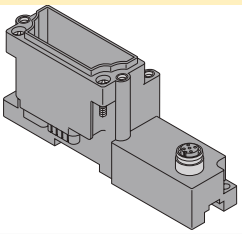
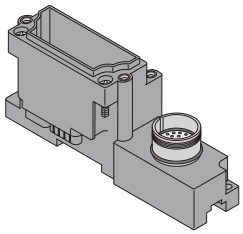
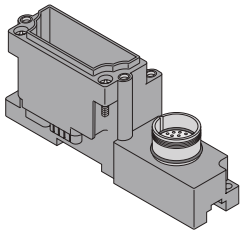
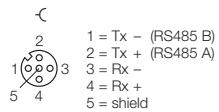
Compatible base modules

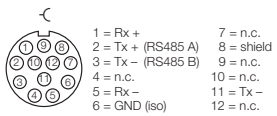
Dimensions	Type	Connection
	**6827185 BL67-B-1M12** **1 × M12, 5-pole, female** Shielded connection cable (for example): WAK4.5-2-WAS4.5/S57 Ident-No. 8016988	F176, F179, F180
Dimensions	**Type**	**Connection**
	**6827193 BL67-B-1M12-8** **1 × M12, 8-pole, female** **Comments** Pin configuration see above. Field-wireable connector (for example) BS8181-0 Ident no. 6901004	F177
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** **1 × M23, 12-pole, female** **Comments** Pin configuration see above. Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident no. 6604070	F178
Dimensions	**Type**	**Connection**
	**6827290 BL67-B-1M23-VI** 1 × M23, 12-pole, female **Comments** Pin configuration comparable with BL67-B-1M12 (see above). Additionally with 24 VDC sensor supply.	F408

Connection

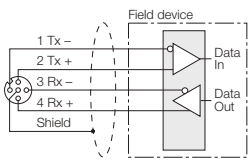
F176 - Pin configuration



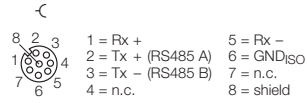
F178 - Pin configuration



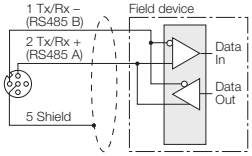
F180 - wiring diagram for RS422



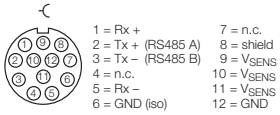
F177 - Pin configuration



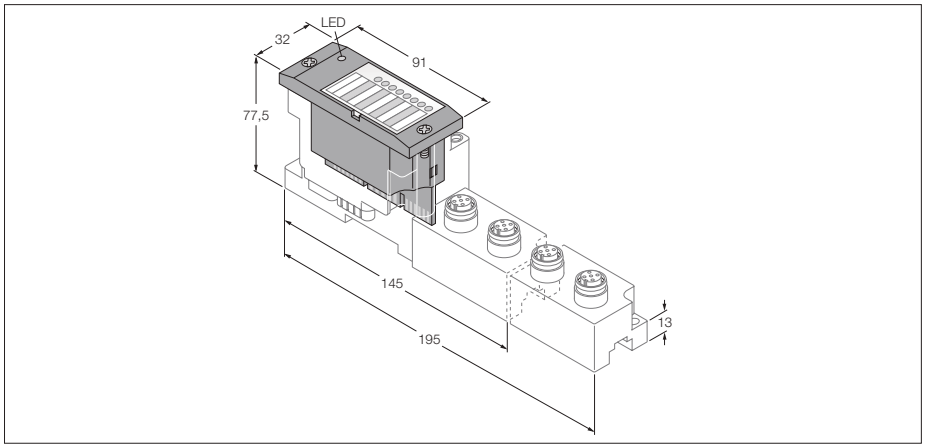
F179 - wiring diagram for RS485



F408 – Pin configuration



BL67 electronic modules
Connection of SSI sensors
BL67-1SSI



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Connection of SSI sensors
- Maximum bit transmission rate 1 MBit/s

Type	BL67-1SSI
Ident-No.	6827191
Number of channels	1
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 50 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission signals	CL, D
Connection type	4-wire full duplex (clock output/signal input)
Transmission rate	62.5 kbps up to 1 Mbps
Parameter	transmission rate, diagnostics, data format (binary / GRAY coded), data frame bits (1-32), number of invalid bits (LSB: 0-15, MSB 0-7)
Cable length	30 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	1
Number of parameter bytes	4
Operating temperature	-40…+70 °C
General technical data	see page 35

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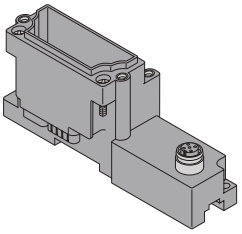
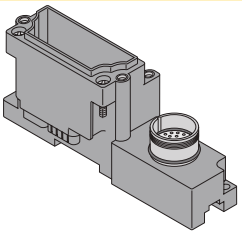
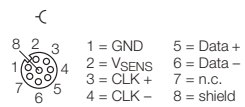
Compatible base modules

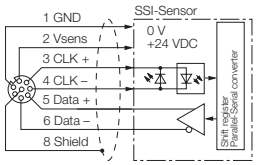
Dimensions	Type	Connection
	**6827193 BL67-B-1M12-8** 1 × M12, 8-pole, female **Comments** Field-wireable connector (for example): BS8181-0 Ident no. 6901004 For connection of SSI sensors paired, shielded sensor cable is recommended. Matching connection cable (for example): E-RKC8T-264-2M-RSC8T Ident no. 6611745	F181, F243
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female **Comments** Wiring diagram see above. Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident no. 6604070	F182

Connection

F181 - Pin configuration

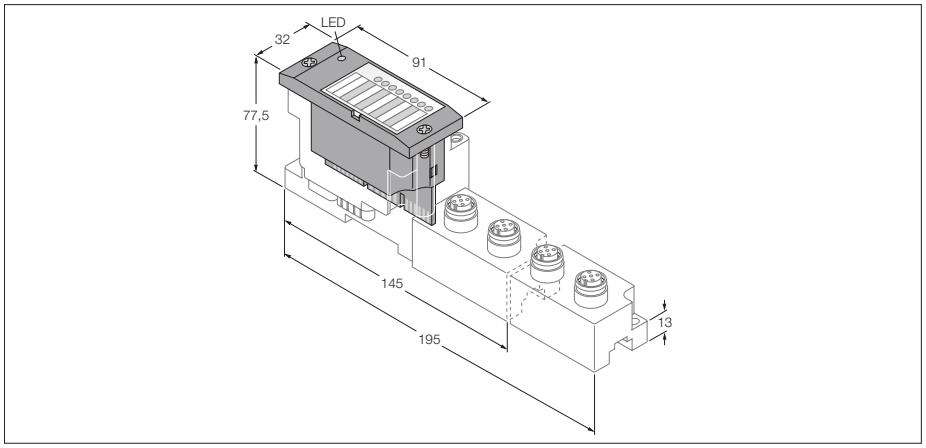


F243 - Wiring diagram



F182 - Pin configuration

BL67 electronic modules
Detection of standard counting signals
BL67-1CNT/ENC



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Detection of standard counting signals
- 5 VDC differential
- 5… 24 VDC single ended
- 2 digital inputs, 24 VDC
- 2 digital outputs, 24 VDC, 0.5 A
- 2 more digital channels, configurable 24 VDC, 0.5 A

Type	BL67-1CNT/ENC
Ident-No.	6827224
Number of channels	1
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 50 mA
Power loss, typical	≤ 1.2 W
Inputs / Outputs	
Electrical isolation	isolation of electronics and field level via opto-couplers
Input type	pnp
Low level signal voltage	< 5 V
High level signal voltage	7…30 V
High level signal current	max. 5 mA
Connection technology	M12, M23
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.2 ms
Load type	resistive, inductive, lamp load
Lamp load	< 10 W
Switching frequency, resistive	< 100 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 10 Hz
Short-circuit protection	yes
Simultaneity factor	1
Measuring ranges	
Frequency measurement	up to 250 kHz
Speed measurement	factor parameterisable
Period duration measurement	Resolution 200 ns, max. period duration $(2^{32-1}) \times 200$ ns
Upper count limit	0x80000000 up to 0xFFFFFFFF
Lower count limit	0x80000000 up to 0xFFFFFFFF
Operating temperature	-40…+70 °C
General technical data	see page 35

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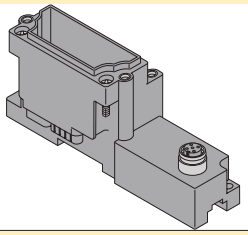
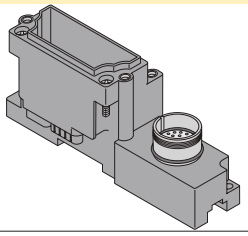
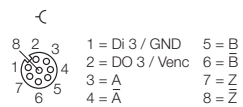
Compatible base modules

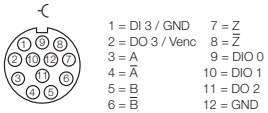
Dimensions	Type	Connection
	**6827193 BL67-B-1M12-8** 1 × M12, 8-pole, female **Comments** Field-wireable connector (for example): BS8181-0 Ident no. 6901004	F244
Dimensions	**Type**	**Connection**
	**6827213 BL67-B-1M23** 1 × M23, 12-pole, female **Comments** Field-wireable connector (for example): FW-M23ST12Q-G-LT-ME-XX-10 Ident no. 6904070	F245

Connection

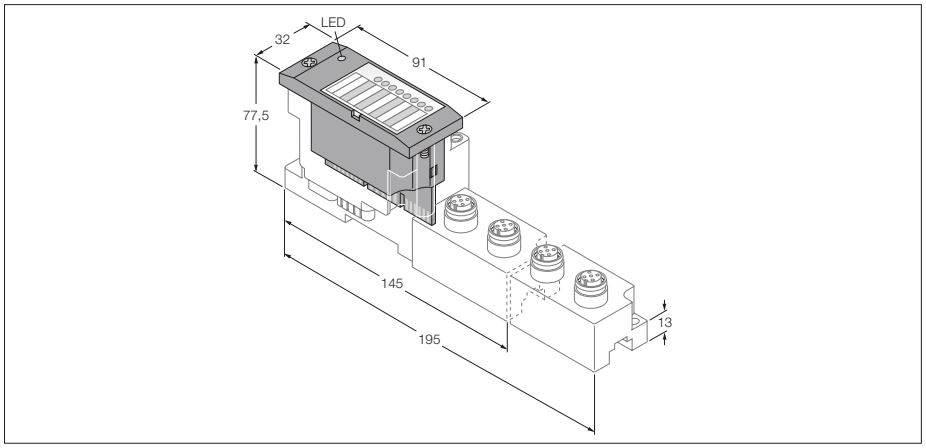
F244 - Pin configuration



F245 - Pin configuration



BL67 electronic modules
Connection of CANopen nodes
BL67-1CVI



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 byte I/O process data per CVI module
- Connection of up to 8 CANopen nodes
- max. 4 byte I/O data per node
- max. transmission rate 1 MBit/s

Type	BL67-1CVI
Ident-No.	6827223
Number of channels	1
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
max. sensor supply I_{sens}	1 A electronically limited current supply
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission signals	CAN high, CAN low
Connection type	CANopen
Transmission rate	10 kbps up to 1 Mbps
Parameter	transmission rate, diagnostics, bus termination, range of I/O data
Bus termination	internal
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	6
Number of parameter bytes	16
Operating temperature	-40…+70 °C
General technical data	see page 35

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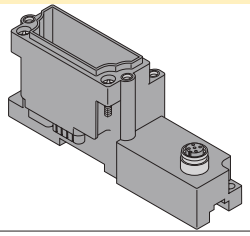
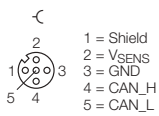
Compatible base modules

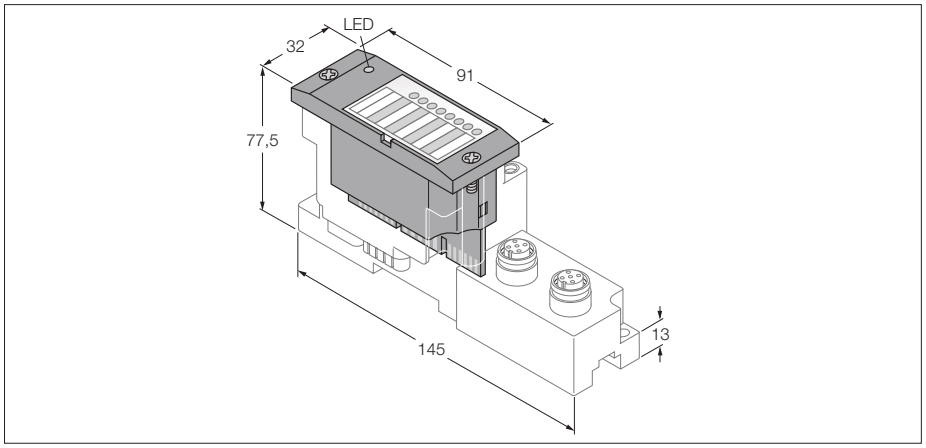
Dimensions	Type	Connection
	**6827185 BL67-B-1M12** 1 × M12, 5-pole, female **Comments** matching connection cable (for example): RSC-RKC5701-2M Ident no. 6604833	F184

Connection

F184 - Pin configuration



RFID system
Interface for connection of *BL ident*® write-read heads (HF/UHF)
BL67-2RFID-A



- This module is used in conjunction with the BL67-GW-DPV1
- Degree of protection IP67
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Connection of 2 *BL ident*® write-read heads
- Mixed operation of HF and UHF read/ write heads
- Transmission rate: 115.2 kbps
- Cable length: 50 m maximum

Type	BL67-2RFID-A
Ident-No.	6827225
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission rate	115.2 kbps
Cable length	50 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Connection technology	M12
Simultaneity factor	1
Sensor supply	0.5 A per channel, short-circuit proof
Number of diagnostic bytes	4
Number of parameter bytes	8
Number of input bytes	4
Number of output bytes	4
Operating temperature	-40…+70 °C
General technical data	see page 35

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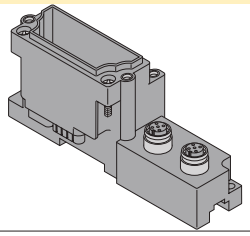
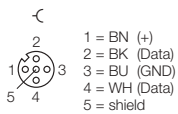
Compatible base modules

Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded Matching connection cable (for example): RK4.5T5-RS4.5T/S2500 Ident-No. 6699201	F185, F284

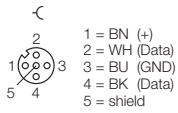
Connection

F185 – Pin configuration/Connector …/S2500



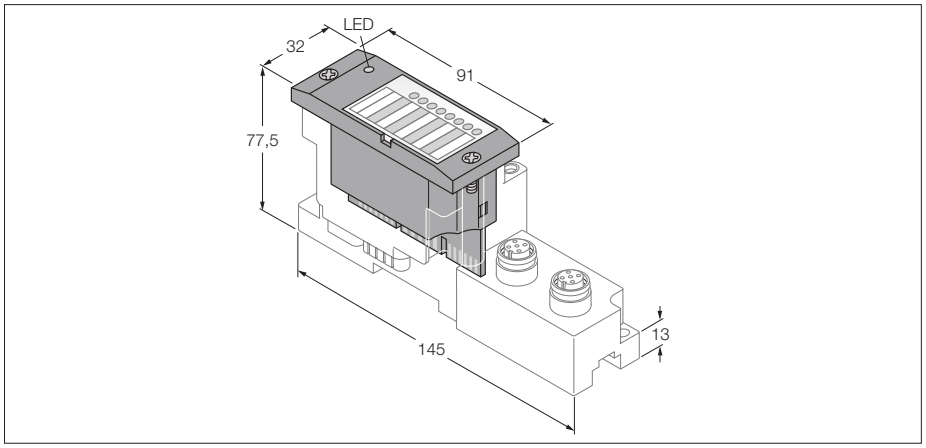
1 = BN (+)
2 = BK (Data)
3 = BU (GND)
4 = WH (Data)
5 = shield

F284 – Pin configuration/Connectors …/S2501



1 = BN (+)
2 = WH (Data)
3 = BU (GND)
4 = BK (Data)
5 = shield

RFID system
Interface for connection of *BL ident*® write-read heads (HF/UHF)
BL67-2RFID-S



- No special software (function module) is necessary for the integration in PLC systems.
- 8 byte user data per read/write cycle
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Connection of 2 *BL ident*® write-read heads
- Mixed operation of HF and UHF read/ write heads
- Transmission rate: 115.2 kbps
- Cable length: 50 m maximum

Type	BL67-2RFID-S
Ident-No.	6827305
Number of channels	2
Nominal voltage V_i	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission rate	115.2 kbps
Cable length	50 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Simultaneity factor	1
Sensor supply	0.5 A per channel, short-circuit proof
Operating temperature	-40…+70 °C
General technical data	see page 35

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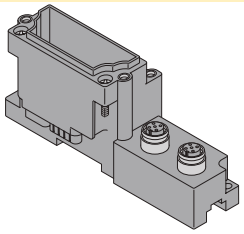
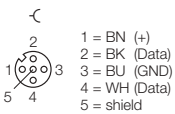
Compatible base modules

Dimensions	Type	Connection
	**6827186 BL67-B-2M12** 2 × M12, 5-pole, female, a-coded Matching connection cable (for example): RK4.5T5-RS4.5T/S2500 Ident-No. 6699201	F185, F284

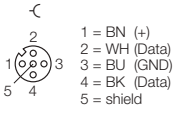
Connection

F185 – Pin configuration/Connector …/S2500



1 = BN (+)
2 = BK (Data)
3 = BU (GND)
4 = WH (Data)
5 = shield

F284 – Pin configuration/Connectors …/S2501



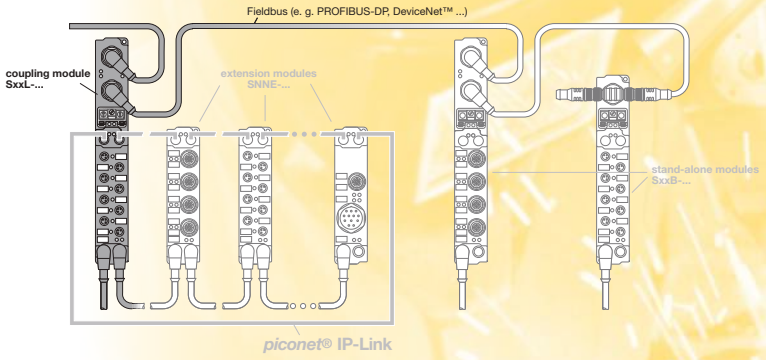
1 = BN (+)
2 = WH (Data)
3 = BU (GND)
4 = BK (Data)
5 = shield

DIGITAL
ANALOGUE
TECHNOLOGY

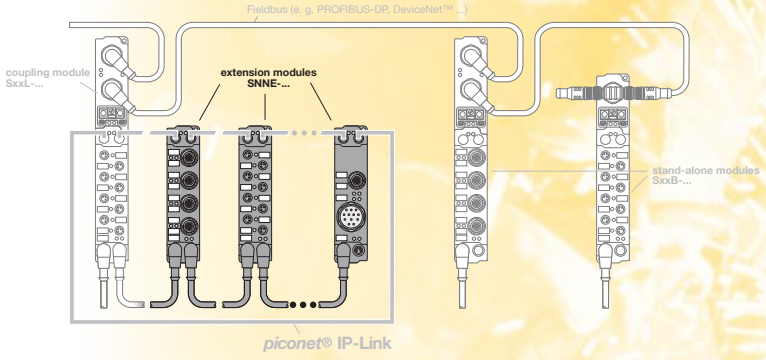
PROFI PROCESS FIELD BUS

DeviceNet™

CANopen

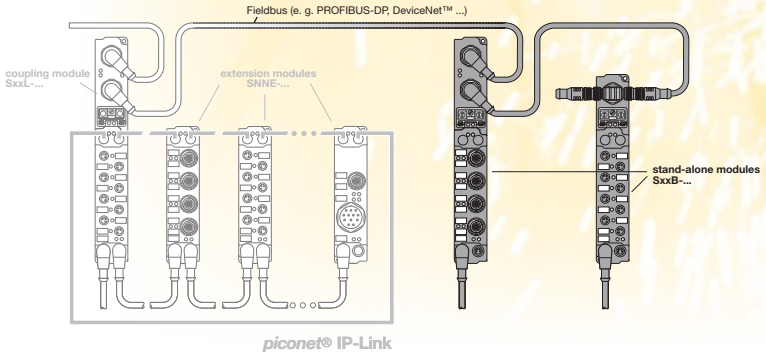


INTERBUS
Certified! No.099



Modbus TCP

EtherNet/IP™



PROFI INDUSTRIAL ETHERNET NET®

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piconet® – Modular fieldbus I/O system in IP67

TURCK
Industrial Automation

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Configuration software I/O-ASSISTANT, fibre-optic cable measuring device, fibre-optic cables, fibre-optic connectors, grinding gauge, fibre-optic cable assembly kit, IP-Link bridge, power junctions, compensation connector for thermoelements, earthing clip, DIN rail, mounting plates, drilling templates	

***piconet*® – Coupling modules**	
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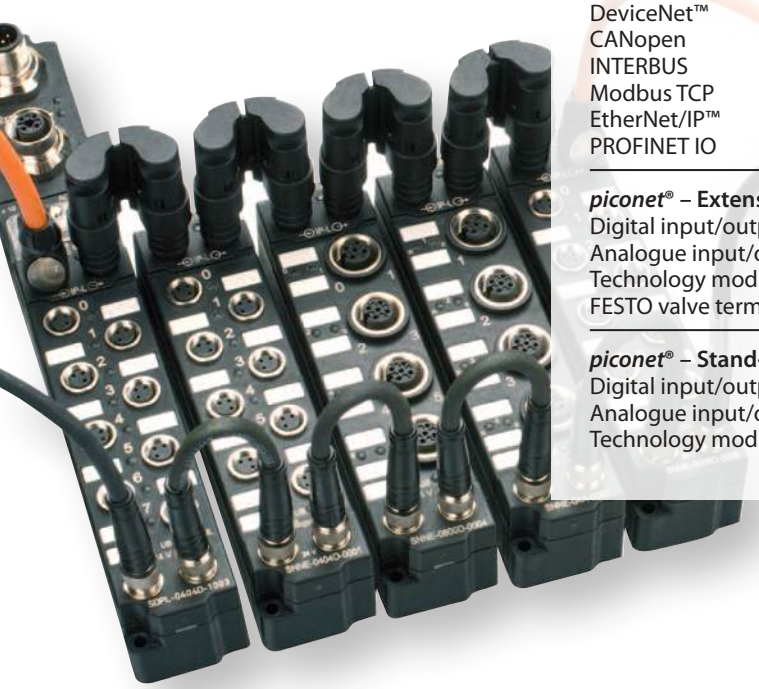
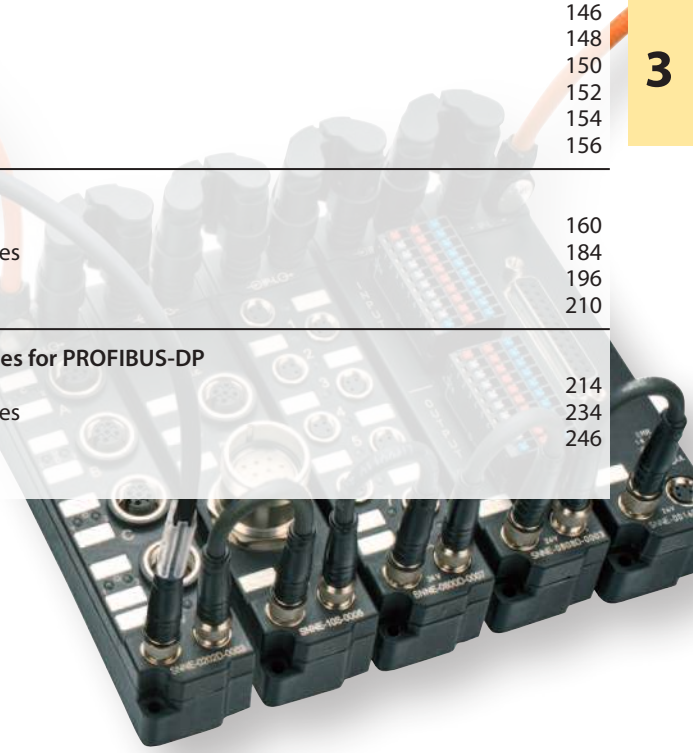
***piconet*® – Stand-alone modules for PROFIBUS-DP**	
Digital input/output modules	214
Analogue input/output modules	234
Technology modules	246





The *piconet*® I/O system – in miniature housings for highest industrial requirements

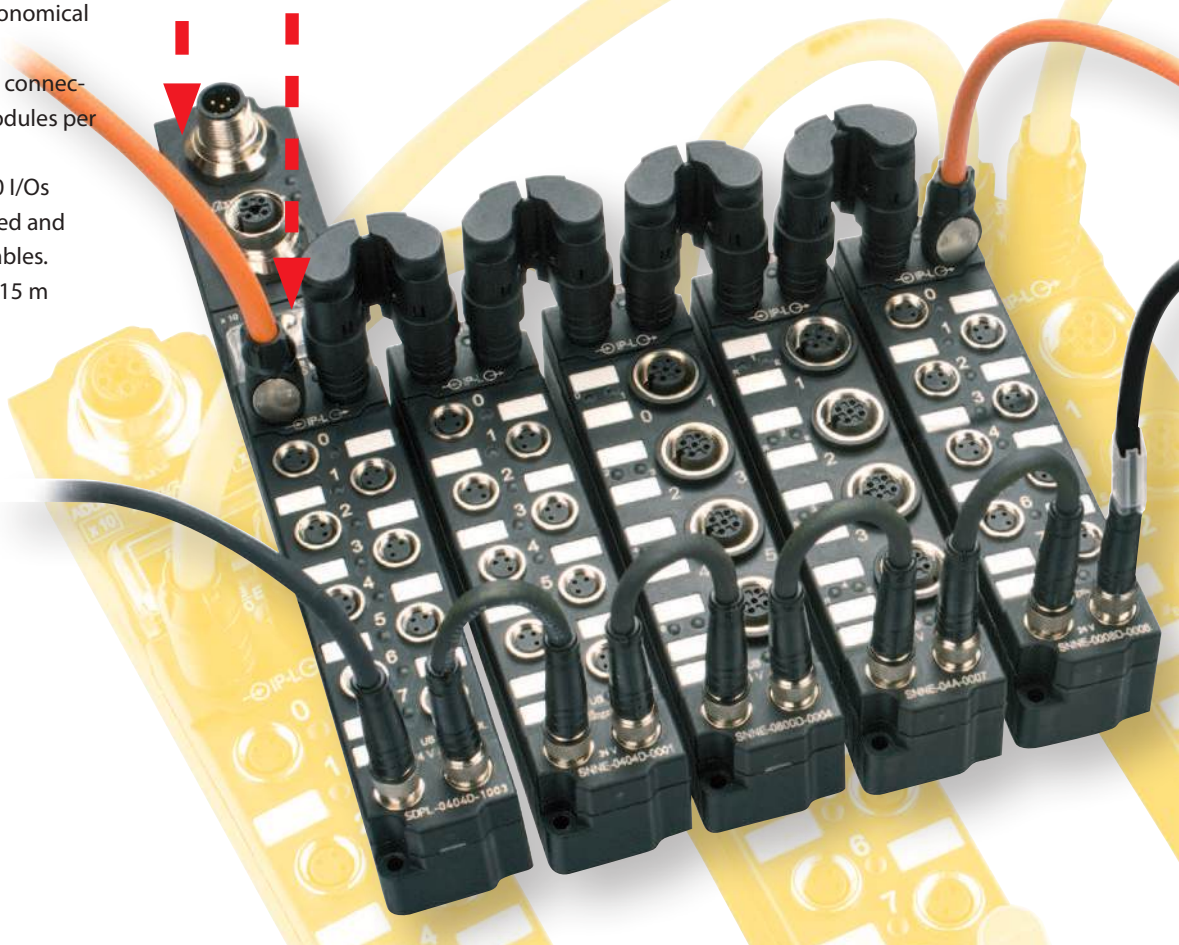
piconet® – Coupling modules

- As interface to the higher level control system
- Gateway between PROFIBUS-DP, CANopen, DeviceNet™, INTERBUS, EtherNet/IP™, Modbus TCP, PROFINET IO and fiber-optic cable based Sub-Bus „IP-Link“
- Coupling modules connect the higher level open fieldbus and the economical extension modules.
- Fiber-optic subnet (IP-Link) for connection of up to 120 extension modules per coupling module
- High-speed transmission, 1000 I/Os in approx. 1 ms via prefabricated and interference-free fiber-optic cables.
- Fiber-optic cable length up to 15 m

Bus addressing switch and service interface to I/O-ASSISTANT software

Bus LEDs

Module/ IP-Link LEDs



Compact and robust housing

- Only 26.5 mm high, 30 mm wide and 210, 175 or 126 mm long
- Fully encapsulated IP67 housing
- Suited for direct use on the machine
- Ideally suited for special or serial machine engineering as well as for various field applications

piconet®-Stand-alone module

- Stand-alone modules connect the integrated I/Os directly with the open fieldbus, e.g. PROFIBUS-DP, CANopen, DeviceNet™, INTERBUS, Modbus TCP, EtherNet/IP™ and PROFINET IO

A secure connection

- Prefabricated bus, fiber optic, power and I/O cables
- Field-wireable connectors
- Additional networking components such as T-pieces, terminating resistors etc.

PROFI PROCESS FIELD BUS

DeviceNet™

CANopen

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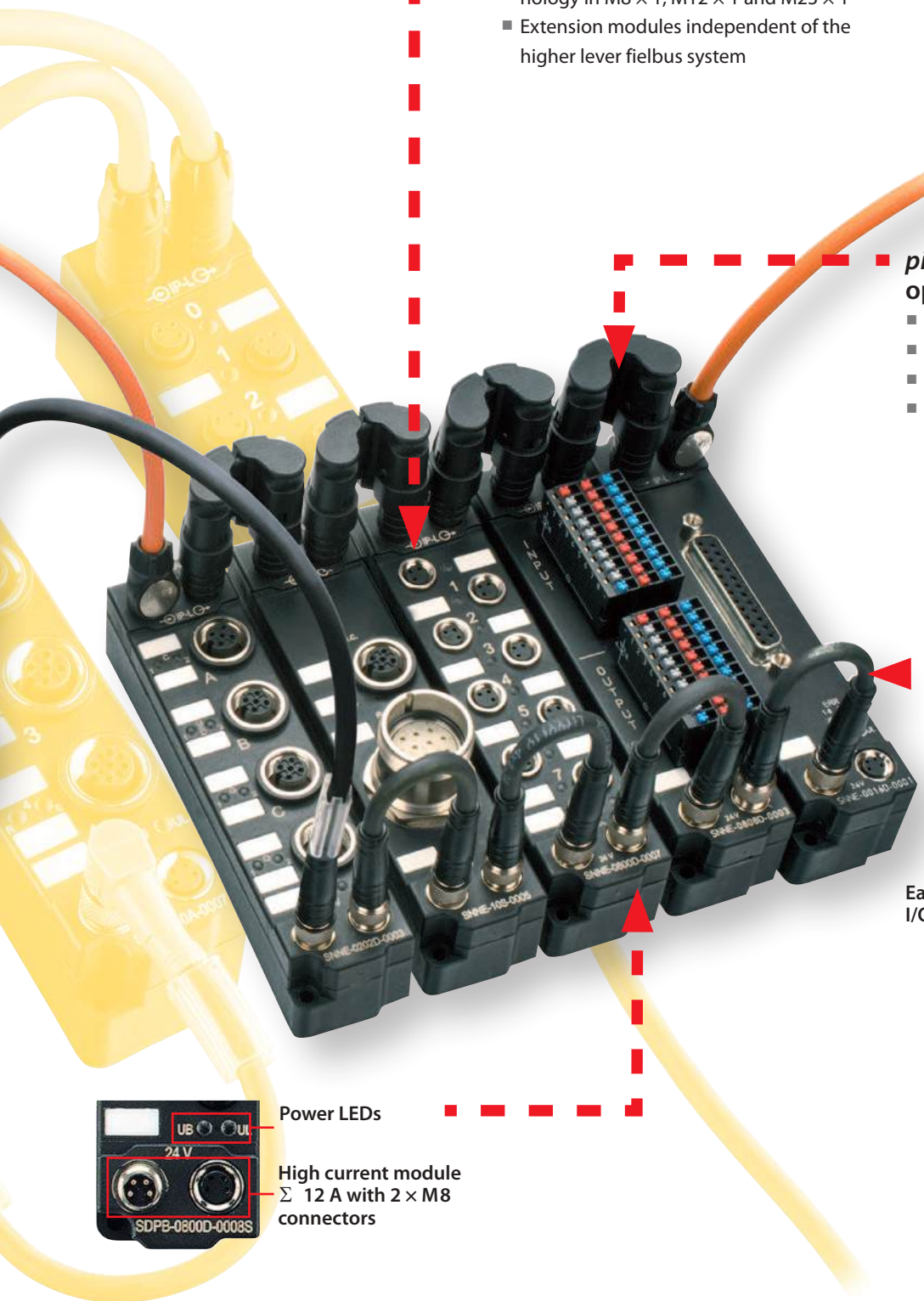
piconet® - Extension modules

- Flexible and tested I/O connection technology in M8 × 1, M12 × 1 and M23 × 1
- Extension modules independent of the higher lever fielbus system

piconet® – Bridges for fibre optics and power cables

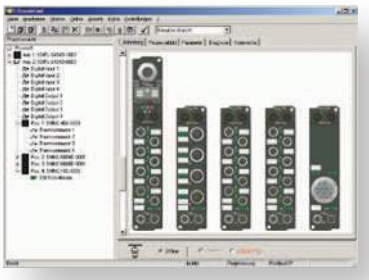
- Compact mounting
- Reduced space requirements
- Easy installation
- IP67



Power LEDs

High current module
Σ 12 A with 2 × M8 connectors

Easy planning and configuration with the I/O-ASSISTANT



INTERBUS Certified! No.099

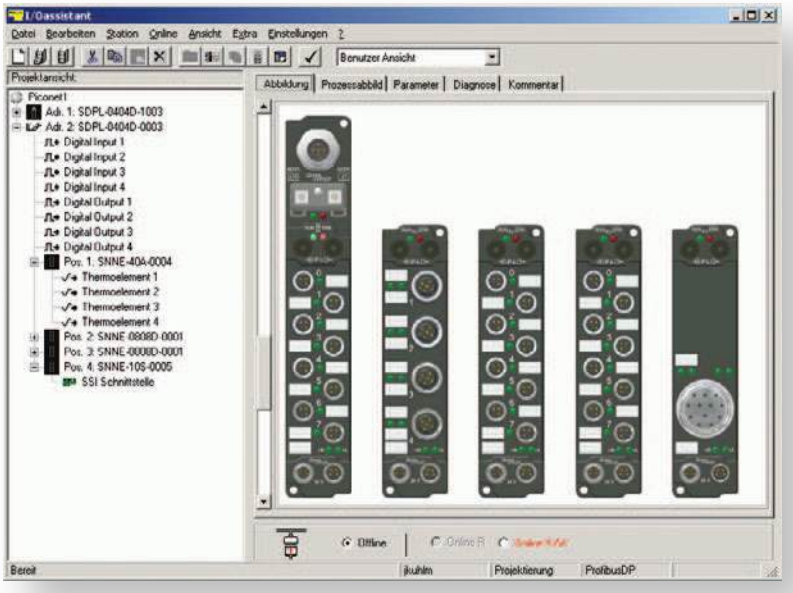
Modbus TCP EtherNet/IP™ PROFINET INDUSTRIAL ETHERNET

I/O-ASSISTANT

Easy planning and configuration with the I/O-ASSISTANT

Configuration software for

- Project planning
- Configuration
- Parameterisation



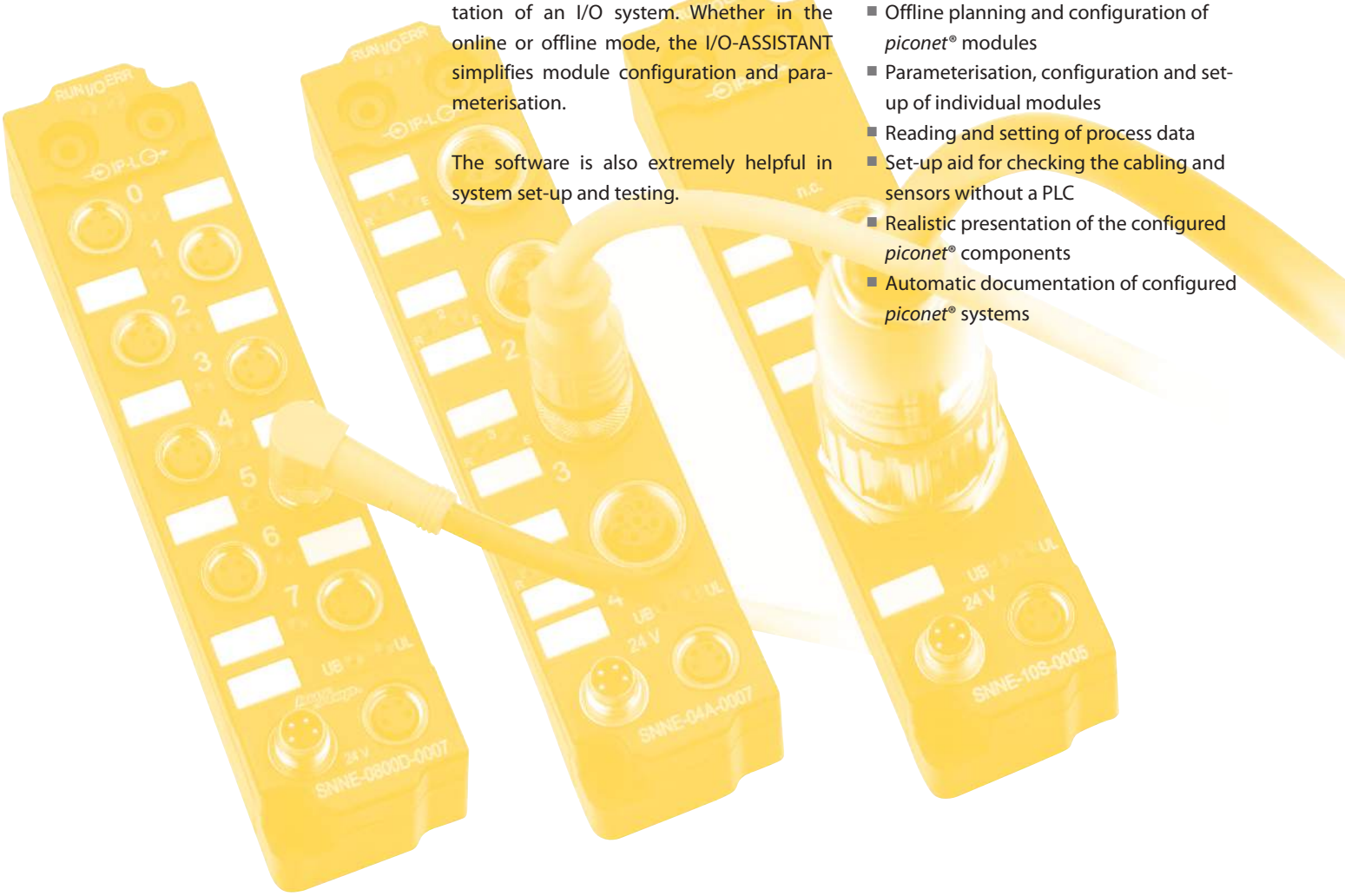
Description

The configuration software I/O-ASSISTANT supports you in planning and implementation of an I/O system. Whether in the online or offline mode, the I/O-ASSISTANT simplifies module configuration and parameterisation.

The software is also extremely helpful in system set-up and testing.

Functions

- Convenient software tool
- Selection of the required modules
- Offline planning and configuration of *piconet*® modules
- Parameterisation, configuration and set-up of individual modules
- Reading and setting of process data
- Set-up aid for checking the cabling and sensors without a PLC
- Realistic presentation of the configured *piconet*® components
- Automatic documentation of configured *piconet*® systems



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TURCK
Industrial Automation

SDPL – 0404 D – 0003

Housing style
(S) Small housing style

Connection fieldbus system
(DP) PROFIBUS-DP
(DN) DeviceNet™
(CO) CANopen
(IB) INTERBUS
(EN) Modbus TCP
(IP) EtherNet/IP™
(PN) PROFINET IO
(NN) IP-Link (Extension modules)

Module type
(B) Stand-alone module (block module)
(E) Extension module
(L) Coupling module (link module)

Number of chhannels
(0800) 8-channel input module
(0008) 8-channel output module
(0404) 8-channel combined module (4 inputs and 4 outputs)
(0808) 16-channel combined module (8 inputs and 8 outputs)
(40) 4-channel input module
(04) 4-channel output module
(0002) 2-channel pulse width modulation
(0202) 2-channel up/down counter
(10) 1-channel interface module

Signal type
(A) Analogue
(D) Digital
(S) Interface module

Note:
The type code is for model purposes only and is to explain existing type codes. All possible constallations are thus not also available products!

Function (0800D)

(2)	Filter 0.2 ms	4 × M12
(4)	Filter 3.0 ms	4 × M12
(7)	Filter 3.0 ms	8 × M8
(8)	Filter 0.2 ms	8 × M8

Function (40A)

(4)	Thermoelement	4 × M12
(5)	Differential inputs ± 10 V	4 × M12
(7)	Differential inputs 0(4)...20 mA	4 × M12
(9)	Resistance thermometers, PT100	4 × M12

Function (0008D)

(1)	0.5 A	4 × M12
(2)	2.0 A (I_Σ = 4 A)	8 × M8
(3)	2.0 A (I_Σ = 4 A)	4 × M12
(4)	2.0 A (I_Σ = 12 A)	8 × M8
(5)	2.0 A (I_Σ = 12 A)	4 × M12
(6)	0.5 A	8 × M8

Function (0016D)

(1)	0.5 A (I_Σ = 4 A)	1 × SUB-D
(2)	0.5 A (I_Σ = 4 A), autoreset	1 × SUB-D

Function (04A)

(7)	± 10 V	4 × M12
(9)	0…20 mA	4 × M12

Function (0002D)

(2)	Pulse width modulation, 2,5 A	2 × M12

Function (0404D)

(1)	Filter 0.2 ms, 0.5 A	8 × M8
(2)	Filter 0.2 ms, 0.5 A	4 × M12
(3)	Filter 3.0 ms, 0.5 A	8 × M8
(4)	Filter 3.0 ms, 0.5 A	4 × M12
(5)	Filter 0.2 ms, 2.0 A (I_Σ = 4 A)	8 × M8
(6)	Filter 0.2 ms, 2.0 A (I_Σ = 4 A)	4 × M12
(7)	Filter 3.0 ms, 2.0 A (I_Σ = 4 A)	8 × M8
(8)	Filter 3.0 ms, 2.0 A (I_Σ = 4 A)	4 × M12

Function (0808D)

(1)	Filter 3.0 ms, 0.5 A (I_Σ = 4 A)	4 × M12
(3)	Filter 3.0 ms, 0.5 A (I_Σ = 4 A)	IP20 terminals

Function (0202D)

(3)	Channel up/down counter, 100 kHz	4 × M12

Function (10S)

(1)	Incremental encoder	1 × M12, 1 × M23
(2)	Serial interface RS232	1 × M12
(3)	Serial interface 0…20 mA (TTY)	1 × M12
(4)	Serial interface RS422/RS485	1 × M12
(5)	SSI encoder	1 × M23

not used

Number of bus connections
(0) 1 (external T-piece needed)
(1) 2 (integrated T-piece)

piconet® – Compact I/O system in IP67 – Overview

piconet®, the miniature IP67 product family within the TURCK fieldbus programme, featuring extremely compact housings and a fine modular structure, is the ideal solution for serial and special machine engineering and many other field applications. The product line includes:

- *piconet*® coupling modules
  The coupling modules function as the gateway between the open fieldbus and the fibre-optic based *piconet*® sub-bus "IP-Link".
- *piconet*® extension modules
  The various extension modules are combined to form a modular network via the fibre-optic based IP-Link .
- *piconet*® stand-alone modules
  Stand-alone-modules connect the integrated inputs/outputs directly to the open fieldbus.

Based on the IP-Link, a modular network can be constructed, with which up to 120 extension modules can be operated via a single coupling module. The coupling module collects the I/O data of the connected extension modules via the interference-immune and fast IP-Link network with a transmission speed of 2 Mbps.

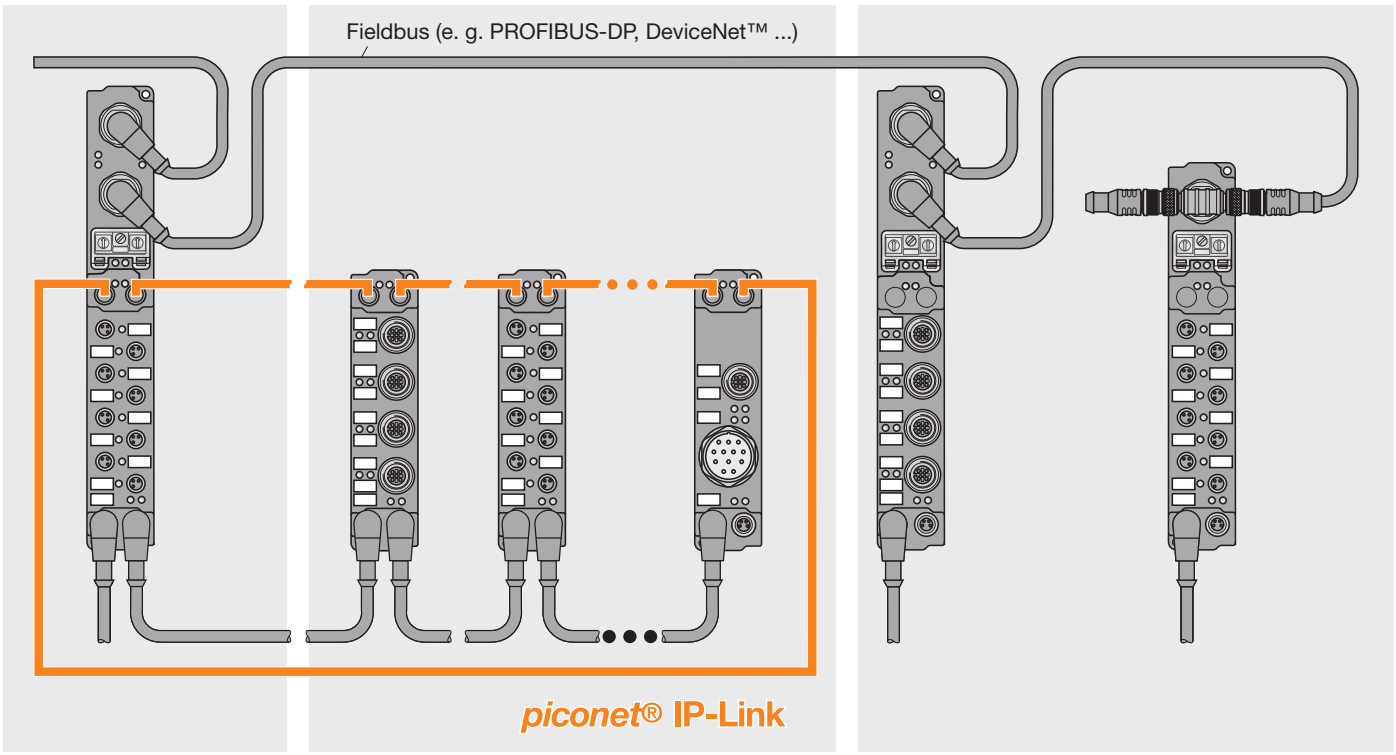
The transmission time for 1,000 I/Os is approx. 1 ms – if less data are transferred the transmission speed is even higher. The maximum fibre-optic cable length is 15 m.

The product line comprises of extension and stand-alone modules for the entire spectrum of I/O signals – ranging from standardised digital industrial signals to analogue inputs and outputs. The family is complemented by a choice of technology modules, such as a pulse width modulator, an up/down counter, an incremental encoder as well as various serial interfaces. *piconet*® can be connected to all major industrial fieldbus systems (e.g. PROFIBUS-DP, DeviceNet™, CANopen, INTERBUS, Modbus TCP, EtherNet/IP™ and PROFINET IO).

The robust IP67 housing is extremely compact, fully encapsulated and equipped throughout with metal connectors. As a result, the modules are perfectly suited for application in harsh industrial environments as well as in space-critical applications in special and serial machine engineering.

The operating and load supply are fed separately to all *piconet*® modules.
A status LED is assigned to each channel to provide signal status indications.

piconet® – modular network with direct connection to the higher level fieldbus



Coupling module (Gateway) **Extension modules** **Stand-alone modules**

The figure shows a PROFIBUS-DP application.

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piconet® – General technical information

A detailed technical system description as well as application guidelines for *piconet*® fieldbus components are contained in the *piconet*® – User Manual.

piconet®-User manuals:

For download on: www.turck.com
→ Headquarters → Download

Earthing/Shielding concept

The shield is capacitively coupled with the base of the *piconet*® modules. In order to eliminate interferences effectively via the shield, the surface on which the module is mounted must provide a low impedance or low-resistance connection to the ground (e.g. the ground reference plane, the machine's ground). Optionally, the shield of the bus cable can be directly earthed via the *piconet*® earthing clip EL-0002.

Data mapping

Compact mapping

In the compact data mapping mode, purely process/user data are mapped. Data of bit-oriented modules are mapped in the compact mode only.

Complex mapping

In the complex data mapping mode, control and status byte are mapped in addition to process/user data. Data of byte-oriented modules can be mapped either in the compact or complex mode.

Note: *piconet*® coupling modules first map the data of the byte-oriented (complex) extension modules to the process image according to their physical order within the IP-Link network. Then the data of the bit-oriented extension modules are added to the process image

Data formats

The Intel format

In the Intel format, the most significant data byte follows the least significant data byte. The Intel format is colloquially also referred to as the "little Endian".

The Motorola format

In the Motorola format, the least significant data byte follows the most significant data byte. The Motorola format is colloquially also referred to as the "big Endian".

Note: The default data format setting of the various fieldbus types differs. Fieldbus components for DeviceNet™, CANopen and Ethernet are set by default to Intel, while PROFIBUS-DP and INTERBUS components are pre-set to the Motorola format. In the catalogue, the mapping tables (process images) of the extension modules are exclusively shown in the Motorola format.

Alignment

Byte alignment

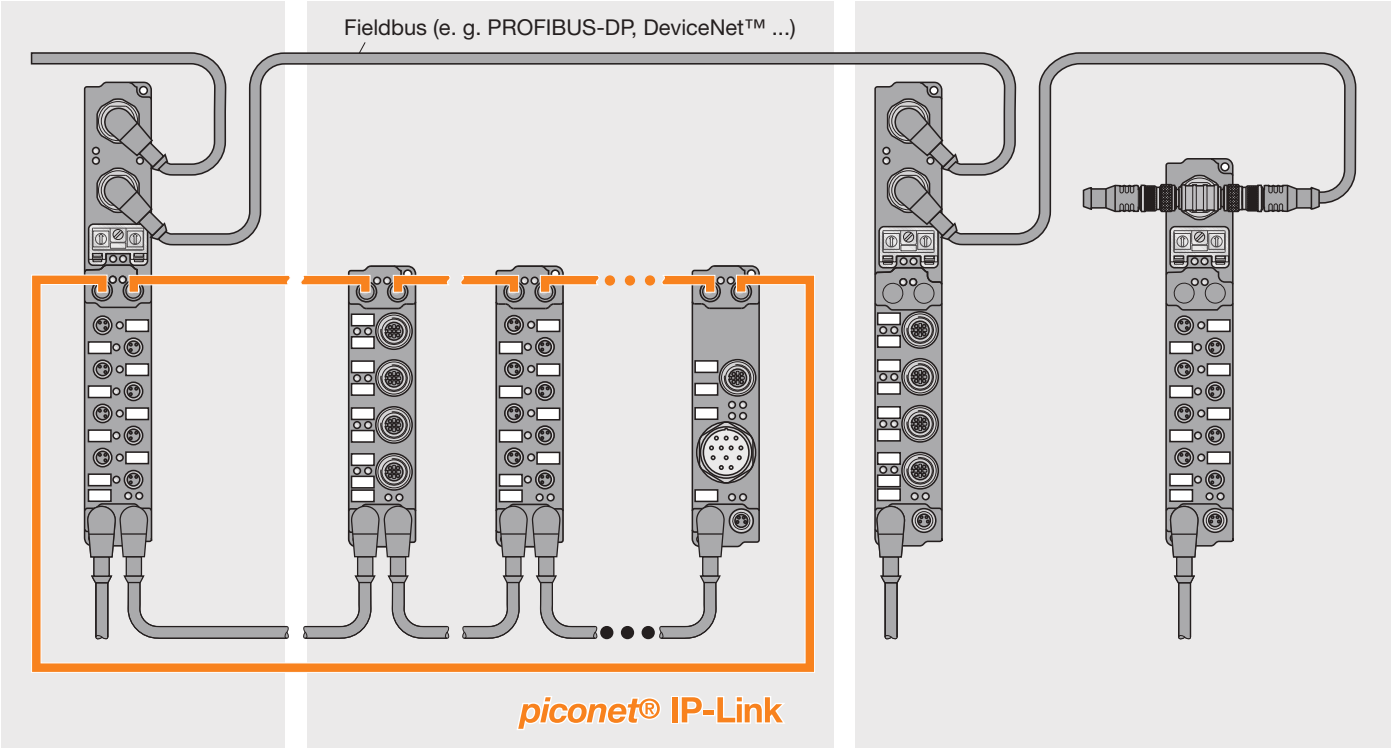
In order to ensure that the addressing area always starts at the beginning of a byte, so-called filler bits (unused/idle) are inserted into the process image when the byte alignment option is activated.

Word alignment

In order to ensure that the addressing area always starts at the beginning of a word, so-called filler bytes (unused/idle) are inserted into the process image when the word alignment option is activated.

piconet® – Overview of module types and functions

piconet® – Configuration options



Coupling module (Gateway) **Extension modules** **Stand-alone modules**

Coupling modules (Gateway)

Fieldbus type	Module type	Digital modules – Description	I/O connection	Bus connect.	Ident-No.	Page
PROFIBUS-DP	SDPL-0404D-0003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824173	144
PROFIBUS-DP	SDPL-0404D-0004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824175	144
PROFIBUS-DP	SDPL-0404D-1003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	2 × M12	6824450	144
PROFIBUS-DP	SDPL-0404D-1004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	2 × M12	6824451	144
DeviceNet™	SDNL-0404D-0003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824227	146
DeviceNet™	SDNL-0404D-0004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824225	146
DeviceNet™	SDNL-0404D-1003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	2 × M12	6824457	146
DeviceNet™	SDNL-0404D-1004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	2 × M12	6824453	146
CANopen	SCOL-0404D-0003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824221	148
CANopen	SCOL-0404D-0004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824219	148
CANopen	SCOL-0404D-1003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	2 × M12	6824454	148
CANopen	SCOL-0404D-1004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	2 × M12	6824456	148
INTERBUS	SIBL-0404D-0003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824224	150
INTERBUS	SIBL-0404D-0004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824222	150
Modbus TCP	SENL-0404D-0003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × RJ45	6824242	152
Modbus TCP	SENL-0404D-0004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × RJ45	6824240	152
Modbus TCP	SENL-0404D-0001	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824480	152
Modbus TCP	SENL-0404D-0002	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824481	152
EtherNet/IP	SIPL-0404D-0003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824472	154
EtherNet/IP	SIPL-0404D-0004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824471	154
PROFINET	SPNL-0404D-0003	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824478	156
PROFINET	SPNL-0404D-0004	4 inputs and 4 outputs, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824477	156

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Extension modules for IP-Link

Module type	Digital modules – Description	I/O connection	Ident-No.	Page
SNNE-0800D-0007	8 inputs, 24 VDC, filter 3,0 ms	8 × M8	6824204	160
SNNE-0800D-0004	8 inputs, 24 VDC, filter 3,0 ms	4 × M12	6824203	160
SNNE-0800D-0008	8 inputs, 24 VDC, filter 0.2 ms	8 × M8	6824206	162
SNNE-0800D-0002	8 inputs, 24 VDC, filter 3,0 ms	4 × M12	6824202	162
SNNE-0008D-0006	8 outputs, 24 VDC, 0.5 A	8 × M8	6824185	164
SNNE-0008D-0001	8 outputs, 24 VDC, 0.5 A	4 × M12	6824178	164
SNNE-0008D-0002	8 outputs, 24 VDC, 2 A (I_{Σ} = 4 A)	8 × M8	6824179	166
SNNE-0008D-0003	8 outputs, 24 VDC, 2 A (I_{Σ} = 4 A)	4 × M12	6824181	166
SNNE-0008D-0004	8 outputs, 24 VDC, 2 A (I_{Σ} = 12 A)	8 × M8	6824182	168
SNNE-0008D-0005	8 outputs, 24 VDC, 2 A (I_{Σ} = 12 A)	4 × M12	6824184	168
SNNE-0016D-0001	16 outputs, 24 VDC, 0,5 A (I_{Σ} = 4 A)	SUB-D	6824468	170
SNNE-0016D-0002	16 outputs, 24 VDC, 0,5 A (I_{Σ} = 4 A), autoreset	SUB-D	6824476	170
SNNE-0404D-0003	4 inputs and 4 outputs,, 24 VDC, 0,5 A, Filter 3.0 ms	8 × M8	6824191	172
SNNE-0404D-0004	4 inputs and 4 outputs,, 24 VDC, 0,5 A, Filter 3.0 ms	4 × M12	6824193	172
SNNE-0404D-0001	4 inputs and 4 outputs,, 24 VDC, 0,5 A, Filter 0.2 ms	8 × M8	6824188	174
SNNE-0404D-0002	4 inputs and 4 outputs,, 24 VDC, 0,5 A, Filter 0.2 ms	4 × M12	6824190	174
SNNE-0404D-0007	4 inputs and 4 outputs,, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 3.0 ms	8 × M8	6824197	176
SNNE-0404D-0008	4 inputs and 4 outputs,, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 3.0 ms	4 × M12	6824199	176
SNNE-0404D-0005	4 inputs and 4 outputs,, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 0.2 ms	8 × M8	6824194	178
SNNE-0404D-0006	4 inputs and 4 outputs,, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 0.2 ms	4 × M12	6824196	178
SNNE-0808D-0001	8 inputs and 8 outputs, 24 VDC, 0,5 A, Filter 3.0 ms	8 × M8	6824208	180
SNNE-0808D-0003	8 inputs and 8 outputs, 24 VDC, 0,5 A, Filter 3.0 ms	IP20 terminals	6824473	182

Module type	Analogue modules – Description	I/O connection	Ident-No.	Page
SNNE-40A-0005	4 analogue differential inputs, ±10 V, 16 bit	4 × M12	6824216	184
SNNE-40A-0007	4 analogue differential inputs, 0/4...20 mA, 16 bit	4 × M12	6824217	186
SNNE-40A-0009	4 analogue inputs for Pt100 (RTD)	4 × M12	6824176	188
SNNE-40A-0004	4 analogue inputs for thermoelements	4 × M12	6824215	190
SNNE-04A-0007	4 analogue outputs, ±10 V, 16 Bit	4 × M12	6824200	192
SNNE-04A-0009	4 analogue outputs, 0…20 mA, 16 Bit	4 × M12	6824201	194

Module type	Technology modules – Description	I/O connection	Ident-No.	Page
SNNE-0002D-0002	2-channel pulse width modulation, 24 VDC, 2.5 A	2 × M12	6824177	196
SNNE-0202D-0003	2-channel up/down counter, 24 VDC, 100 kHz	2 × M12	6824187	198
SNNE-10S-0001	1-channel incremental encoder interface	1 × M12, 1 × M23	6824210	200
SNNE-10S-0002	1-channel serial interface RS232	1 × M12	6824211	202
SNNE-10S-0003	1-channel serial interface 0…20 mA (TTY)	1 × M12	6824212	204
SNNE-10S-0004	1-channel serial interface RS422/485	1 × M12	6824213	206
SNNE-10S-0005	1-channel SSI encoder interface	1 × M23	6824214	208

Module type	FESTO valve terminal – Description	Ident-No.	Page
CPV10-VI-IP8-8	8 valve discs with max. 16 valve coils, size per valve disc 10 mm	[1])	210
CPV14-VI-IP8-8	8 valve discs with max. 16 valve coils, size per valve disc 14 mm	[1])	210

[1]) the CPV valve terminal is exclusively sold by the company FESTO AG & Co

piconet® – Overview of module types and functions

Stand-alone-Module für PROFIBUS-DP

Module type	Digital modules – Description	I/O connection	Bus connect.	Ident-No.	Page
SDPB-0800D-0007	8 inputs, 24 VDC, filter 3.0 ms	8 × M8	1 × M12	6824058	214
SDPB-0800D-0004	8 inputs, 24 VDC, filter 3.0 ms	4 × M12	1 × M12	6824071	214
SDPB-0800D-1007	8 inputs, 24 VDC, filter 3.0 ms	8 × M8	2 × M12	6824409	214
SDPB-0800D-1004	8 inputs, 24 VDC, filter 3.0 ms	4 × M12	2 × M12	6824410	214
SDPB-0800D-0008	8 inputs, 24 VDC, filter 0.2 ms	8 × M8	1 × M12	6824048	216
SDPB-0800D-0002	8 inputs, 24 VDC, filter 0.2 ms	4 × M12	1 × M12	6824070	216
SDPB-0800D-1008	8 inputs, 24 VDC, filter 0.2 ms	8 × M8	2 × M12	6824407	216
SDPB-0800D-1002	8 inputs, 24 VDC, filter 0.2 ms	4 × M12	2 × M12	6824412	216
SDPB-0008D-0006	8 outputs, 24 VDC, 0.5 A	8 × M8	1 × M12	6824057	218
SDPB-0008D-0001	8 outputs, 24 VDC, 0.5 A	4 × M12	1 × M12	6824061	218
SDPB-0008D-1006	8 outputs, 24 VDC, 0.5 A	8 × M8	2 × M12	6824415	218
SDPB-0008D-1001	8 outputs, 24 VDC, 0.5 A	4 × M12	2 × M12	6824416	218
SDPB-0008D-0002	8 outputs, 24 VDC, 2 A (I_{Σ} = 4 A)	8 × M8	1 × M12	6824056	220
SDPB-0008D-0003	8 outputs, 24 VDC, 2 A (I_{Σ} = 4 A)	4 × M12	1 × M12	6824063	220
SDPB-0008D-1002	8 outputs, 24 VDC, 2 A (I_{Σ} = 4 A)	8 × M8	2 × M12	6824405	220
SDPB-0008D-1003	8 outputs, 24 VDC, 2 A (I_{Σ} = 4 A)	4 × M12	2 × M12	6824418	220
SDPB-0008D-0004	8 outputs, 24 VDC, 2 A (I_{Σ} = 12 A)	8 × M8	1 × M12	6824064	222
SDPB-0008D-0005	8 outputs, 24 VDC, 2 A (I_{Σ} = 12 A)	4 × M12	1 × M12	6824066	222
SDPB-0008D-1004	8 outputs, 24 VDC, 2 A (I_{Σ} = 12 A)	8 × M8	2 × M12	6824420	222
SDPB-0008D-1005	8 outputs, 24 VDC, 2 A (I_{Σ} = 12 A)	4 × M12	2 × M12	6824421	222
SDPB-0404D-0003	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 3.0 ms	8 × M8	1 × M12	6824114	224
SDPB-0404D-0004	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 3.0 ms	4 × M12	1 × M12	6824115	224
SDPB-0404D-1003	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 3.0 ms	8 × M8	2 × M12	6824423	224
SDPB-0404D-1004	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 3.0 ms	4 × M12	2 × M12	6824424	224
SDPB-0404D-0001	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 0.2 ms	8 × M8	1 × M12	6824049	226
SDPB-0404D-0002	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 0.2 ms	4 × M12	1 × M12	6824113	226
SDPB-0404D-1001	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 0.2 ms	8 × M8	2 × M12	6824426	226
SDPB-0404D-1002	4 inputs and 4 outputs, 24 VDC, 0.5 A, filter 0.2 ms	4 × M12	2 × M12	6824427	226
SDPB-0404D-0007	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 3.0 ms	8 × M8	1 × M12	6824119	228
SDPB-0404D-0008	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 3.0 ms	4 × M12	1 × M12	6824111	228
SDPB-0404D-1007	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 3.0 ms	8 × M8	2 × M12	6824429	228
SDPB-0404D-1008	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 3.0 ms	4 × M12	2 × M12	6824430	228
SDPB-0404D-0005	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 0.2 ms	8 × M8	1 × M12	6824116	230
SDPB-0404D-0006	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 0.2 ms	4 × M12	1 × M12	6824118	230
SDPB-0404D-1005	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 0.2 ms	8 × M8	2 × M12	6824432	230
SDPB-0404D-1006	4 inputs and 4 outputs, 24 VDC, 2 A (I_{Σ} = 4 A), Filter 0.2 ms	4 × M12	2 × M12	6824433	230
SDPB-0808D-0001	8 inputs and 8 outputs, 24 VDC, 0.5 A, Filter 3.0 ms	8 × M8	1 × M12	6824167	232
SDPB-0808D-1001	8 inputs and 8 outputs, 24 VDC, 0.5 A, Filter 3.0 ms	8 × M8	2 × M12	6824435	232

In addition to the stand-alone modules for PROFIBUS-DP there are also Stand-alone modules for DeviceNet™ and CANopen available. More information on availability of various signal types can be obtained directly from TURCK.

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Module type	Analogue modules – Description	I/O connection	Bus connect.	Ident-No.	Page
SDPB-40A-0005	4 analogue differential inputs, ±10 V, 16 bit	4 × M12	1 × M12	6824051	234
SDPB-40A-1005	4 analogue differential inputs, ±10 V, 16 bit	4 × M12	2 × M12	6824438	234
SDPB-40A-0007	4 analogue differential inputs, 0/4…20 mA	4 × M12	1 × M12	6824052	236
SDPB-40A-1007	4 analogue differential inputs, 0/4…20 mA	4 × M12	2 × M12	6824439	236
SDPB-40A-0009	4 analogue inputs for Pt100 (RTD)	4 × M12	1 × M12	6824040	238
SDPB-40A-1009	4 analogue inputs for Pt100 (RTD)	4 × M12	2 × M12	6824440	238
SDPB-40A-0004	4 analogue inputs for thermoelements	4 × M12	1 × M12	6824050	240
SDPB-40A-1004	4 analogue inputs for thermoelements	4 × M12	2 × M12	6824441	240
SDPB-04A-0007	4 analogue outputs, ±10 V, 16 bit	4 × M12	1 × M12	6824069	242
SDPB-04A-1007	4 analogue outputs, ±10 V, 16 bit	4 × M12	2 × M12	6824443	242
SDPB-04A-0009	4 analogue outputs, 0…20 mA, 16 bit	4 × M12	1 × M12	6824059	244
SDPB-04A-1009	4 analogue outputs, 0…20 mA, 16 bit	4 × M12	2 × M12	6824442	244

Module type	Technology modules – Description	I/O connection	Bus connect.	Ident-No.	Page
SDPB-0002D-0002	2-channel pulse width modulation, 24 VDC, 2.5 A	2 × M12	1 × M12	6824060	246
SDPB-0002D-1002	2-channel pulse width modulation, 24 VDC, 2.5 A	2 × M12	2 × M12	6824437	246
SDPB-0202D-0003	2-channel up/down counter, 24 VDC, 100 kHz	2 × M12	1 × M12	6824068	248
SDPB-0202D-1003	2-channel up/down counter, 24 VDC, 100 kHz	2 × M12	2 × M12	6824413	248
SDPB-10S-0001	1-channel incremental encoder interface	1 × M12, 1 × M23	1 × M12	6824074	250
SDPB-10S-1001	1-channel incremental encoder interface	1 × M12, 1 × M23	2 × M12	6824445	250
SDPB-10S-0002	1-channel serial interface RS232	2 × M12	1 × M12	6824075	252
SDPB-10S-1002	1-channel serial interface RS232	2 × M12	2 × M12	6824446	252
SDPB-10S-0003	1-channel serial interface 0…20 mA (TTY)	2 × M12	1 × M12	6824076	254
SDPB-10S-1003	1-channel serial interface 0…20 mA (TTY)	2 × M12	2 × M12	6824447	254
SDPB-10S-0004	1-channel serial interface RS422/485	2 × M12	1 × M12	6824077	256
SDPB-10S-1004	1-channel serial interface RS422/485	2 × M12	2 × M12	6824448	256
SDPB-10S-0005	1-channel SSI encoder interface	1 × M23	1 × M12	6824078	258
SDPB-10S-1005	1-channel SSI encoder interface	1 × M23	2 × M12	6824444	258

piconet® – Special accessories

piconet® – Special accessories	Page
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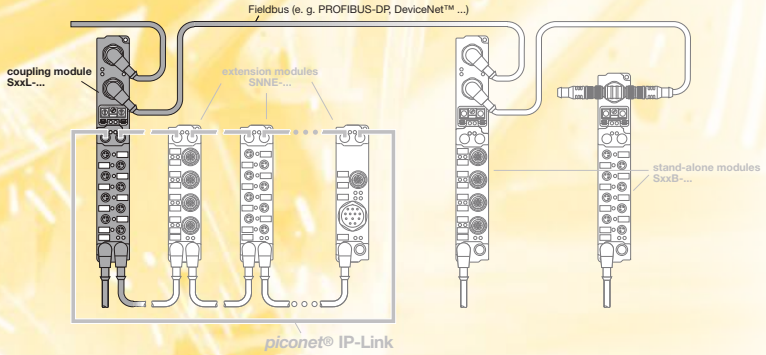

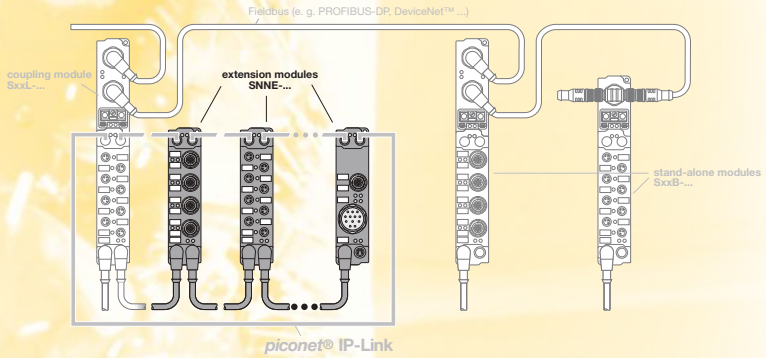

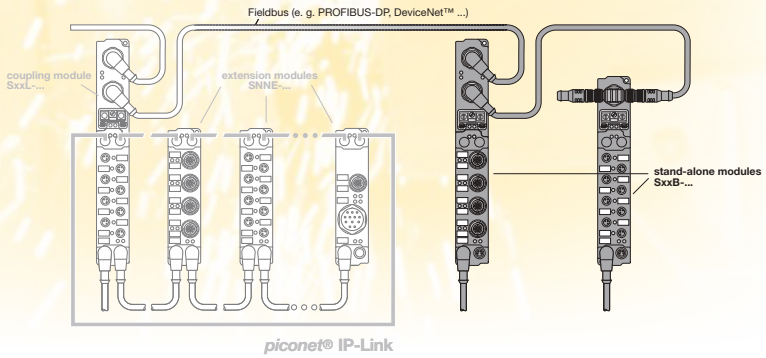

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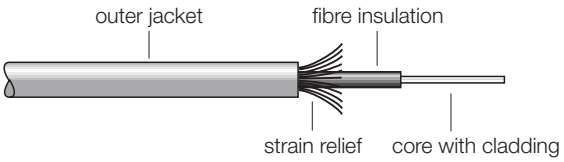
piconet® – Special accessories

piconet® – technical data of fibre-optic cables "IP-Link"



⚠ ATTENTION:
For detailed assembly instructions concerning the IP-Link fiber optic cables, please refer to the "*piconet*® - User manual I/O modules" i.e. the mounting instructions of the IP-Link connector SFOC-0002-10

Profile Material fibre core Material fibre jacket Material fibre insulation Material strain relief Material outer jacket	step index PMMA, Ø 980 µm PMMA, Ø 1000 µm PE, colour black, Ø 2.2 mm Aramid (Kevlar) PUR, colour orange, Ø 5.5 ± 0.2 mm
Application	for stationary installation in the machine sector, in cable dutcs and conduits on cable racks for flexible use in robot applications with slight dynamic strain for use in trailing cables
Transmission characteristics – Attenuation at 650 nm	 typ. 170…180 dB/km, max. 200 dB/km
Numerical aperture	0.5
Mechanical features – Bending radius, static – Bending radius, dynamic – Bending radius, trailing chain	 min. 50 mm min. 10 × outer diameter min. 10 × outer diameter (approx. 2 milion cycles)
Chemical features	very good resistance to oils, fat, acids, alkalis long-term installation in water not admissible
Operating temperature Storage temperature	-20…+ 70 °C -40…+ 70 °C
Flammability	flame-retardent halogen-free to IEC 60754-2A1:1997, no corrosive and toxic gases

piconet® – premoulded IP-Link fibre-optic cables

Figure	Description	Type	Ident-No.
	fibre-optic cable, 0.2 m, trailing capable	**SFOL-0,2M**	6603379
	fibre-optic cable, 0.25 m, trailing capable	**SFOL-0,25M**	6603750
	fibre-optic cable, 0.3 m, trailing capable	**SFOL-0,3M**	6603382
	fibre-optic cable, 0.5 m, trailing capable	**SFOL-0,5M**	6603383
	fibre-optic cable, 1 m, trailing capable	**SFOL-1M**	6603384
	fibre-optic cable, 2 m, trailing capable	**SFOL-2M**	6603385
	fibre-optic cable, 3 m, trailing capable	**SFOL-3M**	6611279
	fibre-optic cable, 5 m, trailing capable	**SFOL-5M**	6603386
	fibre-optic cable, 10 m, trailing capable	**SFOL-10M**	6611280
	fibre-optic cable, 15 m, trailing capable	**SFOL-15M**	6611281

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piconet® – IP-Link fibre-optic bulk cable

Figure	Description	Type	Ident-No.
	Fibre-optic cable, bulk cable, x = length in metres Fiber-optic cable reel, 500 m	**SFOF-xM** **SFOF-500M-ROLLE**	6603393 6611086

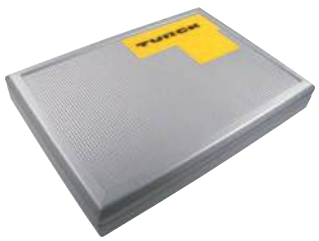
piconet® – Field-wireable IP-Link connector

Figure	Description	Type	Ident-No.
	The new IP-Link connector makes assembling the fiber optic cable considerably easier. PVC grip. The fiber optic cable is locked with a terminal clamp made of die-cast zinc. The cable is strongly fixated by pushing the terminal clamp in the connector. Degree of protection IP67. (10 pcs. per pack)	**SFOC-0002-10**	6604094

piconet® – Fibre-optic cable IP-Link – Grinding gauge

Figure	Description	Type	Ident-No
	The front face of the prefabricated fiber-optic cable is optimally processed with the grinding gauge.	**LWL-SL-SFOC-0002**	6901180

piconet® Fibre-optic cable IP-Link – Assembly kit

Figure	Description	Type	Ident-No.
	The fiber-optic assembly kit is the ideal tool for all users who want to assemble the fiber-optic cables for the *piconet*® sub-system IP-Link themselves. Content: 1 cable stripper 1 diagonal cutter 1 grinding gauge for connector type SFOC-0002 1 sand paper, grain size 600 1 mounting guidelines	**LWL-KS-SFOC-0002**	6901181

piconet® – Special accessories

piconet® – Fibre-optic cable IP-Link – Measuring device

Figure	Description	Type	Ident-No.
	The optical measuring device determines the light intensity and the degree of attenuation produced by the fibre-optic cable IP-Link by using a stabilized light source. The integrated microprocessor enables the measuring of wave lengths of 590 nm which are displayed either as µW or dBm. Zero calibration is automatically started after switching on the device.	**LWL-MG**	6901182

piconet® – Fibre-optic cable IP-Link – Bridge

Figure	Description	Type	Ident-No.
	The IP-Link bridge provides considerable mounting comfort, especially for compact mounting of the extension modules. The flexible centerpiece of the jumper enables the line up of extension modules at a distance between 0 and 5 mm. If the optional DIN rail SNNE-RAIL500 with M3 drills is used, the time for mounting is further reduced. Degree of protection IP67.	**SFOB-0001**	6603817

piconet® – Power bridge

Figure	Description	Type	Ident-No.
	The power bridge eases assembly of extension modules, especially for compact mounting of the extension modules. If the optional DIN rail SNNE-RAIL500 with M3 threaded holes is used, the time for mounting is further reduced. Degree of protection IP67. Further information about power cables is provided in the chapter General Accessories.	**PKG4M-0,12-PSG4M/TXL**	6627043

piconet® – DIN rail

Figure	Description	Type	Ident-No.
	The DIN rail with M3 threaded holes for quick mounting of *piconet*® extension modules is optional and made of stainless steel (V2A). Up to 15 extension modules can be lined up in a distance of 2 mm. Direct mounting on the machine with M5 screws is possible. 129 mm × 500 mm × 1.5 mm (H × W × D)	**SNNE-RAIL500**	6824470

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piconet® – IP20 terminal blocks

Figure	Description	Type	Ident-No.
	Single-row terminal block with 10 terminals for 8 I/O channels, "Push-in" technology for tool free connections, clear display of signal status via LEDs, degree of protection IP20. For usage in combination with *piconet*® extension module SNNE-0808D-0003.	**SNNE-BL I/O 3,5-10/LED-SET**	6824475
	3-row terminal block with 30 terminals for 8 I/O channels, "Push in" technology for tool free connections, clear display of signal status via LEDs, degree of protection IP20 For usage in combination with *piconet*® extension modules SNNE-0808D-0003.	**SNNE-BL I/O 3,5-30/LED-SET**	6824474

piconet® – SUB-D connector IP67

Figure	Description	Type	Ident-No.
	25-pole SUB-D connector, degree of protection IP67, for cable mounting. For connection cables with outer diameter between 6 and 10mm. For usage in combination with *piconet*® extension module SNNE-0016D-000x.	**SUB-D-IP67**	6901390

piconet® – Sets

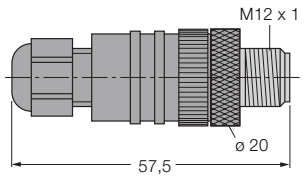
Description	Type	Ident-No.
Parts list *piconet*® set M8: 1 × M12 end cap, 9 × M8 end caps, 2 × fibre-optic cable blanking plugs 1 × frame with 10 lables, 2 × M8 blanking plugs, 1 × M12 blanking plug	***piconet*®-Set-M8**	8015078
Parts list *piconet*® set-M12: 5 × M12, 1 × M8 end caps, 2 × fibre-optic blanking plugs 1 × frame with 10 lables, 2 × M8 blanking plugs, 1 × M12 blanking plug	***piconet*®-Set-M12**	8015076

piconet® – Planning and configuration software I/O-ASSISTANT and adapter cable

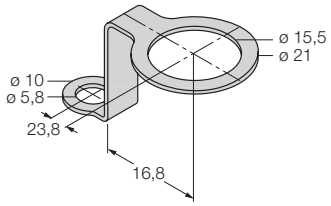
Figure	Description	Type	Ident-No.
	RS232 adapter cable	**I/O-ASSISTANT-KABEL-PICONET**	6824399
	Planning and configuration software	**SW-I/O-ASSISTANT**	freeware for download on: http://www.turck.com

piconet® – Special accessories

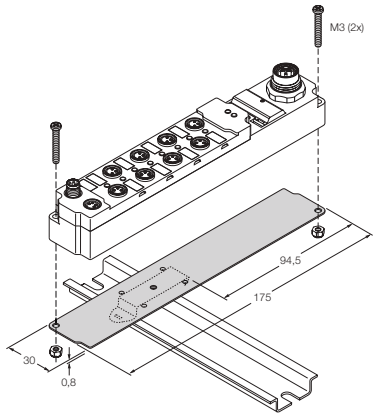
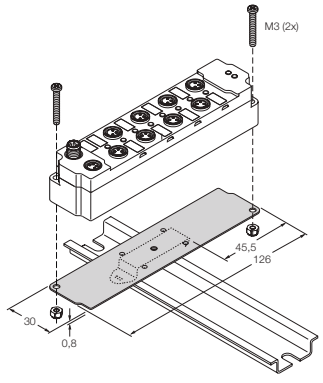
piconet® – Thermoelement compensation connector

Figure	Description	Type	Ident-No.
	Thermoelement compensation connector, M12 × 1	**WAS5-THERMO**	6824260

Earthing clip for *piconet*® modules

Figure	Description	Type	Ident-No.
	Earthing clip for *piconet*® modules	**EL-0002**	8030476

Mounting plate for *piconet*® housings to be mounted on a DIN-rail (hat-rail)

Figure	Description	Type	Ident-No.
	Mounting plate for mounting the *piconet*® coupling and stand-alone modules (housing length: 175 mm) on a hat-rail. Mounting instructions: 1. Module carrier clip (1) with base plate (2) to be fixed via a blind rivet (included in delivery) 2. Housing base plate to be mounted on the module via screws and coupling nuts (included in delivery). 3. Finally let the module snap on the hat-rail via the module carrier clip.	**S-BKT1**	6603930
	Mounting plate for mounting *piconet*® extension modules (housing length: 126 mm) on a hat-rail. Mounting instructions: 1. Module carrier clip (1) and base plate (2) to be fixed via a blind rivet (included in delivery) 2. Housing base plate to be mounted on the module via screws and coupling nuts (included in delivery). 3. Finally let the module snap on the hat-rail via the module carrier clip.	**S-BKT2**	6603931

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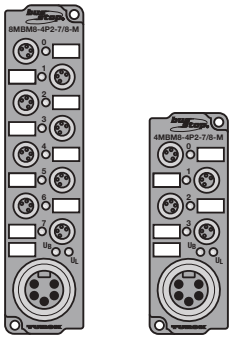
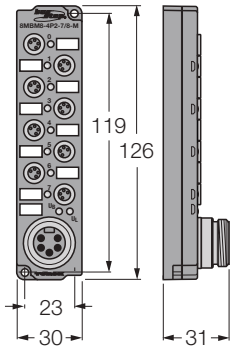
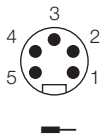
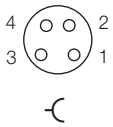
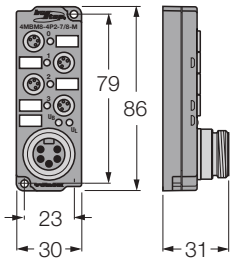
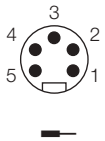
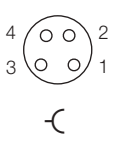
piconet® – Power junction boxes



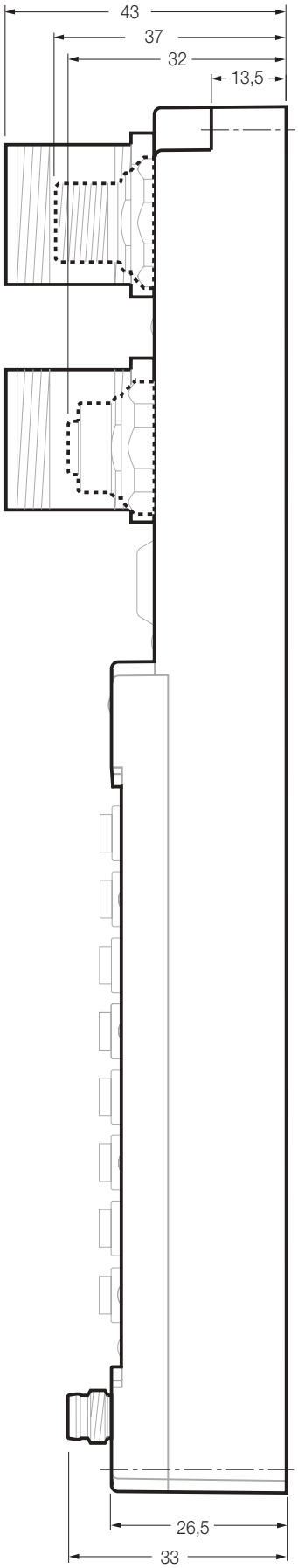
- Power junction for *piconet*® stations
- Robust and fully encapsulated polyamide housing

⚠ ATTENTION:
piconet® power junctions may be powered with a current of max. 9 A each. A maximum of 4 A can be drawn from the power junction per channel. The junctions have to be protected with correspondent fuse elements at the power connector (7/8") and the outputs (M8)!

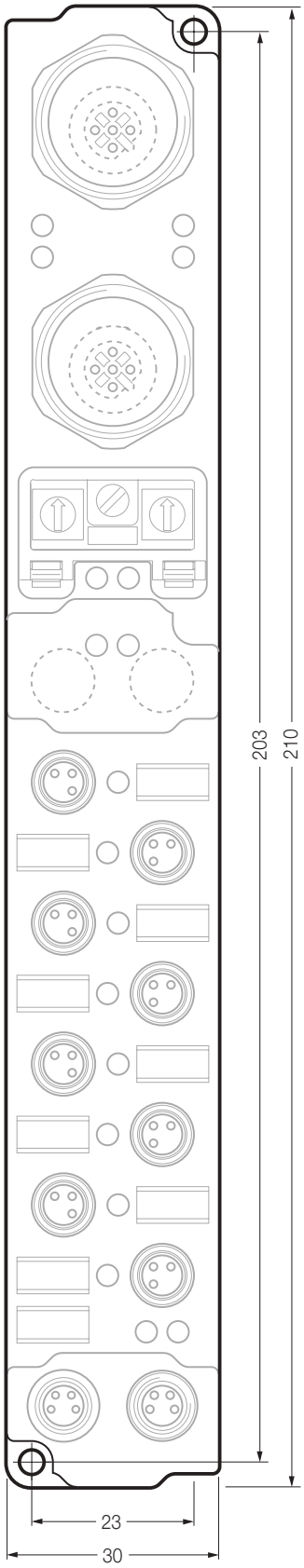
Type/Ident-No.	Description	Pin configuration
8MBM8-4P2-7/8-M Ident-No. 8017216 	8-port power junction – max. 4 A per channel – small housing style – fully encapsulated plastic housing – degree of protection IP67	 1 = GND 2 = GND 3 = PE 4 = 24 VDC U_B 5 = 24 VC U_L (I_{max} = 9 A) System 7/8"  1 = 24 VDC U_B 2 = 24 VDC U_L (I_{max} = 4 A) 3 = GND 4 = GND System M8 × 1
4MBM8-4P2-7/8-M Ident-No. 8017217 	4-port power junction – max. 4 A per channel – small housing style – fully encapsulated plastic housing – degree of protection IP67	 1 = GND 2 = GND 3 = PE 4 = 24 VDC U_B 5 = 24 VDC U_L (I_{max} = 9 A) System 7/8"  1 = 24 VDC U_B 2 = 24 VDC U_L (I_{max} = 4 A) 3 = GND 4 = GND System M8 × 1

piconet® – Module dimensions (Drilling Templates)

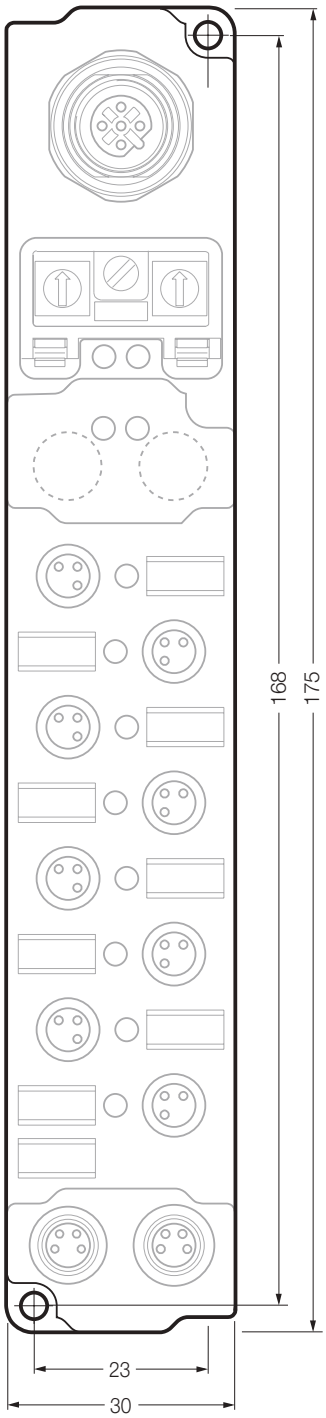
Side view



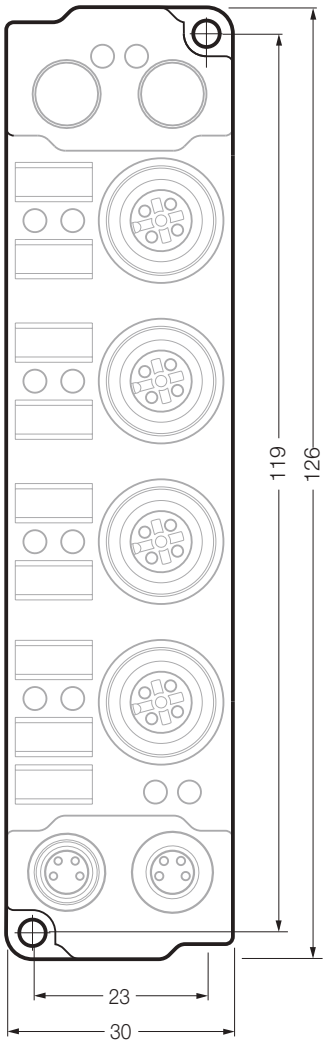
Coupling and stand-alone modules



Coupling and stand-alone modules



Extension modules



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piconet® – Coupling modules

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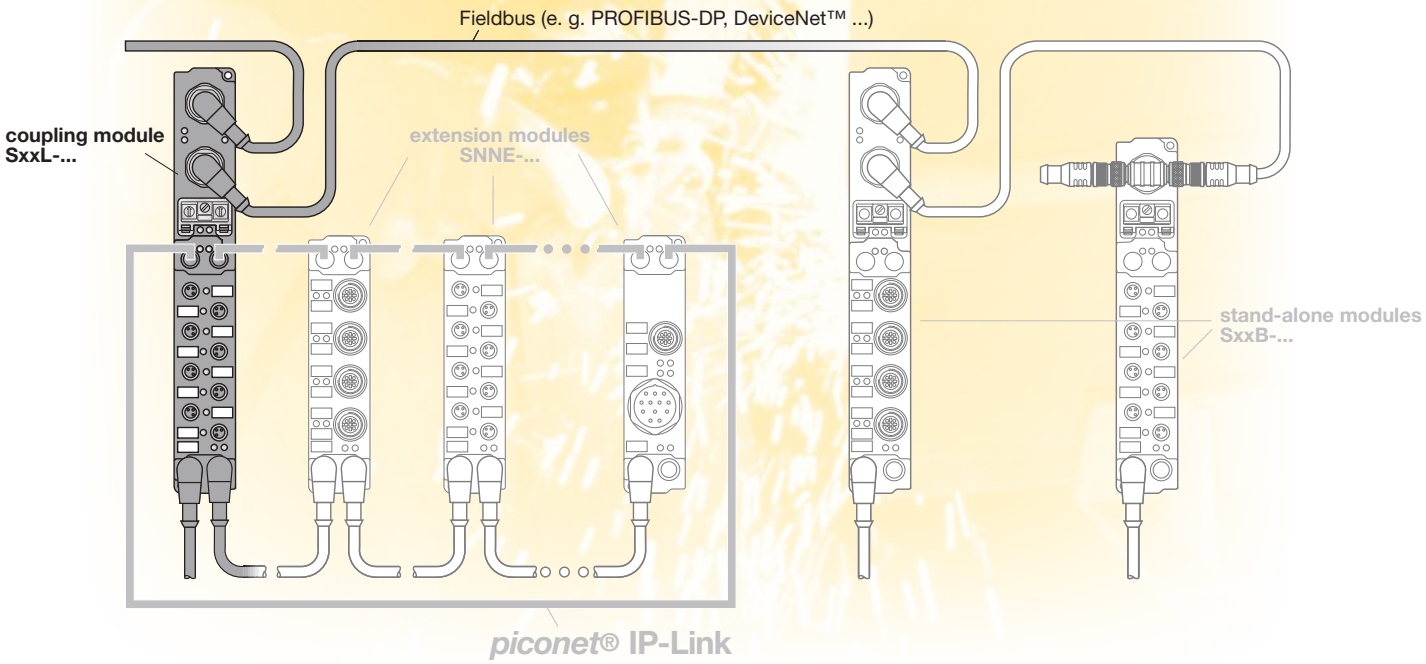
PROFIBUS-DP	144
DeviceNet™	146
CANopen	148
INTERBUS	150
Modbus TCP	152
EtherNet/IP™	154
PROFINET IO	156



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piconet® – Coupling modules

piconet® coupling modules are the gateway between the higher level fieldbus (e.g. PROFIBUS-DP, DeviceNet™, CANopen, INTERBUS, Modbus TCP, EtherNet/IP™ and PROFINET IO) and the fibre-optic based *piconet*® sub-bus "IP-Link". Depending on the type of coupling module, they are equipped with one or two fieldbus connections and two further connectors for connection to the *piconet*® IP-Link.

On basis of the IP-Link, it is possible to construct a modular network, for operation of up to 120 extension modules per coupling module.

The coupling module collects the I/O data of the connected extension modules via the interference immune and fast (2 Mbps) IP-Link network.

The transmission time for 1,000 I/Os is approx. 1 ms – if less data are transferred the transmission speed is even higher. The maximum fibre-optic cable length is 15 m.

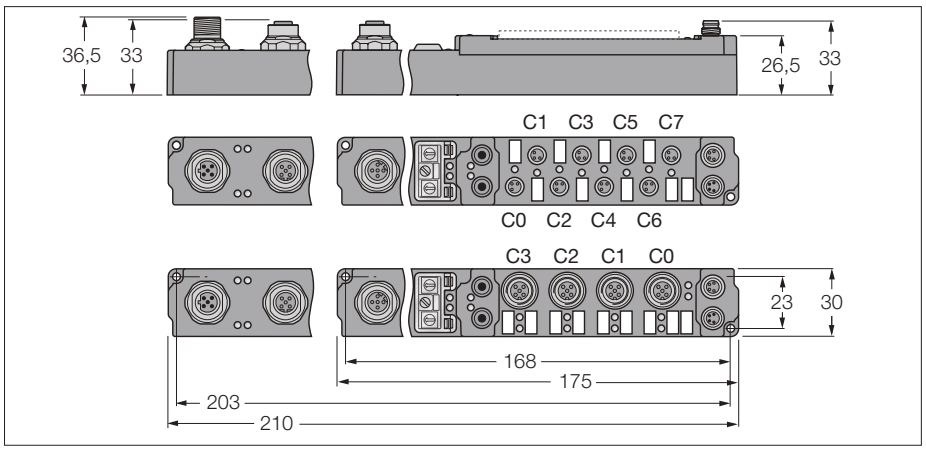
The robust IP67 housing is extremely compact, fully encapsulated and equipped throughout with metal connectors. As a result, our *piconet*® modules are suited for application both in rough industrial environments as well as in space-critical applications in serial and special machine engineering. Operating and load voltage are – as with all *piconet*® module types – fed separately. Alongside the "Power" LED, each channel is assigned a "Status" LED for switching status indications.

piconet® – coupling modules – general technical data

Adjustment	
Fieldbus address	1…99 (decimal), adjustable via coded rotary switches
Transmission rate	automatic
LED indications (module-specific)	
Fieldbus	fieldbus specific (s. manual)
Status IP-Link or module (local errors)	
– green LED flashing/ON – red LED OFF:	receipt of error-free IP-Link protocols
– green LED flashing/red LED flashing:	receipt of faulty IP-Link protocols (must not lead to a system error)
– green LED OFF/red LED flashing:	receipt of faulty IP-Link protocols
– green LED OFF/red LED ON:	no data transfer via the IP-Link or module error
Operating voltage U_B	green: operational
Load voltage U_L	green: operational
Connections	brass, nickel-plated
Fieldbus	depending on the type of fieldbus system used
IP-Link	(2) IP-Link female connectors
Length of fibre-optic cable	max. 15 m
Power supply	(1) M8 male connectors, 4-pole, (1) M8 female connectors, 4-pole
Inputs/outputs	selectable: (8) M8 female connectors, 3-pole, or (4) M12 female connectors, 5-pole
Service interface	(1) terminal strip, 5-pole (for I/O-ASSISTANT)
Housing	compact, fully encapsulated plastic housing
Material	PA6 (Polyamid)
Dimensions – device with 1 fieldbus connection	175 × 30 × 26.5 mm (H × W × D)
Dimensions – device with 2 fieldbus connections	210 × 30 × 26.5 mm (H × W × D)
Mounting	via 2 through-holes, Ø 3 mm
Mounting position	any
Operating temperature (range)	0 °C to +55 °C (+32 °F to +131 °F)
Operating temperature (storage)	-25 °C to +85 °C (-13 °F to +185 °F)
Degree of protection (IEC 60529/EN 60529)	IP65, IP66, IP67
Vibration and shock testing	according to IEC 68, part 2-6 / IEC 68, part 2-27
Electromagnetic capability (EMC)	according to EN 50081-2/EN 50082-2
Weight	approx. 250–280 g (depending on type)
Approvals	CE, cULus LISTED

Please note: further technical information is contained in the *piconet*® user manuals.

piconet® coupling module for PROFIBUS-DP
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of Protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 100 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	Fieldbus to operational voltage
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Byte alignment disabled (default). Up to 4 bit input and 4 bit output data are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4
Byte alignment enabled. Up to 8 bit input data and 8 bit output data are mapped.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	idle	idle	idle	idle
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	idle	idle	idle	idle

C… = Connector No. – P… = Pin No.

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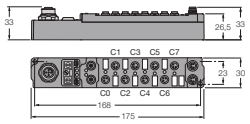
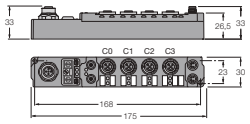
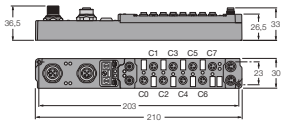
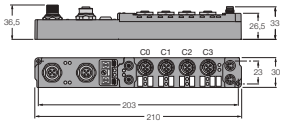
piconet® coupling module for PROFIBUS-DP
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

TURCK
Industrial Automation

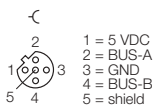
Device types

Dimensions	Type	Connection
	6824173 SDPL-0404D-0003	F083, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824175 SDPL-0404D-0004	F083, F117, F118, F081
Dimensions	**Type**	**Connection**
	6824450 SDPL-0404D-1003	F084, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824451 SDPL-0404D-1004	F084, F117, F118, F081

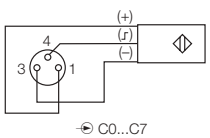
3

Connection

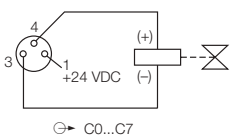
F083 - Fieldbus M12 × 1



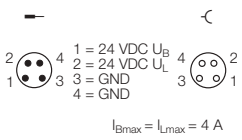
F077 - Input M8 × 1



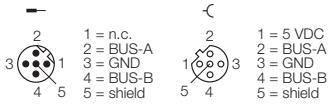
F079 - Output M8 × 1



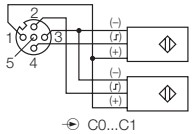
F081 - Voltage supply M8 × 1



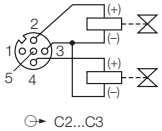
F084 - Fieldbus M12 × 1



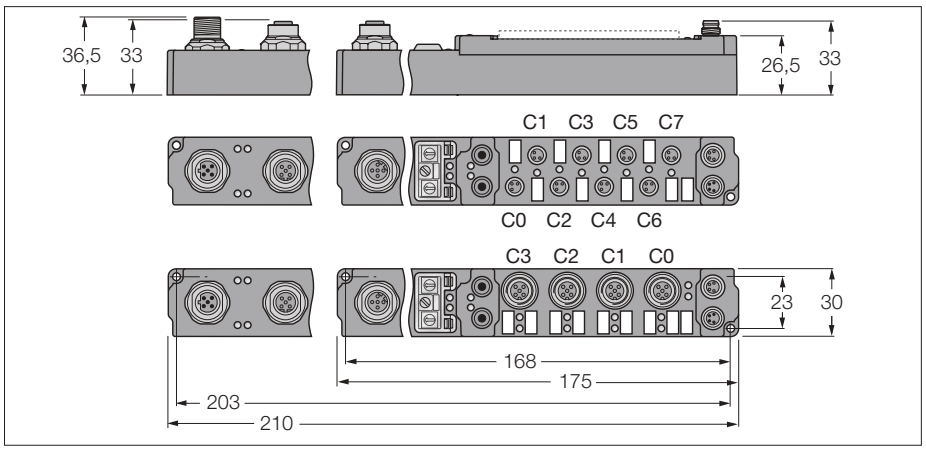
F117 - Input M12 × 1



F118 - Output M12 × 1



piconet® coupling module for DeviceNet™
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of Protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 60 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	Fieldbus to operational voltage
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Each 4 bit input and 4 bit output data are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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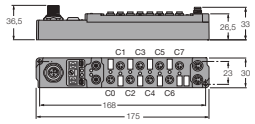
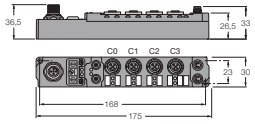
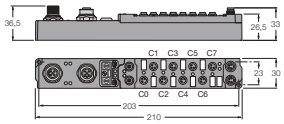
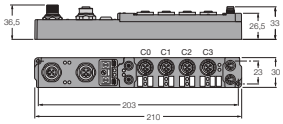
piconet® coupling module for DeviceNet™
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

Industrial Automation

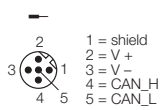
Device types

Dimensions	Type	Connection
	**6824227 SDNL-0404D-0003**	F119, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824225 SDNL-0404D-0004**	F119, F117, F118, F081
Dimensions	**Type**	**Connection**
	**6824457 SDNL-0404D-1003**	F085, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824453 SDNL-0404D-1004**	F085, F117, F118, F081

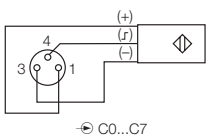
3

Connection

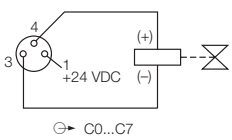
F119 - Fieldbus M12 × 1



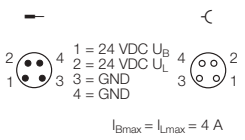
F077 - Input M8 × 1



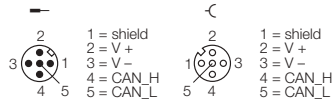
F079 - Output M8 × 1



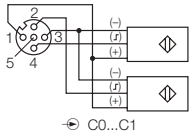
F081 - Voltage supply M8 × 1



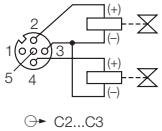
F085 - Fieldbus M12 × 1



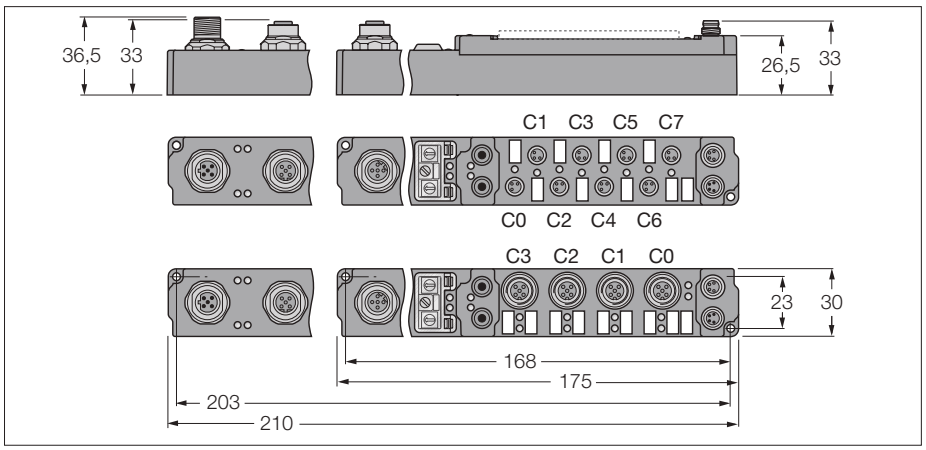
F117 - Input M12 × 1



F118 - Output M12 × 1



piconet® coupling module for CANopen
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of Protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 60 mA
Fieldbus transmission rate	10 kbps up to 1 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	Fieldbus to operational voltage
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Each 4 bit input and 4 bit output data are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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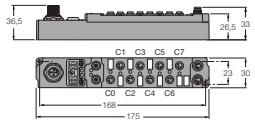
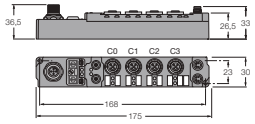
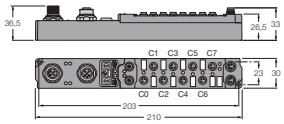
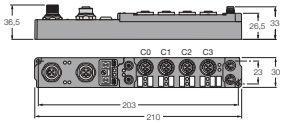
piconet® coupling module for CANopen
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

Industrial Automation

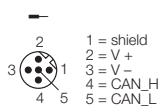
Device types

Dimensions	Type	Connection
	6824221 SCOL-0404D-0003	F119, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824219 SCOL-0404D-0004	F119, F117, F118, F081
Dimensions	**Type**	**Connection**
	6824454 SCOL-0404D-1003	F085, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824456 SCOL-0404D-1004	F085, F117, F118, F081

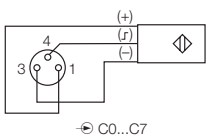
3

Connection

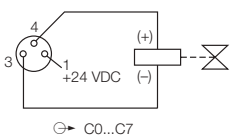
F119 - Fieldbus M12 × 1



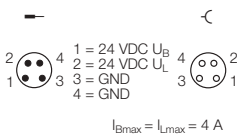
F077 - Input M8 × 1



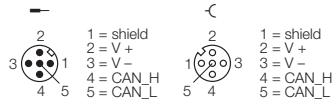
F079 - Output M8 × 1



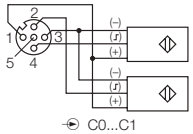
F081 - Voltage supply M8 × 1



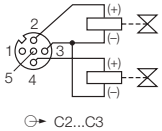
F085 - Fieldbus M12 × 1



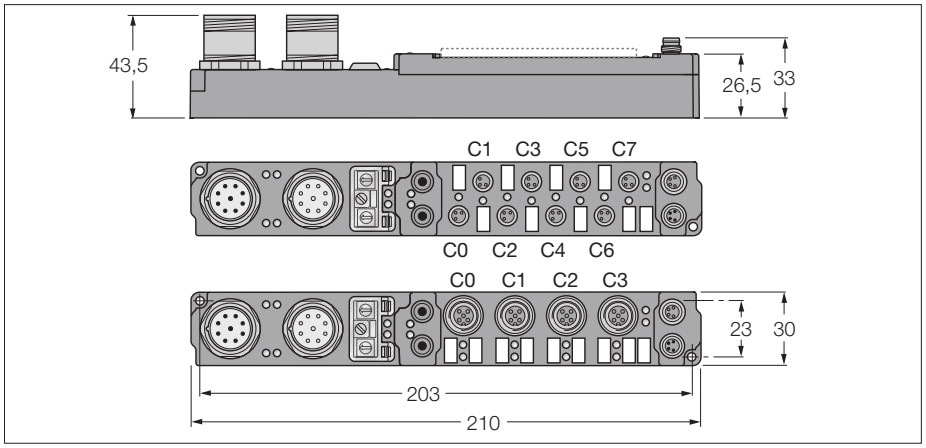
F117 - Input M12 × 1



F118 - Output M12 × 1



piconet® coupling module for INTERBUS
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of Protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 100 mA
Fieldbus transmission rate	500 kbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Each 4 bit input and 4 bit output data are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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piconet® coupling module for INTERBUS
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

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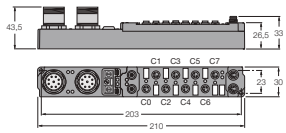
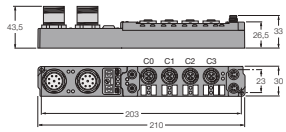
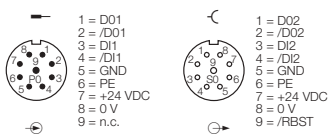
Industrial Automation

Device types

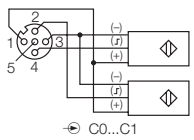
Dimensions	Type	Connection
	**6824224 SIBL-0404D-0003**	F109, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824222 SIBL-0404D-0004**	F109, F117, F118, F081

Connection

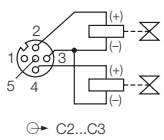
F109 - Fieldbus M23 × 1



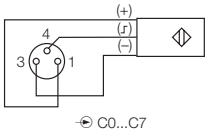
F117 - Input M12 × 1



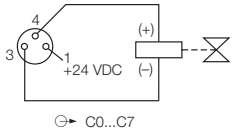
F118 - Output M12 × 1



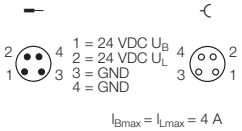
F077 - Input M8 × 1



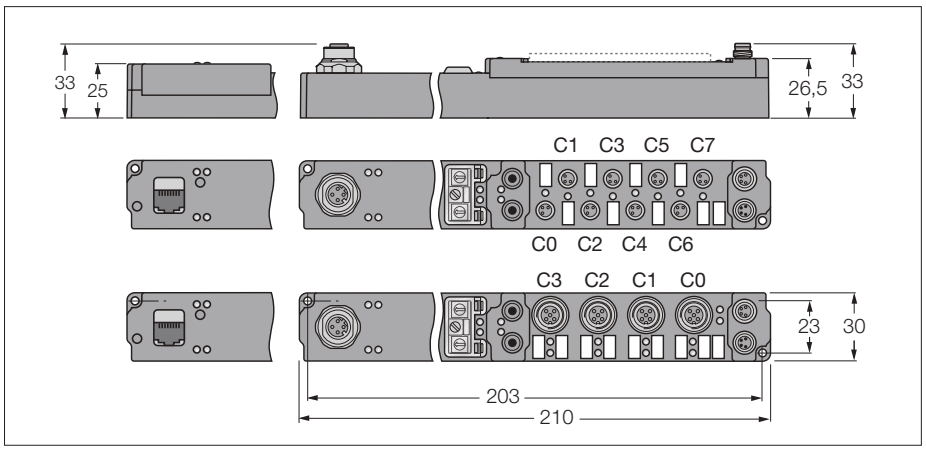
F079 - Output M8 × 1



F081 - Voltage supply M8 × 1



piconet® coupling module for Modbus TCP
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of Protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 100 mA
Transmission rate Ethernet	10 Mbps / 100 Mbps
Addressing modes Ethernet:	via coded rotary switches
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Each 4 bit input and 4 bit output data are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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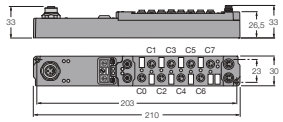
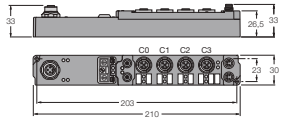
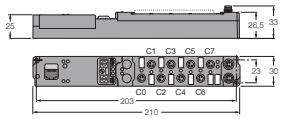
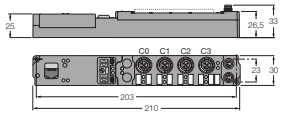
piconet® coupling module for Modbus TCP
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

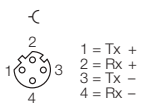
Industrial Automation

Device types

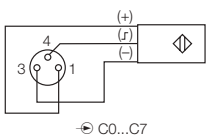
Dimensions	Type	Connection
	6824480 SENL-0404D-0001	F120, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824481 SENL-0404D-0002	F120, F117, F118, F081
Dimensions	**Type**	**Connection**
	6824242 SENL-0404D-0003	F105, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824240 SENL-0404D-0004	F105, F117, F118, F081

Connection

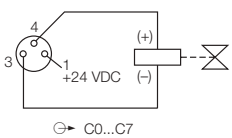
F120 - Ethernet M12 × 1



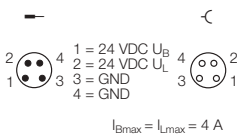
F077 - Input M8 × 1



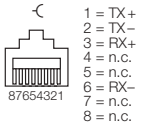
F079 - Output M8 × 1



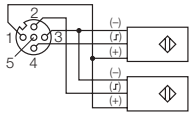
F081 - Voltage supply M8 × 1



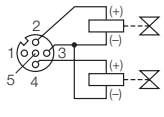
F105 - Fieldbus RJ45



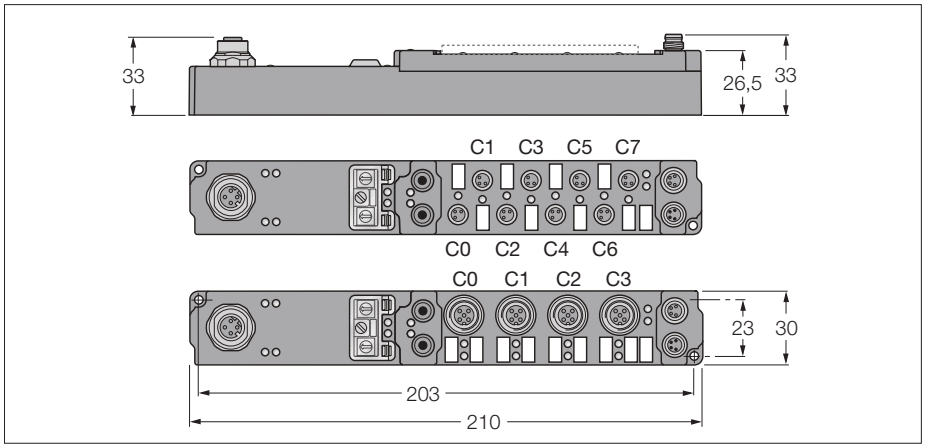
F117 - Input M12 × 1



F118 - Output M12 × 1



piconet® coupling module for EtherNet/IP™
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
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- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Direct connection to the IP link
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- Encapsulated module electronics
- Metal connector
- Degree of Protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 100 mA
Transmission rate Ethernet	10 Mbps / 100 Mbps
Addressing modes Ethernet:	via coded rotary switches
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	ethernet for operating voltage
Fibre-optic length	≤ 15 m
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Max. input current	6 mA
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Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
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Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
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	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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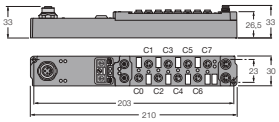
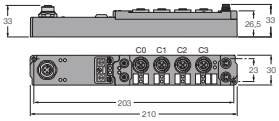
piconet® coupling module for EtherNet/IP™
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

Industrial Automation

Device types

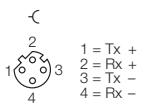
Dimensions	Type	Connection
	6824472 SIPL-0404D-0003	F120, F077, F079, F081

Dimensions	Type	Connection
	6824471 SIPL-0404D-0004	F120, F117, F118, F081

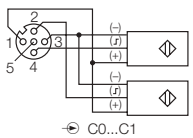
3

Connection

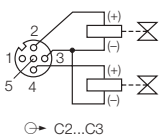
F120 - Ethernet M12 × 1



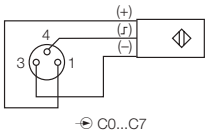
F117 - Input M12 × 1



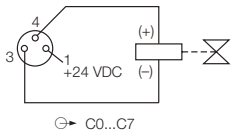
F118 - Output M12 × 1



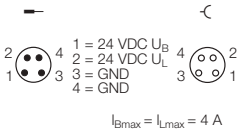
F077 - Input M8 × 1



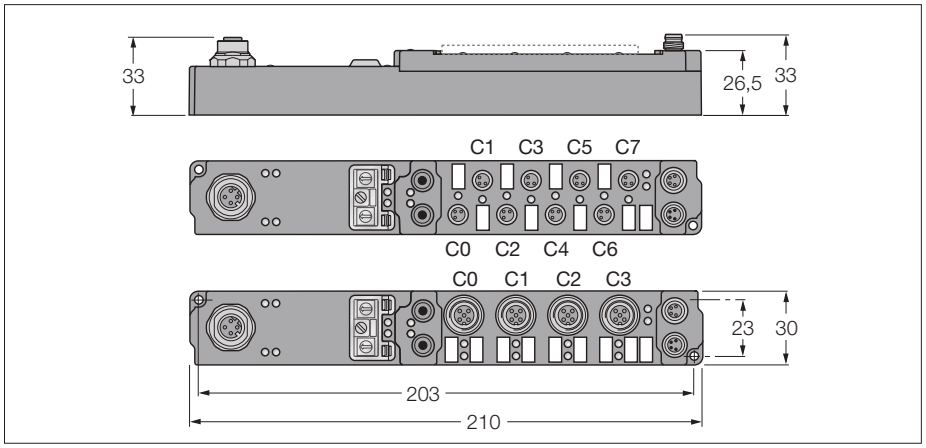
F079 - Output M8 × 1



F081 - Voltage supply M8 × 1



piconet® coupling module for PROFINET IO
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
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- Direct connection to the fieldbus
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Operating / load voltage	20…29 VDC
Operating current	≤ 100 mA
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Max. input current	6 mA
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Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Each 4 bit input and 4 bit output data are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
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	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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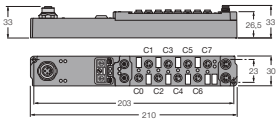
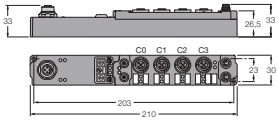
piconet® coupling module for PROFINET IO
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

Industrial Automation

Device types

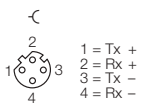
Dimensions	Type	Connection
	**6824478 SPNL-0404D-0003**	F120, F077, F079, F081

Dimensions	Type	Connection
	**6824477 SPNL-0404D-0004**	F120, F117, F118, F081

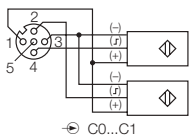
3

Connection

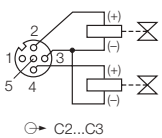
F120 - Ethernet M12 × 1



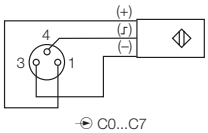
F117 - Input M12 × 1



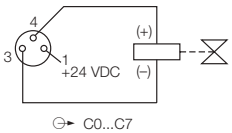
F118 - Output M12 × 1



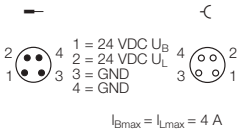
F077 - Input M8 × 1



F079 - Output M8 × 1



F081 - Voltage supply M8 × 1



piconet® – Extension modules

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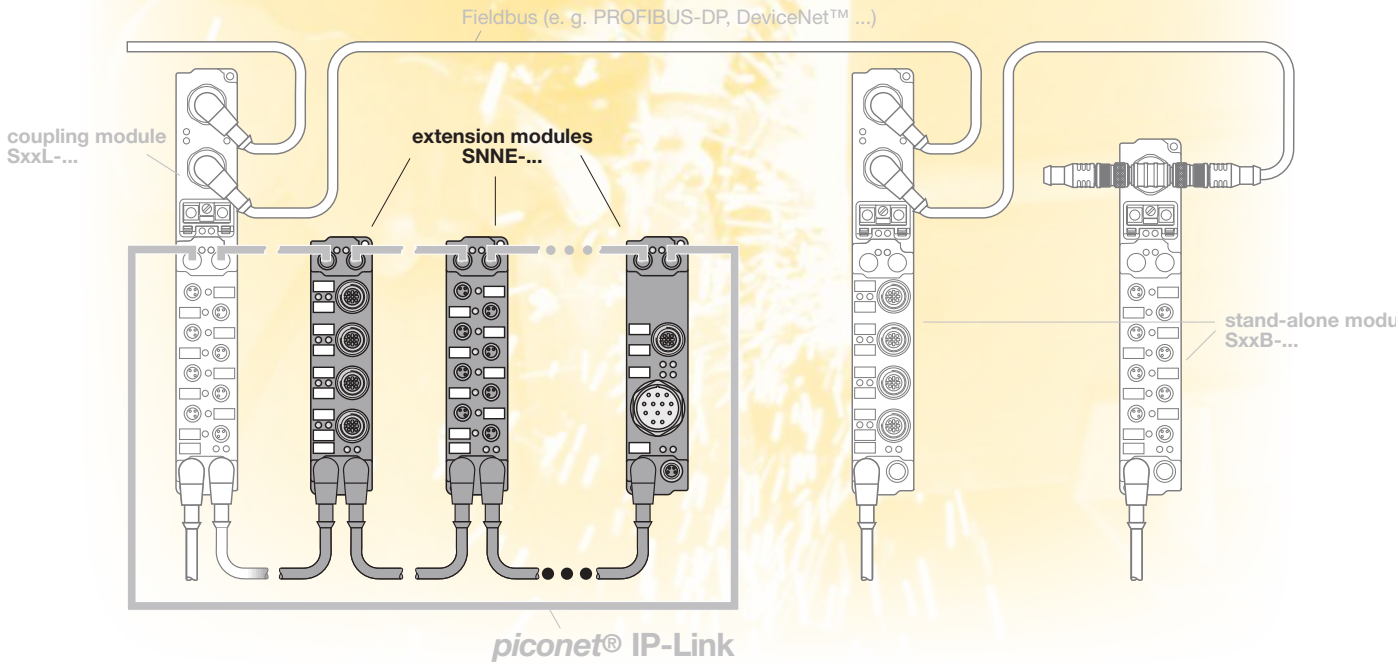

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piconet® – Extension modules for IP-Link

piconet® extension modules are equipped with a bus connector for the fibre-optic network IP-Link. The IP-Link allows connection and operation of up to 120 extension modules via a single coupling module.

The product spectrum comprises extension modules for the entire spectrum of I/O signals – ranging from standardised digital industrial signals up to analogue inputs and outputs. The family is complemented by a choice of technology modules, such as a pulse width modulator, an up/down counter and an incremental encoder as well as various serial interfaces. The coupling module collects the I/O data of the connected extension modules via the interference immune and fast (2 Mbps) IP-Link network.

The transmission time for 1,000 I/Os is approx. 1 ms – if less data are transferred the transmission time is even less. The maximum length of a fibre-optic cable is 15 m.

The robust IP67 housing is extremely compact, fully encapsulated and equipped throughout with metal connectors. As a result, our *piconet*® modules are suited for application both in rough industrial environments as well as in space-critical applications in serial and special machine engineering.

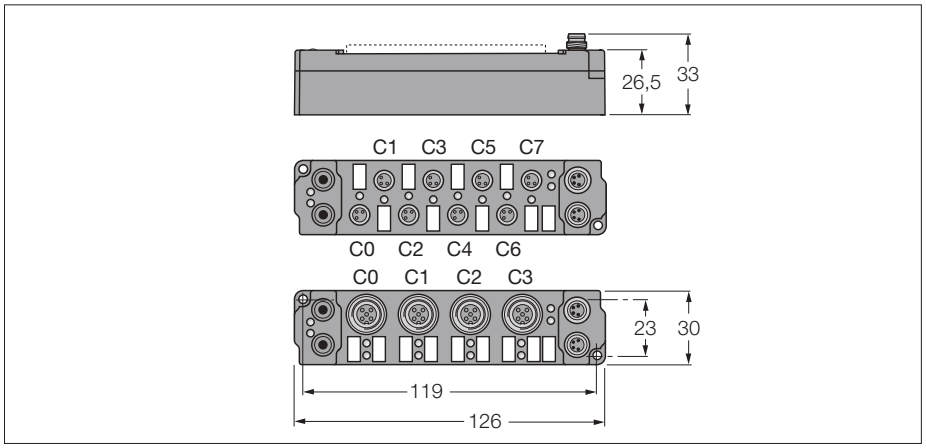
Operating and load voltage are – as with all *piconet*® module types – fed separately. Alongside the "Power" LED, each channel is assigned a "Status" LED for switching status indications.

piconet®– Extension modules for IP-Link – general technical data

Adjustment	
Transmission rate	automatic
LED indications (module-specific)	
Status IP-Link or module (local errors)	
– green LED flashing/ON – red LED OFF:	receipt of error-free IP-Link protocols
– green LED flashing/red LED flashing:	receipt of faulty IP-Link protocols (must not lead to a system error)
– green LED OFF/red LED flashing:	receipt of faulty IP-Link protocols
– green LED OFF/red LED ON:	no data transfer via the IP-Link or module error
Operating voltage U_B	green: operational
Load voltage U_L	green: operational
Connections	brass, nickel-plated
IP-Link	(2) IP-Link female connectors
Length of fibre-optic cable	max. 15 m
Power supply	depending on the respective module type
Inputs/outputs	selectable: (8) M8 female connectors or (4) M12 female connectors
Housing	compact, fully encapsulated plastic housing
Material	PA6 (Polyamid)
Dimensions	126 × 30 × 26.5 mm (H × W × D)
Mounting	via 2 through-holes, Ø 3 mm
Mounting position	any
Operating temperature (range)	0 °C to +55 °C (+32 °F to +131 °F)
Operating temperature (storage)	-25 °C to +85 °C (-13 °F to +185 °F)
Degree of protection (IEC 60529/EN 60529)	IP65, IP66, IP67
Vibration and shock testing	according to IEC 68, part 2-6 / IEC 68, part 2-27
Electromagnetic capability (EMC)	according to EN 50081-2/EN 50082-2
Weight	approx. 120–200 g (depending on type)
Approvals	CE, cULus LISTED

Please note: further technical information is contained in the *piconet*® user manuals.

piconet® extension module for IP link
8 digital pnp inputs filter 3 ms



- 8 digital pnp inputs
- Input filter 3 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	8 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and byte n has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
		Byte n+1 (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C7P4	C6P4	C5P4	C4P4
		Byte n+1 (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is avtive. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	C… = Connector no. – P… = Pin no.									

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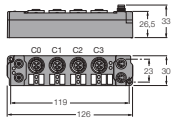
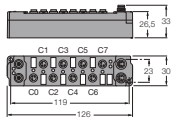
Industrial Automation

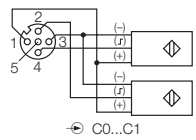
Device types

Dimensions	Type	Connection
	**6824203 SNNE-0800D-0004**	F117, F081

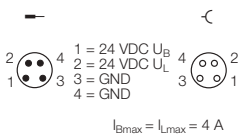
Dimensions	Type	Connection
	**6824204 SNNE-0800D-0007**	F077, F081

Connection

F117 - Input M12 × 1

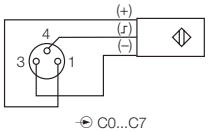


F081 - Voltage supply M8 × 1

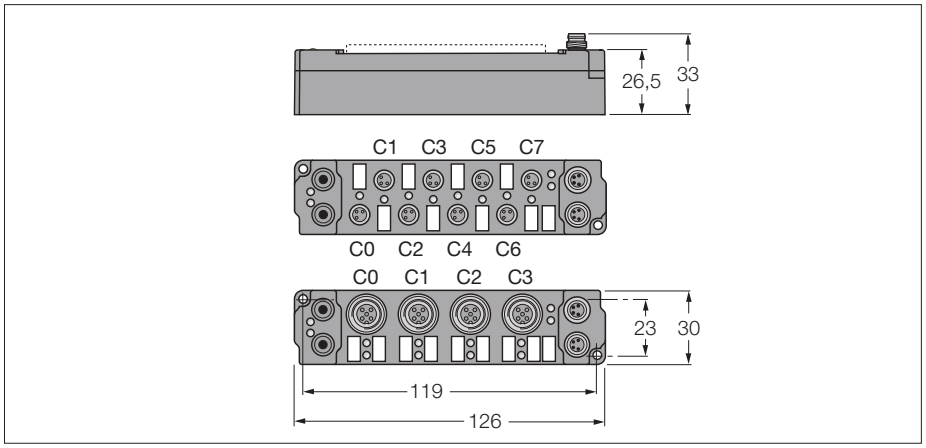


$I_{Bmax} = I_{Lmax} = 4$ A

F077 - Input M8 × 1



piconet® extension module for IP link
8 digital pnp inputs filter 0.2 ms



- 8 digital pnp inputs
- Input filter 0.2 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	8 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	2.5 kHz
Input delay	0.2 ms
Max. input current	6 mA
Operating temperature	0 to 55 °C

Data in process image

<table>
<tr><th></th><th></th><th></th><th>Bit 7</th><th>Bit 6</th><th>Bit 5</th><th>Bit 4</th><th>Bit 3</th><th>Bit 2</th><th>Bit 1</th><th>Bit 0</th></tr>
<tr><td rowspan="4">PROFIBUS-DP coupling module:
"Byte alignment" is disabled (default) and byte n has been used halfway.
DeviceNet™, CANopen, INTERBUS, Ethernet coupling module:
Byte n has been used halfway. Up to 8 bit user data are mapped.</td><td rowspan="4">Output</td><td>Byte n (M8)</td><td>C3P4</td><td>C2P4</td><td>C1P4</td><td>C0P4</td><td colspan="4" rowspan="2">Is used by the physically preceeding bit-oriented extension module connected via the IP Link.</td></tr>
<tr><td>Byte n (M12)</td><td>C1P2</td><td>C1P4</td><td>C0P2</td><td>C0P4</td></tr>
<tr><td>Byte n+1 (M8)</td><td colspan="4" rowspan="2">Is used by the physically following bit-oriented extension module connected via the IP Link.</td><td>C7P4</td><td>C6P4</td><td>C5P4</td><td>C4P4</td></tr>
<tr><td>Byte n+1 (M12)</td><td>C3P2</td><td>C3P4</td><td>C2P2</td><td>C2P4</td></tr>
<tr><td rowspan="3">PROFIBUS-DP coupling module:
"Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is avtive.
DeviceNet™, CANopen, INTERBUS, Ethernet coupling module:
The previous byte has been completely used.
Up to 8 bit user data are mapped.</td><td rowspan="2">Output</td><td>Byte n (M8)</td><td>C7P4</td><td>C6P4</td><td>C5P4</td><td>C4P4</td><td>C3P4</td><td>C2P4</td><td>C1P4</td><td>C0P4</td></tr>
<tr><td>Byte n (M12)</td><td>C3P2</td><td>C3P4</td><td>C2P2</td><td>C2P4</td><td>C1P2</td><td>C1P4</td><td>C0P2</td><td>C0P4</td></tr>
<tr><td colspan="10">C… = Connector no. – P… = Pin no.</td></tr>
</table>

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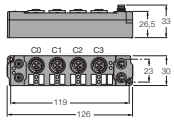
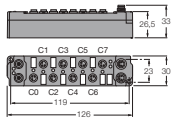
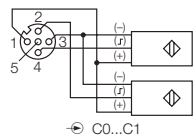
Device types

Dimensions	Type	Connection
	**6824202 SNNE-0800D-0002**	F117, F081

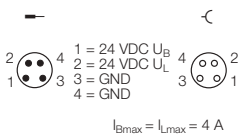
Dimensions	Type	Connection
	**6824206 SNNE-0800D-0008**	F077, F081

Connection

F117 - Input M12 × 1

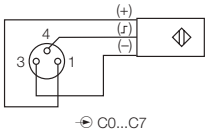


F081 - Voltage supply M8 × 1

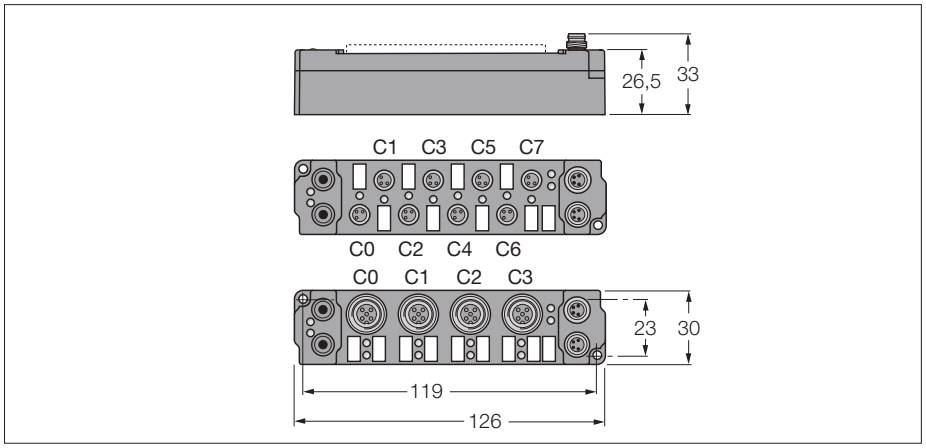


$I_{Bmax} = I_{Lmax} = 4$ A

F077 - Input M8 × 1



piconet® extension module for IP link
8 digital outputs 0.5 A



- 8 digital outputs 0.5 A
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and byte n has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
		Byte n+1 (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C7P4	C6P4	C5P4	C4P4
		Byte n+1 (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is avtive. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	C… = Connector no. – P… = Pin no.									

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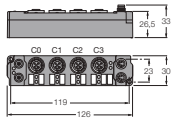
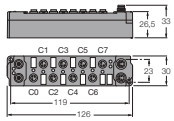
Industrial Automation

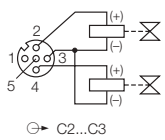
Device types

Dimensions	Type	Connection
	**6824178 SNNE-0008D-0001**	F118, F081

Dimensions	Type	Connection
	**6824185 SNNE-0008D-0006**	F079, F081

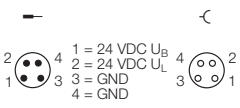
Connection

F118 - Output M12 × 1



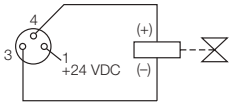
⊖► C2...C3

F081 - Voltage supply M8 × 1



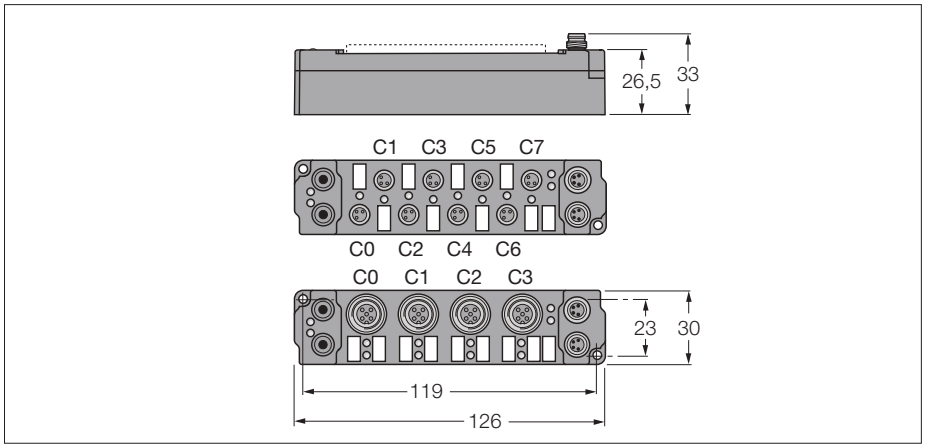
$I_{Bmax} = I_{Lmax} = 4$ A

F079 - Output M8 × 1



⊖► C0...C7

piconet® extension module for IP link
8 digital outputs 2 A (Σ 4 A)



- 8 digital outputs 2 A
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m

Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 4 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.25
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and byte n has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
		Byte n+1 (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C7P4	C6P4	C5P4	C4P4
		Byte n+1 (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is avtive. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	C… = Connector no. – P… = Pin no.									

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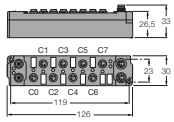
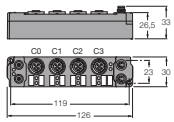
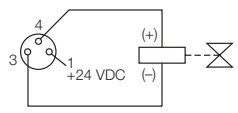
Device types

Dimensions	Type	Connection
	**6824179 SNNE-0008D-0002**	F079, F081

Dimensions	Type	Connection
	**6824181 SNNE-0008D-0003**	F118, F081

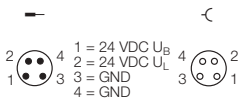
Connection

F079 - Output M8 × 1



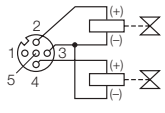
⊖► C0...C7

F081 - Voltage supply M8 × 1



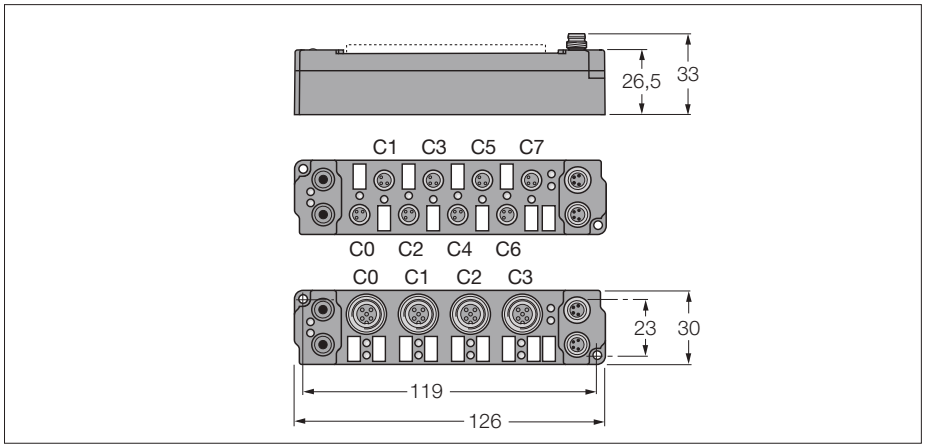
$I_{Bmax} = I_{Lmax} = 4$ A

F118 - Output M12 × 1



⊖► C2...C3

piconet® extension module for IP link
8 digital outputs 2 A (Σ 12 A)



- 8 digital outputs 2 A
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 12 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.75
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and byte n has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
		Byte n+1 (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C7P4	C6P4	C5P4	C4P4
		Byte n+1 (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is avtive. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 8 bit user data are mapped.	**Output**	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	C… = Connector no. – P… = Pin no.									

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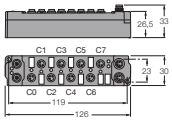
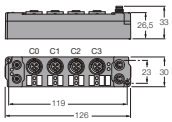
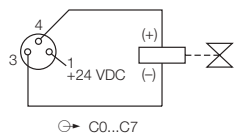
Device types

Dimensions	Type	Connection
	**6824182 SNNE-0008D-0004**	F079, F082

Dimensions	Type	Connection
	**6824184 SNNE-0008D-0005**	F118, F082

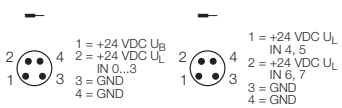
Connection

F079 - Output M8 × 1

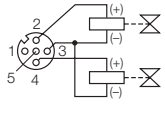


C0...C7

F082 - Voltage supply M8 × 1

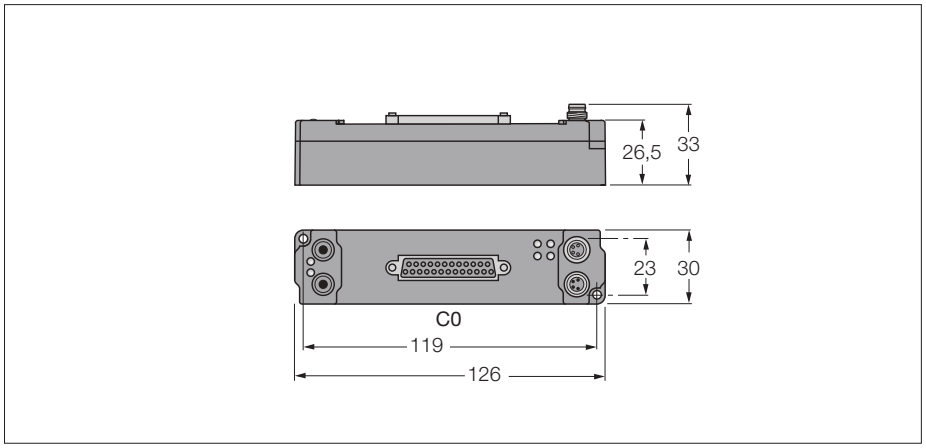


F118 - Output M12 × 1



C2...C3

piconet® extension module for IP link
16 digital outputs 0.5 A (Σ 4 A)



- 16 digital outputs 0.5 A
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
	≤ 15 m
Outputs	
Number of channels	16 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A (Σ 4 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.5
	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and byte n has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 8 bit user data are mapped.	**Output**	**Byte n**	C0P4	C0P3	C0P2	C0P1	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n+1	C0P12	C0P11	C0P10	C0P9	C0P8	C0P7	C0P6	C0P5
		Byte n+2	Is used by the physically following bit-oriented extension module connected via the IP Link.				C0P16	C0P15	C0P14	C0P13
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is avtive. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 8 bit user data are mapped.	**Output**	**Byte n**	C0P8	C0P7	C0P6	C0P5	C0P4	C0P3	C0P2	C0P1
		Byte n+1	C0P16	C0P15	C0P14	C0P13	C0P12	C0P11	C0P10	C0P9
	C… = Connector no. – P… = Pin no.									

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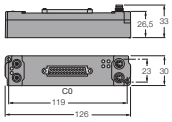
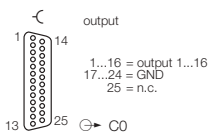
Device types

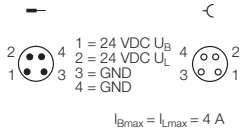
Dimensions	Type	Connection
	**6824476 SNNE-0016D-0002** Field wireable connector (example): Sub-D-IP67 Ident no. 6901390 Details see *piconet*® accessories, p. 137	F121, F081

Connection

F121 - Sub-D output

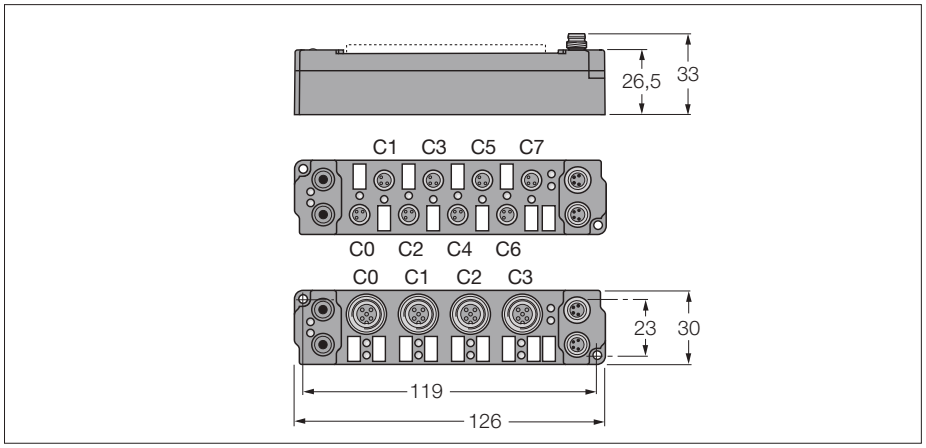


F081 - Voltage supply M8 × 1



$I_{Bmax} = I_{Lmax} = 4$ A

piconet® extension module for IP link
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 3 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is activated. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4				
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4				
PROFIBUS-DP coupling module: "Byte alignment" is activated. Up to 8 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	idle	idle	idle	idle
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	idle	idle	idle	idle

C… = Connector no. – P… = Pin no.

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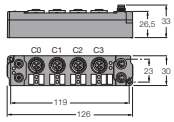
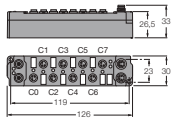
piconet® extension module for IP link
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

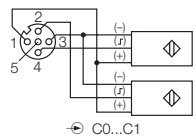
Industrial Automation

Device types

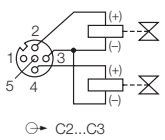
Dimensions	Type	Connection
	**6824193 SNNE-0404D-0004**	F117, F118, F081
Dimensions	**Type**	**Connection**
	**6824191 SNNE-0404D-0003**	F077, F079, F081

Connection

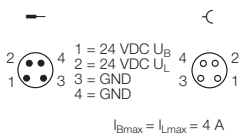
F117 - Input M12 × 1



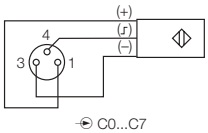
F118 - Output M12 × 1



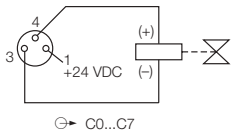
F081 - Voltage supply M8 × 1



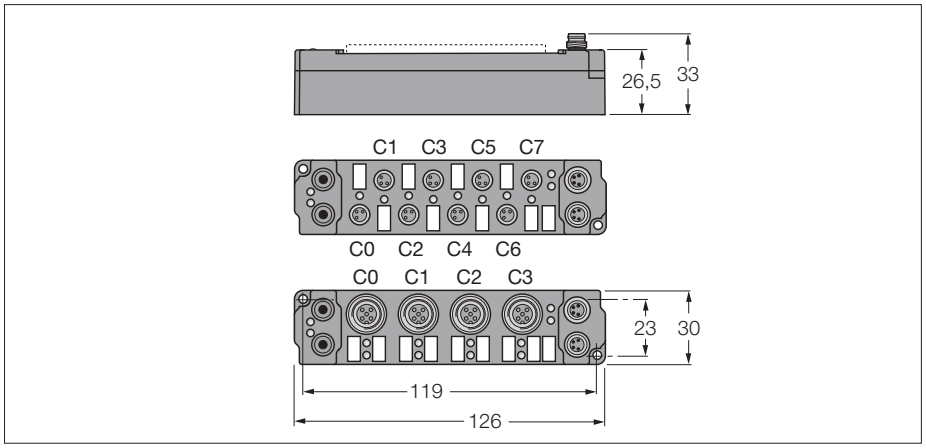
F077 - Input M8 × 1



F079 - Output M8 × 1



piconet® extension module for IP link
4 digital pnp inputs filter 0.2 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 0.2 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	2.5 kHz
Input delay	0.2 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is activated. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4				
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4				
PROFIBUS-DP coupling module: "Byte alignment" is activated. Up to 8 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	idle	idle	idle	idle
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	idle	idle	idle	idle

C… = Connector no. – P… = Pin no.

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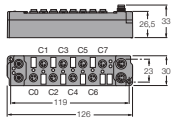
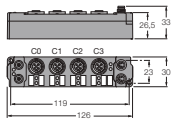
piconet® extension module for IP link
4 digital pnp inputs filter 0.2 ms
4 digital outputs 0.5 A

Industrial Automation

Device types

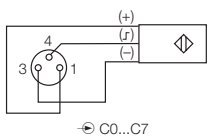
Dimensions	Type	Connection
	**6824188 SNNE-0404D-0001**	F077, F079, F081

Dimensions	Type	Connection
	**6824190 SNNE-0404D-0002**	F117, F118, F081

3

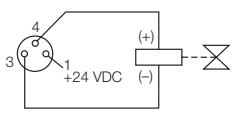
Connection

F077 - Input M8 × 1



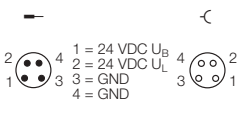
C0...C7

F079 - Output M8 × 1



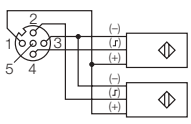
C0...C7

F081 - Voltage supply M8 × 1



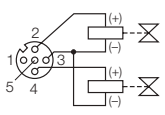
$I_{Bmax} = I_{Lmax} = 4$ A

F117 - Input M12 × 1



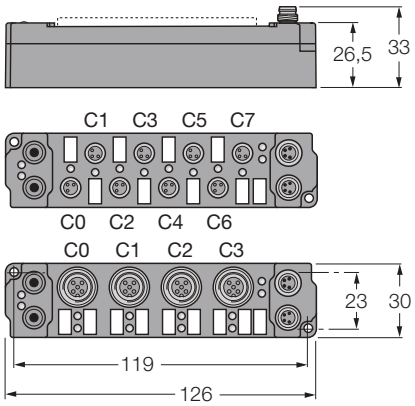
C0...C1

F118 - Output M12 × 1



C2...C3

piconet® extension module for IP link
4 digital pnp inputs filter 3 ms
4 digital outputs 2 A



- 4 digital pnp inputs
- 4 digital outputs 2 A
- Input filter 3 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 4 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.5
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is activated. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4				
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4				
PROFIBUS-DP coupling module: "Byte alignment" is activated. Up to 8 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	idle	idle	idle	idle
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	idle	idle	idle	idle

C… = Connector no. – P… = Pin no.

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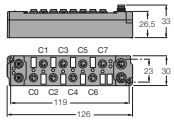
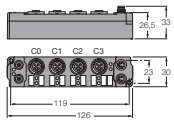
piconet® extension module for IP link
4 digital pnp inputs filter 3 ms
4 digital outputs 2 A

Industrial Automation

Device types

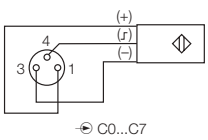
Dimensions	Type	Connection
	**6824197 SNNE-0404D-0007**	F077, F079, F081

Dimensions	Type	Connection
	**6824199 SNNE-0404D-0008**	F117, F118, F081

3

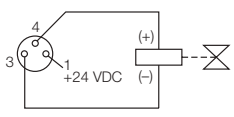
Connection

F077 - Input M8 × 1



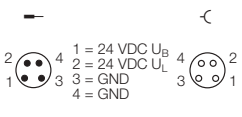
C0...C7

F079 - Output M8 × 1



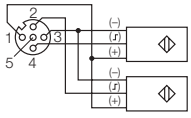
C0...C7

F081 - Voltage supply M8 × 1



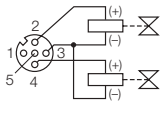
$I_{Bmax} = I_{Lmax} = 4$ A

F117 - Input M12 × 1



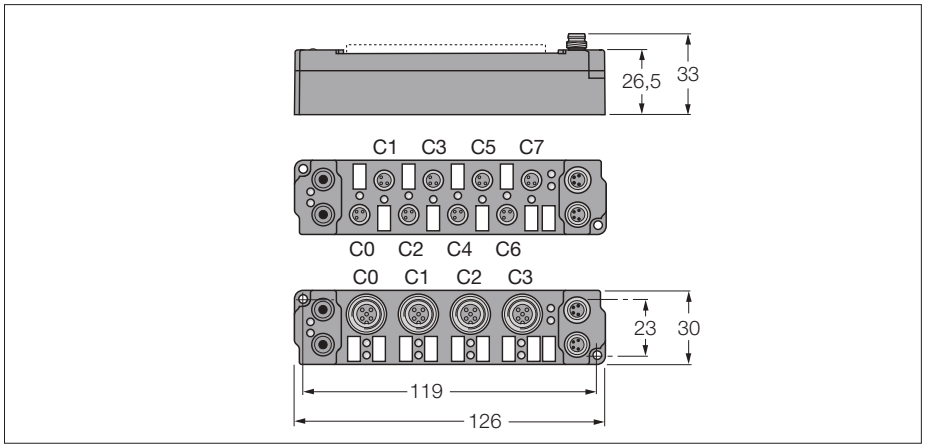
C0...C1

F118 - Output M12 × 1



C2...C3

piconet® extension module for IP link
4 digital pnp inputs filter 0.2 ms
4 digital outputs 2 A



- 4 digital pnp inputs
- 4digital outputs 2 A
- Input filter 0.2 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	2.5 kHz
Input delay	0.2 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 4 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.5
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is activated. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: The previous byte has been completely used. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	Is used by the physically following bit-oriented extension module connected via the IP Link.				C3P4	C2P4	C1P4	C0P4
		Byte n (M12)					C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)					C7P4	C6P4	C5P4	C4P4
		Byte n (M12)					C3P2	C3P4	C2P2	C2P4
PROFIBUS-DP coupling module: "Byte alignment" is disabled (default) and the previous byte has been used halfway. DeviceNet™, CANopen, INTERBUS, Ethernet coupling module: Byte n has been used halfway. Up to 4 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	C3P4	C2P4	C1P4	C0P4	Is used by the physically preceeding bit-oriented extension module connected via the IP Link.			
		Byte n (M12)	C1P2	C1P4	C0P2	C0P4				
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4				
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4				
PROFIBUS-DP coupling module: "Byte alignment" is activated. Up to 8 bit input data and output data each are mapped.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	C7P4	C6P4	C5P4	C4P4	idle	idle	idle	idle
		Byte n (M12)	C3P2	C3P4	C2P2	C2P4	idle	idle	idle	idle

C… = Connector no. – P… = Pin no.

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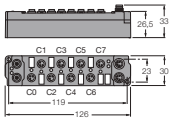
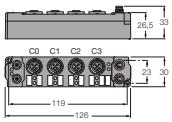
piconet® extension module for IP link
4 digital pnp inputs filter 0.2 ms
4 digital outputs 2 A

Industrial Automation

Device types

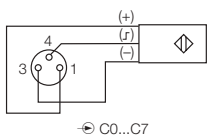
Dimensions	Type	Connection
	**6824194 SNNE-0404D-0005**	F077, F079, F081

Dimensions	Type	Connection
	**6824196 SNNE-0404D-0006**	F117, F118, F081

3

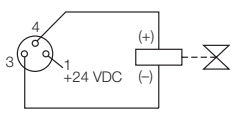
Connection

F077 - Input M8 × 1



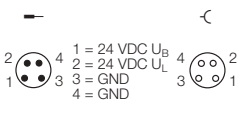
C0...C7

F079 - Output M8 × 1



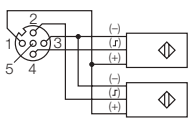
C0...C7

F081 - Voltage supply M8 × 1



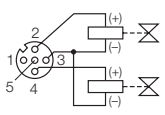
$I_{Bmax} = I_{Lmax} = 4$ A

F117 - Input M12 × 1



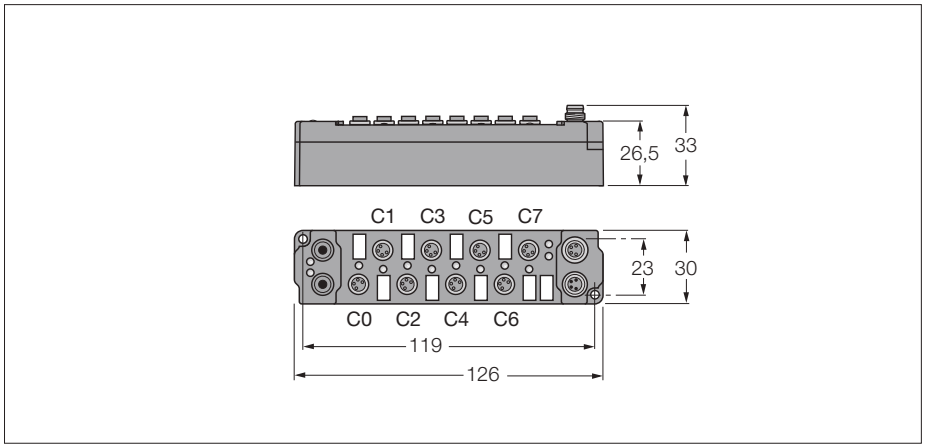
C0...C1

F118 - Output M12 × 1



C2...C3

piconet® extension module for IP link
8 digital pnp inputs filter 3 ms
8 digital outputs 0.5 A



- 8 digital pnp inputs
- 8 digital outputs 0.5 A
- Input filter 3 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	8 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

<table>
<tr><th></th><th></th><th></th><th>Bit 7</th><th>Bit 6</th><th>Bit 5</th><th>Bit 4</th><th>Bit 3</th><th>Bit 2</th><th>Bit 1</th><th>Bit 0</th></tr>
<tr><td rowspan="4">PROFIBUS-DP coupling module:
"Byte alignment" is disabled (default) and the previous byte has been used halfway.
DeviceNet™, CANopen, INTERBUS, Ethernet coupling module:
Byte n has been used halfway. Up to 8 bit input data and output data each are mapped.</td><td>Input</td><td>Byte n</td><td>C3P4</td><td>C2P4</td><td>C1P4</td><td>C0P4</td><td colspan="4" rowspan="2">Is used by the physically preceeding bit-oriented extension module connected via the IP Link.</td></tr>
<tr><td>Output</td><td>Byte n</td><td>C3P2</td><td>C2P2</td><td>C1P2</td><td>C0P2</td></tr>
<tr><td>Input</td><td>Byte n+1</td><td colspan="4" rowspan="2">Is used by the physically following bit-oriented extension module connected via the IP Link.</td><td>C7P4</td><td>C6P4</td><td>C5P4</td><td>C4P4</td></tr>
<tr><td>Output</td><td>Byte n+1</td><td>C7P2</td><td>C6P2</td><td>C5P2</td><td>C4P2</td></tr>
<tr><td rowspan="3">PROFIBUS-DP coupling module:
"Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is activated.
DeviceNet™, CANopen, INTERBUS, Ethernet coupling module:
The previous byte has been completely used.
Up to 8 bit input data and output data each are mapped.</td><td>Input</td><td>Byte n</td><td>C7P4</td><td>C6P4</td><td>C5P4</td><td>C4P4</td><td>C3P4</td><td>C2P4</td><td>C1P4</td><td>C0P4</td></tr>
<tr><td>Output</td><td>Byte n</td><td>C7P2</td><td>C6P2</td><td>C5P2</td><td>C4P2</td><td>C3P2</td><td>C2P2</td><td>C1P2</td><td>C0P2</td></tr>
<tr><td colspan="10">C… = Connector no. – P… = Pin no.</td></tr>
</table>

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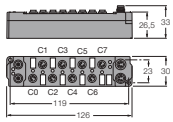
piconet® extension module for IP link
8 digital pnp inputs filter 3 ms
8 digital outputs 0.5 A

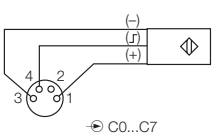
Industrial Automation

Device types

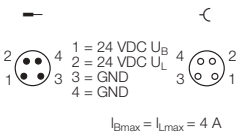
Dimensions	Type	Connection
	**6824208 SNNE-0808D-0001**	F075, F078, F081

Connection

F075 - Input M8 × 1

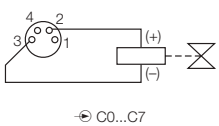


F081 - Voltage supply M8 × 1

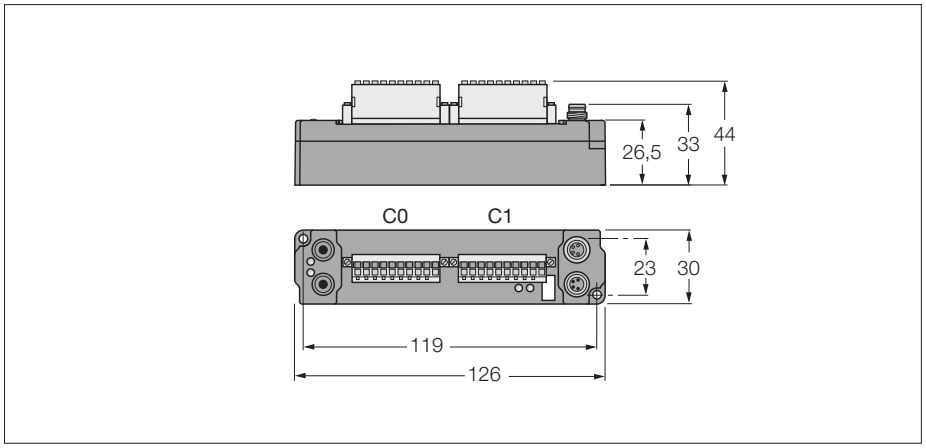


$I_{Bmax} = I_{Lmax} = 4$ A

F078 - Output M8 × 1



piconet® extension module for IP link
8 digital pnp inputs filter 3 ms
8 digital outputs 0.5 A



- 8 digital pnp inputs
- 8 digital outputs 0.5 A
- Input filter 3 ms
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- IP20 terminals, tension spring connections
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal round connector
- Degree of protection IP20

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	8 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

<table>
<tr><th></th><th></th><th></th><th>Bit 7</th><th>Bit 6</th><th>Bit 5</th><th>Bit 4</th><th>Bit 3</th><th>Bit 2</th><th>Bit 1</th><th>Bit 0</th></tr>
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DeviceNet™, CANopen, INTERBUS, Ethernet coupling module:
Byte n has been used halfway. Up to 8 bit input data and output data each are mapped.</td><td>Input</td><td>Byte n</td><td>C0P4</td><td>C0P3</td><td>C0P2</td><td>C0P1</td><td colspan="4" rowspan="2">Is used by the physically preceeding bit-oriented extension module connected via the IP Link.</td></tr>
<tr><td>Output</td><td>Byte n</td><td>C1P4</td><td>C1P3</td><td>C1P2</td><td>C1P1</td></tr>
<tr><td>Input</td><td>Byte n+1</td><td colspan="4" rowspan="2">Is used by the physically following bit-oriented extension module connected via the IP Link.</td><td>C0P8</td><td>C0P7</td><td>C0P6</td><td>C0P5</td></tr>
<tr><td>Output</td><td>Byte n+1</td><td>C1P8</td><td>C1P7</td><td>C1P6</td><td>C1P5</td></tr>
<tr><td rowspan="3">PROFIBUS-DP coupling module:
"Byte alignment" is disabled (default) and the previous byte has been completely used or "byte alignment" is activated.
DeviceNet™, CANopen, INTERBUS, Ethernet coupling module:
The previous byte has been completely used.
Up to 8 bit input data and output data each are mapped.</td><td>Input</td><td>Byte n</td><td>C0P8</td><td>C0P7</td><td>C0P6</td><td>C0P5</td><td>C0P4</td><td>C0P3</td><td>C0P2</td><td>C0P1</td></tr>
<tr><td>Output</td><td>Byte n</td><td>C1P8</td><td>C1P7</td><td>C1P6</td><td>C1P5</td><td>C1P4</td><td>C1P3</td><td>C1P2</td><td>C1P1</td></tr>
<tr><td colspan="10">C… = Connector no. – P… = Pin no.</td></tr>
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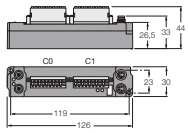
piconet® extension module for IP link
8 digital pnp inputs filter 3 ms
8 digital outputs 0.5 A

Industrial Automation

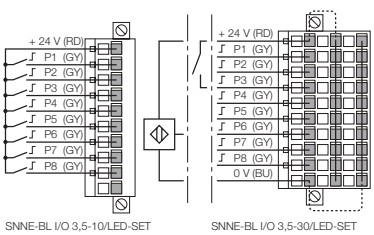
Device types

Dimensions	Type	Connection
	**6824473 SNNE-0808D-0003** IP20 terminal block, single row: SNNE-BLI/O3,5-10/LED-SET Ident no.: 6824475 IP20 terminal block, tripple row: SNNE-BLI/O3,5-30/LED-SET Ident no.: 6824474 Details see *piconet*® accessories, p. 137	F122, F123, F081

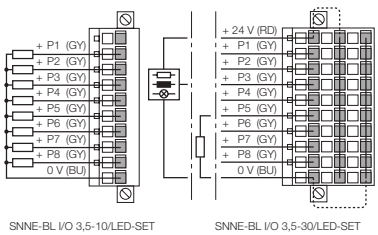
3

Connection

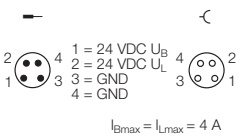
F122 - Input IP20 terminal



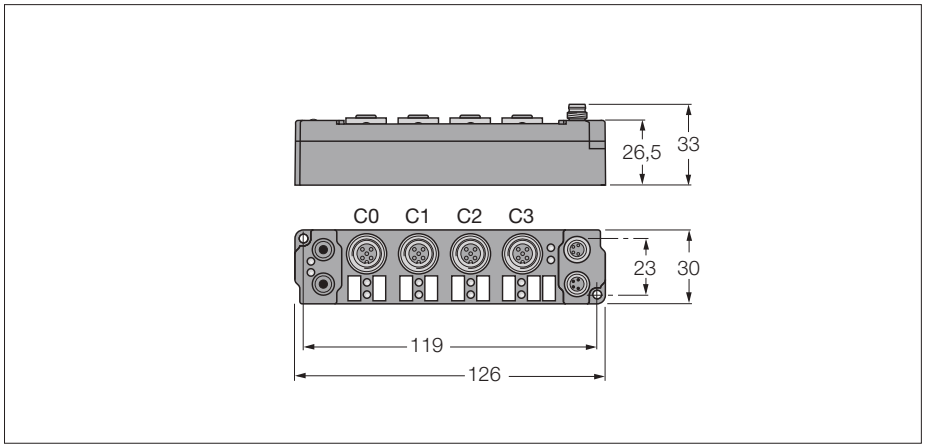
F123 - Output IP20 terminal



F081 - Voltage supply M8 × 1



piconet® extension module for IP link
4 analogue inputs ±10 V



- 4 analogue inputs ±10 V
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 55 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 analogue inputs ± 10 V
Input resistance	> 100 Ω
Electrical isolation	channels to operational voltage
Common mode voltage	max. 35 V
Measuring current	0.5 mA
Conversion time	250 ms
Relative measuring error	< +- 0.3 % of full scale
Input filter	variable
Sensor supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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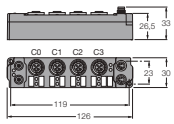
piconet® extension module for IP link
4 analogue inputs ±10 V

Industrial Automation

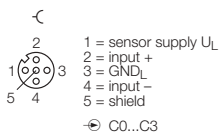
Device types

Dimensions	Type	Connection
	**6824216 SNNE-40A-0005**	F087, F124, F091

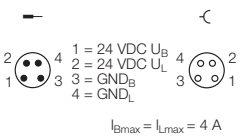
3

Connection

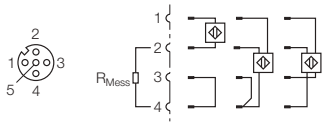
F087 - Input M12 × 1



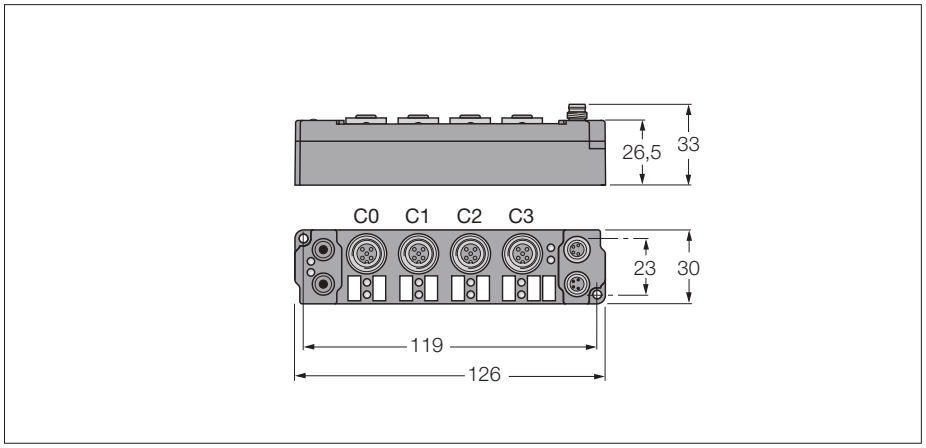
F091 - Voltage supply M8 × 1



F124 - Connection - Inputs



piconet® extension module for IP link
4 analogue inputs 0/4… 20 mA



- 4 analogue inputs 0/4…20 mA
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 55 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 analogue inputs 20 mA
Input resistance	80 Ω
Electrical isolation	channels to operational voltage
Common mode voltage	max. 35 V
Measuring current	0.5 mA
Conversion time	250 ms
Relative measuring error	< +- 0.3 % of full scale
Input filter	variable
Sensor supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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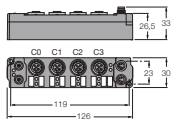
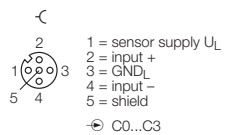
Industrial Automation

Device types

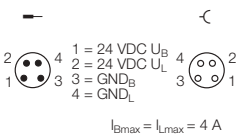
Dimensions	Type	Connection
	**6824217 SNNE-40A-0007**	F087, F124, F091

Connection

F087 - Input M12 × 1

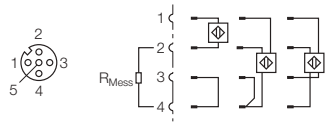


F091 - Voltage supply M8 × 1

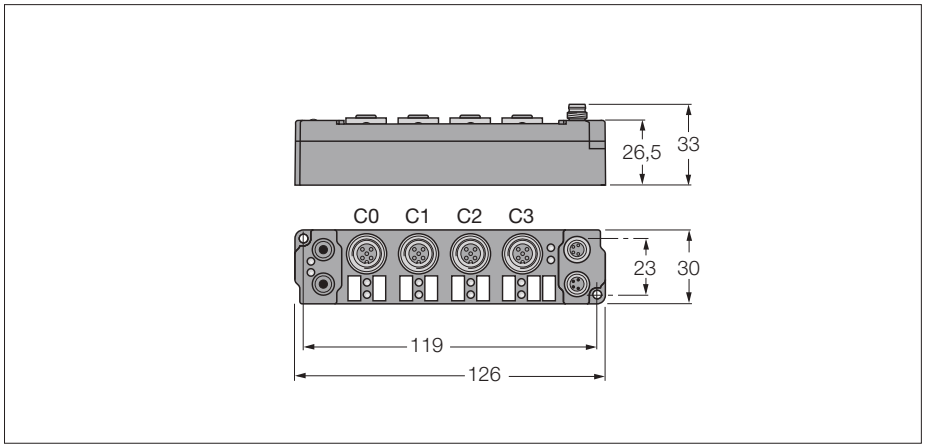


$I_{Bmax} = I_{Lmax} = 4$ A

F124 - Connection - Inputs



piconet® extension module for IP link
4 analogue inputs for Pt100



- 4 analogue inputs for Pt100
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 40 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 analogue inputs Pt100
Electrical isolation	channels to operational voltage
Sensor type	Pt100
Temperature range	-200 to 850 °C (Pt sensors), -60 to 250 °C (Ni sensors)
Measuring current	0.1 °C
Conversion time	250 ms
Relative measuring error	< +-1.0 % of full scale
Input filter	variable
Sensor supply	from operational voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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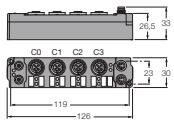
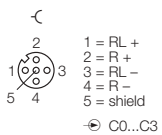
piconet® extension module for IP link
4 analogue inputs for Pt100

Device types

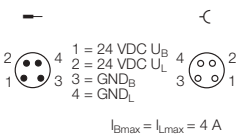
Dimensions	Type	Connection
	**6824176 SNNE-40A-0009**	F088, F125, F091

Connection

F088 - Input M12 × 1

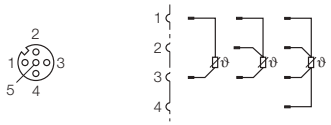


F091 - Voltage supply M8 × 1

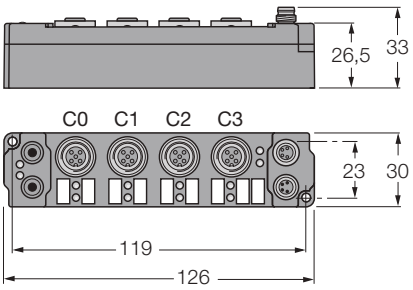


$I_{Bmax} = I_{Lmax} = 4$ A

F125 - Connection - Inputs



piconet® extension module for IP link
4 analogue inputs for thermoelements



- 4 analogue inputs for thermoelements
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 40 mA
Fibre-optic length	≤ 15 m
Inputs	
Number of channels	4 analogue thermoelement inputs
Electrical isolation	channels to operational voltage
Sensor type	K
Temperature range	Sensor sensor (default type K)
Conversion time	250 ms
Relative measuring error	< +-0.5 % of full scale
Input filter	variable
Sensor supply	from operational voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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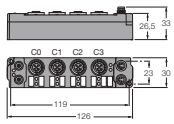
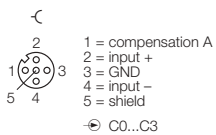
Industrial Automation

Device types

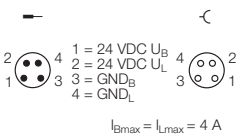
Dimensions	Type	Connection
	**6824215 SNNE-40A-0004** Matching connector with Pt1000 probe for cold junction compensation: **WAS5-THERMO** Ident no. 6824260	F086, F126, F091

Connection

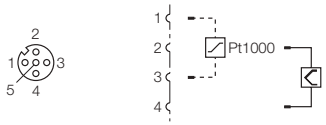
F086 - Input M12 × 1



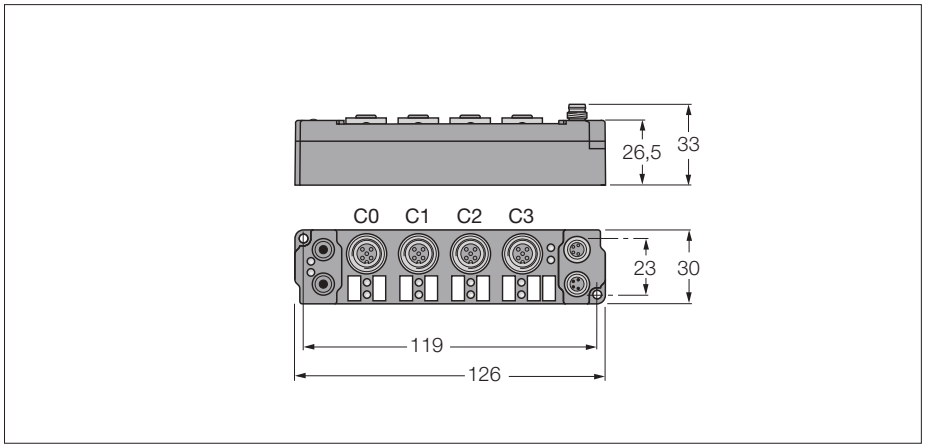
F091 - Voltage supply M8 × 1



F126 - Connection - Inputs



piconet® extension module for IP link
4 analogue outputs ±10 V



- 4 analogue outputs ±10 V
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 40 mA
Fibre-optic length	≤ 15 m
Outputs	
Number of channels	4 analogue outputs ±- 10 V
Load resistance	> 5000 Ω
Electrical isolation	channels to operational voltage
Conversion time	< 1 ms
Relative measuring error	< +- 0.3 % of full scale
Actuator power supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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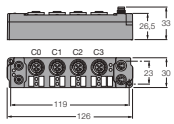
piconet® extension module for IP link
4 analogue outputs ±10 V

Industrial Automation

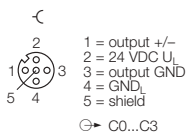
Device types

Dimensions	Type	Connection
	**6824200 SNNE-04A-0007**	F127, F128, F091

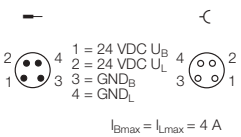
3

Connection

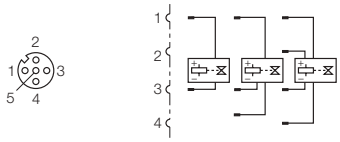
F127 - Output M12 × 1



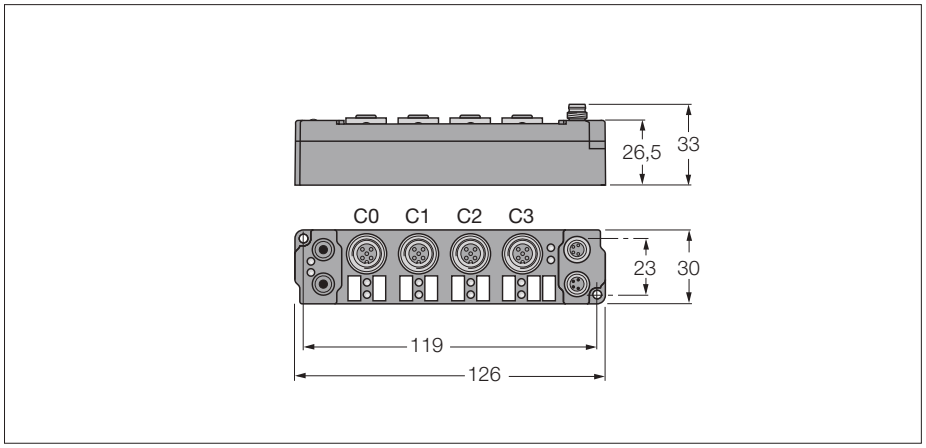
F091 - Voltage supply M8 × 1



F128 - Connection - Outputs



piconet® extension module for IP link
4 analogue outputs 0/4…20 mA



- 4 analogue outputs 0/4…20 mA
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 40 mA
Fibre-optic length	≤ 15 m
Outputs	
Number of channels	4 analogue outputs 20 mA
Load resistance	< 500 Ω
Electrical isolation	channels to operational voltage
Conversion time	< 3.5 ms
Relative measuring error	< +- 0.3 % of full scale
Actuator power supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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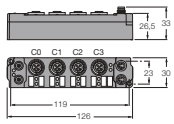
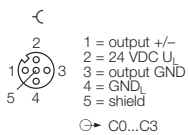
Industrial Automation

Device types

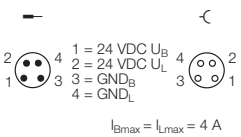
Dimensions	Type	Connection
	**6824201 SNNE-04A-0009**	F127, F128, F091

Connection

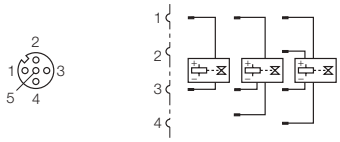
F127 - Output M12 × 1



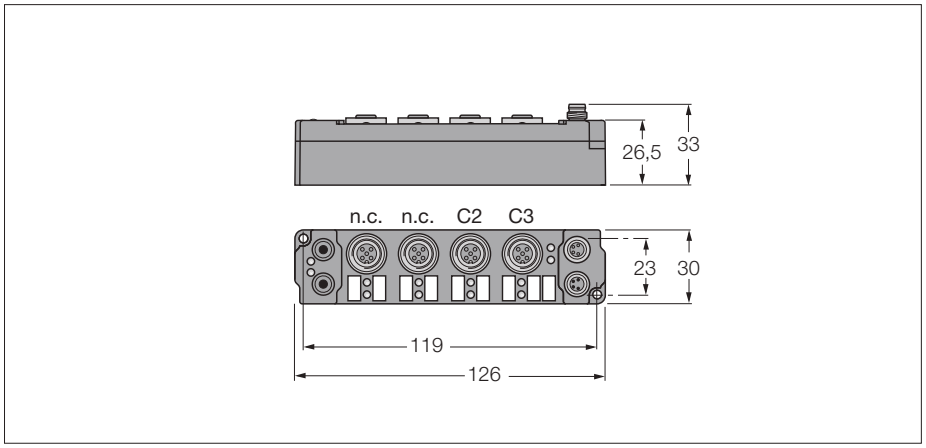
F091 - Voltage supply M8 × 1



F128 - Connection - Outputs



piconet® extension module for IP link
2-channel pulse width modulation (PWM)



- Pulse width modulation
- 2-channel
- 2.5 A per channel
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 25 mA
Fibre-optic length	≤ 15 m
V/R output	0.5 A short-circuit proof
Output current per channel	2.5
Load type	resistive, inductive
Base frequency	1 Hz…10 kHz (default 250 Hz)
Duty factor	0…100 % (t ON > 750 ns, t OFF > 500 ns)
Resolution	10 Bit
Freewheeling diode	on the outputs
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	Ch0 Reg1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 Reg0	CB1	Ch0 D0
	2	Ch1 Reg0	Ch1 Reg1	Ch1 D0	Ch1 D1

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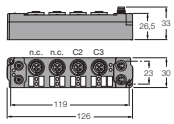
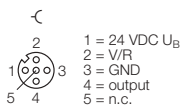
Device types

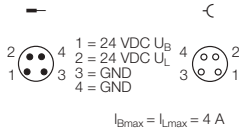
Dimensions	Type	Connection
	**6824177 SNNE-0002D-0002**	F092, F081

Connection

F092 - Output M12 × 1

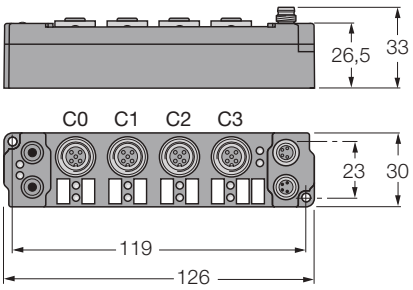


F081 - Voltage supply M8 × 1



$I_{Bmax} = I_{Lmax} = 4$ A

piconet® extension module for IP link
2-channel up/down counter



- Up/down counter
- 2-channel
- Switching frequency 100 kHz
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 30 mA
Fibre-optic length	≤ 15 m
Number of channels	2 count-, 2 gate inputs, 2 V/R changeover contacts
Low level signal voltage	-3 to 5 VDC
Switching frequency	≤ 100000 Hz
Number of channels	2 × 24 VDC/0.5 A, short-circuit proof
High level signal voltage	11 to 30 VDC
Current consumption	≤ 10 mA
Sensor supply	short-circuit proof, max. 0.5 A from operating voltage
Operating temperature	0 to 55 °C

Data in process image

	Adresse	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	Ch0 D3	SB0	Ch0 D3	CB0
	1	Ch0 D1	Ch0 D2	Ch0 D1	Ch0 D2
	2	SB1	Ch0 D0	CB1	Ch0 D0
	3	Ch1 D2	Ch1 D3	Ch1 D2	Ch1 D3
	4	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1

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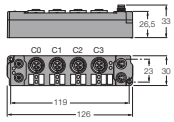
piconet® extension module for IP link
2-channel up/down counter

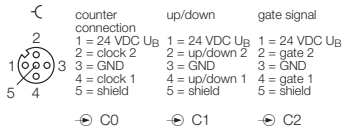
Industrial Automation

Device types

Dimensions	Type	Connection
	**6824187 SNNE-0202D-0003**	F093, F129, F081

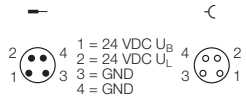
Connection

F093 - Input M12 × 1



	counter connection	up/down	gate signal
1	1 = 24 VDC U_B	1 = 24 VDC U_B	1 = 24 VDC U_B
2	2 = clock 2	2 = up/down 2	2 = gate 2
3	3 = GND	3 = GND	3 = GND
4	4 = clock 1	4 = up/down 1	4 = gate 1
5	5 = shield	5 = shield	5 = shield
	C0	C1	C2

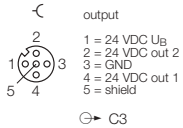
F081 - Voltage supply M8 × 1



1 = 24 VDC U_B
2 = 24 VDC U_L
3 = GND
4 = GND

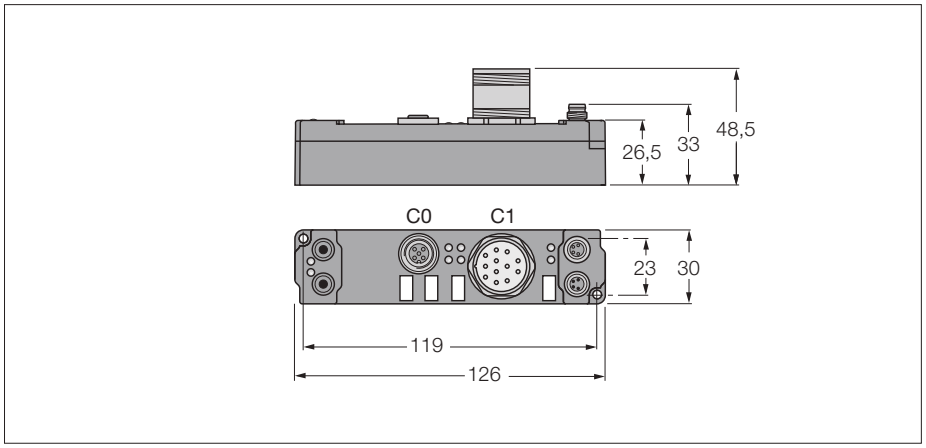
$I_{Bmax} = I_{Lmax} = 4$ A

F129 - Output M12 × 1



	output
1	1 = 24 VDC U_B
2	2 = 24 VDC out 2
3	3 = GND
4	4 = 24 VDC out 1
5	5 = shield
	C3

piconet® extension module for IP link
single-channel incremental encoder interface



- Incremental encoder interface
- 1-channel
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 55 mA
Fibre-optic length	≤ 15 m
Maximum limiting frequency, analogue	1 MHz
Rectangular decoder	1-port, 2-port, 4-port evaluation
Counter	16 bit binary
Actuator power supply	5 VDC
Zero pulse latch	16 bit
Commands	read, set, activate
Operating temperature	0 to 55 °C

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D1	SB	Reg1	CB
	1	D2	D0	reserved	Reg0
	2	D3	D4	reserved	reserved

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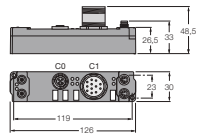
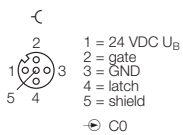
Device types

Dimensions	Type	
	**6824210 SNNE-10S-0001**	F095, F110, F081

Connection

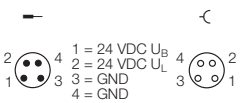
F095 - Gate / latch Input M12 × 1



1 = 24 VDC U_B
2 = gate
3 = GND
4 = latch
5 = shield

C0

F081 - Voltage supply M8 × 1



1 = 24 VDC U_B
2 = 24 VDC U_L
3 = GND
4 = GND

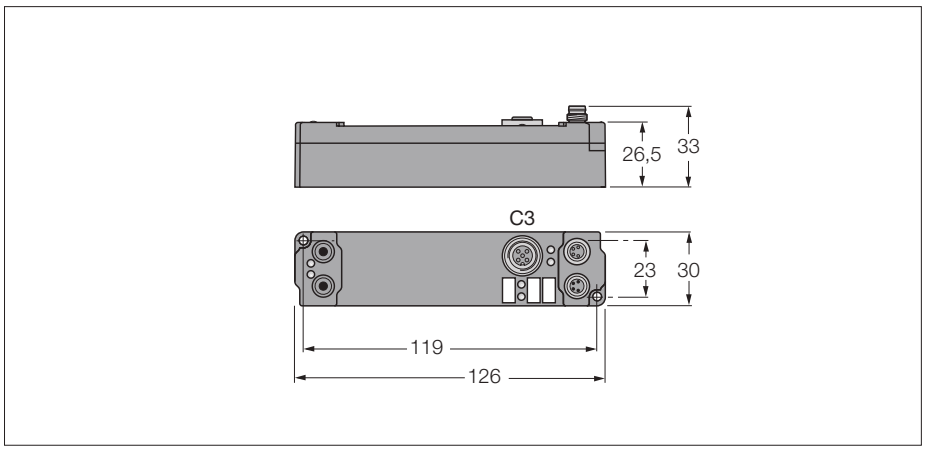
$I_{Bmax} = I_{Lmax} = 4$ A

F110 - Encoder - M23 × 1

1 = B –
2 = +5-VDC-Sensor
3 = Null +
4 = Null –
5 = A +
6 = A –
7 = Status –
8 = B +
9 = n.c.
10 = GND
11 = GND
12 = +5-VDC-Sensor

C1

piconet® extension module for IP link
Single channel serial interface RS232



- Serial interface RS232
- 1-channel
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 40 mA
Fibre-optic length	≤ 15 m
Bit distortion	≤ 3 %
Transmission rate	1.2 to 19.2 kBit/s (default 9.6 kbps)
RS232 Cable length	≤ 15 m
Low level signal voltage	-18 to -3 VDC
High level signal voltage	3 to 18 VDC
Data buffer	128 byte receive buffer, 16 byte send buffer
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D0	SB	D0	CB
	1	D2	D1	D2	D1
	2	D4	D3	D4	D3

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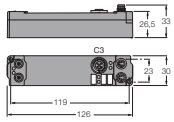
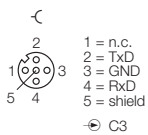
Industrial Automation

Device types

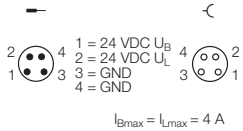
Dimensions	Type	Connection
	**6824211 SNNE-10S-0002**	F111, F081

Connection

F111 - Input M12 × 1

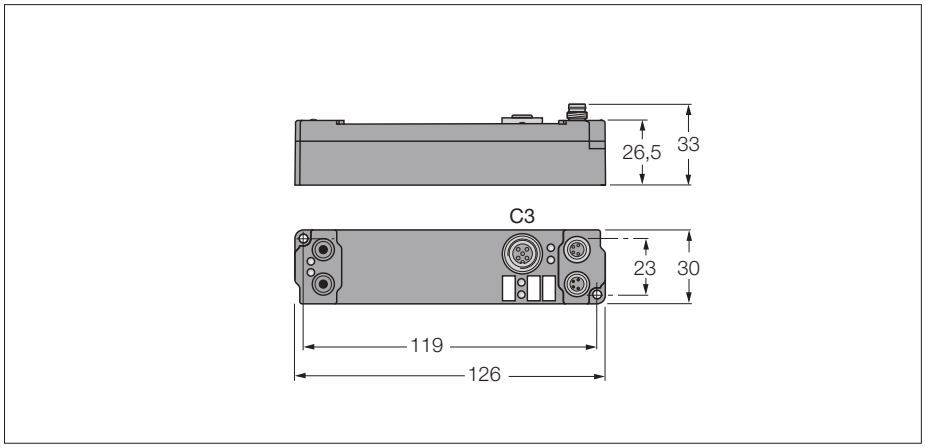


F081 - Voltage supply M8 × 1



$I_{Bmax} = I_{Lmax} = 4$ A

piconet® extension module for IP link
Single channel serial interface 0…20 mA (TTY)



- Serial interface 0…20 mA (TTY)
- 1-channel
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 40 mA
Fibre-optic length	≤ 15 m
Low level signal current	0 to 3 mA
High level signal current	14 to 20 mA
Load resistance	≤ 500 Ω
Bit transfer	2 × 20 mA
Transmission rate	1.2 to 19.2 kBit/s (default 9.6 kbps)
Transfer circuit	twisted pair ≤ 1000 m
Data buffer	128 byte receive buffer, 16 byte send buffer
Electrical isolation	operational voltage to TTY
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D0	SB	D0	CB
	1	D2	D1	D2	D1
	2	D4	D3	D4	D3

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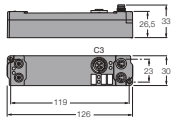
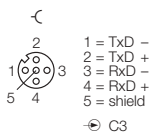
Device types

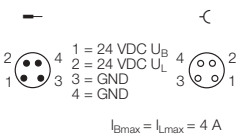
Dimensions	Type	Connection
	**6824212 SNNE-10S-0003**	F094, F130, F081

Connection

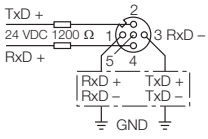
F094 - Input M12 × 1



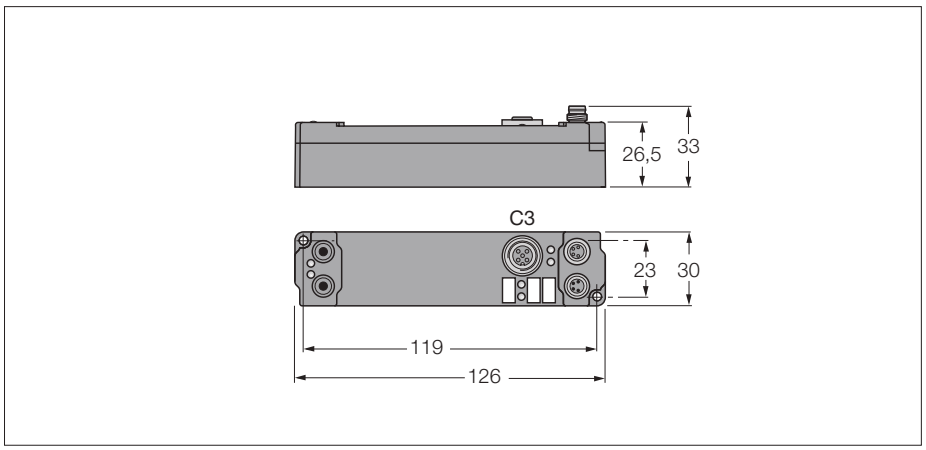
F081 - Voltage supply M8 × 1



F130 - Connection - passive TTY devices



piconet® extension module for IP link
Single channel serial interface RS422/RS485



- Serial interface RS422/485
- 1-channel
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 40 mA
Fibre-optic length	≤ 15 m
Line impedance	120 Ω
Common mode voltage	max. -7…+12 V (against ground)
Bit transfer	differential
Transmission rate	1.2 to 19.2 kBit/s (default 9.6 kbps)
Transfer circuit	twisted pair ≤ 1000 m
Data buffer	128 byte receive buffer, 16 byte send buffer
Electrical isolation	operating voltage to RS485
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D0	SB	D0	CB
	1	D2	D1	D2	D1
	2	D4	D3	D4	D3

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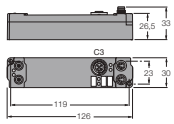
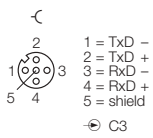
Industrial Automation

Device types

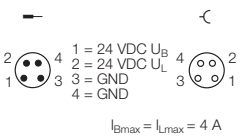
Dimensions	Type	Connection
	**6824213 SNNE-10S-0004**	F094, F130, F081

Connection

F094 - Input M12 × 1

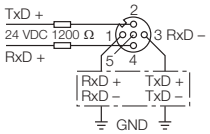


F081 - Voltage supply M8 × 1

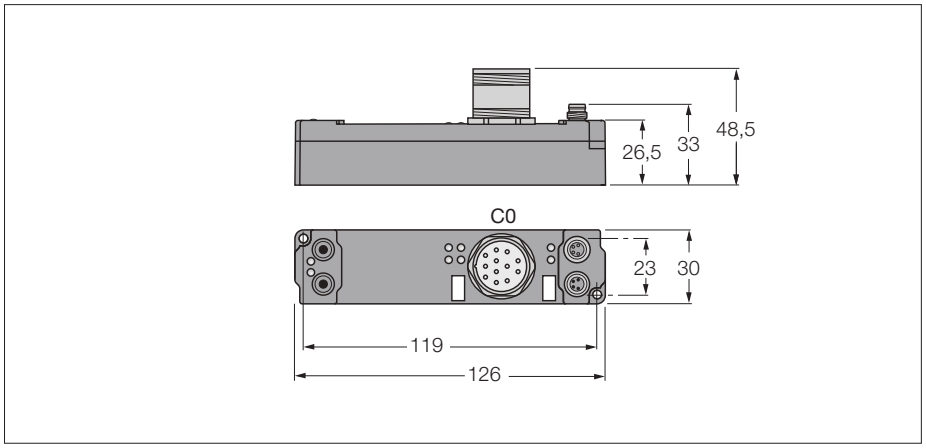


$I_{Bmax} = I_{Lmax} = 4$ A

F130 - Connection - RS485 devices



piconet® extension module for IP link
Single channel SSI sensor interface



- SSI encoder interface
- 1-channel
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 55 mA
Fibre-optic length	≤ 15 m
Bit transfer	differential (RS485)
Transmission rate	variable up to 1 MHz (default 250 Hz)
Serial input	24 bit
Data direction	read
Sensor supply	24 VDC from load voltage
Electrical isolation	operating voltage to RS232
Operating temperature	0 to 55 °C

Data in process image

Pre-conditions	Address	Input data		Output data	
	Word	High-Byte	Low-Byte	High-Byte	Low-Byte
Compact mapping: Starting with D3 in "Low-Byte" word 0 all other bytes follow immediately (highlighted in grey).	**0**	D3	SB	Reg1	CB
Complex mapping: Data are mapped with control and status byte	**1**	D1	D2	reserved	Reg0
	2	reserved	D0	reserved	reserved

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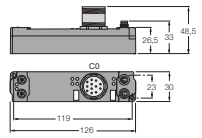
Device types

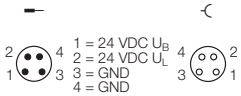
Dimensions	Type	Connection
	**6824214 SNNE-10S-0005**	F096, F081

Connection

F096 - Encoder - M23 × 1

1 = GND
2 = +24 VDC U_B
3 = Clock +
4 = Clock –
5 = Data +
6 = Data –
7 = n.c.
8 = n.c.
9 = n.c.
10 = n.c.
11 = n.c.
12 = n.c.

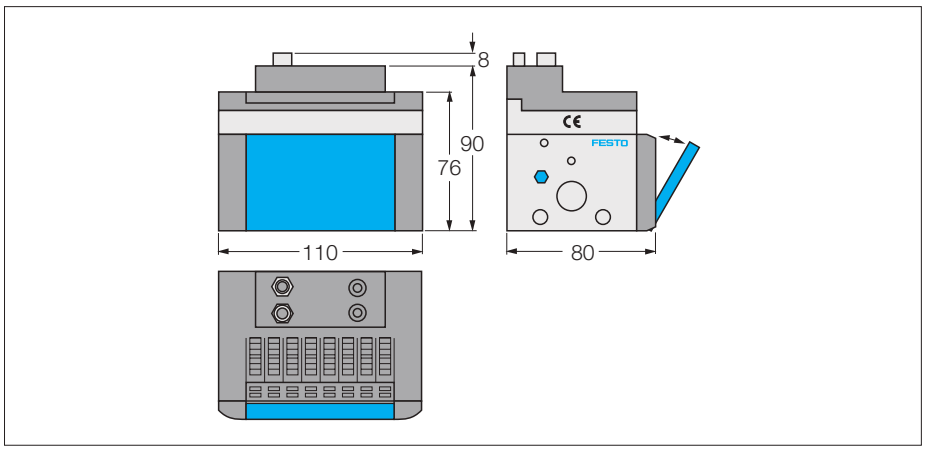
F081 - Voltage supply M8 × 1



$I_{Bmax} = I_{Lmax} = 4$ A

piconet® extension module for IP link
8 valve slices with max. 16 valve coils

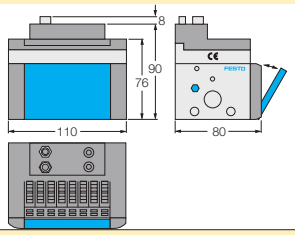
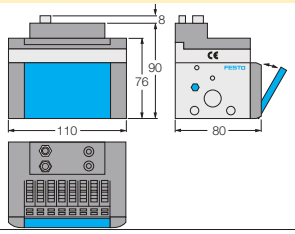
CPV valve blocks are exclusively sold by FESTO AG & Co.



- 8 valve slices
- max. 16 valve coils
- CPV10 10 mm valve slices
- CPV14 14 mm valve slices
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the IP link
- Degree of protection IP65

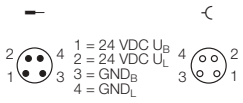
Operating / load voltage	20…29 VDC
Operating current	≤ 50 mA
Fibre-optic length	≤ 15 m
Electrical isolation	Operation voltage to fieldbus
Operating temperature	0 to 55 °C

Device types

Dimensions	Type	Connection
	**CPV10-VI-IP8-8**	F091
Dimensions	**Type**	**Connection**
	**CPV14-VI-IP8-8**	F091

Connection

F091 - Voltage supply M8 × 1



$I_{Bmax} = I_{Lmax} = 4$ A

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piconet® – Stand-alone modules for PROFIBUS

piconet® – Stand-alone modules for PROFIBUS-DP	Page
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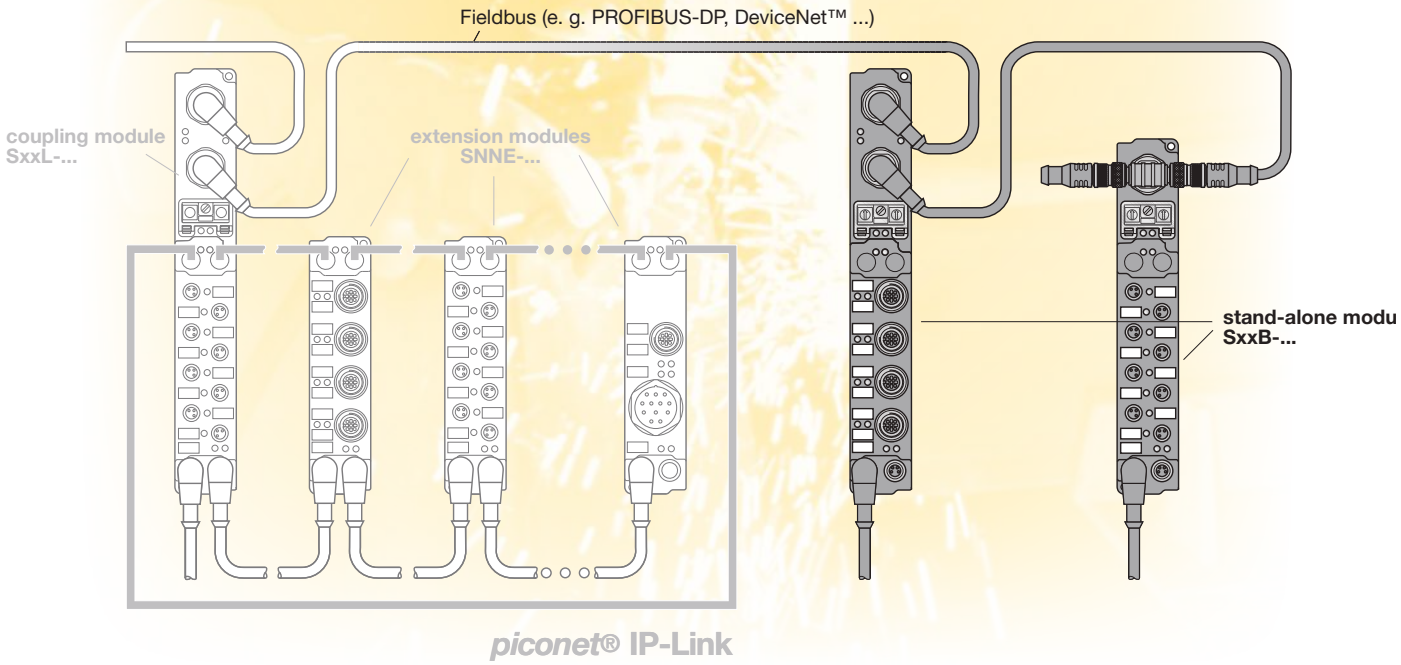

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piconet® – Stand-alone modules for PROFIBUS-DP

piconet® stand-alone modules connect each *piconet*® I/O module directly to the fieldbus. There are versions with one fieldbus connection (separate tee needed) and with two bus connections (tee piece integrated).

The programme comprises modules for the whole spectrum of I/O signals – from standardised digital industrial signals to analogue inputs and outputs. The family is complemented by a choice of technology modules, such as a pulse width modulator, an up/down counter, an incremental encoder as well as various serial interfaces.

The robust IP67 housing is extremely compact, fully encapsulated and equipped throughout with metal connectors. As a result, the *piconet*® modules are perfectly suited for application in harsh industrial environments as well as serial and special machine engineering.

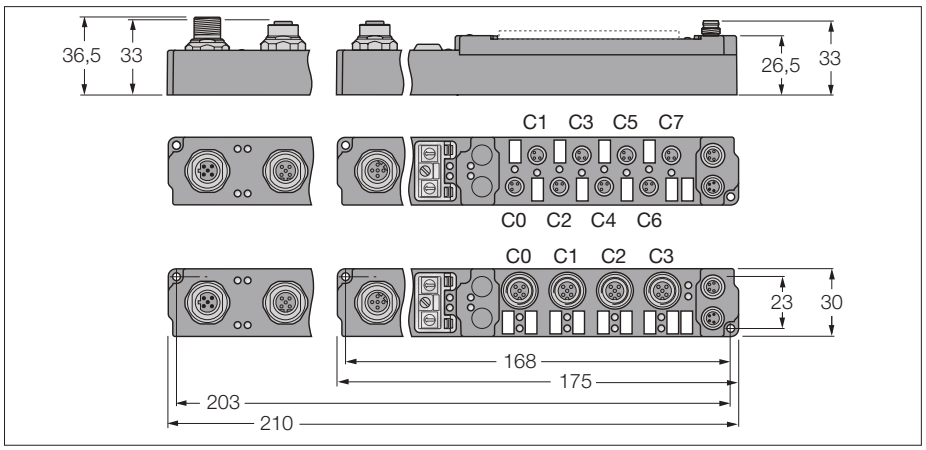
Operating and load voltage are – as with all *piconet*® module types – fed separately. Alongside the "Power" LED, each channel is assigned a "Status" LED for switching status indications.

piconet® – Stand-alone modules – general technical data

Adjustment	
Fieldbus address	1…99 (decimal), adjustable via coded rotary switches
Transmission rate	automatic
LED indications (module-specific)	
Fieldbus	fieldbus specific (s. manual)
Operating voltage U_B	green: operational
Load voltage U_L	green: operational
Connections	brass, nickel-plated
Fieldbus	depending on the type of fieldbus system used
Power supply	(1) M8 male connectors, 4-pole, (1) M8 female connectors, 4-pole
Inputs/outputs	selectable: (8) M8 female connectors, 3-pole, or (4) M12 female connectors, 5-pole
Service interface	(1) terminal strip, 5-pole (for I/O-ASSISTANT)
Housing	compact, fully encapsulated plastic housing
Material	PA6 (Polyamid)
Dimensions – device with 1 fieldbus connection	175 × 30 × 26.5 mm (H × W × D)
Dimensions – device with 2 fieldbus connections	210 × 30 × 26.5 mm (H × W × D)
Mounting	via 2 through-holes, Ø 3 mm
Mounting position	any
Operating temperature (range)	0 °C to +55 °C (+32 °F to +131 °F)
Operating temperature (storage)	-25 °C to +85 °C (-13 °F to +185 °F)
Degree of protection (IEC 60529/EN 60529)	IP65, IP66, IP67
Vibration and shock testing	according to IEC 68, part 2-6 / IEC 68, part 2-27
Electromagnetic capability (EMC)	according to EN 50081-2/EN 50082-2
Weight	approx. 250–280 g (depending on type)
Approvals	CE, cULus LISTED

Please note: further technical information is contained in the *piconet*® user manuals.
Additionally available to PROFIBUS-DP are stand-alone modules for DeviceNet™ and CANopen. For more detailed information concerning the availability of correspondent signal forms, please contact the Hans Turck GmbH & Co KG directly.

piconet® stand-alone module for PROFIBUS-DP
8 digital pnp inputs filter 3 ms



- 8 digital pnp inputs
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 85 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	8 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Operating temperature	0 to 55 °C

Data in process image

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 0 (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4

C… = Connector No., P… = Pin No.

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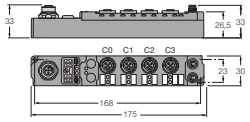
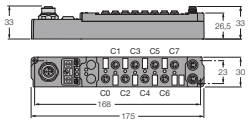
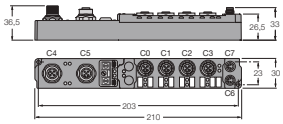
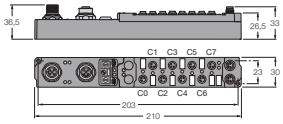
Industrial Automation

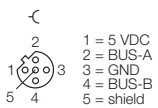
Device types

Dimensions	Type	Connection
	**6824071 SDPB-0800D-0004**	F083, F117, F081
Dimensions	**Type**	**Connection**
	**6824058 SDPB-0800D-0007**	F083, F077, F081
Dimensions	**Type**	**Connection**
	**6824410 SDPB-0800D-1004**	F084, F117, F081
Dimensions	**Type**	**Connection**
	**6824409 SDPB-0800D-1007**	F084, F077, F081

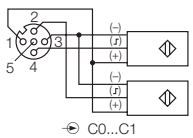
3

Connection

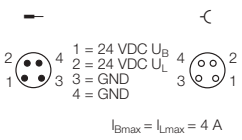
F083 - Fieldbus M12 × 1



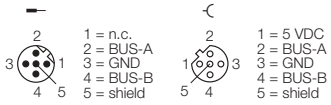
F117 - Input M12 × 1



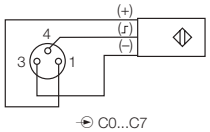
F081 - Voltage supply M8 × 1



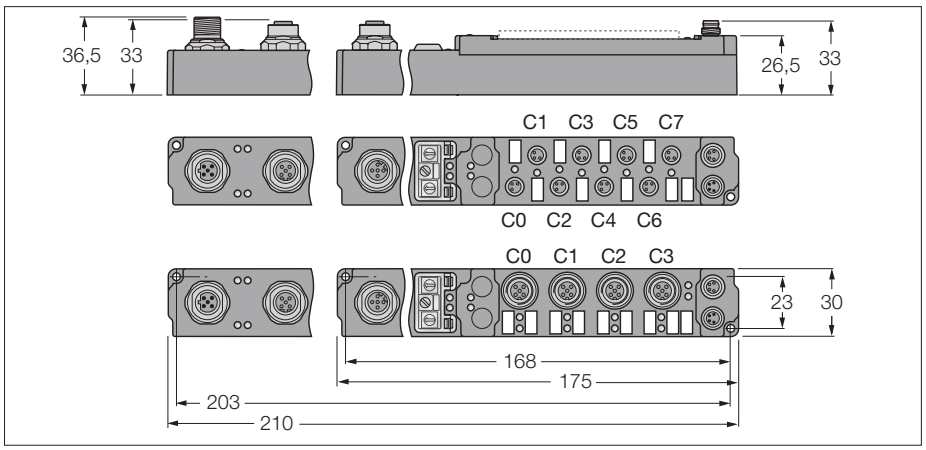
F084 - Fieldbus M12 × 1



F077 - Input M8 × 1



piconet® stand-alone module for PROFIBUS-DP
8 digital pnp inputs filter 0.2 ms



- 8 digital pnp inputs
- Input filter 0.2 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 85 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	8 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	2.5 kHz
Input delay	0.2 ms
Max. input current	6 mA
Operating temperature	0 to 55 °C

Data in process image

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 0 (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4

C… = Connector No., P… = Pin No.

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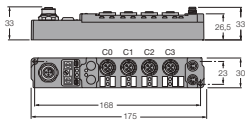
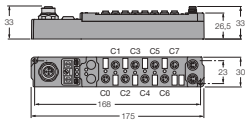
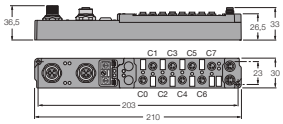
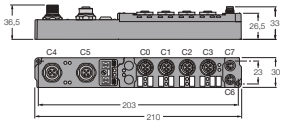
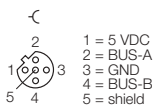
Device types

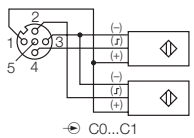
Dimensions	Type	Connection
	**6824070 SDPB-0800D-0002**	F083, F117, F081
Dimensions	**Type**	**Connection**
	**6824048 SDPB-0800D-0008**	F083, F077, F081
Dimensions	**Type**	**Connection**
	**6824407 SDPB-0800D-1008**	F084, F077, F081
Dimensions	**Type**	**Connection**
	**6824412 SDPB-0800D-1002**	F084, F117, F081

Connection

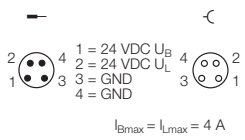
F083 - Fieldbus M12 × 1



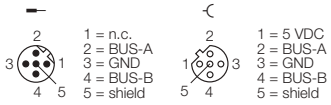
F117 - Input M12 × 1



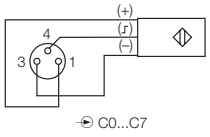
F081 - Voltage supply M8 × 1



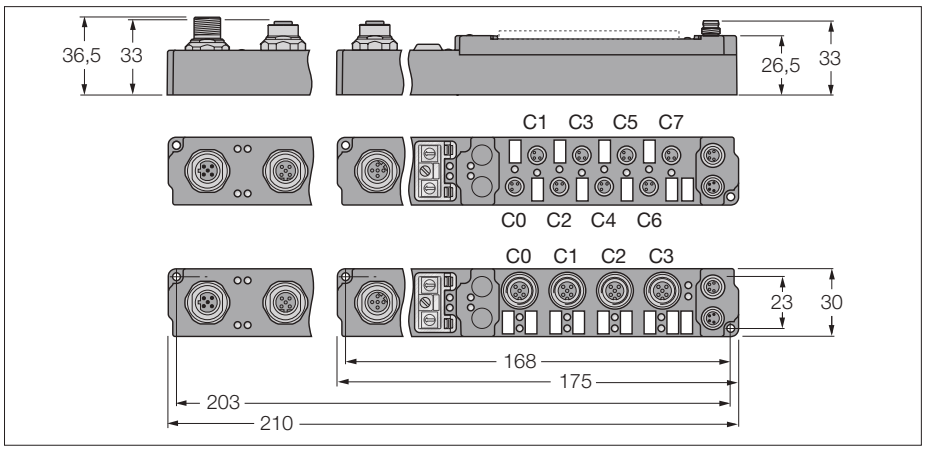
F084 - Fieldbus M12 × 1



F077 - Input M8 × 1



piconet® stand-alone module for PROFIBUS-DP
8 digital outputs 0.5 A



- 8 digital outputs 0.5 A
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 0 (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4

C… = Connector No., P… = Pin No.

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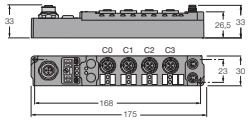
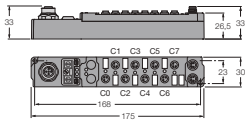
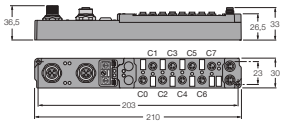
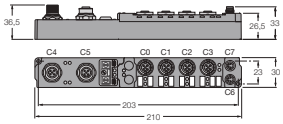
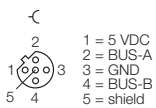
Device types

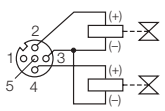
Dimensions	Type	Connection
	**6824061 SDPB-0008D-0001**	F083, F118, F081
Dimensions	**Type**	**Connection**
	**6824057 SDPB-0008D-0006**	F083, F079, F081
Dimensions	**Type**	**Connection**
	**6824415 SDPB-0008D-1006**	F084, F079, F081
Dimensions	**Type**	**Connection**
	**6824416 SDPB-0008D-1001**	F084, F118, F081

Connection

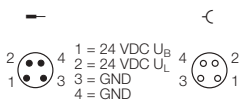
F083 - Fieldbus M12 × 1



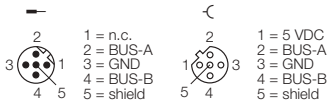
F118 - Output M12 × 1



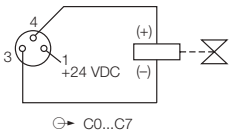
F081 - Voltage supply M8 × 1



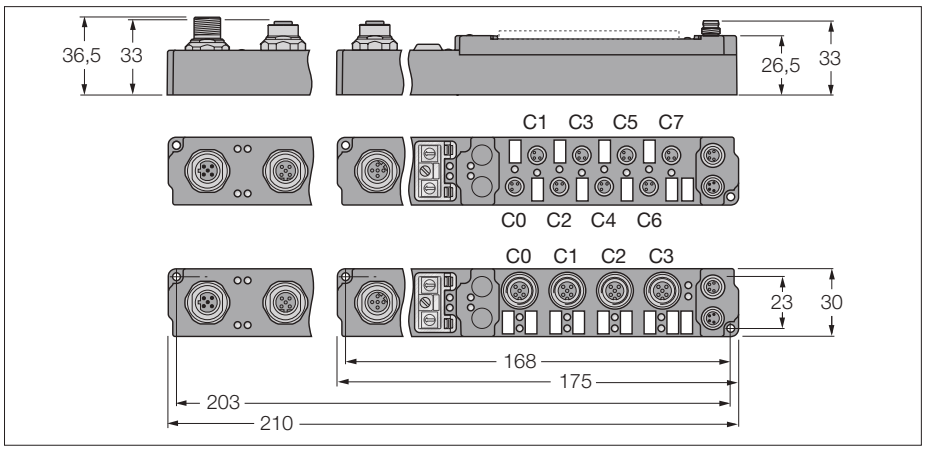
F084 - Fieldbus M12 × 1



F079 - Output M8 × 1



piconet® stand-alone module for PROFIBUS-DP
8 digital outputs 2 A (Σ 4 A)



- 8 digital outputs 2 A (Σ = 4 A)
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 4 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.25
Operating temperature	0 to 55 °C

Data in process image

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 0 (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4

C… = Connector No., P… = Pin No.

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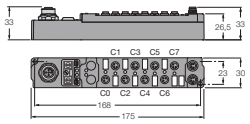
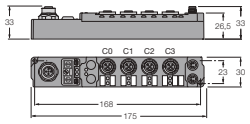
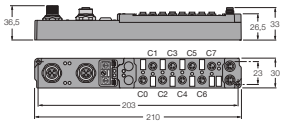
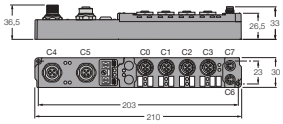
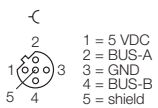
Device types

Dimensions	Type	Connection
	**6824056 SDPB-0008D-0002**	F083, F079, F081
Dimensions	**Type**	**Connection**
	**6824063 SDPB-0008D-0003**	F083, F118, F081
Dimensions	**Type**	**Connection**
	**6824405 SDPB-0008D-1002**	F084, F079, F081
Dimensions	**Type**	**Connection**
	**6824418 SDPB-0008D-1003**	F084, F118, F081

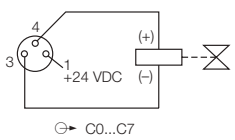
3

Connection

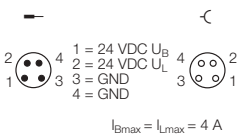
F083 - Fieldbus M12 × 1



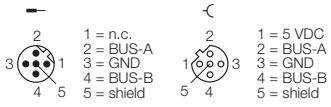
F079 - Output M8 × 1



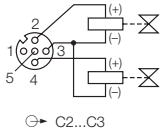
F081 - Voltage supply M8 × 1



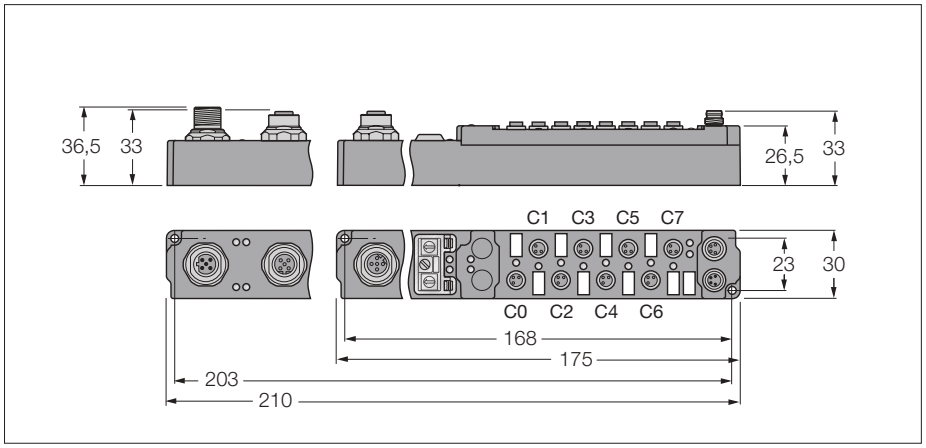
F084 - Fieldbus M12 × 1



F118 - Output M12 × 1



piconet® stand-alone module for PROFIBUS-DP
8 digital outputs 2 A (Σ 12 A)



- 8 digital outputs 2 A (Σ = 12 A)
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 12 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.75
Operating temperature	0 to 55 °C

Data in process image

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 0 (M12)	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4

C… = Connector No., P… = Pin No.

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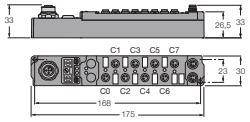
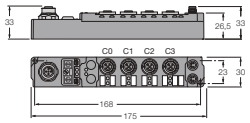
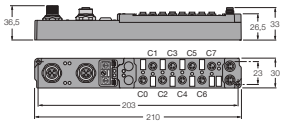
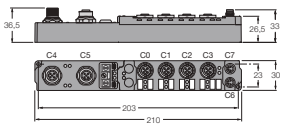
piconet® stand-alone module for PROFIBUS-DP
8 digital outputs 2 A (Σ 12 A)

Industrial Automation

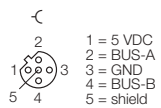
Device types

Dimensions	Type	Connection
	**6824064 SDPB-0008D-0004**	F083, F079, F082
Dimensions	**Type**	**Connection**
	**6824066 SDPB-0008D-0005**	F083, F118, F082
Dimensions	**Type**	**Connection**
	**6824420 SDPB-0008D-1004**	F084, F079, F082
	Type	**Connection**
	**6824421 SDPB-0008D-1005**	F084, F118, F082

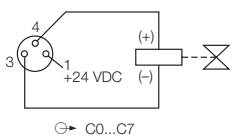
3

Connection

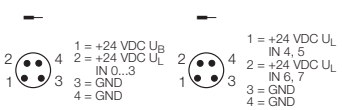
F083 - Fieldbus M12 × 1



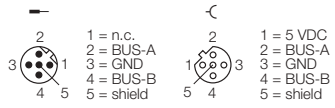
F079 - Output M8 × 1



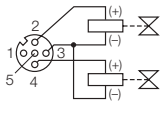
F082 - Voltage supply M8 × 1



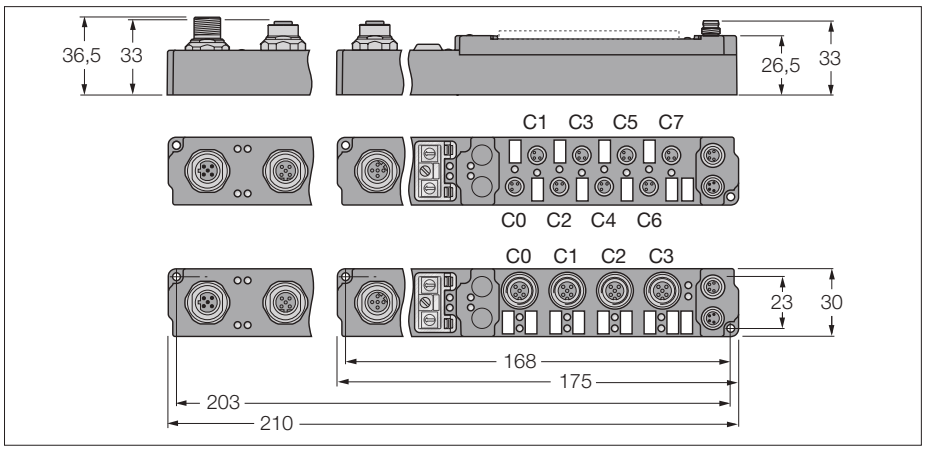
F084 - Fieldbus M12 × 1



F118 - Output M12 × 1



piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
The 4 most significant bits are not used, but require memory allocation.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	idle	idle	idle	idle	C7P4	C6P4	C5P4	C4P4
		Byte n (M12)	idle	idle	idle	idle	C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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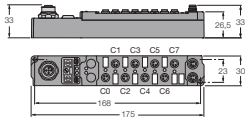
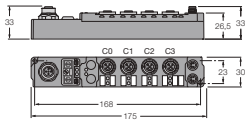
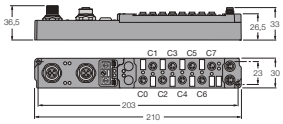
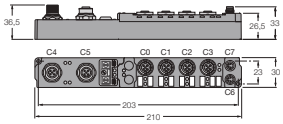
piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 3 ms
4 digital outputs 0.5 A

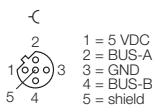
Industrial Automation

Device types

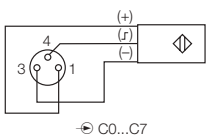
Dimensions	Type	Connection
	**6824114 SDPB-0404D-0003**	F083, F077, F079, F081
	Type	**Connection**
	**6824115 SDPB-0404D-0004**	F083, F117, F118, F081
Dimensions	**Type**	**Connection**
	**6824423 SDPB-0404D-1003**	F084, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824424 SDPB-0404D-1004**	F084, F117, F118, F081

Connection

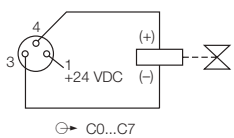
F083 - Fieldbus M12 × 1



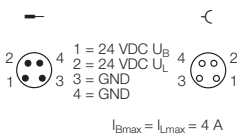
F077 - Input M8 × 1



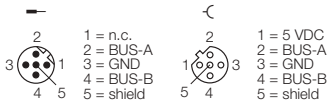
F079 - Output M8 × 1



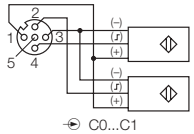
F081 - Voltage supply M8 × 1



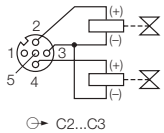
F084 - Fieldbus M12 × 1



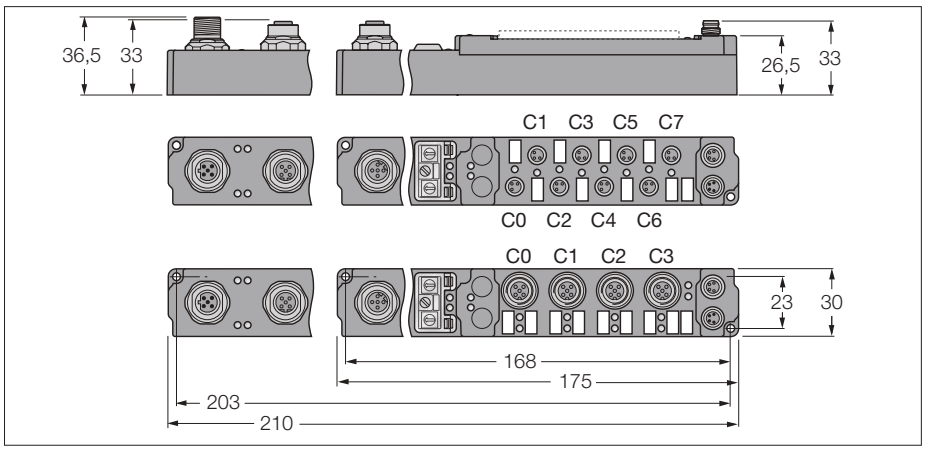
F117 - Input M12 × 1



F118 - Output M12 × 1



piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 0.2 ms
4 digital outputs 0.5 A



- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Input filter 0.2 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	2.5 kHz
Input delay	0.2 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
The 4 most significant bits are not used, but require memory allocation.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	idle	idle	idle	idle	C7P4	C6P4	C5P4	C4P4
		Byte n (M12)	idle	idle	idle	idle	C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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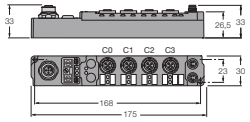
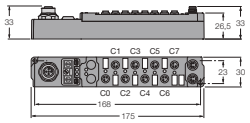
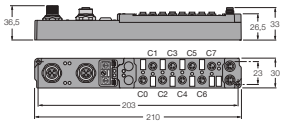
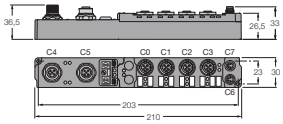
piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 0.2 ms
4 digital outputs 0.5 A

Industrial Automation

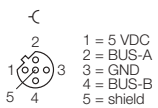
Device types

Dimensions	Type	Connection
	**6824113 SDPB-0404D-0002**	F083, F117, F118, F081
Dimensions	**Type**	**Connection**
	**6824049 SDPB-0404D-0001**	F083, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824426 SDPB-0404D-1001**	F084, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824427 SDPB-0404D-1002**	F084, F117, F118, F081

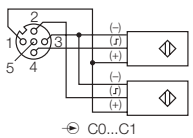
3

Connection

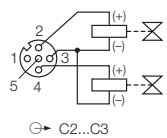
F083 - Fieldbus M12 × 1



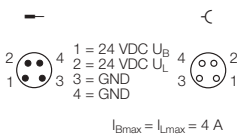
F117 - Input M12 × 1



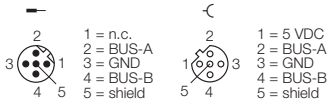
F118 - Output M12 × 1



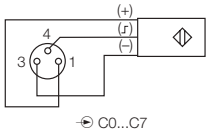
F081 - Voltage supply M8 × 1



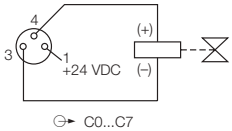
F084 - Fieldbus M12 × 1



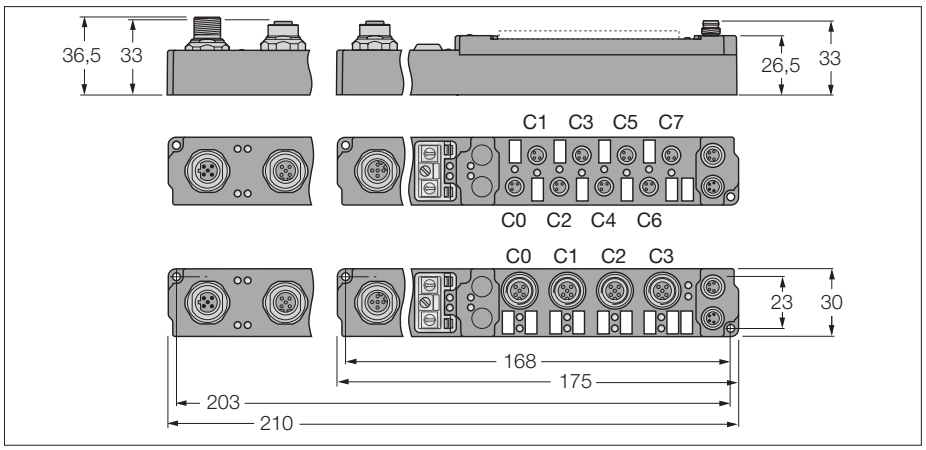
F077 - Input M8 × 1



F079 - Output M8 × 1



piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 3 ms
4 digital outputs 2 A



- 4 digital pnp inputs
- 4 digital outputs 2 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	167 Hz
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 4 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.5
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
The 4 most significant bits are not used, but require memory allocation.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	idle	idle	idle	idle	C7P4	C6P4	C5P4	C4P4
		Byte n (M12)	idle	idle	idle	idle	C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 3 ms
4 digital outputs 2 A

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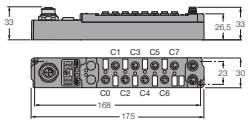
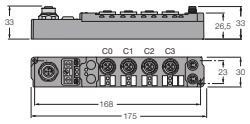
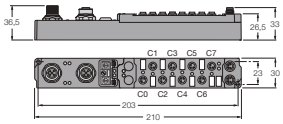
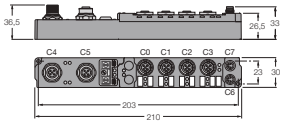
Industrial Automation

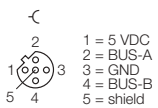
Device types

Dimensions	Type	Connection
	6824119 SDPB-0404D-0007	F083, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824111 SDPB-0404D-0008	F083, F117, F118, F081
Dimensions	**Type**	**Connection**
	6824429 SDPB-0404D-1007	F084, F077, F079, F081
Dimensions	**Type**	**Connection**
	6824430 SDPB-0404D-1008	F084, F117, F118, F081

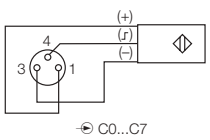
3

Connection

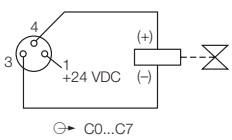
F083 - Fieldbus M12 × 1



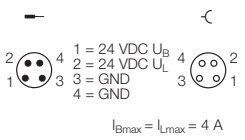
F077 - Input M8 × 1



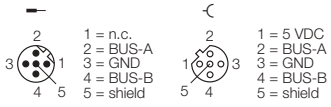
F079 - Output M8 × 1



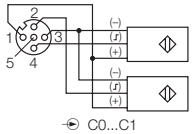
F081 - Voltage supply M8 × 1



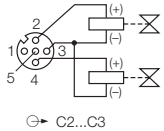
F084 - Fieldbus M12 × 1



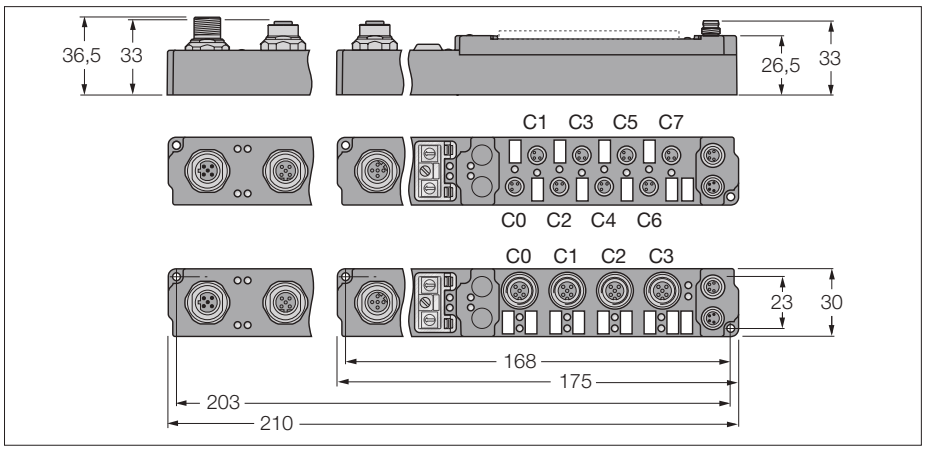
F117 - Input M12 × 1



F118 - Output M12 × 1



piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 0.2 ms
4 digital outputs 2 A



- 4 digital pnp inputs
- 4 digital outputs 2 A
- Input filter 0.2 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Max. input frequency	2.5 kHz
Input delay	0.2 ms
Max. input current	6 mA
Outputs	
Number of channels	4 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	2 A (Σ 4 A), short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	0.5
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
The 4 most significant bits are not used, but require memory allocation.	**Input**	**Byte n** (M8)	idle	idle	idle	idle	C3P4	C2P4	C1P4	C0P4
		Byte n (M12)	idle	idle	idle	idle	C1P2	C1P4	C0P2	C0P4
	Output	**Byte n** (M8)	idle	idle	idle	idle	C7P4	C6P4	C5P4	C4P4
		Byte n (M12)	idle	idle	idle	idle	C3P2	C3P4	C2P2	C2P4

C… = Connector no., P… = Pin no.

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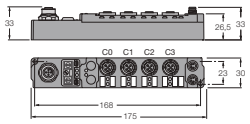
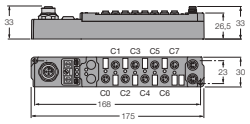
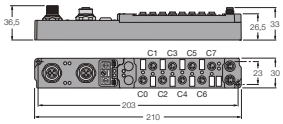
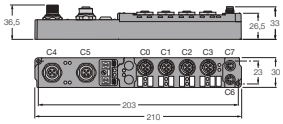
piconet® stand-alone module for PROFIBUS-DP
4 digital pnp inputs filter 0.2 ms
4 digital outputs 2 A

Industrial Automation

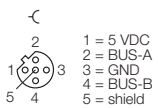
Device types

Dimensions	Type	Connection
	**6824118 SDPB-0404D-0006**	F083, F117, F118, F081
Dimensions	**Type**	**Connection**
	**6824116 SDPB-0404D-0005**	F083, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824432 SDPB-0404D-1005**	F084, F077, F079, F081
Dimensions	**Type**	**Connection**
	**6824433 SDPB-0404D-1006**	F084, F117, F118, F081

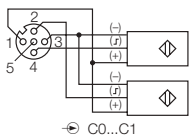
3

Connection

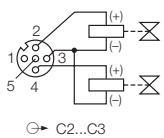
F083 - Fieldbus M12 × 1



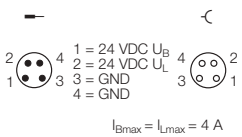
F117 - Input M12 × 1



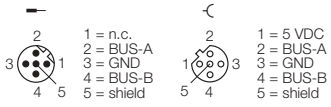
F118 - Output M12 × 1



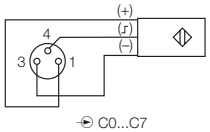
F081 - Voltage supply M8 × 1



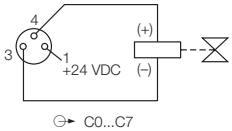
F084 - Fieldbus M12 × 1



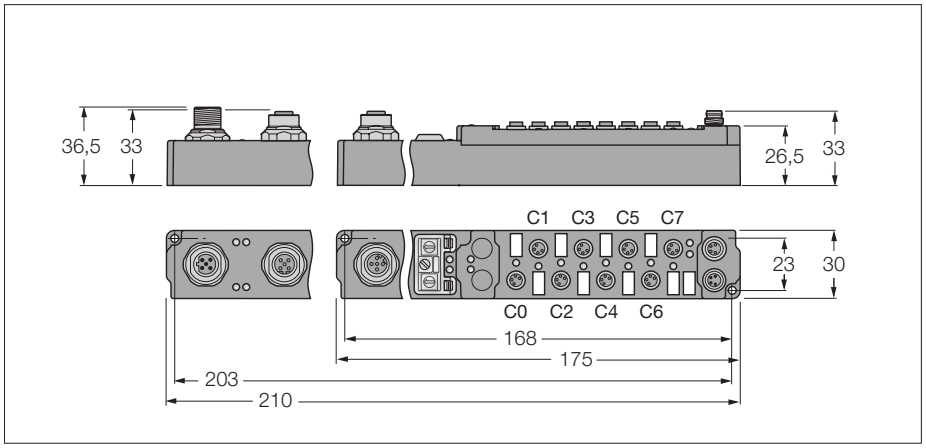
F077 - Input M8 × 1



F079 - Output M8 × 1



piconet® stand-alone module for PROFIBUS-DP
8 digital pnp inputs filter 3 ms
8 digital outputs 0.5 A



- 8 digital pnp inputs
- 8 digital outputs 0.5 A
- Input filter 3 ms
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 90 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	8 digital inputs acc. to EN 61131-2
Input voltage	20…29 VDC via operating voltage
Supply current	< 500 mA per channel, short-circuit proof
Low level signal voltage	-3…5 VDC (EN 61131-2, type 2)
High level signal voltage	11…30 VDC (EN 61131-2, type 2)
Input delay	3 ms
Max. input current	6 mA
Outputs	
Number of channels	8 digital outputs acc. to EN 61131-2
Output voltage	20…29 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 500 Hz
Simultaneity factor	1
Operating temperature	0 to 55 °C

Data in process image

			Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Each 1 byte input data is mapped.	**Input**	**Byte 0** (M8)	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Each 1 byte output data is mapped.	**Output**	**Byte 0** (M8)	C7P2	C6P2	C5P2	C4P2	C3P2	C2P2	C1P2	C0P2

C… = Connector no. – P… = Pin no.

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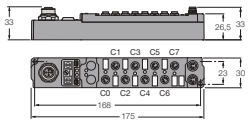
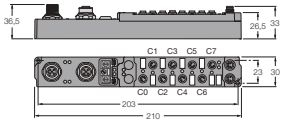
piconet® stand-alone module for PROFIBUS-DP
8 digital pnp inputs filter 3 ms
8 digital outputs 0.5 A

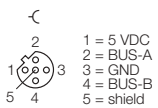
Industrial Automation

Device types

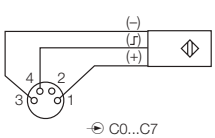
Dimensions	Type	Connection
	**6824167 SDPB-0808D-0001**	F083, F075, F078, F081
Dimensions	**Type**	**Connection**
	**6824435 SDPB-0808D-1001**	F084, F075, F078, F081

Connection

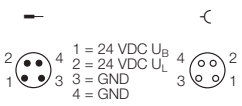
F083 - Fieldbus M12 × 1



F075 - Input M8 × 1

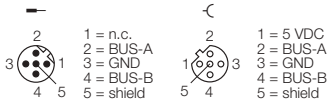


F081 - Voltage supply M8 × 1

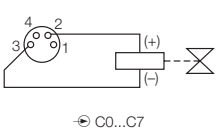


$I_{Bmax} = I_{Lmax} = 4$ A

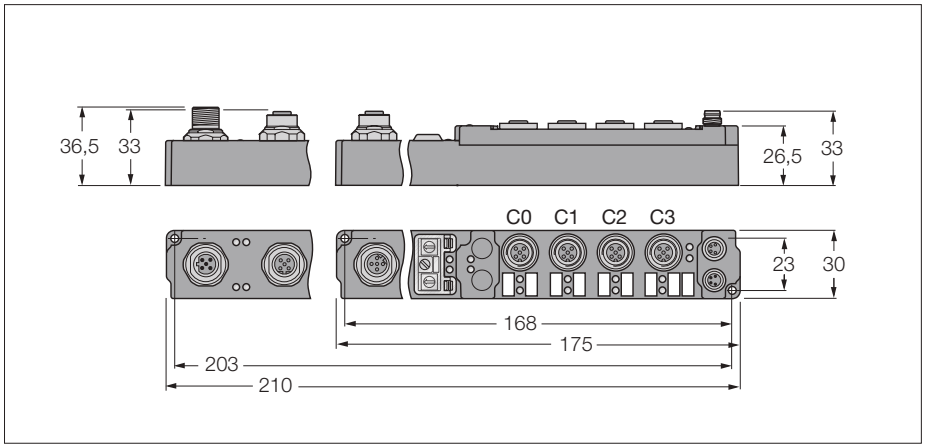
F084 - Fieldbus M12 × 1



F078 - Output M8 × 1



piconet® stand-alone module for PROFIBUS-DP
4 analogue inputs ±10 V



- 4 analogue inputs ±10 V
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 140 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 analogue inputs ± 10 V
Input resistance	> 100 Ω
Electrical isolation	channels to operational voltage
Common mode voltage	max. 35 V
Measuring current	0.5 mA
Conversion time	250 ms
Relative measuring error	< +- 0.3 % of full scale
Input filter	variable
Sensor supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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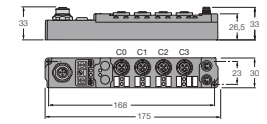
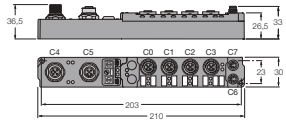
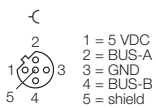
Device types

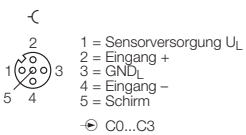
Dimensions	Type	Connection
	**6824051 SDPB-40A-0005**	F083, F087, F124, F091
Dimensions	**Type**	**Connection**
	**6824438 SDPB-40A-1005**	F084, F087, F124, F091

Connection

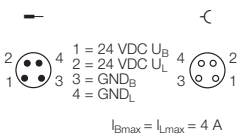
F083 - Fieldbus M12 × 1



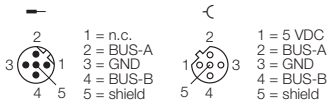
F087 - Input M12 × 1



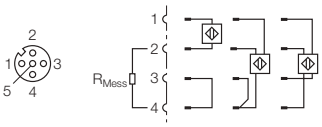
F091 - Voltage supply M8 × 1



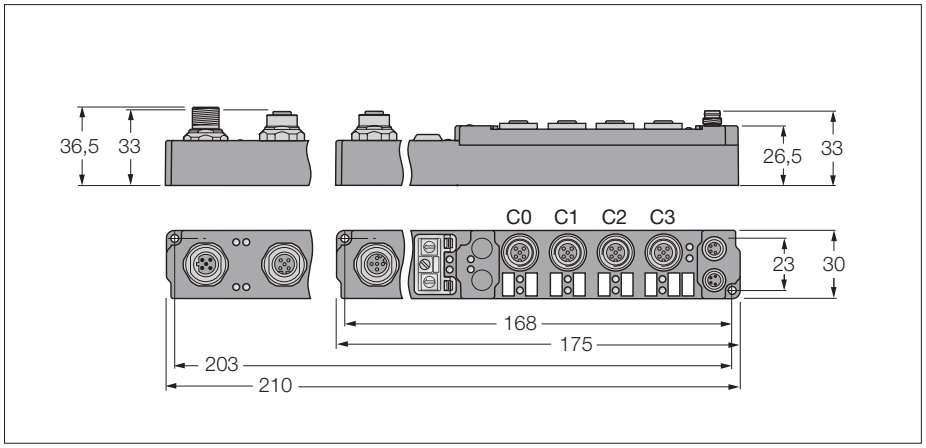
F084 - Fieldbus M12 × 1



F124 - Connection - inputs



piconet® stand-alone module for PROFIBUS-DP
4 analogue inputs 0/4… 20 mA



- 4 analogue inputs 0/4…20 mA
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 140 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 analogue inputs 20 mA
Input resistance	80 Ω
Electrical isolation	channels to operational voltage
Common mode voltage	max. 35 V
Measuring current	0.5 mA
Conversion time	250 ms
Relative measuring error	< +- 0.3 % of full scale
Input filter	variable
Sensor supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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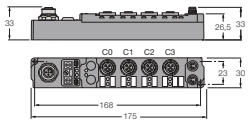
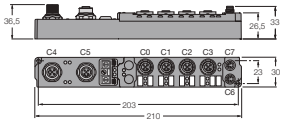
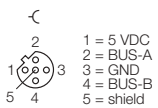
Device types

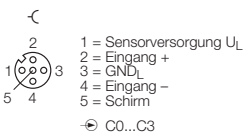
Dimensions	Type	Connection
	**6824052 SDPB-40A-0007**	F083, F087, F124, F091
Dimensions	**Type**	**Connection**
	**6824439 SDPB-40A-1007**	F084, F087, F124, F091

Connection

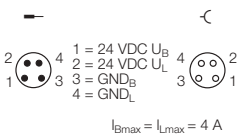
F083 - Fieldbus M12 × 1



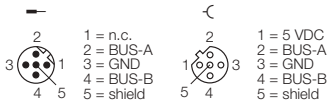
F087 - Input M12 × 1



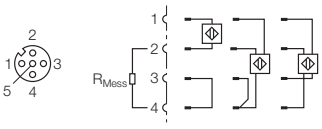
F091 - Voltage supply M8 × 1



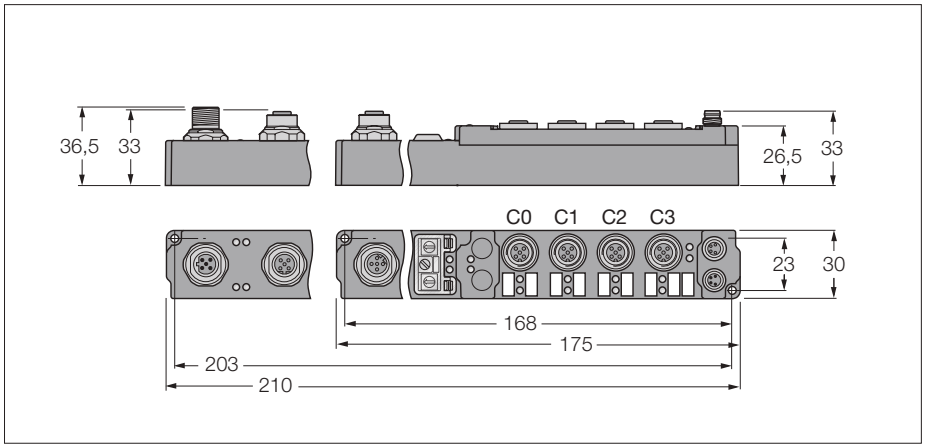
F084 - Fieldbus M12 × 1



F124 - Connection - inputs



piconet® stand-alone module for PROFIBUS-DP
4 analogue inputs for Pt100



- 4 analogue inputs for Pt100
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 110 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 analogue inputs Pt100
Electrical isolation	channels to operational voltage
Sensor type	Pt100
Temperature range	-200 to 850 °C (Pt sensors), -60 to 250 °C (Ni sensors)
Measuring current	0.1 °C
Conversion time	250 ms
Relative measuring error	< +-1.0 % of full scale
Input filter	variable
Sensor supply	from operational voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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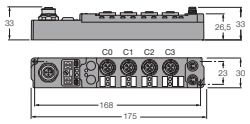
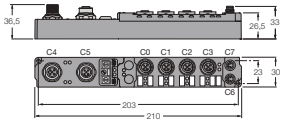
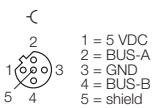
Device types

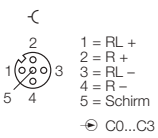
Dimensions	Type	Connection
	**6824040 SDPB-40A-0009**	F083, F088, F125, F091
Dimensions	**Type**	**Connection**
	**6824440 SDPB-40A-1009**	F084, F088, F125, F091

Connection

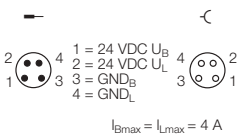
F083 - Fieldbus M12 × 1



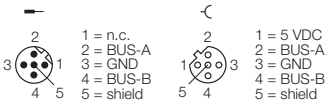
F088 - Input M12 × 1



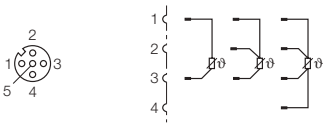
F091 - Voltage supply M8 × 1



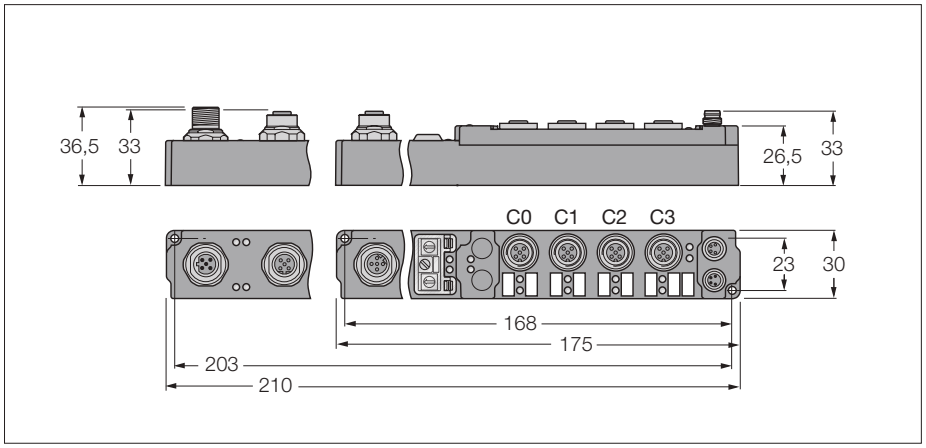
F084 - Fieldbus M12 × 1



F125 - Connection - inputs



piconet® stand-alone module for PROFIBUS-DP
4 analogue inputs for thermoelements



- 4 analogue inputs for thermoelements
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 110 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Inputs	
Number of channels	4 analogue thermoelement inputs
Electrical isolation	channels to operational voltage
Sensor type	K
Temperature range	Sensor sensor (default type K)
Conversion time	250 ms
Relative measuring error	< +-0.5 % of full scale
Input filter	variable
Sensor supply	from operational voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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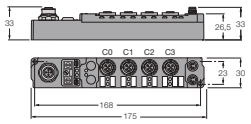
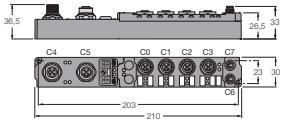
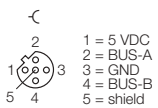
Device types

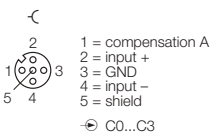
Dimensions	Type	Connection
	**6824050 SDPB-40A-0004** Matching connector with Pt1000 probe for cold junction compensation: **WAS5-THERMO** Ident no. 6824260	F083, F086, F126, F091
Dimensions	**Type**	**Connection**
	**6824441 SDPB-40A-1004** Matching connector with Pt1000 probe for cold junction compensation: **WAS5-THERMO** Ident no. 6824260	F084, F086, F126, F091

Connection

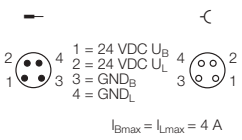
F083 - Fieldbus M12 × 1



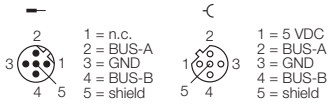
F086 - Input M12 × 1



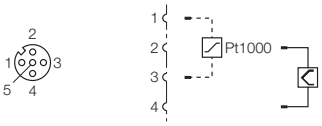
F091 - Voltage supply M8 × 1



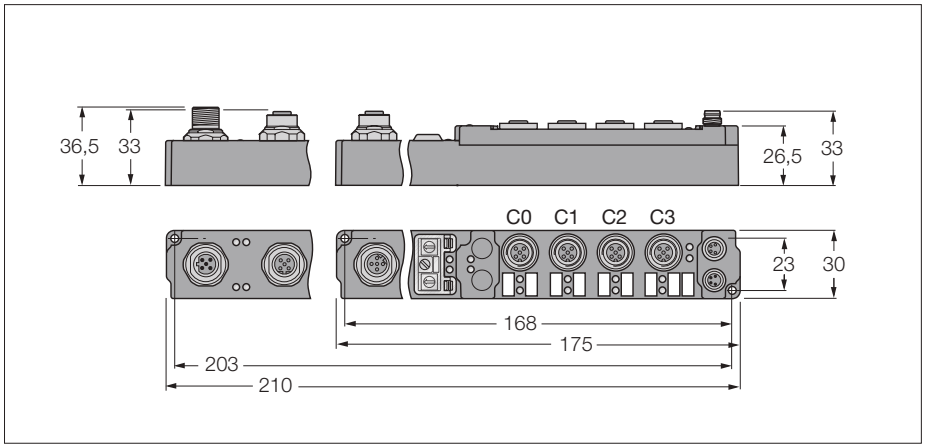
F084 - Fieldbus M12 × 1



F126 - Connection - inputs



piconet® stand-alone module for PROFIBUS-DP
4 analogue outputs ±10 V



- 4 analogue outputs ±10 V
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 140 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Outputs	
Number of channels	4 analogue outputs ± 10 V
Load resistance	> 5000 Ω
Electrical isolation	channels to operational voltage
Conversion time	< 1 ms
Relative measuring error	< +- 0.3 % of full scale
Actuator power supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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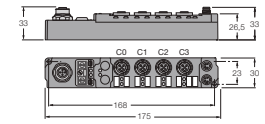
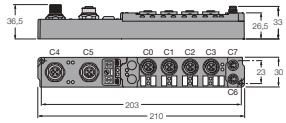
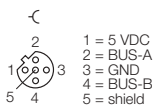
Device types

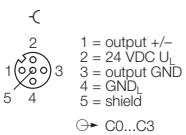
Dimensions	Type	Connection
	**6824069 SDPB-04A-0007**	F083, F127, F128, F091
Dimensions	**Type**	**Connection**
	**6824443 SDPB-04A-1007**	F084, F127, F128, F091

Connection

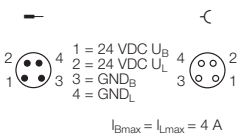
F083 - Fieldbus M12 × 1



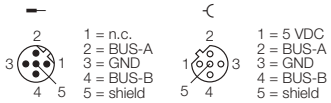
F127 - Output M12 × 1



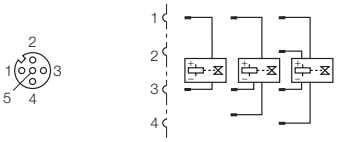
F091 - Voltage supply M8 × 1



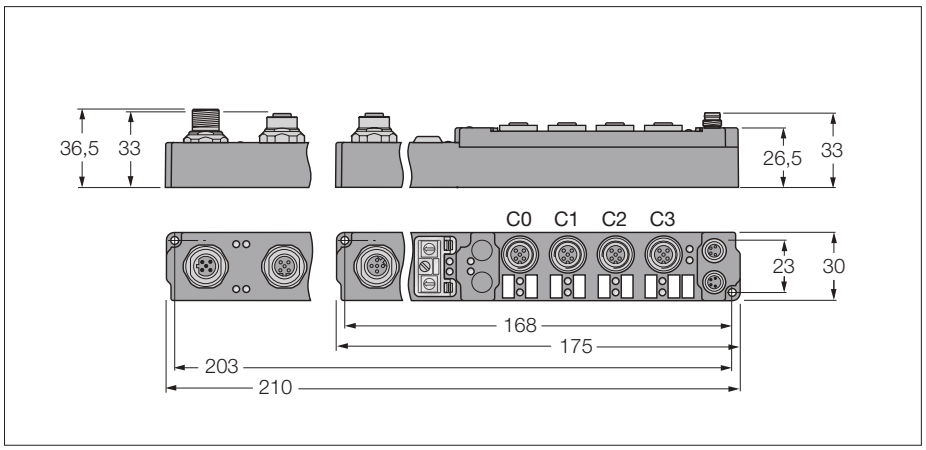
F084 - Fieldbus M12 × 1



F128 - Connection - outputs



piconet® stand-alone module for PROFIBUS-DP
4 analogue outputs 0/4…20 mA



- 4 analogue outputs 0/4…20 mA
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 115 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Outputs	
Number of channels	4 analogue outputs 20 mA
Load resistance	< 500 Ω
Electrical isolation	channels to operational voltage
Conversion time	< 3.5 ms
Relative measuring error	< +- 0.3 % of full scale
Actuator power supply	from load voltage
Operating temperature	0 to 55 °C

Data in process image

Valid for the setting "Motorola format"

SBn: Status byte channel n
CBn: Control byte channel n
Chn D0: channel n, least significant data byte
Chn D1: channel n, most significant data byte

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Compact mapping: Starting with Ch0 D1 in "Low-Byte" word 0 all other bytes follow immediately. Only the user data are mapped (greyed in the table). **Complex mapping:** Data are mapped with control and status byte.	**0**	Ch0 D1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 D0	CB1	Ch0 D0
	2	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1
	3	Ch2 D1	SB2	Ch2 D1	CB2
	4	SB3	Ch2 D0	CB3	Ch2 D0
	5	Ch3 D0	Ch3 D1	Ch3 D0	Ch3 D1

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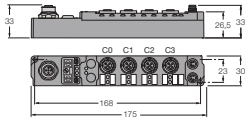
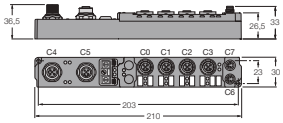
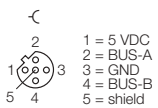
Device types

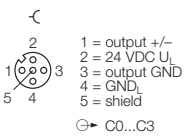
Dimensions	Type	Connection
	**6824059 SDPB-04A-0009**	F083, F127, F128, F091
Dimensions	**Type**	**Connection**
	**6824442 SDPB-04A-1009**	F084, F127, F128, F091

Connection

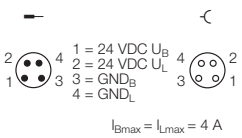
F083 - Fieldbus M12 × 1



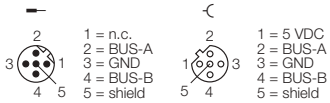
F127 - Output M12 × 1



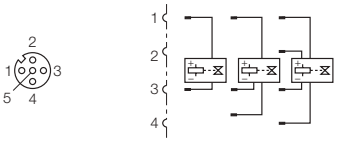
F091 - Voltage supply M8 × 1



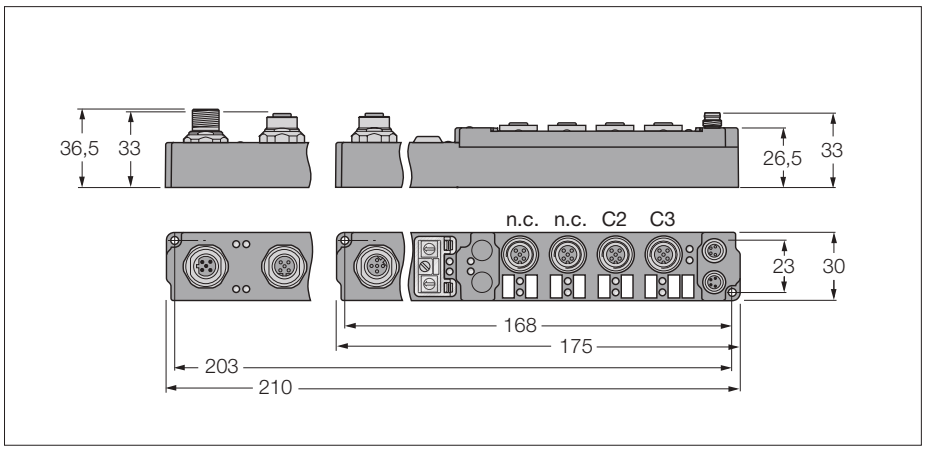
F084 - Fieldbus M12 × 1



F128 - Connection - outputs



piconet® stand-alone module for PROFIBUS-DP
2-channel pulse width modulation (PWM)



- Pulse width modulation
- 2-channel
- 2.5 A per channel
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 85 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
V/R output	0.5 A short-circuit proof
Output current per channel	2.5 A
Load type	resistive, inductive
Base frequency	1 Hz…10 kHz (default 250 Hz)
Duty factor	0…100 % (t ON > 750 ns, t OFF > 500 ns)
Resolution	10 Bit
Freewheeling diode	on the outputs
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	Ch0 Reg1	SB0	Ch0 D1	CB0
	1	SB1	Ch0 Reg0	CB1	Ch0 D0
	2	Ch1 Reg0	Ch1 Reg1	Ch1 D0	Ch1 D1

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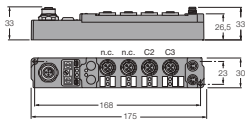
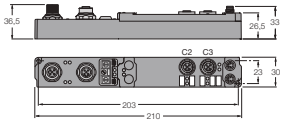
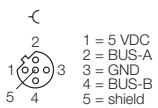
Device types

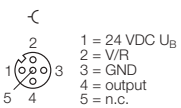
Dimensions	Type	Connection
	**6824060 SDPB-0002D-0002**	F083, F092, F081
Dimensions	**Type**	**Connection**
	**6824437 SDPB-0002D-1002**	F084, F092, F081

Connection

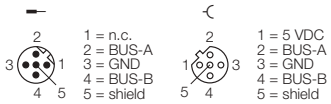
F083 - Fieldbus M12 × 1



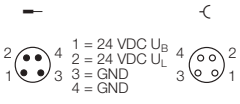
F092 - Output M12 × 1



F084 - Fieldbus M12 × 1

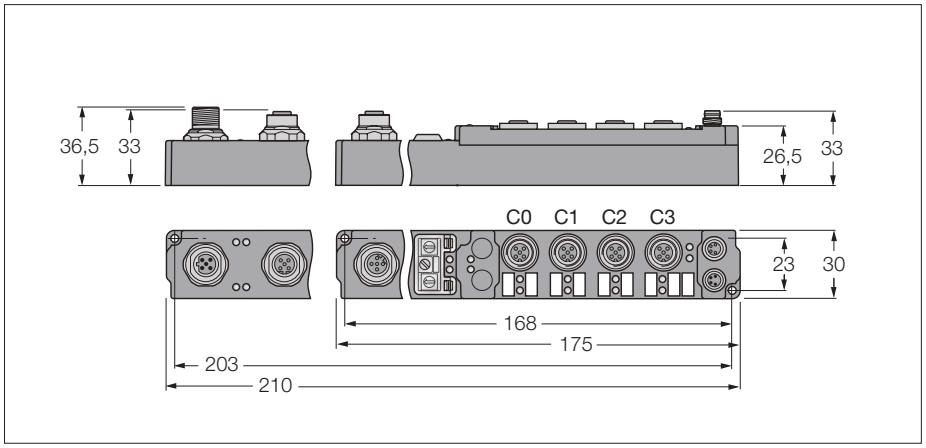


F081 - Voltage supply M8 × 1



$I_{Bmax} = I_{Lmax} = 4$ A

piconet® stand-alone module for PROFIBUS-DP
2-channel up/down counter



- Up/down counter
- 2-channel
- Switching frequency 100 kHz
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 30 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Number of channels	2 count-, 2 gate inputs, 2 V/R changeover contacts
Low level signal voltage	-3 to 5 VDC
High level signal voltage	11 to 30 VDC
Current consumption	≤ 10 mA
Switching frequency	≤ 100000 Hz
Number of channels	2 × 24 VDC/0.5 A, short-circuit proof
Sensor supply	short-circuit proof, max. 0.5 A from operating voltage
Operating temperature	0 to 55 °C

Data in process image

	Adresse	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byt**
Complex mapping: Data are mapped with control and status byte	**0**	Ch0 D3	SB0	Ch0 D3	CB0
	1	Ch0 D1	Ch0 D2	Ch0 D1	Ch0 D2
	2	SB1	Ch0 D0	CB1	Ch0 D0
	3	Ch1 D2	Ch1 D3	Ch1 D2	Ch1 D3
	4	Ch1 D0	Ch1 D1	Ch1 D0	Ch1 D1

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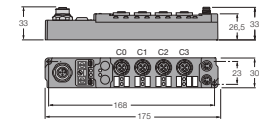
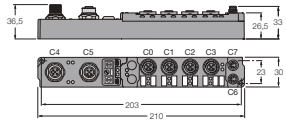
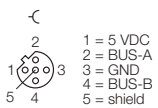
Device types

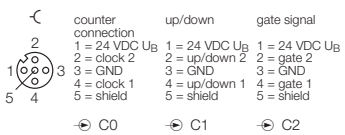
Dimensions	Type	Connection
	**6824068 SDPB-0202D-0003**	F083, F093, F129, F081
Dimensions	**Type**	**Connection**
	**6824413 SDPB-0202D-1003**	F084, F093, F129, F081

Connection

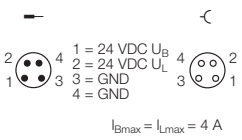
F083 - Fieldbus M12 × 1



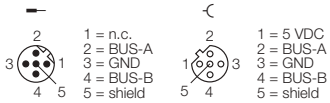
F093 - Input M12 × 1



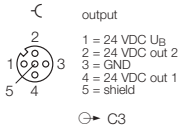
F081 - Voltage supply M8 × 1



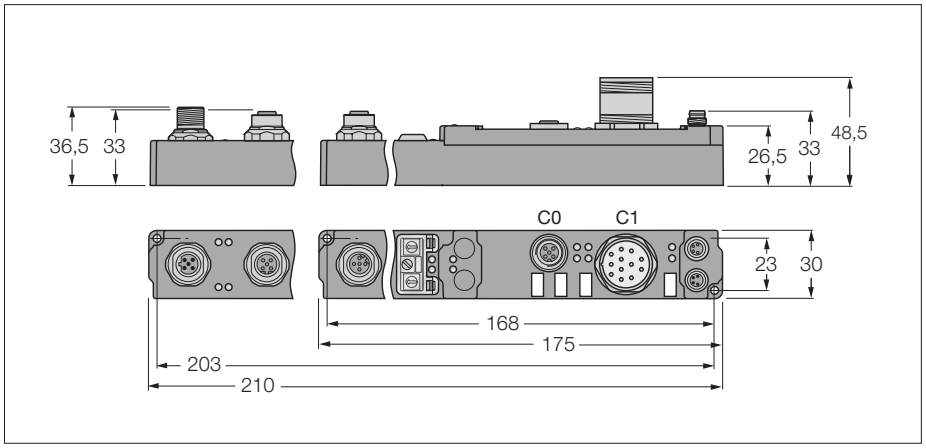
F084 - Fieldbus M12 × 1



F129 - Output M12 × 1



piconet® stand-alone module for PROFIBUS-DP
Single-channel incremental encoder interface



- Incremental encoder interface
- 1-channel
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 140 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Maximum limiting frequency, analogue	1 MHz
Rectangular decoder	1-port, 2-port, 4-port evaluation
Counter	16 bit binary
Actuator power supply	5 VDC
Zero pulse latch	16 bit
Commands	read, set, activate
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D1	SB	Reg1	CB
	1	D2	D0	reserved	Reg0
	2	D3	D4	reserved	reserved

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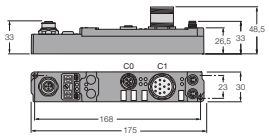
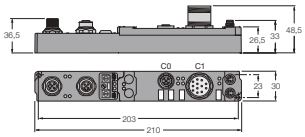
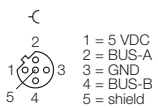
Device types

Dimensions	Type	Connection
	**6824074 SDPB-10S-0001**	F083, F095, F110, F081
Dimensions	**Type**	**Connection**
	**6824445 SDPB-10S-1001**	F084, F095, F110, F081

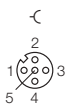
Connection

F083 - Fieldbus M12 × 1



1 = 5 VDC
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

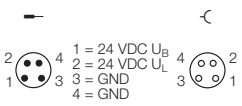
F095 - Gate-/latch input - M12 × 1



1 = 24 VDC U_B
2 = gate
3 = GND
4 = latch
5 = shield

C0

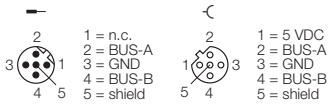
F081 - Voltage supply M8 × 1



1 = 24 VDC U_B
2 = 24 VDC U_L
3 = GND
4 = GND

$I_{Bmax} = I_{Lmax} = 4$ A

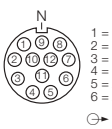
F084 - Fieldbus M12 × 1



1 = n.c.
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

1 = 5 VDC
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

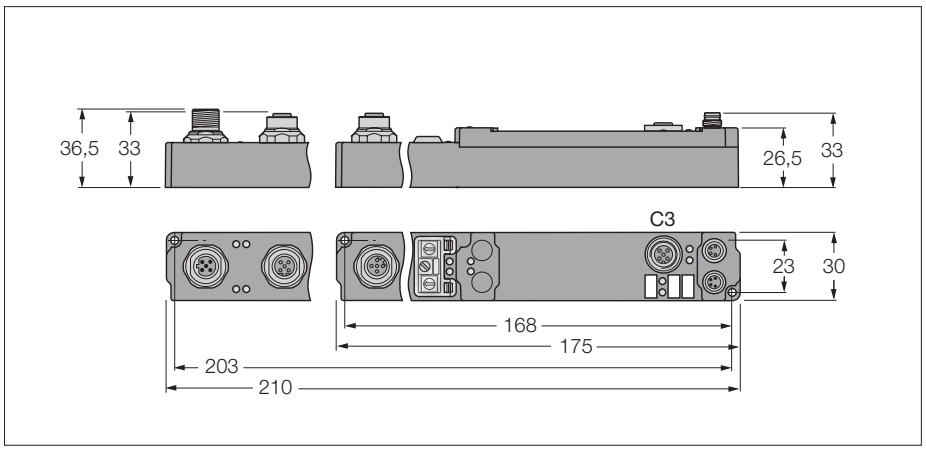
F110 - Encoder - M23 × 1



1 = B –
2 = +5-VDC-Sensor
3 = Null +
4 = Null –
5 = A +
6 = A –
7 = Status –
8 = B +
9 = n.c.
10 = GND
11 = GND
12 = +5-VDC-Sensor

C1

piconet® stand-alone module for PROFIBUS-DP
Single channel serial interface RS232



- Serial interface RS232
- 1-channel
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 115 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Bit distortion	≤ 3 %
Transmission rate	1.2 to 19.2 kBit/s (default 9.6 kbps)
RS232 Cable length	≤ 15 m
Low level signal voltage	-18 to -3 VDC
High level signal voltage	3 to 18 VDC
Data buffer	128 byte receive buffer, 16 byte send buffer
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D1	SB	Reg1	CB
	1	D2	D0	reserved	Reg0
	2	D3	D4	reserved	reserved

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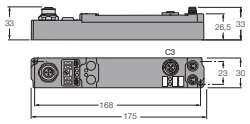
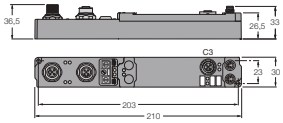
Industrial Automation

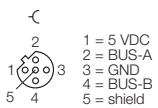
Device types

Dimensions	Type	Connection
	**6824075 SDPB-10S-0002**	F083, F111, F081

Dimensions	Type	Connection
	**6824446 SDPB-10S-1002**	F084, F111, F081

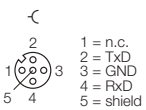
Connection

F083 - Fieldbus M12 × 1



1 = 5 VDC
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

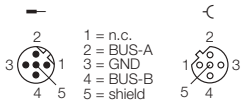
F111 - Input M12 × 1



1 = n.c.
2 = TxD
3 = GND
4 = RxD
5 = shield

C3

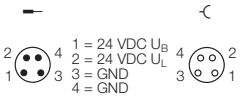
F084 - Fieldbus M12 × 1



1 = n.c.
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

1 = 5 VDC
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

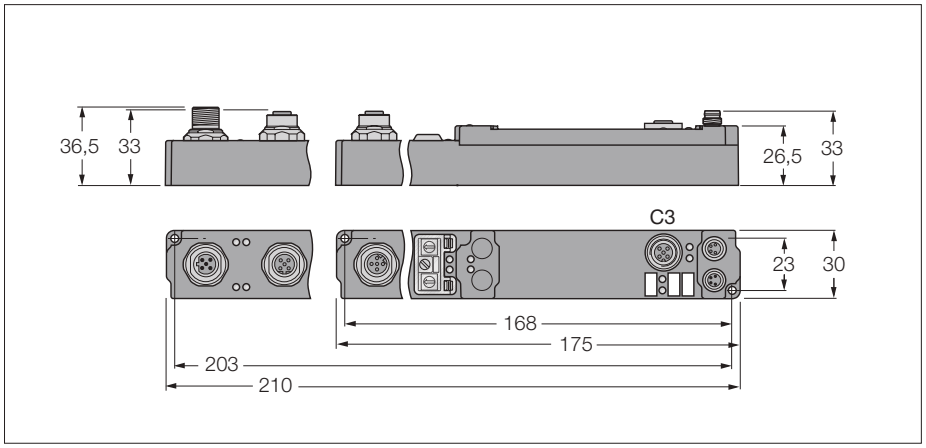
F081 - Voltage supply M8 × 1



1 = 24 VDC U_B
2 = 24 VDC U_L
3 = GND
4 = GND

$I_{Bmax} = I_{Lmax} = 4$ A

piconet® stand-alone module for PROFIBUS-DP
Single channel serial interface 0…20 mA (TTY)



- Serial interface 0…20 mA (TTY)
- 1-channel
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 115 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Low level signal current	0 to 3 mA
High level signal current	14 to 20 mA
Load resistance	≤ 500 Ω
Bit transfer	2 × 20 mA
Transmission rate	1.2 to 19.2 kBit/s (default 9.6 kbps)
Transfer circuit	twisted pair ≤ 1000 m
Data buffer	128 byte receive buffer, 16 byte send buffer
Electrical isolation	operational voltage to TTY
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D1	SB	Reg1	CB
	1	D2	D0	reserved	Reg0
	2	D3	D4	reserved	reserved

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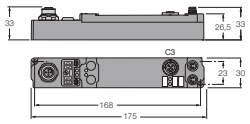
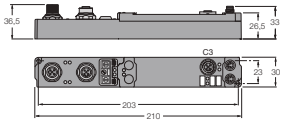
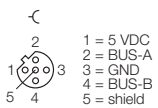
Device types

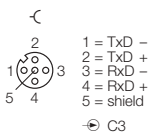
Dimensions	Type	Connection
	**6824076 SDPB-10S-0003**	F083, F094, F130, F081
Dimensions	**Type**	**Connection**
	**6824447 SDPB-10S-1003**	F084, F094, F130, F081

Connection

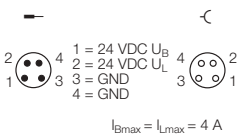
F083 - Fieldbus M12 × 1



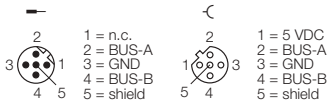
F094 - Input M12 × 1



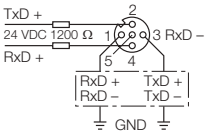
F081 - Voltage supply M8 × 1



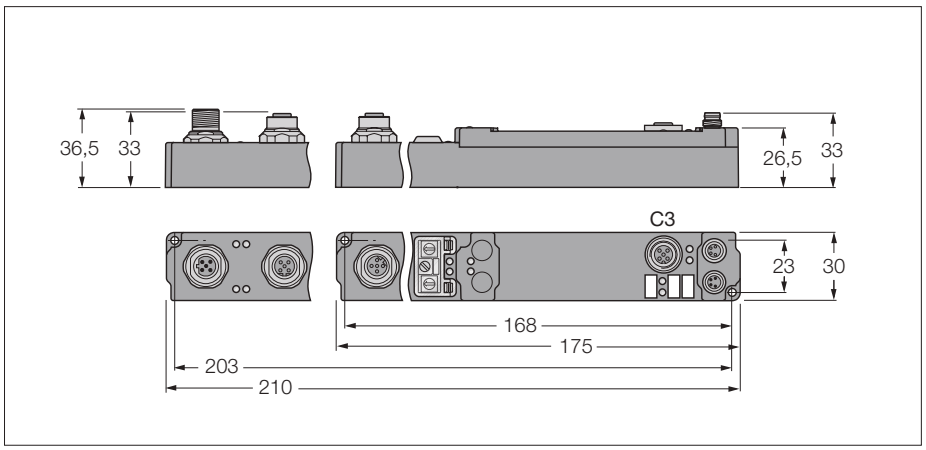
F084 - Fieldbus M12 × 1



F130 - Connection - passive TTY devices



piconet® stand-alone module for PROFIBUS-DP
Single channel serial interface RS422/RS485



- Serial interface RS422/485
- 1-channel
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 115 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Line impedance	120 Ω
Common mode voltage	max. -7…+12 V (against ground)
Bit transfer	differential
Transmission rate	1.2 to 19.2 kBit/s (default 9.6 kbps)
Transfer circuit	twisted pair ≤ 1000 m
Data buffer	128 byte receive buffer, 16 byte send buffer
Electrical isolation	operating voltage to RS485
Operating temperature	0 to 55 °C

Data in process image

	Address	Input data		Output data	
Pre-conditions	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
Complex mapping: Data are mapped with control and status byte	**0**	D1	SB	Reg1	CB
	1	D2	D0	reserved	Reg0
	2	D3	D4	reserved	reserved

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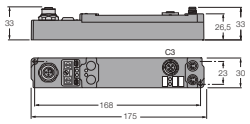
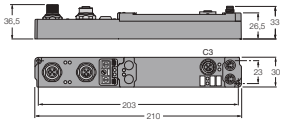
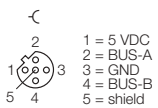
Device types

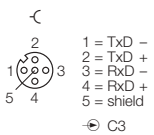
Dimensions	Type	Connection
	**6824077 SDPB-10S-0004**	F083, F094, F130, F081
Dimensions	**Type**	**Connection**
	**6824448 SDPB-10S-1004**	F084, F094, F130, F081

Connection

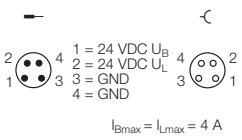
F083 - Fieldbus M12 × 1



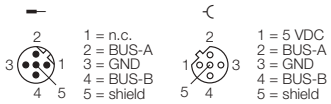
F094 - Input M12 × 1



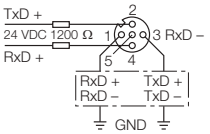
F081 - Voltage supply M8 × 1



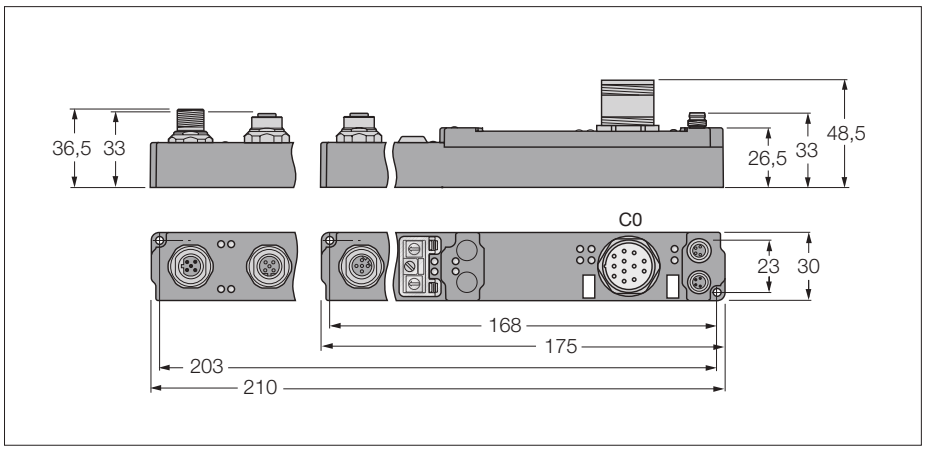
F084 - Fieldbus M12 × 1



F130 - Connection - RS485 devices



piconet® stand-alone module for PROFIBUS-DP
Single channel SSI sensor interface



- SSI encoder interface
- 1-channel
- Configuration interface
- Parameterisable functions
- Supported via I/O-ASSISTANT
- Direct connection to the fieldbus
- Fibre-glass reinforced PA6 housing
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Operating / load voltage	20…29 VDC
Operating current	≤ 140 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	0 to 99
Service interface	parameterisation via I/O-ASSISTANT
Electrical isolation	fieldbus to operational voltage
Bit transfer	differential (RS485)
Transmission rate	variable up to 1 MHz (default 250 Hz)
Serial input	24 bit
Data direction	read
Sensor supply	24 VDC from load voltage
Electrical isolation	operating voltage to RS232
Operating temperature	0 to 55 °C

Data in process image

Pre-conditions	Address	Input data		Output data	
Compact mapping: Starting with D3 in "Low-Byte" word 0 all other bytes follow immediately (highlighted in grey). **Complex mapping:** Data are mapped with control and status byte	**Word**	**High-Byte**	**Low-Byte**	**High-Byte**	**Low-Byte**
	0	D3	SB	Reg1	CB
	1	D1	D2	reserved	Reg0
	2	reserved	D0	reserved	reserved

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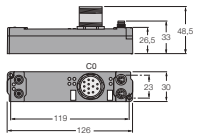
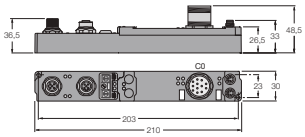
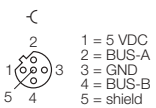
Device types

Dimensions	Type	Connection
	**6824078 SDPB-10S-0005**	F083, F096, F081
Dimensions	**Type**	**Connection**
	**6824444 SDPB-10S-1005**	F084, F096, F081

Connection

F083 - Fieldbus M12 × 1

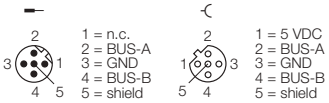


1 = 5 VDC
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

F096 - Encoder - M23 × 1

1 = GND	7 = n.c.
2 = +24 VDC U_B	8 = n.c.
3 = Clock +	9 = n.c.
4 = Clock –	10 = n.c.
5 = Data +	11 = n.c.
6 = Data –	12 = n.c.

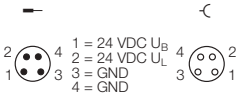
F084 - Fieldbus M12 × 1



1 = n.c.
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

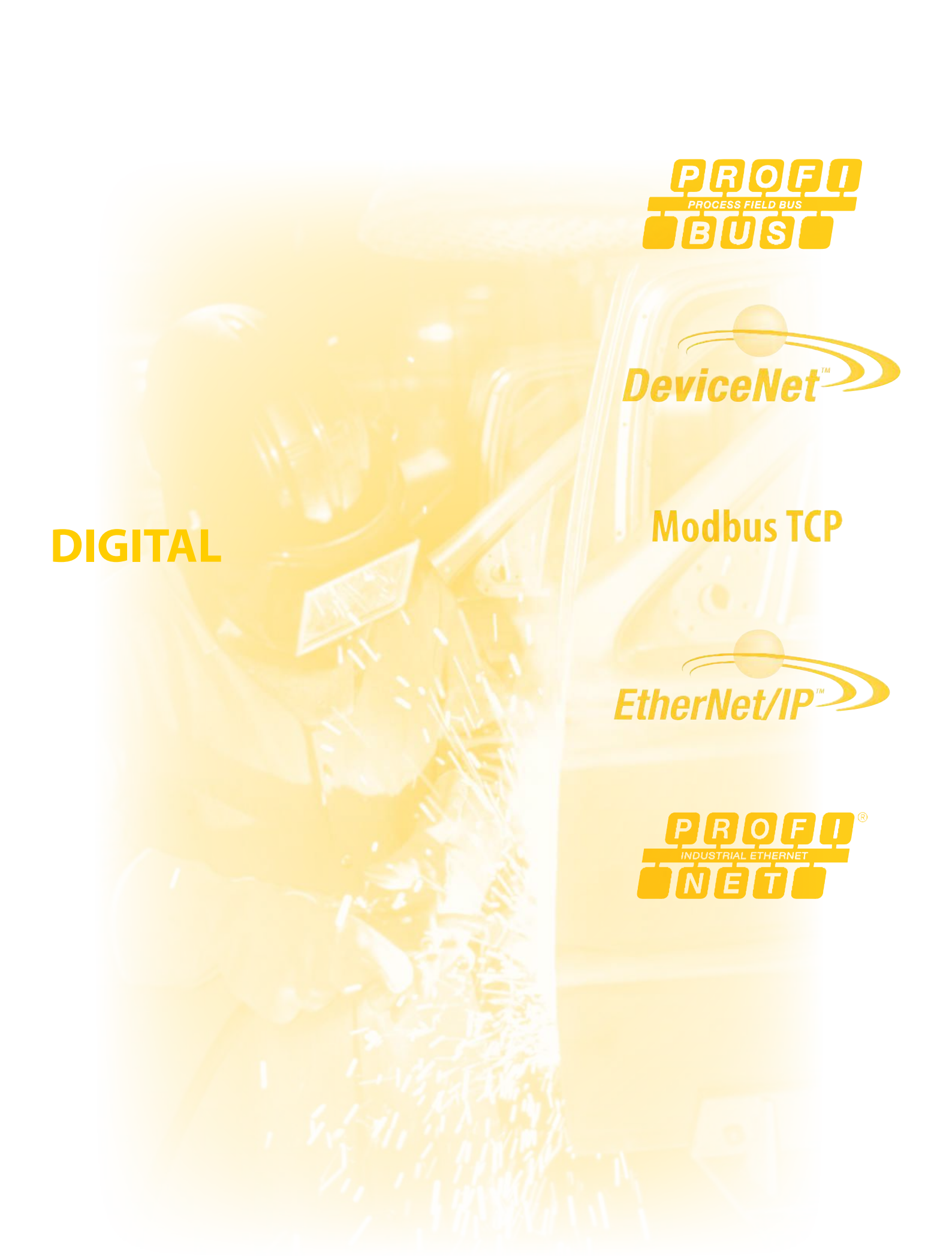
1 = 5 VDC
2 = BUS-A
3 = GND
4 = BUS-B
5 = shield

F081 - Voltage supply M8 × 1



1 = 24 VDC U_B
2 = 24 VDC U_L
3 = GND
4 = GND

$I_{Bmax} = I_{Lmax} = 4$ A



DIGITAL

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Compact fieldbus I/O modules in IP67 and IP20

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4

Compact fieldbus I/O modules in IP67 and IP20

Compact fieldbus modules

These rugged modules are ideal for use in harsh industrial environments (both electrical and mechanical).

No matter if PROFIBUS-DP, DeviceNet™, Modbus TCP, EtherNet/IP™ or PROFINET IO protocols are required, all compact fieldbus I/O modules are designed with the same mechanical concept and have the following characteristics:

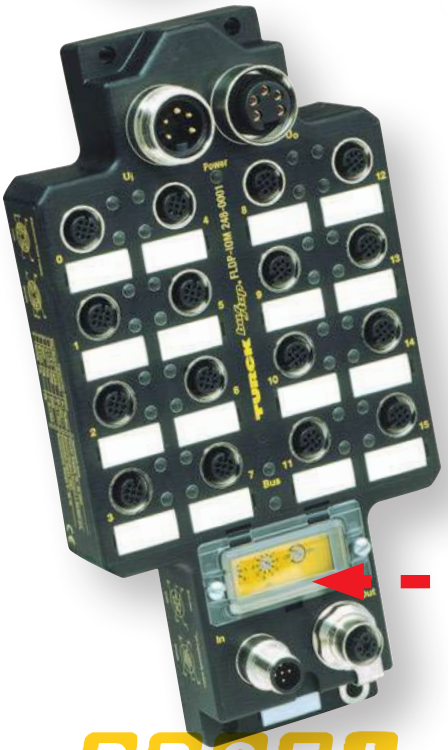
- Fibre-glass reinforced plastic housing
- Fully encapsulated module electronics
- Standard connection technology
- Metal round connector
- Vibration and shock tested
- Degree of protection IP67

FXDP – Configurable PROFIBUS-DP modules

- Freely configurable I/Os
- Channel-specific diagnostics
- Diagnostics according to PROFIBUS standard
- Diagnostics can be mapped to user data area
- Up to 16 digital channels

FGDP – PROFIBUS-DP-Modules with galvanic isolation

- Channel-specific diagnostics
- Diagnostics according to PROFIBUS standard
- Diagnostics can be mapped to user data area
- Up to 16 digital channels
- Galvanic isolation of operating and load voltage



FLDP – PROFIBUS-DP modules

- Module-specific diagnostics
- Up to 32 digital channels

DEGREE OF PROTECTION IP67

PROFI PROCESS FIELD BUS

DeviceNet™

Modbus TCP

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FDNL – DeviceNet™ modules

- Channel-specific diagnostics (LX series) or module-specific diagnostics (SE series)
- Up to 16 digital channels
- Power supply via DeviceNet™

FDNP – DeviceNet™ module

- Channel-specific diagnostics (LX series) or module-specific diagnostics (SE series)
- Up to 16 digital channels
- Separate power supply for the outputs

FDN/FDP – IP20 modules

- Extremely compact for mounting in tight spaces
- PROFIBUS-DP or DeviceNet™
- Up to 16 digital channels

FGEN – Configurable multi-protocol Ethernet modules

- Integrated Ethernet switch
- Freely configurable I/Os
- Channel-specific diagnostics
- Up to 16 digital channels

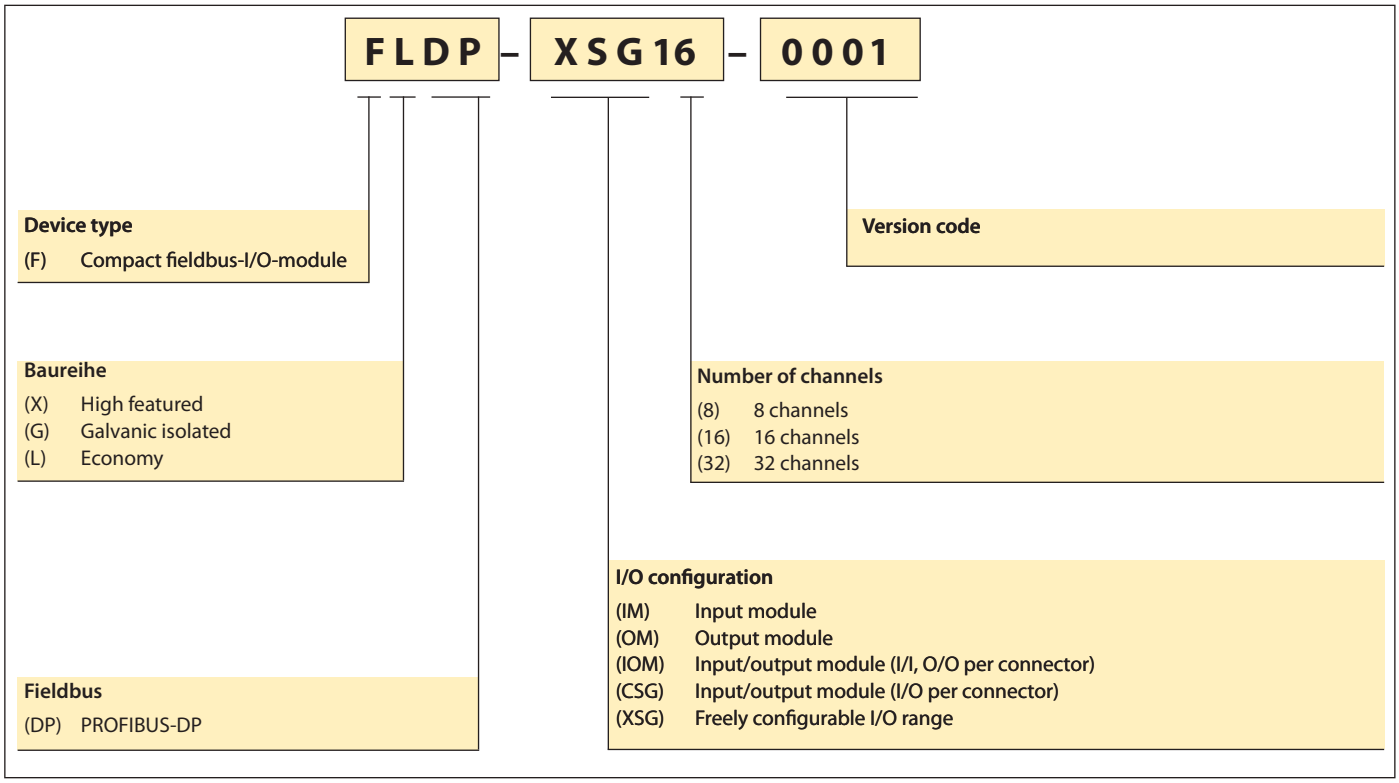
Accessories

- Cordsets – premoulded cables for bus, power supply and I/Os
- T and Y pieces
- Terminating resistors
- Flange connectors
- Feed-through receptacles
- Passive junction boxes

EtherNet/IP™

PROFI® INDUSTRIAL ETHERNET NET

Compact fieldbus I/O modules in IP67 for PROFIBUS-DP
Type code



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Compact fieldbus I/O modules in IP67 for PROFIBUS-DP

TURCK
Industrial Automation

Series FLDP

Housing version 1

- Compact flat housing
- Up to 16 channels
- Two bus connectors
- Module-specific diagnostics

Housing version 2

- Compact flat housing
- Up to 32 channels
- Two bus connectors
- Module-specific diagnostics

4

Series FXDP

- Compact flat housing
- Up to 16 channels
- Channel-specific diagnostics
- Diagnostics can be mapped to user data area
- Freely configurable I/Os

Series FGDP

- Compact flat housing
- Up to 16 channels
- Channel-specific diagnostics
- Diagnostics can be mapped to user data area
- Galvanic isolation of operating and load voltage

Compact fieldbus I/O modules in IP67 for PROFIBUS-DP Selection guide

		Housing type	Number of inputs	Number of outputs	Number of inputs/outputs per connector	Maximum load current [A]	Integrated bus-T-piece	Page
FXDP modules – channel-specific diagnostics, freely configurable I/O range	**Ident-no.**							
FXDP-IM8-0001	6825400	–	8	–	1/–	–	•	268
FXDP-IM16-0001	6825401	–	16	–	2/–	–	•	269
FXDP-OM8-0001	6825402	–	–	8	–/1	1.4	•	270
FXDP-OM16-0001	6825403	–	–	16	–/2	1.4	•	271
FXDP-IOM88-0001	6825404	–	8	8	2/2	1.4	•	272
FXDP-CSG88-0001	6825405	–	8	8	1/1	1.4	•	273
FXDP-XSG16-0001	6825406	–	16 configurable channels			1.4	•	274
FGDP modules – channel-specific diagnostics, galvanic isolation of operating and load voltage								
FGDP-IM16-0001	6825368	–	16	–	2/–	–	•	276
FGDP-IOM88-0001	6825369	–	8	8	2/2	1.4	•	277
FLDP modules – module-specific diagnostics								
FLDP-IM8-0001	6825320	1	8	–	1/–	–	•	279
FLDP-IM16-0001	6825326	1	16	–	2/–	–	•	280
FLDP-IM32-0001	6825332	3	32	–	2/–	–	•	281
FLDP-OM8-0001	6825321	1	–	8	–/1	0.5	•	282
FLDP-OM8-0002	6825331	1	–	8	–/1	2	•	283
FLDP-OM16-0001	6825327	1	–	16	–/2	0.5	•	284
FLDP-IOM84-0001	6825330	1	8	4	2/1	2	•	285
FLDP-IOM88-0001	6825322	1	8	8	1/1	0.5	•	286
FLDP-IOM88-0003	6825370	1	8	8	2/2	2	•	287
FLDP-IOM1616-0001	6825338	3	16	16	2/2	0.5	•	288
FLDP-IOM2012-0001	6825339	3	20	12	Burndy	0.5	•	289
FLDP-IOM248-0001	6825333	3	24	8	2/2	0.5	•	291

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Compact fieldbus I/O modules in IP67 for PROFIBUS-DP

TURCK
Industrial Automation

Series FXDP – general information

The compact FXDP series fieldbus I/O modules allow direct connection of up to 16 inputs/outputs to a PROFIBUS-DP network.
The I/O modules offer channel-specific short-circuit diagnostics of the outputs and module specific short-circuit diagnostics of the inputs. The diagnostics can also be mapped to the user data area. The XSG version also allows the I/O area to be freely configured.

Operating and load voltage are fed separately. If the load supply is switched off, the module electronics and all inputs continue operation when the outputs are turned off. In this case, the load voltage diagnostics can also be deactivated.

The I/O modules support transmission rates of 12 Mbps. The PROFIBUS-DP connection is implemented via 5-pole, reverse-keyed M12 × 1 connectors.
The module is powered via a 7/8" round connector and can be fed through via a second 7/8" round connector.

The I/O level is equipped throughout with metal M12 connectors.

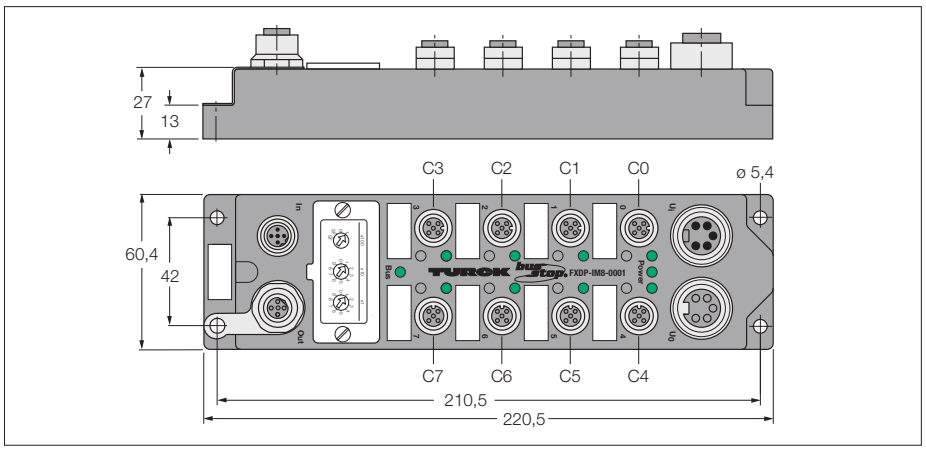
Glass-fibre reinforced plastic housings and the fully encapsulated module electronics guarantee protection degree IP67. The I/O modules are therefore particularly suited for use in harsh industrial environments.

4

General technical data

Characteristics	Extended diagnostics, connector-specific short-circuit diagnostics of the sensor supply voltage, channel-specific short-circuit diagnostics of the outputs, Complete diagnostic information according to standards via the PROFIBUS-DP, channel-specific display of status and errors via LEDs, diagnostics can be mapped to the user data area (diagnostics inputs).
Settings	
PROFIBUS-DP	address 1…126 (decimal) adjustable via three coded rotary switches Transmission rate of 9.6 kbps up to 12 Mbps, automatic
LEDs	
Bus (dual colour LED)	green: communication, red: no communication
Power (dual colour LED)	green: operational, off: U_B < 18 VDC, red: U_L < 18V (only modules with digital outputs)
Inputs (dual colour LED)	green: ON, red: short-circuit
Outputs (dual colour LED)	green: ON, red: short-circuit
Connections	Nickel-plated brass
PROFIBUS	1 × male M12 connector (IN), 1 × female M12 connector (OUT), 5-pole, reverse-keyed
Power supply	1 × 7/8" male connector (IN), 1 × 7/8" female connector (OUT), 5-pole
Inputs/outputs	8 female M12 × 1 connectors; 5-pole
Housing	PA6-GF30, glass-fibre reinforced plastic housing with encapsulated electronics and nickel-plated brass connectors
Mounting	via 4 through-holes, Ø 5.4 mm
Degree of protection	(IEC 60529/EN 60529) IP67
Vibration and shock tested	according to EN 60068-2-6, 2-27
EMC	to EN 61000-6-2, IEC 61000-6-4
Temperature range	
– Operating temperature	-25 °C to +55 °C(-25 °F to +131 °F)
– Storage and transport temperature	-25 °C to +70 °C (-13 °F to +158 °F)
Dimensions	220.5 × 62.4 × 27 mm (H × W × D)
Approvals	CE, cULus LISTED, Ex II 3G EEx nA IIC T4X (EC Ex-regulations 94/9/EG)

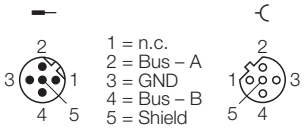
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
FXDP-IM8-0001



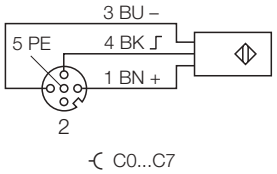
- ATEX category II 3 G, Ex Zone 2
- 8 digital pnp inputs
- Diagnostics can be mapped in user data
- Input diagnostics per slot
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FXDP-IM8-0001
Ident-No.	6825400
Operating / load voltage	18…30 VDC
Operating current	< 75 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Operating temperature	- 25…55 °C

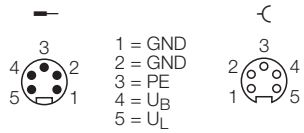
Fieldbus M12 × 1



Input M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3

Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

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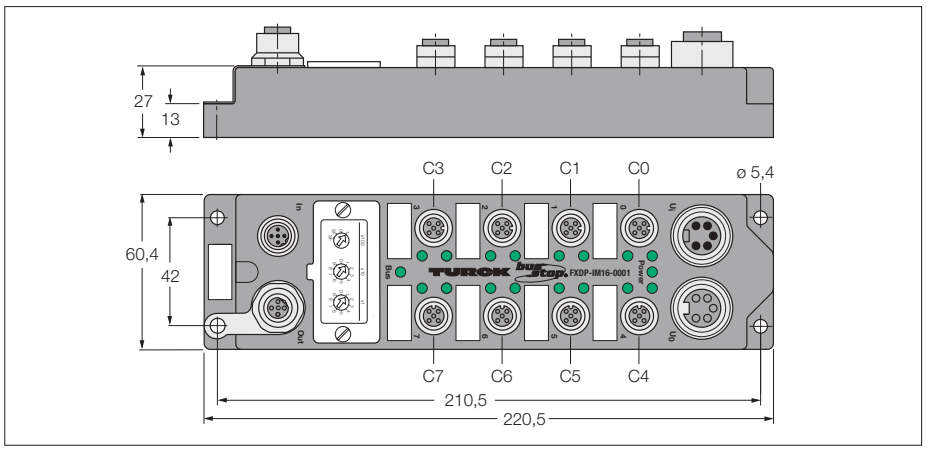
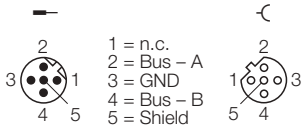
Fieldbus I/O module PROFIBUS-DP
16 digital pnp inputs
FXDP-IM16-0001



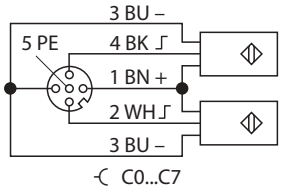
- ATEX category II 3 G, Ex Zone 2
- 16 digital pnp inputs
- Diagnostics can be mapped in user data
- Input diagnostics per slot
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FXDP-IM16-0001
Ident-No.	6825401
Operating / load voltage	18…30 VDC
Operating current	< 75 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Operating temperature	- 25…55 °C

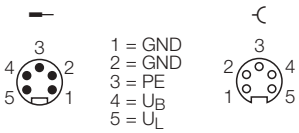
Fieldbus M12 × 1



Input M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3

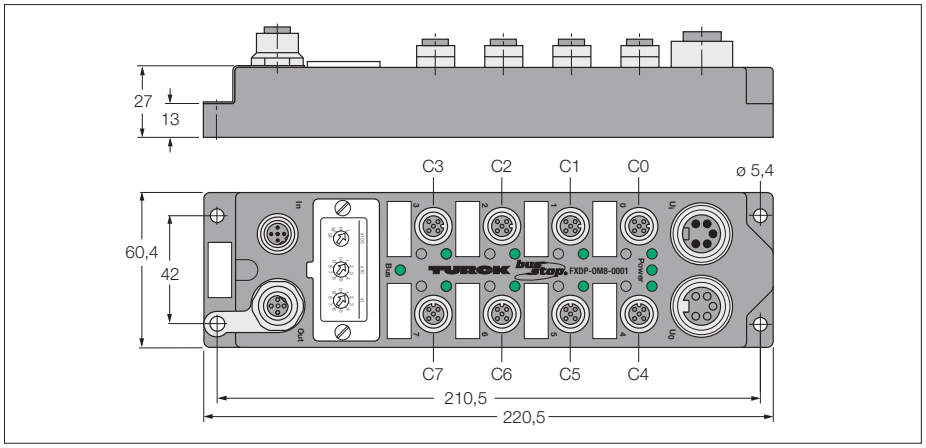
Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics[1]	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

1) The manufacturer-specific diagnostics can be fully mapped to the user data area via the configuration menu.

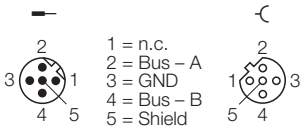
Fieldbus I/O module PROFIBUS-DP
8 digital outputs 1.4 A
FXDP-OM8-0001



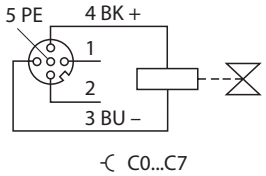
- ATEX category II 3 G, Ex Zone 2
- 8 digital outputs 1.4 A
- Diagnostics can be mapped in user data
- Output diagnostics per channel
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FXDP-OM8-0001
Ident-No.	6825402
Operating / load voltage	18…30 VDC
Operating current	< 75 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	1.4 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	0.8
Electrical isolation	galvanic isolation against the bus
Operating temperature	- 25…55 °C

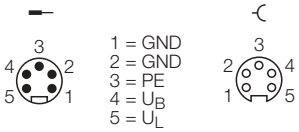
Fieldbus M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3

Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

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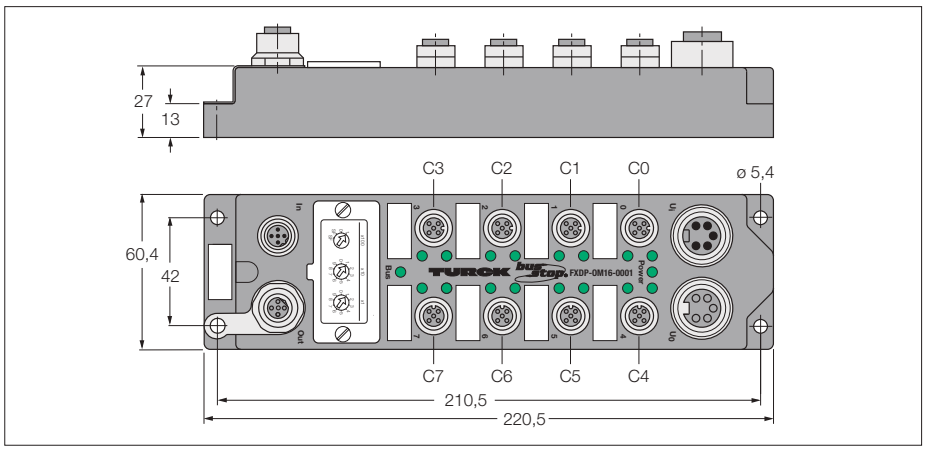
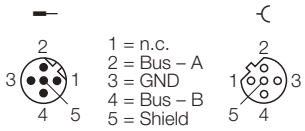
Fieldbus I/O module PROFIBUS-DP
16 digital outputs 1.4 A
FXDP-OM16-0001



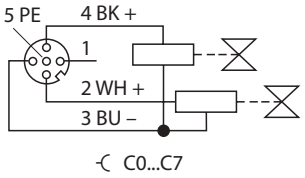
- ATEX category II 3 G, Ex Zone 2
- 16 digital outputs 1.4 A
- Diagnostics can be mapped in user data
- Output diagnostics per channel
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FXDP-OM16-0001
Ident-No.	6825403
Operating / load voltage	18…30 VDC
Operating current	< 75 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Outputs	
Number of channels	(16) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	1.4 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	0.4
Electrical isolation	galvanic isolation against the bus
Operating temperature	- 25…55 °C

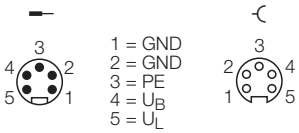
Fieldbus M12 × 1



Output M12 × 1



Power supply 7/8"

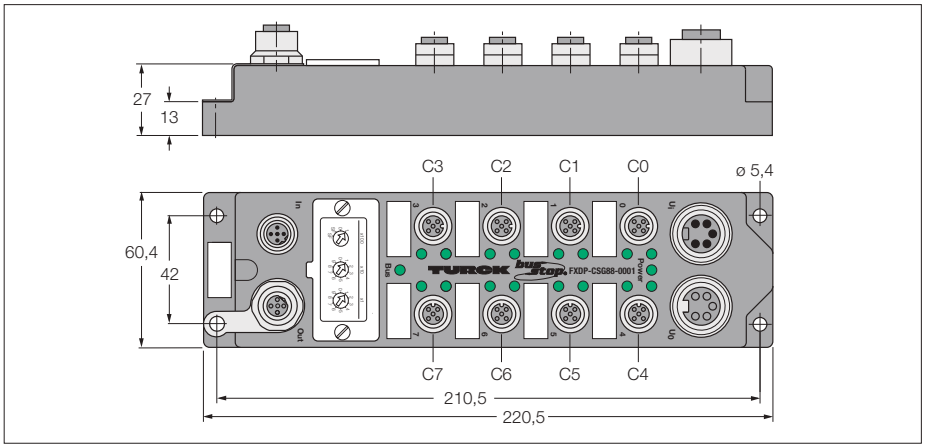


Data in process image

C1P4: Male Connector 1, 4-pole
SC: Short-circuit - group signal
SC3: Short-circuit channel 3
Con2: Overload sensor supply C2
U_B: U_B < 18 VDC
U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

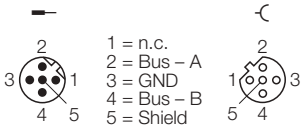
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
8 digital outputs 1.4 A
FXDP-IOM88-0001



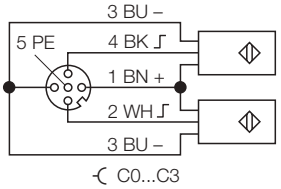
- ATEX category II 3 G, Ex Zone 2
- 8 digital pnp inputs
- and 8 digital outputs, 24 VDC 1.4 A
- Diagnostics can be mapped in user data
- Input diagnostics per slot
- Output diagnostics per channel
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FXDP-IOM88-0001
Ident-No.	6825404
Operating / load voltage	18…30 VDC
Operating current	< 75 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	1.4 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	0.8
Electrical isolation	galvanic isolation against the bus
Operating temperature	- 25…55 °C

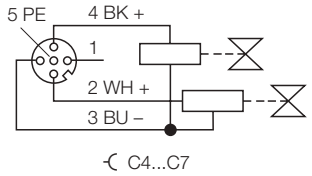
Fieldbus M12 × 1



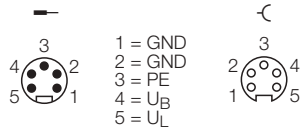
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3

Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
Output	**Byte 0**	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

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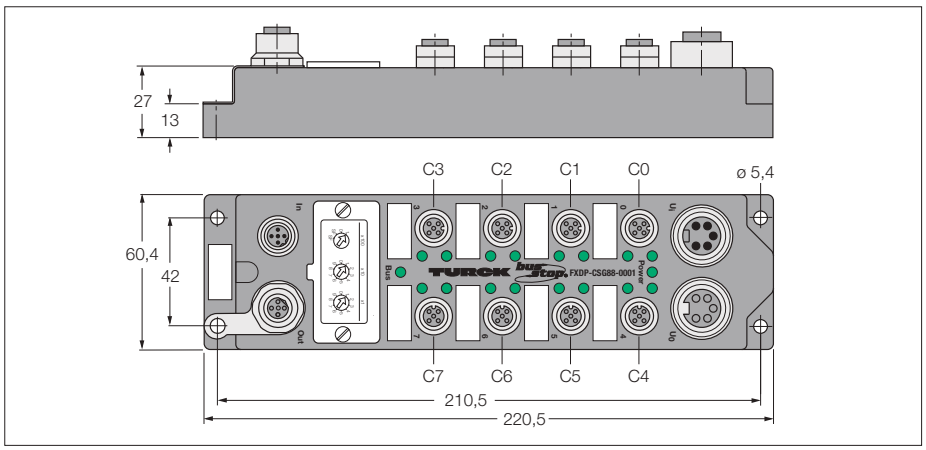
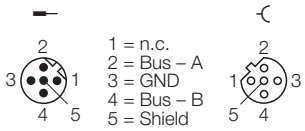
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
8 digital outputs 1.4 A
FXDP-CSG88-0001



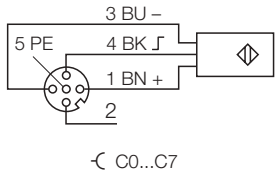
- ATEX category II 3 G, Ex Zone 2
- 8 digital pnp inputs
- and 8 digital outputs, 24 VDC 1.4 A
- Diagnostics can be mapped in user data
- Input diagnostics per slot
- Output diagnostics per channel
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FXDP-CSG88-0001
Ident-No.	6825405
Operating / load voltage	18…30 VDC
Operating current	< 75 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	1.4 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	0.8
Electrical isolation	galvanic isolation against the bus
Operating temperature	- 25…55 °C

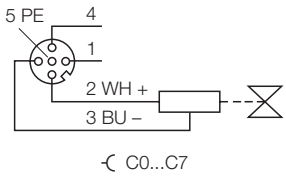
Fieldbus M12 × 1



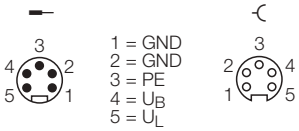
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3

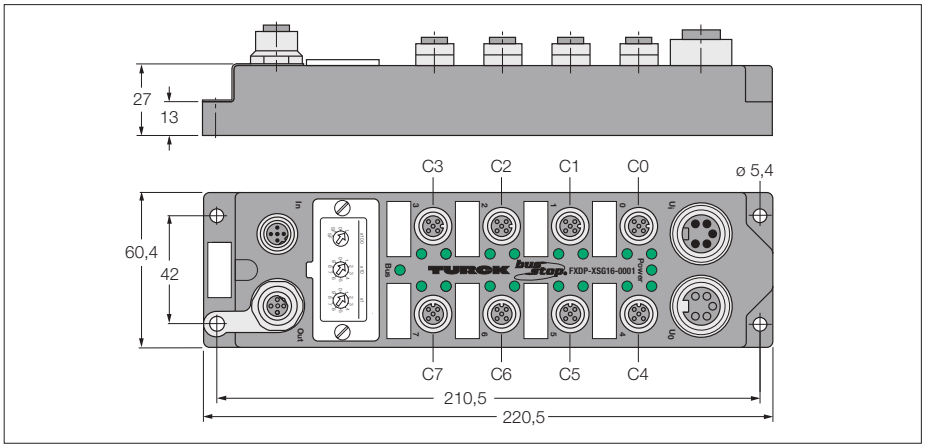
Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Output	**Byte 0**	C7P2	C6P2	C5P2	C4P2	C3P2	C2P2	C1P2	C0P2
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

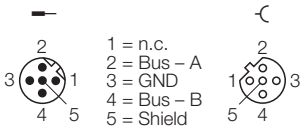
Fieldbus I/O module PROFIBUS-DP
16 configurable digital channels
pnp inputs / outputs 1.4 A
FXDP-XSG16-0001



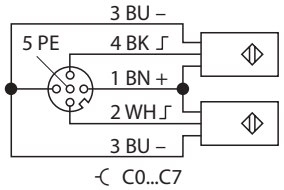
- ATEX category II 3 G, Ex Zone 2
- 16 configurable digital channels
- Diagnostics can be mapped in user data
- Input diagnostics per slot
- Output diagnostics per channel
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FXDP-XSG16-0001
Ident-No.	6825406
Operating / load voltage	18…30 VDC
Operating current	< 75 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(16) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	1.4 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	0.4
Electrical isolation	galvanic isolation against the bus
Operating temperature	- 25…55 °C

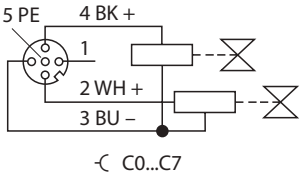
Fieldbus M12 × 1



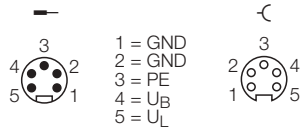
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3

Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Output	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

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Compact fieldbus I/O modules in IP67 for PROFIBUS-DP

Series FGDP – general information

The compact FGDP series fieldbus I/O modules allow direct connection of up to 16 inputs/outputs to a PROFIBUS-DP network. The I/O modules offer channel-specific short-circuit diagnostics of the outputs and module specific short-circuit diagnostics of the inputs. The diagnostics can also be mapped to the user data area.

The operating and load supply are fed separately to the module and are galvanically isolated from each other. If the load supply is switched off, the module electronics and all inputs continue operation when the outputs are turned off. In this case, the load voltage diagnostics can also be deactivated.

The I/O modules support transmission rates of 12 Mbps. The PROFIBUS-DP connection is implemented via 5-pole, reverse-keyed M12 × 1 connectors. The module is powered via a 7/8" round connector and can be fed through via a second 7/8" round connector. The I/O level is equipped throughout with metal M12 connectors.

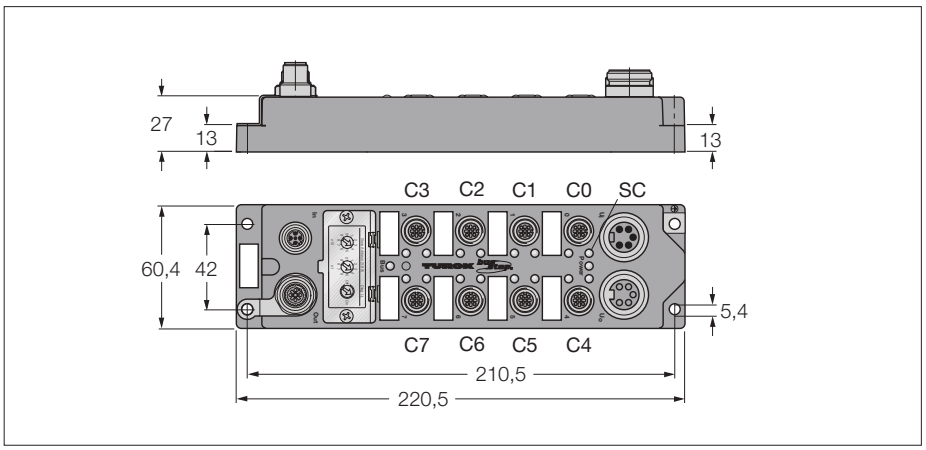
Glass-fibre reinforced plastic housings and the fully encapsulated module electronics guarantee protection degree IP67. The I/O modules are therefore particularly suited for use in harsh industrial environments.

4

General technical data

Characteristics	Extended diagnostics, connector-specific short-circuit diagnostics of the sensor supply voltage, channel specific short-circuit monitoring of the outputs, Complete diagnostic information according to standards via the PROFIBUS-DP, channel-specific display of errors and status indications via LEDs, diagnostics can be mapped to user data area (diagnostic inputs), Galvanic isolation of operating and load voltage.
Settings	
PROFIBUS-DP address	1…126 (decimal) adjustable via three coded rotary switches
Transmission rate	9.6 kbps up to 12 Mbps, automatic
LEDs	
Bus (dual colour LED)	green: communication, red: no communication
Power (dual colour LED)	green: operational, off: U_B < 18 VDC, red: U_L < 18V (modules with digital outputs)
Inputs (dual colour LED)	green: ON, red: short-circuit
Outputs (dual colour LED)	green: ON, red: short-circuit
Connections	Nickel-plated brass
PROFIBUS	1 × male M12 connector (IN), 1 × female M12 connector (OUT), 5-pole, reverse-keyed
Power supply	1 × 7/8" male connector (IN), 1 × 7/8" female connector (OUT), 5-pole
Inputs/outputs	8 female M12 × 1 connectors; 5-pole
Housing	PA6-GF30, glass-fibre reinforced plastic housing with encapsulated electronics and nickel-plated brass connectors
Mounting	via 4 through-holes, Ø 5.4 mm
Degree of protection	(IEC 60529/EN 60529) IP67
Vibration and shock testing	according to EN 60068-2-6, 2-27
EMC	acc.to EN 61000-6-2, IEC 61000-6-4
Temperature range	
– Operating temperature	0 °C to +55 °C (+32 °F to +131 °F)
– Storage and transport temperature	-25 °C to +70 °C (-13 °F to +158 °F)
Dimensions	220.5 × 62.4 × 27 mm (H × W × D)
Approvals	CE, cULus LISTED

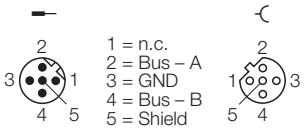
Fieldbus I/O module PROFIBUS-DP
16 digital pnp inputs
FGDP-IM16-0001



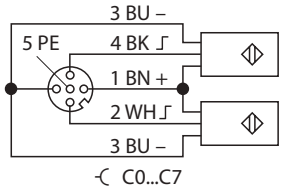
- 16 digital pnp inputs
- Galvanic isolated power supply
- Diagnostics can be mapped in user data
- Input diagnostics per slot
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FGDP-IM16-0001
Ident-No.	6825368
Operating / load voltage	18…30 VDC
Operating current	< 60 mA
Electrical isolation	operational to load voltage
$C_{GND / FE}$	< 10 nF
$R_{GND / FE}$	> 20 MΩ
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 40 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

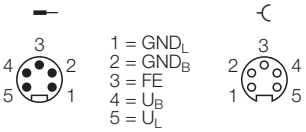
Fieldbus M12 × 1



Input M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3:

Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics[1)]	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

1) The manufacturer-specific diagnostics can be fully mapped to the user data area via the configuration menu.

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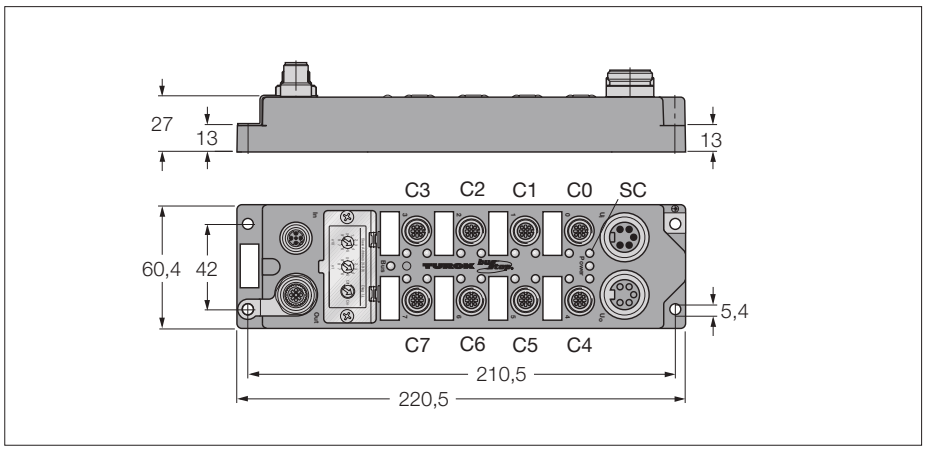
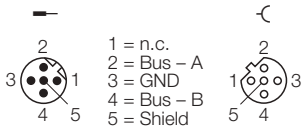
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
8 digital outputs 1.4 A
FGDP-IOM88-0001



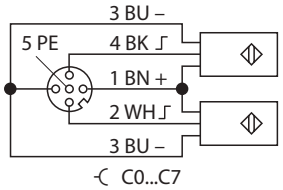
- 8 digital pnp inputs
- and 8 digital outputs, 24 VDC, 1.4 A
- Galvanic isolated power supply
- Diagnostics can be mapped in user data
- Input diagnostics per slot
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FGDP-IOM88-0001
Ident-No.	6825369
Operating / load voltage	18…30 VDC
Operating current	< 60 mA
Electrical isolation	operational to load voltage
$C_{GND / FE}$	< 10 nF
$R_{GND / FE}$	> 20 MΩ
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…126 (decimal) via three coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 40 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus and outputs
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	1.4 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 40 Hz
Simultaneity factor	0.8
Electrical isolation	galvanic isolation against the bus and outputs
Operating temperature	0 to 55 °C

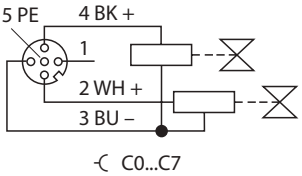
Fieldbus M12 × 1



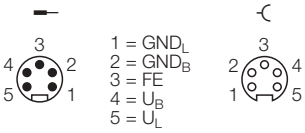
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

SC3: Short-circuit channel 3:

Con2: Overload sensor supply C2

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
Output	**Byte 0**	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC
	Byte 1	SC 7	SC 6	SC 5	SC 4	SC 3	SC 2	SC 1	SC 0
	Byte 2	SC 15	SC 14	SC 13	SC 12	SC 11	SC 10	SC 9	SC 8
	Byte 3	Con 7	Con 6	Con 5	Con 4	Con 3	Con 2	Con 1	Con 0

Compact fieldbus I/O modules in IP67 for PROFIBUS-DP

Series FLDP – general information

The compact fieldbus I/O modules of the FLDP series allow direct connection of up to 32 inputs/outputs to a PROFIBUS-DP network. The I/O modules offer module-specific short-circuit diagnostics of the inputs and outputs.

Operating and load voltage are fed separately. If the load supply is switched off, the module electronics and all inputs continue operation when the outputs are turned off. In this case, the load voltage diagnostics can also be deactivated. The I/O modules support transmission rates of 12 Mbps.

The PROFIBUS-DP connection is implemented via 5-pole, reverse-keyed M12 × 1 round connectors. The module is powered via a 7/8" round connector and can be fed through via a second 7/8" round connector. The I/O level is equipped throughout with M12 metal round connectors.

Glass-fibre reinforced plastic housings and the fully encapsulated module electronics guarantee protection degree IP67. The I/O modules are therefore particularly suited for use in harsh industrial environments.

General technical data

Characteristics	Load voltage diagnostics can be disabled via rotary switch, common short-circuit diagnostics
Settings	
PROFIBUS-DP address	1…99 (decimal) adjustable via two coded rotary switches
Load voltage diagnostics	can be disabled via coded rotary switch (modules with digital outputs only)
Transmission rate	9.6 kbps up to 12 Mbps, automatic
LEDs	
Bus (dual colour LED)	green: communication, red: no communication
Power (dual colour LED)	green: operational, off: U_B < 18 VDC red: U_L < 18 V (modules with digital outputs)
Inputs	green: ON
Outputs	green: ON
Common short-circuit indication	red: short-circuit at one input
Connections	brass, nickel-plated
PROFIBUS	M12 × 1 connectors, reverse-keyed
Power supply	7/8" connector, 5-pole or
Inputs/outputs	female M12 × 1 connectors; 5-pole
– FLDP-IOM2012-0001 only:	2 × 19-pole Burndy connectors
Housing material	PA6-GF30, glass-fibre reinforced plastic housing with encapsulated electronics and nickel-plated brass connectors
Mounting	4 through-holes, Ø 5.4 mm
Degree of protection (IEC 60529/EN 60529)	IP67 (NEMA 1, 3, 4, 12, 13)
Vibration and shock tested	according to EN 60068-2-6, 2-27
Temperature range	0 °C to +55 °C (+32 °F to +131 °F)
Dimensions	
– Housings for modules with 8, 12 and 16 channels	220.5 × 62.4 × 27 mm (H × W × D)
– Housing for modules with 32 channels	220.5 × 115 × 27 mm (H × W × D)
Approvals	CE, cULus LISTED

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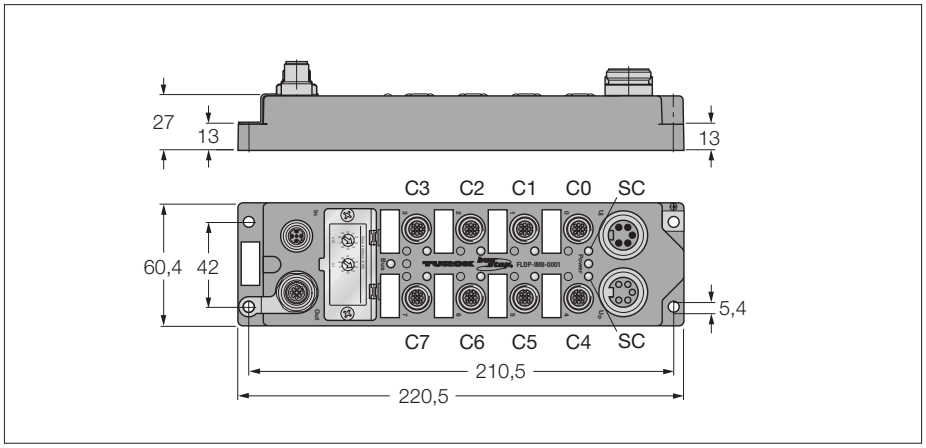
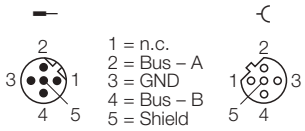
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
FLDP-IM8-0001



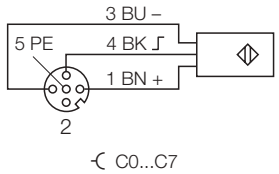
- 8 digital pnp inputs
- Module-related diagnostics
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IM8-0001
Ident-No.	6825320
Operating / load voltage	18…30 VDC
Operating current	< 110 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 2/3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 4 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

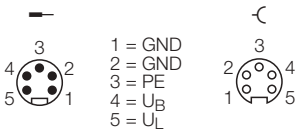
Fieldbus M12 × 1



Input M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

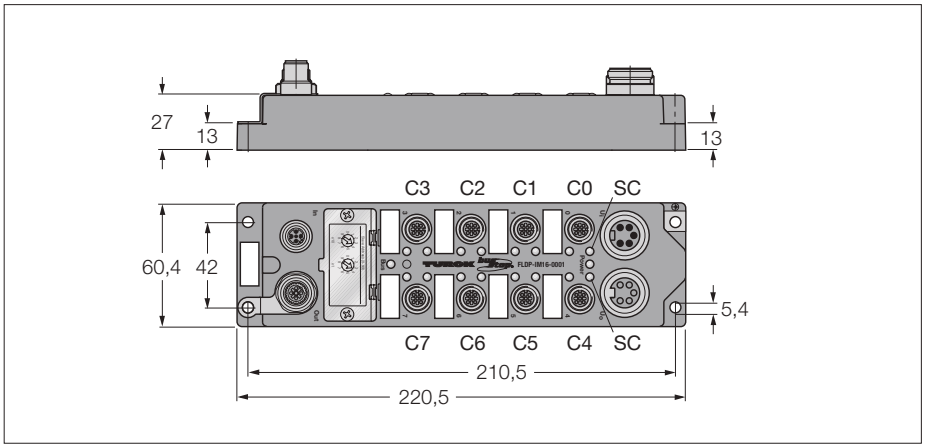
SC: Short-circuit - group signal

U_B: U_B < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	–	SC

4

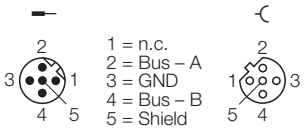
Fieldbus I/O module PROFIBUS-DP
16 digital pnp inputs
FLDP-IM16-0001



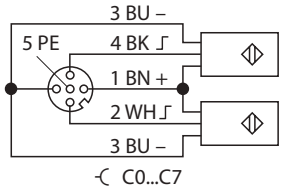
- 16 digital pnp inputs
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IM16-0001
Ident-No.	6825326
Operating / load voltage	18…30 VDC
Operating current	< 110 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 2/3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 8 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

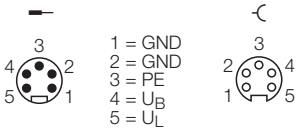
Fieldbus M12 × 1



Input M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

U_B: U_B < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	–	SC

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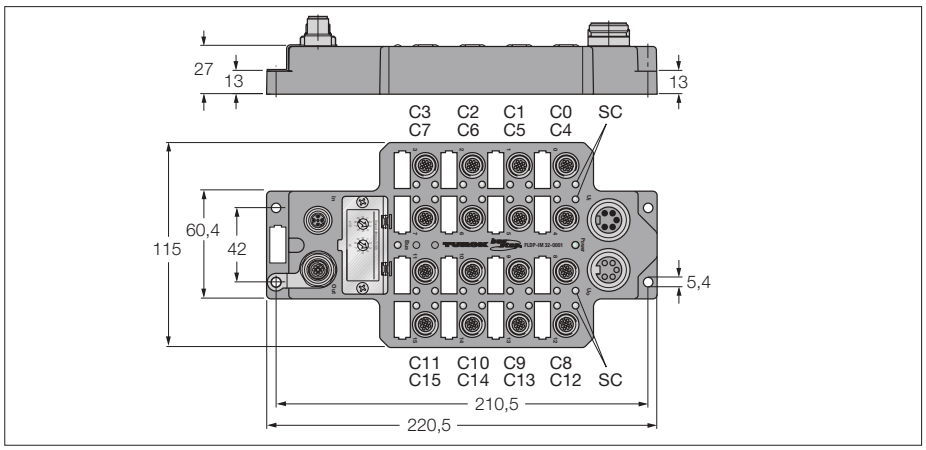
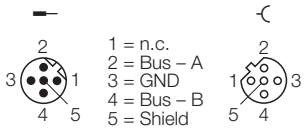
Fieldbus I/O module PROFIBUS-DP
32 digital pnp inputs
FLDP-IM32-0001



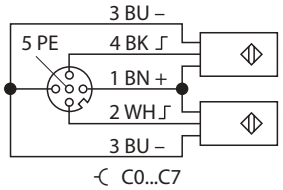
- 32 digital pnp inputs
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IM32-0001
Ident-No.	6825332
Operating / load voltage	18…30 VDC
Operating current	< 110 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(32) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 8 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

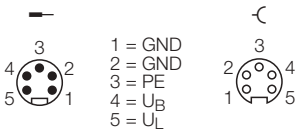
Fieldbus M12 × 1



Input M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

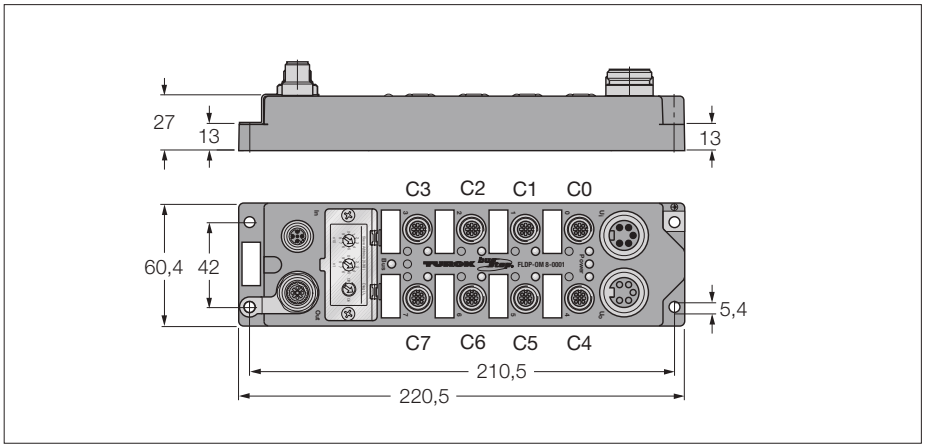
SC: Short-circuit - group signal

U_B: U_B < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
	Byte 2	C11P2	C11P4	C10P2	C10P4	C9P2	C9P4	C8P2	C8P4
	Byte 3	C15P2	C15P4	C14P2	C14P4	C13P2	C13P4	C12P2	C12P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	–	SC

4

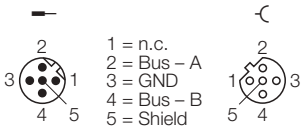
Fieldbus I/O module PROFIBUS-DP
8 digital outputs 0.5 A
FLDP-OM8-0001



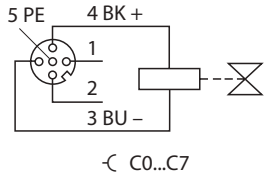
- 8 digital outputs, 0.5 A
- Module-related diagnostics
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-OM8-0001
Ident-No.	6825321
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

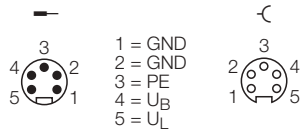
Fieldbus M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	–

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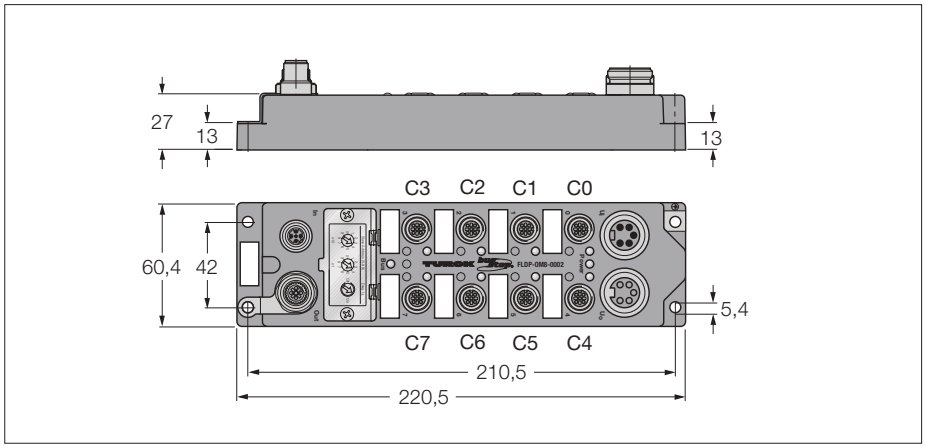
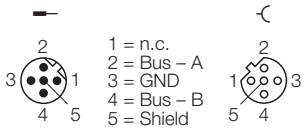
Fieldbus I/O module PROFIBUS-DP
8 digital outputs 2 A
FLDP-OM8-0002



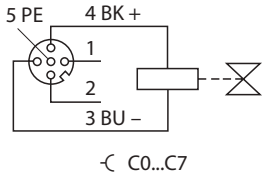
- 8 digital outputs, 2 A
- Module-related diagnostics
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-OM8-0002
Ident-No.	6825331
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	2.0 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	0.5
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

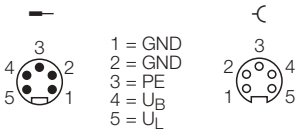
Fieldbus M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

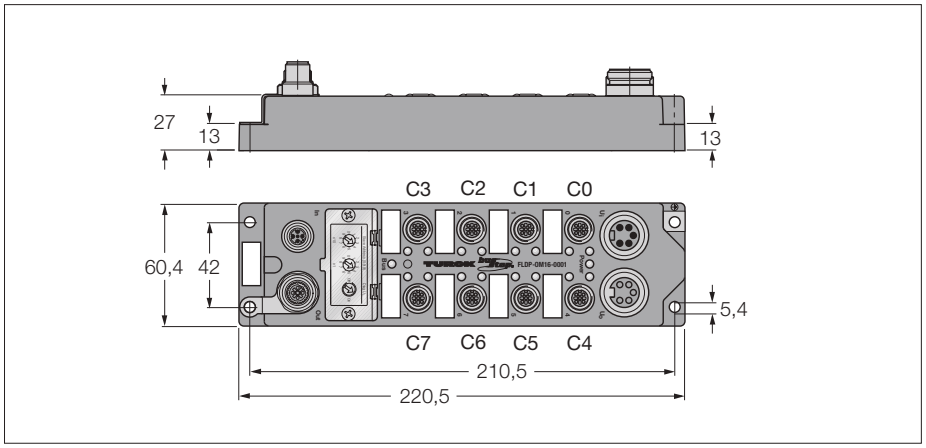
SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	–

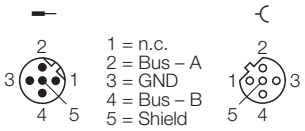
Fieldbus I/O module PROFIBUS-DP
16 digital outputs 0.5 A
FLDP-OM16-0001



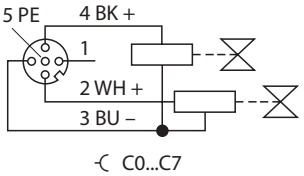
- 16 digital outputs, 0.5 A
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-OM16-0001
Ident-No.	6825327
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Outputs	
Number of channels	(16) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

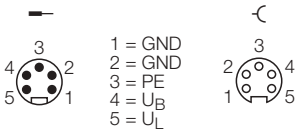
Fieldbus M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	–

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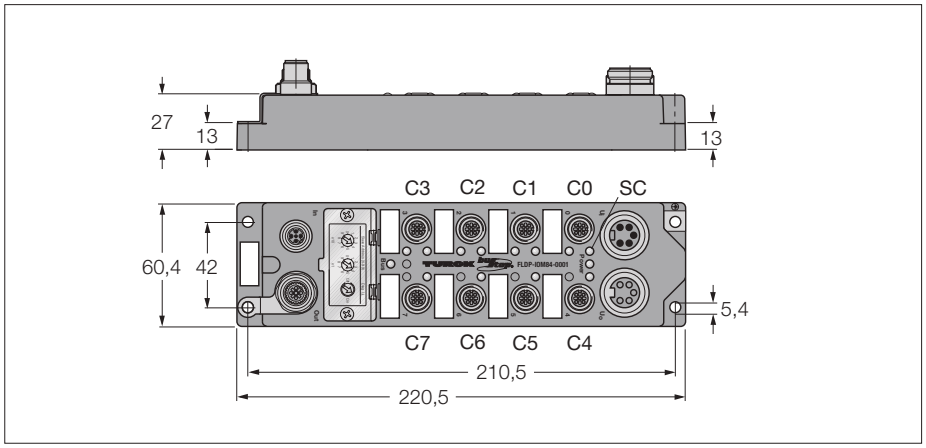
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
4 digital outputs 2 A
FLDP-IOM84-0001

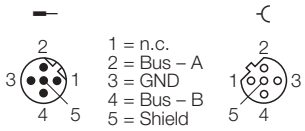
Industrial Automation



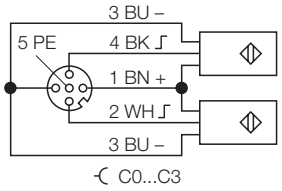
- 8 digital pnp inputs
- 4 digital outputs 2 A
- Module-related diagnostics
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IOM84-0001
Ident-No.	6825330
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 2/3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 8 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(4) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	2.0 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

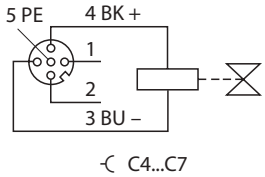
Fieldbus M12 × 1



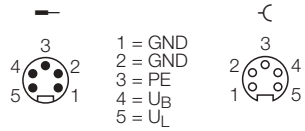
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

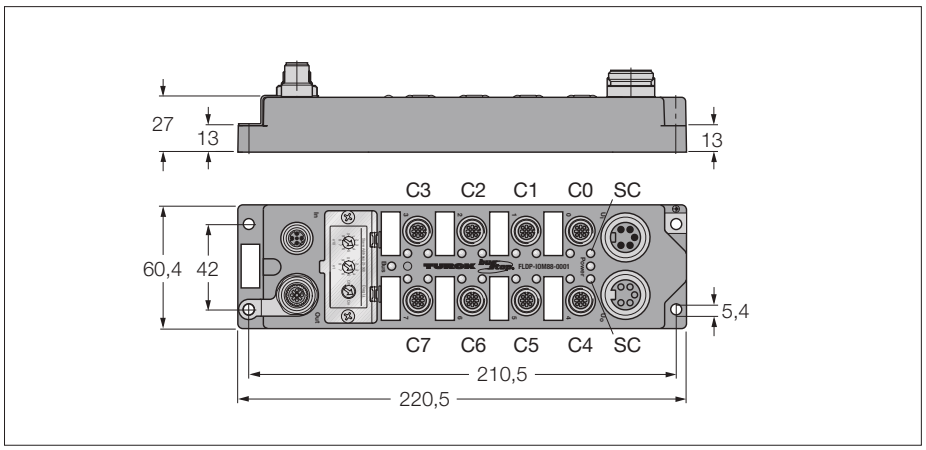
U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
Output	**Byte 0**	–	C7P4	–	C6P4	–	C5P4	–	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC

4

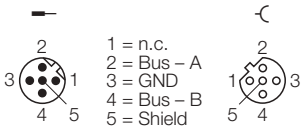
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
8 digital outputs 0.5 A
FLDP-IOM88-0001



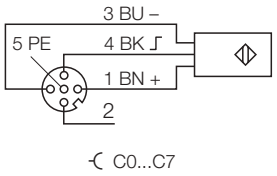
- 8 digital pnp inputs
- 8 digital outputs 0.5 A
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IOM88-0001
Ident-No.	6825322
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 2/3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 4 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

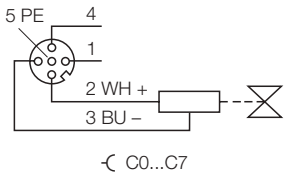
Fieldbus M12 × 1



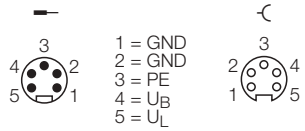
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Output	**Byte 0**	C7P2	C6P2	C5P2	C4P2	C3P2	C2P2	C1P2	C0P2
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC

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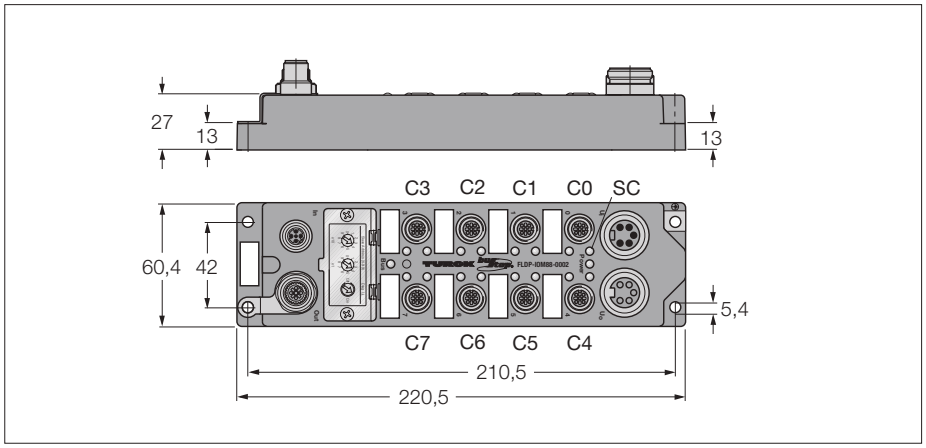
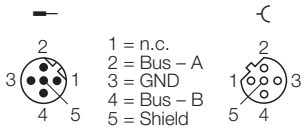
Fieldbus I/O module PROFIBUS-DP
8 digital pnp inputs
8 digital outputs 2 A
FLDP-IOM88-0003



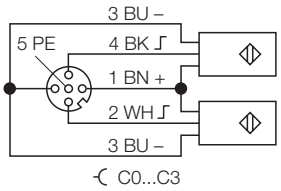
- 8 digital pnp inputs
- 8 digital outputs 2 A
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IOM88-0003
Ident-No.	6825370
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 2/3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 8 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	2.0 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

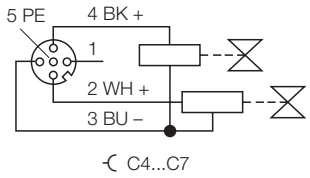
Fieldbus M12 × 1



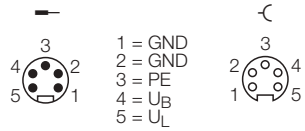
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

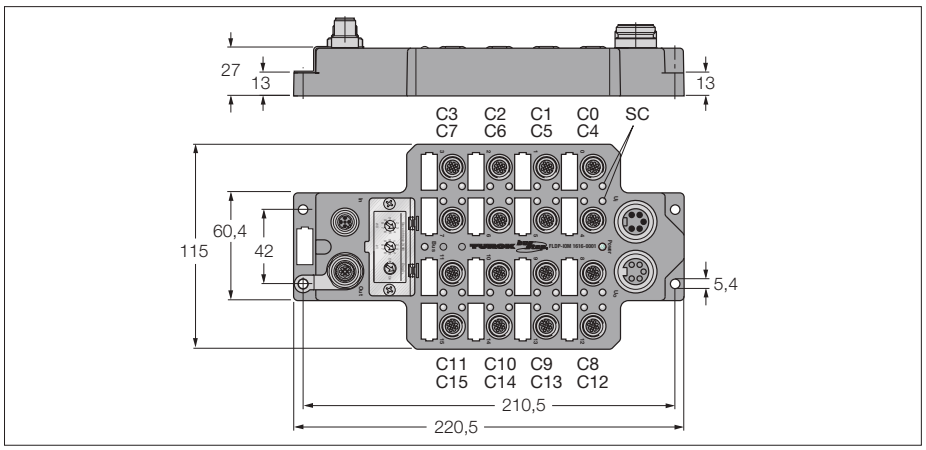
SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
Output	**Byte 0**	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC

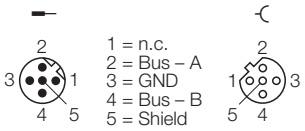
Fieldbus I/O module PROFIBUS-DP
16 digital pnp inputs
16 digital outputs 0.5 A
FLDP-IOM1616-0001



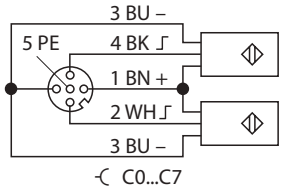
- 16 digital pnp inputs
- 16 digital outputs 0.5 A
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IOM1616-0001
Ident-No.	6825338
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 8 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(16) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

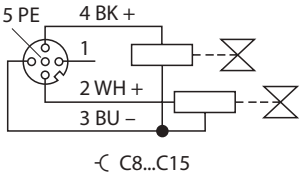
Fieldbus M12 × 1



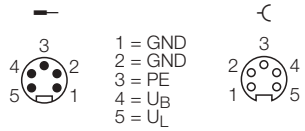
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
Output	**Byte 0**	C11P2	C11P4	C10P2	C10P4	C9P2	C9P4	C8P2	C8P4
	Byte 1	C15P2	C15P4	C14P2	C14P4	C13P2	C13P4	C12P2	C12P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC

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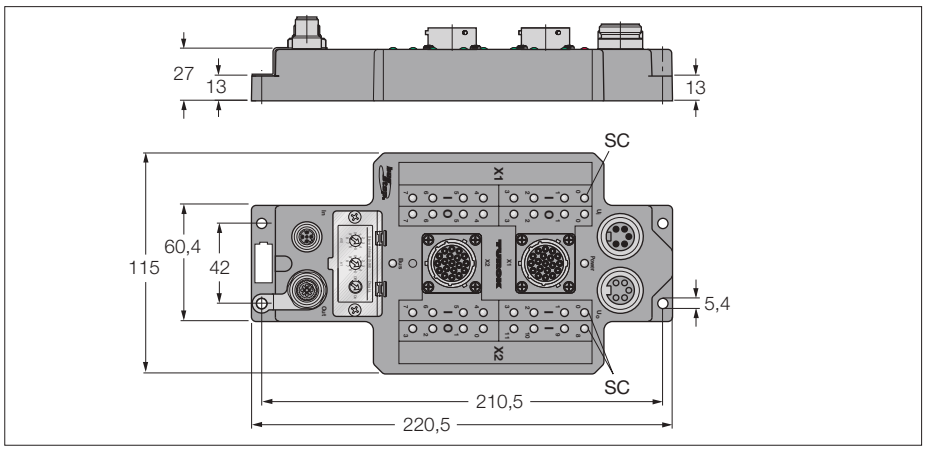
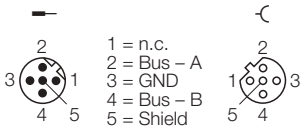
Fieldbus I/O module PROFIBUS-DP
20 digital pnp inputs
12 digital outputs 0.5 A
FLDP-IOM2012-0001



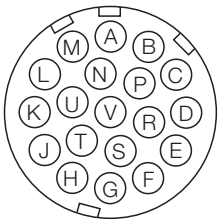
- 20 digital pnp inputs
- and 12 digital outputs, 24 VDC 0.5 A
- Module-related diagnostics
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IOM2012-0001
Ident-No.	6825339
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(20) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 8/12 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(12) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

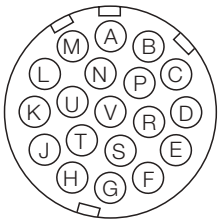
Fieldbus M12 × 1



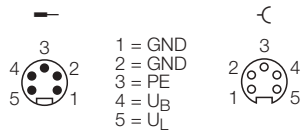
Connection - Inputs



Connection - Outputs



Power supply 7/8"



Data in process image

X1I4: Connector 1, input 4

X2O3: Connector, 2/3", output 3

SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	X1I7	X1I6	X1I5	X1I4	X1I3	X1I2	X1I1	X1I0
	Byte 1	X2I7	X2I6	X2I5	X2I4	X2I3	X2I2	X2I1	X2I0
	Byte 2	–	–	–	–	X2I11	X2I10	X2I9	X2I8
Output	**Byte 0**	X1O7	X1O6	X1O5	X1O4	X1O3	X1O2	X1O1	X1O0
	Byte 1	–	–	–	–	X2O3	X2O2	X2O1	X2O0
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC

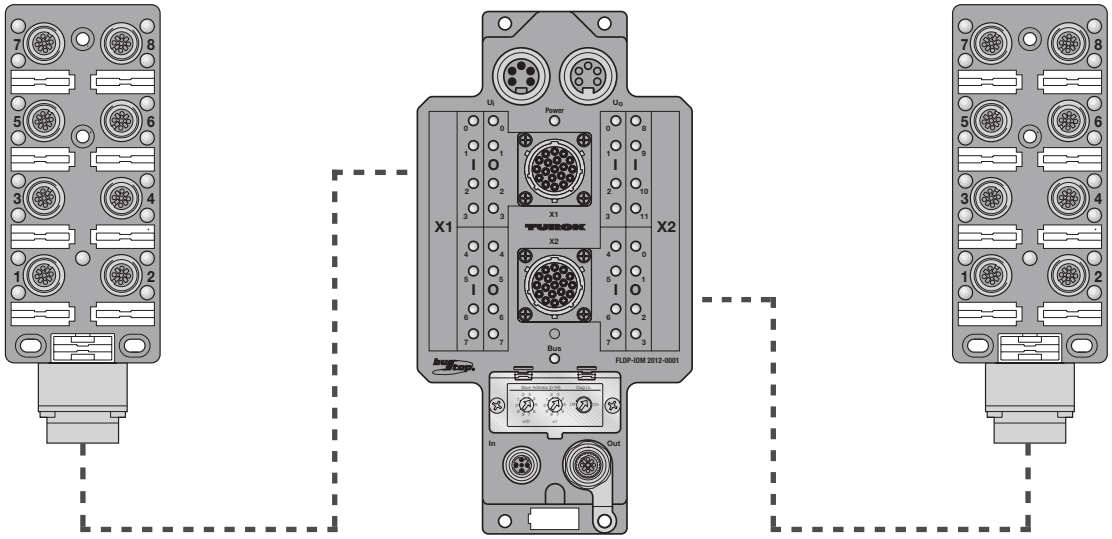
Fieldbus I/O module PROFIBUS-DP
20 digital pnp inputs
12 digital outputs 0.5 A
FLDP-IOM2012-0001

Connection of input/output module FLDP-IOM2012 – junction 8FKS5P3

Passive junction 8FKS5P3 (X1)
Ident-Nr. 8008720

Input/output module FLDP-IOM2012

Passive junction 8FKS5P3 (X2)
Ident-Nr. 8008720

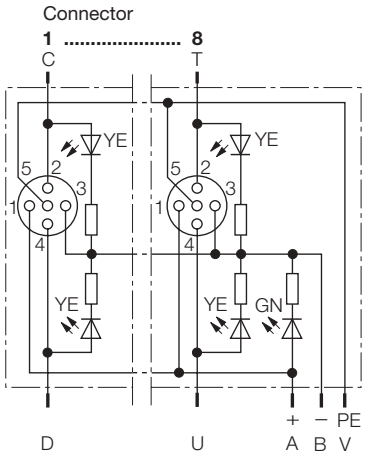


Prefabricated cable FLDP-IOM2012-0001 - 8FKS5P3: RKM23-RSM23-2M (Ident-no.: 6914321)
Field wireable burndy connector (female): VZ5 (Ident-no.: 8000063)
Field wireable burndy connector (male): VZ7 (Ident-no.: 8018763)

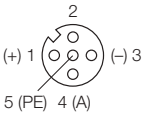
Connection: input/output module FLDP-IOM2012 – junction 8FKS5P3

Burndy	FLDP- IOM2012		8FKS5P3		Input/output bytes	
	X1	X2	X1	X2	X1	X2
A	+	+	+	+		
B	–	–	–	–		
S	I0	I0	S7/4	S7/4	I 0.0	I 1.0
R	I1	I1	S7/2	S7/2	I 0.1	I 1.1
M	I2	I2	S5/4	S5/4	I 0.2	I 1.2
L	I3	I3	S5/2	S5/2	I 0.3	I 1.3
H	I4	I4	S3/4	S3/4	I 0.4	I 1.4
G	I5	I5	S3/2	S3/2	I 0.5	I 1.5
D	I6	I6	S1/4	S1/4	I 0.6	I 1.6
C	I7	I7	S1/2	S1/2	I 0.7	I 1.7
U	O0	I8	S8/4	S8/4	O0.0	I 2.0
T	O1	I9	S8/2	S8/2	O0.1	I 2.1
P	O2	I10	S6/4	S6/4	O0.2	I 2.2
N	O3	I11	S6/2	S6/2	O0.3	I 2.3
K	O4	O0	S4/4	S4/4	O0.4	O1.0
J	O5	O1	S4/2	S4/2	O0.5	O1.1
F	O6	O2	S2/4	S2/4	O0.6	O1.2
E	O7	O3	S2/2	S2/2	O0.7	O1.3
V	PE	PE	PE	PE		

Block diagram/Pin configuraton
Passive junction module 8FKS5P3



M12 × 1 connector



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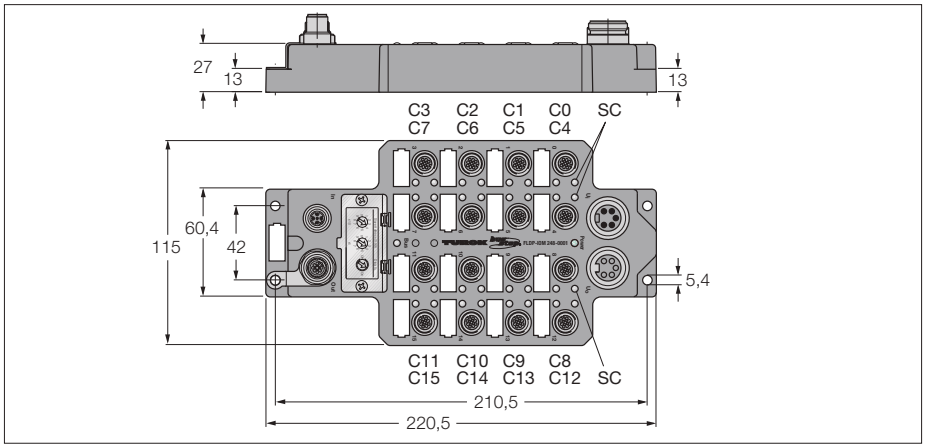
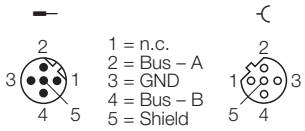
Fieldbus I/O module PROFIBUS-DP
24 digital pnp inputs
8 digital outputs 0.5 A
FLDP-IOM248-0001



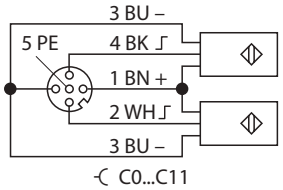
- 24 digital pnp inputs
- 8 digital outputs 0.5 A
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FLDP-IOM248-0001
Ident-No.	6825333
Operating / load voltage	18…30 VDC
Operating current	< 150 mA
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing	1…99 (decimal) via two coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(24) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 500 mA 8 channel each, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Switching frequency	≤ 250 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 250 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Operating temperature	0 to 55 °C

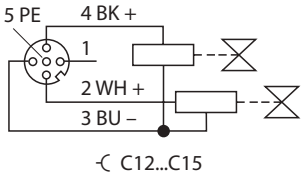
Fieldbus M12 × 1



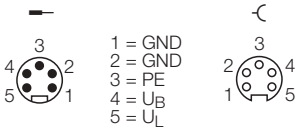
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

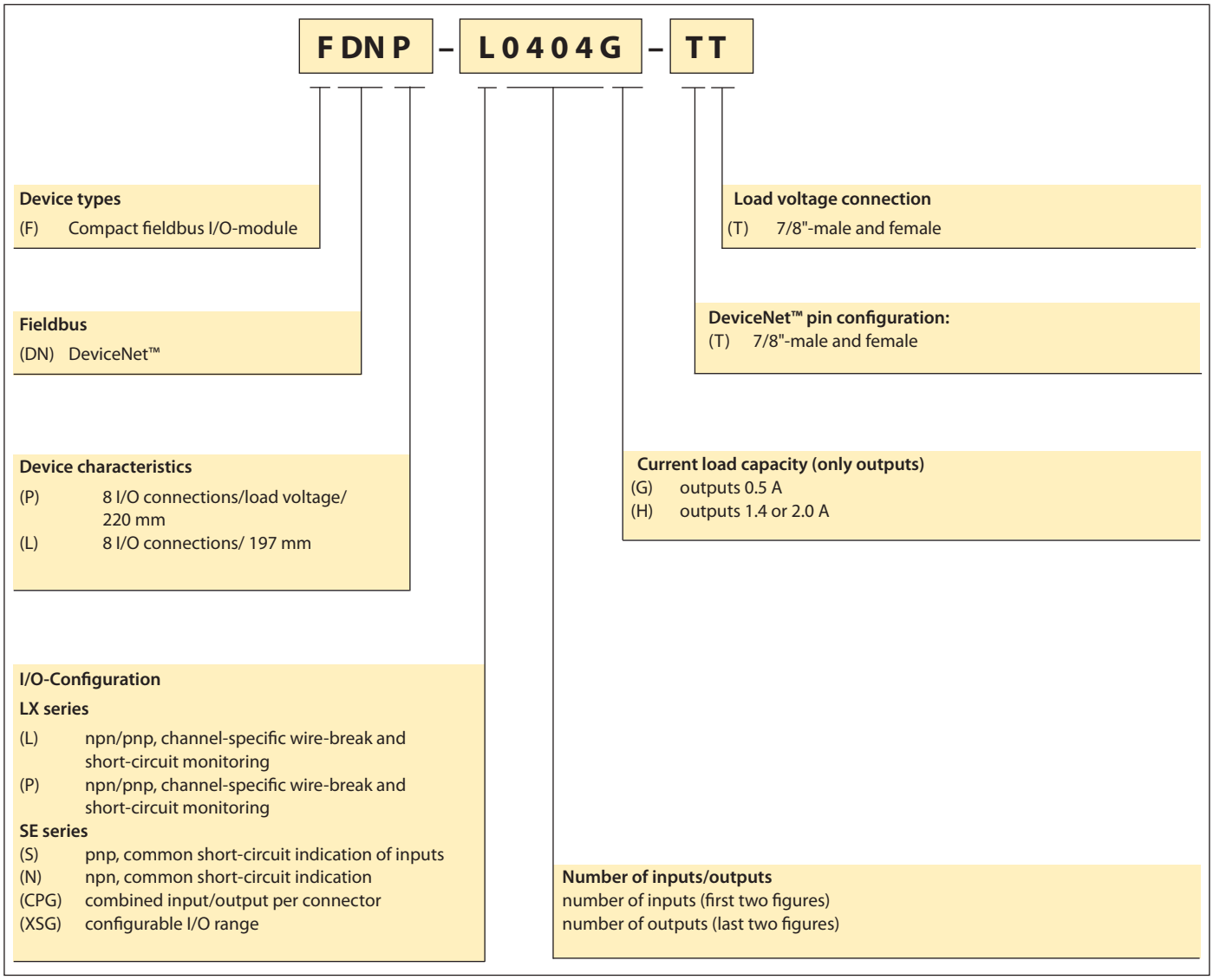
SC: Short-circuit - group signal

U_B: U_B < 18 VDC

U_L: U_L < 18 VDC

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
	Byte 2	C11P2	C11P4	C10P2	C10P4	C9P2	C9P4	C8P2	C8P4
Output	**Byte 0**	C15P2	C15P4	C14P2	C14P4	C13P2	C13P4	C12P2	C12P4
Diagnostics	**Byte 0**	–	–	–	–	–	U_B	U_L	SC

Compact fieldbus I/O modules in IP67 for DeviceNet™
Type code



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Compact fieldbus I/O modules in IP67 for DeviceNet™

Industrial Automation

Series FDNL

- Compact flat housing with up to 16 channels
- Module diagnostics (SE series) or channel-specific diagnostics (LX series)
- Power supply of the outputs is implemented via DeviceNet™

Series FDNP

- Compact flat housing with up to 16 channels,
- Module diagnostics (SE series) or channel-specific diagnostics (LX series)
- Separate connection to power supply

Compact fieldbus I/O modules in IP67 for DeviceNet™
Selection guide

		Number of inputs	Number of output	Number of inputs/outputs per connector	npn/pnp sensor connectable	Maximum load current [A]	Supply concept of the outputs	Page
LX-Serie – channel-specific diagnostics	**Ident-no.**							
FDNL-L0800-T	6603335	8	–	1/–	npn/pnp	–	–	298
FDNL-L1600-T	6602335	16	–	2/–	npn/pnp	–	–	301
FDNP-CPG88-TT	6603324	8	8	1/1	pnp	0.5	Aux	309
FDNP-L0404G-TT	6603327	4	4	1/1	npn/pnp	0.5	Aux	307
FDNP-L0808G-TT	6602389	8	8	2/2	npn/pnp	0.5	Aux	310
FDNP-P1204G-TT	6602672	12	4	2/2	pnp	0.5	Aux	313
FDNP-P0808H-TT	6603329	8	8	2/2	pnp	2	Aux	311
FDNP-L0808H-TT	6603328	8	8	2/2	npn/pnp	2	Aux	312
SE-Serie – module-specific diagnostics,								
FDNL-S0800-T	6603336	8	–	1/–	pnp	–	–	296
FDNL-N0800-T	6603671	8	–	1/–	npn	–	–	297
FDNL-S1600-T	6603316	16	–	2/–	pnp	–	–	299
FDNL-N1600-T	6603672	16	–	2/–	npn	–	–	300
FDNL-CSG88-T	6603351	8	8	1/1	pnp	0.5	Bus	302
FDNP-S0404G-TT	6603331	4	4	1/1	pnp	0.5	Aux	306
FDNP-S0808G-TT	6603348	8	8	2/2	pnp	0.5	Aux	308
FDNP-XSG16-TT	6603323	16 configurable channels			pnp	0.5	Aux	314
FDNP-S0008G-TT	6603673	–	8	–/1	–	0.5	Aux	304
FDNP-S0008H-TT	6603674	–	8	–/1	–	1.4	Aux	305

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Compact fieldbus I/O modules in IP67 for DeviceNet™

TURCK
Industrial Automation

Series FDNL – General information

The compact FDNL series fieldbus I/O modules allow direct connection of up to 16 digital inputs/outputs to a DeviceNet™ network. Depending on type, the I/O modules offer channel (LX series) and module (SE series) specific wire-break/short-circuit diagnostics. The I/O modules support transmission rates of 500 Kbit/s as well as all types of DeviceNet™ communication modes, incl. "Poll", "Strobe", "Cyclic", "Change of State (COS)" and "UCMM".

The DeviceNet™ connection is implemented via 5-pole, 7/8" connectors. Both the module electronics and also the inputs and outputs are supplied via DeviceNet™. The I/O level is equipped throughout with M12 metal round connectors.

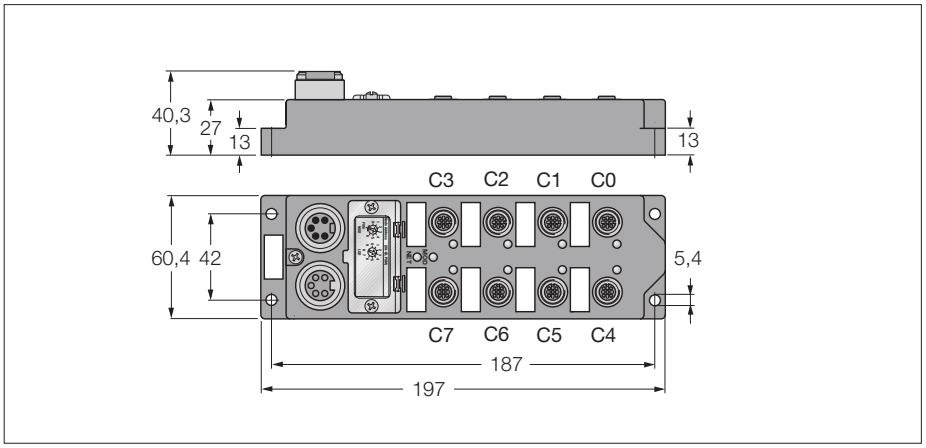
Glass-fibre reinforced plastic housings and the fully encapsulated module electronics guarantee protection degree IP67. The I/O modules are therefore particularly suited for use in harsh industrial environments.

4

General technical data

Characteristics	
– LX series:	Channel-specific short-circuit and wire-break diagnostics of inputs and outputs
– SE series:	Module-specific short-circuit diagnostics of inputs and outputs
Settings	
DeviceNet™ address	0…63 (decimal) adjustable via two coded rotary switches
Transmission rate	automatic
LEDs	
Inputs	green: ON
Outputs	green: ON
wire-break and short-circuit,	
Only LX series (dual colour LED)	yellow: wire-break, red: short-circuit
Module status (dual colour LED)	green: operational, green flashing: detection of the baud rate, red flashing: I/O short-circuit
Network status LED (dual colour LED)	green: communication, green flashing: ready to establish communication red: communication failed, red flashing: communication time-out
Connections	Nickel-plated brass
DeviceNet™	7/8" connector, 5-pole; IN and OUT
Inputs/outputs	female M12 × 1 connectors; 5-pole
Housing	Housing PA6-GF30, glass-fibre reinforced plastic housing with encapsulated electronics and nickel-plated brass connectors
Mounting	via 4 through-holes, Ø 5.4mm
Degree of protection	IP67 (NEMA 1, 3, 4, 12, 13)
Temperature range	
– LX series	-25 °C to +70 °C (-13 °F to 158 °F)
– SE series	-40 °C to 70 °C (-40 °F to 158 °F)
Dimensions	197 × 60 × 27 mm (H × W × D)
Approvals	CE, UL, FM, CSA

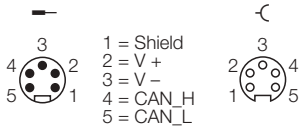
Fieldbus I/O module for DeviceNet™
8 digital pnp inputs
FDNL-S0800-T



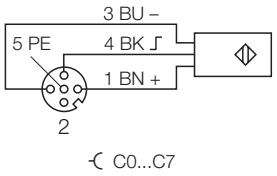
- 8 digital pnp inputs
- Short-circuit monitoring
- Module-related diagnostics
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNL-S0800-T
Ident-No.	6603336
Operating / load voltage	11…26 VDC
Operating current	< 50 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Operating temperature	- 40… +70 °C

Fieldbus 7/8"



Input M12 × 1



Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 1	IGS	–	–	–	–	–	–	–

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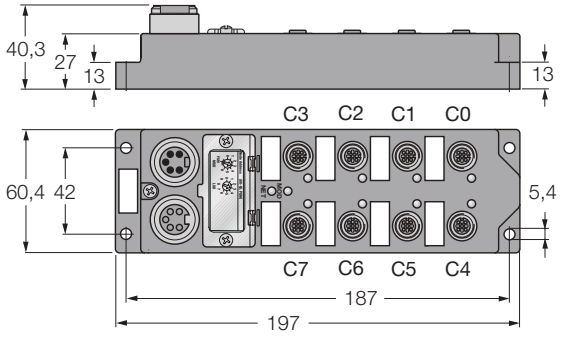
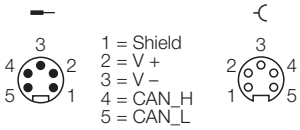
Fieldbus I/O module for DeviceNet™
8 digital npn inputs
FDNL-N0800-T



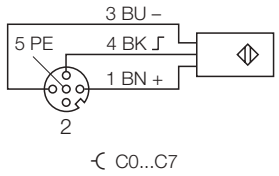
- 8 digital npn inputs
- Short-circuit monitoring
- Module-related diagnostics
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNL-N0800-T
Ident-No.	6603671
Operating / load voltage	11…26 VDC
Operating current	< 50 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire npn sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Operating temperature	- 40… +70 °C

Fieldbus 7/8"



Input M12 × 1



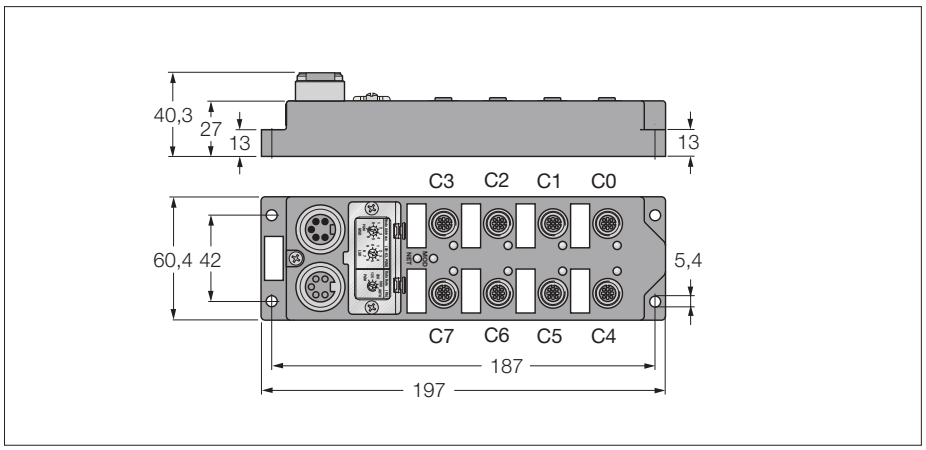
Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 1	IGS	–	–	–	–	–	–	–

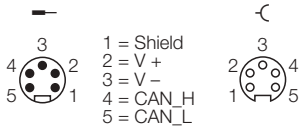
Fieldbus I/O module for DeviceNet™
8 digital npn/pnp inputs
FDNL-L0800-T



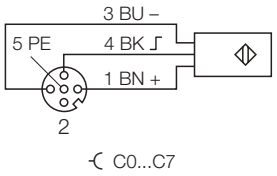
- 8 digital npn/pnp inputs
- Wire-break monitoring
- Channel-related diagnostics
- One channel per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNL-L0800-T
Ident-No.	6603335
Operating / load voltage	11…26 VDC
Operating current	< 100 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire npn/pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Operating temperature	-25 to 70 °C

Fieldbus 7/8"



Input M12 × 1



Data in process image

C1P4: Male Connector 1, 4-pole

ISS-3: Short-circuit channel 3

IOS-2: Wire-break channel 2

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 1	ISS-7	ISS-6	ISS-5	ISS-4	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 2	IOS-7	IOS-6	IOS-5	IOS-4	IOS-3	IOS-2	IOS-1	IOS-0

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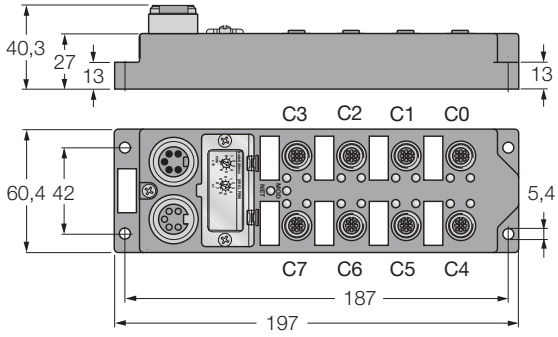
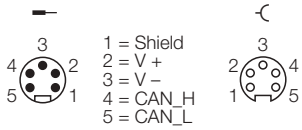
Fieldbus I/O module for DeviceNet™
16 digital pnp inputs
FDNL-S1600-T



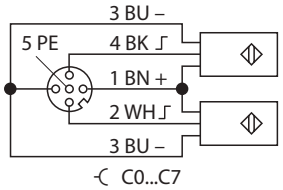
- 16 digital pnp inputs
- Short-circuit monitoring
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNL-S1600-T
Ident-No.	6603316
Operating / load voltage	11…26 VDC
Operating current	< 50 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Operating temperature	- 40… +70 °C

Fieldbus 7/8"



Input M12 × 1



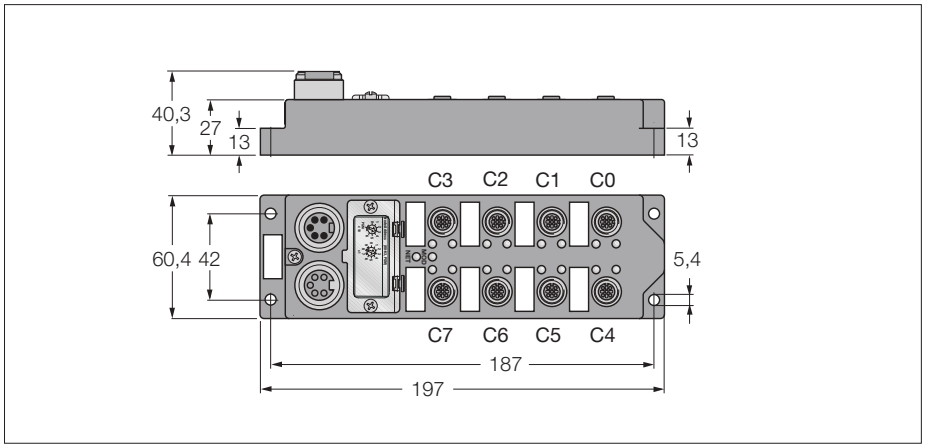
Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
	Byte 2	IGS	–	–	–	–	–	–	–

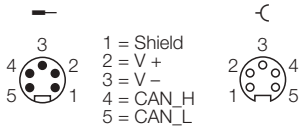
Fieldbus I/O module for DeviceNet™
16 digital npn inputs
FDNL-N1600-T



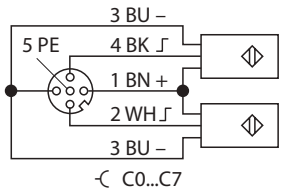
- 16 digital npn inputs
- Short-circuit monitoring
- Module-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNL-N1600-T
Ident-No.	6603672
Operating / load voltage	11…26 VDC
Operating current	< 50 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire npn sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Operating temperature	- 40… +70 °C

Fieldbus 7/8"



Input M12 × 1



Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
	Byte 2	IGS	–	–	–	–	–	–	–

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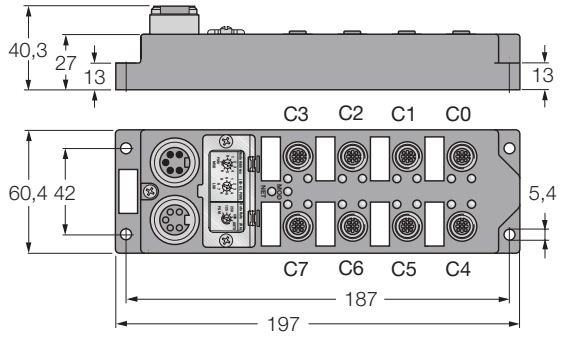
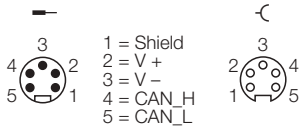
Fieldbus I/O module for DeviceNet™
16 digital pnp/npn inputs
FDNL-L1600-T



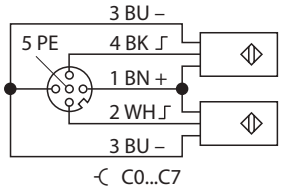
- 16 digital npn/pnp inputs
- Wire-break monitoring
- Channel-related diagnostics
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNL-L1600-T
Ident-No.	6602335
Operating / load voltage	11…26 VDC
Operating current	< 140 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire npn/pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Operating temperature	- 25… +70 °C

Fieldbus 7/8"



Input M12 × 1

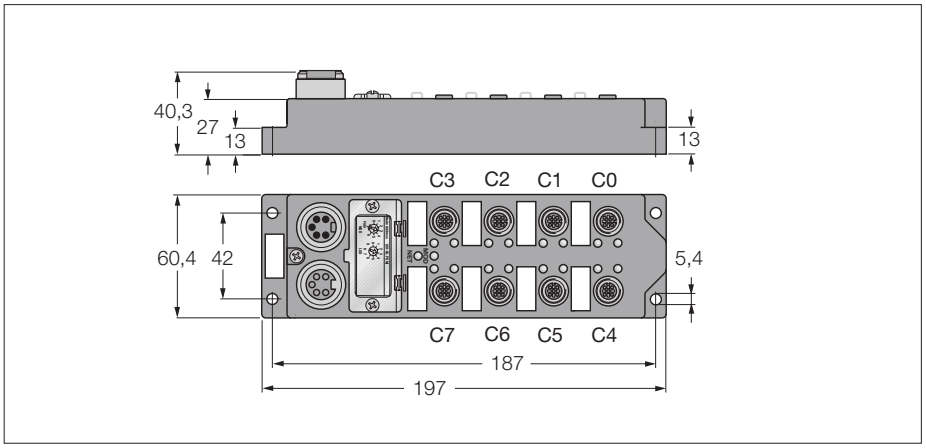


Data in process image

C1P4: Male Connector 1, 4-pole
ISS-3: Short-circuit channel 3
IOS-2: Wire-break channel 2

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
	Byte 2	ISS-7	ISS-6	ISS-5	ISS-4	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 3	ISS-15	ISS-14	ISS-13	ISS-12	ISS-11	ISS-10	ISS-9	ISS-8
	Byte 4	IOS-7	IOS-6	IOS-5	IOS-4	IOS-3	IOS-2	IOS-1	IOS-0
	Byte 5	IOS-15	IOS-14	IOS-13	IOS-12	IOS-11	IOS-10	IOS-9	IOS-8

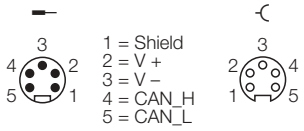
Fieldbus I/O module for DeviceNet™
8 digital pnp inputs
8 digital outputs 0.5 A
FDNL-CSG88-T



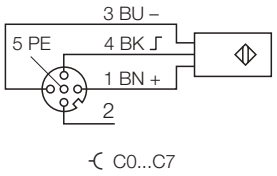
- 8 digital pnp inputs
- 8 digital outputs 0.5 A
- Short-circuit monitoring
- Module-related diagnostics
- Two channels per connector
- Separate auxiliary / load voltage (Aux)
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNL-CSG88-T
Ident-No.	6603351
Operating / load voltage	11…26 VDC
Operating current	< 100 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	bus connection
Operating temperature	- 40… +70 °C

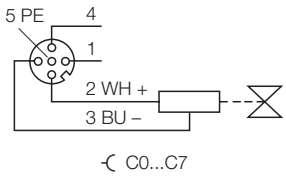
Fieldbus 7/8"



Input M12 × 1



Output M12 × 1



Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

OGS: Short-circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 1	IGS	OGS	–	–	–	–	–	–
Output	**Byte 0**	C7P2	C6P2	C5P2	C4P2	C3P2	C2P2	C1P2	C0P2

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Compact fieldbus I/O modules in IP67 for DeviceNet™

TURCK
Industrial Automation

Series FDNP – general information

The compact FDNP series fieldbus I/O modules allow direct connection of up to 16 digital inputs/outputs to a DeviceNet™ network. Depending on type, the I/O modules offer channel (LX series) and module (SE series) specific wire-break/short-circuit diagnostics.

The I/O modules support transmission rates of 500 Kbit/s as well as all types of DeviceNet™ communication modes, incl. "Poll", "Strobe", "Cyclic", "Change of State (COS)" and "UCMM".

The DeviceNet™ connection is implemented via 5-pole, 7/8" round connectors. The module electronics and the inputs are supplied via DeviceNet™; the auxiliary voltage for the outputs is also fed via a 7/8" round connector and can be fed through via a second 7/8" round connector. The I/O level is equipped throughout with metal M12 connectors.

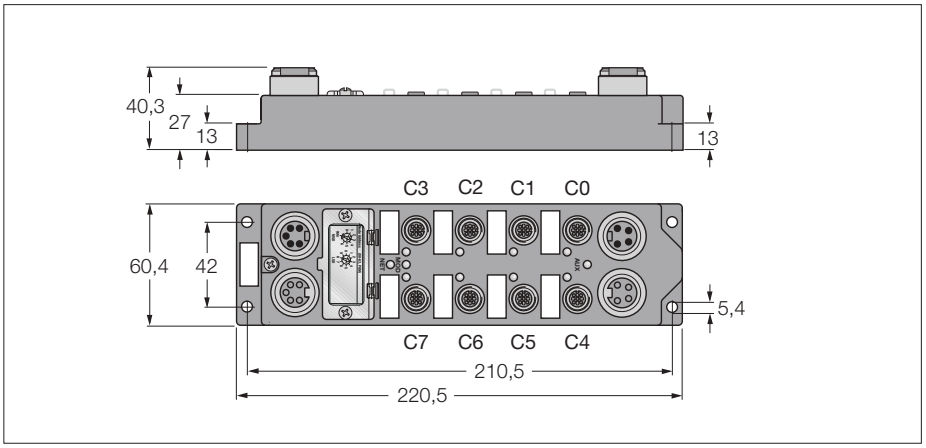
Glass-fibre reinforced plastic housings and the fully encapsulated module electronics guarantee protection degree IP67. The I/O modules are therefore particularly suited for use in harsh industrial environments.

4

General technical data

Characteristics	
– LX series:	Channel-specific short-circuit and wire-break diagnostics of inputs and outputs
– SE series:	Module-specific short-circuit diagnostics of inputs and outputs
Settings	
DeviceNet™ address	0…63 (decimal) adjustable via two coded rotary switches
Transmission rate	automatic
LEDs	
Inputs	green: ON
Outputs	green: ON
wire-break and short-circuit,	
Only LX series (dual colour LED)	yellow: wire-break, red: short-circuit
Module status (dual colour LED)	green: operational, green flashing: detection of the baud rate, red flashing: I/O short-circuit
Network status LED (dual colour LED)	green: communication, green flashing: ready to establish communication red: communication failed, red flashing: communication time-out
Connections	nickel-plated brass
DeviceNet™	7/8" connector, 5-pole; IN and OUT
aux power	7/8" connector, 4-pole; IN and OUT
Inputs/outputs	female M12 × 1 connectors; 5-pole
Housing	Housing PA6-GF30, glass-fibre reinforced plastic housing with encapsulated electronics and nickel-plated brass connectors
Mounting	via 4 through-holes, Ø 5.4mm
Degree of protection	IP67 (NEMA 1, 3, 4, 12, 13)
Temperature range	
– LX series	-25 °C to +70 °C (-13 °F to 158 °F)
– SE series	-40 °C to 70 °C (-40 °F to 158 °F)
Dimensions	220 × 60 × 27 mm (H × W × D)
Approvals	CE, UL, FM, cULus

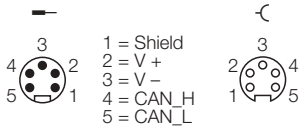
Fieldbus I/O module for DeviceNet™
8 digital outputs 0.5 A
FDNP-S0008G-TT



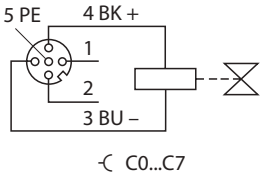
- 8 digital outputs 0.5 A
- Output diagnostics per channel
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-S0008G-TT
Ident-No.	6603673
Operating / load voltage	11…26 VDC
Operating current	< 140 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 40… +70 °C

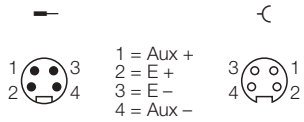
Fieldbus 7/8"



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

OGS: Short-circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Input	**Byte 0**	OS-7	OS-6	OS-5	OS-4	OS-3	OS-2	OS-1	OS-0

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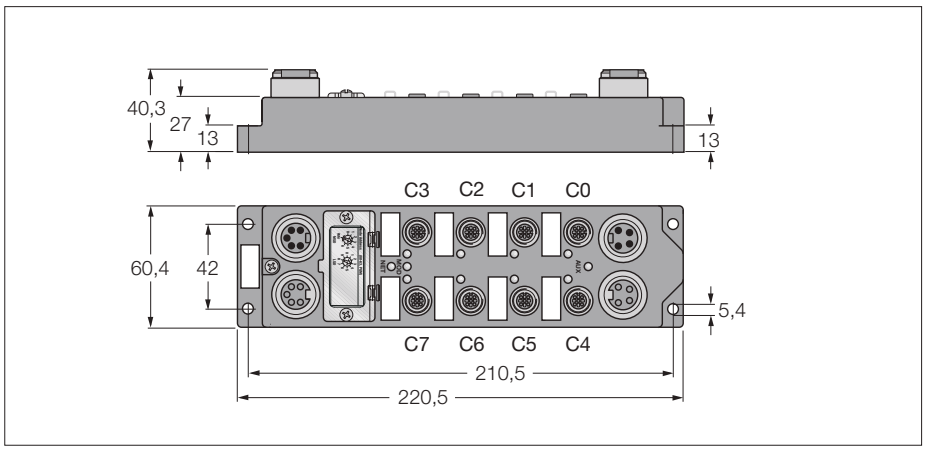
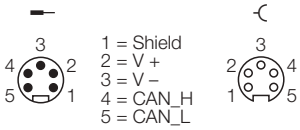
Fieldbus I/O module for DeviceNet™
8 digital outputs 1.4 A
FDNP-S0008H-TT



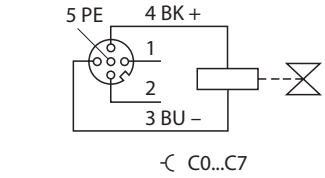
- 8 digital outputs 1.4 A
- Output diagnostics per channel
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-S0008H-TT
Ident-No.	6603674
	11…26 VDC
Operating current	< 50 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	1.4 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	0.8
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 40… +70 °C

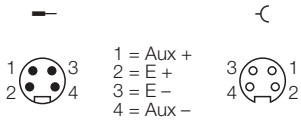
Fieldbus 7/8"



Output M12 × 1



Power supply 7/8"



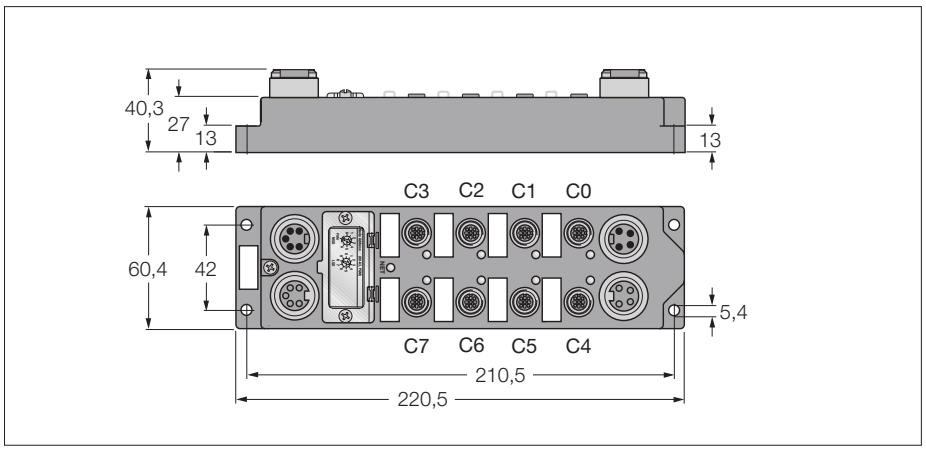
Data in process image

C1P4: Male Connector 1, 4-pole

OGS: Short-circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Output	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
Input	**Byte 0**	OS-7	OS-6	OS-5	OS-4	OS-3	OS-2	OS-1	OS-0

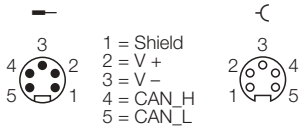
Fieldbus I/O module for DeviceNet™
4 digital pnp inputs
4 digital outputs 0.5 A
FDNP-S0404G-TT



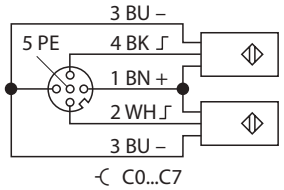
- 4 digital pnp inputs
- 4 digital outputs 0.5 A
- Short-circuit monitoring
- Module-related diagnostics
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-S0404G-TT
Ident-No.	6603331
Operating / load voltage	11…26 VDC
Operating current	< 75 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(4) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(4) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 40… +70 °C

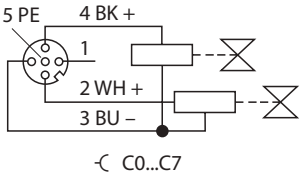
Fieldbus 7/8"



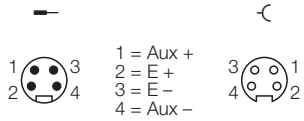
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

OGS: Short-circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	IGS	OGS	–	–	C3P4	C2P4	C1P4	C0P4
Output	**Byte 0**	–	–	–	–	C7P4	C6P4	C5P4	C4P4

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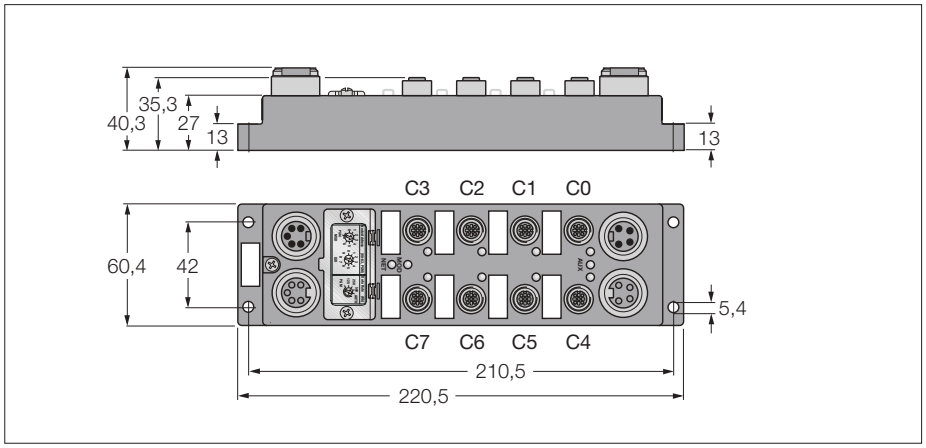
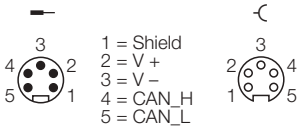
Fieldbus I/O module for DeviceNet™
4 digital pnp/npn inputs
4 digital outputs 0.5 A
FDNP-L0404G-TT



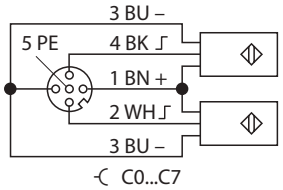
- 4 digital npn/pnp inputs
- and 4 digital outputs, 24 VDC, 0.5 A
- Wire-break monitoring
- Short-circuit monitoring
- Channel-related diagnostics
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-L0404G-TT
Ident-No.	6603327
Operating / load voltage	11…26 VDC
Operating current	< 140 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(4) 3-wire npn/pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(4) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 25… +70 °C

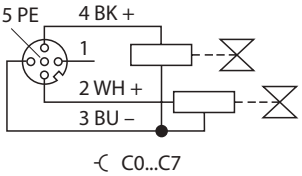
Fieldbus 7/8"



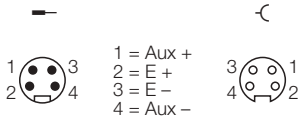
Input M12 × 1



Output M12 × 1



Power supply 7/8"

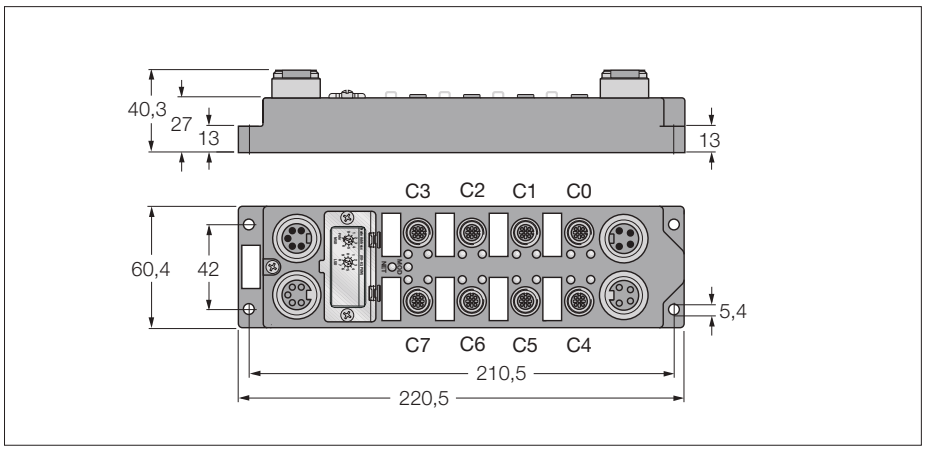


Data in process image

C1P4: Male Connector 1, 4-pole
APS: Auxiliary Status
ISS-3: Short-circuit channel 3
IOS-2: Wire-break channel 2
OS: Output status

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	–	–	–	–	C3P4	C2P4	C1P4	C0P4
	Byte 1	IOS-3	IOS-2	IOS-1	IOS-0	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 2	OOS-3	OOS-2	OOS-1	OOS-0	OSS-3	OSS-2	OSS-1	OSS-0
	Byte 3	–	APS	–	–	–	–	–	–
Output	**Byte 0**	–	–	–	–	C7P4	C4P4	C5P4	C4P4

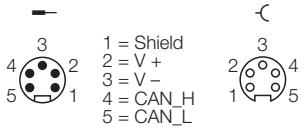
Fieldbus I/O module for DeviceNet™
8 digital pnp inputs
8 digital outputs 0.5 A
FDNP-S0808G-TT



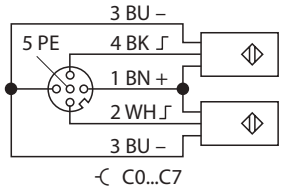
- 8 digital pnp inputs
- 8 digital outputs 0.5 A
- Short-circuit monitoring
- Module-related diagnostics
- Two channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-S0808G-TT
Ident-No.	6603348
Operating / load voltage	11…26 VDC
Operating current	< 75 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 40… +70 °C

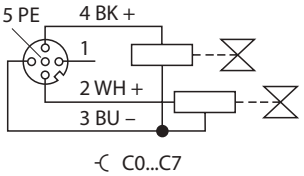
Fieldbus 7/8"



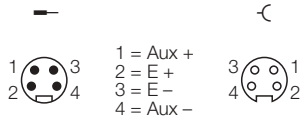
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

OGS: Short-circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	IGS	OGS	–	–	–	–	–	–
Output	**Byte 0**	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4

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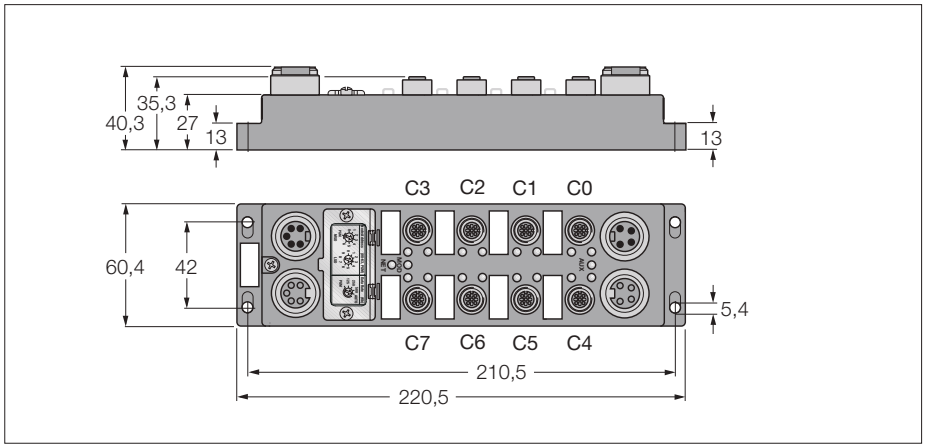
Fieldbus I/O module for DeviceNet™
8 digital pnp inputs
8 digital outputs 0.5 A
FDNP-CPG88-TT

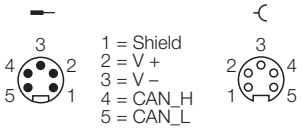
Industrial Automation



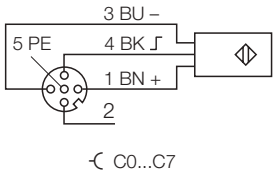
- 8 digital pnp inputs
- and 8 digital outputs, 24 VDC, 0.5 A
- Wire-break monitoring
- Short-circuit monitoring
- Channel-related diagnostics
- Two channels per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-CPG88-TT
Ident-No.	6603324
Operating / load voltage	11…26 VDC
Operating current	< 100 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 25… +70 °C

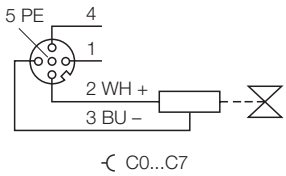
Fieldbus 7/8"



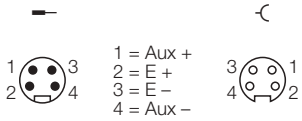
Input M12 × 1



Output M12 × 1



Power supply 7/8"

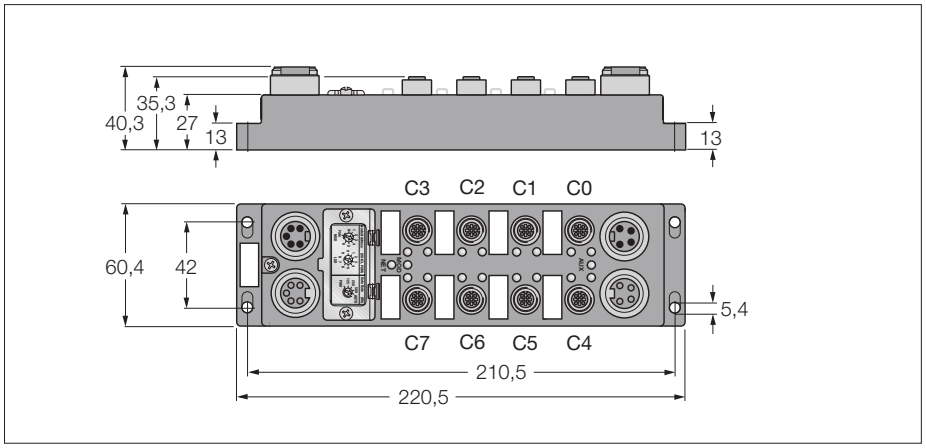


Data in process image

C1P4: Male Connector 1, 4-pole
APS: Auxiliary Status
ISS-3: Short-circuit channel 3
IOS-2: Wire-break channel 2
OS: Output status

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C7P4	C6P4	C5P4	C4P4	C3P4	C2P4	C1P4	C0P4
	Byte 1	ISS-7	ISS-6	ISS-5	ISS-4	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 2	IOS-7	IOS-6	IOS-5	IOS-4	IOS-3	IOS-2	IOS-1	IOS-0
	Byte 3	OS-7	OS-6	OS-5	OS-4	OS-3	OS-2	OS-1	OS-0
	Byte 4	–	APS	–	–	–	–	–	–
Output	**Byte 0**	C7P2	C6P2	C5P2	C4P2	C3P2	C2P2	C1P2	C0P2

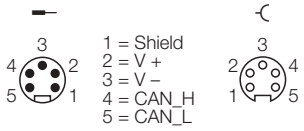
Fieldbus I/O module for DeviceNet™
8 digital npn/pnp inputs
8 digital outputs 0.5 A
FDNP-L0808G-TT



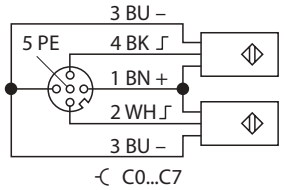
- 8 digital npn/pnp inputs
- and 8 digital outputs, 24 VDC, 0.5 A
- Wire-break monitoring
- Short-circuit monitoring
- Channel-related diagnostics
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-L0808G-TT
Ident-No.	6602389
Operating / load voltage	11…26 VDC
Operating current	< 100 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire npn/pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 25… +70 °C

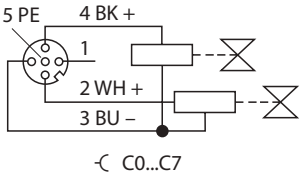
Fieldbus 7/8"



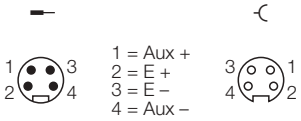
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

APS: Auxiliary Status

ISS-3: Short-circuit channel 3

IOS-2: Wire-break channel 2

OS: Output status

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	ISS-7	ISS-6	ISS-5	ISS-4	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 2	IOS-7	IOS-6	IOS-5	IOS-4	IOS-3	IOS-2	IOS-1	IOS-0
	Byte 3	OS-7	OS-6	OS-5	OS-4	OS-3	OS-2	OS-1	OS-0
	Byte 4	–	APS	–	–	–	–	–	–
Output	**Byte 0**	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4

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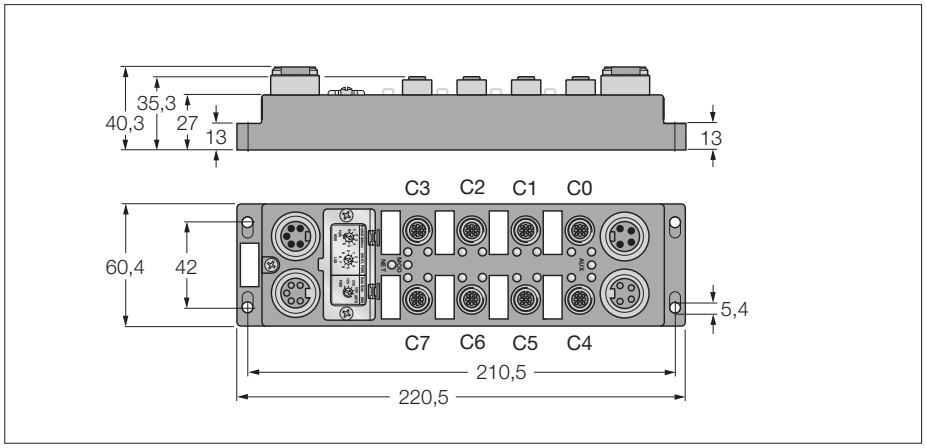
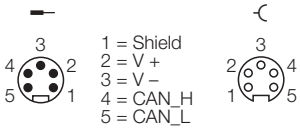
Fieldbus I/O module for DeviceNet™
8 digital pnp inputs
8 digital outputs 2 A
FDNP-P0808H-TT



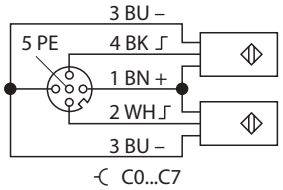
- 8 digital pnp inputs
- and 8 digital outputs, 24 VDC 2 A
- Wire-break monitoring
- Short-circuit monitoring
- Channel-related diagnostics
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-P0808H-TT
Ident-No.	6603329
Operating / load voltage	11…26 VDC
Operating current	< 100 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	2.0 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	0.5
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 25… +70 °C

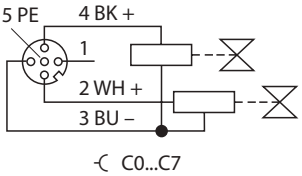
Fieldbus 7/8"



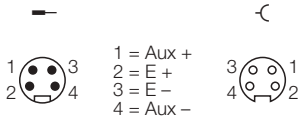
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

APS: Auxiliary Status

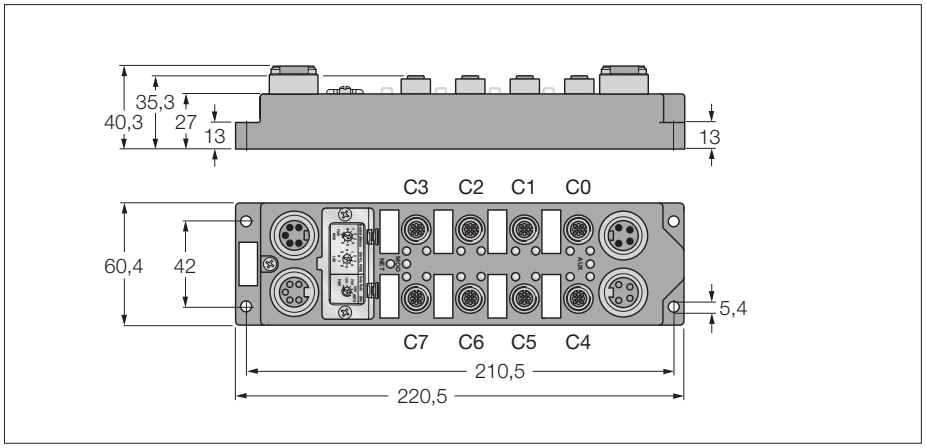
ISS-3: Short-circuit channel 3

IOS-2: Wire-break channel 2

OS: Output status

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	ISS-7	ISS-6	ISS-5	ISS-4	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 2	IOS-7	IOS-6	IOS-5	IOS-4	IOS-3	IOS-2	IOS-1	IOS-0
	Byte 3	OS-7	OS-6	OS-5	OS-4	OS-3	OS-2	OS-1	OS-0
	Byte 4	–	APS	–	–	–	–	–	–
Output	**Byte 0**	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4

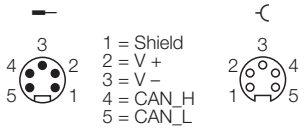
Fieldbus I/O module for DeviceNet™
8 digital npn/pnp inputs
8 digital outputs 2 A
FDNP-L0808H-TT



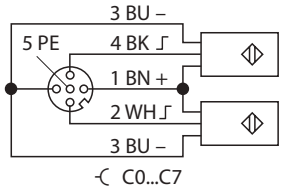
- 8 digital npn/pnp inputs
- and 8 digital outputs, 24 VDC 2 A
- Wire-break monitoring
- Short-circuit monitoring
- Channel-related diagnostics
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-L0808H-TT
Ident-No.	6603328
Operating / load voltage	11…26 VDC
Operating current	< 100 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(8) 3-wire npn/pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(8) DC actuators
Output voltage	24 VDC
Output current per channel	2.0 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	0.5
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 25… +70 °C

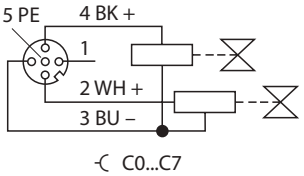
Fieldbus 7/8"



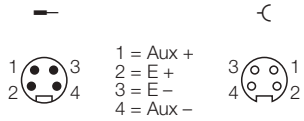
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

APS: Auxiliary Status

ISS-3: Short-circuit channel 3

IOS-2: Wire-break channel 2

OS: Output status

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	ISS-7	ISS-6	ISS-5	ISS-4	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 2	IOS-7	IOS-6	IOS-5	IOS-4	IOS-3	IOS-2	IOS-1	IOS-0
	Byte 3	OS-7	OS-6	OS-5	OS-4	OS-3	OS-2	OS-1	OS-0
	Byte 4	–	APS	–	–	–	–	–	–
Output	**Byte 0**	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4

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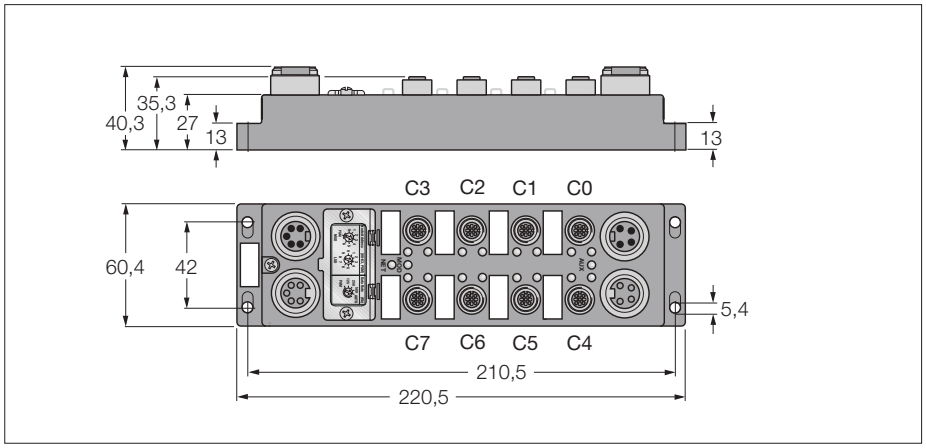
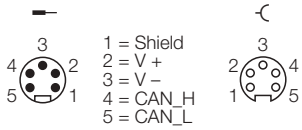
Fieldbus I/O module for DeviceNet™
12 digital pnp inputs
4 digital outputs 0.5 A
FDNP-P1204G-TT



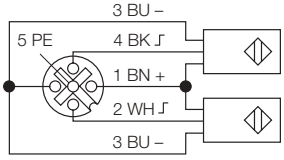
- 12 digital pnp inputs
- and 4 digital outputs, 24 VDC, 0.5 A
- Wire-break monitoring
- Short-circuit monitoring
- Channel-related diagnostics
- One channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-P1204G-TT
Ident-No.	6602672
Operating / load voltage	11…26 VDC
Operating current	< 100 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(12) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(4) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 25… +70 °C

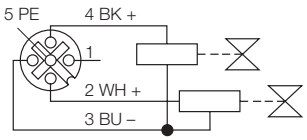
Fieldbus 7/8"



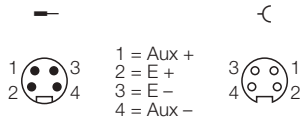
Input M12 × 1



Output M12 × 1



Power supply 7/8"

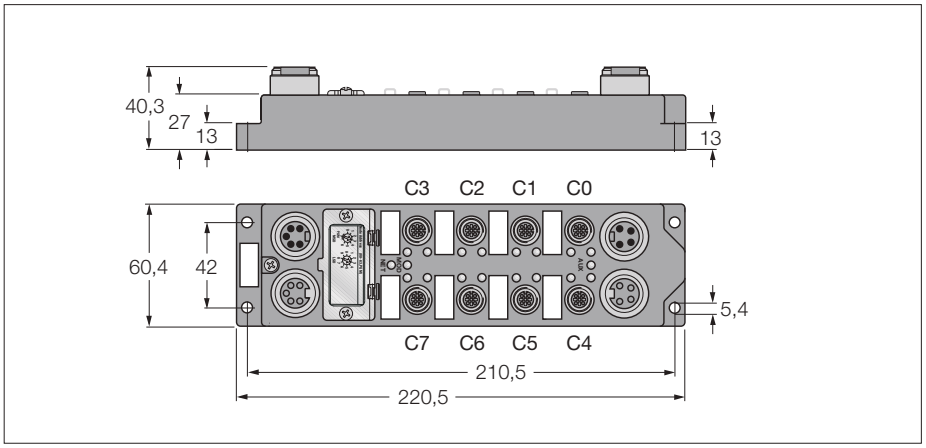


Data in process image

C1P4: Male Connector 1, 4-pole
APS: Auxiliary Status
ISS-3: Short-circuit channel 3
IOS-2: Wire-break channel 2
OS: Output status

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C5P2	C5P4	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4
	Byte 1	–	APS	–	–	C7P2	C7P4	C6P2	C6P4
	Byte 2	ISS-7	ISS-6	ISS-5	ISS-4	ISS-3	ISS-2	ISS-1	ISS-0
	Byte 3	OSS-3	OSS-2	OSS-1	OSS-0	ISS-11	ISS-10	ISS-9	ISS-8
	Byte 4	IOS-7	IOS-6	IOS-5	IOS-4	IOS-3	IOS-2	IOS-1	IOS-0
	Byte 5	OOS-3	OOS-2	OOS-1	OOS-0	IOS-11	IOS-10	IOS-9	IOS-8
Output	**Byte 0**	–	–	–	–	C4P2	C4P4	C0P2	C0P4

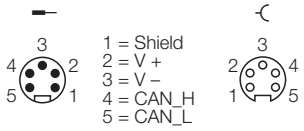
Fieldbus I/O module for DeviceNet™
16 configurable digital channels
Pnp inputs / outputs 0.5 A
FDNP-XSG16-TT



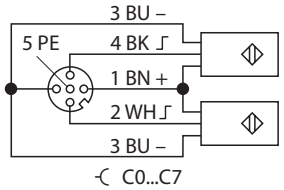
- 16 configurable digital channels
- Short-circuit monitoring
- Module-related diagnostics
- Two channel per connector
- Separate actuator power supply
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

Type	FDNP-XSG16-TT
Ident-No.	6603323
Operating / load voltage	11…26 VDC
Operating current	< 75 mA
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing	0…63 (decimal) via coded rotary switches
Electrical isolation	to operating and load voltage
Inputs	
Number of channels	(16) 3-wire pnp sensors
Input voltage	13…26 VDC
Input delay	2.5 ms
Switching frequency	≤ 100 Hz
Max. input current	6 mA
Electrical isolation	galvanic isolation against the bus
Outputs	
Number of channels	(16) DC actuators
Output voltage	24 VDC
Output current per channel	0.5 A, short-circuit proof
Load type	resistive, inductive, lamp load
Switching frequency	≤ 100 Hz
Simultaneity factor	1
Electrical isolation	galvanic isolation against the bus
Sensor supply	bus connection
Actuator power supply	separate (Aux)
Operating temperature	- 40… +70 °C

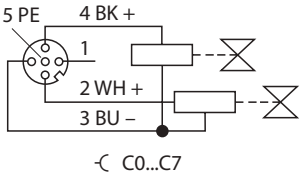
Fieldbus 7/8"



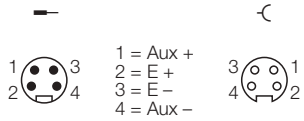
Input M12 × 1



Output M12 × 1



Power supply 7/8"



Data in process image

C1P4: Male Connector 1, 4-pole

IGS: Wire-break/ short circuit - group signal

OGS: Short-circuit - group signal

		Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Input	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4
	Byte 2	IGS	OGS	–	–	–	–	–	–
Output	**Byte 0**	C3P2	C3P4	C2P2	C2P4	C1P2	C1P4	C0P2	C0P4
	Byte 1	C7P2	C7P4	C6P2	C6P4	C5P2	C5P4	C4P2	C4P4

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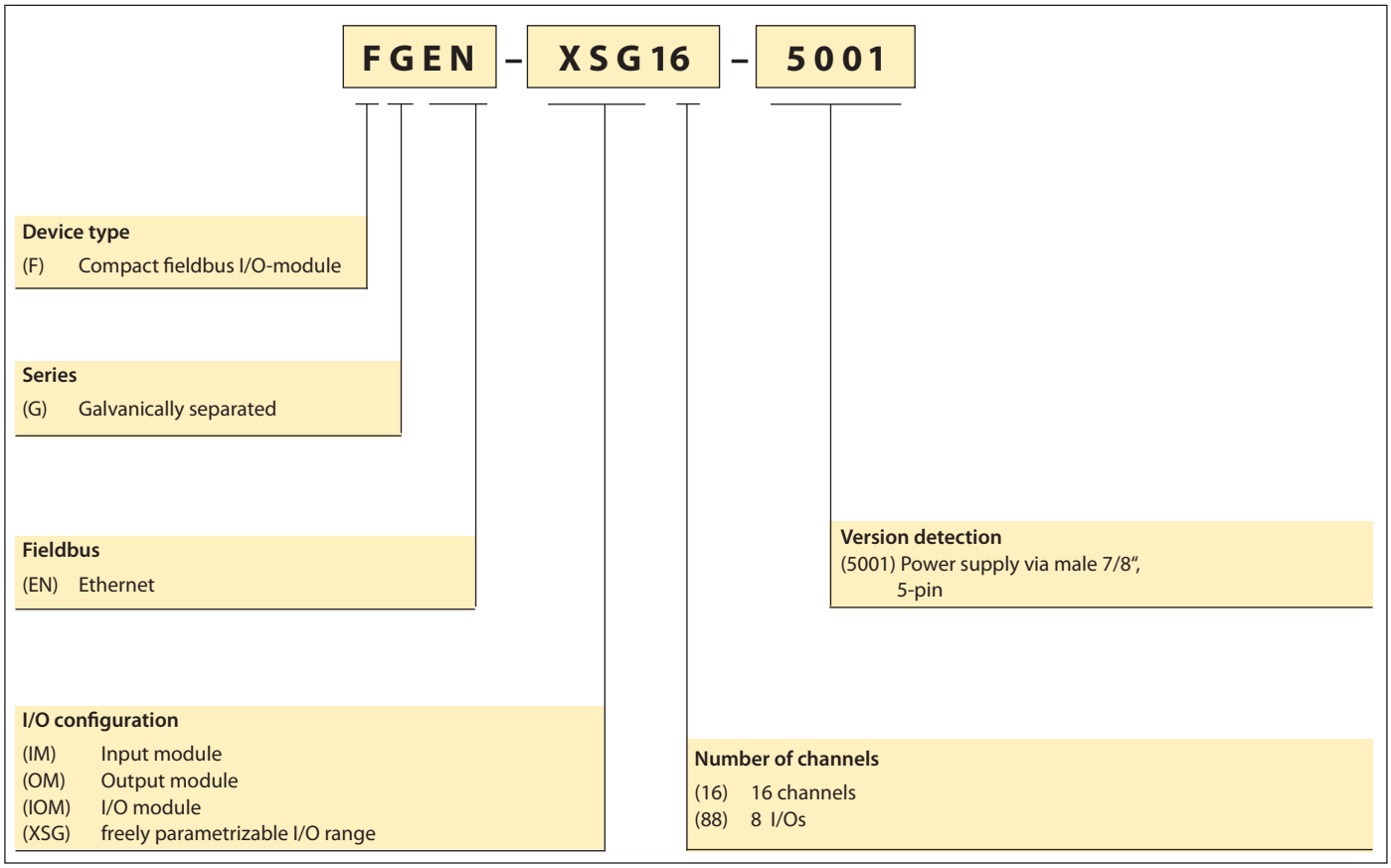
Compact multiprotocol I/O modules in IP67 for Ethernet
Type code



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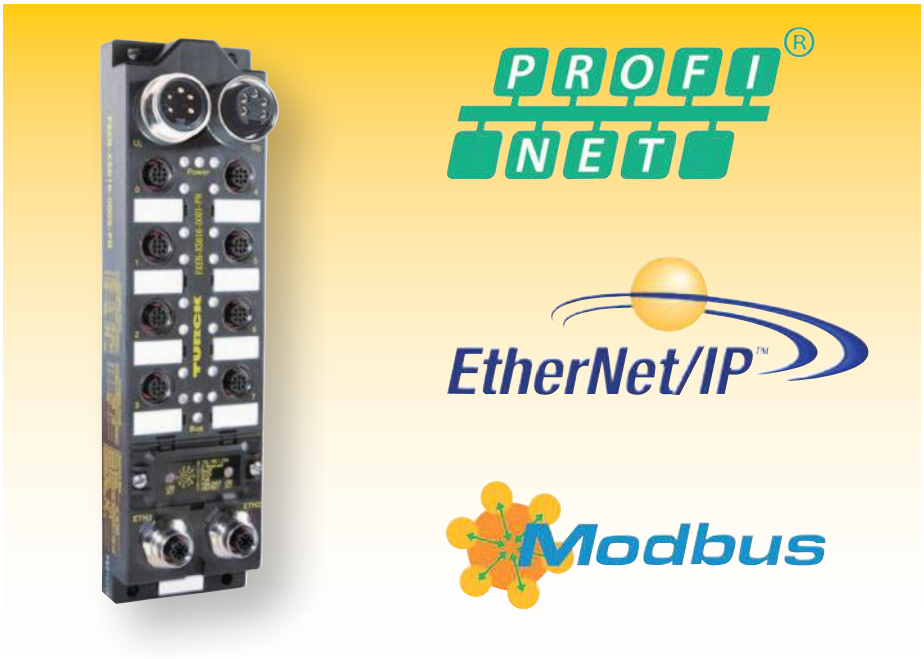
Compact multiprotocol I/O modules in IP67 for Ethernet

TURCK
Industrial Automation

Multiprotocol I/O systems: One device – three Ethernet protocols



The devices marketed by TURCK under the concept of "multiprotocol", share the same functionality.

- **Multiprotocol:**
  The gateways as well as the compact I/O modules combine the three Ethernet protocols PROFINET IO, EtherNet/IP™ and Modbus TCP in one device.
- **Line topology**
  All devices have a 3-port switch installed, allowing a network to be arranged in line topology.
- **Prioritized start-up:**
  A lean architecture and optimized Ethernet protocol stacks enable accelerated start-up. Thanks to these features, the devices support Fast Startup (FSU) in PROFINET IO or Quick Connect (QC) in EtherNet/IP™ applications.

4

New TURCK multiprotocol platform

A TURCK multiprotocol device can be operated at a PROFINET IO, EtherNet/IP™ or a Modbus TCP system without having to be reprogrammed. After connecting the power, the integrated snooping functionality enables the device to identify the Ethernet protocol requesting for connection buildup during a predefined recognition phase. If one of the three protocols is identified, the device automatically selects this protocol and ignores the other two.

The implementation of the protocols leaves nothing to be desired: When operated as a PROFINET IO device, it supports prioritized start-up, the media redundancy protocol (MRP), topology recognition as well as address allocation via Link Layer discovery Protocol (LLDP). Both, QuickConnect (QC) and Device Level Ring (DLR) are implemented in EtherNet/IP™.

The multiprotocol interface from TURCK helps to reduce the variety of fieldbus devices considerably. Multiprotocol I/O systems can thus be installed in machines and systems that are largely built with identical components but only need a customer specific control resp. master. Not only purchase and stock keeping of spare-parts profit from these obvious advantages, also electrical construction plans can just be duplicated.

Compact multiprotocol I/O modules in IP67 for Ethernet
Selection guide

Ethernet	Ident-no.	Number of inputs	Number of outputs	Number of M12 connectors	Maximum load current [A]	Page
FGEN-IM16-5001	6825427	16	–	8	–	320
FGEN-OM16-5001	6825430	–	16	8	2	321
FGEN-IOM88-5001	6825424	8	8	8	2	322
FGEN-XSG16-5001	6825421	16 configurable channels		8	2	323

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Compact multiprotocol I/O modules in IP67 for Ethernet

Series FGEN – general information

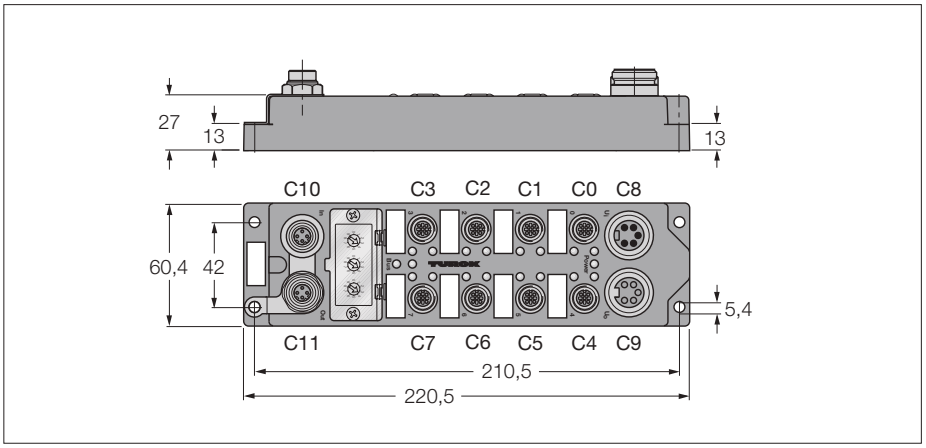
The compact fieldbus I/O modules of the FGEN series are designed to interface up to 16 digital I/Os to an Ethernet network. The Ethernet application layer PROFINET IO, EtherNet/IP™ and Modbus TCP are processed with a single module from the FGEN series. The I/O modules feature a channel-related diagnostics of the outputs and a slot-related diagnostics of the inputs. The Ethernet connection is established via a 4-pin D-coded round connector M12 × 1.

The I/O modules have an integrated switch, allowing a network to be arranged in line topology. The module is powered via a 7/8" connector and can be looped through via a second 7/8" connector. The I/O connection level is throughout equipped with M12 round connectors. The glass-fiber reinforced plastic housing and the fully encapsulated module electronics guarantee IP67 rated protection. These I/O modules are thus particularly suited for use in harsh industrial environments.

General technical data

EtherNet/IP™	
Addressing	acc. to EtherNet/IP™
QuickConnect	< 100 ms
DLR	supported
Number of connections	6
Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
QuickConnect	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of connections	6
PROFINET IO*	
Addressing	DCP
Conformance Class	B (RT)
MiniCycleTime	1 ms
Fast Startup	< 150 ms
Diagnostics	acc. to PROFINET Alarm Handling
Topology detection	supported
Automatic addressing	supported
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Protocol detection/changeover	automatic
Web server	in preparation
Mechanical data	
Dimensions	220.5 × 60.4 × 27 mm
Housing material	PA6-GF30, Glass-fiber reinforced plastic housing
Mounted	via 4 holes, Ø 5.4 mm
Temperature range	
- Operation	0…+55 °C
- Storage	-25…+70 °C
Vibration	acc. to EN60068-2-6
Shock	acc. to EN60068-2-27
EMC	acc. to EN61000-6-2, EN61000-6-4
Protection class	IP67
Approvals	CE

Compact multiprotocol I/O module for Ethernet
16 digital pnp inputs
FGEN-IM16-5001

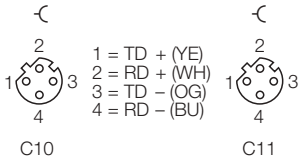


- Multiprotocol I/O module for Modbus TCP, EtherNet/IP™ and PROFINET
- EtherNet/IP™ supports QuickConnect (QC)
- PROFINET IO supports fast start-up (FSU)
- Galvanically separated power supply
- Input diagnostics per slot
- Diagnostics and user data mappable
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

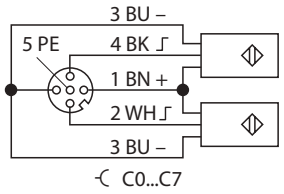
Type	FGEN-IM16-5001
Ident-No.	6825427
Supply voltage	24 VDC
Admissible range	18…30 VDC
Voltage supply connection	2 × 5-pin 7/8" connectors
Potential separation	Between operating, load and bus voltage
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × female M12 ×1, 4-pin, D-coded
Protocol detection/changeover	automatic
Web server	in preparation
Inputs	
Number of channels	(16) 3-wire pnp sensors
Input voltage	18…30 VDC via operating voltage
Supply current	< 120 mA per channel, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Max. input current	6 mA
Operating temperature	0 … +55 °C

For mapping table and LED status indications see technical data sheet on www.turck.com

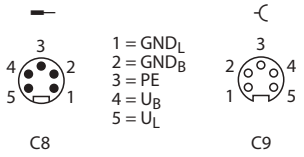
Ethernet M12 × 1



Input M12 × 1



Power supply 7/8"



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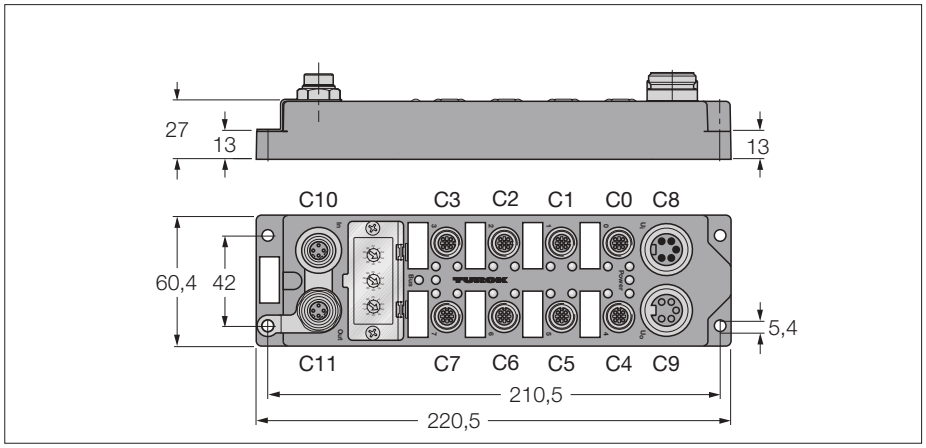
Compact multiprotocol I/O module for Ethernet
16 digital outputs 2 A
FGEN-OM16-5001

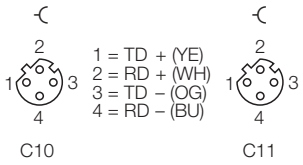


Type	FGEN-OM16-5001
Ident-No.	6825430
Supply voltage	24 VDC
Admissible range	18…30 VDC
Voltage supply connection	2 × 5-pin 7/8" connectors
Potential separation	Between operating, load and bus voltage
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × female M12 ×1, 4-pin, D-coded
Protocol detection/changeover	automatic
Web server	in preparation
Outputs	
Number of channels	(16) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	2 A, short-circuit proof
Load type	resistive, inductive, lamp load
Simultaneity factor	0.5 but max. 9 A per module
Operating temperature	0 …+55 °C

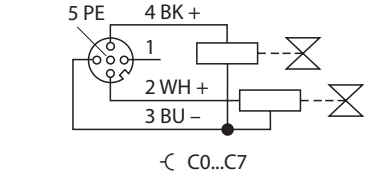
For mapping table and LED status indications see technical data sheet on www.turck.com

- Multiprotocol I/O module for Modbus TCP, EtherNet/IP™ and PROFINET
- EtherNet/IP™ supports QuickConnect (QC)
- PROFINET IO supports fast start-up (FSU)
- Galvanically separated power supply
- Output diagnostics per channel
- Diagnostics and user data mappable
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

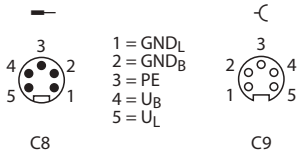
Ethernet M12 × 1



Output M12 × 1

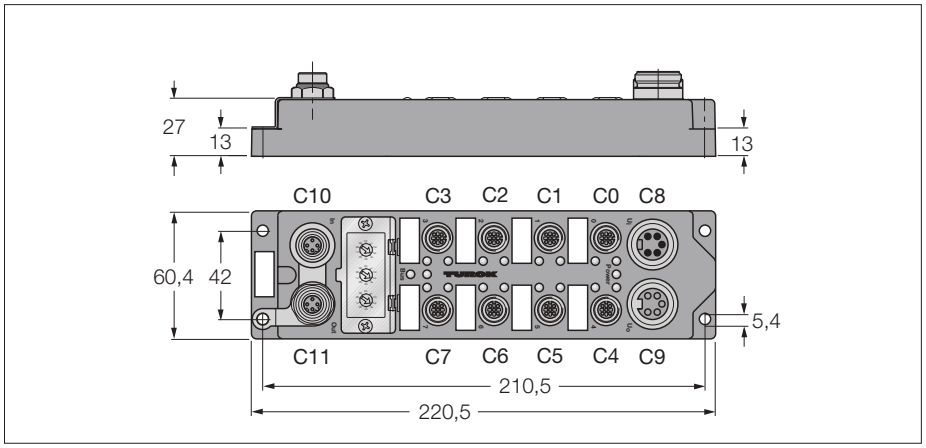


Power supply 7/8"



4

Compact multiprotocol I/O module for Ethernet
8 digital pnp inputs
8 digital outputs 2 A
FGEN-IOM88-5001

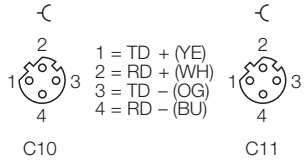


- Multiprotocol I/O module for Modbus TCP, EtherNet/IP™ and PROFINET
- EtherNet/IP™ supports QuickConnect (QC)
- PROFINET IO supports fast start-up (FSU)
- Galvanically separated power supply
- Input diagnostics per slot
- Diagnostics and user data mappable
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

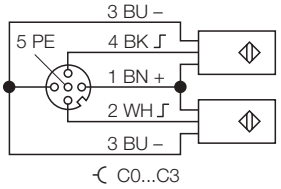
Type	FGEN-IOM88-5001
Ident-No.	6825424
Supply voltage	24 VDC
Admissible range	18…30 VDC
Voltage supply connection	2 × 5-pin 7/8" connectors
Potential separation	Between operating, load and bus voltage
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × female M12 ×1, 4-pin, D-coded
Protocol detection/changeover	automatic
Web server	in preparation
Inputs	
Number of channels	(16) 3-wire PNP sensors
Input voltage	18…30 VDC from operating voltage
Supply current	< 120 mA per slot, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Max. input current	6 mA
Outputs	
Number of channels	(16) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	2 A, short-circuit proof
Load type	resistive, inductive, lamp load
Simultaneity factor	0.5 but max. 9 A per module
Operating temperature	0…+55 °C

For mapping table and LED status indications see technical data sheet on www.turck.com

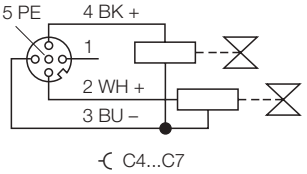
Ethernet M12 × 1



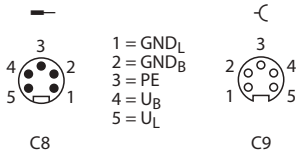
Input M12 × 1



Output M12 × 1



Power supply 7/8"



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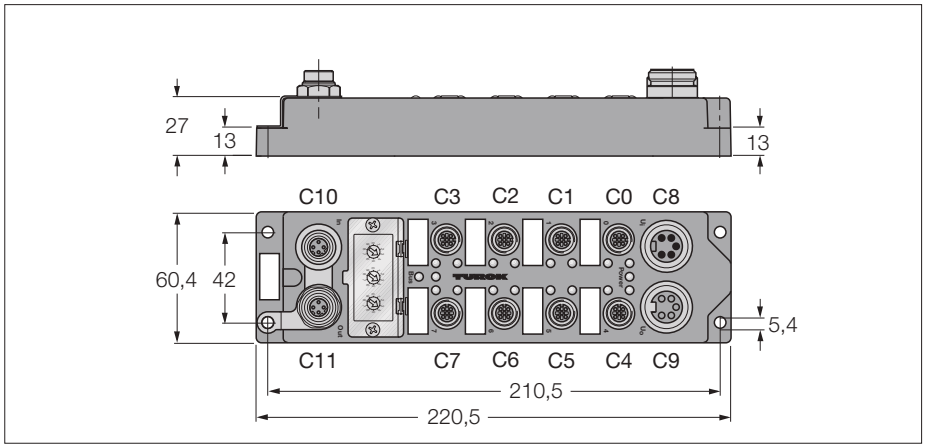
Compact multiprotocol I/O module for Ethernet
16 configurable digital channels
pnp inputs / outputs 2 A
FGEN-XSG16-5001

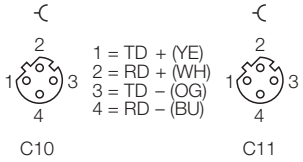


Type	FGEN-XSG16-5001
Ident-No.	6825421
Supply voltage	24 VDC
Admissible range	18…30 VDC
Voltage supply connection	2 × 5-pin 7/8" connectors
Potential separation	Between operating, load and bus voltage
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × female M12 ×1, 4-pin, D-coded
Protocol detection/changeover	automatic
Web server	in preparation
Inputs	
Number of channels	(16) 3-wire PNP sensors
Input voltage	18…30 VDC from operating voltage
Supply current	< 120 mA per slot, short-circuit proof
Switching threshold	2 mA / 4 mA
Input delay	2.5 ms
Max. input current	6 mA
Outputs	
Number of channels	(16) DC actuators
Output voltage	18…30 VDC from load voltage
Output current per channel	2 A, short-circuit proof
Load type	resistive, inductive, lamp load
Simultaneity factor	0.5 but max. 9 A per module
Operating temperature	0 … 55 °C

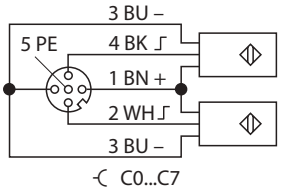
For mapping table and LED status indications see technical data sheet on www.turck.com

- Multiprotocol I/O module for Modbus TCP, EtherNet/IP™ and PROFINET
- EtherNet/IP™ supports QuickConnect (QC)
- PROFINET IO supports fast start-up (FSU)
- Galvanically separated power supply
- Input diagnostics per slot
- Output diagnostics per channel
- Diagnostics and user data mappable
- Two channels per connector
- Fibre-glass reinforced PA6 housing
- Vibration and shock-resistant
- Encapsulated module electronics
- Metal connector
- Degree of protection IP67

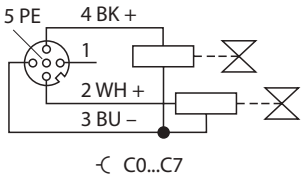
Ethernet M12 × 1



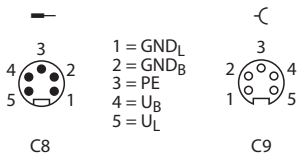
Input M12 × 1



Output M12 × 1

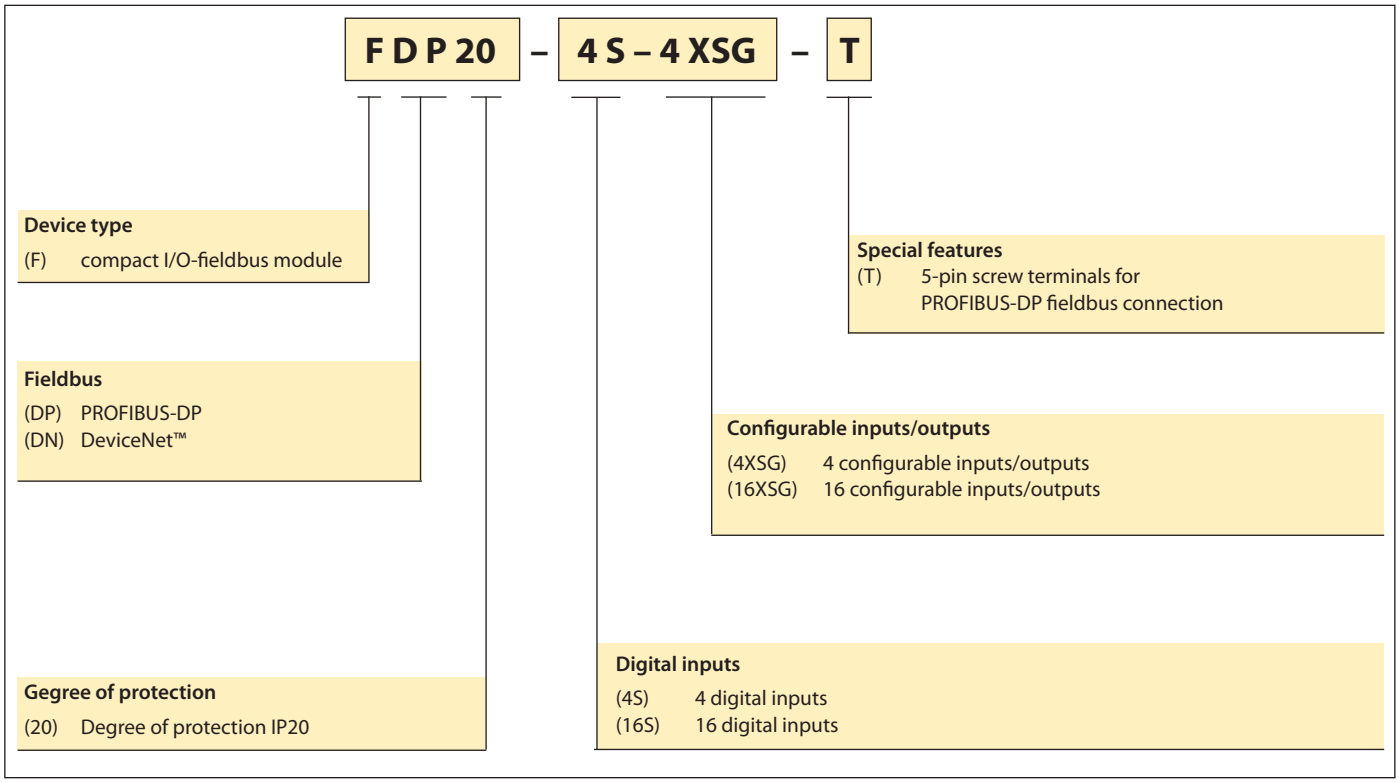


Power supply 7/8"



4

Compact fieldbus I/O-modules in IP20
Type code



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Compact fieldbus I/O-modules in IP20

Industrial Automation

Series FDN/FDP with 16 channels

Series FDN with 8 channels

- Extremely compact for restricted space conditions
- High flexibility through freely configurable I/Os
- Different potential groups for the I/O range
- Inputs: PNP, short-circuit protected
- Outputs: 0.5 A and 1.8 A (FDN20-16XSG), short-circuit protected
- Extended temperature range
  DeviceNet™: -40…+70 °C
  PROFIBUS-DP: -40…+55 °C

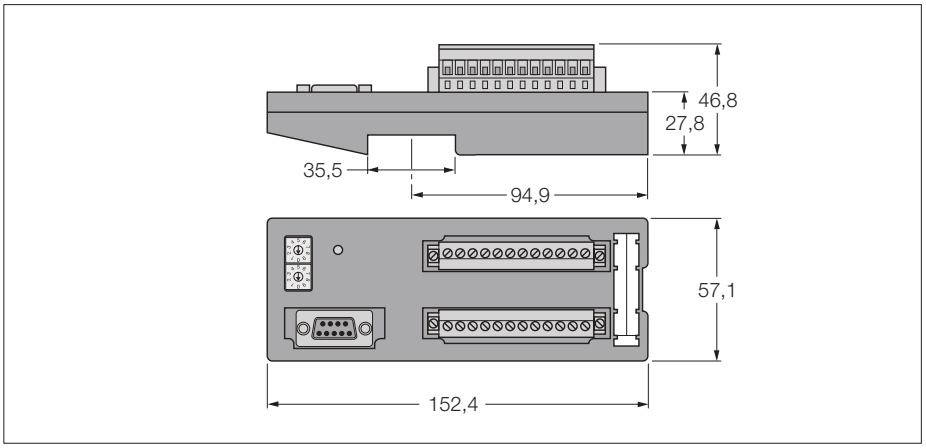
Small housing style, flexible and inexpensive

The new compact IP20 modules are designed for use where conventional I/O bus terminal systems are unsuitable due to their large dimensions. In applications with a small number of signals, they have the edge on modular systems.

Low space requirements as well as simple handling make work easy for the design engineer and ensures fast setup.

Depending on type, the modules offer 8 or 16 digital channels. If necessary these can be configured as inputs or outputs, with the I/O supply circuits arranged in three galvanically isolated levels. In this way the modules offer optimum flexibility in an extremely compact design.

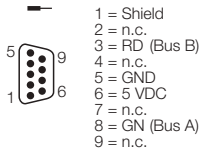
Fieldbus I/O module for PROFIBUS-DP
16 configurable channels
FDP20-16XSG



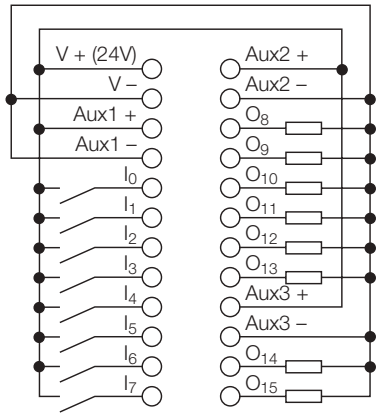
- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 3 I/O power supply groups each galvanically isolated
- 16 configurable channels, DI or DO
- 24 VDC, pnp
- Output current: 0.5 A

Type	FDP20-16XSG
Ident-No.	6611466
Number of channels	16
Electrical isolation	I/Os to PROFIBUS
Internal power consumption	< 75 mA plus I/O supply
Admissible range field supply	18…30VDC
Electrical isolation	I/Os to PROFIBUS
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…99
Fieldbus addressing	2 decimally coded rotary switches
Inputs	
Input voltage	18…30VDC
Low level signal voltage	< 4 V
High level signal voltage	8…24 V
Low level signal current	< 0.5 mA
High level signal current	1…3.4 mA
Input delay	2.5 ms
Max. input current	700 mA
Outputs	
Output voltage	18…30 VDC, short-circuit proof
Output current per channel	0.5A (from Aux)
Switching frequency	≤ 100 Hz
Operating temperature	-40 °C…55 °C

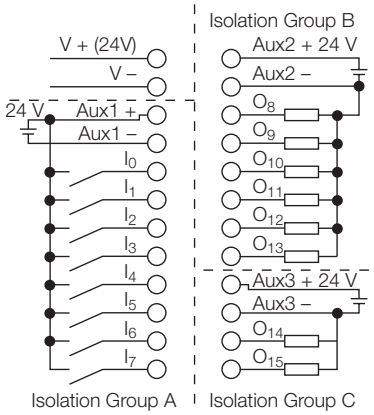
Fieldbus



Wiring diagram



Wiring diagram



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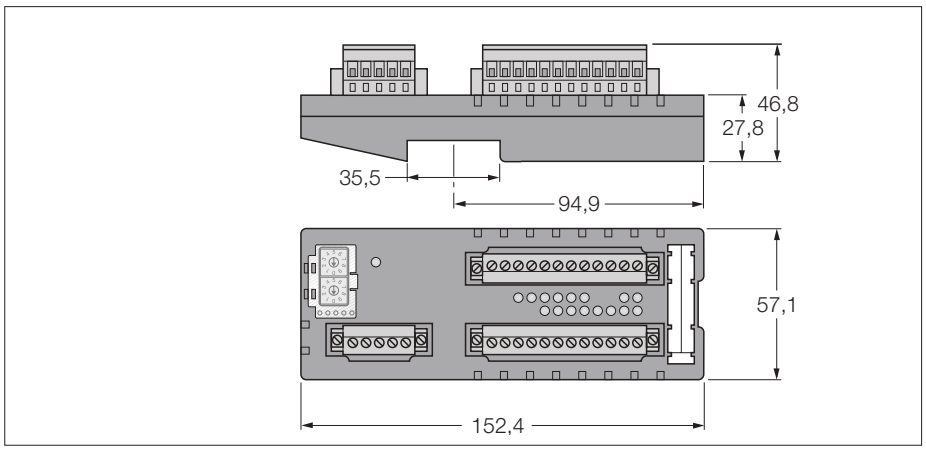
Fieldbus I/O module for PROFIBUS-DP
16 configurable channels
FDP20-16XSG-T



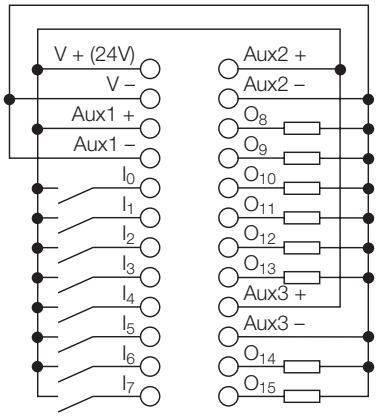
- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 3 I/O power supply groups each galvanically isolated
- 16 configurable channels, DI or DO
- 24 VDC, pnp
- Output current: 0.5 A
- 5-pole screw-type terminal block for PROFIBUS-DP fieldbus connection

Type	FDP20-16XSG-T
Ident-No.	6611486
Number of channels	16
Electrical isolation	I/Os to PROFIBUS
Internal power consumption	< 75 mA plus I/O supply
Admissible range field supply	18…30VDC
Supply voltage	24 VDC
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…99
Fieldbus addressing	2 decimally coded rotary switches
Inputs	
Input voltage	18…30VDC
Low level signal voltage	< 4 V
High level signal voltage	8…24 V
Low level signal current	< 0.5 mA
High level signal current	1…3.4 mA
Input delay	2.5 ms
Max. input current	700 mA
Outputs	
Output voltage	18…30 VDC, short-circuit proof
Output current per channel	0.5A (from Aux)
Switching frequency	≤ 100 Hz
Operating temperature	-40 °C…55 °C

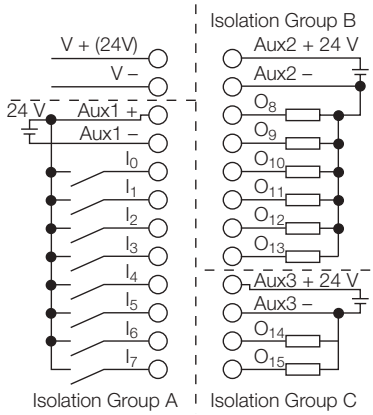
Fieldbus

1 = 5 VDC
2 = GN (Bus A)
3 = Shield
4 = RD (Bus B)
5 = GND

Wiring diagram

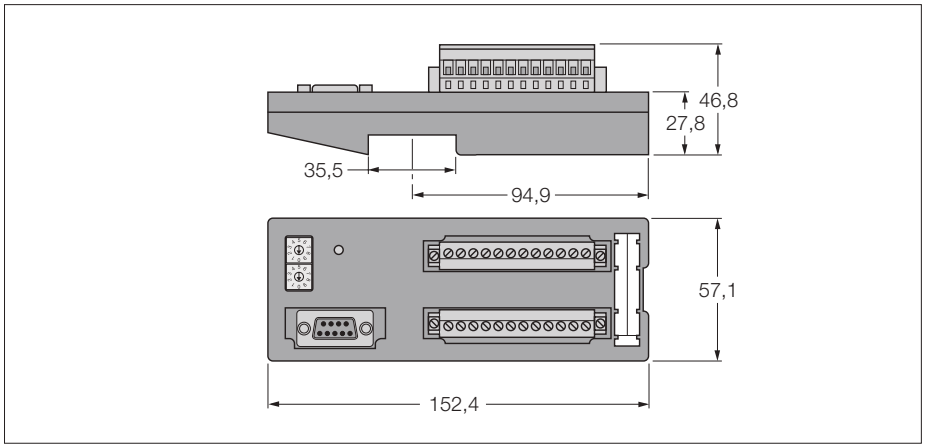


Wiring diagram



4

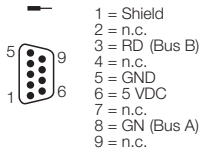
Fieldbus I/O module for PROFIBUS-DP
16 digital inputs
FDP20-16S



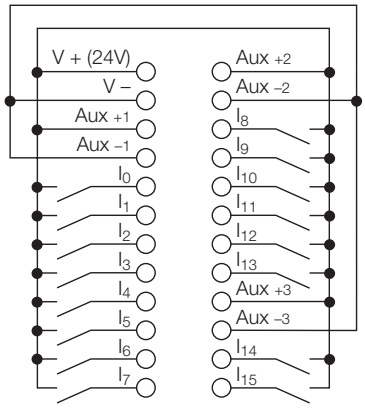
- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 3 I/O power supply groups each galvanically isolated
- 16 digital inputs, 24 VDC
- pnp

Type	FDP20-16S
Ident-No.	6611465
Number of channels	16
Electrical isolation	I/Os to PROFIBUS
Internal power consumption	< 75 mA plus I/O supply
Admissible range field supply	18…30VDC
Electrical isolation	I/Os to PROFIBUS
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…99
Fieldbus addressing	2 decimally coded rotary switches
Inputs	
Input voltage	18…30VDC
Low level signal voltage	< 4 V
High level signal voltage	8…24 V
Low level signal current	< 0.5 mA
High level signal current	1…3.4 mA
Input delay	2.5 ms
Max. input current	700 mA
Operating temperature	-40 °C…55 °C

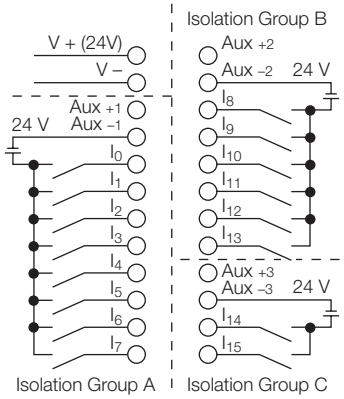
Fieldbus



Wiring diagram



Wiring diagram



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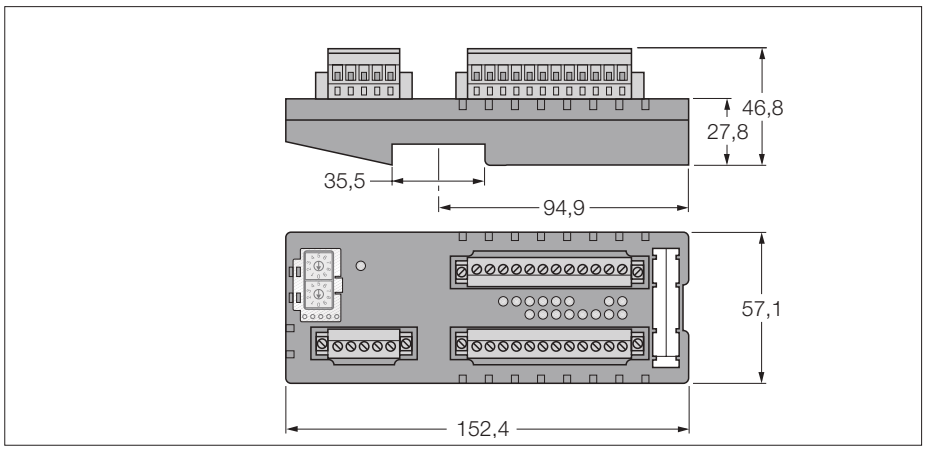
Fieldbus I/O module for PROFIBUS-DP
16 digital inputs
FDP20-16S-T



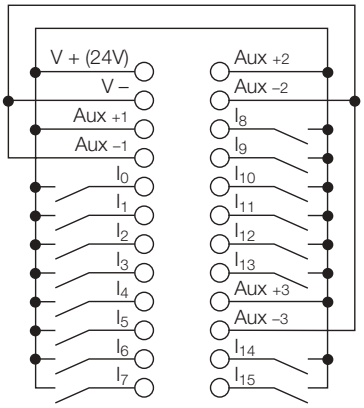
- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 3 I/O power supply groups each galvanically isolated
- 16 digital inputs, 24 VDC
- pnp
- 5-pole screw-type terminal block for PROFIBUS-DP fieldbus connection

Type	FDP20-16S-T
Ident-No.	6611485
Number of channels	16
Electrical isolation	I/Os to PROFIBUS
Internal power consumption	< 75 mA plus I/O supply
Admissible range field supply	18…30VDC
Supply voltage	24 VDC
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…99
Fieldbus addressing	2 decimally coded rotary switches
Inputs	
Input voltage	18…30VDC
Low level signal voltage	< 4 V
High level signal voltage	8…24 V
Low level signal current	< 0.5 mA
High level signal current	1…3.4 mA
Input delay	2.5 ms
Max. input current	700 mA
Operating temperature	-40 °C…55 °C

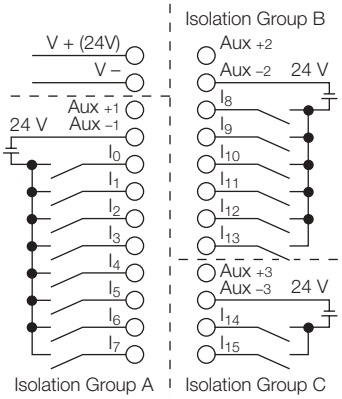
Fieldbus

1 = 5 VDC
2 = GN (Bus A)
3 = Shield
4 = RD (Bus B)
5 = GND

Wiring diagram

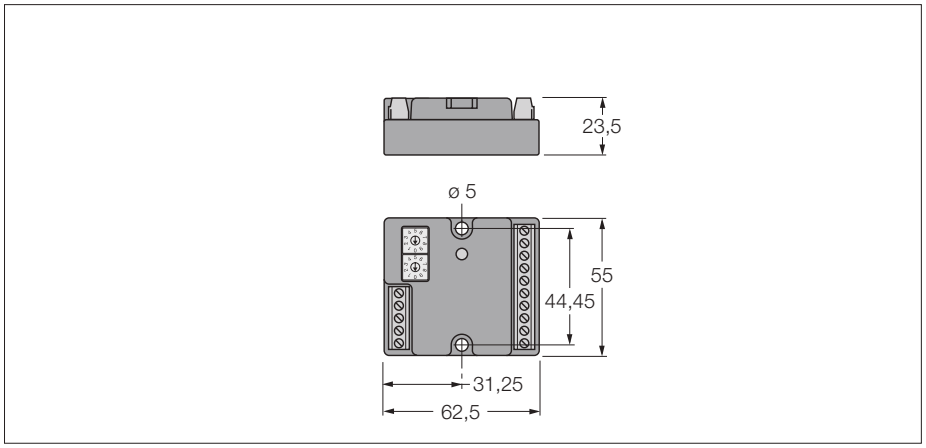


Wiring diagram



4

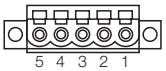
Fieldbus I/O module for DeviceNet™
4 digital inputs, 4 configurable channels
FDN20-4S-4XSG



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 4 digital inputs
- 4 configurable channels, DI or DO
- 24 VDC
- pnp
- Output current: 0.5 A

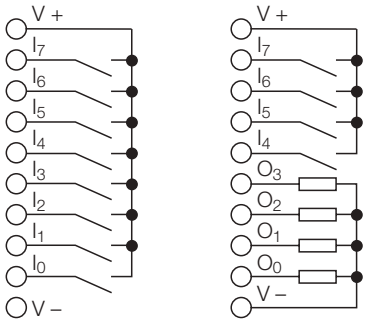
Type	FDN20-4S-4XSG
Ident-No.	6611359
Number of channels	8
Internal power consumption	< 50 mA plus I/O supply
Voltage supply via DeviceNet	24 VDC
Admissible range field supply	11…26 VDC
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing range	0…63
Fieldbus addressing	2 decimally coded rotary switches
Inputs	
Input voltage	11…26 VDC
Low level signal voltage	< 4 V
High level signal voltage	8…24 V
Low level signal current	< 0.5 mA
High level signal current	1…3.4 mA
Input delay	2.5 ms
Max. input current	total: 700 mA
Outputs	
Output voltage	18…26 VDC, short-circuit proof
Output current per channel	0.5 A (from DeviceNet™)
Switching frequency	≤ 100 Hz
Operating temperature	-40 °C…70 °C

Fieldbus



1 = BK (V –)
2 = BU (CAN L)
3 = Shield
4 = WH (CAN H)
5 = RD (V +)

Wiring diagram



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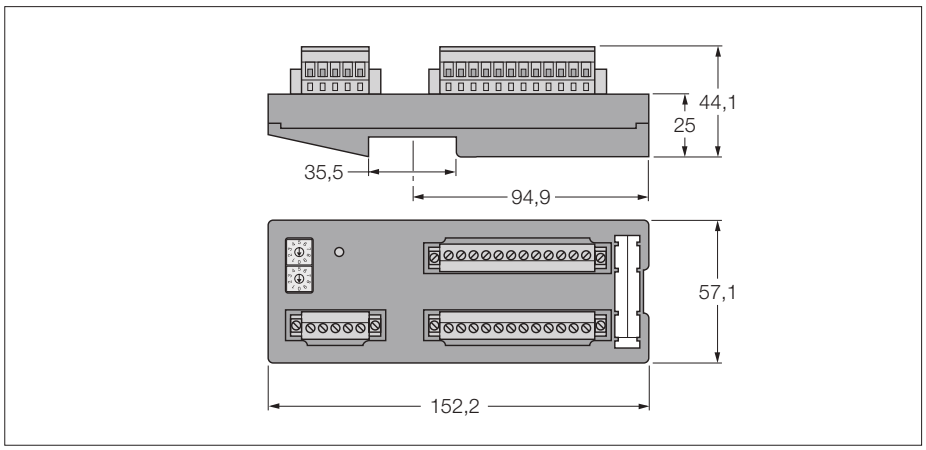
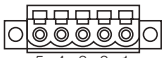
Fieldbus I/O module for DeviceNet™
16 configurable channels
FDN20-16XSG



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 3 I/O power supply groups each galvanically isolated
- 16 configurable channels, DI or DO
- 24 VDC
- pnp
- Output current: 0.5 A

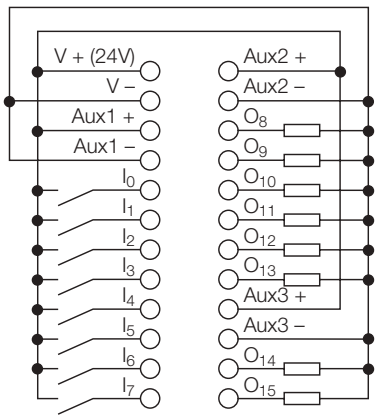
Type	FDN20-16XSG
Ident-No.	6611373
Number of channels	16
Electrical isolation	I/Os to DeviceNet
Internal power consumption	< 75 mA plus I/O supply
Voltage supply via DeviceNet	24 VDC
Admissible range field supply	11…26 VDC
Electrical isolation	I/Os to DeviceNet
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing range	0…63
Fieldbus addressing	2 decimally coded rotary switches
Inputs	
Input voltage	11…26 VDC
Low level signal voltage	< 4 V
High level signal voltage	8…24 V
Low level signal current	< 0.5 mA
High level signal current	1…3.4 mA
Input delay	1 ms
Max. input current	total: 700 mA
Outputs	
Output voltage	18…26 VDC, short-circuit proof
Output current per channel	0.5A (from Aux)
Switching frequency	≤ 100 Hz
Operating temperature	-40 °C…70 °C

Fieldbus

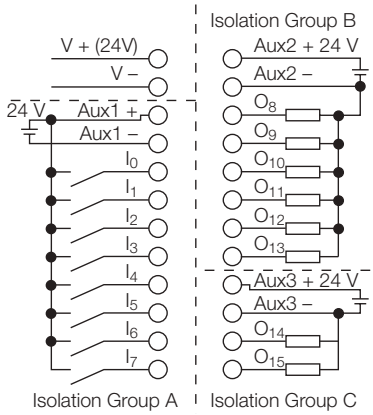


1 = BK (V –)
2 = BU (CAN L)
3 = Shield
4 = WH (CAN H)
5 = RD (V +)

Wiring diagram

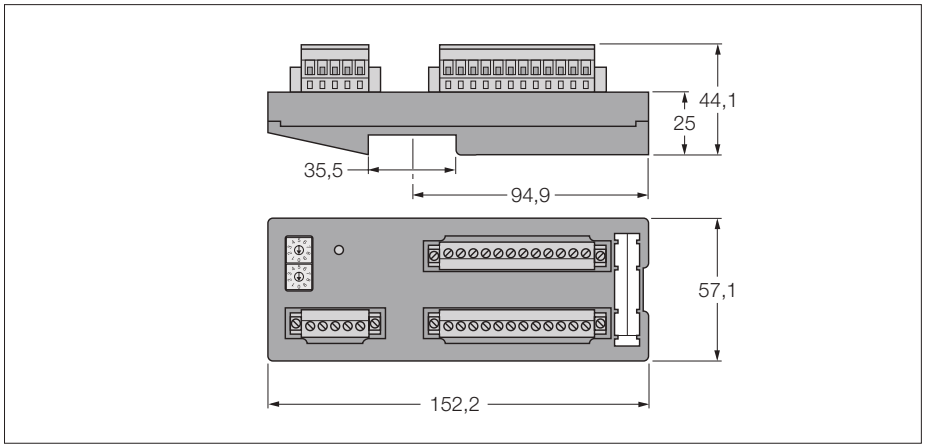


Wiring diagram



4

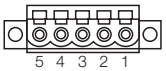
Fieldbus I/O module for DeviceNet™
16 digital inputs
FDN20-16S



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 3 I/O power supply groups each galvanically isolated
- 16 digital inputs, 24 VDC
- pnp

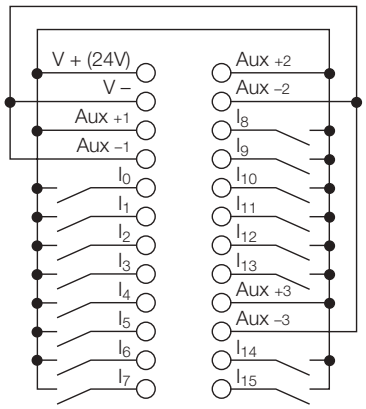
Type	FDN20-16S
Ident-No.	6611312
Number of channels	16
Electrical isolation	I/Os to DeviceNet
Internal power consumption	< 75 mA plus I/O supply
Voltage supply via DeviceNet	24 VDC
Admissible range field supply	11…26 VDC
Electrical isolation	I/Os to DeviceNet
Fieldbus transmission rate	125 kbps to 500 kbps
Fieldbus addressing range	0…63
Fieldbus addressing	2 decimally coded rotary switches
Inputs	
Input voltage	11…26 VDC
Low level signal voltage	< 4 V
High level signal voltage	8…24 V
Low level signal current	< 0.5 mA
High level signal current	1…3.4 mA
Input delay	1 ms
Max. input current	total: 700 mA
Operating temperature	-40 °C…70 °C

Fieldbus

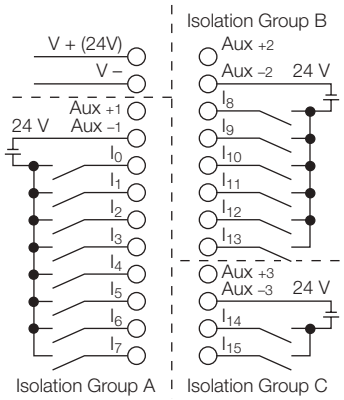


1 = BK (V –)
2 = BU (CAN L)
3 = Shield
4 = WH (CAN H)
5 = RD (V +)

Wiring diagram



Wiring diagram



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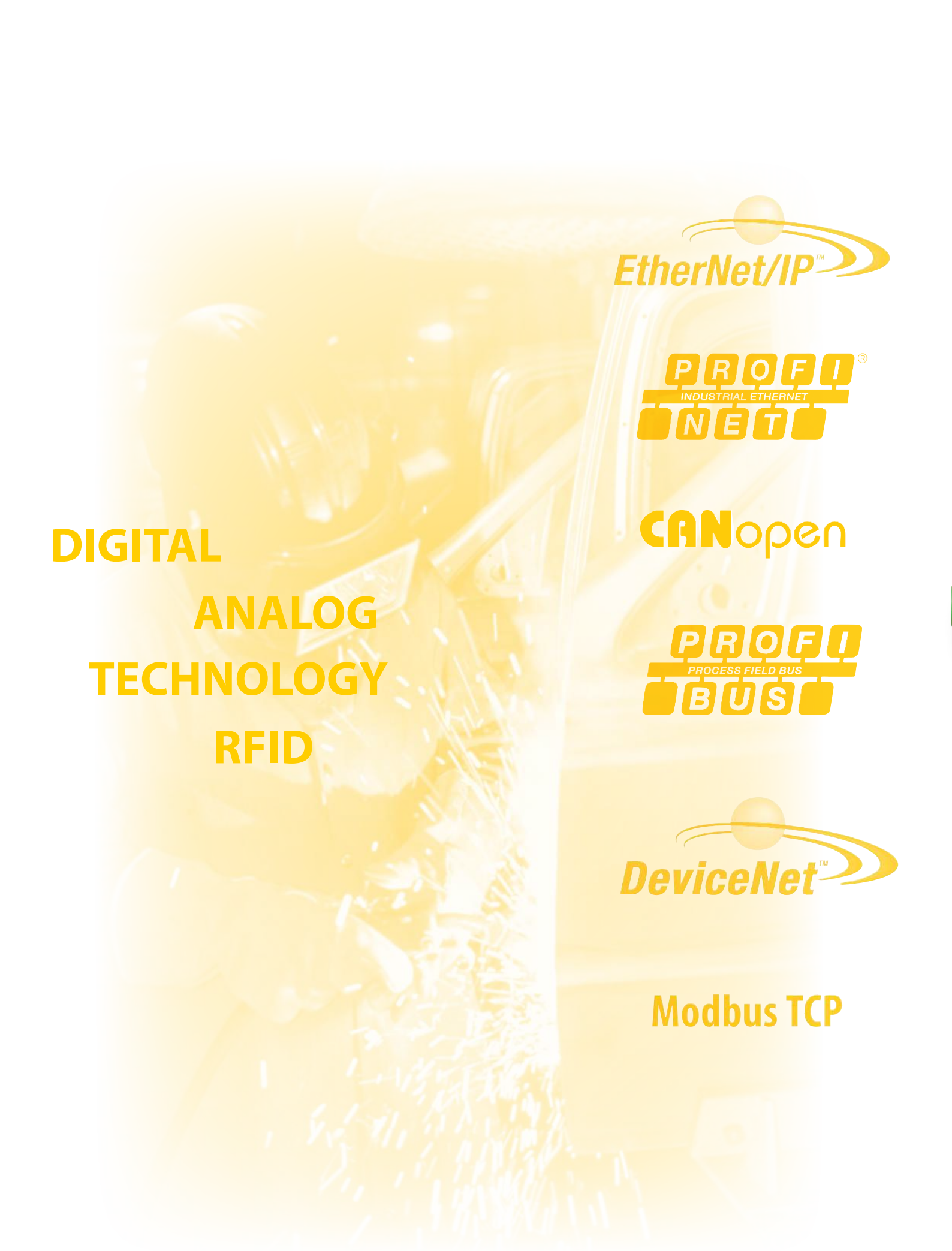

DIGITAL
ANALOG
TECHNOLOGY
RFID

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BL20 – Modular fieldbus I/O System in IP20

BL20 – General	Page
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The BL20 I/O system –
The integrator for fieldbus, ident system, motor starter

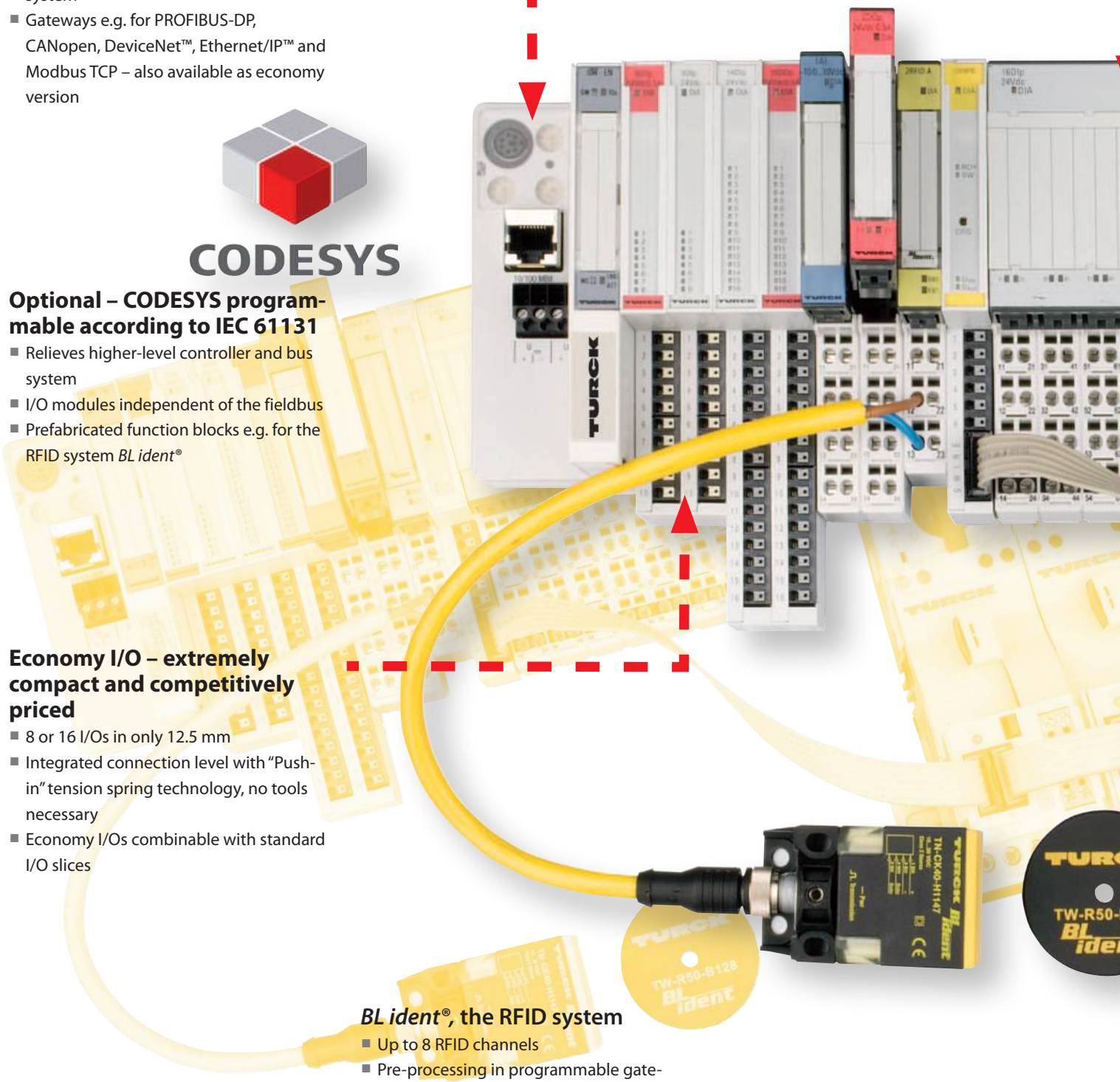
Gateway – The system control

- The interface to the higher level control system
- Gateways e.g. for PROFIBUS-DP, CANopen, DeviceNet™, Ethernet/IP™ and Modbus TCP – also available as economy version

CODESYS

Optional – CODESYS programmable according to IEC 61131

- Relieves higher-level controller and bus system
- I/O modules independent of the fieldbus
- Prefabricated function blocks e.g. for the RFID system *BL ident*®



Economy I/O – extremely compact and competitively priced

- 8 or 16 I/Os in only 12.5 mm
- Integrated connection level with "Push-in" tension spring technology, no tools necessary
- Economy I/Os combinable with standard I/O slices

BL ident®, the RFID system

- Up to 8 RFID channels
- Pre-processing in programmable gateway relieves the higher-level controller.

EtherNet/IP™ PROFINET® INDUSTRIAL ETHERNET Modbus TCP

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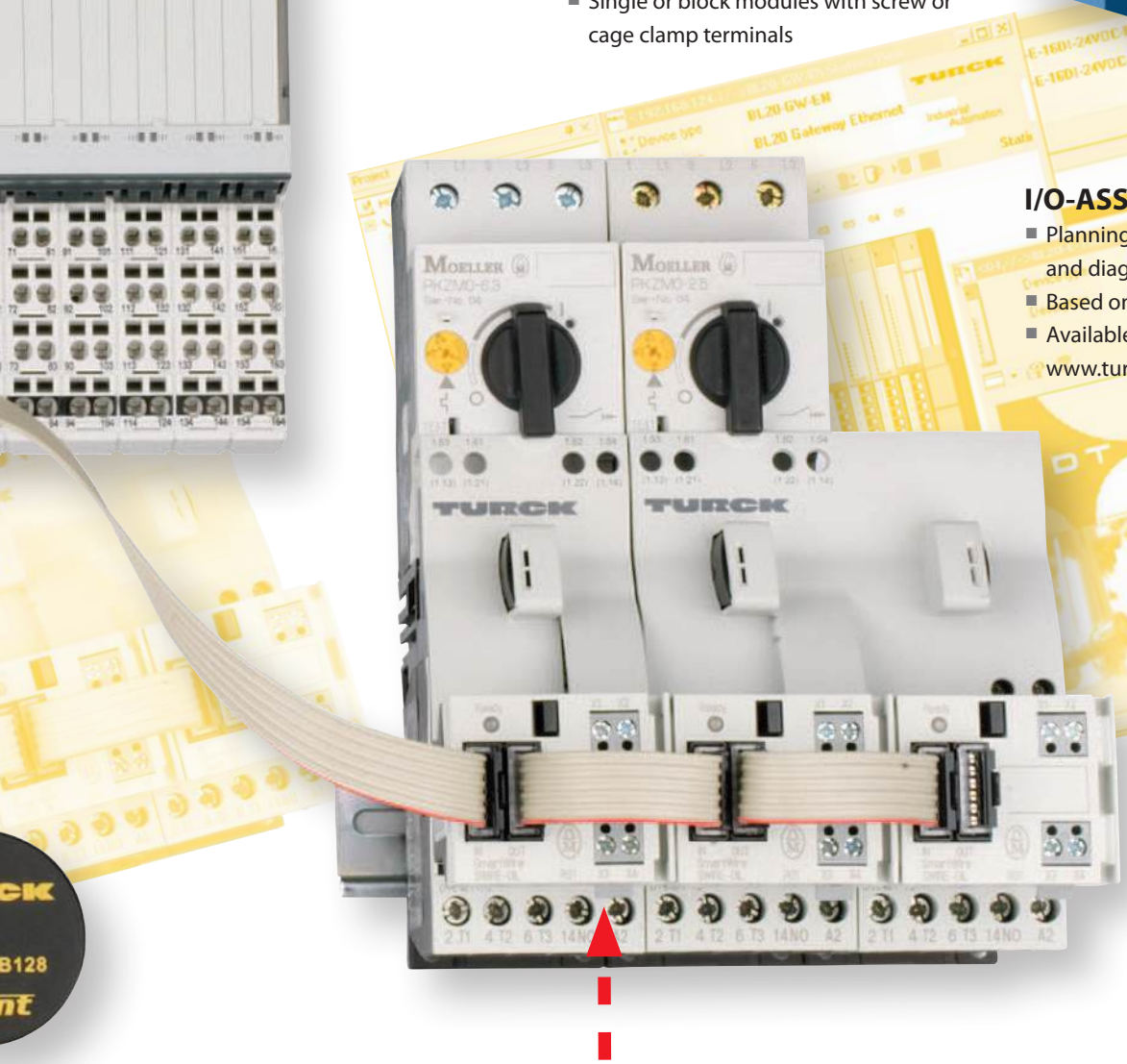
Standard I/O – multifunctional and system friendly

- Exchangeable electronic modules – disconnection of field wiring is not necessary.
- Up to two neighbouring modules are exchangeable during normal system operation without disrupting system functions
- Single or block modules with screw or cage clamp terminals



I/O-ASSISTANT

- Planning, configuration, commissioning and diagnostic software
- Based on FDT/DTM technology
- Available as freeware on www.turck.com

Motor starter

- 3 connection-slices per gateway
- Up to 16 devices per slice
- Simple wiring

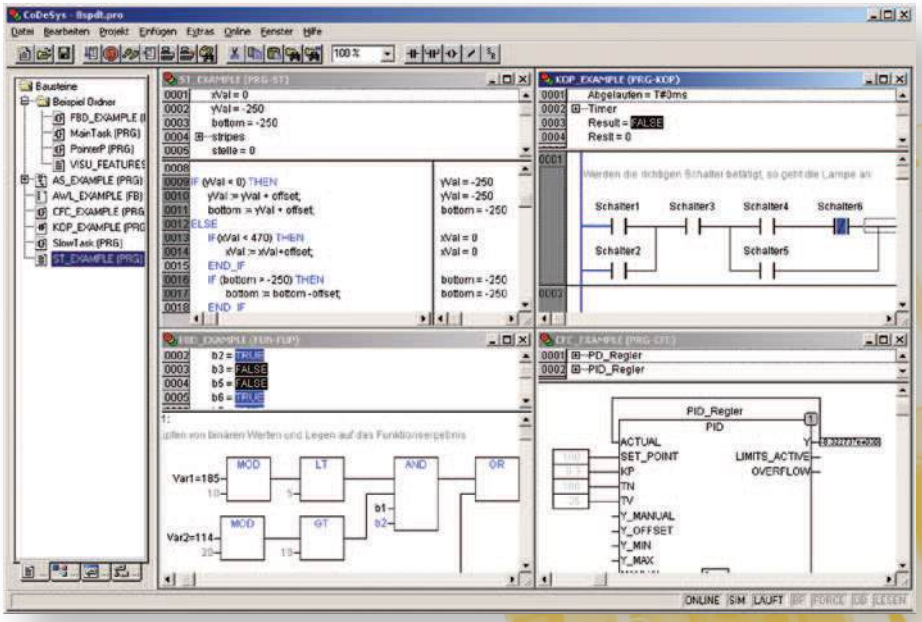
CANopen PROFIBUS PROCESS FIELD BUS DeviceNet™

CODESYS

Easy programming with CODESYS according to IEC 61131-3

The programmable gateways become decentral control units with the CODESYS programming software. The graphical programming interface supports all IEC-61131-3 programming languages

- Statement list (STL)
- Ladder Diagram (LD)
- Continuous Function Chart (CFC)
- Structured Text (ST)
- Sequential Function Chart (AS)



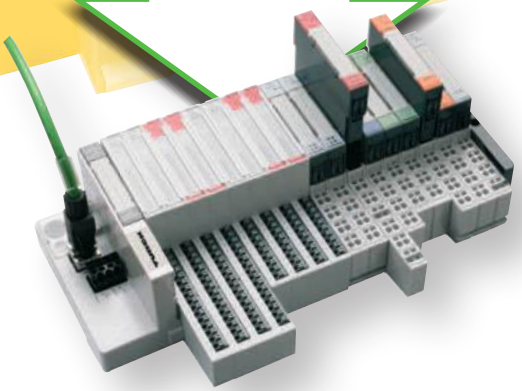
Simple connection

- Fast and simple networking of heterogeneous systems
- Standard transmission protocols such as TCP/IP and UDP/IP
- Global network variables
- Bidirectional data exchange between CODESYS systems
- No additional programming required

Data-exchange via Ethernet

Project planning and configuration

- Target Support Package as a driver for the target system
- Drag and Drop function for hardware configuration
- Standard editor for I/O configuration and parameterisation
- Symbolic display of variables for I/O addresses
- Numerous diagnostics and commissioning functions
- Function blocks e. g. for the RFID system *BL ident®*



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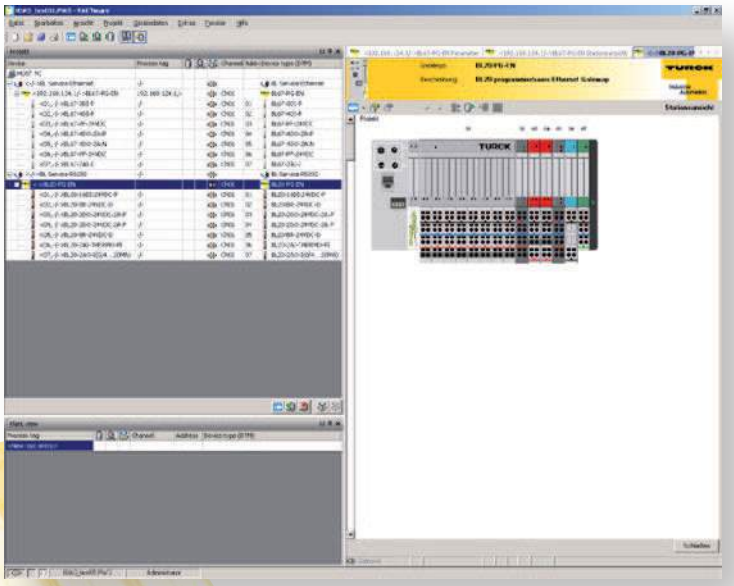
Easy parameterisation with the I/O-ASSISTANT on the basis of FDT/DTM technology

- System configuration, parameterisation and diagnostics with a graphical interface based on FDT/DTM technology
- DTMs can be integrated in any FDT frame application for configuration, commissioning and maintenance
- I/O-ASSISTANT and DTMs are available as freeware on www.turck.com



Description

The configuration software I/O-ASISSTANT supports you in planning and implementation of your I/O system. No matter if you are online or offline, the I/O-ASSISTANT simplifies configuration and parameterisation of the modules.

This software is also extremely helpful in system set-up and testing.

Functions

- Supporting software tool
- Selection of the required modules
- Offline planning and configuration of BL20 modules
- Configuration, parameterisation and commissioning of individual modules
- Reading and setting of process data
- Commissioning help for testing the wiring and sensors without PLC
- Realistic display of configured BL20 components
- Automatic documentation of configured BL20 systems

BL20 Electronic modules – Type code and colour code

Electronic module – Type code

Marking	Designation	Examples
GWBR	Gateway with integrated supply	BL20-**GWBR**-PBDP
PBDP	PROFIBUS-DP	BL20-GWBR-**PBDP**
E	ECONOMY modules	BL20-**E**-8DI-24VDC-P
BL20-8/-E-8	Number of channels	BL20-E-**8**DI-24VDC-P
BR	Bus refreshing modules	BL20-**BR**-24VDC-D
PF, D	Power feeding modules, with diagnostics	BL20-**PF**-24VDC-D
DI	Digital input module	BL20-2**DI**-24VDC-P
N	npn	BL20-2DI-24VDC-**N**
P	pnp	BL20-2DI-24VDC-**P**
DO	Digital output module	BL20-2**DO**-24VDC-2A-P
R	Relay module	BL20-2DO-**R**-NC
CO	Change over	BL20-2DO-R-**CO**
NC	Normally closed	BL20-2DO-R-**NC**
NO	Normally open	BL20-2DO-R-**NO**
AI	Analogue input module	BL20-1**AI**-U(-10/0...+10VDC)
PT/NI	Analogue input module for the connection of resistance thermometers Ni100 and Ni1000 as well as Pt100, Pt500 and Pt1000 in 2-wire and 3-wire technology	BL20-2AI-**PT/NI**-2/3
PI	Analogue input module for the connection of thermocouples with cold junction compensation	BL20-2AI-THERMO-**PI**
AO	Analogue output module	BL20-1**AO**-I(0/4...20MA)
CNT	Counter module	BL20-1**CNT**-24VDC

Electronic modules – Colour code

Electronic module	Colour code
Gateway	dusty grey
Bus refreshing modules 24 VDC	dusty grey
Power feeding modules 24 VDC	dusty grey
Power feeding modules 120/230 VAC	orange brown
Digital input modules	light grey
Analogue input modules	pigeon blue
Digital output modules	strawberry red
Analogue output modules	pale green
Relay modules	pastel orange
Technology modules (counter module)	zinc yellow

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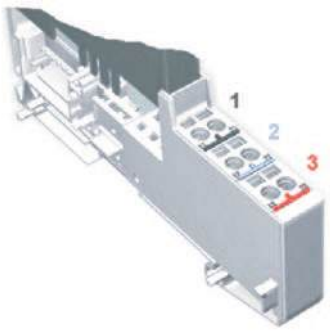
BL20 Base modules – Type code

BL20 – S3T – SBB

Example: BL20-S3T-SBB



Device series
(BL20) BL20 system

Device design
(S) Slice design
(B) Block design
(P) Base module for power supply

Number of connection levels
(3) 3 connection levels

Connection technology
(T) Tension spring connection
(S) Screw connection

Connection level
3 **(B)** bridged conections (bridged connectors)

Connection level
2 **(B)** bridged conections (bridged connectors)

Connection level
1 **(S)** non-bridged connections (single connectors)

5

BL20 – Combination options

Electronic modules and base modules

Digital input modules	Ident-no.	Base modules with tension spring connection	BL20-S3T-SBB	BL20-S3T-SBC	BL20-S4T-SBBC	BL20-S4T-SBBS	BL20-S4T-SBCS	BL20-S4T-SBBS-CJ	BL20-S6T-SBBSBB	BL20-S6T-SBCSBC	BL20-B3T-SBB	BL20-B3T-SBC	BL20-B4T-SBBC	BL20-B6T-SBBSBB	BL20-B6T-SBCSBC	BL20-P3T-SBB	BL20-P3T-SBB-B	BL20-P4T-SBBC	BL20-P4T-SBBC-B	Page
			6827044	6827058	6827050	6827046	6827063	6827048	6827052	6827064	6827054	6827061	6827056	6827065	6827218	6827036	6827040	6827038	6827042	
BL20-2DI-120/230VAC-P	6827011		✔		✔															366
BL20-4DI-24VDC-P	6827012					✔		✔												368
BL20-4DI-24VDC-N	6827013					✔		✔												370
BL20-4DI-NAMUR	6827212					✔														372
BL20-16DI-24VDC-P	6827014									✔		✔								376
BL20-32DI-24VDC-P	6827015												✔							380
Analogue input modules																				
BL20-2AI-I(0/4...20MA)	6827021		✔			✔														388
BL20-2AI-U(-10/0...+10VDC)	6827022		✔			✔														392
BL20-2AI-PT/NI-2/3	6827017		✔			✔														394
BL20-2AI-THERMO-PI	6827020							✔												396
BL20-4AI-U/I	6827217								✔											398
BL20-2AIH-I	6827331					✔														390
Digital output modules																				
BL20-2DO-24VDC-0,5A-N	6827025			✔			✔													402
BL20-2DO-24VDC-2A-P	6827026			✔			✔													404
BL20-2DO-120/230VAC-0.5A	6827137			✔			✔													406
BL20-4DO-24VDC-0,5A-P	6827023						✔			✔											414
BL20-16DO-24VDC-0,5A-P	6827027											✔								418
BL20-32DO-24VDC-0,5A-P	6827220													✔						420
Analogue output modules																				
BL20-2AO-I(0/4...20MA)	6827034		✔																	422
BL20-2AO-U(-10/0...+10VDC)	6827033		✔																	426
BL20-2AOH-I	6827332					✔														424
Relay modules																				
BL20-2DO-R-NC	6827028					✔	✔													410
BL20-2DO-R-NO	6827029					✔	✔													408
BL20-2DO-R-CO	6827030					✔														412
Technology modules																				
BL20-1RS232	6827169					✔														430
BL20-1RS485/422	6827165					✔														432
BL20-1SSI	6827166					✔														434
Power supply modules															1	2	1	2		
BL20-BR-24VDC-D	6827006														✔	✔	✔	✔		368
BL20-PF-24VDC-D	6827007														✔		✔			370
BL20-PF-120/230VAC-D	6827008														✔		✔			372
***BL ident*® RFID modules**																				
BL20-2RFID-A	6827233					✔														438
BL20-2RFID-S	6827306					✔														440

[1] Base module with gateway power supply
[2] Base module for module refresh within the station

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Base modules with screw connections	Ident-no.	6827045	6827059	6827051	6827047	6827060	6827049	6827053	6827066	6827055	6827062	6827057	6827067	6827219	6827037	6827041	6827039	6827043	
		BL20-S3S-SBB	BL20-S3S-SBC	BL20-S4S-SBBC	BL20-S4S-SBBS	BL20-S4S-SBCS	BL20-S4S-SBBS-CJ	BL20-S6S-SBBSBB	BL20-S6S-SBCSBC	BL20-B3S-SBB	BL20-B3S-SBC	BL20-B4S-SBBC	BL20-B6S-SBBSBB	BL20-B6S-SBCSBC	BL20-P3S-SBB	BL20-P3S-SBB-B	BL20-P4S-SBBC	BL20-P4S-SBBC-B	Page
		✔		✔															366
					✔			✔											368
					✔			✔											370
					✔														372
									✔		✔								376
												✔							380
		✔			✔														388
		✔			✔														392
		✔			✔														394
							✔												396
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					✔														390
			✔			✔													402
			✔			✔													404
			✔			✔													406
						✔		✔											414
										✔									418
													✔						420
		✔																	422
		✔																	426
				✔															424
				✔	✔														410
				✔	✔														408
				✔															412
				✔															430
				✔															432
				✔															434
														1	2	1	2		
														✔	✔	✔	✔		368
														✔		✔			370
														✔		✔			372
				✔															438
				✔															440

ECONOMY modules

Digital input modules – series ECO (base module integrated)		Page
BL20-E-8DI-24VDC-P	6827227	382
BL20-E-16DI-24VDC-P[3]	6827231	383
Digital output modules – series ECO (base module integrated)		
BL20-E-8DO-24VDC-0,5A-P	6827226	416
BL20-E-16DO-24VDC-0,5A-P	6827230	417
Analogue input modules – series ECO (base module integrated)		
BL20-E-8AI-U/I-4PT/NI	6827325	400
Analogue output modules – series ECO (base module integrated)		
BL20-E-4AO-U/I	6827328	428
Technology modules – series ECO (base module integrated)		
BL20-E-2CNT-2PWM	6827341	436
SWIRE communication module – series ECO (base module integrated)		
BL20-E-1SWIRE	6827251	442

BL20 – System supply

General system power supply

The BL20 system features two power circuits:

- The internal module bus feeds the module electronics and the gateway.
- The field supply feeds all connected fieldbus devices.

Forming potential groups

Bus-Refreshing modules as well as Power-Feeding modules can be used for the creation of potential groups. Modules with 24 VDC and 120/230 VAC field supply should not be used in the same potential group. The use of digital input modules for 120/230 VAC requires the creation of a separate potential group with the Power-Feeding module BL20-PF-120/230VAC-D.

Module bus supply

The voltage supply for the module bus is integrated in current BL20 gateways. If the module bus is not sufficiently supplied (max. 1.5 A), a second Refreshing-Module has to be applied – see chapter **Supply concept** on the next page .

NOTE: Bus-Refreshing modules can not be used in combination with the Economy gateway for PROFIBUS-DP.

Field supply

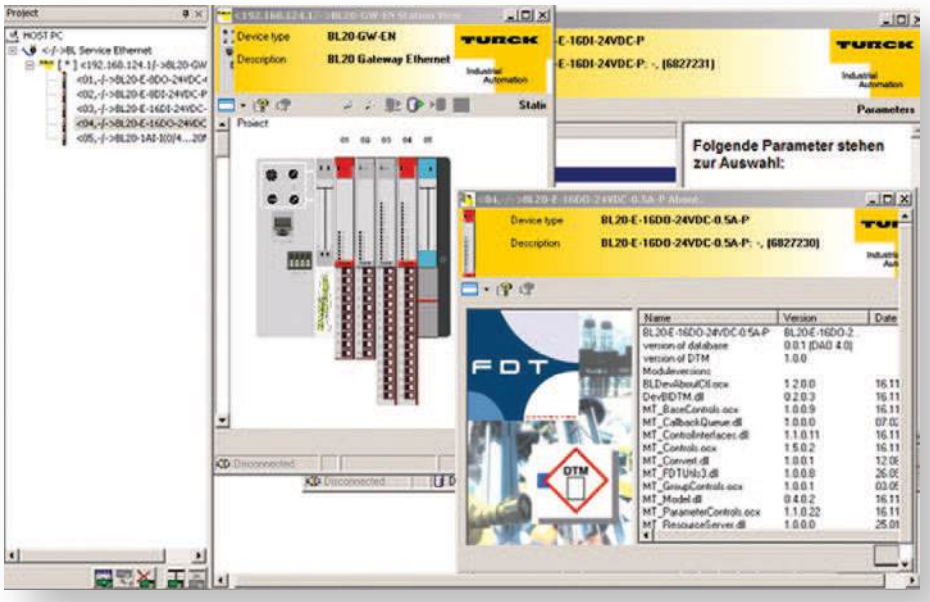
The field supply is provided by the gateway. A Power-Feeding module has to be used if the field supply of fieldbus nodes reaches 10 A or a new potential group is required (see section to the left).

System planning

For the planning of many complex BL20 stations, different factors have to be considered. For example rated current consumption of the modules, number of modules, parameters and data volume and possible restrictions imposed by the higher level fieldbus.

The I/O-ASSISTANT (p. 339), which can be downloaded from our website checks all relevant parameters and simplifies project planning considerably.

The I/O-ASSISTANT is also able to generate dimension drawings and documentation of the stations. Reading and setting of I/Os is also possible which proves very helpful for commissioning. Furthermore, module parameters can be set.



[1] I_{MB} : current via the module bus

[2] I_{EL} : electrical operating current (field supply)

BL20 – Power supply concept

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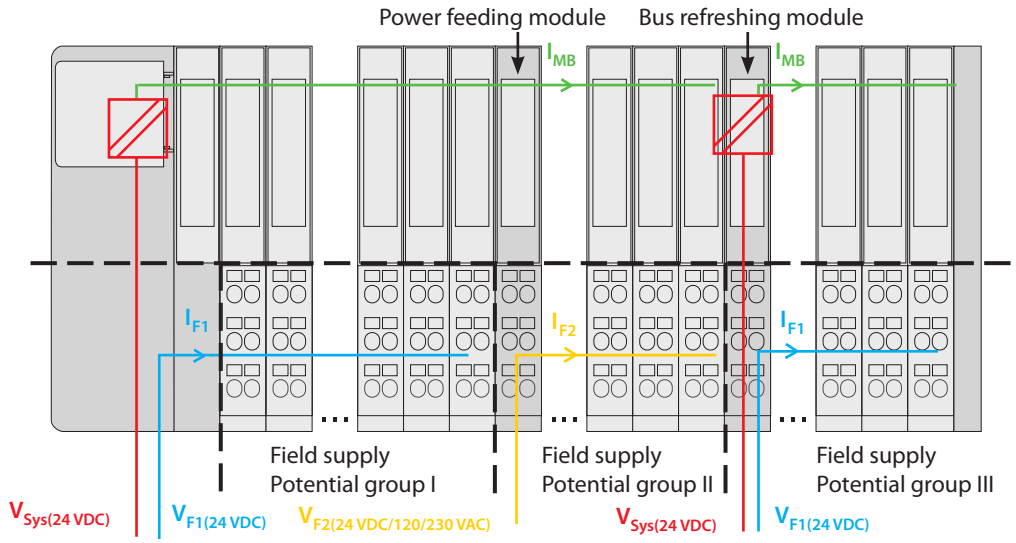
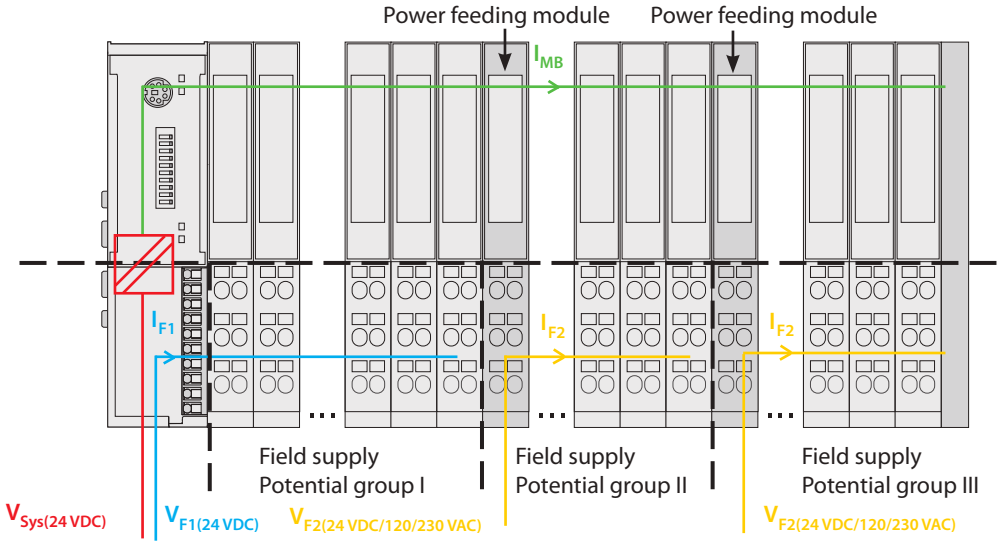
Standard gateways (with integrated power supply)



V_{MB} = Internal module bus
V_{Sys} = System supply
V_{F1} = Field supply 1
V_{F2} = Field supply 2

I_{MBmax} = 1.5 A
I_{F1max} = 10 A
I_{F2max} = 10 A

Economy gateway for PROFIBUS-DP (with integrated power supply)

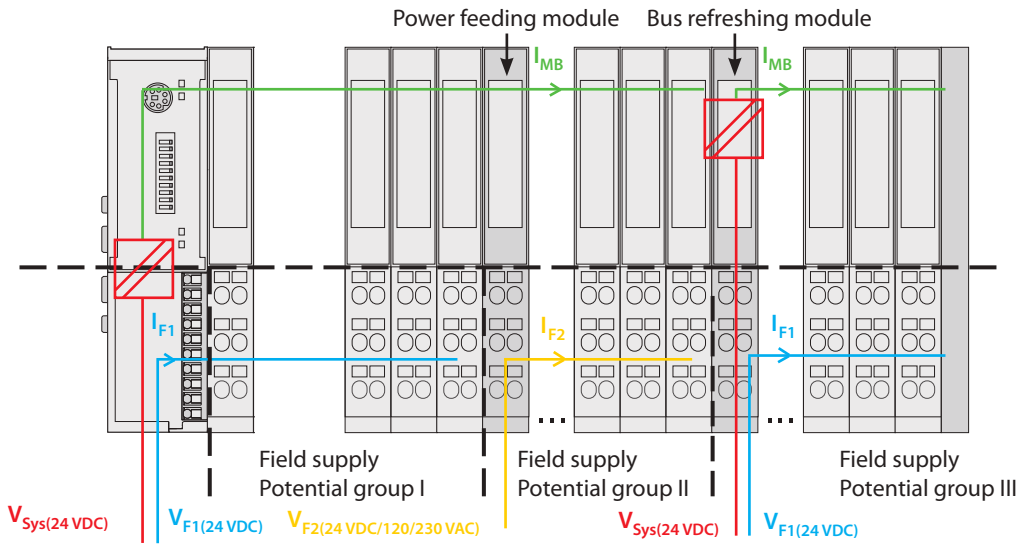


V_{MB} = Internal module bus
V_{Sys} = System supply
V_{F1} = Field supply 1
V_{F2} = Field supply 2

I_{MBmax} = 1 A
I_{F1max} = 10 A
I_{F2max} = 10 A

Note: No application of bus refreshing module possible with Economy Gateway for PROFIBUS-DP.

Economy gateway for DeviceNet™ and CANopen (with integrated power supply)



V_{MB} = Internal module bus
V_{Sys} = System supply
V_{F1} = Field supply 1
V_{F2} = Field supply 2

I_{MBmax} = 0.7 A
I_{F1max} = 10 A
I_{F2max} = 10 A

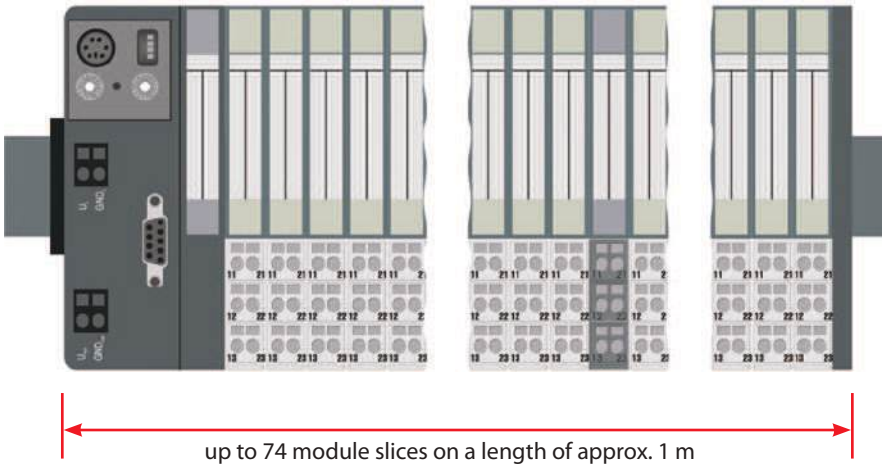
5

BL20 – Maximum system extension

Maximum system extension

The maximum number of modules depends on the respective system configuration. Important thereby is the current consumption of the different I/O modules as well as the required address space and the fieldbus used. The tables below show some of the limitations for different fieldbuses.

The configuration software I/O- ASSISTANT takes these and all other relevant parameters into consideration and generates a warning message if appropriate.



A BL20 station consists of a gateway and a maximum of 74 modules (approximately 1 m length of rail including end bracket and end plate). With the use of block modules, the maximum number of modules is correspondingly reduced
(1 block module corresponds to approximately 8 slice modules).

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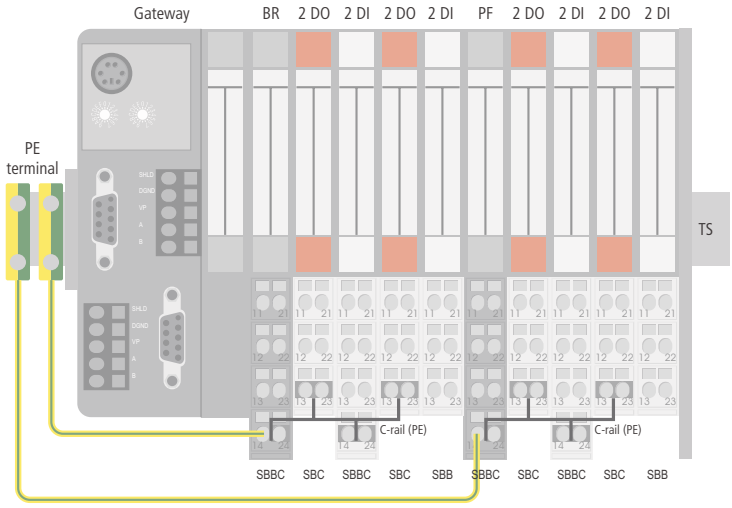
C-rail (cross connection)

The C-rails run through all I/O base modules. The C-rail of the base modules for power distribution modules is mechanically separated; thus potentially isolating the adjoining supply groups.

Using the C-rail as a protective earth

The C-rail can be used as required in the application, for example, as a protective earth (PE). In this case, the PE connection of each power distribution module must be connected to the mounting rail via an additional PE terminal (see accessories), which is available as an accessory.



Access to C-rail

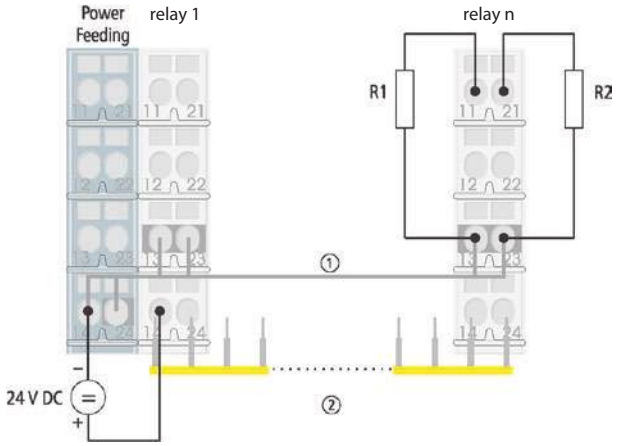
Access to the C-rail is made via base modules with a C in their designation, for example: BL20-S4T-SBCS. The corresponding connection level is indicated by a thick black line on all base modules for BL20 I/O modules.

With base modules for power distribution modules, the black line is above the connection 24 only. This makes clear that the C-rail is separated from the adjoining potential group to its left. A maximum load of 24 VDC to the C-rail is allowed, but never 120/230 VAC.

Using the C-rail with relay modules

The C-rail can be used to supply a common voltage when relay modules are to be used. To accomplish this, the load voltage (24 VDC) is connected to a power distribution module with the base module BL20-P4x-SBBC using either tension springs or screw connections. All the following relay modules are supplied with 24 VDC via the C-rail (see ①, Fig. below). The cross-connection of the individual relay modules is achieved using the cross-connector QVR (see ②, Fig. below).

If the C-rail is to be used for the joint supply of voltage to relay modules, then there must subsequently be a further power distribution module used for the potential isolation of the following BL20 modules. The C-rail can again be put on other uses (for example, as a PE) once the potential isolation has been made.



BL20 – General technical data

BL20 modules – technical data	
Supply voltage/auxiliary power	
Nominal value (provided for other modules)	24 VDC
Residual ripple	according to EN 61131-2
Electrical isolation (U_L[2] to U_{SYS}[3]/ U_L to fieldbus/U_{SYS} to fieldbus)	yes, via opto-couplers
Ambient temperature	
Horizontal mounting ambient temperature	0 … +55 °C
Vertical mounting ambient temperature	0 … +55 °C
Storage temperature	-25 … +85 °C
Relative humidity to EN 61131-2/EN 50178	5 … 95 % (indoor), Level RH-2, no condensation (storage at 45 °C, no functional test)
Corrosive gases	
SO_2	10 ppm (rel. humidity < 75 %, no condensation)
H_2S	1.0 ppm (rel. humidity < 75 %, no condensation)
Vibration resistance	
10 to 57 Hz, constant amplitude 0.075 mm, 1 g	yes
57 to 150 Hz, constant amplitude 1 g	yes
Vibration type	Variable frequency runs at a rate of change of 1 octave/min
Vibration duration	20 variable frequency runs per coordinate axis
Shock resistance as per IEC 68-2-27	18 shocks, half-sine 15 g peak value/11 ms, for both ±-directions per spatial coordinate
Repeated shock resistance as per IEC 68-2-29	1000 shocks, half sine 25 g peak value/6 ms, for both ±-directions per spatial coordinate
Drop and topple	
Fall height (weight < 10 kg)	1.0 m
Fall height (weight 10 to 40 kg)	0.5 m
Test runs	7
Electromagnetic compatibility (EMC) as per EN 50082-2 (Industrial)	
Static electricity as per EN 61000-4-2	
Air discharge (direct)	8 kV
Relay discharge (indirect)	4 kV
Electromagnetic HF fields as per EN 61000-4-3 and ENV 50204	10 V/m
Conducted interference, induced by HF fields as per EN 61000-4-6	10 V
Radiated interference as per EN 50081-2 (industrial)	to EN 55011 class A[1], group 1

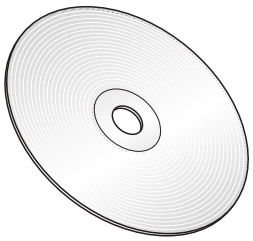
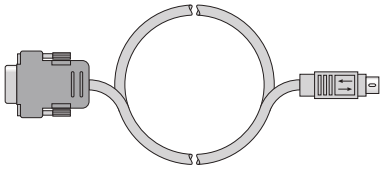
[1] Use in residential areas may lead to functional errors. Additional suppression measures are necessary!
[2] U_L : Field supply
[3] U_{SYS} : System supply

BL20 – General technical data

BL20 stations – approvals and tests	
Approvals	CE cULus UL
Tests (EN 61131-2)	
Cold	DIN IEC 68-2-1, temperature -25 °C, duration 96 h; device not operational
Dry heat	DIN IEC 68-2-2, temperature +85 °C, duration 96 h; device not operational
Damp heat, cyclic	DIN IEC 68-2-30, temperature +55 °C, duration 2 cycles of 12 h; device operational
Temperature change	DIN IEC 68-2-14, temperature 0 to +55 °C, duration 2 cycles, temperature change per minute; device operational
Operating life MTBF	120000 h
Extraction/insertion cycles for electronics modules	20
Pollution level as per IEC 664 (EN 61131)	2
Degree of protection (IEC 60529/EN 60529)	IP20

Base modules – technical data		
	BL20 Base module	**BL20 ECONOMY module**
Degree of protection (IEC 60529/EN 60529)	IP20	IP20
Stripped length	8 mm	8 mm
Max. cross-section at terminal	0.5…2.5 mm²	0.14…1.5 mm²
Conductors to be clamped		
"e" solid H 07V-U	0.5…2.5 mm²	0.25…1.5 mm²
"f" stranded H 07V-K	0.5…1.5 mm²	0.25…1.5 mm²
"f" with core-end ferrules to DIN 46228/1 (ferrules are crimped gas-tight)	0.5…1.5 mm²	0.25…1.5 mm²
on wire end sleeves with plastic collar	0.25…0.75mm²	0.25…0.75 mm²
Finger test to IEC 947-1/1988	A1	A1
Rating data in accordance with VDE 0611 part 1/8.92/IEC 947-7-1/ 1989		
Rated voltage	250 V	250 V
Rated current	17.5 A	17.5 A
Rated cross-section	1.5 mm²	1.5 mm²
Rated surge voltage	4 kV	4 kV
Pollution degree	2	2
Connection method in TOP direction	Tension spring connector or screw terminal	Tension spring connector

BL20 – Special accessories

Figure	Description	Type	Ident-No.
	Configuration, commissioning and diagnosticsoftware for modular fieldbus I/O systems freeware for download on http://www.turck.com	**I/O-ASSISTANT**	–
	RS232 adapter cable for connection to configuration software I/O ASSISTANT, 9-pole SUB-D connector, cable length 2.5 m	**I/O-ASSISTANT-Kabel-BL20/BL67**	6827133

User manuals
The user manual for BL20 systems is only available as PDF file and can be downloaded on **www.turck.com**

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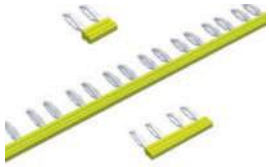
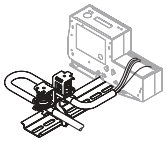
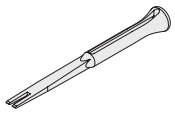
Designation	Description (per packing unit)	Type	Ident-No.
Labels	for labelling electronic modules		
	DIN A5 sheets, slice, perforated (laser print) 5 × 57 labels	BL20-LABEL/SCHEIBE	6827070
	DIN A5 sheets, block, perforated (laser print) 5 × 6 labels	BL20-LABEL/BLOCK	6827071
Markers	for labeling base modules, color identification for clear recognition of potentials in the connection level of the base modules (strip of 10 × 6):		
	blue	BL20-ANBZ-BL	6827072
	red	BL20-ANBZ-RT	6827073
	green	BL20-ANBZ-GN	6827074
	black	BL20-ANBZ-SW	6827075
	brown	BL20-ANBZ-BR	6827076
	red/blue	BL20-ANBZ-RT/BL-BED	6827077
	green/yellow	BL20-ANBZ-GN/GE-BED	6827078
	white	BL20-ANBZ-WS	6827079
Jumpers for relays (QVR) 	for bridging the 4th connection level (14/24) of base modules for relays /10 pcs.		
	1 grid	BL20-QV/1	6827104
	2 grid	BL20-QV/2	6827105
	3 grid	BL20-QV/3	6827106
	4 grid	BL20-QV/4	6827107
	5 grid	BL20-QV/5	6827108
	6 grid	BL20-QV/6	6827109
	7 grid	BL20-QV/7	6827110
	8 grid	BL20-QV/8	6827111

BL20 – Special accessories

Designation	Description (per packing unit)	Type	Ident-No.
End plate	mechanical termination of the BL20 station on the right-hand side, included with gateways	BL20-ABPL	6827123
End bracket, black	mechanical fixing of the BL20 station, 2 pcs., included with gateways	BL20-WEW-35/2-SW	6827124
Shield terminal 	Shield terminal	BS3511/KLBUE4-31.5	6827342
tension spring operating tool 	tension spring operating tool	ZBW5	6827129

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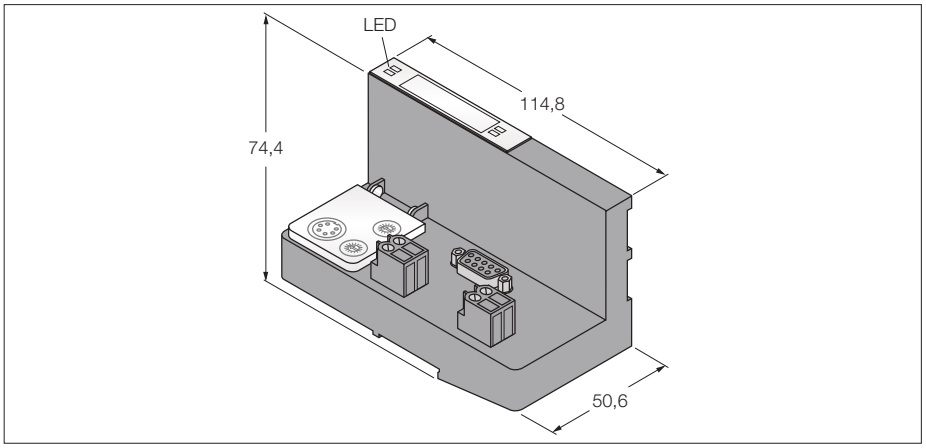
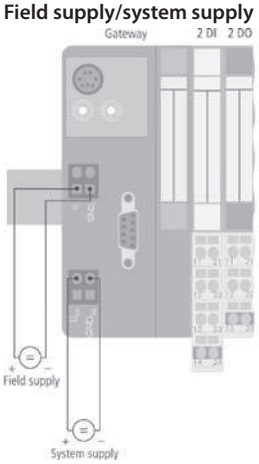
Gateway for BL20 I/O system
Interface for PROFIBUS-DP incl. supply
BL20-GW-DPV1



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and PROFIBUS-DPV0/DPV1
- 12 Mbps
- 9-pole sub-D female connector

Type	BL20-GW-DPV1
Ident-No.	6827234
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 430 mA
Max. field supply current	10 A
Max. system supply current	1.5 A
Voltage supply connection	screw connection
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…99
Fieldbus addressing	2 rotary switches
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	1 × female sub-D connector
Voltage supply connection	screw connection
Fieldbus connection	external
Number of diagnostic bytes	3
Number of parameter bytes	5
Operating temperature	0 to +55 °C

Field supply/system supply



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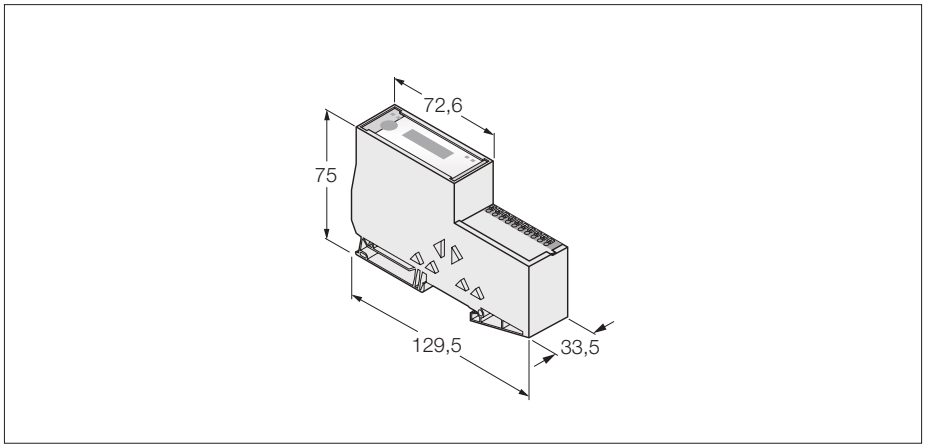
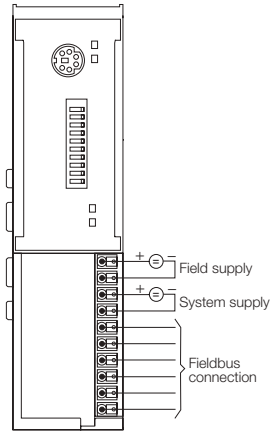
Gateway for BL20 I/O system
Interface for PROFIBUS-DP
BL20-E-GW-DP



- DIP switch rotary for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and PROFIBUS-DPV0/DPV1
- 12 Mbit/s
- Push-in clamps

Type	BL20-E-GW-DP
Ident-No.	6827250
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 430 mA
Max. field supply current	10 A
Max. system supply current	1 A
Voltage supply connection	Push-in clamps
Fieldbus transmission rate	9.6 kbps up to 12 Mbps
Fieldbus addressing range	1…126
Fieldbus addressing	per DIP switch
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	push-in clamps
Voltage supply connection	push-in clamps
Fieldbus connection	per DIP switch
Number of diagnostic bytes	3
Number of parameter bytes	5
Operating temperature	0 to +55 °C

Field supply/system supply



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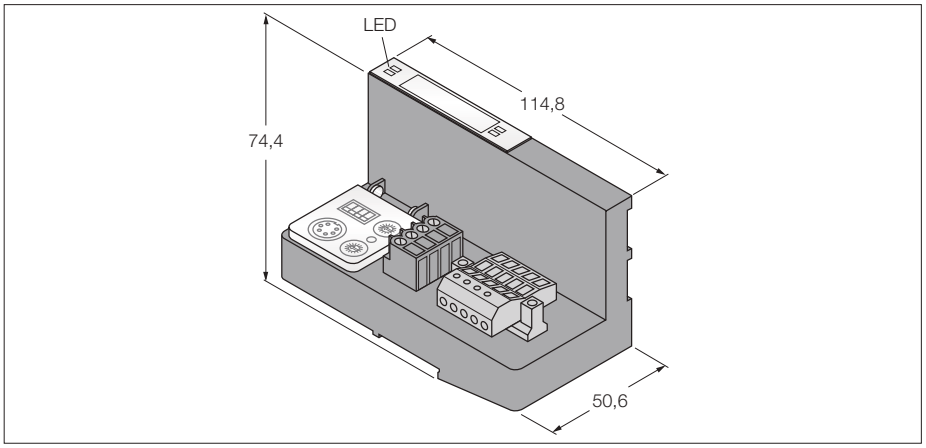
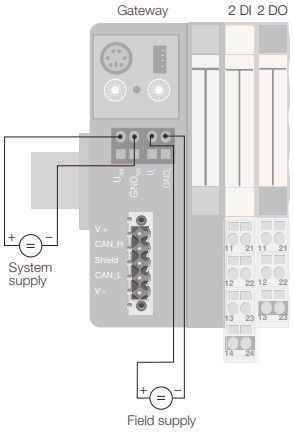
Gateway for BL20 I/O system
Interface for DeviceNet™ incl. supply
BL20-GWBR-DNET



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and DeviceNet™
- 125 / 250 / 500 kbps
- The connection to DeviceNet is established via an Open-Style-Connector

Type	BL20-GWBR-DNET
Ident-No.	6827168
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 250 mA
Max. field supply current	10 A
Max. system supply current	1.5 A
Voltage supply connection	screw connection
Fieldbus transmission rate	125/250/500 kbps, DIP switch
Fieldbus addressing range	0…63
Fieldbus addressing	2 rotary switches
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	open connector
Voltage supply connection	screw connection
Fieldbus connection	external
Operating temperature	0 to +55 °C

Field supply/system supply



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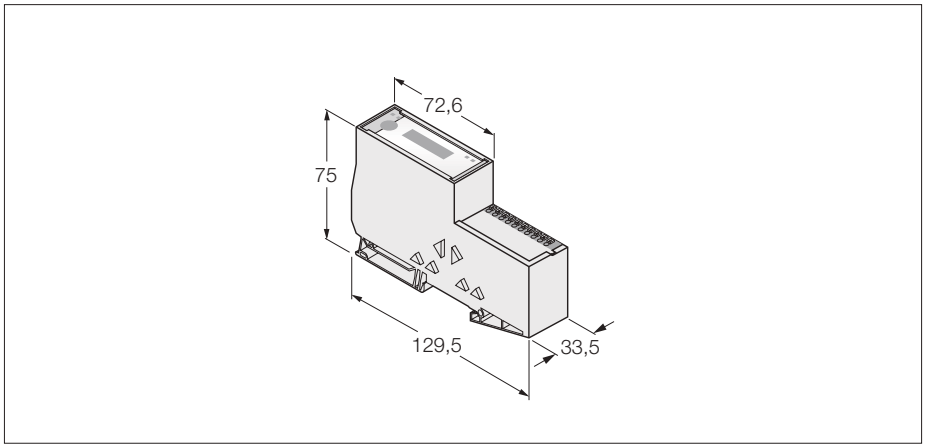
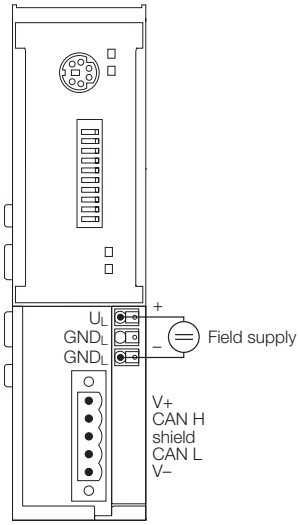
Gateway for BL20 I/O system
Interface for DeviceNet™
BL20-E-GW-DN



- DIP switch rotary for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and DeviceNet™
- 125 / 250 / 500 kbps
- The connection to DeviceNet™ is established via an Open-Style-Connector

Type	BL20-E-GW-DN
Ident-No.	6827301
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 250 mA
Max. field supply current	10 A
Max. system supply current	0.7 A
Voltage supply connection	Push-in clamps
Fieldbus transmission rate	125…500 kbps
Fieldbus addressing range	0…63
Fieldbus addressing	per DIP switch
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	open connector
Fieldbus connection	per DIP switch
Operating temperature	0 to +55 °C

Field supply/system supply



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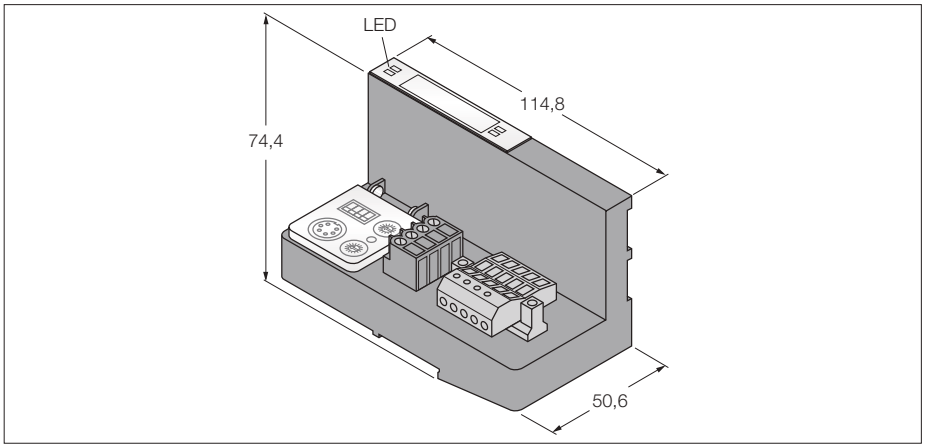
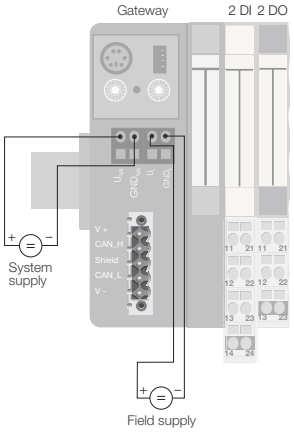
Gateway for BL20 I/O system
Interface for CANopen incl. supply
BL20-GWBR-CANOPEN



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between BL20 system and CAN bus
- 20 kbps up to 1000 kbps
- The connection to CANopen is established via an Open-Style-Connector

Type	BL20-GWBR-CANOPEN
Ident-No.	6827167
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 350 mA
Max. field supply current	10 A
Max. system supply current	1.5 A
Voltage supply connection	screw connection
Fieldbus transmission rate	20 to 1000 kbps, DIP switch
Fieldbus addressing range	1…99
Fieldbus addressing	2 rotary switches
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	open connector
Voltage supply connection	screw connection
Fieldbus connection	external
Operating temperature	0 to +55 °C

Field supply/system supply



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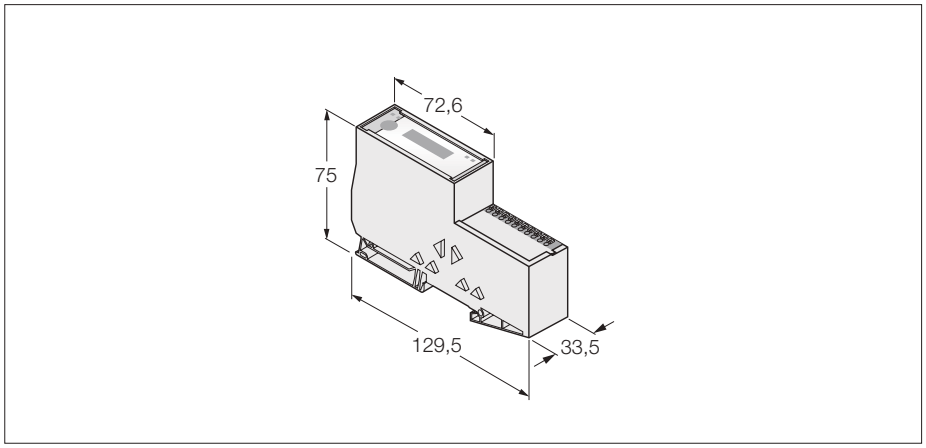
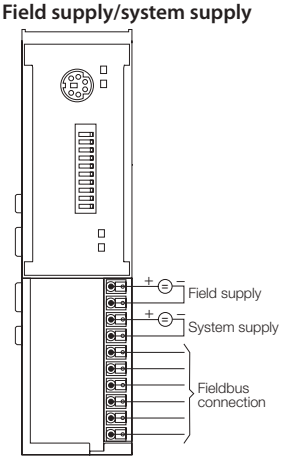
Gateway for BL20 I/O system
Interface for CANopen
BL20-E-GW-CO



- DIP switch rotary for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and CANopen
- 1 Mbps
- Push-in clamps

Type	BL20-E-GW-CO
Ident-No.	6827252
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 350 mA
Max. field supply current	10 A
Max. system supply current	0.7 A
Voltage supply connection	push-in clamps
Fieldbus transmission rate	20 kbps to 1 Mbps
Fieldbus addressing range	1…63
Fieldbus addressing	per DIP switch
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	push-in clamps
Fieldbus connection	per DIP switch
Number of diagnostic bytes	3
Number of parameter bytes	5
Operating temperature	0 to +55 °C

Field supply/system supply



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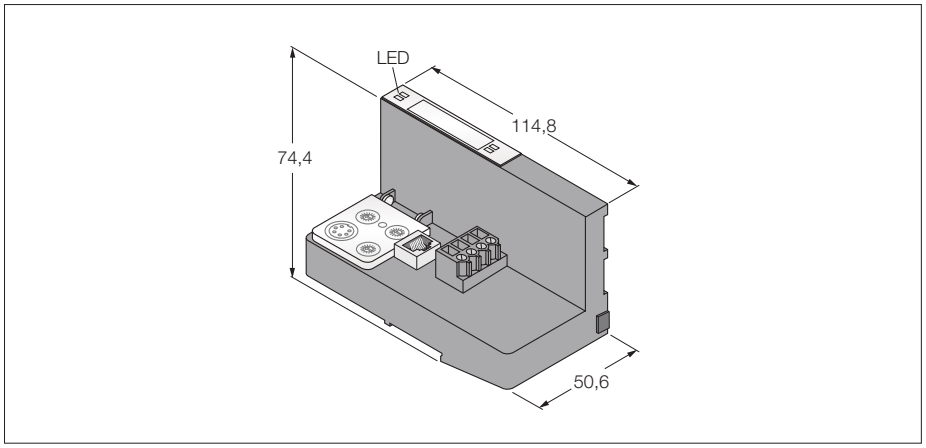
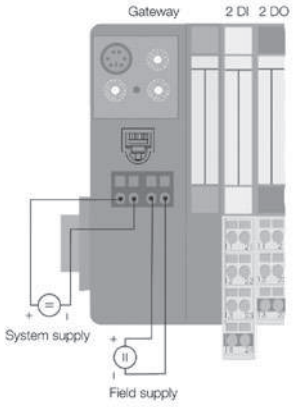
Gateway for BL20 I/O system
Interface for MODBUS TCP incl. supply
BL20-GW-EN



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and MODBUS TCP
- 10/100 Mbps
- RJ45 socket

Type	BL20-GW-EN
Ident-No.	6827237
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 500 mA
Max. field supply current	10 A
Max. system supply current	1.5 A
Voltage supply connection	screw connection
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	rotary switch, BOOTP, DHCP, IO-ASSISTANT
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	RJ45 socket
Voltage supply connection	screw connection
Operating temperature	0 to +55 °C

Field supply/system supply



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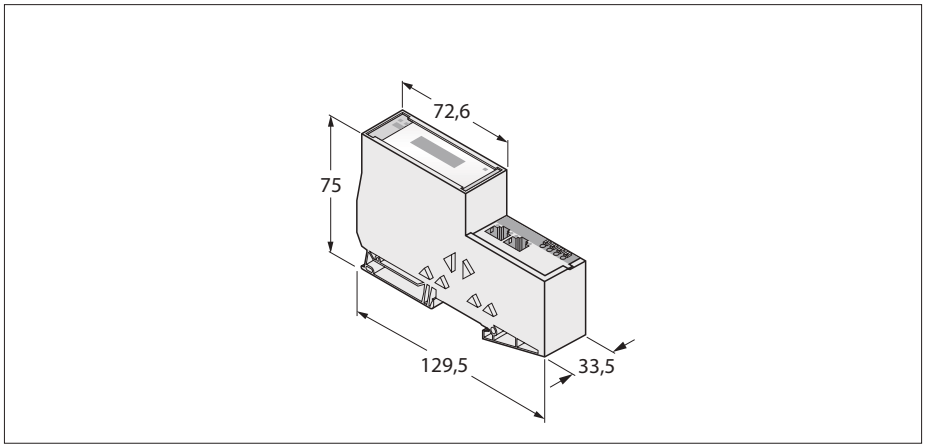
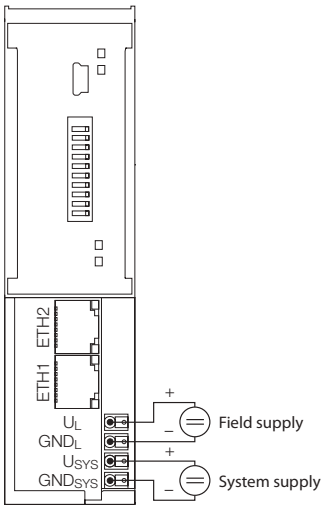
Gateway for BL20 I/O system
Multi-protocol interface for Ethernet
BL20-E-GW-EN



Type	BL20-E-GW-EN
Ident-No.	6827329
Supply voltage	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 200 mA
Max. system supply current	0.4 A
Max. load current Io	10 A
Voltage supply connection	push-in clamps
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × RJ45, female
Protocol detection/changeover	automatic
Service interface	Mini-USB, Ethernet
Web server	in preparation
Modbus TCP	
Addressing	Static IP, BOOTP, DHCP
Supported function codes	FC1, FC2, FC3, FC4, FC5, FC6, FC15, FC16, FC23
Number of connections	6
EtherNet/IP™	(available Q1/2013*)
Addressing	acc. to EtherNet/IP™ specification
Quick Connect (QC)	< 150 ms
Device Level Ring (DLR)	supported
Number of connections	6
PROFINET IO	(available Q1/2013*)
Addressing	DCP
Conformance Class	B (RT)
MinCycleTime	1 ms
Fast Startup	< 150 ms
Diagnostics	acc. to PROFINET IO Alarm Handling
Topology detection	supported
Automatic addressing	supported
Operating temperature	0 to +55 °C

- DIP switch rotary for adjustment of the node address
- Degree of protection IP20
- LEDs for display of supply voltage, common alarm and bus errors
- Multiprotocol interface between the BL20 system and the Ethernet protocols Modbus TCP and EtherNet/IP™ and PROFINET IO
- EtherNet/IP™ supports QuickConnect (QC)
- PROFINET IO supports fast start-up (FSU)
- Integrated switch 10/100 Mbps
- Two RJ45 males for fieldbus connection
- Push-in clamps for connection of power supply

Field supply/system supply



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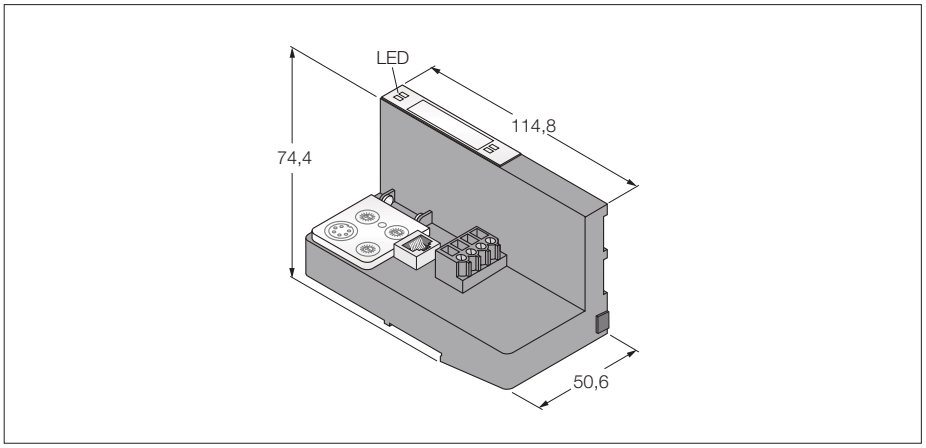
* The current device firmware supports Modbus TCP, the EtherNet/IP™ and PROFINET IO protocols will be included in phase 2

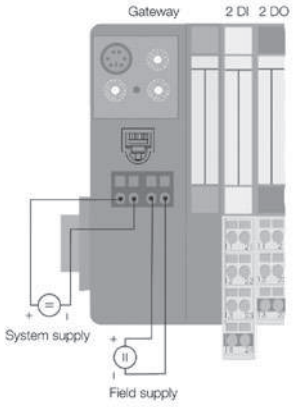
Gateway for BL20 I/O system
Interface for EtherNet/IP™ supply inclusive
BL20-GW-EN-IP



- Rotary coding switch for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and EtherNet/IP
- 10/100 Mbps
- RJ45 socket

Type	BL20-GW-EN-IP
Ident-No.	6827247
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 500 mA
Max. field supply current	10 A
Max. system supply current	1.5 A
Voltage supply connection	screw connection
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	rotary switch, BOOTP, DHCP, IO-ASSISTANT
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	RJ45 socket
Voltage supply connection	screw connection
Operating temperature	0 to +55 °C

Field supply/system supply



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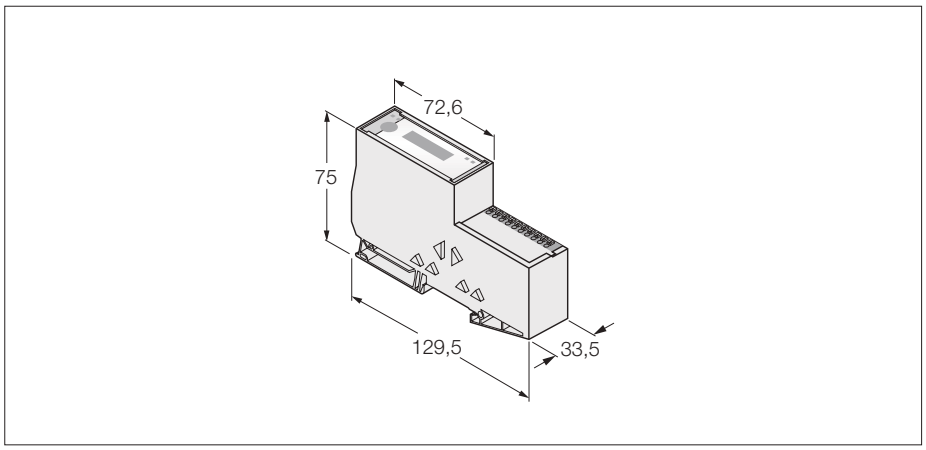
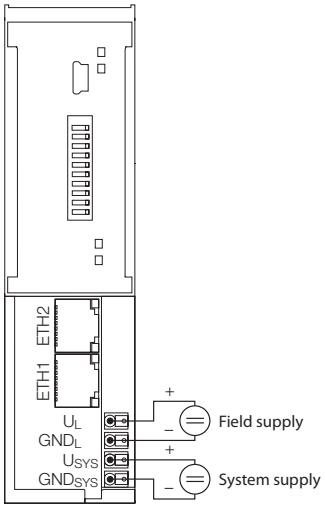
Gateway for BL20 I/O system
Interface for EtherNet/IP™ supply inclusive
BL20-E-GW-EN-IP



- DIP switch rotary for adjustment of the node address
- Degree of protection IP20
- 2 × end brackets BL20-WEW35/2-SW
- 1 × end plate BL20-ABPL
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and EtherNet/IP™
- 10/100 Mbps
- Integrated switch
- 2 × RJ45 socket

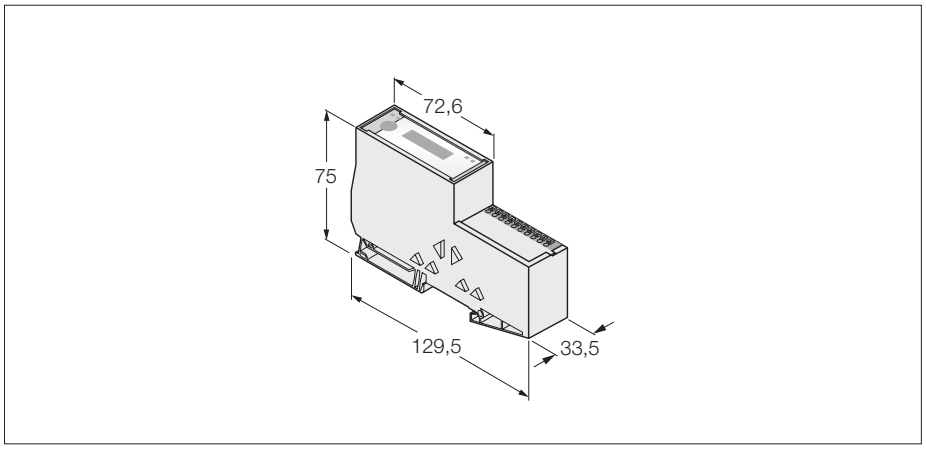
Type	BL20-E-GW-EN-IP
Ident-No.	6827330
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 250 mA
Max. field supply current	10 A
Max. system supply current	0.4 A
Voltage supply connection	push-in clamps
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	per DIP switch
Service interface	Mini USB
Fieldbus connection technology	RJ45 socket
Operating temperature	0 to +55 °C
Approvals	CE, cULus, Zone2, ClassI, Div.2

Field supply/system supply



5

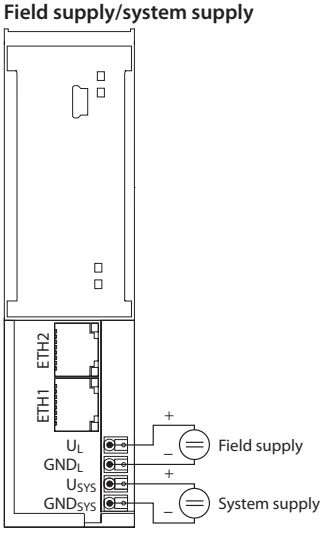
Gateway for BL20 I/O system
High-feature interface for PROFINET IO (RT/IRT)
BL20-E-GW-PN



- Degree of protection IP20
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and PROFINET IO (IRT)
- Interface between BL20 system and PROFINET IO RT/IRT
- Supports topology recognition and LLDP
- Integrated switch 10/100 Mbps
- Two RJ45 males for fieldbus connection
- Push-in clamps for connection of power supply

Type	BL20-E-GW-PN
Ident-No.	6827377
System power supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 200 mA
Max. system supply current	0.8 A
Max. load current I_o	10 A
Voltage supply connection	push-in clamps
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × RJ45, female
Protocol detection/changeover	automatic
Service interface	Mini USB
Web server	in preparation
PROFINET	
Addressing	DCP
Conformance Class	C (IRT)
MinCycleTime	1 ms
Fast Startup	< 150 ms
Diagnostics	acc. to PROFINET Alarm Handling
Topology detection	supported
Automatic addressing	supported
Media Redundancy Protocol (MRP)	in preparation
Max. number of I/O modules	72
Operating temperature	0 to +55 °C

Field supply/system supply



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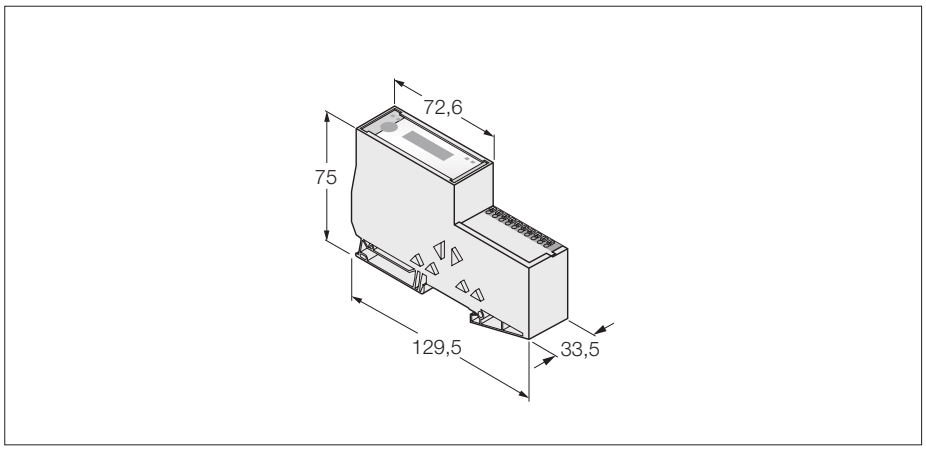
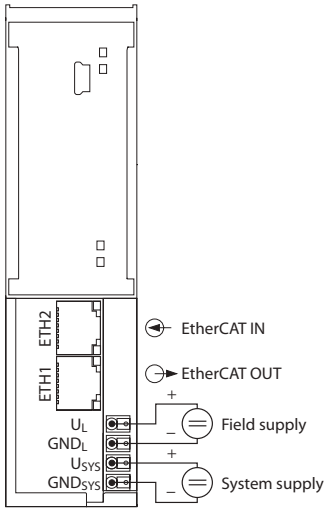
Gateway for BL20 I/O system
Interface for EtherCAT
BL20-E-GW-EC



- Degree of protection IP20
- LEDs for display of supply voltage, common alarm and bus errors
- Interface between the BL20 system and PROFINET IO (IRT)
- Interface between the BL20 system and EtherCAT
- Modular Device Profile (MDP) Support
- 10/100 Mbps, Auto MDIX
- Two RJ45 males for fieldbus connection
- Push-in clamps for connection of power supply

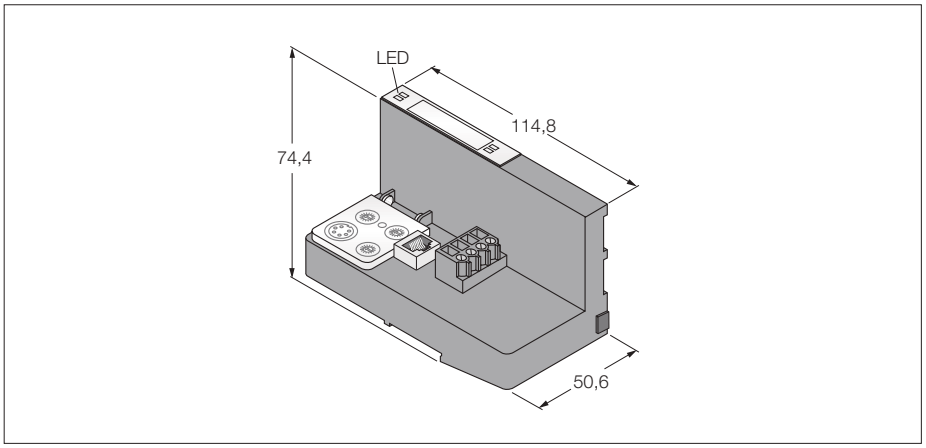
Type	BL20-E-GW-EC
Ident-No.	6827380
System power supply	24 VDC / 5 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 200 mA
Max. system supply current	0.8 A
Max. load current I_o	10 A
Voltage supply connection	push-in clamps
System data	
Transmission rate	10/100 Mbps; Full/Half Duplex; Auto Negotiation; Auto Crossing
Connection technology Ethernet	2 × RJ45, female
Protocol detection/changeover	automatic
Service interface	Mini USB
Web server	in preparation
EtherCAT	
Addressing	automatic
MinCycleTime	250 µs
Diagnostics	CoE Emergencies, DiagnosisHistory
CAN over EtherCAT	acc. to Modular Device Profile
Max. number of I/O modules	72
Operating temperature	0 to +55 °C

Field supply/system supply



5

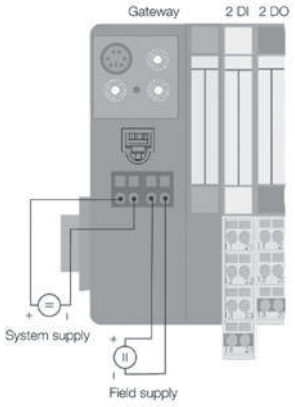
Programmable gateway for the BL20 I/O system
Interface for MODBUS TCP incl. supply
BL20-PG-EN



- Programmable acc.to IEC 61131-3 with CODESYS
- Ethernet and RS232 programmable interface
- 512 kByte program memory
- 32 Bit RISC processor
- < 1 ms for 1000 instructions
- 3 decimally coded rotary switches
- Degree of protection IP20
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface for MODBUS TCP
- 10/100 Mbps

Type	BL20-PG-EN
Ident-No.	6827249
System power supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 500 mA
Max. field supply current	10 A
Max. system supply current	1.5 A
Voltage supply connection	screw connection
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	rotary switch, BOOTP, DHCP, IO-ASSISTANT
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	RJ45 socket
Voltage supply connection	screw connection
PLC data	
Programming	CODESYS V2.3
Released for CODESYS version	V 2.3.6.4
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Application tasks	1
Number of POUs	1024
Programming interface	RS232 interface, Ethernet
	RISC
	32 bit
Cycle time	< 1 ms for 1000 IL commands (without I/O cycle)
Program memory	512 kByte
Data memory	512 kByte
Input data	4 kByte
Output data	4 kByte
Non-volatile memory	16 kByte
Operating temperature	0 to +55 °C

Field supply/system supply



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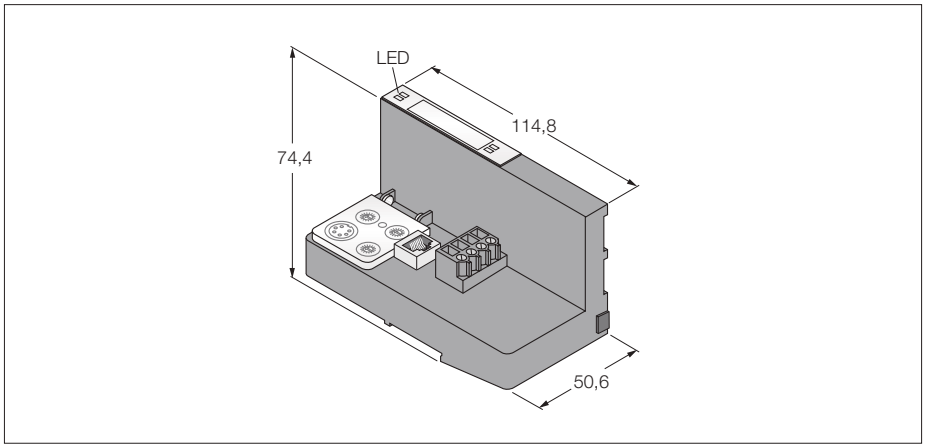
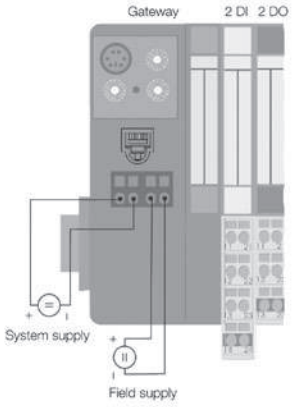
Programmable gateway for the BL20 I/O system
Interface for EtherNet/IP™ supply inclusive
BL20-PG-EN-IP



- Programmable acc.to IEC 61131-3 with CODESYS
- Ethernet and RS232 programmable interface
- 512 kByte program memory
- 32 Bit RISC processor
- < 1 ms for 1000 instructions
- 3 decimally coded rotary switches
- Degree of protection IP20
- With integrated supply
- LEDs for display of supply voltage, common alarm and bus errors
- Interface for EtherNet/IP™
- 10/100 Mbps

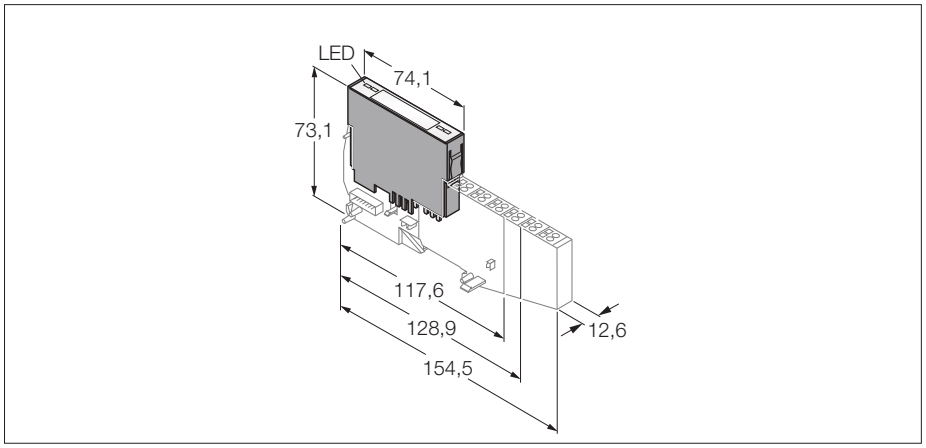
Type	BL20-PG-EN-IP
Ident-No.	6827248
System power supply	24 VDC
Admissible range	18…30 VDC
Rated current from module bus	≤ 500 mA
Max. field supply current	10 A
Max. system supply current	1.5 A
Voltage supply connection	screw connection
Fieldbus transmission rate	10/100 Mbps
Fieldbus addressing	rotary switch, BOOTP, DHCP, IO-ASSISTANT
Service interface	PS/2 socket for I/O-ASSISTANT
Fieldbus connection technology	RJ45 socket
Voltage supply connection	screw connection
PLC data	
Programming	CODESYS V2.3
Released for CODESYS version	V 2.3.6.4
Programming languages	IEC 61131-3 (IL, LD, FBD, SFC, ST)
Application tasks	1
Number of POUs	1024
Programming interface	RS232 interface, Ethernet
	RISC
	32 bit
Cycle time	< 1 ms for 1000 IL commands (without I/O cycle)
Program memory	512 kByte
Data memory	512 kByte
Input data	4 kByte
Output data	4 kByte
Non-volatile memory	16 kByte
Operating temperature	0 to +55 °C

Field supply/system supply



5

BL20 electronic module
Bus refreshing module with diagnostics
BL20-BR-24VDC-D



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of system status, field supply and diagnostic information
- Can be used to form potential groups
- Power supply of the BL20 I/O module and the gateway with a nominal system voltage of 5 VDC via the internal module bus
- Field supply featuring a rated voltage of 24 VDC

Type	BL20-BR-24VDC-D
Ident-No.	6827006
System power supply	24 VDC / 5 VDC
Field supply	24 VDC
Admissible range	18…30 VDC
Max. field supply current	10 A
Max. system supply current	1.5 A
Number of diagnostic bits	4
Operating temperature	0 to +55 °C

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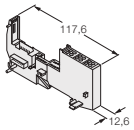
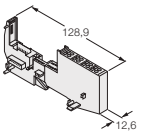
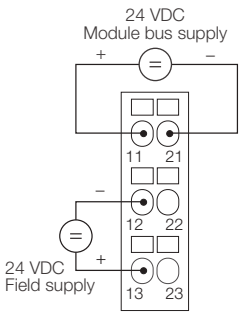
Compatible base modules

Dimensions	Type	Connection
	**6827036 BL20-P3T-SBB** Tension spring connection, with gateway supply **6827037 BL20-P3S-SBB** Screw connection, with gateway supply Is placed on the right side of the gateway (for gateways without integrated power supply). **6827040 BL20-P3T-SBB-B** Tension spring connection, without gateway supply **6827041 BL20-P3S-SBB-B** Screw connection, without gateway supply Is applied to bigger BL20 systems in order to supply the module bus if required.	F186
Dimensions	**Type**	**Connection**
	**6827038 BL20-P4T-SBBC** Tension spring connection, C rail, with gateway supply **6827039 BL20-P4S-SBBC** Screw connection, C rail, with gateway supply Is placed on the right side of the gateway (for gateways without integrated power supply). **6827042 BL20-P4T-SBBC-B** Tension spring connection, C rail, without gateway supply **6827043 BL20-P4S-SBBC-B** Screw connection, C rail, without gateway supply Is applied to bigger BL20 systems in order to supply the module bus if required.	F187

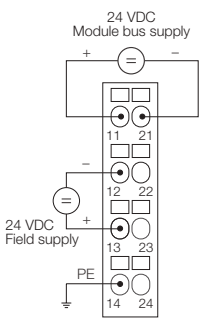
5

Connection

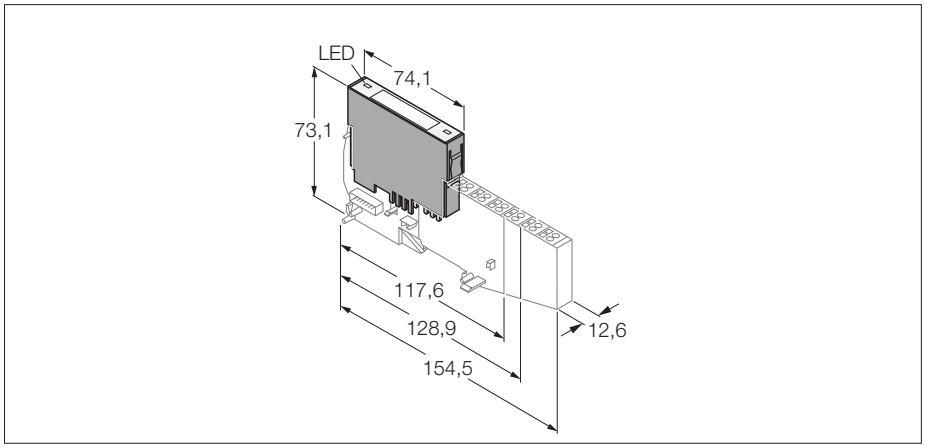
F186 - Wiring diagram



F187 - Wiring diagram



BL20 electronic module
Power feeding module with diagnostics
BL20-PF-24VDC-D



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of system status, field supply and diagnostic information
- Can be used to form potential groups
- Field supply featuring a rated voltage of 24 VDC

Type	BL20-PF-24VDC-D
Ident-No.	6827007
Field supply	24 VDC
Rated current from module bus	≤ 28 mA
Max. field supply current	10 A
Number of diagnostic bits	4
Operating temperature	0 to +55 °C

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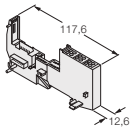
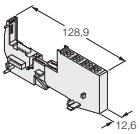
BL20 electronic module
Power feeding module with diagnostics
BL20-PF-24VDC-D

Industrial Automation

Compatible base modules

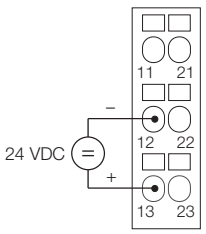
Dimensions	Type	Connection
	**6827036 BL20-P3T-SBB** Tension spring connection **6827037 BL20-P3S-SBB** Screw connection	F188

Dimensions	Type	Connection
	**6827038 BL20-P4T-SBBC** Tension spring connection, access to C rail **6827039 BL20-P4S-SBBC** Screw connection, access to C rail	F189

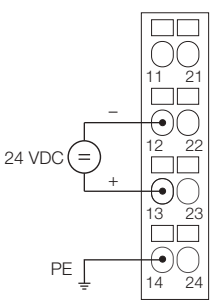
5

Connection

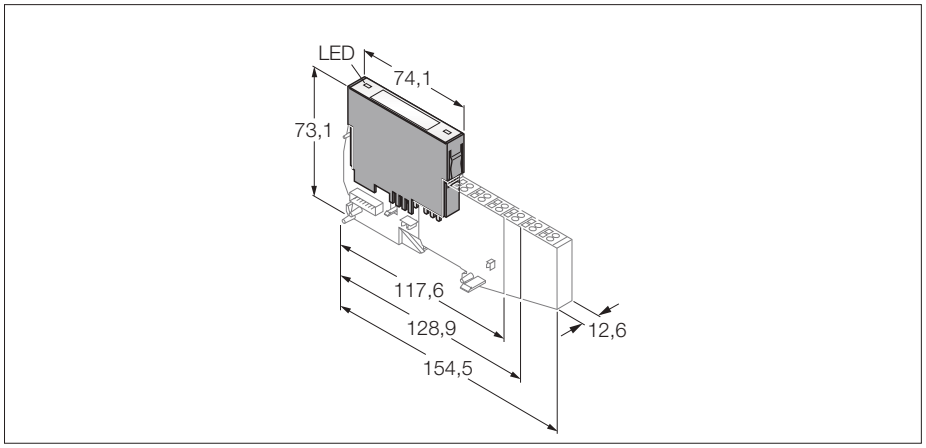
F188 - Wiring diagram



F189 - Wiring diagram



BL20 electronic module
Power feeding module with diagnostics
BL20-PF-120/230VAC-D



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of system status, field supply and diagnostic information
- Can be used to form potential groups
- Field supply featuring a rated voltage of 120/230 VAC

Type	BL20-PF-120/230VAC-D
Ident-No.	6827008
Field supply	120 / 230 VAC
Rated current from module bus	≤ 25 mA
Max. field supply current	10 A
Number of diagnostic bits	4
Operating temperature	0 to +55 °C

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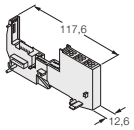
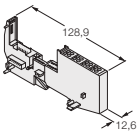
BL20 electronic module
Power feeding module with diagnostics
BL20-PF-120/230VAC-D

Industrial Automation

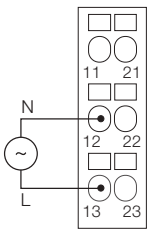
Compatible base modules

Dimensions	Type	Connection
	**6827036 BL20-P3T-SBB** Tension spring connection **6827037 BL20-P3S-SBB** Screw connection	F190
Dimensions	**Type**	**Connection**
	**6827038 BL20-P4T-SBBC** Tension spring connection, access to C rail **6827039 BL20-P4S-SBBC** Screw connection, access to C rail	F191

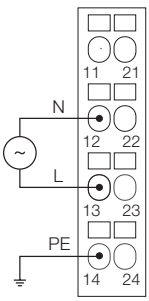
5

Connection

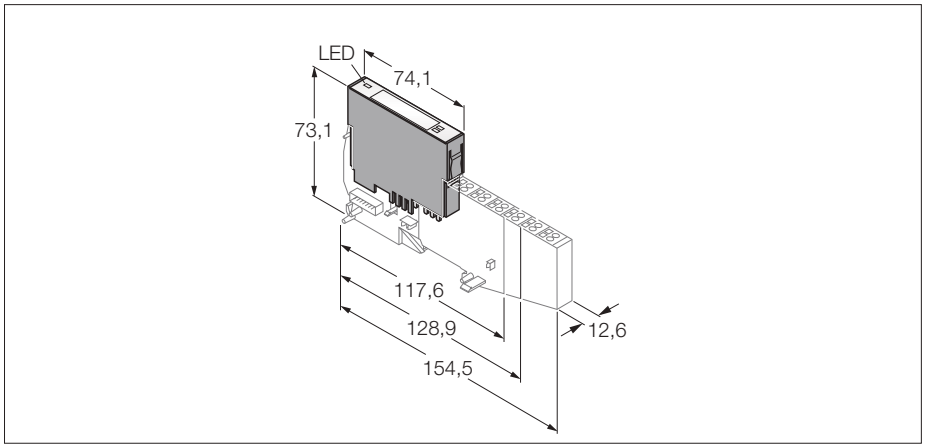
F190 - Wiring diagram



F191- - Wiring diagram



BL20 electronic module
2 digital inputs
BL20-2DI-120/230VAC-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 digital inputs, 120/230 VAC

Type	BL20-2DI-120/230VAC-P
Ident-No.	6827011
Number of channels	2
Rated voltage from the supply terminal	120 / 230 VAC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 28 mA
Power loss, typical	≤ 1 W
Inputs	
Low level signal voltage	0 V…20 VAC
High level signal voltage	79 VAC…265 VAC
Frequency range	47.5 Hz to 63 Hz
Low level signal current	0 mA…1 mA
High level signal current	3 mA…10 mA
Input delay	< 20 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

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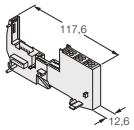
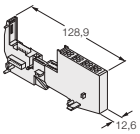
BL20 electronic module
2 digital inputs
BL20-2DI-120/230VAC-P

Industrial Automation

Compatible base modules

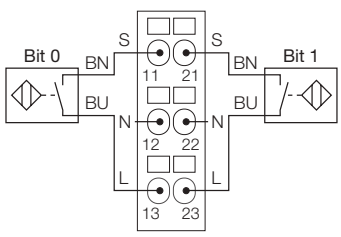
Dimensions	Type	Connection
	**6827044 BL20-S3T-SBB** Tension spring connection **6827045 BL20-S3S-SBB** Screw connection	F196

Dimensions	Type	Connection
	**6827050 BL20-S4T-SBBC** Tension spring connection, access to C rail **6827051 BL20-S4S-SBBC** Screw connection, access to C rail	F197

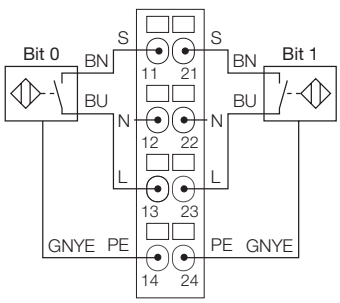
5

Connection

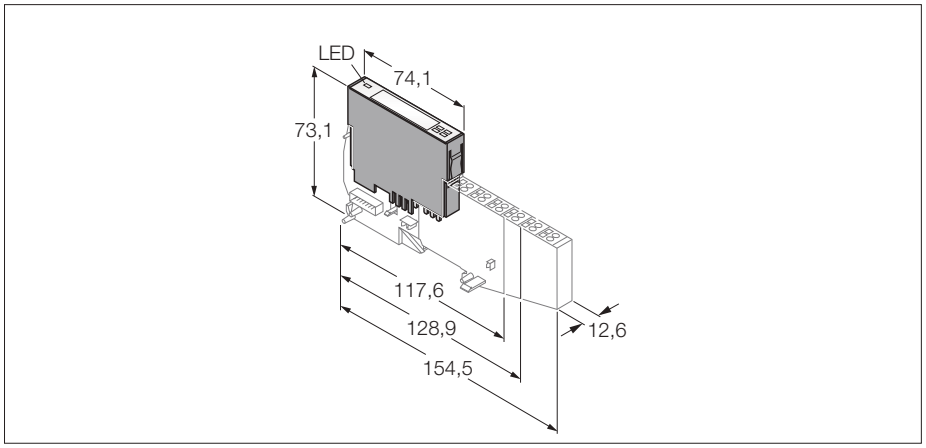
F196 - Wiring diagram



F197 - Wiring diagram



BL20 electronic module
4 digital inputs
BL20-4DI-24VDC-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital inputs, 24 VDC
- pnp

Type	BL20-4DI-24VDC-P
Ident-No.	6827012
Number of channels	4
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 40 mA
Rated current from module bus	≤ 28 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	pnp
Low level signal voltage	-30 V … +5 V
High level signal voltage	15 V … 30 V
Low level signal current	0 mA … 1.5 mA
High level signal current	2 mA … 10 mA
Input delay	< 0.2 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

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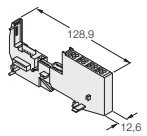
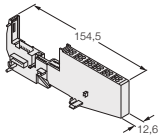
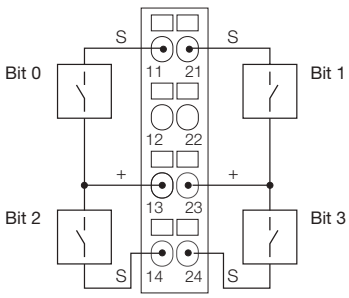
Compatible base modules

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F198

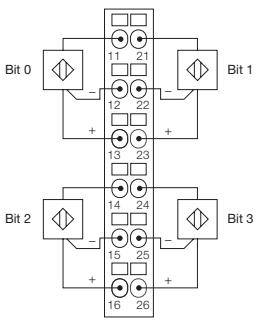
Dimensions	Type	Connection
	**6827052 BL20-S6T-SBBSBB** Tension spring connection **6827053 BL20-S6S-SBBSBB** Screw connection	F199

Connection

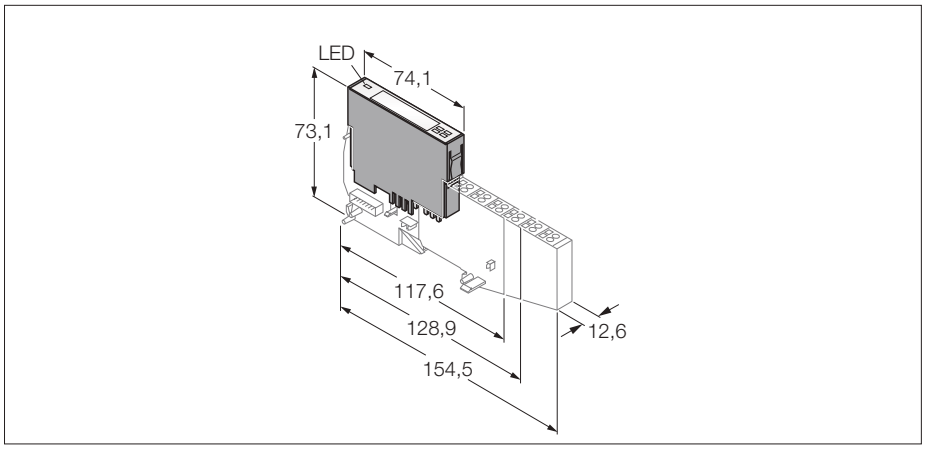
F198 - Wiring diagram



F199 - Wiring diagram



BL20 electronic module
4 digital inputs
BL20-4DI-24VDC-N



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital inputs, 24 VDC
- npn

Type	BL20-4DI-24VDC-N
Ident-No.	6827013
Number of channels	4
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 40 mA
Rated current from module bus	≤ 28 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	npn
Low level signal voltage	> 13 V
High level signal voltage	0 V … +5 V
Low level signal current	0…1.2 mA
High level signal current	1.3…6 mA
Input delay	< 0.2 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

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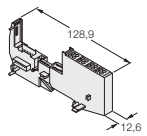
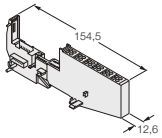
BL20 electronic module
4 digital inputs
BL20-4DI-24VDC-N

TURCK
Industrial Automation

Compatible base modules

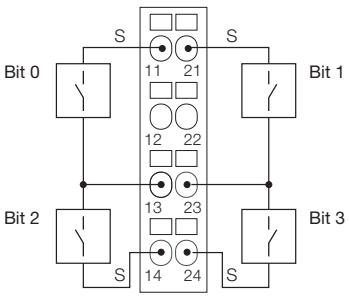
Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F200

Dimensions	Type	Connection
	**6827052 BL20-S6T-SBBSBB** Tension spring connection **6827053 BL20-S6S-SBBSBB** Screw connection	F201

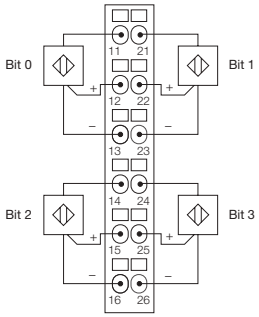
5

Connection

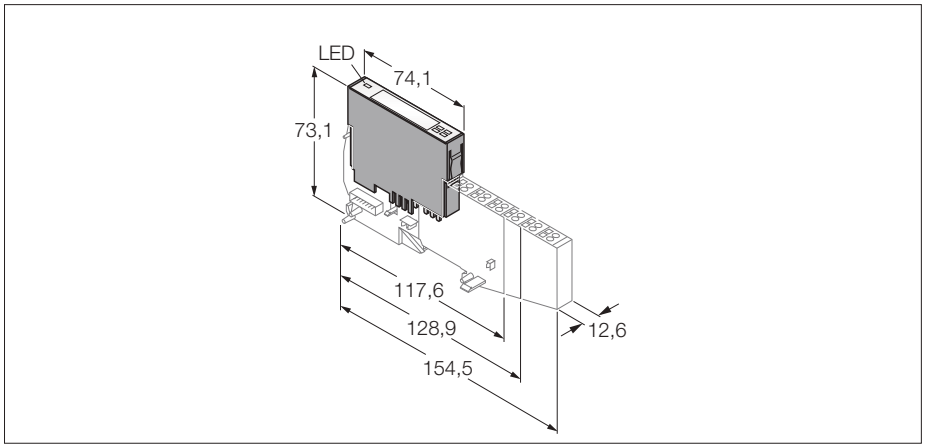
F200 - Wiring diagram



F201 - Wiring diagram



BL20 electronic module
4 digital inputs
BL20-4DI-NAMUR



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 NAMUR inputs acc. to EN 60947-5-6

Type	BL20-4DI-NAMUR
Ident-No.	6827212
Number of channels	4
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 30 mA
Rated current from module bus	≤ 40 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	NAMUR according to EN60947-5-6
No-load voltage	8.2…8.6 VDC
Input - status	switch on threshold: 1.74 mA
	switch off threshold: 1.45 mA
Input wire-break	switch on threshold: 0.08 mA
	switch off threshold: 0.12 mA
Input - short-circuit	switch on threshold: 6.2 mA
	switch off threshold: 5.9 mA
Input delay	0.25 or 2.5 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

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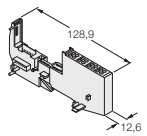
BL20 electronic module
4 digital inputs
BL20-4DI-NAMUR

Industrial Automation

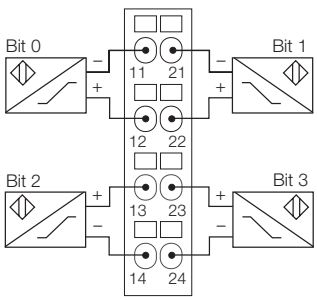
Compatible base modules

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F200

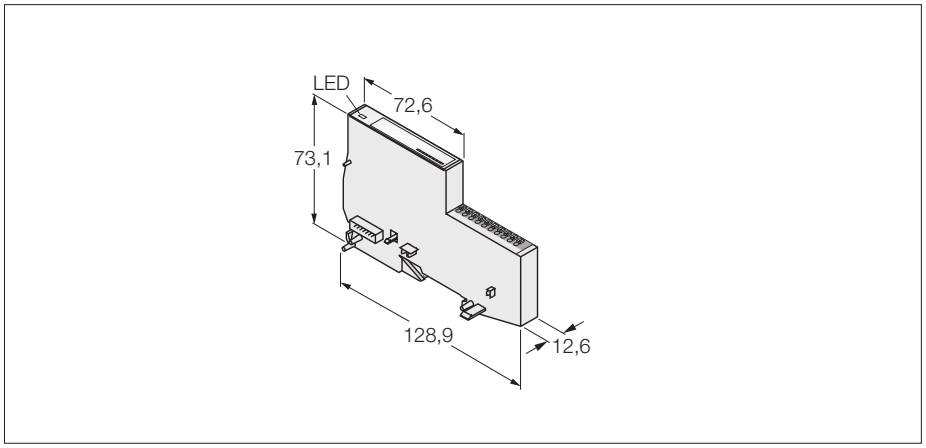
5

Connection

F200 - Wiring diagram



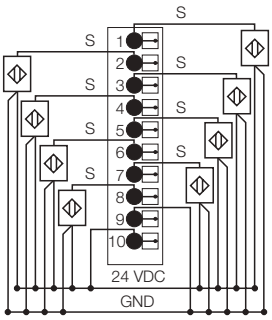
BL20 Economy Module
8 digital inputs
BL20-E-8DI-24VDC-P



- Independent of the type of fieldbus used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 digital inputs, 24 VDC
- pnp

Type	BL20-E-8DI-24VDC-P
Ident-No.	6827227
Number of channels	8
Rated voltage from the supply terminal	24 VDC
Admissible range	18…30 VDC
Rated current from field supply	≤ 2 mA
Rated current from module bus	≤ 15 mA
Power loss, typical	≤ 1.5 W
Inputs	
Input type	pnp
Low level signal voltage	-30 V … +5 V
High level signal voltage	11 V … 30 V
Low level signal current	-1 mA … 1.5 mA
High level signal current	2 mA … 5 mA
Input delay	< 0.2 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

Terminal connection



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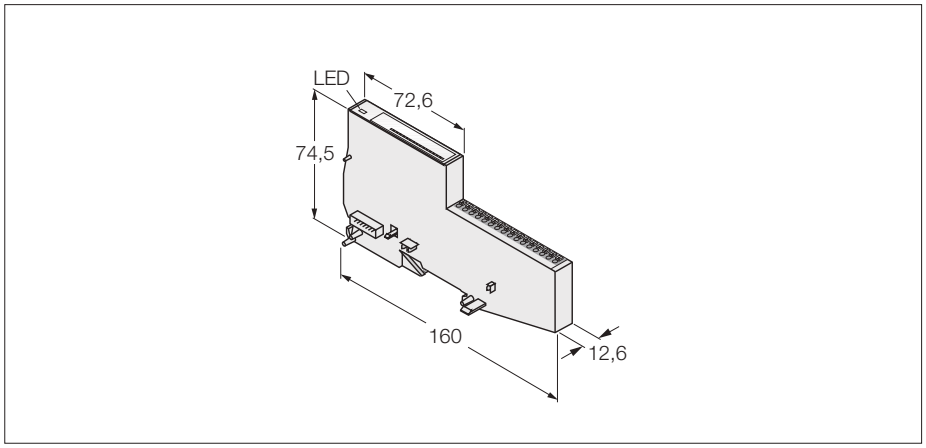
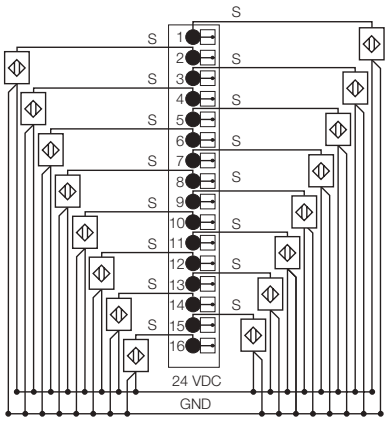
BL20 Economy Module
16 digital inputs
BL20-E-16DI-24VDC-P



- Independent of the type of fieldbus used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 16 digital inputs, 24 VDC
- pnp

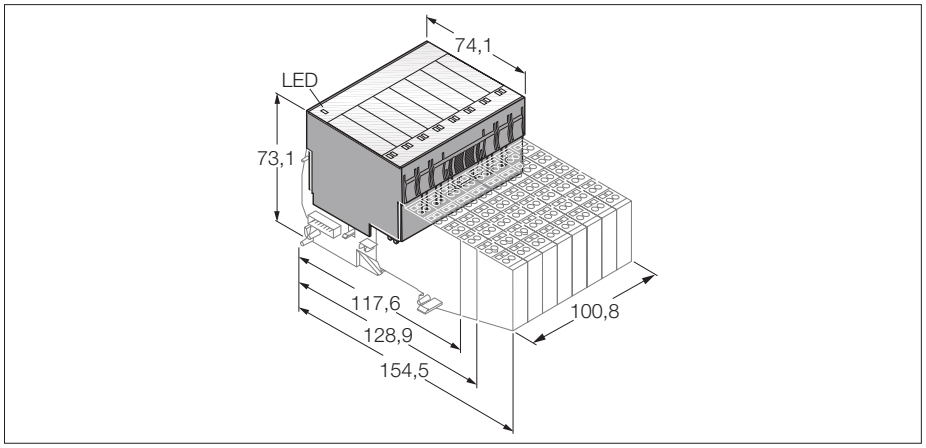
Type	BL20-E-16DI-24VDC-P
Ident-No.	6827231
Number of channels	16
Rated voltage from the supply terminal	24 VDC
Admissible range	18…30 VDC
Rated current from field supply	≤ 3 mA
Rated current from module bus	≤ 15 mA
Power loss, typical	≤ 1.5 W
Inputs	
Input type	pnp
Low level signal voltage	-30 V … +5 V
High level signal voltage	11 V … 30 V
Low level signal current	-1 mA … 1.5 mA
High level signal current	2 mA … 5 mA
Input delay	< 0.3 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

Terminal connection



5

BL20 electronic module
16 digital inputs
BL20-16DI-24VDC-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 16 digital inputs, 24 VDC
- pnp

Type	BL20-16DI-24VDC-P
Ident-No.	6827014
Number of channels	16
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 40 mA
Rated current from module bus	≤ 45 mA
Power loss, typical	≤ 2.5 W
Inputs	
Input type	pnp
Low level signal voltage	-30 V … +5 V
High level signal voltage	15 V … 30 V
Low level signal current	0 mA … 1.5 mA
High level signal current	2 mA … 10 mA
Input delay	< 0.2 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

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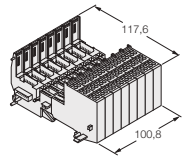
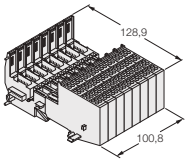
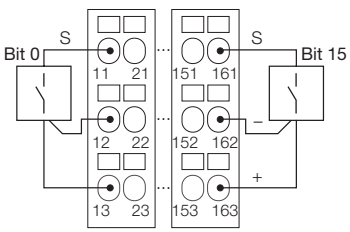
Compatible base modules

Dimensions	Type	Connection
	**6827054 BL20-B3T-SBB** Tension spring connection **6827055 BL20-B3S-SBB** Screw connection	F203
Dimensions	**Type**	**Connection**
	**6827056 BL20-B4T-SBBC** Tension spring connection, access to C rail **6827057 BL20-B4S-SBBC** Screw connection, access to C rail	F204

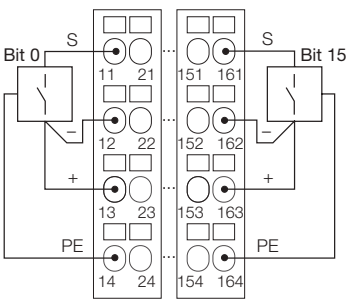
5

Connection

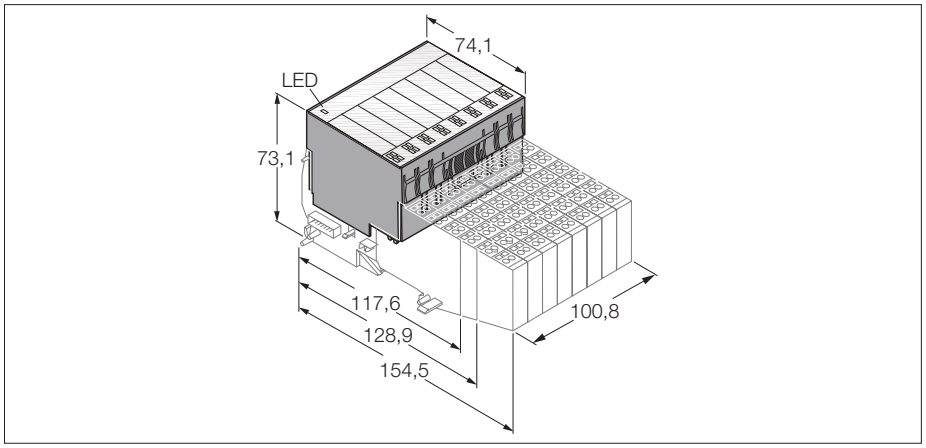
F203 - Wiring diagram



F204 - Wiring diagram



BL20 electronic module
32 digital inputs
BL20-32DI-24VDC-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 32 digital inputs, 24 VDC
- pnp

Type	BL20-32DI-24VDC-P
Ident-No.	6827015
Number of channels	32
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 30 mA
Rated current from module bus	≤ 45 mA
Power loss, typical	≤ 4.2 W
Inputs	
Input type	pnp
Low level signal voltage	-30 V … +5 V
High level signal voltage	15 V … 30 V
Low level signal current	< 1.5 mA
High level signal current	2 mA … 10 mA
Input delay	< 0.2 ms
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

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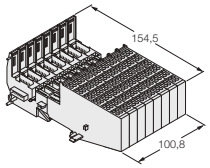
BL20 electronic module
32 digital inputs
BL20-32DI-24VDC-P

Industrial Automation

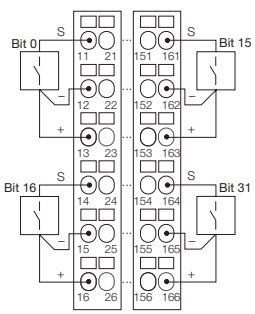
Compatible base modules

Dimensions	Type	Connection
	**6827065 BL20-B6T-SBBSBB** Tension spring connection **6827067 BL20-B6S-SBBSBB** Screw connection	F205

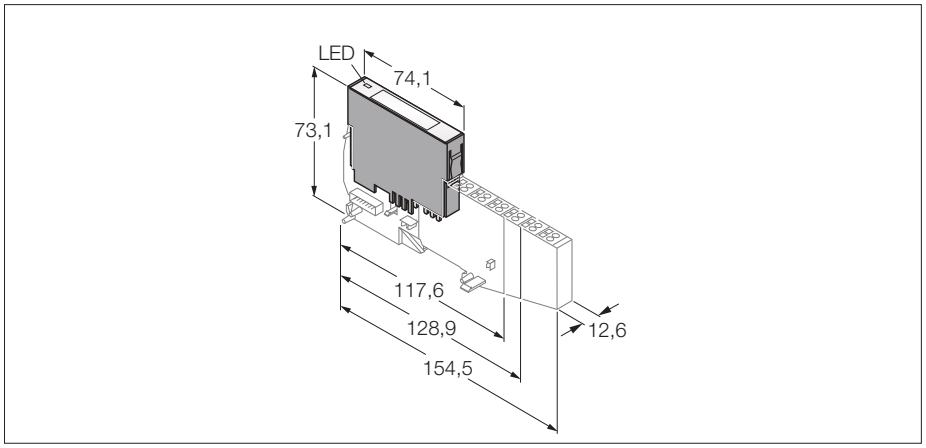
5

Connection

F205 - Wiring diagram



BL20 electronic module
2 analog inputs
BL20-2AI-I(0/4...20MA)



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog inputs 0/4…20 mA

Type	BL20-2AI-I(0/4...20MA)
Ident-No.	6827021
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Max. input current	50 mA
Rated current from field supply	≤ 12 mA
Rated current from module bus	≤ 35 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	0/4…20 mA
Input resistance	< 0.125
Max. input current	50 mA
Electrical isolation	electronics for the field level
Maximum limiting frequency, analog	< 50 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Delta Sigma
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	2
Number of parameter bytes	2
Operating temperature	0 to +55 °C

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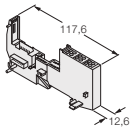
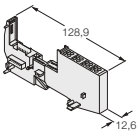
BL20 electronic module
2 analog inputs
BL20-2AI-I(0/4...20MA)

Industrial Automation

Compatible base modules

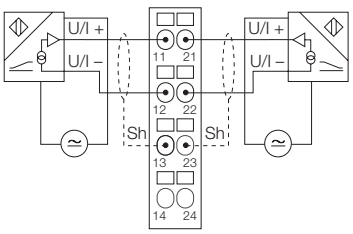
Dimensions	Type	Connection
	**6827044 BL20-S3T-SBB** Tension spring connection with external sensor supply **6827045 BL20-S3S-SBB** Screw connection with external sensor supply	F210

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F211, F212

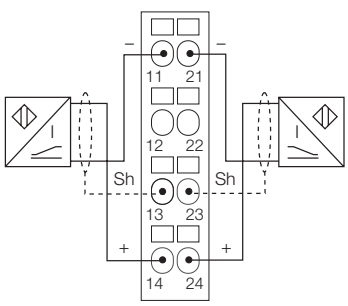
5

Connection

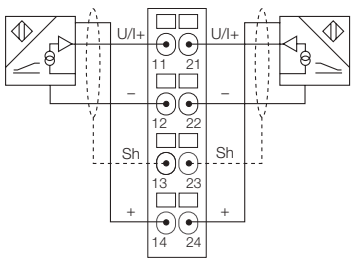
F210 - Wiring diagram



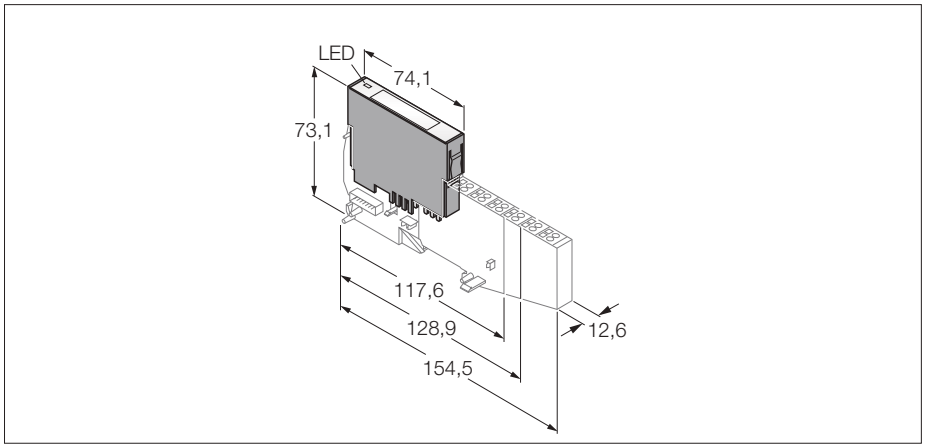
F211 - 2-wire technology



F212 - 3-wire technology



BL20 electronic module
2 analog inputs
BL20-2AIH-I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog inputs 0/4…20 mA
- HART®

Type	BL20-2AIH-I
Ident-No.	6827331
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Max. input current	24 mA
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	0/4…20 mA
Input resistance	> 250
Max. input current	24 mA
Electrical isolation	500 V electronics to field level, 500 V channel to channel
Maximum limiting frequency, analog	< 50 Hz
Basic fault limit at 23 °C	< 0.1 %
Repeatability	0.1 %
Temperature coefficient	< 150 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Delta Sigma
Measured-value display	16 bit signed integer ,NE43(PA), Extended
Number of diagnostic bytes	4
Number of parameter bytes	8
Operating temperature	0 to +55 °C

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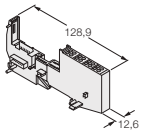
BL20 electronic module
2 analog inputs
BL20-2AIH-I

Industrial Automation

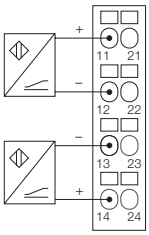
Compatible base modules

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F271, F272

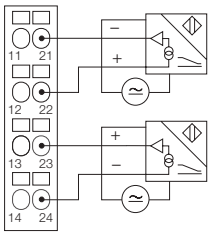
5

Connection

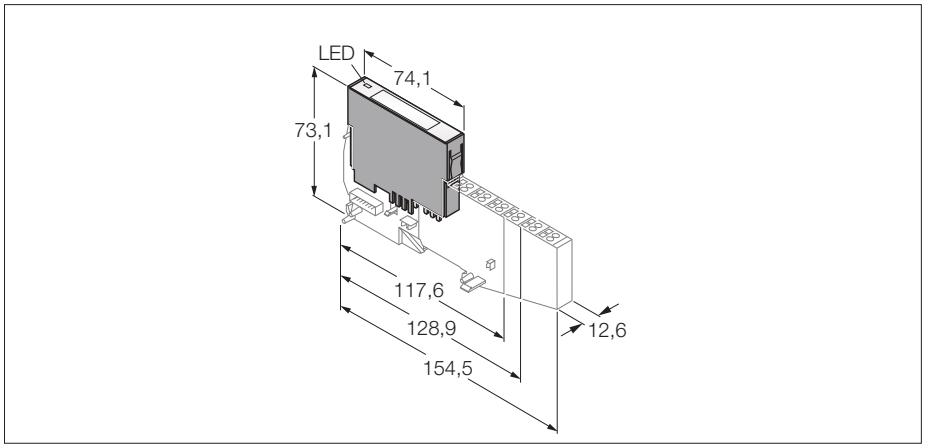
F272 - 2-wire technology



F271 - 4-wire technology



BL20 electronic module
2 analog inputs
BL20-2AI-U(-10/0...+10VDC)



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog input -10/0…+10 VDC

Type	BL20-2AI-U(-10/0...+10VDC)
Ident-No.	6827022
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 12 mA
Rated current from module bus	≤ 35 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	-10/0…+10 VDC
Input resistance	< 98,5
Max. input voltage	35 V constant
Electrical isolation	electronics for the field level
Maximum limiting frequency, analog	< 50 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 150 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Delta Sigma
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of diagnostic bytes	2
Number of parameter bytes	2
Operating temperature	0 to +55 °C

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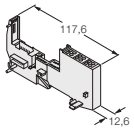
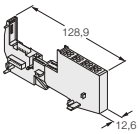
BL20 electronic module
2 analog inputs
BL20-2AI-U(-10/0...+10VDC)

Industrial Automation

Compatible base modules

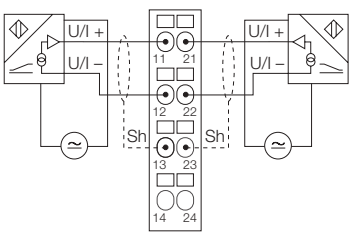
Dimensions	Type	Connection
	**6827044 BL20-S3T-SBB** Tension spring connection with external sensor supply **6827045 BL20-S3S-SBB** Screw connection with external sensor supply	F210

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F211, F212

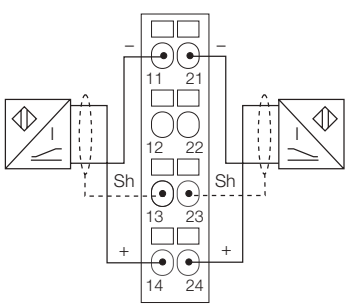
5

Connection

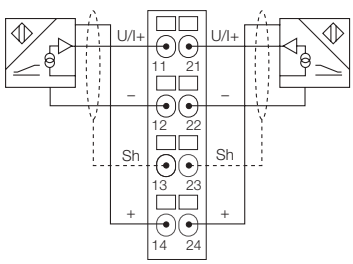
F210 - Wiring diagram



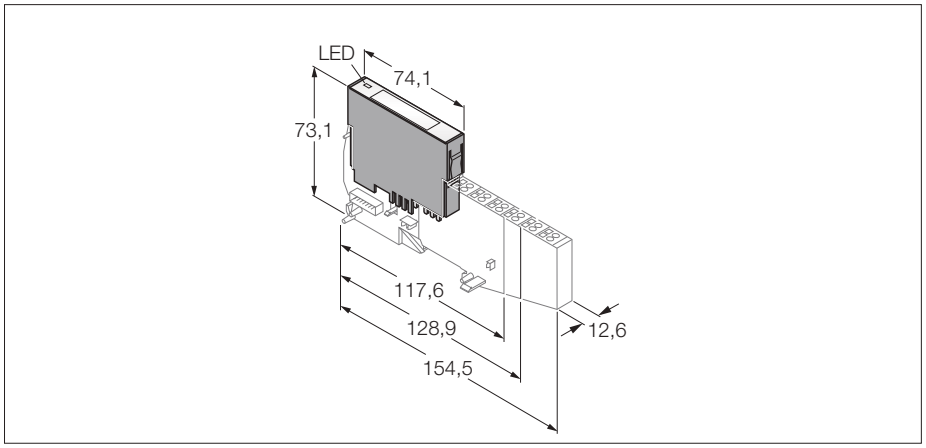
F211 - 2-wire technology



F212 - 3-wire technology



BL20 electronic module
2 analog inputs for temperature measurement
BL20-2AI-PT/NI-2/3



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog inputs for PT100, PT500 and PT1000 as well as for Ni100 and Ni1000

Type	BL20-2AI-PT/NI-2/3
Ident-No.	6827017
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 30 mA
Rated current from module bus	≤ 45 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	PT100, PT500, PT1000, Ni100, Ni1000
Electrical isolation	electronics for the field level
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Cycle time	≤ 130 ms
Measuring current	< 1 mA
Number of diagnostic bytes	2
Number of parameter bytes	4
Operating temperature	0 to +55 °C

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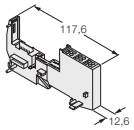
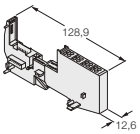
BL20 electronic module
2 analog inputs for temperature measurement
BL20-2AI-PT/NI-2/3

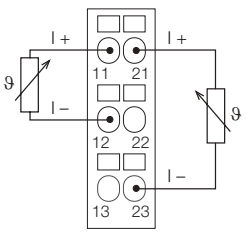
Compatible base modules

Dimensions	Type	Connection
	**6827044 BL20-S3T-SBB** Tension spring connection **6827045 BL20-S3S-SBB** Screw connection	F213
Dimensions	**Type**	**Connection**
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F214

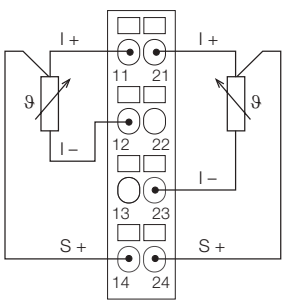
5

Connection

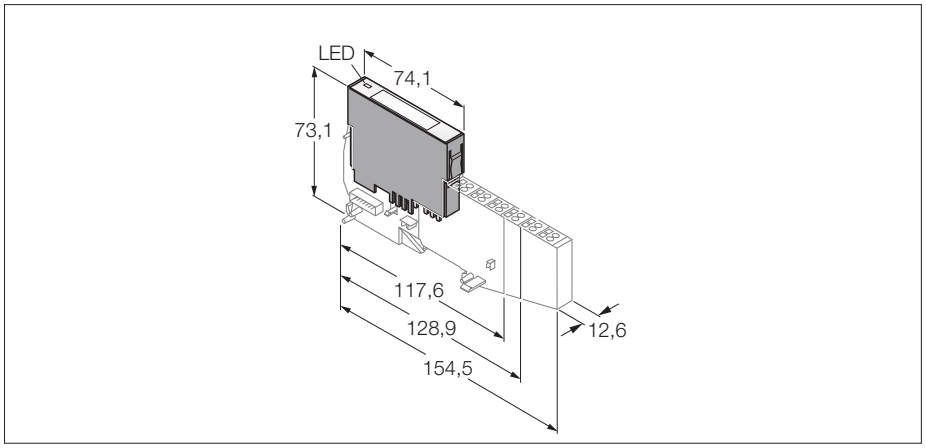
F213 - 2-wire technology



F214 - 3-wire technology



BL20 electronic module
2 analog inputs for temperature measurement
BL20-2AI-THERMO-PI



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog inputs for connection of thermoelements, types B, E, J, K, N, R, S and T
- Base module with internal cold junction point compensation

Type	BL20-2AI-THERMO-PI
Ident-No.	6827020
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 30 mA
Rated current from module bus	≤ 45 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	types B, E, J, K, N, R, S, T
Electrical isolation	electronics for the field level
Voltage resolution	+-50mV: < 2µV
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Cycle time	≤ 60 ms
Number of diagnostic bytes	2
Number of parameter bytes	2
Operating temperature	0 to +55 °C

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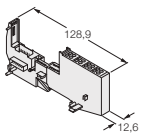
BL20 electronic module
2 analog inputs for temperature measurement
BL20-2AI-THERMO-PI

Industrial Automation

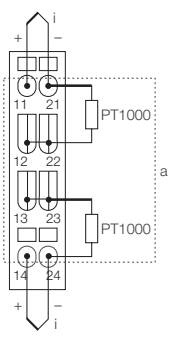
Compatible base modules

Dimensions	Type	Connection
	**6827048 BL20-S4T-SBBS-CJ** Tension spring connection **6827049 BL20-S4S-SBBS-CJ** Screw connection	F215

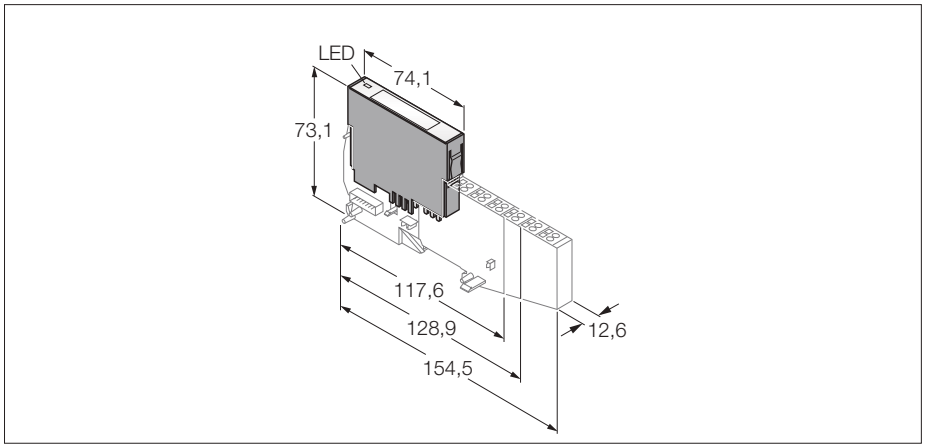
5

Connection

F215 - Wiring diagram



BL20 electronic module
4 analog inputs
BL20-4AI-U/I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 analog inputs
- 0/4…20 mA or –10/0…+10 VDC
- Selectable per channel

Type	BL20-4AI-U/I
Ident-No.	6827217
Number of channels	4
Rated voltage from the supply terminal	24 VDC
Max. input current	50 mA
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 50 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	0/4 … 20 mA or -10/0 … +10 VDC
Input resistance	< 62 Ω (current) or > 98.5 kΩ (voltage)
Max. input current	50 mA
Max. input voltage	35 V constant
Electrical isolation	electronics for the field level
Maximum limiting frequency, analog	< 20 Hz
Basic fault limit at 23 °C	< 0.3 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measuring principle	Delta Sigma
Number of diagnostic bytes	4
Number of parameter bytes	4
Operating temperature	0 to +55 °C

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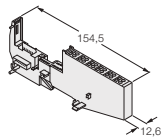
BL20 electronic module
4 analog inputs
BL20-4AI-U/I

Industrial Automation

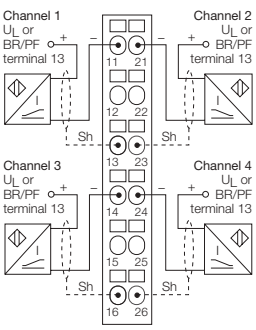
Compatible base modules

Dimensions	Type	Connection
	**6827064 BL20-S6T-SBCSBC** Tension spring connection **6827066 BL20-S6S-SBCSBC** Screw connection	F216, F217, F218

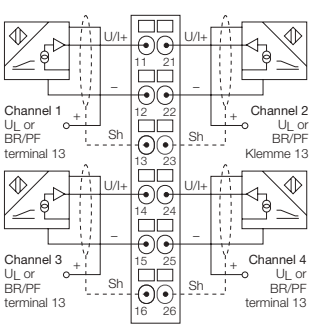
5

Connection

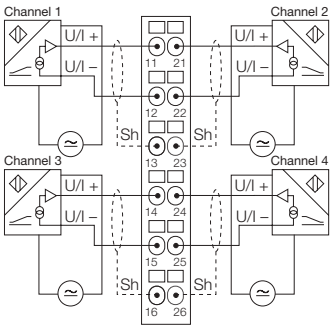
F216 - 2-wire technology



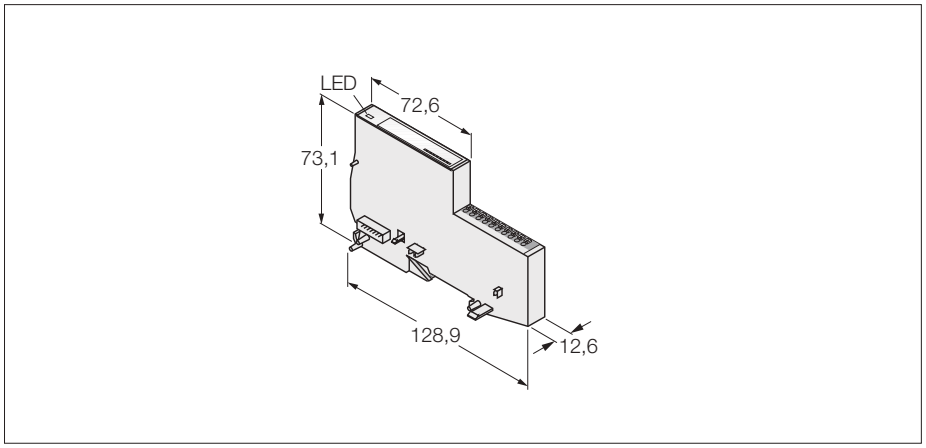
F217 - 3-wire technology



F218 - 4-wire technology



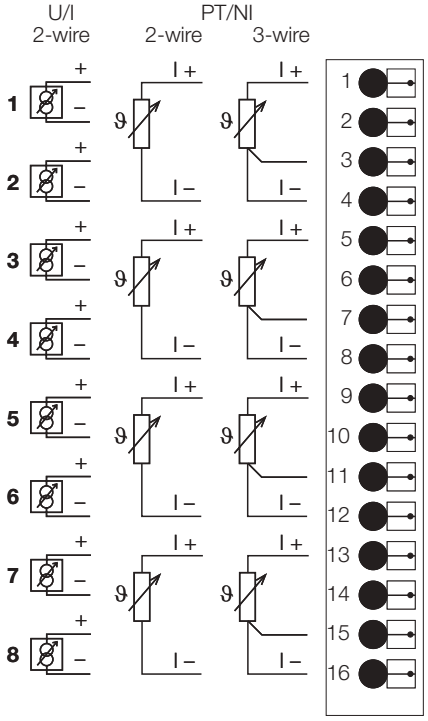
BL20 electronic module
8 2-wire analog inputs U/I resp.
4 2/3-wire PT/NI inputs
BL20-E-8AI-U/I-4PT/NI



- Independent of the type of fieldbus and connection technology used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 2-wire analog inputs U/I
- Passive inputs – external power supply
- 0…20mA, 4…20mA,-10…+10VDC or 0…+10VDC, selectable per channel, resp.
- 4PT/NI inputs (always 2 analog inputs are combined to a PT/Ni 2/3-wire input)

Type	BL20-E-8AI-U/I-4PT/NI
Ident-No.	6827325
Number of channels	8/4
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 35 mA
Rated current from module bus	≤ 35 mA
Power loss, typical	≤ 1 W
Inputs	
Input type	0/4…20 mA, -10/0…+10 VDC, PT100, PT200, PT500, PT1000, NI100, NI1000, 0…250 Ω, 0…400 Ω, 0…800 Ω, 0…2000 Ω, 0…4000 Ω
Input resistance	< 62 Ω (current) or > 98.5 kΩ (voltage)
Max. input current	50 mA
Max. input voltage	-20 VDC < U < 20 VDC (externally supplied)
Basic fault limit at 23 °C	< 0.2 %
Temperature coefficient	< 200 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Conversion time	< (44 × [number of channels being activated during parametrization]) ms
Number of diagnostic bytes	8
Number of parameter bytes	8
Operating temperature	0 to +55 °C

Terminal connection



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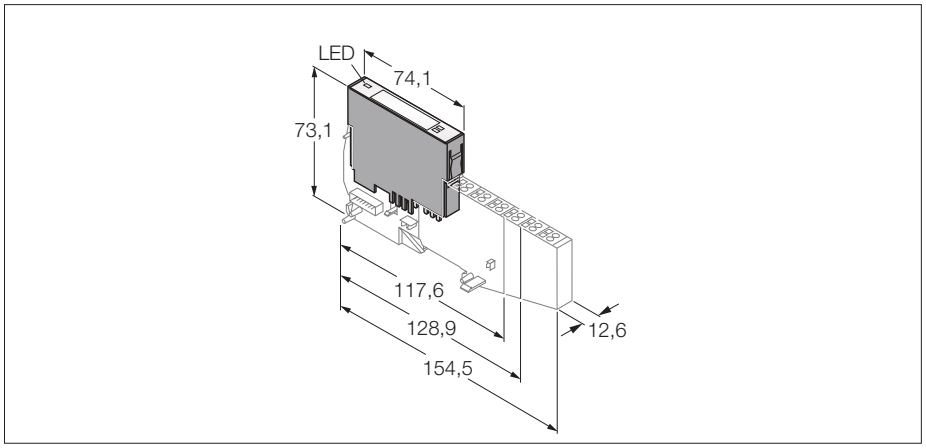
BL20 electronic module
2 digital outputs
BL20-2DO-24VDC-0.5A-N



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 digital outputs, 24 VDC
- 0.5 A max.
- npn

Type	BL20-2DO-24VDC-0.5A-N
Ident-No.	6827025
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 32 mA
Power loss, typical	≤ 1 W
Outputs	
Output type	npn
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.1 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 12 W
Switching frequency, resistive	< 100 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 10 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	2
Operating temperature	0 to +55 °C

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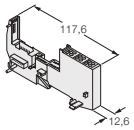
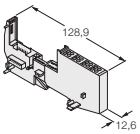
BL20 electronic module
2 digital outputs
BL20-2DO-24VDC-0.5A-N

Industrial Automation

Compatible base modules

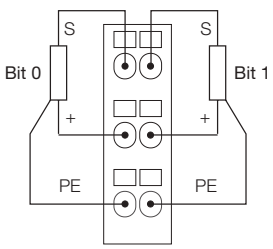
Dimensions	Type	Connection
	**6827058 BL20-S3T-SBC** Tension spring connection, access to C rail **6827059 BL20-S3S-SBC** Screw connection, access to C rail	F221

Dimensions	Type	Connection
	**6827063 BL20-S4T-SBCS** Tension spring connection, access to C rail **6827060 BL20-S4S-SBCS** Screw connection, access to C rail	F222

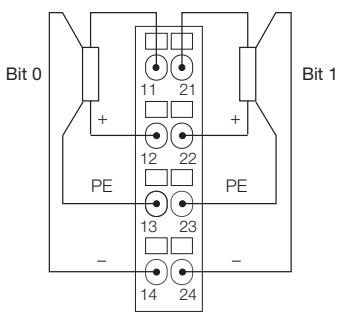
5

Connection

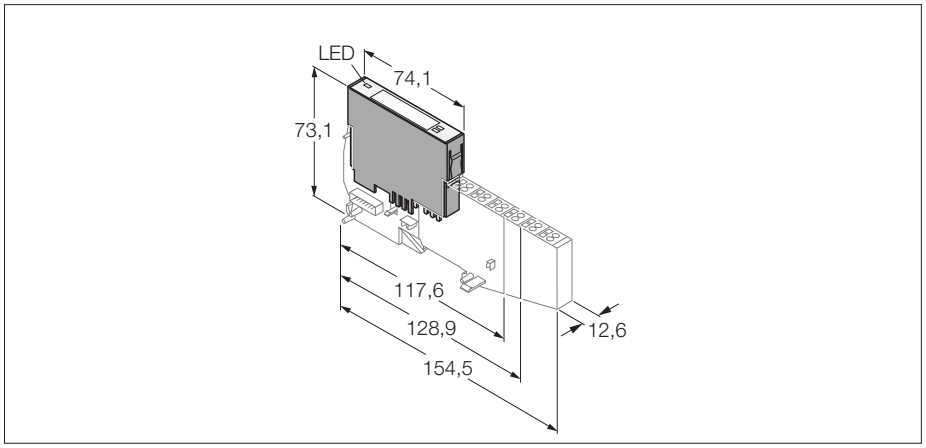
F221 - Wiring diagram



F222 - Wiring diagram



BL20 electronic module
2 digital outputs
BL20-2DO-24VDC-2A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 digital outputs, 24 VDC
- 2 A max.
- pnp

Type	BL20-2DO-24VDC-2A-P
Ident-No.	6827026
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 33 mA
Power loss, typical	≤ 1 W
Outputs	
Output type	pnp
Output voltage	24 VDC
Output current per channel	2 A
Output delay	0.1 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 12 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 6 W
Switching frequency, resistive	< 5000 Hz
Switching frequency, lamp load	< 10 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	2
Operating temperature	0 to +55 °C

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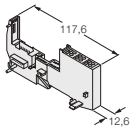
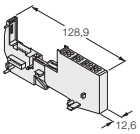
BL20 electronic module
2 digital outputs
BL20-2DO-24VDC-2A-P

Industrial Automation

Compatible base modules

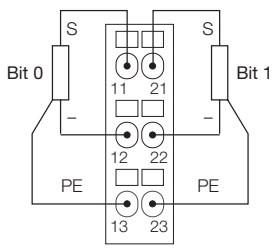
Dimensions	Type	Connection
	**6827058 BL20-S3T-SBC** Tension spring connection, access to C rail **6827059 BL20-S3S-SBC** Screw connection, access to C rail	F219

Dimensions	Type	Connection
	**6827063 BL20-S4T-SBCS** Tension spring connection, access to C rail **6827060 BL20-S4S-SBCS** Screw connection, access to C rail	F220

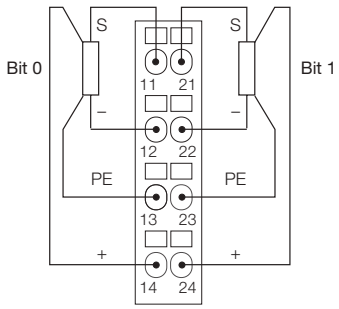
5

Connection

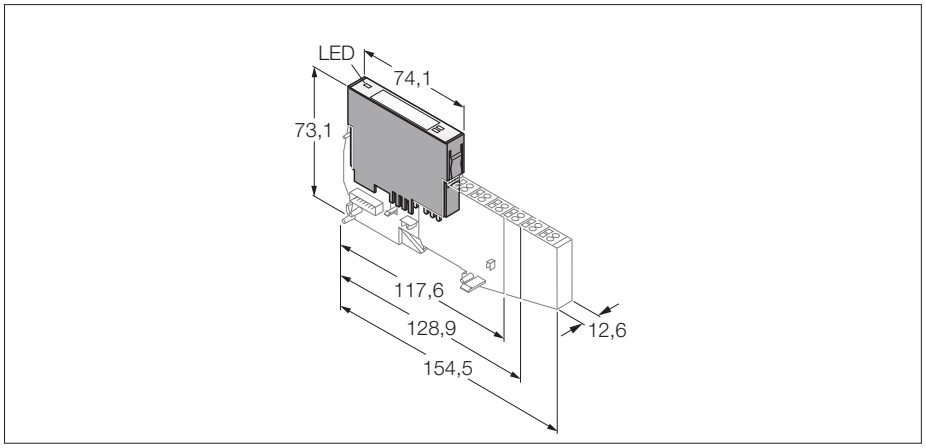
F219 - Wiring diagram



F220 - Wiring diagram



BL20 electronic module
2 digital outputs
BL20-2DO-120/230VAC-0.5A



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 digital outputs, 120/230 VAC
- 0.5 A max.

Type	BL20-2DO-120/230VAC-0.5A
Ident-No.	6827137
Number of channels	2
Rated voltage from the supply terminal	120 / 230 VAC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 35 mA
Power loss, typical	≤ 1 W
Outputs	
Output voltage	120 / 230 VAC
Output current per channel	0.5 A
Output delay	0.1 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	2
Operating temperature	0 to +55 °C

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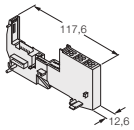
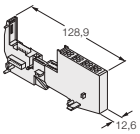
BL20 electronic module
2 digital outputs
BL20-2DO-120/230VAC-0.5A

Industrial Automation

Compatible base modules

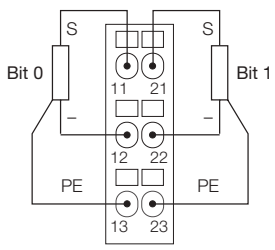
Dimensions	Type	Connection
	**6827058 BL20-S3T-SBC** Tension spring connection, access to C rail **6827059 BL20-S3S-SBC** Screw connection, access to C rail	F219

Dimensions	Type	Connection
	**6827063 BL20-S4T-SBCS** Tension spring connection, access to C rail **6827060 BL20-S4S-SBCS** Screw connection, access to C rail	F220

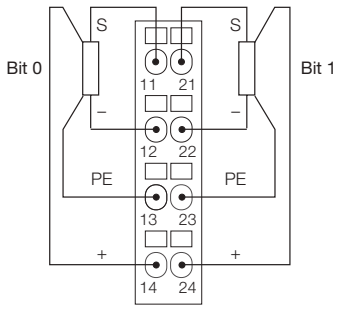
5

Connection

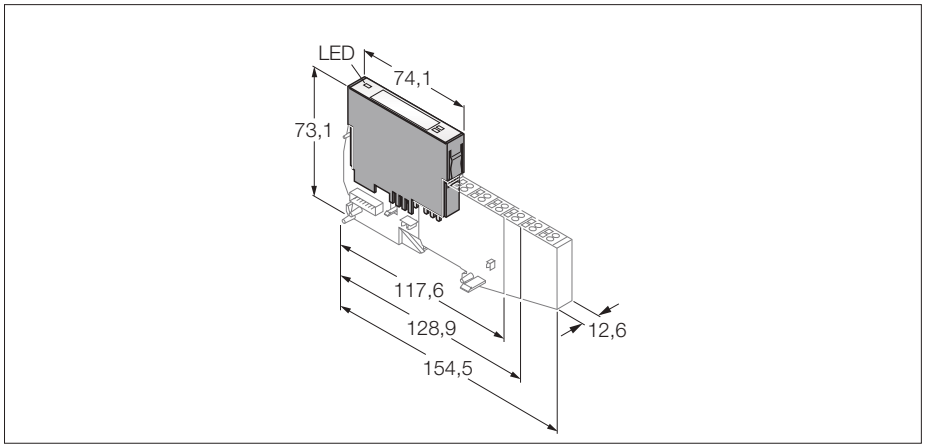
F219 - Wiring diagram



F220 - Wiring diagram



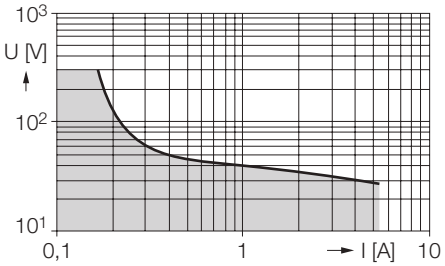
BL20 electronic module
relay module, 2 × normally open
BL20-2DO-R-NO



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 normally open channels

Type	BL20-2DO-R-NO
Ident-No.	6827029
Number of channels	2, normally open
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 28 mA
Power loss, typical	≤ 1 W
Outputs	
Load type	resistive, inductive, lamp load
Rated load voltage	230/30 VAC/DC
Simultaneity factor	1
Life at 230 VAC, 5A	100000
Life at 230 VAC, 0.5A	1000000
Output current with DC voltage (resistive)	see load limit curve
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

Load limit curve



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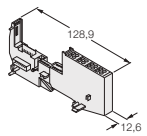
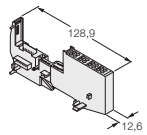
BL20 electronic module
relay module, 2 × normally open
BL20-2DO-R-NO

Industrial Automation

Compatible base modules

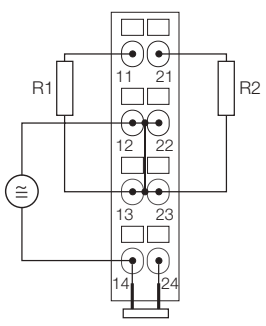
Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection With externally applied supply and cross connected root 1) Jumpered in the electronics 2) cross-connection via QVR in the base	F223, F225

Dimensions	Type	Connection
	**6827063 BL20-S4T-SBCS** Tension spring connection **6827060 BL20-S4S-SBCS** Screw connection With supply via C rail and cross connected root 1) C rail 2) cross-connection via QVR in the base; max. 8 relay modules	F224, F226

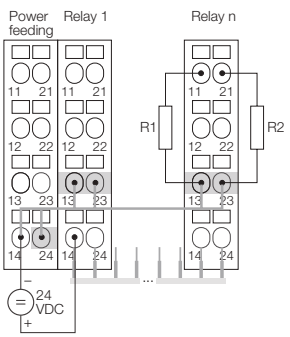
5

Connection

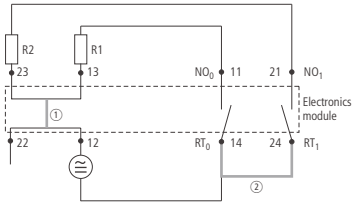
F223 - Wiring diagram



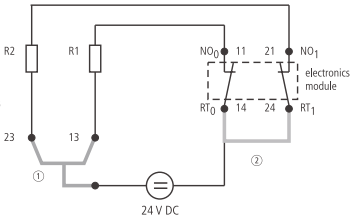
F224 - Wiring diagram



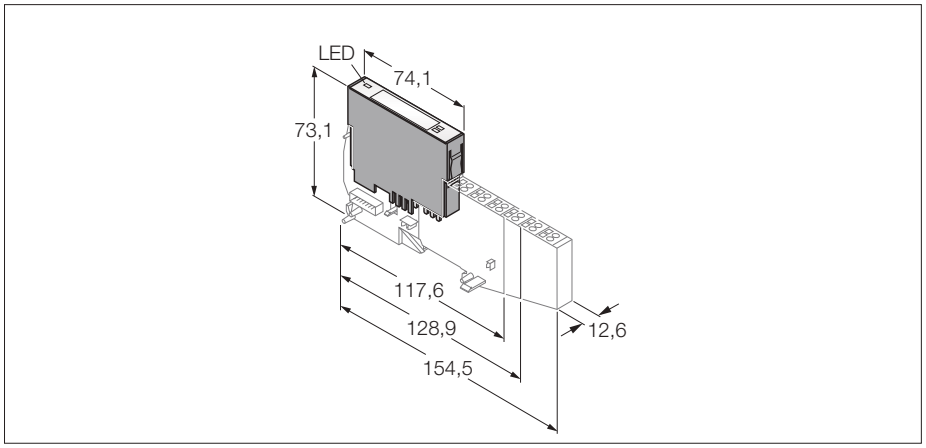
F225 - module wiring diagram



F226 - module wiring diagram



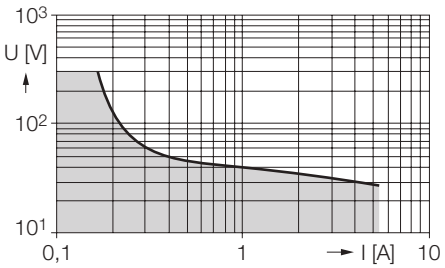
BL20 electronic module
relay module, 2 × normally closed
BL20-2DO-R-NC



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 normally closed channels

Type	BL20-2DO-R-NC
Ident-No.	6827028
Number of channels	2, normally closed
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 28 mA
Power loss, typical	≤ 1 W
Outputs	
Load type	resistive, inductive, lamp load
Rated load voltage	230/30 VAC/DC
Simultaneity factor	1
Life at 230 VAC, 5A	100000
Life at 230 VAC, 0.5A	1000000
Output current with DC voltage (resistive)	see load limit curve
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

Load limit curve



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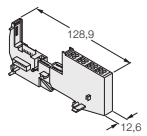
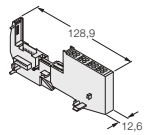
BL20 electronic module
relay module, 2 × normally closed
BL20-2DO-R-NC

Compatible base modules

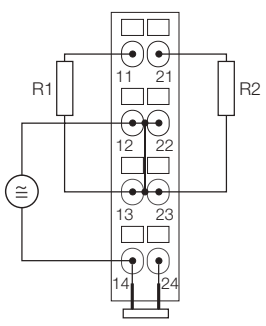
Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection With externally applied supply and cross connected root 1) Jumpered in the electronics 2) cross-connection via QVR in the base	F223, F227

Dimensions	Type	Connection
	**6827063 BL20-S4T-SBCS** Tension spring connection **6827060 BL20-S4S-SBCS** Screw connection With supply via C rail and cross connected root 1) C rail 2) cross-connection via QVR in the base; max. 8 relay modules	F224, F228

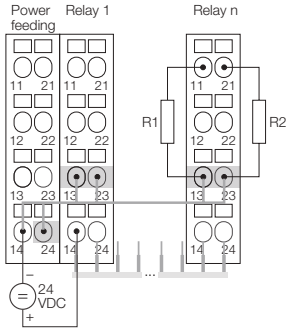
5

Connection

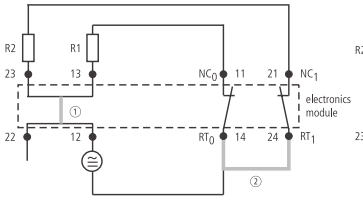
F223 - Wiring diagram



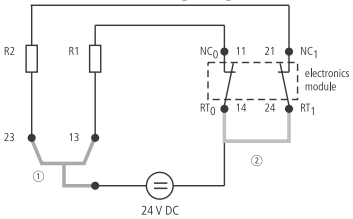
F224 - Wiring diagram



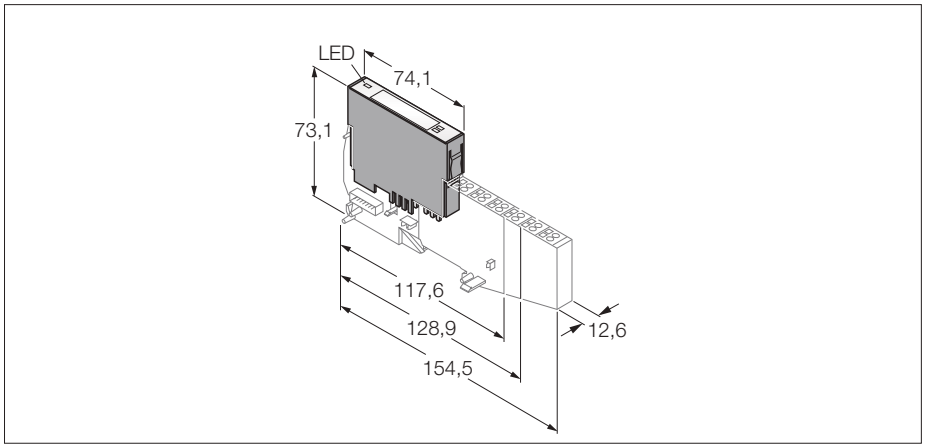
F227 - module wiring diagram



F228 - module wiring diagram



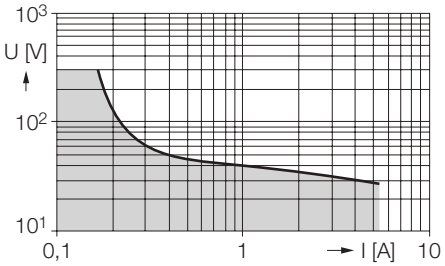
BL20 electronic module
relay module, 2 × change-over
BL20-2DO-R-CO



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 change-over channels

Type	BL20-2DO-R-CO
Ident-No.	6827030
Number of channels	2, change-over, galvanically isolated
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 28 mA
Power loss, typical	≤ 1 W
Outputs	
Load type	resistive, inductive, lamp load
Rated load voltage	230/30 VAC/DC
Simultaneity factor	1
Life at 230 VAC, 5A	100000
Life at 230 VAC, 0.5A	1000000
Output current with DC voltage (resistive)	see load limit curve
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

Load limit curve



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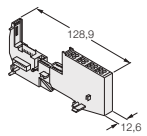
BL20 electronic module
relay module, 2 × change-over
BL20-2DO-R-CO

Industrial Automation

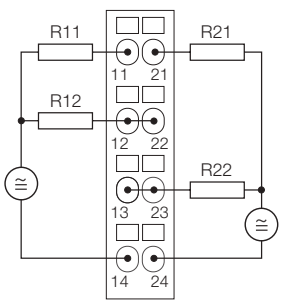
Compatible base modules

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F229, F230

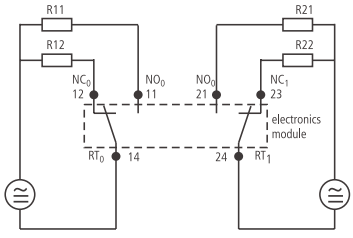
5

Connection

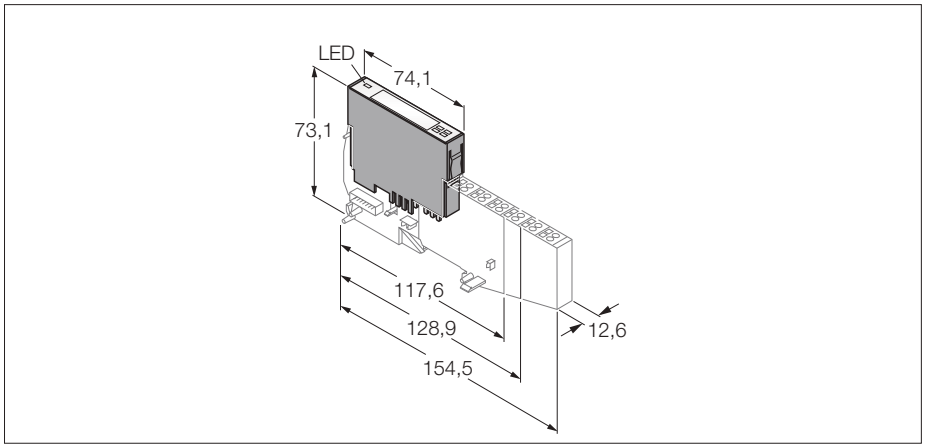
F229 - Wiring diagram



F230 - module wiring diagram



BL20 electronic module
4 digital outputs
BL20-4DO-24VDC-0.5A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 digital outputs, 24 VDC
- 0.5 A max.
- pnp

Type	BL20-4DO-24VDC-0.5A-P
Ident-No.	6827023
Number of channels	4
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 25 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1 W
Outputs	
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.25 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 6 W
Switching frequency, resistive	< 5000 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 10 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	1
Operating temperature	0 to +55 °C

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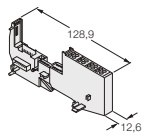
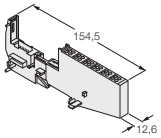
Compatible base modules

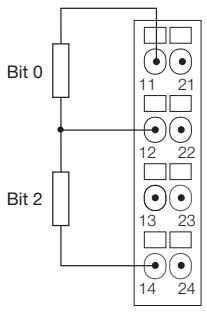
Dimensions	Type	Connection
	**6827063 BL20-S4T-SBCS** Tension spring connection, access to C rail **6827060 BL20-S4S-SBCS** Screw connection, access to C rail	F231

Dimensions	Type	Connection
	**6827064 BL20-S6T-SBCSBC** Tension spring connection, access to C rail **6827066 BL20-S6S-SBCSBC** Screw connection, access to C rail	F232

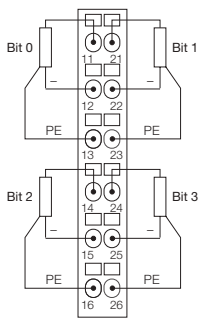
5

Connection

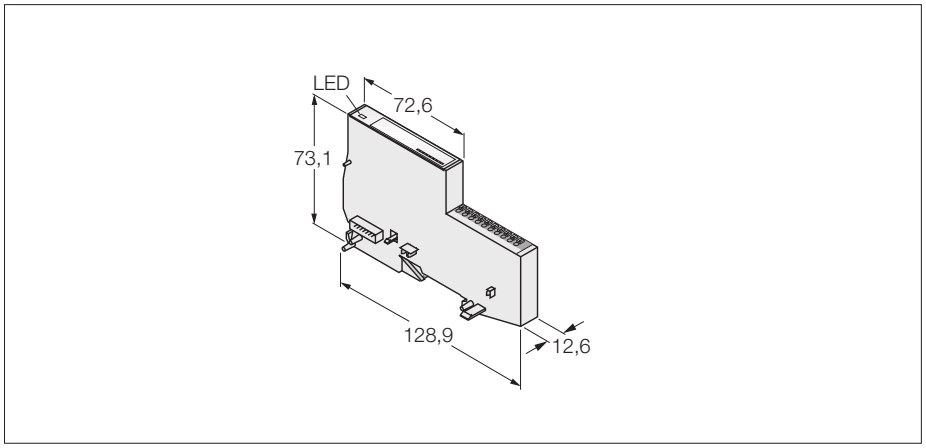
F231 - Wiring diagram



F232 - Wiring diagram



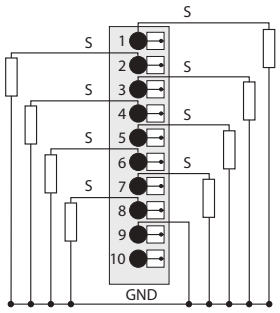
BL20 Economy Module
8 digital outputs
BL20-E-8DO-24VDC-0.5A-P



- Independent of the type of fieldbus used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 8 digital outputs, 24 VDC
- 0.5 A max.
- pnp

Type	BL20-E-8DO-24VDC-0.5A-P
Ident-No.	6827226
Number of channels	8
Rated voltage from the supply terminal	24 VDC
Admissible range	18…30 VDC
Rated current from field supply	≤ 3 mA
Rated current from module bus	≤ 15 mA
Power loss, typical	≤ 1.5 W
Outputs	
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Lamp load	< 6 W
Switching frequency, resistive	< 100 Hz
Switching frequency, lamp load	< 10 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

Terminal connection



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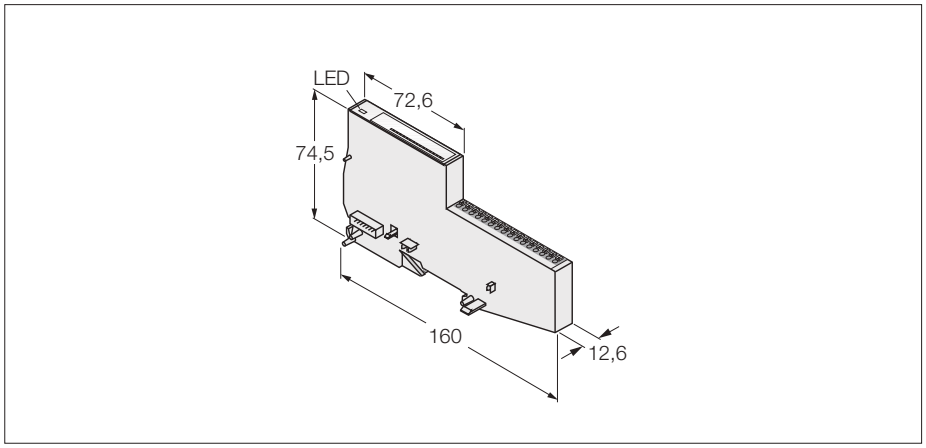
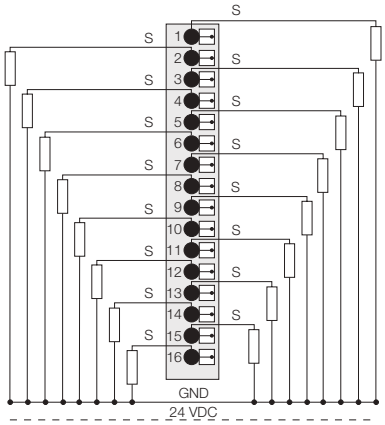
BL20 Economy Module
16 digital outputs
BL20-E-16DO-24VDC-0.5A-P



- Independent of the type of fieldbus used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 16 digital outputs, 24 VDC
- 0.5 A max.
- pnp

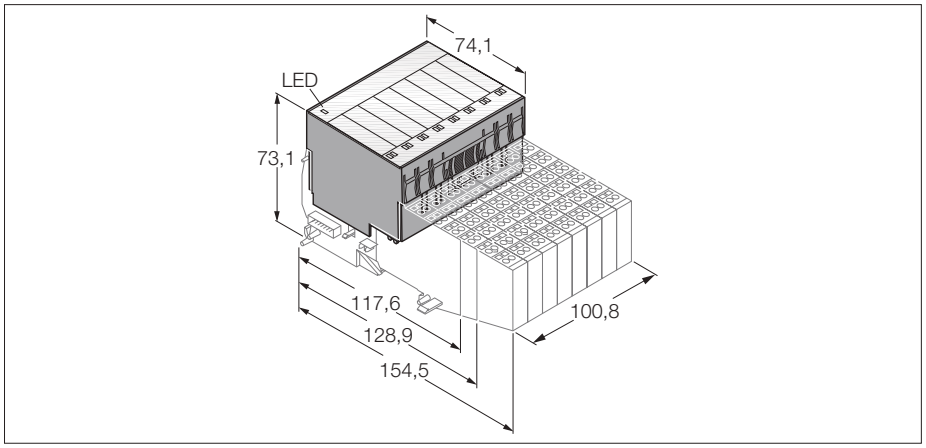
Type	BL20-E-16DO-24VDC-0.5A-P
Ident-No.	6827230
Number of channels	16
Rated voltage from the supply terminal	24 VDC
Admissible range	18…30 VDC
Rated current from field supply	≤ 3 mA
Rated current from module bus	≤ 25 mA
Power loss, typical	≤ 1.5 W
Outputs	
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Lamp load	< 6 W
Switching frequency, resistive	< 100 Hz
Switching frequency, lamp load	< 10 Hz
Short-circuit protection	yes
Simultaneity factor	0.5
Electrical isolation	electronics for the field level
Operating temperature	0 to +55 °C

Terminal connection



5

BL20 electronic module
16 digital outputs
BL20-16DO-24VDC-0.5A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 16 digital outputs, 24 VDC
- 0.5 A max.
- pnp

Type	BL20-16DO-24VDC-0.5A-P
Ident-No.	6827027
Number of channels	16
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 120 mA
Power loss, typical	≤ 4 W
Outputs	
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.1 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 3 W
Switching frequency, resistive	< 100 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	4
Operating temperature	0 to +55 °C

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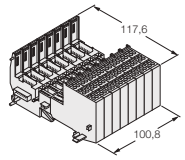
BL20 electronic module
16 digital outputs
BL20-16DO-24VDC-0.5A-P

Industrial Automation

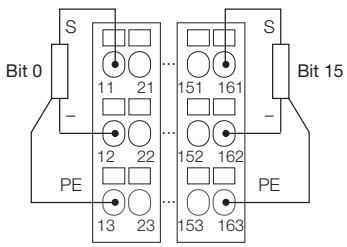
Compatible base modules

Dimensions	Type	Connection
	**6827061 BL20-B3T-SBC** Tension spring connection, access to C rail **6827062 BL20-B3S-SBC** Screw connection, access to C rail	F233

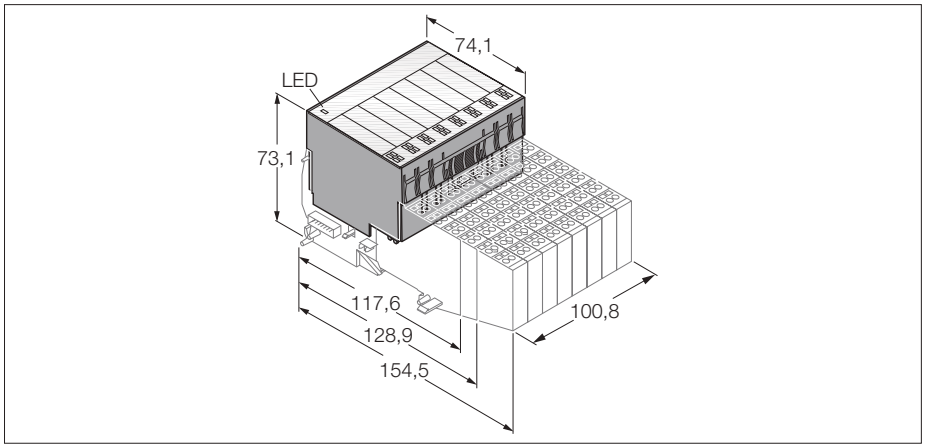
5

Connection

F233 - Wiring diagram



BL20 electronic module
32 digital outputs
BL20-32DO-24VDC-0.5A-P



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 32 digital outputs, 24 VDC
- 0.5 A max.
- pnp

Type	BL20-32DO-24VDC-0.5A-P
Ident-No.	6827220
Number of channels	32
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 120 mA
Power loss, typical	≤ 4 W
Outputs	
Output type	pnp
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.3 ms
Load type	resistive, inductive, lamp load
Load resistance, resistive	> 48 Ω
Load resistance, inductive	< 1.2 H
Lamp load	< 6 W
Switching frequency, resistive	< 100 Hz
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level
Number of diagnostic bits	8
Operating temperature	0 to +55 °C

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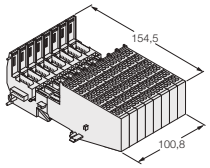
BL20 electronic module
32 digital outputs
BL20-32DO-24VDC-0.5A-P

Industrial Automation

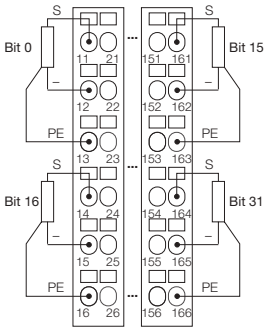
Compatible base modules

Dimensions	Type	Connection
	**6827218 BL20-B6T-SBCSBC** Tension spring connection, access to C rail **6827219 BL20-B6S-SBCSBC** Screw connection, access to C rail	F234

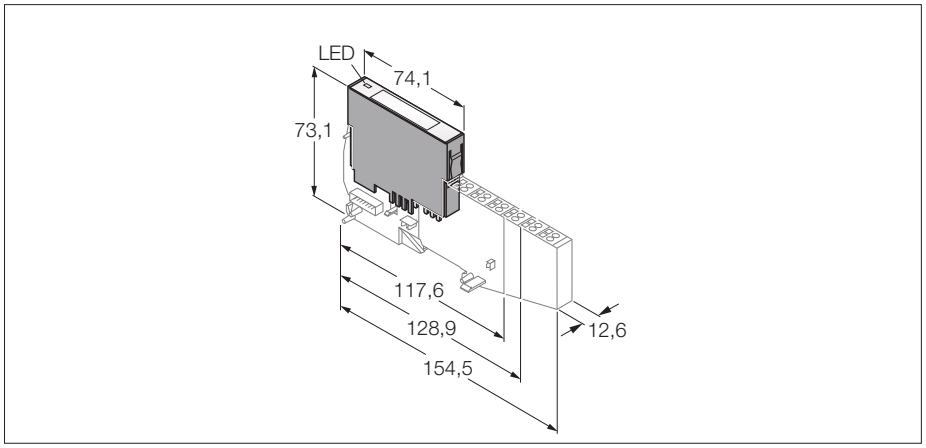
5

Connection

F234 - Wiring diagram



BL20 electronic module
2 analog outputs
BL20-2AO-I(4...20MA)



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog outputs 0/4…20 mA

Type	BL20-2AO-I(4...20MA)
Ident-No.	6827034
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 40 mA
Power loss, typical	≤ 1 W
Outputs	
Output type	0/4…20 mA
Load resistance, resistive	< 0.45 kΩ
Load resistance, inductive	< 1 mH
Electrical isolation	electronics for the field level
Transmission frequency	< 200 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 150 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit full range left justified
Number of parameter bytes	6
Operating temperature	0 to +55 °C

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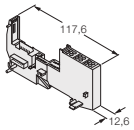
BL20 electronic module
2 analog outputs
BL20-2AO-I(4...20MA)

Industrial Automation

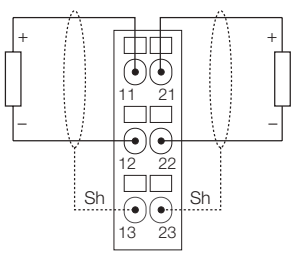
Compatible base modules

Dimensions	Type	Connection
	**6827044 BL20-S3T-SBB** Tension spring connection **6827045 BL20-S3S-SBB** Screw connection	F236

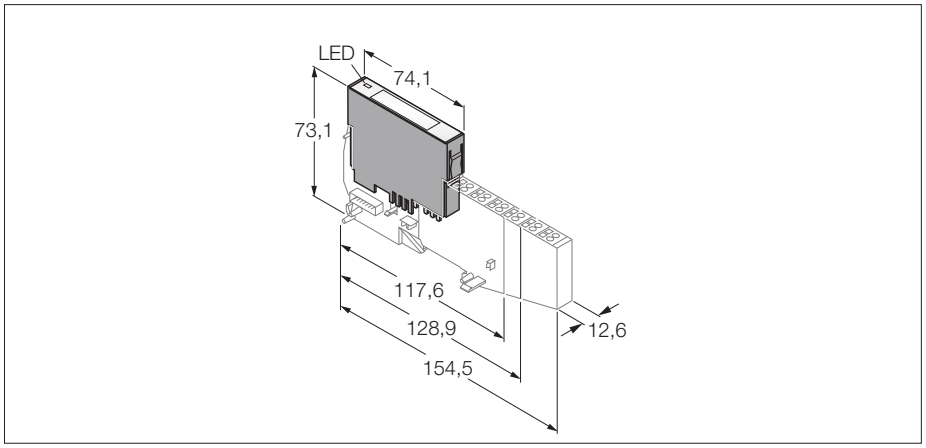
5

Connection

F236 - Wiring diagram



BL20 electronic module
2 analog outputs
BL20-2AOH-I



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog outputs 0/4…20 mA
- HART®

Type	BL20-2AOH-I
Ident-No.	6827332
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1 W
Outputs	
Output type	0/4…20 mA
Load resistance, resistive	< 0.60 kΩ
Load resistance, inductive	< 1 mH
Electrical isolation	Electronics to field level, channel to channel
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 150 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer NE43(PA), Extended
Cycle time	≤ 250 ms
Number of parameter bytes	12
Operating temperature	0 to +55 °C

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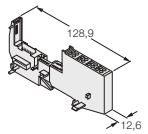
BL20 electronic module
2 analog outputs
BL20-2AOH-I

Industrial Automation

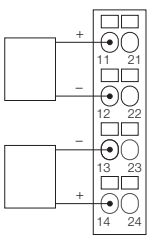
Compatible base modules

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F286

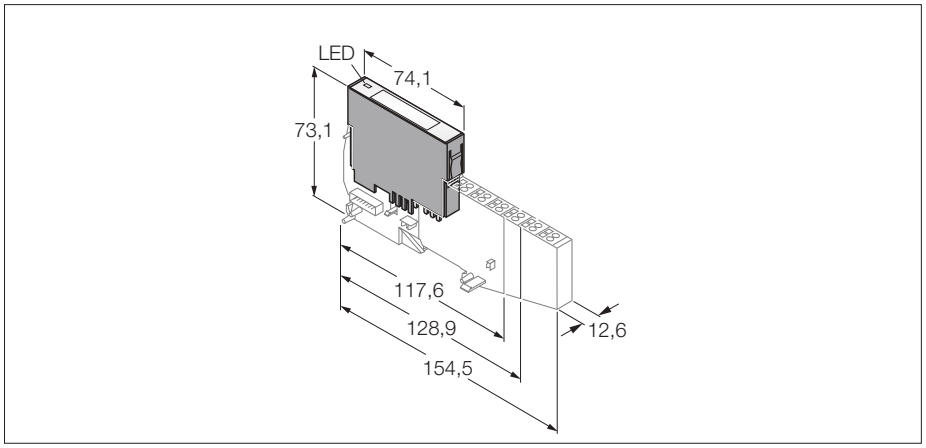
5

Connection

F286 - Wiring diagram



BL20 electronic module
2 analog outputs
BL20-2AO-U(-10/0...+10VDC)



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 analog input -10/0…+10 VDC

Type	BL20-2AO-U(-10/0...+10VDC)
Ident-No.	6827033
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 50 mA
Rated current from module bus	≤ 43 mA
Power loss, typical	≤ 1 W
Outputs	
Output type	-10/0…+10 VDC
Load resistance, resistive	> 1 kΩ
Load resistance, capacitive	> 1 µF
Electrical isolation	electronics for the field level
Transmission frequency	< 100 Hz
Basic fault limit at 23 °C	< 0.2 %
Repeatability	0.05 %
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Measured-value display	16 bit signed integer 12 bit signed integer left justified 12 bit full range left justified
Number of parameter bytes	6
Operating temperature	0 to +55 °C

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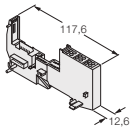
BL20 electronic module
2 analog outputs
BL20-2AO-U(-10/0...+10VDC)

Industrial Automation

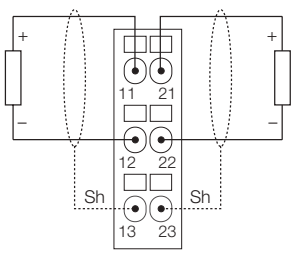
Compatible base modules

Dimensions	Type	Connection
	**6827044 BL20-S3T-SBB** Tension spring connection **6827045 BL20-S3S-SBB** Screw connection	F236

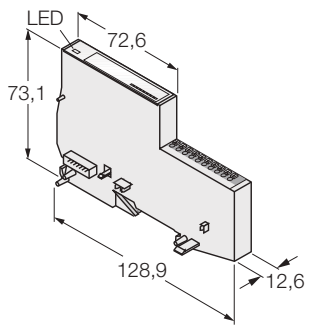
5

Connection

F236 - Wiring diagram



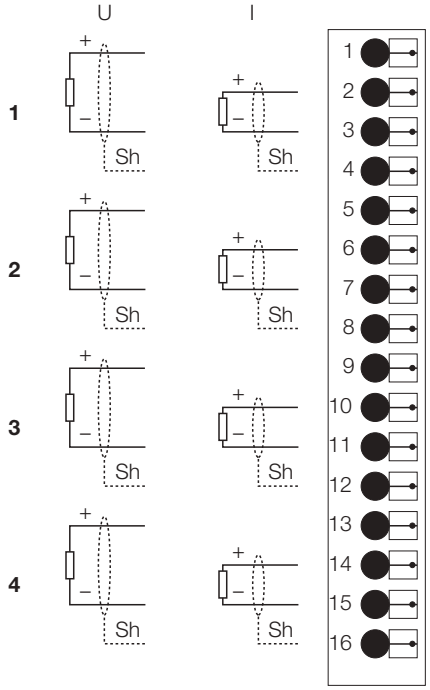
BL20 Economy Module
4 analog outputs
BL20-E-4AO-U/I



- Independent of the type of fieldbus used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 4 analog outputs
- 0…20 mA, 4…20 mA,-10…+10 VDC or 0…+10VDC,
- Selectable per channel

Type	BL20-E-4AO-U/I
Ident-No.	6827328
Number of channels	4
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 130 mA
Rated current from module bus	≤ 50 mA
Power loss, typical	≤ 2.6 W
Outputs	
Output type	0…20 mA, 4…20 mA, -10…+10 VDC or 0…+10 VDC
Load resistance, resistive	< 0.45 (current) or > 1 (voltage) kΩ
Load resistance, inductive	< 0.01 (voltage) mH
Load resistance, capacitive	< 1 (current) µF
Electrical isolation	electronics for the field level
Basic fault limit at 23 °C	< 0.2 %
Measured-value display	16 bit signed integer
Temperature coefficient	< 300 ppm/°C of full scale
Resolution	16 Bit
Cycle time	≤ 50 ms
Number of diagnostic bytes	4
Number of parameter bytes	12
Operating temperature	0 to +55 °C

Terminal connection



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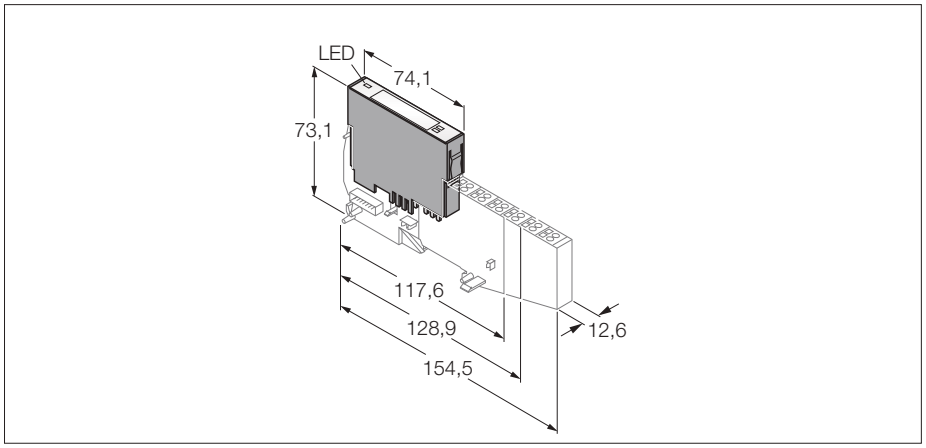
BL20 electronic module
RS232 interface
BL20-1RS232



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Transmission of serial data via RS232 interface
- For connection of different devices, such as printers, scanners or bar code readers

Type	BL20-1RS232
Ident-No.	6827169
Number of channels	1
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 25 mA
Rated current from module bus	≤ 140 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission level active (U RS1)	-15 to -3 VDC
Transmission level inactive (URSO)	3 to 15 VDC
Common-mode range (UGL)	-7 to 12 VDC
Transmission signals	RxD, TxD, RTS, CTS
Data buffer received	128 Byte
Send data buffer	64 Byte
Connection type	full duplex
Transmission rate	300 to 115200 bps
Parameter	transmission rate, diagnostics, data bits, stop bits, XON - character, XOFF - character, parity, flow control
Cable length	15 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	1
Number of parameter bytes	4
Operating temperature	0 to +55 °C

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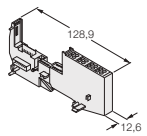
BL20 electronic module
RS232 interface
BL20-1RS232

TURCK
Industrial Automation

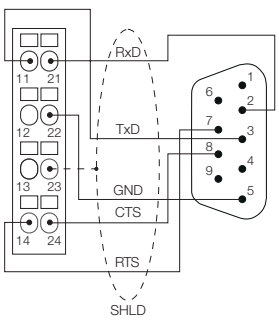
Compatible base modules

Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F238

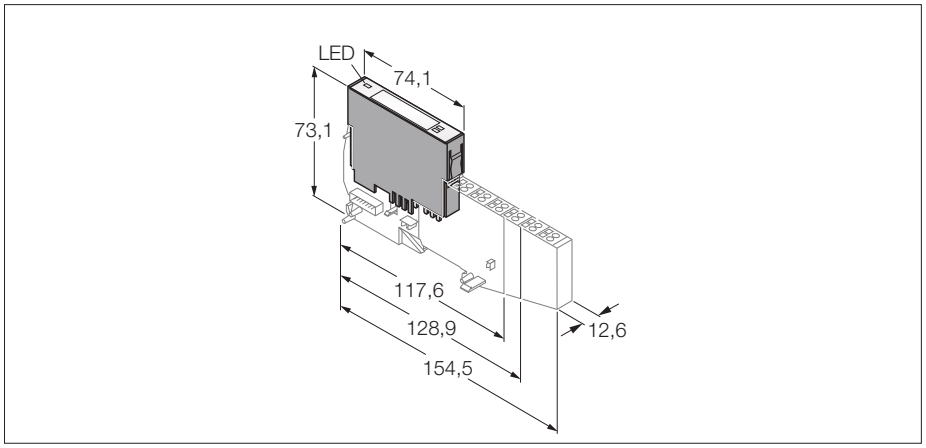
5

Connection

F238 - Wiring diagram



BL20 electronic module
RS485/422 interface
BL20-1RS485/422



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Transmission of serial data via RS485/422 interface
- For connection of different devices, such as printers, scanners or bar code readers

Type	BL20-1RS485/422
Ident-No.	6827165
Number of channels	1
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 25 mA
Rated current from module bus	≤ 60 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission signals	TxD, RxD
Data buffer received	128 Byte
Send data buffer	64 Byte
Connection type	2-wire half duplex or 4-wire full duplex
Transmission rate	300 to 115200 bps
Parameter	RS485/422, transmission rate, diagnostics, data bits, stop bits, XON - character, XOFF - character, parity, flow control
Cable length	30 m
Line impedance	120 Ω
Bus termination	external
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	1
Number of parameter bytes	4
Operating temperature	0 to +55 °C

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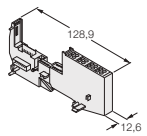
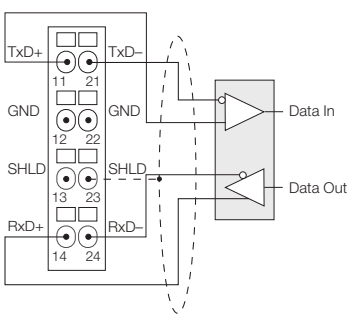
Industrial Automation

Compatible base modules

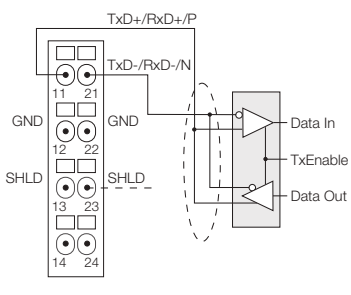
Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F239, F240

Connection

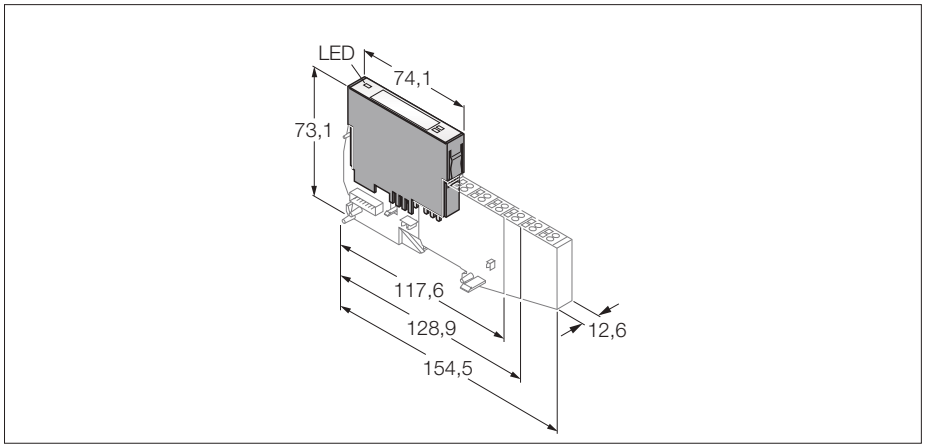
F239 - wiring diagram for RS422



F240 - wiring diagram for RS485



BL20 electronic module
connection of SSI sensors
BL20-1SSI



- Independent of the type of fieldbus and connection technology used
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Connection of SSI sensors
- Maximum bit transmission rate 1 Mbps

Type	BL20-1SSI
Ident-No.	6827166
Number of channels	1
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 25 mA
Rated current from module bus	≤ 50 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission signals	CL, D
Connection type	4-wire full duplex (clock output/signal input)
Transmission rate	62.5 kbps up to 1 Mbps
Parameter	transmission rate, diagnostics, data format (binary / GRAY coded), data frame bits (1-32), number of invalid bits (LSB: 0-15, MSB 0-7)
Cable length	30 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	1
Number of parameter bytes	4
Operating temperature	0 to +55 °C

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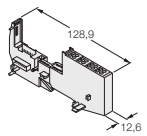
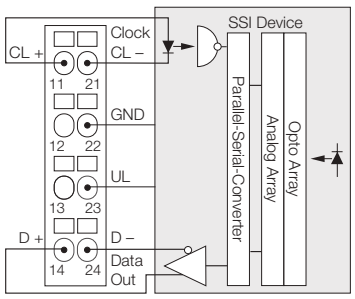
Industrial Automation

Compatible base modules

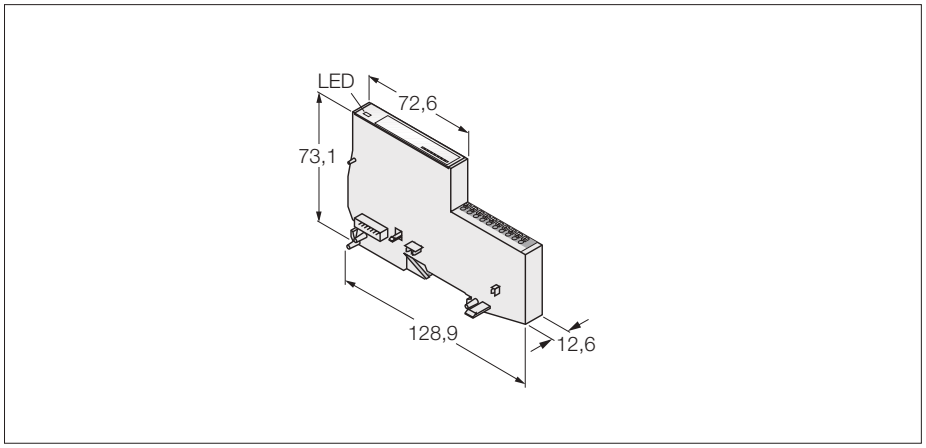
Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F241

Connection

F241 - Wiring diagram



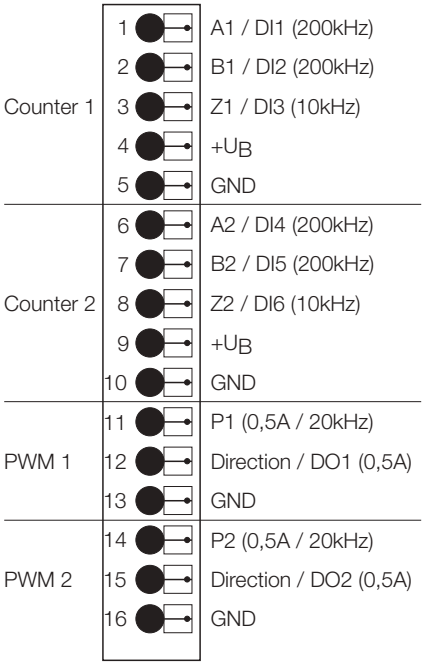
BL20 Economy Module
2 × counter/encoder channels, 2 × PWM outputs
BL20-E-2CNT-2PWM



- Independent of the type of fieldbus used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- 2 × counter/encoder channels 200 kHz
- 2 digital outputs 20kHz / 0.5A
- 2 PWM outputs 20kHz / 0.5A
- Counting mode: Continuous, single or periodic count
- Measuring mode: Frequency, rotation speed or period duration measurement

Type	BL20-E-2CNT-2PWM
Ident-No.	6827341
Number of channels	4
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 20 mA
Rated current from module bus	≤ 50 mA
Power loss, typical	≤ 1 W
Electrical isolation	isolation of electronics and field level via opto-couplers
Low level signal voltage	0…1 VDC / 0…4.5 VDC
High level signal voltage	3.5…30 VDC / 7.5…30 VDC
Low level signal current	0…0.1 mA / 0…0.4 mA
High level signal current	0.3…3 mA / 0.6…3mA
Filter on	> 16 µs (62,5 kHz)
Filter off	< 2.5 µs (200 kHz)
Outputs	
Output type	PNP
Output voltage	24 VDC
Output current per channel	0.5 A
Output delay	0.2 ms
Load type	resistive, inductive, lamp load
Lamp load	< 10 W
Switching frequency	≤ 20000 Hz
Switching frequency, resistive	< 100 Hz
Inductive switching frequency	< 2 Hz
Switching frequency, lamp load	< 10 Hz
Short-circuit protection	yes
Simultaneity factor	1
Number of diagnostic bytes	1
Number of parameter bytes	15
Operating temperature	0 to +55 °C

Terminal connection



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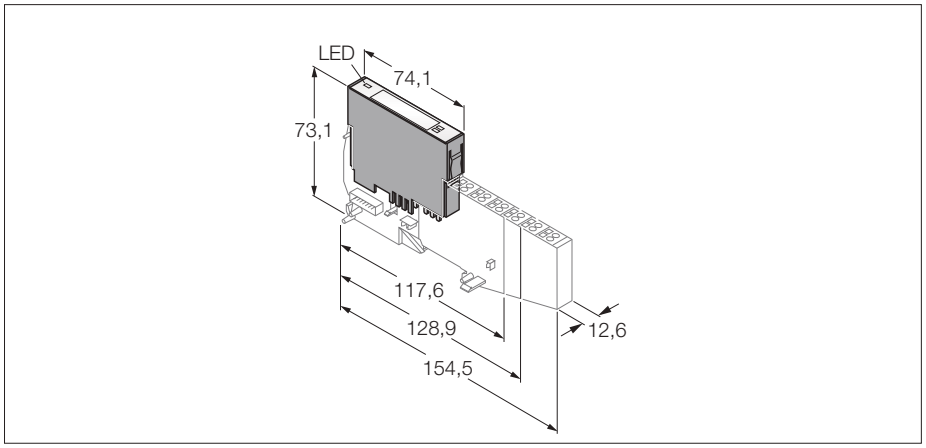
RFID system
Interface for connection of *BL ident*® write-read heads (HF/UHF)
BL20-2RFID-A



- This module is used together for example with the gateway BL20-GW-DPV1
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Connection of 2 *BL ident*® write-read heads
- Mixed operation of HF and UHF write-read heads
- transmission rate: 115.2 kbps
- Cable length: 50 m maximum

Type	BL20-2RFID-A
Ident-No.	6827233
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission rate	115.2 kbps
Cable length	50 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Simultaneity factor	1
Sensor supply	0.25 A per channel, short-circuit proof
Number of diagnostic bytes	4
Number of parameter bytes	8
Number of input bytes	4
Number of output bytes	4
Operating temperature	0 to +55 °C

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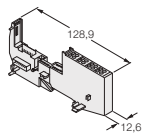
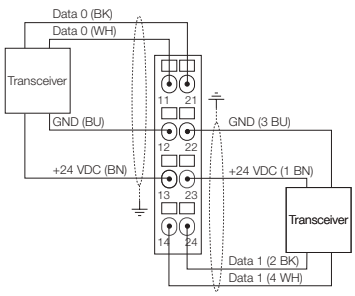
Compatible base modules

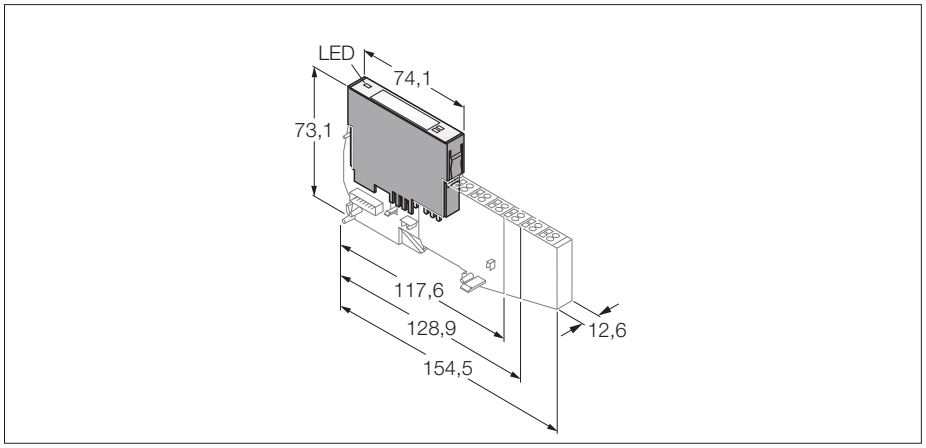
Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F242

Connection

F242 - Wiring diagram (…/S2500)



RFID system
Interface for connection of *BL ident*® write-read heads (HF/UHF)
BL20-2RFID-S



- No special software (function module) is necessary for integration in the PLC systems
- 8 byte user data per read / write cycle
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Connection of 2 *BL ident*® write-read heads
- Mixed operation of HF and UHF write-read heads
- Transmission rate: 115.2 kbps
- Cable length: 50 m maximum

Type	BL20-2RFID-S
Ident-No.	6827306
Number of channels	2
Rated voltage from the supply terminal	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1 W
Inputs / Outputs	
Transmission rate	115.2 kbps
Cable length	50 m
Electrical isolation	isolation of electronics and field level via opto-couplers
Simultaneity factor	1
Sensor supply	0.25 A per channel, short-circuit proof
Number of diagnostic bytes	4
Number of parameter bytes	8
Number of input bytes	24
Number of output bytes	24
Operating temperature	0 to +55 °C

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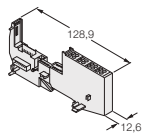
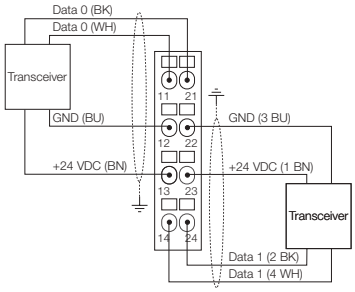
Compatible base modules

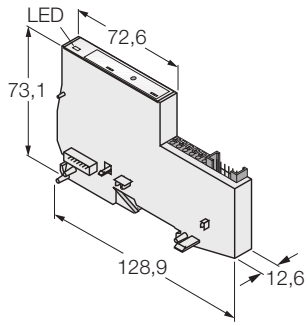
Dimensions	Type	Connection
	**6827046 BL20-S4T-SBBS** Tension spring connection **6827047 BL20-S4S-SBBS** Screw connection	F242

Connection

F242 - Wiring diagram (…/S2500)



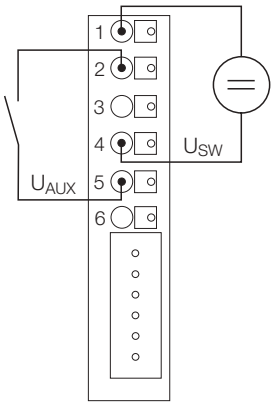
BL20 Economy Module
SWIRE communication module
BL20-E-1SWIRE



- Independent of the type of fieldbus used
- Electronics and connection technology in an single housing
- Tension spring connection technology
- Degree of protection IP20
- LEDs for display of status and diagnostics
- Electronics galvanically isolated from the field level via opto-couplers
- Supports the connection of a SWIRE branch.
- Maximum 16 nodes per SWIRE branch
- Maximum 3 SWIRE modules per BL20 station

Type	BL20-E-1SWIRE
Ident-No.	6827251
Number of channels	1 SWIRE branch
Admissible range	18…30 VDC
Voltage supply for contactor	24 VDC
Voltage supply for contactor	3 A
Rated current from module bus	≤ 60 mA
Electrical isolation	isolation of electronics and field level via opto-couplers
Number of diagnostic bytes	8
Number of parameter bytes	24
Operating temperature	0 to +55 °C

Terminal connection



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BL20 motor starter –
Save switching and protection of motors

Direct and reversing starters up to 15 kW

The motor starters consequently build upon the advantages of the BL20 system:

- Modular
- Flexible
- Simple mounting and operation
- Cost-efficient

BL20 direct and reversing motor starters fulfil the requirements of the IEC/EN 60947-4-1 norm for industrial switching devices.

Modular mounting

A BL20 motor starter is composed of standard components. Easy and error-free mounting of direct or reversing starters with a power range between 0.06 kW and 15 kW is thus possible. This applies to the single components of which a motor starter is built, as well as to the connection between motor starters and the gateway.

Should it become necessary to adapt the motor starter to altered conditions, the relevant components can be easily exchanged.

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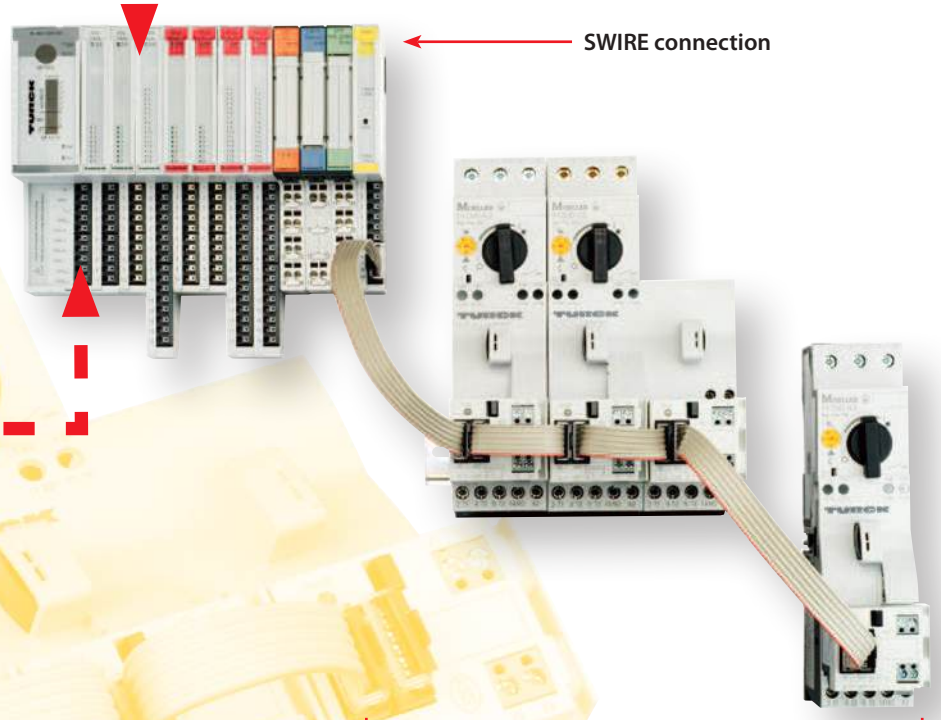
Compact system solution

The SWIRE connection module allows a maximum of 4 m between the module and the last motor starter. This allows an exceptionally flexible layout of the motor starters in the control cabinet and thus compact solutions.



Communication

Due to digital communications between the motor starters and the BL20, various diagnostics are available to the host system. This is realised without the need for extra I/Os.

This means:

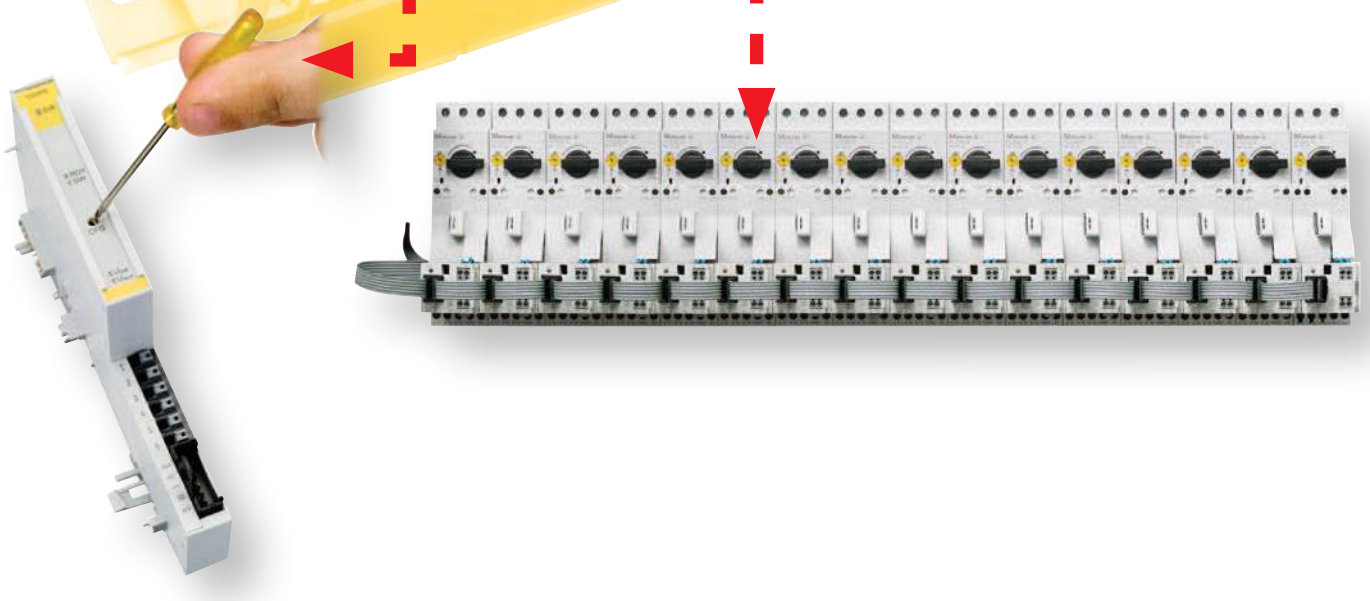
- Reduction of commissioning times
- Quick trouble shooting
- Lower costs

Configuration

The integration of motor starters in the BL20 system is very easy: All connected motor starters are configured in the BL20 system by a simple tap on a pushbutton.

Maximum system expansion

Up to 16 motor starters per SWIRE module, up to 3 SWIRE branches per BL20-system = up to 48 motor starters per fieldbus interface!



BL20 motor starter –
Selection guide direct starter

	=		+		+		
Rated operating performance		**Motor protection switch**		**Auxiliary switch for motor protection switch**		**SWIRE communication module**	
AC-3 , 380 V…415 V							
P, kW / hp				5 pcs / package		5 pcs /package	
0.06 / 0.08		PKZM0-0,25 6827283					
0.09 / 0.12		PKZM0-0,4 6827282					
0.12 / 0.16		PKZM0-0,63 6827280					
0.18 / 0.24		PKZM0-0,63 6827280					
0.25 / 0.33		PKZM0-1 6827279					
0.37 / 0.5		PKZM0-1,6 6827255					
0.55 / 0.74		PKZM0-1,6 6827255					
0.75 / 1		PKZM0-2,5 6827256					
1.1 / 1.5		PKZM0-4 6827257		NHI-E-10L-PKZ0 (5pcs) 6827254		BL20-SWIRE-DIL(5pcs) 6827291	
1.5 / 2		PKZM0-4 6827257					
2.2 / 2.95		PKZM0-6,3 6827258					
3 / 4		PKZM0-10 6827259					
4 / 5.4		PKZM0-10 6827259					
5.5 / 7.38		PKZM0-12 6827260					
7.5 / 10		PKZM0-16 6827284					
7.5 / 10		PKZM0-16 6827284					
11 / 15		PKZM0-25 6827285					
15 / 20		PKZM0-32 6827261					

* These power contactors require a different wiring set as mentioned here

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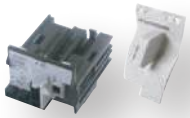
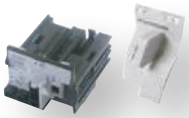
	Type "1" coordination In type "1" coordination, the contactor or soft starter must not endanger persons or the installation in the event of a short-circuit and does not have to be capable of continued use without repairs or parts replacements.				Type "2" coordination In type "2" coordination, the contactor or soft starter must not endanger persons or the installation in the event of a short-circuit and must be capable of continued use without repairs or parts replacements.			
	+		+ 		+		+ 	
	Power contactor		Wiring set		Power contactor		Wiring set	
	Aux. contact				Aux. contact			
	1 × N. C.	1 × N. O.			1 × N. C.	1 × N.O.		
	DILM7-01(24VDC) 6827541	DILM7-10(24VDC) 6827267	BL20-PKZM0-XDM12 6827262		DILM7-01(24VDC) 6827541	DILM7-10(24VDC) 6827267	BL20-PKZM0-XDM12 6827262	
	DILM9-01(24VDC) 6827543	DILM9-10(24VDC) 6827268						
	DILM12-01(24VDC) 6827542	DILM12-10(24VDC) 6827278						
	DILM15-01(24VDC) 6827538	DILM15-10(24VDC) 6827287			DILM17-01(RDC24)* 6827298	DILM17-10(RDC24)* 6827297	BL20-PKZM0-XDM32 6827263	
	DILM17-01(RDC24)* 6827298	DILM17-10(RDC24)* 6827297						
	DILM25-01(RDC24)* 6827539	DILM25-10(RDC24)* 6827281	BL20-PKZM0-XDM32 6827263		DILM25-01(RDC24)* 6827539	DILM25-10(RDC24)* 6827281		
	DILM32-01(RDC24)* 6827540	DILM32-10(RDC24)* 6827270			DILM32-01(RDC24)* 6827540	DILM32-10(RDC24)* 6827270		

5

BL20 motor starter –
Selection guide reversing starter

	=		+		+ 2 ×		
Rated operating performance		**Motor protection switch**		**Auxiliary switch for motor protection switch**		**SWIRE communication module**	
AC-3 , 380 V…415 V							
P, kW / hp				5 pcs / package		5 pcs / package	
0.06 / 0.08		PKZM0-0,25 6827283					
0.09 / 0.12		PKZM0-0,4 6827282					
0.12 / 0.16		PKZM0-0,63 6827280					
0.18 / 0.24		PKZM0-0,63 6827280					
0.25 / 0.33		PKZM0-1 6827279					
0.37 / 0.5		PKZM0-1,6 6827254					
0,55 / 0,74		PKZM0-1,6 6827254					
0.75 / 1		PKZM0-2,5 6827256					
1.1 / 1.5		PKZM0-4 6827257					
1.5 / 2		PKZM0-4 6827257		NHI-E-10L-PKZ0 (5pcs) 6827254		BL20-SWIRE-DIL(5pcs) 6827291	
2.2 / 2.95		PKZM0-6,3 6827258					
3 / 4		PKZM0-10 6827259					
4 / 5.4		PKZM0-10 6827259					
5.5 / 7.38		PKZM0-12 6827260					
7.5 / 10		PKZM0-16 6827284					
7.5 / 10		PKZM0-16 6827284					
11 / 15		PKZM0-25 6827285					
15 / 20		PKZM0-32 6827261					

* These power contactors require a different wiring set as mentioned here

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Type "1" coordination In type "1" coordination, the contactor or soft starter must not endanger persons or the installation in the event of a short-circuit and does not have to be capable of continued use without repairs or parts replacements.					Type "2" coordination In type "2" coordination, the contactor or soft starter must not endanger persons or the installation in the event of a short-circuit and must be capable of continued use without repairs or parts replacements.				
+2×		+	+		+2×		+	+	
Power contactor			Wiring set	Mech. interlock	Power contactor			Wiring set	Mech. interlock
Aux. contact					Aux. contact				
1 × N. C.	1 × N. O.				1 × N. C.	1 × N. O.			
DILM7-01(24VDC) 6827541	DILM7-10(24VDC) 6827267		BL20-PKZM0-XRM12 6827264	DILM12-XMV 6827269	DILM7-01(24VDC) 6827541	DILM7-10(24VDC) 6827267		BL20-PKZM0-XRM12 6827264	DILM12-XMV 6827269
DILM9-01(24VDC) 6827543	DILM9-10(24VDC) 6827268				DILM17-01(RDC24)* 6827298	DILM17-10(RDC24)* 6827297		BL20-PKZM0-XRM32 6827286	DILM32-XMV 6827545
DILM12-01(24VDC) 6827542	DILM12-10(24VDC) 6827278				DILM25-01(RDC24)* 6827539	DILM25-10(RDC24)* 6827281			
DILM17-01(RDC24)* 6827298	DILM17-10(RDC24)* 6827297		BL20-PKZM0-XRM32 6827286	DILM32-XMV 6827545	DILM32-01(RDC24)* 6827540	DILM32-10(RDC24)* 6827270			
DILM25-01(RDC24)* 6827539	DILM25-10(RDC24)* 6827281								
DILM32-01(RDC24)* 6827540	DILM32-10(RDC24)* 6827270								

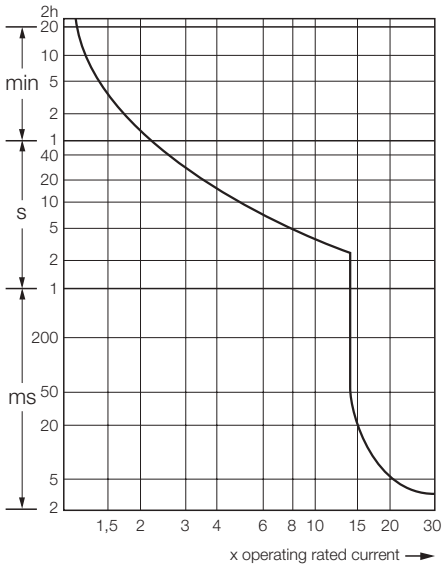
or

5

BL20 motor starter –
Technical specification motor protection switch

Type	Ident-no.	Max. rated operating performance					Rated continuous current	Setting range overload release	Short circuit release
		AC3							
		220 V	380 V	440 V	500 V	660 V			
		230 V	400V			690 V			
		240 V	415 V						
		P [kW]					I_u [A]	I_r [A]	I_m [A]
PKZM0-0,25	6827283		0.06	0.06	0.06	0.12	0.25	0.16…0.25	3.5
PKZM0-0,4	6827282	0.06	0.09	0.12	0.12	0.18	0.4	0.25…0.4	5.6
PKZM0-0,63	6827280	0.09	0.12	0.18	0.25	0.25	0.63	0.4…0.63	6.8
PKZM0-1	6827279	0.12	0.25	0.25	0.37	0.55	1	0.63…1	14
PKZM0-1,6	6827254	0.25	0.55	0.55	0.75	1.1	1.6	1…1.6	22
PKZM0-2,5	6827256	0.37	0.75	1.1	1.1	1.5	2.5	1.6…2.5	35
PKZM0-4	6827257	0.75	1.5	1.5	2.2	3	4	2.5…4	56
PKZM0-6,3	6827258	1.1	2.2	3	3	4	6.3	4…6.3	88
PKZM0-10	6827259	2.2	4	4	4	7.5	10	6.3…10	140
PKZM0-12	6827260	3	5.5	5.5	5.5	11	12	8…12	168
PKZM0-16	6827284	4	7.5	9	9	12.5	16	10…16	224
PKZM0-25	6827285	5.5	12.5	12.5	15	22	25	20…25	350
PKZM0-32	6827261	7.5	15	15	22	30	32	25…32	448

Tripping characteristic for motor protection switch PKZM0-…



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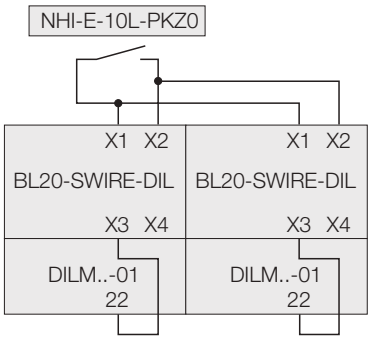
BL20 motor starter – Technical specification power contactor

Industrial Automation

Type	Ident-no.	Rated operating current	Max. rated operating performance three-phase AC motor 50…60 Hz						$I_{th} = I_e$, AC-1 at 60 °C, open	Contact-complement
		AC-3	AC-3			AC-4				
		380 V	220 V	380 V	660 V	220 V	380 V	660 V		
		400 V	230 V	400 V	690 V	230 V	400 V	690 V		
		I_e [A]	P [kW]			P [kW]			$I_{th} = I_e$ [A]	N. O./ N. C.
DILM7-01(24VDC)	6827541	7	2.2	3	3.5	1	2.2	2.9	20	N. C.
DILM7-10(24VDC)	6827267	7	2.2	3	3.5	1	2.2	2.9	20	N. O.
DILM9-01(24VDC)	6827543	9	2.5	4	4.5	1.5	2.5	3.6	20	N. C.
DILM9-10(24VDC)	6827268	9	2.5	4	4.5	1.5	2.5	3.6	20	N. O.
DILM12-01(24VDC)	6827542	12	3.5	5.5	6.5	2	3	4.4	20	N. C.
DILM12-10(24VDC)	6827278	12	3.5	5.5	6.5	2	3	4.4	20	N. O.
DILM15-01(24VDC)	6827538	15.5	4	7.5	7	2	3	4.4	20	N. C.
DILM15-10(24VDC)	6827287	15.5	4	7.5	7	2	3	4.4	20	N. O.
DILM17-01(RDC24)	6827298	18	5	7.5	11	2.5	4.5	6.5	35	N. C.
DILM17-10(RDC24)	6827297	18	5	7.5	11	2.5	4.5	6.5	35	N. O.
DILM25-01(RDC24)	6827539	25	7.5	11	14	3.5	6	8.5	40	N. C.
DILM25-10(RDC24)	6827281	25	7.5	11	14	3.5	6	8.5	40	N. O.
DILM32-01(RDC24)	6827540	32	10	15	17	4	7	10	40	N. C.
DILM32-10(RDC24)	6827270	32	10	15	17	4	7	10	40	N. O.

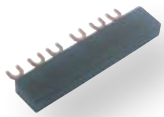
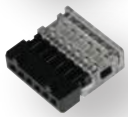
5

Electrical interlock wiring for reversing starters



Power contactors with a N. C. output are obligatory for the electrical interlock of reversing starters. The wiring is implemented by the user as shown on the left. All other necessary connections are implemented with pluggable bridges which are included in the wiring sets.

BL20 motor starter – Accessories

Figure	Description	Type	Ident-no.
	Three-phase current rail, insulated, U_e = 690 V, I_u = 63 A, extension enabled by rotated mounting, length 90 mm	**B3.0/2-PKZ0**	6827099
	Three-phase current rail, insulated, U_e = 690 V, I_u = 63 A, extension enabled by rotated mounting, length 180 mm	**B3.0/4-PKZ1**	6827098
	Input terminal for three-phase current rail, insulated, U_e = 690 V, I_u = 63 A,	**BK25/3-PKZ0**	6827134
	No-load connection cover for non-assigned connections at three-phase current rails 20 pcs/ package	**H-B3-PKZ0(20pcs)**	6827544
	SWIRE power module. For power supply of SWIRE branches. Is applied when groups of motor starters have to be disconnected. Max. 4 Power modules per SWIRE branch.	**BL20-SWIRE-PF**	6827288
	Terminating connector for SWIRE-branches, no electrical function 25 pcs / package	**BL20-SWIRE-CAB-000 (25pcs)**	6827292
	SWIRE connection cable, length 85 mm 25 pcs / package	**BL20-SWIRE-CAB-008 (25pcs)**	6827274
	SWIRE connection cable, length 110 mm 25 pcs / package	**BL20-SWIRE-CAB-011 (25pcs)**	6827275
	SWIRE connection cable, length 150 mm 5 pcs / package	**BL20-SWIRE-CAB-015 (5pcs)**	6827293
	SWIRE connection cable, length 250 mm 5 pcs / package	**BL20-SWIRE-CAB-025 (5pcs)**	6827276
	SWIRE connection cable, length 500 mm	**BL20-SWIRE-CAB-050**	6827296
	SWIRE connection cable, length1000 mm	**BL20-SWIRE-CAB-100**	6827294
	SWIRE connection cable, length 2000 mm	**BL20-SWIRE-CAB-200**	6827295
	Mechanical interlock for reversing starters with power contactors DILM7-DILM15	**DILM12-XMV**	6827269
	Mechanical interlock for reversing starters with power contactors DILM17-DILM32	**DILM32-XMV**	6827545

User manuals
The user manual for BL20 systems is only available as PDF file and can be downloaded on **www.turck.com**

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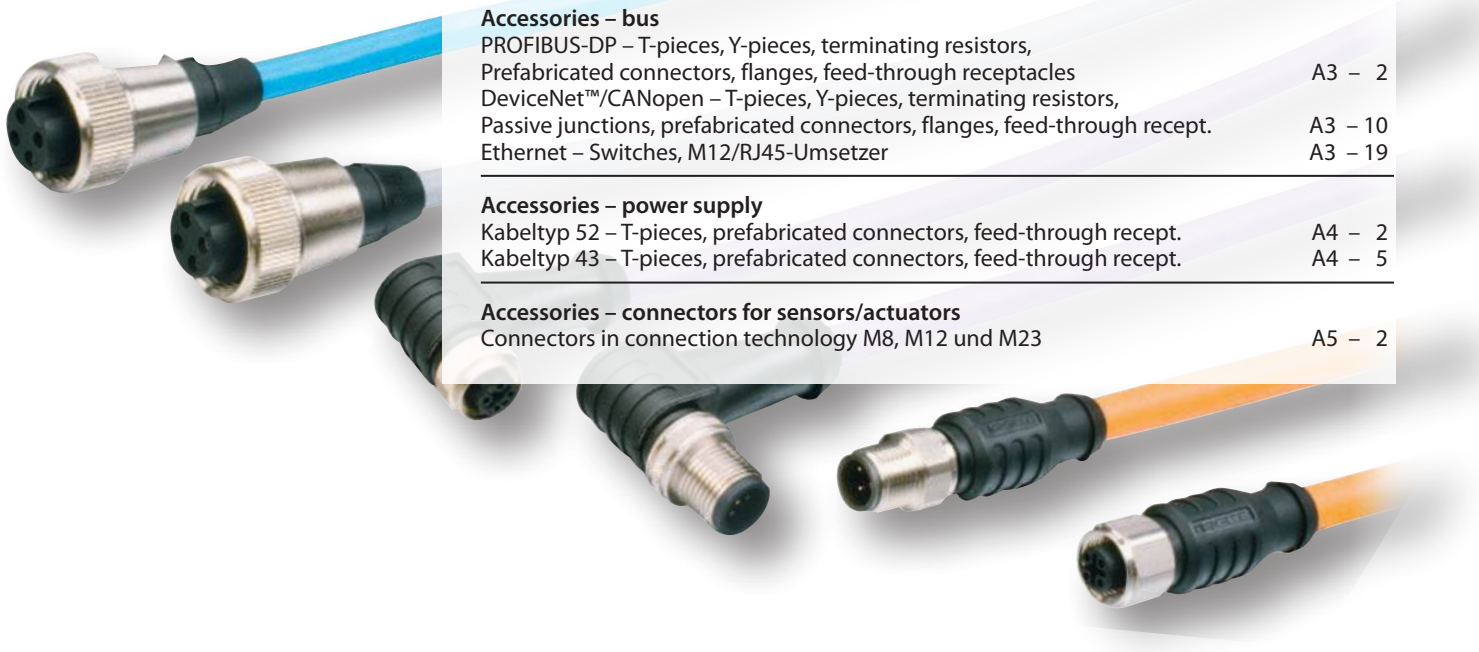
General accessories

The JIT-5D-Programme	Page
Type code	A0 – 5
PROFIBUS-DP-cables and power cables	A0 – 6
DeviceNet™/CAN-cables	A0 – 7
PROFIBUS-PA-cables	A0 – 8
FOUNDATION fieldbus™-cables	A0 – 9
Bus cables	
Bus cables and power cables	A1 – 2
PROFIBUS-DP – bus cables	A1 – 6
DeviceNet™ – bus cables	A1 – 14
Ethernet – bus cables	A1 – 28
Power cables	
PROFIBUS-DP – power cable, cable type 52	A2 – 2
DeviceNet™ – power cable, cable type 43	A2 – 6
piconet® – power cable, cable type IPS	A2 – 10
Accessories – bus	
PROFIBUS-DP – T-pieces, Y-pieces, terminating resistors, Prefabricated connectors, flanges, feed-through receptacles	A3 – 2
DeviceNet™/CANopen – T-pieces, Y-pieces, terminating resistors, Passive junctions, prefabricated connectors, flanges, feed-through recept.	A3 – 10
Ethernet – Switches, M12/RJ45-Umsetzer	A3 – 19
Accessories – power supply	
Kabeltyp 52 – T-pieces, prefabricated connectors, feed-through recept.	A4 – 2
Kabeltyp 43 – T-pieces, prefabricated connectors, feed-through recept.	A4 – 5
Accessories – connectors for sensors/actuators	
Connectors in connection technology M8, M12 und M23	A5 – 2



JIT – Just in Time

Ideally the length of the cord set is adjusted according to the requirements of the plant. For this reason TURCK now offers a Just-In-Time-delivery service (JIT) for premoulded cables.

The new JIT-5D-Programme for perfect connections:

- Just-In-Time delivery within 5 days only*
- Free choice of cable length
- Premoulded fieldbus and power cables
- High flexibility with respect to planning and mounting of your application
- High cost savings

* valid for deliveries within the European Union (EU)

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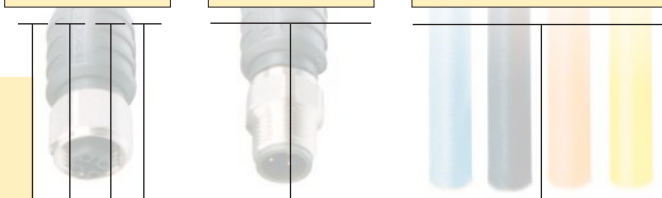
JIT – product range
Type code



RKCV – RSCV – FBY49x – *M / 5D

Geometry
R: straight
W: angled

Connection mode
S: male
K: female

Mechanical connection
C: M12
without: 7/8"
S: M12 shielded

Coupling nut/Coding
M/without: coupling nut: brass, nickel-plated
V: coupling nut: stainless steel
W: coupling nut: brass, nickel-plated, reverse-keyed connectors

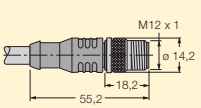
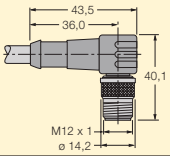
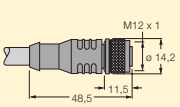
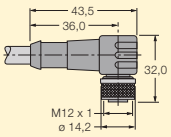
for premoulded cables on both ends

Fieldbus system
451: PROFIBUS-DP, suited for trailing applications
452: PROFIBUS-DP
572: DeviceNet™
52: power cable 7/8", 5-pole
43: power cable 7/8", 4-pole
FBY48x: PROFIBUS-PA
FBY49x: FOUNDATION™ fieldbus
x = colour: BU = blue, BK = black, OG = orange, YE= yellow

Cable length
0,3 and 0,5 m
1…5 m (available in 0.5 m steps)
5…50 m (available in 1.0 m steps)

Just-in-time-Programme (5 days)

PROFIBUS-DP – cables, type 451/452

M12 × 1	Type designation x = cable type 451 or 452, *M = variable length in m (see type code				
	one-sided premoulded	RSSW 	WSSW 	RKSW 	WKSW 
RSSW	RSSW-45x-*M/5D	RSSW-RSSW-45x-*M/5D	—	RSSW-RKSW-45x-*M/5D	—
WSSW	WSSW-45x-*M/5D	—	WSSW-WSSW-45x-*M/5D	—	WSSW-WKSW-45x-*M/5D
RKSW	RKSW-45x-*M/5D	—	—	RKSW-RKSW-45x-*M/5D	—
WKSW	WKSW-45x-*M/5D	—	—	—	WKSW-WKSW-45x-*M/5D

Pin configuration:

Male

1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = n.c.

Female

1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = n.c.

Connectors:

Coupling nut:	Brass, nickel-plated
Contacts:	Gold-plated
Grip:	PA
Protection degree:	IP67

Cable layout	451	452
Outer Jacket:	TPU, purple	PVC, purple
Core isolation:	PE	PE
Colour code:	GN, RD	GN, RD
Shield:	Aluminium foil, tin-plated copper braid	Aluminium foil, tin-plated copper braid
Diameter:	approx. 8.5 mm	approx. 8.1 mm
Core diameter:	AWG22/7	AWG22/1
Trailing application:	5 mio. cycles	–
U_L approval:	–	yes

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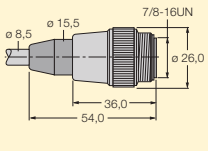
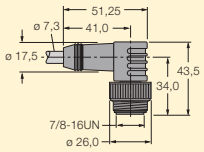
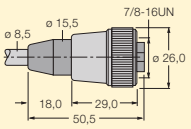
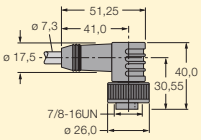
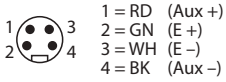
Power cables, type 43/52

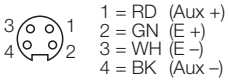
Industrial Automation

7/8"	Type designation x = cable type 43 or 52, *M = variable length in m (see type code)				
	one-sided premoulded	RSM 	WSM 	RKM 	WKM 
RSM	RSM-x-*M/5D	RSM-RSM-x-*M/5D	—	RSM-RKM-x-*M/5D	—
WSM	WSM-x-*M/5D	—	WSM-WSM-x-*M/5D	—	WSM-WKM-x-*M/5D
RKM	RKM-x-*M/5D	—	—	RKM-RKM-x-*M/5D	—
WKM	WKM-x-*M/5D	—	—	—	WKM-WKM-x-*M/5D

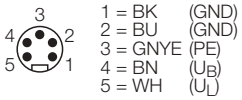
Pin configuration:
Male
Female

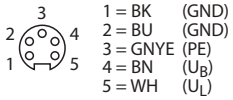
Cable type 43





Cable type 52





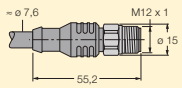
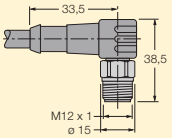
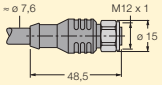
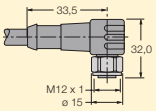
A0

Connectors:

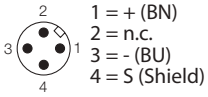
Coupling nut:	Brass nickel-plated
Contacts:	Gold-plated
Grip:	PA
Protection degree:	IP67

Cable layout	43	52
Outer Jacket:	PUR, grey	PUR, grey
Core isolation:	PP	PP
Colour code:	BK, GN, RD, WH	BK, BU, GNYE, BN, WH
Shield:	–	–
Diameter:	approx. 7.5 mm	approx. 8.1 mm
Core diameter:	4 × 1.5 mm²	5 × 1.5 mm²
Trailing application:	yes	yes
U_L approval:	–	–

PROFIBUS-PA – cables
Cable FBY48…

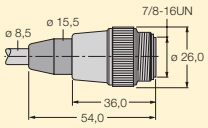
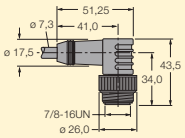
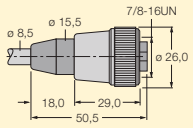
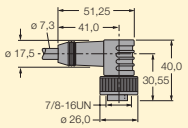
M12 × 1	Type designation cable type FBY48x, x = colour (BU, BK, OG, YE), *M = variable length in m (see type code)				
	one-sided premoulded	RSCV	WSCV	RKCV	WKCV
					
RSCV	RSCV-FBY48x-*M/5D	RSCV-RSCV-FBY48x-*M/5D	—	RSCV-RKCV-FBY48x-*M/5D	—
WSCV	WSCV-FBY48x-*M/5D	—	WSCV-WSCV-FBY48x-*M/5D	—	WSCV-WKCV-FBY48x-*M/5D
RKCV	RKCV-FBY48x-*M/5D	—	—	RKCV-RKCV-FBY48x-*M/5D	—
WKCV	WKCV-FBY48x-*M/5D	—	—	—	WKCV-WKCV-FBY48x-*M/5D

Pin configuration:
Male
Female

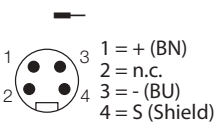


1 = + (BN)
2 = n.c.
3 = - (BU)
4 = S (Shield)

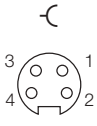
1 = + (BN)
2 = n.c.
3 = - (BU)
4 = S (Shield)

7/8"	Type designation cable type FBY48x, x = colour (BU, BK, OG, YE), *M = variable length in m (see type code)				
	one-sided premoulded	RSV	WSV	RKV	WKV
					
RSV	RSV-FBY48x-*M/5D	RSV-RSV-FBY48x-*M/5D	—	RSV-RKV-FBY48x-*M/5D	—
WSV	WSV-FBY48x-*M/5D	—	WSV-WSV-FBY48x-*M/5D	—	WSV-WKV-FBY48x-*M/5D
RKV	RKV-FBY48x-*M/5D	—	—	RKV-RKV-FBY48x-*M/5D	—
WKV	WKV-FBY48x-*M/5D	—	—	—	WKV-WKV-FBY48x-*M/5D

Pin configuration:
Male
Female



1 = + (BN)
2 = n.c.
3 = - (BU)
4 = S (Shield)



1 = + (BN)
2 = n.c.
3 = - (BU)
4 = S (Shield)

Connectors:

Coupling nut:	Stainless steel
Contacts:	Gold-plated
Grip:	PA
Protection degree:	IP67

Cable layout

Outer jacket:	Polyvinyl chloride (PVC)
Core isolation:	PE-foam with PR-jacket
Colour code:	BN, BU
Insulation:	Extruded special compound
Shield:	One side plastic coated with aluminium strip, metal exterior with contact to tin-plated copper braid and stranded Drain wire
Diameter:	< 8 mm
Conductor:	18/7 AWG (0.8 mm²), stranded blank copper

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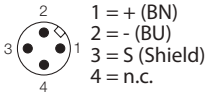
FOUNDATION fieldbus™ – cables
Cable FBY49…

Fieldbus Foundation

TURCK Industrial Automation

M12 × 1	Type designation cable type FBY49x, x = colour (BU, BK, OG, YE), *M = variable length in m (see type code)				
	one-sided premoulded	RSCV	WSCV	RKCV	WKCV
RSCV	RSCV-FBY49x-*M/5D	RSCV-RSCV-FBY49x-*M/5D	—	RSCV-RKCV-FBY49x-*M/5D	—
WSCV	WSCV-FBY49x-*M/5D	—	WSCV-WSCV-FBY49x-*M/5D	—	WSCV-WKCV-FBY49x-*M/5D
RKCV	RKCV-FBY49x-*M/5D	—	—	RKCV-RKCV-FBY49x-*M/5D	—
WKCV	WKCV-FBY49x-*M/5D	—	—	—	WKCV-WKCV-FBY49x-*M/5D

Pin configuration:
Male
Female



1 = + (BN)
2 = - (BU)
3 = S (Shield)
4 = n.c.

1 = + (BN)
2 = - (BU)
3 = S (Shield)
4 = n.c.

7/8"	Type designation cable type FBY49x, x = colour (BU, BK, OG, YE), *M = variable length in m (see type code)				
	one-sided premoulded	RSV	WSV	RKV	WKV
RSV	RSV-FBY49x-*M/5D	RSV-RSV-FBY49x-*M/5D	—	RSV-RKV-FBY49x-*M/5D	—
WSV	WSV-FBY49x-*M/5D	—	WSV-WSV-FBY49x-*M/5D	—	WSV-WKV-FBY49x-*M/5D
RKV	RKV-FBY49x-*M/5D	—	—	RKV-RKV-FBY49x-*M/5D	—
WKV	WKV-FBY49x-*M/5D	—	—	—	WKV-WKV-FBY49x-*M/5D

Pin configuration:
Male
Female

1 = + (BN)
2 = - (BU)
3 = S (Shield)
4 = n.c.

1 = + (BN)
2 = - (BU)
3 = S (Shield)
4 = n.c.

Connectors

Coupling nut:	Stainless steel
Contacts:	Gold-plated
Grip:	PA
Protection degree:	IP67

Cable layout

Outer jacket:	Polyvinyl chloride (PVC)
Core isolation:	PE-foam with PR-jacket
Colour code:	BN, BU
Insolation:	Extruded special compound
Shield:	One side plastic coated with aluminium strip, metal exterior with contact to tin-plated copper braid and stranded drain wire
Diameter:	< 8 mm
Conductor:	18/7 AWG (0.8 mm²), stranded blank copper

A0

Buskabel-Qualitäten PROFIBUS-DP, CAN (DeviceNet™, CANopen), Ethernet (vorkonfektionierte Leitungen ab Seite A1 – 6)
Bus Cabel Materials PROFIBUS-DP, CAN (DeviceNet™, CANopen), Ethernet (premoulded cables from page A1 – 6 onwards)

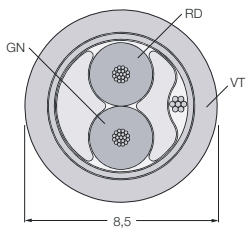
Feldbus Fieldbus	Kabeltyp Cable type	Abb. Fig.	Material Kabelmantel Material cable jacket	Halogenfrei Halogen-free	Schleppkettenfähig Suited to trailing applications	Data pair Leiterquerschnitt Connection profile [mm²]	Data pair Nennstrom Rated current [A]	Data pair DC-Widerstand DC resistance [Ω/Km]	
PROFIBUS-DP	451	(A)	TPUS	•	• [1]	2 x 0.34	4	50	
	452	(B)	PVC	–	–	2 x 0.34	4	50	
DeviceNet™, CANopen	5701	(C)	PUR	•	•	2 x 0.25	6.4	82	
	5711	(D)	PVC	–	–	2 x 0.52	9.6	34.1	
	5723	(D)	PUR	–	• [2]	2 x 0.52	9.6	34.1	
Ethernet	441/S2174	(E)	PUR	–	• [3]	4 x 0.32	4	53	
Leitungen/cables	841	(F)	PVC	–	•	8 x 0.21	1.5	94	
gem./acc. to ISO/IEC 11801, CAT 5	843	(F)	PVC	–	–	8 x 0.21	1.5	94	

[1]) Biegeradius: einmalig > 45 mm, mehrmalig > 65 mm, 5 Mio. Biegezyklen (a_{max} = 4 m/s²)/
bending radius: once > 45 mm, repeated > 65 mm, 5 mill. bending cycles (a_{max} = 4 m/s²)

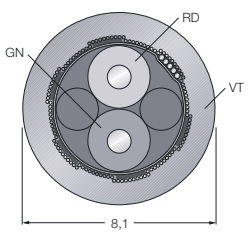
[2]) Biegeradius: 6,5 inch = 165 mm, 10 Mio. Biegezyklen/
bending radius: 6,5 inch = 165 mm, 10 mill. bending cycles

[3]) Biegeradius: einmalig > 33 mm, mehrmalig > 46 mm, 5 Mio. Biegezyklen (Ø 200 mm)/
bending radius: once > 33 mm, repeated > 46 mm, 5 mill. bending cycles (Ø 200 mm)

(A)



(B)



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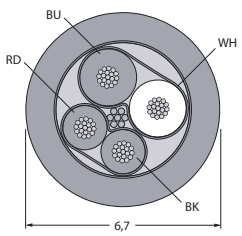

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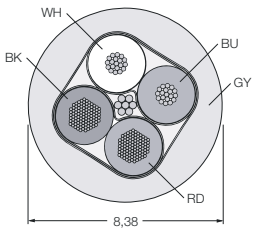

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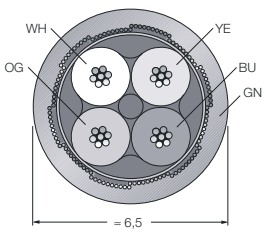
	Power pair			Nennwerte	Nom. Impedanz Power pair	Nom.Kapazität Power pair	Schirmung	Zulassungen
	Leiterquerschnitt Connection profile	Nennstrom Rated current	DC-Widerstand DC resistance	Ratings	nom. impedance Power pair	nom. capacitance Power pair	Shield	Approvals
	[mm²]	[A]	[Ω/Km]		[Ω]	[pF/m]		
	–	–	–	300 V, 80 °C	150 (3...20 MHz)	30	•	-
	–	–	–	300 V, 75 °C	110 (1 MHz)	30	•	UL
	2 x 0.34	8	59	300 V, 60 °C	120 (1 MHz)	37	•	UL, CSA
	2 x 1.3	15.2	13.5	300 V, 75 °C	110 (1 MHz)	40.52	•	UL, CSA
	2 x 1.04	13.6	16.9	300 V, 80 °C	110 (1 MHz)	40.52	•	UL, CSA
	–	–	–	300 V, 75 °C	120 (1 MHz)	52	•	UL
	–	–	–	300 V, 75 °C	100 (1 MHz)	46	•	UL
	–	–	–	300 V, 75 °C	100 (1 MHz)	46	•	UL

A1

(E)



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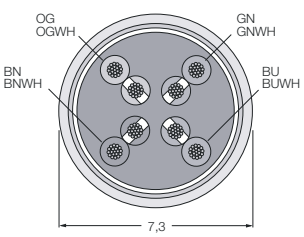
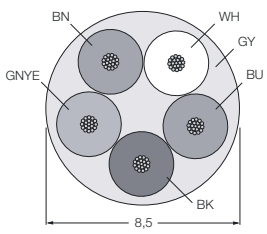


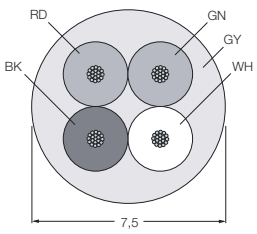
Versorgungskabel-Qualitäten PROFIBUS-DP, CAN (DeviceNet™, CANopen), Ethernet (vorkonfektionierte Leitungen ab Seite A2 – 2)
Power Cabel Materials PROFIBUS-DP, CAN (DeviceNet™, CANopen), Ethernet (premoulded cables from page A2 – 2 onwards)

Nutzbar für Gerätefamilien (Bussystem) Usable for product family (Bus system)	Kabeltyp Cable type	Abb. Fig.	Material Kabelmantel Material cable jacket	Halogenfrei Halogen-free	Schleppkettenfähig Suited to trailing applications	Leiter-Querschnitt Connection profile [mm^2]	
BL67, FLDP, FXDP, FGEN	52	(G)	PUR	•	•	5 x 1.5	
FDN...	43	(H)	PUR	•	•	4 x 1.5	
piconet®	TXL	(I)	PUR	•	•	4 x 0.34	

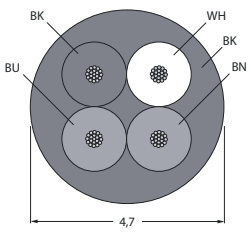
(G)



(H)



(I)



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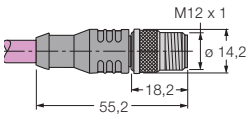
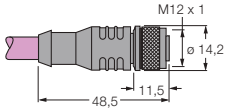
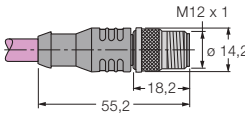
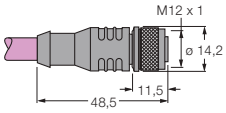
	Nennstrom Rated current [A]	DC-Widerstand DC resistance [Ω/Km]	Nennwerte Ratings	Nom. Impedanz Power pair nom. impedance Power pair [Ω]	Nom.Kapazität Power pair nom. capacitance Power pair [pF/m]	Schirmung Shield	Zulassungen Approvals
	15	13.3	240 V, 90 °C	–	–	–	–
	15	13.3	240 V, 90 °C	–	–	–	–
	4	–	60 V, 80 °C	–	–	–	cULus

A1

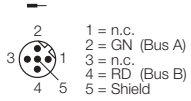
Vorkonfektionierte Buskabel für PROFIBUS-DP, Typ 451, 452
Premoulded Bus Cables for PROFIBUS-DP, Type 451, 452

Konfektionierbare Steckverbinder siehe Seite A3 – 4
Field wireable connectors see page A3 – 4

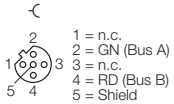
Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
Kabel-Meterware Bulk cable	451	30	TPUS		
	451	150	TPUS		
	451	500	TPUS		
	452	30	PVC		
	452	150	PVC		
	452	500	PVC		
	451	1	TPUS	CuZn-Ni	PUR
	451	2	TPUS	CuZn-Ni	PUR
	451	3	TPUS	CuZn-Ni	PUR
	451	6	TPUS	CuZn-Ni	PUR
	451	10	TPUS	CuZn-Ni	PUR
	451	15	TPUS	CuZn-Ni	PUR
	451	20	TPUS	CuZn-Ni	PUR
	451	6	TPUS	CuZn-Ni	PUR
	451	10	TPUS	CuZn-Ni	PUR
	451	15	TPUS	CuZn-Ni	PUR
	451	6	TPUS	CuZn-Ni	PUR
	451	10	TPUS	CuZn-Ni	PUR
	451	15	TPUS	CuZn-Ni	PUR
	451	20	TPUS	CuZn-Ni	PUR
 	451	0.2	TPUS	CuZn-Ni	PUR
	451	0.3	TPUS	CuZn-Ni	PUR
	451	0.5	TPUS	CuZn-Ni	PUR
	451	1	TPUS	CuZn-Ni	PUR
	451	1.5	TPUS	CuZn-Ni	PUR
	451	2	TPUS	CuZn-Ni	PUR
	451	3	TPUS	CuZn-Ni	PUR
	451	4	TPUS	CuZn-Ni	PUR
	451	5	TPUS	CuZn-Ni	PUR
	451	6	TPUS	CuZn-Ni	PUR
	451	7	TPUS	CuZn-Ni	PUR
	451	8	TPUS	CuZn-Ni	PUR
	451	10	TPUS	CuZn-Ni	PUR
	451	12	TPUS	CuZn-Ni	PUR
	451	15	TPUS	CuZn-Ni	PUR
	451	30	TPUS	CuZn-Ni	PUR

Anschlussbelegung
Pin Configuration

C071



C072



[1]) B = invers codiert gem. PNO-Richtlinie/reverse keyed acc. to PNO directive

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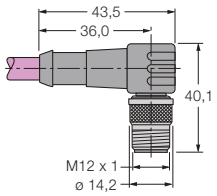
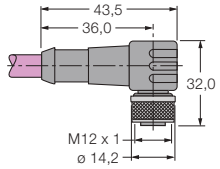
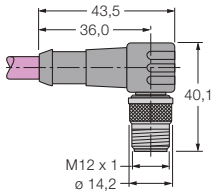
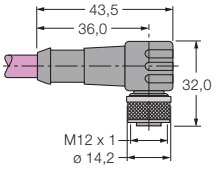
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
KABEL451-30M	6915601			•	–	
KABEL451-150M	6915603			•	–	
KABEL451-500M	6915606			•	–	
KABEL452-30M	6611474			–	UL	
KABEL452-150M	6611475			–	UL	
KABEL452-300M	6611476			–	UL	
RSSW451-1M	8029320	C071	B[1])	•	–	IP67
RSSW451-2M	6914229	C071	B[1])	•	–	IP67
RSSW451-3M	6914402	C071	B[1])	•	–	IP67
RSSW451-6M	6914111	C071	B[1])	•	–	IP67
RSSW451-10M	6914112	C071	B[1])	•	–	IP67
RSSW451-15M	6914113	C071	B[1])	•	–	IP67
RSSW451-20M	6914228	C071	B[1])	•	–	IP67
RKSW451-1M	6915609	C072	B[1])	•	–	IP67
RKSW451-2M	6915611	C072	B[1])	•	–	IP67
RKSW451-3M	6915613	C072	B[1])	•	–	IP67
RKSW451-6M	6914114	C072	B[1])	•	–	IP67
RKSW451-10M	6914115	C072	B[1])	•	–	IP67
RKSW451-15M	6914116	C072	B[1])	•	–	IP67
RKSW451-20M	8030688	C072	B[1])	•	–	IP67
RSSW-RKSW451-0,2M	6915901	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-0,3M	6915655	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-0,5M	6914117	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-1M	6914118	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-1,5M	6915656	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-2M	6914119	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-3M	6915658	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-4M	6914120	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-5M	6915669	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-6M	6914121	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-7M	6914206	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-8M	6915660	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-10M	6914122	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-12M	8029319	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-15M	6914123	C071 / C072	B[1])	•	–	IP67 / IP67
RSSW-RKSW451-30M	6914124	C071 / C072	B[1])	•	–	IP67 / IP67

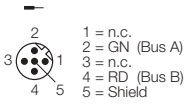
Vorkonfektionierte Buskabel für PROFIBUS-DP, Typ 451
Premoulded Bus Cables for PROFIBUS-DP, Type 451

Konfektionierbare Steckverbinder siehe Seite A3 – 4
Field wireable connectors see page A3 – 4

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	451	6	TPUS	CuZn-Ni	PUR
	451	10	TPUS	CuZn-Ni	PUR
	451	15	TPUS	CuZn-Ni	PUR
	451	2	TPUS	CuZn-Ni	PUR
	451	6	TPUS	CuZn-Ni	PUR
	451	10	TPUS	CuZn-Ni	PUR
	451	15	TPUS	CuZn-Ni	PUR
 	451	0.3	TPUS	CuZn-Ni	PUR
	451	0.5	TPUS	CuZn-Ni	PUR
	451	1	TPUS	CuZn-Ni	PUR
	451	2	TPUS	CuZn-Ni	PUR
	451	4	TPUS	CuZn-Ni	PUR
	451	6	TPUS	CuZn-Ni	PUR
	451	10	TPUS	CuZn-Ni	PUR
	451	15	TPUS	CuZn-Ni	PUR
	451	30	TPUS	CuZn-Ni	PUR

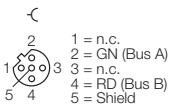
Anschlussbelegung
Pin Configuration

C071



1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

C072



1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

[1]) B = invers codiert gem. PNO-Richtlinie/reverse keyed acc. to PNO directive

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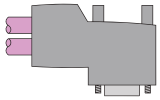
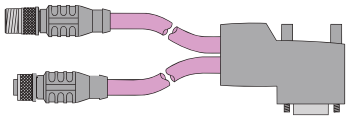
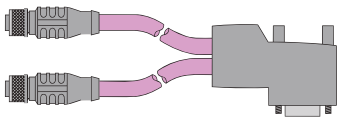
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
WSSW451-6M	6914128	C071	B[1])	•	–	IP67
WSSW451-10M	6914129	C071	B[1])	•	–	IP67
WSSW451-15M	6914130	C071	B[1])	•	–	IP67
WKSW451-2M	6914209	C072	B[1])	•	–	IP67
WKSW451-6M	6914131	C072	B[1])	•	–	IP67
WKSW451-10M	6914132	C072	B[1])	•	–	IP67
WKSW451-15M	6914133	C072	B[1])	•	–	IP67
WSSW-WKSW451-0,3M	6915680	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-0,5M	6914134	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-1M	6914135	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-2M	6914136	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-4M	6914137	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-6M	6914138	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-10M	6914139	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-15M	6914140	C071 / C072	B[1])	•	–	IP67 / IP67
WSSW-WKSW451-30M	6914141	C071 / C072	B[1])	•	–	IP67 / IP67

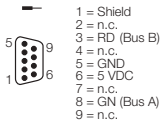
Vorkonfektionierte Buskabel für PROFIBUS-DP, Typ 451
Premoulded Bus Cables for PROFIBUS-DP, Type 451

Konfektionierbare Steckverbinder siehe Seite A3 – 4
Field wireable connectors see page A3 – 4

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable lenght [m]	Werkstoffe/Materials/Materiaux Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	451	0.5 / 0.5	TPUS		
	451	1 / 1	TPUS		
	451	2 / 2	TPUS		
	451	0.3 / 0.3	TPUS	CuZn-Ni	PUR
	451	0.5 / 0.5	TPUS	CuZn-Ni	PUR
	451	0.5 / 1.5	TPUS	CuZn-Ni	PUR
	451	1 / 1	TPUS	CuZn-Ni	PUR
	451	1.5 / 1.5	TPUS	CuZn-Ni	PUR
	451	2 / 2	TPUS	CuZn-Ni	PUR
	451	3 / 3	TPUS	CuZn-Ni	PUR
	451	0.3 / 0.3	TPUS	CuZn-Ni	PUR
	451	0.5 / 0.5	TPUS	CuZn-Ni	PUR
	451	1 / 1	TPUS	CuZn-Ni	PUR
	451	2 / 2	TPUS	CuZn-Ni	PUR

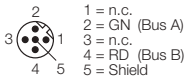
Anschlussbelegung
Pin Configuration

C064



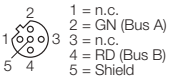
1 = Shield
2 = n.c.
3 = RD (Bus B)
4 = n.c.
5 = GND
6 = 5 VDC
7 = n.c.
8 = GN (Bus A)
9 = n.c.

C071



1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

C072



1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

[1]) B = invers codiert gem. PNO-Richtlinie/reverse keyed acc. to PNO directive

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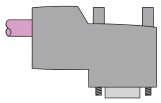
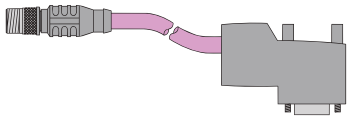
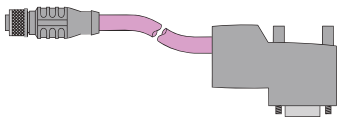
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder Codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
D9-451-0,5M-0,5M	6915747	C064		•	–	IP20
D9-451-1M-1M	6915748	C064		•	–	IP20
D9-451-2M-2M	6915749	C064		•	–	IP20
RSSW-D9-RKSW-451-0,3M-0,3M	6914125	C064 / C071 / C072	B[1])	•	–	IP20 / IP67
RSSW-D9-RKSW-451-0,5M-0,5M	6915741	C064 / C071 / C072	B[1])	•	–	IP20 / IP67
RSSW-D9-RKSW-451-0,5M-1,5M	8030192	C064 / C071 / C072	B[1])	•	–	IP20 / IP67
RSSW-D9-RKSW-451-1M-1M	6914126	C064 / C071 / C072	B[1])	•	–	IP20 / IP67
RSSW-D9-RKSW-451-1,5M-1,5M	6915917	C064 / C071 / C072	B[1])	•	–	IP20 / IP67
RSSW-D9-RKSW-451-2M-2M	6914127	C064 / C071 / C072	B[1])	•	–	IP20 / IP67
RSSW-D9-RKSW-451-3M-3M	6915902	C064 / C071 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9-RKSW-451-0,3M-0,3M	6604659	C064 / C072 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9-RKSW-451-0,5M-0,5M	6915792	C064 / C072 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9-RKSW-451-1M-1M	6604661	C064 / C072 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9-RKSW-451-2M-2M	6604663	C064 / C072 / C072	B[1])	•	–	IP20 / IP67

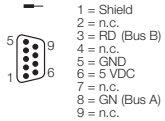
Vorkonfektionierte Buskabel für PROFIBUS-DP, Typ 451
Premoulded Bus Cables for PROFIBUS-DP, Type 451

Konfektionierbare Steckverbinder siehe Seite A3 – 4
Field wireable connectors see page A3 – 4

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable lenght [m]	Werkstoffe/Materials/Materiaux Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	451	0.5	TPUS		
	451	1	TPUS		
	451	2	TPUS		
	451	0.3	TPUS	CuZn-Ni	PUR
	451	0.5	TPUS	CuZn-Ni	PUR
	451	1	TPUS	CuZn-Ni	PUR
	451	2	TPUS	CuZn-Ni	PUR
	451	0.3	TPUS	CuZn-Ni	PUR
	451	0.5	TPUS	CuZn-Ni	PUR
	451	1	TPUS	CuZn-Ni	PUR
	451	2	TPUS	CuZn-Ni	PUR
	451	6	TPUS	CuZn-Ni	PUR

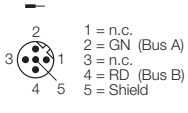
Anschlussbelegung
Pin Configuration

C064



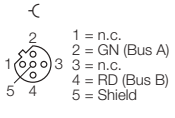
1 = Shield
2 = n.c.
3 = RD (Bus B)
4 = n.c.
5 = GND
6 = 5 VDC
7 = n.c.
8 = GN (Bus A)
9 = n.c.

C071



1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

C072



1 = n.c.
2 = GN (Bus A)
3 = n.c.
4 = RD (Bus B)
5 = Shield

[1]) B = invers codiert gem. PNO-Richtlinie/reverse keyed acc. to PNO directive

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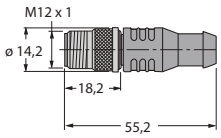
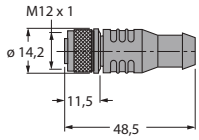
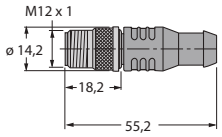
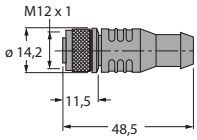
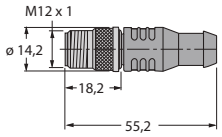
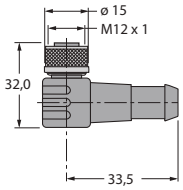
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder Codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
D9T451-0,5M	6915757	C064		•	–	IP20
D9T451-1M	6915758	C064		•	–	IP20
D9T451-2M	6915759	C064		•	–	IP20
RSSW-D9T451-0,3M	6915775	C064 / C071	B[1])	•	–	IP20 / IP67
RSSW-D9T451-0,5M	6915777	C064 / C071	B[1])	•	–	IP20 / IP67
RSSW-D9T451-1M	6915778	C064 / C071	B[1])	•	–	IP20 / IP67
RSSW-D9T451-2M	6915779	C064 / C071	B[1])	•	–	IP20 / IP67
RKSW-D9T451-0,3M	6915765	C064 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9T451-0,5M	6915767	C064 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9T451-1M	6915768	C064 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9T451-2M	6915769	C064 / C072	B[1])	•	–	IP20 / IP67
RKSW-D9T451-6M	6914187	C064 / C072	B[1])	•	–	IP20 / IP67

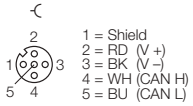
Vorkonfektionierte Buskabel für CAN/DeviceNet™, Typ 5701
Premoulded Bus Cables for CAN/DeviceNet™, Type 5701

Konfektionierbare Steckverbinder siehe Seite A3 – 14
Field wireable connectors see page A3 – 14

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	5701	5	PUR	CuZn-Ni	TPU
	5701	10	PUR	CuZn-Ni	TPU
	5701	5	PUR	CuZn-Ni	TPU
	5701	10	PUR	CuZn-Ni	TPU
 	5701	0.3	PUR	CuZn-Ni	TPU
	5701	0.5	PUR	CuZn-Ni	TPU
	5701	1	PUR	CuZn-Ni	TPU
	5701	1.5	PUR	CuZn-Ni	TPU
	5701	2	PUR	CuZn-Ni	TPU
	5701	3	PUR	CuZn-Ni	TPU
	5701	4	PUR	CuZn-Ni	TPU
	5701	5	PUR	CuZn-Ni	TPU
	5701	6	PUR	CuZn-Ni	TPU
	5701	8	PUR	CuZn-Ni	TPU
	5701	10	PUR	CuZn-Ni	TPU
	5701	15	PUR	CuZn-Ni	TPU
	5701	20	PUR	CuZn-Ni	TPU
	5701	30	PUR	CuZn-Ni	TPU
 	5701	0.3	PUR	CuZn-Ni	TPU
	5701	1	PUR	CuZn-Ni	TPU

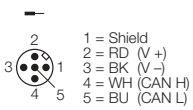
Anschlussbelegung
Pin Configuration

C069



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C070



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

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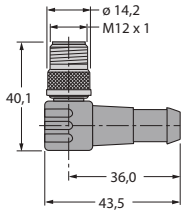
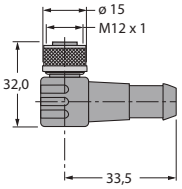
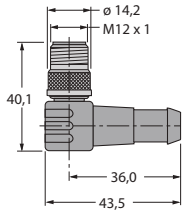
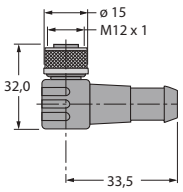
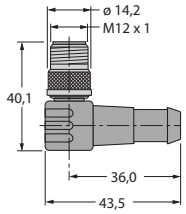
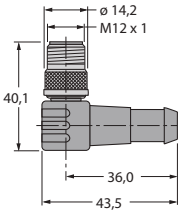
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
RSC5701-5M	6931036	C070	A	•	UL, CSA	IP67
RSC5701-10M	6931037	C070	A	•	UL, CSA	IP67
RKC5701-5M	6931034	C069	A	•	UL, CSA	IP67
RKC5701-10M	6931035	C069	A	•	UL, CSA	IP67
RSC-RKC5701-0,3M	6604829	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-0,5M	6604830	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-1M	6604831	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-1,5M	6604832	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-2M	6604833	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-3M	6604834	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-4M	6604835	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-5M	6604836	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-6M	6604837	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-8M	6604838	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-10M	6931038	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-15M	6604839	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-20M	6604840	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-RKC5701-30M	6604841	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-WKC5701-0,3M	6604842	C070 / C069	A	•	UL, CSA	IP67 / IP67
RSC-WKC5701-1M	6931039	C070 / C069	A	•	UL, CSA	IP67 / IP67

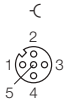
Vorkonfektionierte Buskabel für CAN/DeviceNet™, Typ 5701
Premoulded Bus Cables for CAN/DeviceNet™, Type 5701

Konfektionierbare Steckverbinder siehe Seite A3 – 14
Field wireable connectors see page A3 – 14

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	5701	2	PUR	CuZn-Ni	TPU
	5701	3	PUR	CuZn-Ni	TPU
	5701	6.5	PUR	CuZn-Ni	TPU
	5701	1.5	PUR	CuZn-Ni	TPU
	5701	4.5	PUR	CuZn-Ni	TPU
 	5701	0.3	PUR	CuZn-Ni	TPU
	5701	0.5	PUR	CuZn-Ni	TPU
	5701	1	PUR	CuZn-Ni	TPU
	5701	2	PUR	CuZn-Ni	TPU
	5701	2.5	PUR	CuZn-Ni	TPU
	5701	3	PUR	CuZn-Ni	TPU
	5701	3.5	PUR	CuZn-Ni	TPU
	5701	4	PUR	CuZn-Ni	TPU
	5701	6	PUR	CuZn-Ni	TPU
	5701	10	PUR	CuZn-Ni	TPU
 	5701	0.5	PUR	CuZn-Ni	TPU
	5701	1	PUR	CuZn-Ni	TPU
	5701	2	PUR	CuZn-Ni	TPU
	5701	3	PUR	CuZn-Ni	TPU

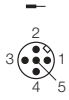
Anschlussbelegung
Pin Configuration

C069



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C070



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

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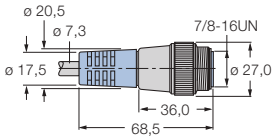
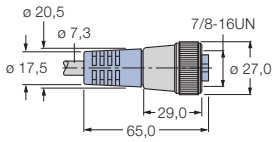
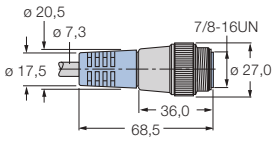
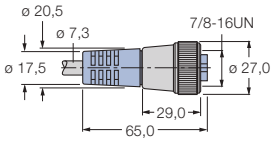
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
WSC5701-2M	6931132	C070	A	•	UL, CSA	IP67
WSC5701-3M	6931096	C070	A	•	UL, CSA	IP67
WSC5701-6,5M	6931133	C070	A	•	UL, CSA	IP67
WKC5701-1,5M	6931130	C069	A	•	UL, CSA	IP67
WKC5701-4,5M	6931131	C069	A	•	UL, CSA	IP67
WSC-WKC5701-0,3M	6604822	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-0,5M	6604823	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-1M	6604824	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-2M	6604825	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-2,5M	6931125	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-3M	6931126	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-3,5M	6931127	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-4M	6604826	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-6M	6604827	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WKC5701-10M	6604828	C070 / C069	A	•	UL, CSA	IP67 / IP67
WSC-WSC5701-0,5M	6931128	C070 / C070	A	•	UL, CSA	IP67 / IP67
WSC-WSC5701-1M	6931082	C070 / C070	A	•	UL, CSA	IP67 / IP67
WSC-WSC5701-2M	6931129	C070 / C070	A	•	UL, CSA	IP67 / IP67
WSC-WSC5701-3M	6604821	C070 / C070	A	•	UL, CSA	IP67 / IP67

Vorkonfektionierte Buskabel für CAN/DeviceNet™, Typ 5711
Premoulded Bus Cables for CAN/DeviceNet™, Type 5711

Konfektionierbare Steckverbinder siehe Seite A3 – 14
Field wireable connectors see page A3 – 14

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
Kabel-Meterware Bulk cable	5711	30	PVC		
	5711	150	PVC		
	5711	500	PVC		
	5711	1	PVC	CuZn-Ni	PUR
	5711	3	PVC	CuZn-Ni	PUR
	5711	6	PVC	CuZn-Ni	PUR
	5711	10	PVC	CuZn-Ni	PUR
	5711	15	PVC	CuZn-Ni	PUR
	5711	1	PVC	CuZn-Ni	PUR
	5711	6	PVC	CuZn-Ni	PUR
	5711	10	PVC	CuZn-Ni	PUR
	5711	15	PVC	CuZn-Ni	PUR
 	5711	0.3	PVC	CuZn-Ni	PUR
	5711	0.5	PVC	CuZn-Ni	PUR
	5711	1	PVC	CuZn-Ni	PUR
	5711	2	PVC	CuZn-Ni	PUR
	5711	3	PVC	CuZn-Ni	PUR
	5711	4	PVC	CuZn-Ni	PUR
	5711	6	PVC	CuZn-Ni	PUR
	5711	10	PVC	CuZn-Ni	PUR
	5711	15	PVC	CuZn-Ni	PUR
	5711	30	PVC	CuZn-Ni	PUR

Anschlussbelegung
Pin Configuration

C054

1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C055

1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

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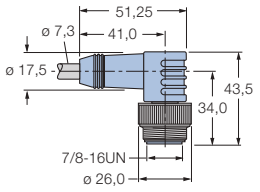
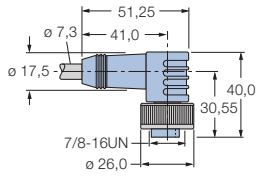
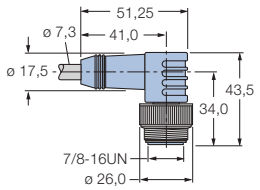
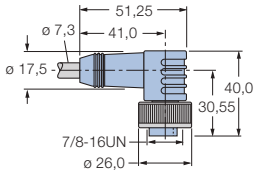
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
KABEL5711-30M	6602453			–	UL, CSA	
KABEL5711-150M	6602455			–	UL, CSA	
KABEL5711-500M	6604922			–	UL, CSA	
RSM5711-1M	6602043	C054		–	UL, CSA	IP67
RSM5711-3M	6604419	C054		–	UL, CSA	IP67
RSM5711-6M	6603649	C054		–	UL, CSA	IP67
RSM5711-10M	6603650	C054		–	UL, CSA	IP67
RSM5711-15M	6603651	C054		–	UL, CSA	IP67
RKM5711-1M	6602391	C055		–	UL, CSA	IP67
RKM5711-6M	6603652	C055		–	UL, CSA	IP67
RKM5711-10M	6603653	C055		–	UL, CSA	IP67
RKM5711-15M	6602395	C055		–	UL, CSA	IP67
RSM-RKM5711-0,3M	6602611	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-0,5M	6602050	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-1M	6602356	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-2M	6602045	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-3M	6602080	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-4M	6602051	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-6M	6602052	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-10M	6602023	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-15M	6602504	C054 / C055		–	UL, CSA	IP67 / IP67
RSM-RKM5711-30M	6603662	C054 / C055		–	UL, CSA	IP67 / IP67

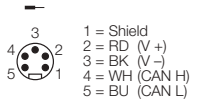
Vorkonfektionierte Buskabel für CAN/DeviceNet™, Typ 5711
Premoulded Bus Cables for CAN/DeviceNet™, Type 5711

Konfektionierbare Steckverbinder siehe Seite A3 – 14
Field wireable connectors see page A3 – 14

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	Überwurfmutter Coupling nut	Griffteil Grip
	5711	6	PVC	CuZn-Ni	PUR
	5711	10	PVC	CuZn-Ni	PUR
	5711	15	PVC	CuZn-Ni	PUR
	5711	6	PVC	CuZn-Ni	PUR
	5711	10	PVC	CuZn-Ni	PUR
	5711	15	PVC	CuZn-Ni	PUR
 	5711	0.3	PVC	CuZn-Ni	PUR
	5711	0.5	PVC	CuZn-Ni	PUR
	5711	1	PVC	CuZn-Ni	PUR
	5711	2	PVC	CuZn-Ni	PUR
	5711	4	PVC	CuZn-Ni	PUR
	5711	6	PVC	CuZn-Ni	PUR
	5711	10	PVC	CuZn-Ni	PUR
	5711	15	PVC	CuZn-Ni	PUR
	5711	30	PVC	CuZn-Ni	PUR

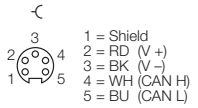
Anschlussbelegung
Pin Configuration

C054



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C055



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

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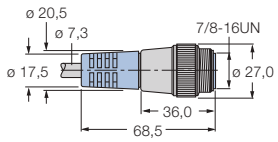
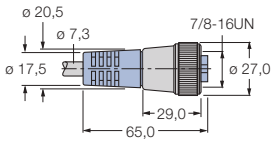
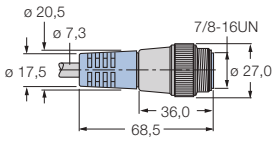
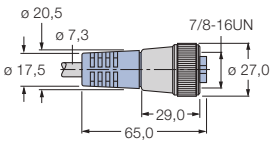
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
WSM5711-6M	6606039	C054		–	UL, CSA	IP67
WSM5711-10M	6602718	C054		–	UL, CSA	IP67
WSM5711-15M	6603225	C054		–	UL, CSA	IP67
WKM5711-6M	6605296	C055		–	UL, CSA	IP67
WKM5711-10M	6605298	C055		–	UL, CSA	IP67
WKM5711-15M	6605299	C055		–	UL, CSA	IP67
WSM-WKM5711-0,3M	6605652	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-0,5M	6602014	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-1M	6602016	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-2M	6602018	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-4M	6605654	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-6M	6602401	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-10M	6602022	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-15M	6603447	C054 / C055		–	UL, CSA	IP67 / IP67
WSM-WKM5711-30M	6605657	C054 / C055		–	UL, CSA	IP67 / IP67

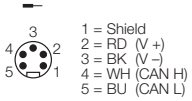
Vorkonfektionierte Buskabel für CAN/DeviceNet™, Typ 5723
Premoulded Bus Cables for CAN/DeviceNet™, Type 5723

Konfektionierbare Steckverbinder siehe Seite A3 – 14
Field wireable connectors see page A3 – 14

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
Kabel-Meterware	5723	30	PUR		
Bulk cable	5723	150	PUR		
	5723	500	PUR		
	5723	6	PUR	CuZn-Ni	PUR
	5723	10	PUR	CuZn-Ni	PUR
	5723	15	PUR	CuZn-Ni	PUR
	5723	6	PUR	CuZn-Ni	PUR
	5723	10	PUR	CuZn-Ni	PUR
	5723	15	PUR	CuZn-Ni	PUR
 	5723	0.3	PUR	CuZn-Ni	PUR
	5723	0.5	PUR	CuZn-Ni	PUR
	5723	1	PUR	CuZn-Ni	PUR
	5723	2	PUR	CuZn-Ni	PUR
	5723	4	PUR	CuZn-Ni	PUR
	5723	6	PUR	CuZn-Ni	PUR
	5723	10	PUR	CuZn-Ni	PUR
	5723	15	PUR	CuZn-Ni	PUR
	5723	30	PUR	CuZn-Ni	PUR

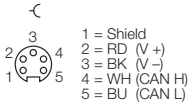
Anschlussbelegung
Pin Configuration

C054



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C055



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

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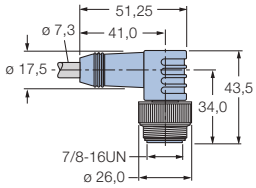
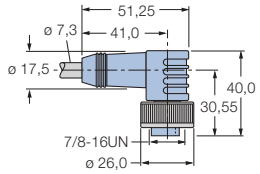
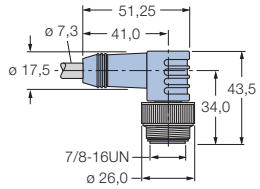
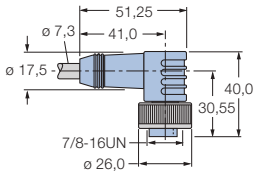
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
KABEL5723-30M	6604923			•	UL, CSA	
KABEL5723-150M	6604925			•	UL, CSA	
KABEL5723-500M	6604928			•	UL, CSA	
RSM5723-6M	6605933	C054		•	UL, CSA	IP67
RSM5723-10M	6605935	C054		•	UL, CSA	IP67
RSM5723-15M	6605936	C054		•	UL, CSA	IP67
RKM5723-6M	6605189	C055		•	UL, CSA	IP67
RKM5723-10M	6605191	C055		•	UL, CSA	IP67
RKM5723-15M	6605192	C055		•	UL, CSA	IP67
RSM-RKM5723-0,3M	6605544	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-0,5M	6605545	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-1M	6605546	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-2M	6605548	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-4M	6605551	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-6M	6605553	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-10M	6605555	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-15M	6605556	C054 / C055		•	UL, CSA	IP67 / IP67
RSM-RKM5723-30M	6605559	C054 / C055		•	UL, CSA	IP67 / IP67

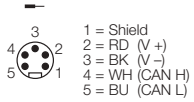
Vorkonfektionierte Buskabel für CAN/DeviceNet™, Typ 5723
Premoulded Bus Cables for CAN/DeviceNet™, Type 5723

Konfektionierbare Steckverbinder siehe Seite A3 – 14
Field wireable connectors see page A3 – 14

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	5723	6	PUR	CuZn-Ni	PUR
	5723	10	PUR	CuZn-Ni	PUR
	5723	15	PUR	CuZn-Ni	PUR
	5723	6	PUR	CuZn-Ni	PUR
	5723	10	PUR	CuZn-Ni	PUR
	5723	15	PUR	CuZn-Ni	PUR
 	5723	0.3	PUR	CuZn-Ni	PUR
	5723	0.5	PUR	CuZn-Ni	PUR
	5723	1	PUR	CuZn-Ni	PUR
	5723	2	PUR	CuZn-Ni	PUR
	5723	4	PUR	CuZn-Ni	PUR
	5723	6	PUR	CuZn-Ni	PUR
	5723	10	PUR	CuZn-Ni	PUR
	5723	15	PUR	CuZn-Ni	PUR
	5723	30	PUR	CuZn-Ni	PUR

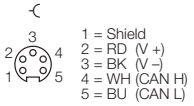
Anschlussbelegung
Pin Configuration

C054



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C055



1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

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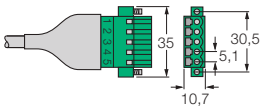
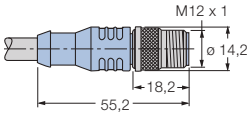
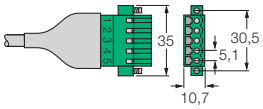
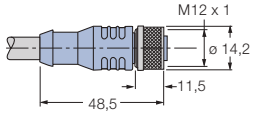
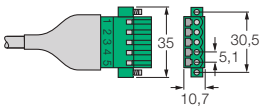
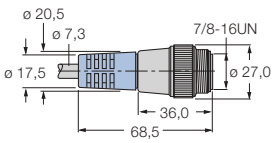
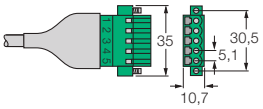
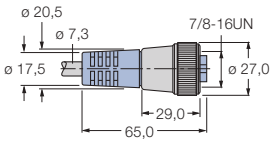
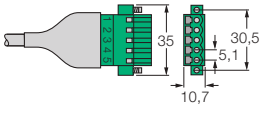
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
WSM5723-6M	6606055	C054		•	UL, CSA	IP67
WSM5723-10M	6606057	C054		•	UL, CSA	IP67
WSM5723-15M	6606058	C054		•	UL, CSA	IP67
WKM5723-6M	6605314	C055		•	UL, CSA	IP67
WKM5723-10M	6605316	C055		•	UL, CSA	IP67
WKM5723-15M	6605317	C055		•	UL, CSA	IP67
WSM-WKM5723-0,3M	6605660	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-0,5M	6605661	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-1M	6605662	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-2M	6605664	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-4M	6605667	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-6M	6605669	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-10M	6605671	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-15M	6605672	C054 / C055		•	UL, CSA	IP67 / IP67
WSM-WKM5723-30M	6605675	C054 / C055		•	UL, CSA	IP67 / IP67

Vorkonfektionierte Buskabel für CAN/DeviceNet™, open connector (OC)
Premoulded Bus Cables for CAN/DeviceNet™, open connector (OC)

Konfektionierbare Steckverbinder siehe Seite A3 – 14
Field wireable connectors see page A3 – 14

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	572	0.5	PVC		
	572	1	PVC		
	572	2	PVC		
	5711	0.5	PVC		
	5711	1	PVC		
	5711	2	PVC		
	5723	0.5	PUR		
	5723	1	PUR		
	5723	2	PUR		
 	572	0.5	PVC	CuZn-Ni	PUR
	572	1	PVC	CuZn-Ni	PUR
	572	2	PVC	CuZn-Ni	PUR
	572	4	PVC	CuZn-Ni	PUR
	572	25	PVC	CuZn-Ni	PUR
 	572	0.5	PVC	CuZn-Ni	PUR
	572	1	PVC	CuZn-Ni	PUR
	572	2	PVC	CuZn-Ni	PUR
 	5711	0.5	PVC	CuZn-Ni	PUR
	5711	1	PVC	CuZn-Ni	PUR
	5711	2	PVC	CuZn-Ni	PUR
	5723	0.5	PUR	CuZn-Ni	PUR
	5723	1	PUR	CuZn-Ni	PUR
	5723	2	PUR	CuZn-Ni	PUR
 	5711	0.5	PVC	CuZn-Ni	PUR
	5711	1	PVC	CuZn-Ni	PUR
	5711	2	PVC	CuZn-Ni	PUR
	5723	0.5	PUR	CuZn-Ni	PUR
	5723	1	PUR	CuZn-Ni	PUR
	5723	2	PUR	CuZn-Ni	PUR

Anschlussbelegung
Pin Configuration

C054

1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C055

1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

C065

1 = BK (V –)
2 = BU (CAN L)
3 = Shield
4 = WH (CAN H)
5 = RD (V +)

C069

1 = Shield
2 = RD (V +)
3 = BK (V –)
4 = WH (CAN H)
5 = BU (CAN L)

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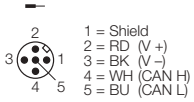
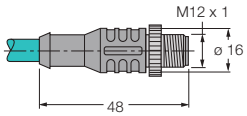
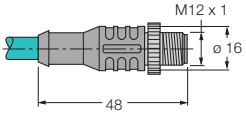
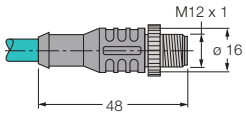
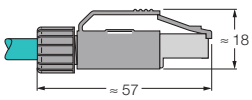
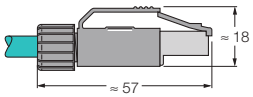
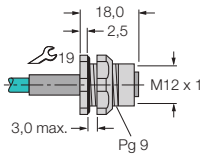
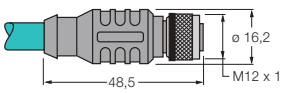
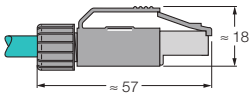
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
CBC5-572-0,5M	6606064	C065		–	UL, CSA	IP20
CBC5-572-1M	6602545	C065		–	UL, CSA	IP20
CBC5-572-2M	6606065	C065		–	UL, CSA	IP20
CBC5-5711-0,5M	6606091	C065		–	UL, CSA	IP20
CBC5-5711-1M	6606092	C065		–	UL, CSA	IP20
CBC5-5711-2M	6606093	C065		–	UL, CSA	IP20
CBC5-5723-0,5M	6606097	C065		•	UL, CSA	IP20
CBC5-5723-1M	6606098	C065		•	UL, CSA	IP20
CBC5-5723-2M	6606099	C065		•	UL, CSA	IP20
RSC-CBC5-572-0,5M	6602737	C070 / C065	A	–	UL, CSA	IP67 / IP20
RSC-CBC5-572-1M	6606133	C070 / C065	A	–	UL, CSA	IP67 / IP20
RSC-CBC5-572-2M	6602340	C070 / C065	A	–	UL, CSA	IP67 / IP20
RSC-CBC5-572-4M	6606134	C070 / C065	A	–	UL, CSA	IP67 / IP20
RSC-CBC5-572-25M	6611350	C070 / C065	A	–	UL, CSA	IP67 / IP20
RKC-CBC5-572-0,5M	6606103	C069 / C065	A	–	UL, CSA	IP67 / IP20
RKC-CBC5-572-1M	6606104	C069 / C065	A	–	UL, CSA	IP67 / IP20
RKC-CBC5-572-2M	6606105	C069 / C065	A	–	UL, CSA	IP67 / IP20
RSM-CBC5-5711-0,5M	6606234	C054 / C065		–	UL, CSA	IP67 / IP20
RSM-CBC5-5711-1M	6606235	C054 / C065		–	UL, CSA	IP67 / IP20
RSM-CBC5-5711-2M	6606236	C054 / C065		–	UL, CSA	IP67 / IP20
RSM-CBC5-5723-0,5M	6606240	C054 / C065		•	UL, CSA	IP67 / IP20
RSM-CBC5-5723-1M	6606241	C054 / C065		•	UL, CSA	IP67 / IP20
RSM-CBC5-5723-2M	6606242	C054 / C065		•	UL, CSA	IP67 / IP20
RKM-CBC5-5711-0,5M	6606195	C055 / C065		–	UL, CSA	IP67 / IP20
RKM-CBC5-5711-1M	6606196	C055 / C065		–	UL, CSA	IP67 / IP20
RKM-CBC5-5711-2M	6606197	C055 / C065		–	UL, CSA	IP67 / IP20
RKM-CBC5-5723-0,5M	6606201	C055 / C065		•	UL, CSA	IP67 / IP20
RKM-CBC5-5723-1M	6606202	C055 / C065		•	UL, CSA	IP67 / IP20
RKM-CBC5-5723-2M	6606203	C055 / C065		•	UL, CSA	IP67 / IP20

Anschlussbelegung
Pin Configuration

C070



Vorkonfektionierte Buskabel für Ethernet, Typ 441/S2174[1])
Premoulded Bus Cables for Ethernet, Typ 441/S2174[1])

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
Kabel-Meterware Bulk cable	441/S2174	100	PUR	–	–
 	441/S2174	0.5	PUR	CuZn-Ni	PUR
	441/S2174	2	PUR	CuZn-Ni	PUR
	441/S2174	6	PUR	CuZn-Ni	PUR
	441/S2174	10	PUR	CuZn-Ni	PUR
	441/S2174	20	PUR	CuZn-Ni	PUR
	441/S2174	30	PUR	CuZn-Ni	PUR
 	441/S2174	0.5	PUR	CuZn-Ni	PUR
	441/S2174	1	PUR	CuZn-Ni	PUR
	441/S2174	2	PUR	CuZn-Ni	PUR
	441/S2174	6	PUR	CuZn-Ni	PUR
	441/S2174	10	PUR	CuZn-Ni	PUR
	441/S2174	15	PUR	CuZn-Ni	PUR
	441/S2174	25	PUR	CuZn-Ni	PUR
	441/S2174	30	PUR	CuZn-Ni	PUR
	441/S2174	40	PUR	CuZn-Ni	PUR
 	441/S2174	0.5	PUR	CuZn-Ni	PUR
 	441/S2174	0.5	PUR	CuZn-Ni	PUR

Anschlussbelegung
Pin Configuration

C061

1 = YE (TX+)
2 = WH (RX+)
3 = OG (TX–)
4 = BU (RX–)

C063

1 = YE (TX+)
2 = WH (RX+)
3 = OG (TX–)
4 = BU (RX–)

C067

1 = YE (TX+)
2 = OG (TX–)
3 = WH (RX+)
4 = n.c.
5 = n.c.
6 = BU (RX–)
7 = n.c.
8 = n.c.

[1]) 8-polige Ethernet-Leitungen auf Anfrage/8-pole Ethernet cables on request

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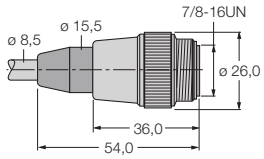
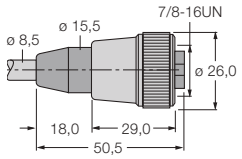
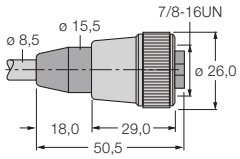
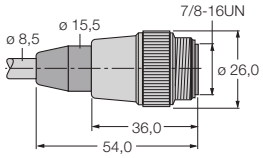
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
KABEL441-100M/S2174	6914212	–	–	•	UL	–
RSSD-RSSD-441-0,5M/S2174	6914217	C061 / C061	D	•	UL	IP67 / IP67
RSSD-RSSD-441-2M/S2174	6914218	C061 / C061	D	•	UL	IP67 / IP67
RSSD-RSSD-441-6M/S2174	6914219	C061 / C061	D	•	UL	IP67 / IP67
RSSD-RSSD-441-10M/S2174	6914220	C061 / C061	D	•	UL	IP67 / IP67
RSSD-RSSD-441-20M/S2174	6914210	C061 / C061	D	•	UL	IP67 / IP67
RSSD-RSSD-441-30M/S2174	6914211	C061 / C061	D	•	UL	IP67 / IP67
RSSD-RJ45-441-0,5M/S2174	6915780	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-1M/S2174	8031217	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-2M/S2174	6915781	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-6M/S2174	6914222	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-10M/S2174	6914223	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-15M/S2174	6915663	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-25M/S2174	6915665	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-30M/S2174	6915666	C061 / C067	D	•	UL	IP67 / IP20
RSSD-RJ45-441-40M/S2174	6915667	C061 / C067	D	•	UL	IP67 / IP20
RJ45-FKSDD-441-0,5M/S2174	6914221	C067 / C063	D	•	UL	IP20 / IP67
RKSD-RJ45-441-0,5M/S2174	6914224	C063 / C067	D	•	UL	IP67 / IP20

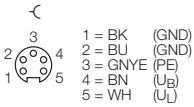
Vorkonfektionierte Versorgungskabel, Typ 52
Premoulded Power Cables, Type 52

Konfektionierbare Steckverbinder siehe Seite A4 – 3
Field wireable connectors see page A4 – 3

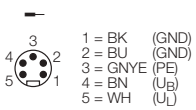
Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
Kabel-Meterware	52	100	PUR		
Bulk cable	52	500	PUR		
	52	2	PUR	CuZn-Ni	PUR
	52	4	PUR	CuZn-Ni	PUR
	52	6	PUR	CuZn-Ni	PUR
	52	10	PUR	CuZn-Ni	PUR
	52	15	PUR	CuZn-Ni	PUR
	52	30	PUR	CuZn-Ni	PUR
	52	2	PUR	CuZn-Ni	PUR
	52	4	PUR	CuZn-Ni	PUR
	52	6	PUR	CuZn-Ni	PUR
	52	10	PUR	CuZn-Ni	PUR
	52	15	PUR	CuZn-Ni	PUR
	52	30	PUR	CuZn-Ni	PUR
 	52	0.3	PUR	CuZn-Ni	PUR
	52	0.5	PUR	CuZn-Ni	PUR
	52	1	PUR	CuZn-Ni	PUR
	52	2	PUR	CuZn-Ni	PUR
	52	3	PUR	CuZn-Ni	PUR
	52	4	PUR	CuZn-Ni	PUR
	52	5	PUR	CuZn-Ni	PUR
	52	6	PUR	CuZn-Ni	PUR
	52	10	PUR	CuZn-Ni	PUR
	52	15	PUR	CuZn-Ni	PUR
	52	20	PUR	CuZn-Ni	PUR
	52	30	PUR	CuZn-Ni	PUR

Anschlussbelegung
Pin Configuration

C056



C058



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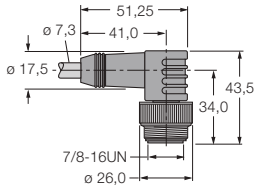
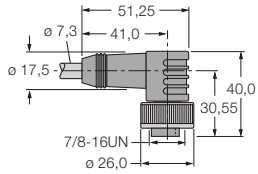
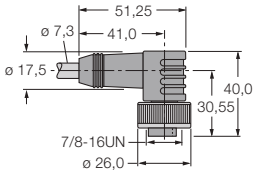
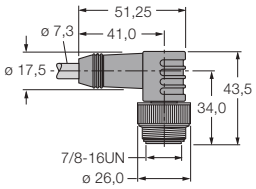
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
KABEL-PDP-52-100M	6604716			•	–	
KABEL-PDP-52-500M	6604717			•	–	
RSM52-2M	6604712	C058		•	–	IP67
RSM52-4M	6604732	C058		•	–	IP67
RSM52-6M	6914142	C058		•	–	IP67
RSM52-10M	6914143	C058		•	–	IP67
RSM52-15M	6914144	C058		•	–	IP67
RSM52-30M	6604740	C058		•	–	IP67
RKM52-2M	6604711	C056		•	–	IP67
RKM52-4M	6604714	C056		•	–	IP67
RKM52-6M	6914145	C056		•	–	IP67
RKM52-10M	6914146	C056		•	–	IP67
RKM52-15M	6914147	C056		•	–	IP67
RKM52-30M	6604722	C056		•	–	IP67
RKM52-0,3-RSM52	6604743	C056 / C058		•	–	IP67 / IP67
RKM52-0,5-RSM52	6914148	C056 / C058		•	–	IP67 / IP67
RKM52-1-RSM52	6914149	C056 / C058		•	–	IP67 / IP67
RKM52-2-RSM52	6914150	C056 / C058		•	–	IP67 / IP67
RKM52-3-RSM52	6604749	C056 / C058		•	–	IP67 / IP67
RKM52-4-RSM52	6914151	C056 / C058		•	–	IP67 / IP67
RKM52-5-RSM52	6604751	C056 / C058		•	–	IP67 / IP67
RKM52-6-RSM52	6914152	C056 / C058		•	–	IP67 / IP67
RKM52-10-RSM52	6914153	C056 / C058		•	–	IP67 / IP67
RKM52-15-RSM52	6914154	C056 / C058		•	–	IP67 / IP67
RKM52-20-RSM52	6604756	C056 / C058		•	–	IP67 / IP67
RKM52-30-RSM52	6914306	C056 / C058		•	–	IP67 / IP67

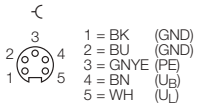
Vorkonfektionierte Versorgungskabel, Typ 52
Premoulded Power Cables, Type 52

Konfektionierbare Steckverbinder siehe Seite A4 – 3
Field wireable connectors see page A4 – 3

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	52	6	PUR	CuZn-Ni	PUR
	52	10	PUR	CuZn-Ni	PUR
	52	15	PUR	CuZn-Ni	PUR
	52	0.5	PUR	CuZn-Ni	PUR
	52	2	PUR	CuZn-Ni	PUR
	52	4	PUR	CuZn-Ni	PUR
	52	6	PUR	CuZn-Ni	PUR
	52	10	PUR	CuZn-Ni	PUR
	52	15	PUR	CuZn-Ni	PUR
 	52	0.3	PUR	CuZn-Ni	PUR
	52	0.5	PUR	CuZn-Ni	PUR
	52	1	PUR	CuZn-Ni	PUR
	52	2	PUR	CuZn-Ni	PUR
	52	4	PUR	CuZn-Ni	PUR
	52	6	PUR	CuZn-Ni	PUR
	52	10	PUR	CuZn-Ni	PUR
	52	15	PUR	CuZn-Ni	PUR
	52	30	PUR	CuZn-Ni	PUR

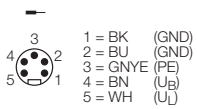
Anschlussbelegung
Pin Configuration

C056



1 = BK (GND)
2 = BU (GND)
3 = GNYE (PE)
4 = BN (U_B)
5 = WH (U_L)

C058



1 = BK (GND)
2 = BU (GND)
3 = GNYE (PE)
4 = BN (U_B)
5 = WH (U_L)

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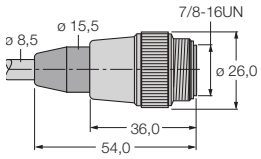
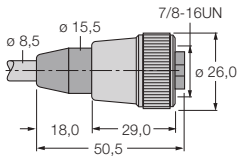
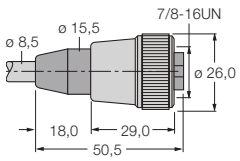
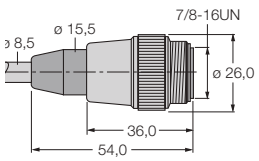
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
WSM52-6M	6604788	C058		•	–	IP67
WSM52-10M	6604790	C058		•	–	IP67
WSM52-15M	6604791	C058		•	–	IP67
WKM52-0.5M	6604762	C056		•	–	IP67
WKM52-2M	6604765	C056		•	–	IP67
WKM52-4M	6604768	C056		•	–	IP67
WKM52-6M	6604770	C056		•	–	IP67
WKM52-10M	6604772	C056		•	–	IP67
WKM52-15M	6604773	C056		•	–	IP67
WKM52-0,3-WSM52	6604797	C056 / C058		•	–	IP67 / IP67
WKM52-0,5-WSM52	6604798	C056 / C058		•	–	IP67 / IP67
WKM52-1-WSM52	6604799	C056 / C058		•	–	IP67 / IP67
WKM52-2-WSM52	6604801	C056 / C058		•	–	IP67 / IP67
WKM52-4-WSM52	6604804	C056 / C058		•	–	IP67 / IP67
WKM52-6-WSM52	6604806	C056 / C058		•	–	IP67 / IP67
WKM52-10-WSM52	6604808	C056 / C058		•	–	IP67 / IP67
WKM52-15-WSM52	6604809	C056 / C058		•	–	IP67 / IP67
WKM52-30-WSM52	6604812	C056 / C058		•	–	IP67 / IP67

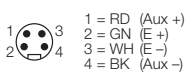
Vorkonfektionierte Versorgungskabel, Typ 43
Premoulded Power Cables, Type 43

Konfektionierbare Steckverbinder siehe Seite A4 – 6
Field wireable connectors see page A4 – 6

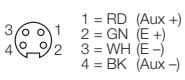
Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
Kabel-Meterware	43	100	PUR		
Bulk cable	43	1000	PUR		
	43	6	PUR	CuZn-Ni	PUR
	43	10	PUR	CuZn-Ni	PUR
	43	15	PUR	CuZn-Ni	PUR
	43	6	PUR	CuZn-Ni	PUR
	43	10	PUR	CuZn-Ni	PUR
	43	15	PUR	CuZn-Ni	PUR
 	43	0.3	PUR	CuZn-Ni	PUR
	43	0.5	PUR	CuZn-Ni	PUR
	43	1	PUR	CuZn-Ni	PUR
	43	2	PUR	CuZn-Ni	PUR
	43	4	PUR	CuZn-Ni	PUR
	43	6	PUR	CuZn-Ni	PUR
	43	10	PUR	CuZn-Ni	PUR
	43	15	PUR	CuZn-Ni	PUR

Anschlussbelegung
Pin Configuration

C057



C060



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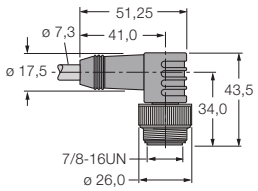
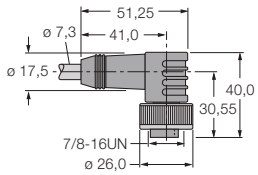
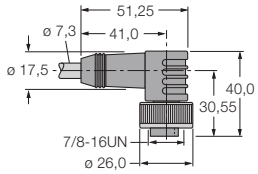
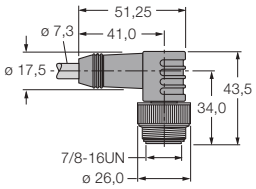
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
KABEL-DN-43-100M	8037697			•	–	
KABEL-DN-43-1000M	8020227			•	–	
RSM43-6M	6915621	C057		•	–	IP67
RSM43-10M	6915622	C057		•	–	IP67
RSM43-15M	6915623	C057		•	–	IP67
RKM43-6M	6914307	C060		•	–	IP67
RKM43-10M	6914308	C060		•	–	IP67
RKM43-15M	6914310	C060		•	–	IP67
RKM43-0,3-RSM43	6914319	C060 / C057		•	–	IP67 / IP67
RKM43-0,5-RSM43	6914311	C060 / C057		•	–	IP67 / IP67
RKM43-1-RSM43	6914312	C060 / C057		•	–	IP67 / IP67
RKM43-2-RSM43	6914313	C060 / C057		•	–	IP67 / IP67
RKM43-4-RSM43	6914314	C060 / C057		•	–	IP67 / IP67
RKM43-6-RSM43	6914315	C060 / C057		•	–	IP67 / IP67
RKM43-10-RSM43	6914316	C060 / C057		•	–	IP67 / IP67
RKM43-15-RSM43	6914317	C060 / C057		•	–	IP67 / IP67

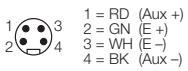
Vorkonfektionierte Versorgungskabel, Typ 43
Premoulded Power Cables, Type 43

Konfektionierbare Steckverbinder siehe Seite A4 – 6
Field wireable connectors see page A4 – 6

Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	43	6	PUR	CuZn-Ni	PUR
	43	10	PUR	CuZn-Ni	PUR
	43	15	PUR	CuZn-Ni	PUR
	43	6	PUR	CuZn-Ni	PUR
	43	10	PUR	CuZn-Ni	PUR
	43	15	PUR	CuZn-Ni	PUR
 	43	0.3	PUR	CuZn-Ni	PUR
	43	0.5	PUR	CuZn-Ni	PUR
	43	1	PUR	CuZn-Ni	PUR
	43	2	PUR	CuZn-Ni	PUR
	43	4	PUR	CuZn-Ni	PUR
	43	6	PUR	CuZn-Ni	PUR
	43	10	PUR	CuZn-Ni	PUR
	43	15	PUR	CuZn-Ni	PUR

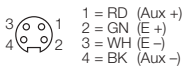
Anschlussbelegung
Pin Configuration

C057



1 = RD (Aux +)
2 = GN (E +)
3 = WH (E –)
4 = BK (Aux –)

C060



1 = RD (Aux +)
2 = GN (E +)
3 = WH (E –)
4 = BK (Aux –)

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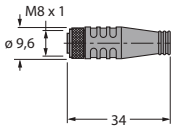
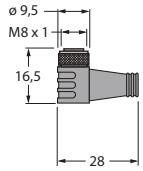
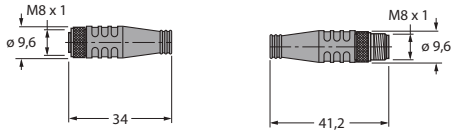
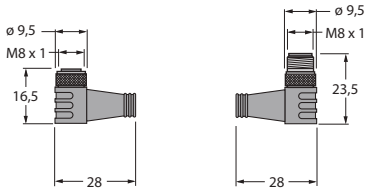
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
WSM43-6M	6915844	C057		•	–	IP67
WSM43-10M	6915845	C057		•	–	IP67
WSM43-15M	6915846	C057		•	–	IP67
WKM43-6M	6913940	C060		•	–	IP67
WKM43-10M	6913941	C060		•	–	IP67
WKM43-15M	6913942	C060		•	–	IP67
WKM43-0,3-WSM43	6913948	C060 / C057		•	–	IP67 / IP67
WKM43-0,5-WSM43	6913949	C060 / C057		•	–	IP67 / IP67
WKM43-1-WSM43	6913950	C060 / C057		•	–	IP67 / IP67
WKM43-2-WSM43	6913951	C060 / C057		•	–	IP67 / IP67
WKM43-4-WSM43	6913916	C060 / C057		•	–	IP67 / IP67
WKM43-6-WSM43	6913918	C060 / C057		•	–	IP67 / IP67
WKM43-10-WSM43	6913917	C060 / C057		•	–	IP67 / IP67
WKM43-15-WSM43	6913928	C060 / C057		•	–	IP67 / IP67

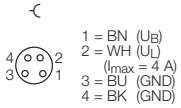
Vorkonfektionierte Versorgungskabel für *piconet*®
Premoulded Power Cables for *piconet*®

Konfektionierbare Steckverbinder siehe Seite A5 – 12
Field wireable connectors see page A5 – 12

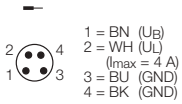
Abmessungen/Bauform Dimensions/Housing style [mm]	Kabeltyp Cable type	Kabellänge Cable length [m]	Werkstoffe/Materials Kabelmantel Cable jacket	 Überwurfmutter Coupling nut	 Griffteil Grip
	TXL	2	PUR	CuZn-Ni	PUR
	TXL	5	PUR	CuZn-Ni	PUR
	TXL	10	PUR	CuZn-Ni	PUR
	TXL	2	PUR	CuZn-Ni	PUR
	TXL	5	PUR	CuZn-Ni	PUR
	TXL	10	PUR	CuZn-Ni	PUR
	TXL	0.12	PUR	CuZn-Ni	PUR
	TXL	0.15	PUR	CuZn-Ni	PUR
	TXL	0.5	PUR	CuZn-Ni	PUR
	TXL	1	PUR	CuZn-Ni	PUR
	TXL	2	PUR	CuZn-Ni	PUR
	TXL	5	PUR	CuZn-Ni	PUR
	TXL	0.15	PUR	CuZn-Ni	PUR
	TXL	0.5	PUR	CuZn-Ni	PUR
	TXL	1	PUR	CuZn-Ni	PUR
	TXL	2	PUR	CuZn-Ni	PUR
	TXL	5	PUR	CuZn-Ni	PUR

Anschlussbelegung
Pin Configuration

C059



C062



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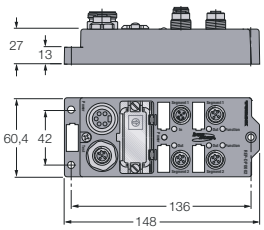
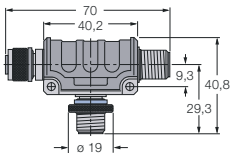
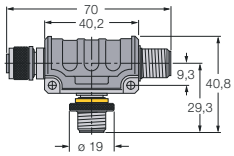
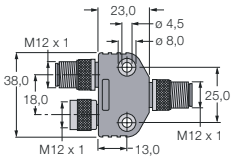
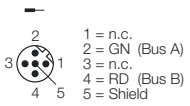
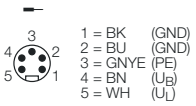
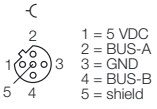
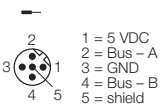
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Connection	Steckverbinder-codierung Connector coding	Schleppkettenfähig Suited to trailing applications	Zulassungen Approvals	Schutzart Degree of protection
PKG4M-2/TXL	6625553	C059		•	cULus	IP67
PKG4M-5/TXL	6625554	C059		•	cULus	IP67
PKG4M-10/TXL	6625555	C059		•	cULus	IP67
PKW4M-2/TXL	6625559	C059		•	cULus	IP67
PKW4M-5/TXL	6625560	C059		•	cULus	IP67
PKW4M-10/TXL	6625561	C059		•	cULus	IP67
PKG4M-0,12-PSG4M/TXL	6627043	C059 / C062		•	cULus	IP67 / IP67
PKG4M-0,15-PSG4M/TXL	6625669	C059 / C062		•	cULus	IP67 / IP67
PKG4M-0,5-PSG4M/TXL	6627049	C059 / C062		•	cULus	IP67 / IP67
PKG4M-1-PSG4M/TXL	6625672	C059 / C062		•	cULus	IP67 / IP67
PKG4M-2-PSG4M/TXL	6625673	C059 / C062		•	cULus	IP67 / IP67
PKG4M-5-PSG4M/TXL	6627076	C059 / C062		•	cULus	IP67 / IP67
PKW4M-0,15-PSW4M/TXL	6625687	C059 / C062		•	cULus	IP67 / IP67
PKW4M-0,5-PSW4M/TXL	6627050	C059 / C062		•	cULus	IP67 / IP67
PKW4M-1-PSW4M/TXL	6625690	C059 / C062		•	cULus	IP67 / IP67
PKW4M-2-PSW4M/TXL	6625691	C059 / C062		•	cULus	IP67 / IP67
PKW4M-5-PSW4M/TXL	6627077	C059 / C062		•	cULus	IP67 / IP67

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	PROFIBUS-DP Repeater, M12 B-codiert, bis 12 MBit/s, IP67 PROFIBUS-DP Repeater, M12 B-coded, up to 12 MBps, IP67	1 x 7/8" (F052) 1 x M12 (F100) 4 x M12 (F083)	**REP-DP 0002**	6825354
	Bus-T-Stück, geschirmt, 12 MBit/s Bus tee, shielded, 12 MBps	2 x M12 (F100) 1 x M12 (F083)	**RKSWS4.5[5]-2RSSWS**	6999021
	Bus-T-Stück, geschirmt, 12 MBit/s, direkte T-Stück Kopplung möglich Bus tee, shielded, 12 MBps, direct coupling possible	1 x M12 (F008) 1 x M12 (F083) 1 x M12 (F100)	**RKSW-2RSSW45-0001**	6914180
	Bus-Y-Stück, komplett geschirmt, 12 MBit/s Bus Y junction, fully shielded, 12 MBps	2 x M12 (F100) 1 x M12 (F083)	**VB2-FSW-FKW-FSW-45**[1])	6996009

Anschlussbelegung
Pin Configuration

(F008)	(F052)	(F083)	(F100)
			

[1]) Gleichzeitiger Anschluss von zwei konfektionierbaren Steckverbindern nicht möglich/Simultaneous connection of two field wireable connectors not possible

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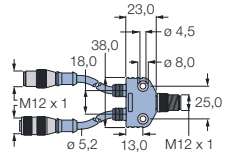
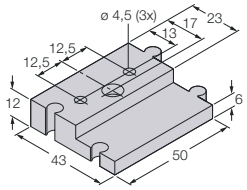
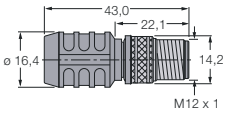
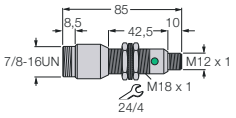
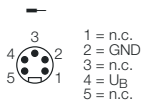
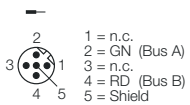
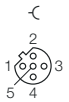
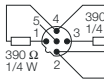
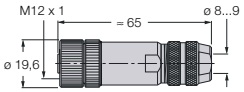
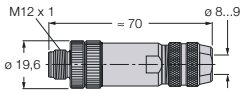
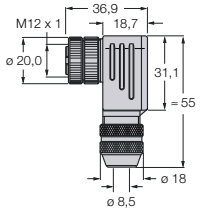
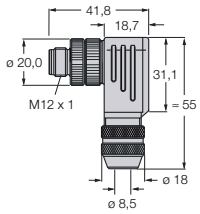
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Bus-Y-Stück, komplett geschirmt, 12 MBit/s, 2 x 0,5 m Bus Y-piece, fully shielded, 12 MBps, 2 x 0.5 m	2 x M12 (F008) 1 x M12 (F034)	**VB2-FSW/RSSW-RKSW455-0.5M-0.5M**	6996038
	Befestigungsset für PROFIBUS-DP/CAN-Sensor-Y-Stück Fixing set for PROFIBUS-DP/CAN-sensor Y-piece	–	**S89/VB2-Befestigungsset**	8036078
	Passiver Abschlusswiderstand Passive terminating resistor	1 x M12 (F035)	**RSS4.5-PDP-TR**	6601590
	Aktiver Abschlusswiderstand Active terminating resistor	1 x M12 (F035) 1 x 7/8" (F006)	**PDP-TRA**	6825346

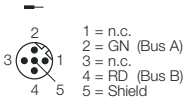
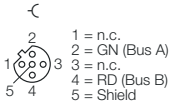
A3

Anschlussbelegung
Pin Configuration

(F006)	(F008)	(F034)	(F035)
 1 = n.c. 2 = GND 3 = n.c. 4 = U_B 5 = n.c.	 1 = n.c. 2 = GN (Bus A) 3 = n.c. 4 = RD (Bus B) 5 = Shield	 1 = n.c. 2 = GN (Bus A) 3 = n.c. 4 = RD (Bus B) 5 = Shield	 1 = 5 VDC 2 = Bus – A 3 = GND 4 = Bus – B 5 = Shield

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Konfektionierbare M12-Kupplung, gerade, Metallgehäuse, schirmbar Field-wireable female M12 connector, straight, metal housing, shieldable	1 x M12 (F034)	**FW-M12KU5W-G-ZF-ME-SH-9**	6604210
	Konfektionierbarer M12-Stecker, gerade, Metallgehäuse, schirmbar Field-wireable male M12 connector, straight, metal housing, shieldable	1 x M12 (F008)	**FW-M12ST5W-G-ZF-ME-SH-9**	6604211
	Konfektionierbare M12-Kupplung, abgewinkelt, Metallgehäuse, schirmbar Field-wireable female M12 connector, angled, metal housing, shieldable	1 x M12 (F034)	**BMWS8251-8,5**	6904723
	Konfektionierbarer M12-Stecker, abgewinkelt, Metallgehäuse, schirmbar Field-wireable male M12 connector, angled, metal housing, shieldable	1 x M12 (F008)	**BMSWS8251-8,5**	6904724

Anschlussbelegung
Pin Configuration

(F008)	(F034)		
			

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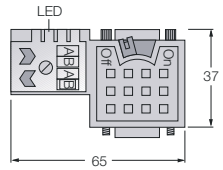
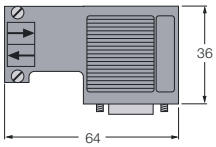
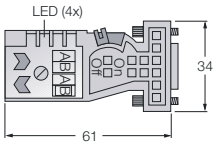
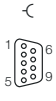
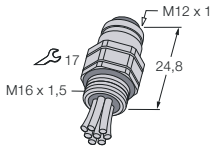
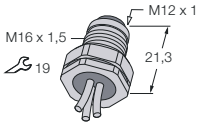
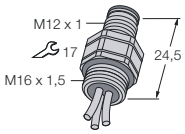
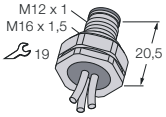
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Abgewinkelter Stecker und Kupplung, 12 MBit/s, Bus IN und OUT, zuschaltbarer Abschlusswiderstand, Schneid-Klemm-Anschlusstechnik/Right-angled male and female connector, 12 Mbps, bus IN and OUT, selectable terminating resistor, insulation displacement connection	1 x SUB-D (C064) 1 x SUB-D (C077)	**FW-D9TLEDKU9PG-W-FC-ME-SH-8,5**	6604220
	Abgewinkelter Stecker, 12 MBit/s, Bus IN und OUT, zuschaltbarer Abschlusswiderstand, Schraub-Anschlusstechnik/Right-angled male connector, 12 Mbps, bus IN and OUT, selectable terminating resistor, screw connection	1 x SUB-D (C064)	**6ES7972-0BA12-0XA0**	6890934
	Gerader Stecker, 12 MBit/s, Bus IN und OUT, zuschaltbarer Abschlusswiderstand, Schneid-Klemm-Anschlusstechnik/Right-angled male connector, 12 Mbps, bus IN and OUT, selectable terminating resistor, insulation displacement connection	1 x SUB-D (C064)	**FW-D9TLEDKU9XX-G-FC-ME-SH-8,5**	6604221

A3

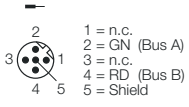
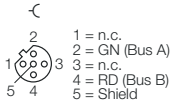
Anschlussbelegung
Pin Configuration

(C064)	(C077)		
 1 = Shield 2 = n.c. 3 = RD (Bus B) 4 = n.c. 5 = GND 6 = 5 VDC 7 = n.c. 8 = GN (Bus A) 9 = n.c.	 1 = Shield 2 = n.c. 3 = RD (Bus B) 4 = n.c. 5 = GND 6 = 5 VDC 7 = n.c. 8 = GN (Bus A) 9 = n.c.		

Flansche (metrisches Gewinde)
Flange Connectors (metric thread)

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	M12-Kupplung, B-codiert, frontseitig schraubbar (M16), drehbar, 0,5 m Litze Female M12 connector, B-coded, for front screw connection (M16), rotatable, 0.5 m litz wire	1 x M12 (F034)	**EC-FKDW4.54-0,5/16**	8030752
	M12-Kupplung, B-codiert, Rückwandmontage (M16), 0,5 m Litze Female M12 connector, B-coded, for back panel mounting (M16), 0.5 m litz wire	1 x M12 (F034)	**EC-FKFDW4.54-0,5/16**	8030753
	M12-Stecker, B-codiert, frontseitig schraubbar (M16), drehbar, 0,5 m Litze Female M12 connector, B-coded, for front screw connection (M16), rotatable, 0.5 m litz wire	1 x M12 (F008)	**EC-FSDW4.54-0,5/16**	8030756
	M12-Stecker, B-codiert, Rückwandmontage (M16), 0,5 m Litze Male M12 connector, B-coded, for back panel mounting (M16), 0.5 m litz wire	1 x M12 (F008)	**EC-FSFDW4.54-0,5/16**	8030757

Anschlussbelegung
Pin Configuration

(F008)	**(F034)**		
			

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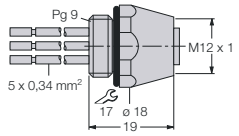
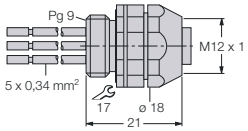
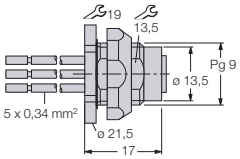
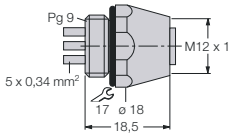
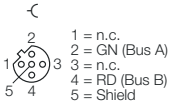
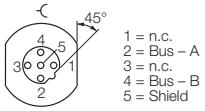
Flansche (PG-Gewinde)
Flange Connector (PG thread)

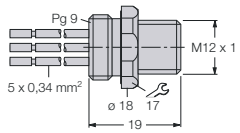
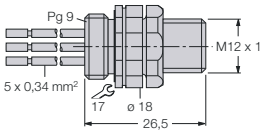
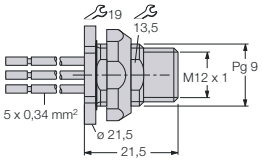
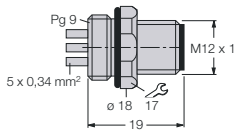
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	M12-Kupplung, frontseitig schraubbar, 0,5 m Litze Female M12 connector, for front screw connection, 0.5 m litz wire	1 x M12 (F034)	**FKW4.54-0,5**	8016042
	M12-Kupplung, frontseitig schraubbar, drehbar, 0,5 m Litze Female M12 connector, for front screw connection, rotatable, 0.5 m litz wire	1 x M12 (F034)	**FKDW4.54-0,5**	8015777
	M12-Kupplung, Rückwandmontage, 0,5 m Litze Female M12 connector, for back-panel mounting , 0.5 m litz wire	1 x M12 (F101)	**FKFDW4.54-0,5**	8016041
	M12-Kupplung, frontseitig schraubbar Female M12 connector, for front screw connection	1 x M12 (F034)	**FKW5L**	8016718

Anschlussbelegung
Pin Configuration

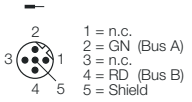
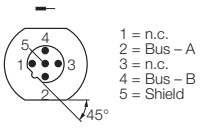
(F034)	(F101)		
			

A3

Flansche (PG-Gewinde)
Flange Connectors (PG thread)

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	M12-Stecker, frontseitig schraubbar, 0,5 m Litze Male M12 connector, for front screw connection, 0.5 m litz wire	1 x M12 (F008)	**FSW4.54-0,5**	8016038
	M12-Stecker, frontseitig schraubbar, drehbar, 0,5 m Litze Male M12 connector, for front screw connection, rotatable, 0.5 m litz wire	1 x M12 (F008)	**FSDW4.54-0,5**	8015776
	M12-Stecker, Rückwandmontage, 0,5 m Litze Male M12 connector, for back-panel mounting , 0.5 m litz wire	1 x M12 (F099)	**FSFDW4.54-0,5**	8016043
	M12-Stecker, frontseitig schraubbar Male M12 connector, for front screw connection	1 x M12 (F008)	**FSW5L**	8016717

Anschlussbelegung
Pin Configuration

(F008)	(F099)		
			

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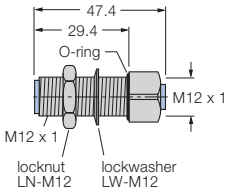
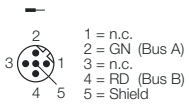
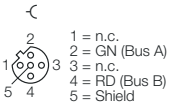
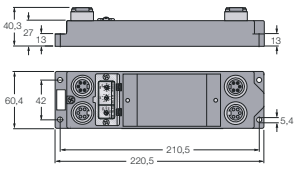
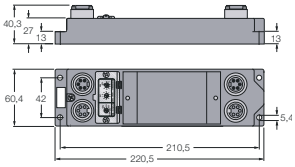
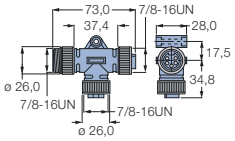
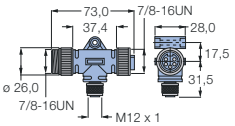
Durchführungen
Feed-through Receptacles

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	M12-Durchführung, Stecker, Kupplung, Lochmaß 12,7mm M12 feed-through connection male/female, through-hole 12.7 mm	1 x M12 (F008) 1 x M12 (F034)	**FKW-FSW45-M12**	6602309

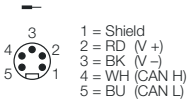
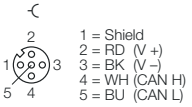
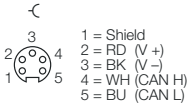
A3

Anschlussbelegung
Pin Configuration

(F008)	(F034)		
			

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	CAN/DeviceNet Repeater, 7/8“ 5-polig, bis 500 KBit/s, IP67 CAN/DeviceNet repeater, 7/8" 5-pole, up to 500 Kbps, IP67	2 x 7/8" (F060) 2 x 7/8" (F065)	**REP-DN**	6825349
	DeviceNet™-Spanner, 7/8“ 5-polig, bis 128 Byte Daten, IP67 DeviceNet™ spanner, 7/8" 5-pole, up to 128 data bytes, IP67	2 x 7/8" (F060) 2 x 7/8" (F065)	**FDN-DN1**	6603596
	T-Stück für Bus und Versorgung Nicht geeignet für piconet®-Module! T piece for bus and power Not suitable for piconet® modules!	1 x 7/8" (F060) 2 x 7/8" (F065)	**RSM-2RKM57**	6602007
	T-Stück für Bus und Versorgung T piece for bus and power	1 x 7/8" (F060) 1 x 7/8" (F065) 1 x M12 (F061)	**RSM-FKM-RKM57**	6602392

Anschlussbelegung
Pin Configuration

(F060)	(F061)	(F065)	
 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	

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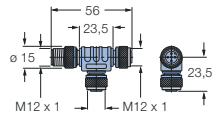
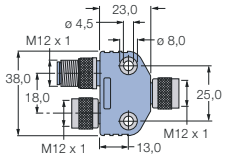
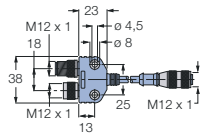
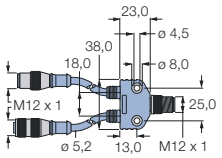
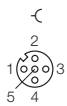
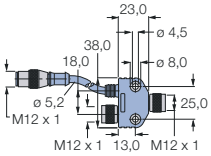
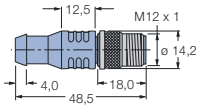
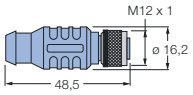
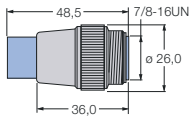
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	T-Stück für Bus und Versorgung T piece for bus and power	2 x M12 (F061) 1 x M12 (F098)	**FSM-2FKM57**	6622101
	Y-Stück für Bus und Versorgung Y piece for bus and power	2 x M12 (F061) 1 x M12 (F098)	**VB2-FKM-FKM-FSM57**[1])	6602331
	Y-Stück für Bus und Versorgung Y piece for bus and power	2 x M12 (F061) 1 x M12 (F098)	**VB2-RKC572-1M-FKM-FSM**	6996011
	Y-Stück für Bus und Versorgung Y piece for bus and power	2 x M12 (F061) 1 x M12 (F098)	**VB2-FKM-RKC-RSC572-0,5M-0,5M**	6602490

A3

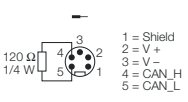
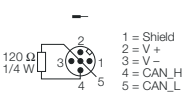
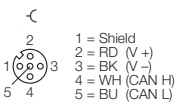
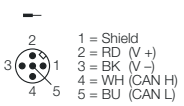
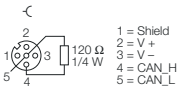
Anschlussbelegung
Pin Configuration

(F061)	(F098)		
 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)		

[1]) Gleichzeitiger Anschluss von zwei konfektionierbaren Steckverbindern nicht möglich/Simultaneous connection of two field wireable connectors not possible

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Y-Stück für Bus und Versorgung Y piece for bus and power	2 x M12 (F061) 1 x M12 (F098)	**VB2-FKM-FKM-RSC572-1M**	6602613
	Abschlusswiderstand (Stecker) Terminating resistor (male)	1 x M12 (F038)	**RSE57-TR2**	6602308
	Abschlusswiderstand (Kupplung) Terminating resistor (female)	1 x M12 (F104)	**RKE57-TR2**	6602629
	Abschlusswiderstand (Stecker) Terminating resistor (male)	1 x 7/8" (F036)	**RSM57-TR2**	6602011

Anschlussbelegung
Pin Configuration

(F036)	(F038)	(F061)	(F098)	(F104)
				

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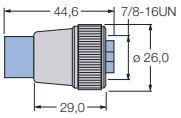
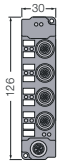
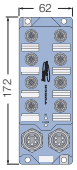
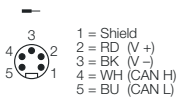
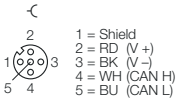
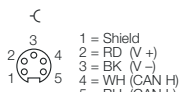
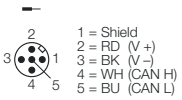
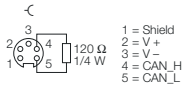
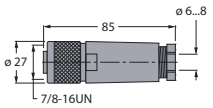
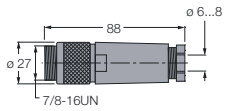
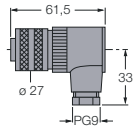
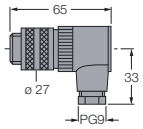
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Abschlusswiderstand (Kupplung) Terminating resistor (female)	1 x 7/8" (F108)	**RKM57-TR2**	6602065
	4fach-Passiv-Verteiler, IP67 4-port passive junction, IP67	1 x M12 (F098) 4 x M12 (F061)	**JBBS-57-E411**	6603378
	8fach-Passiv-Verteiler, IP67, Spannungsüberwachung 8-port passive junction, IP67, voltage monitoring	1 x 7/8" (F060) 1 x 7/8" (F065) 8 x M12 (F061)	**JBBS-57-E811-VM**	6602068

A3

Anschlussbelegung
Pin Configuration

(F060)	(F061)	(F065)	(F098)	(F108)
 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = V + 3 = V – 4 = CAN_H 5 = CAN_L

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Konfektionierbare 7/8“-Kupplung, Klemmbereich: 6...8 mm Field-wireable female 7/8" connector, clamping width: 6...8 mm	1 x 7/8" (F065)	**B4151-0/9**	6904717
	Konfektionierbarer 7/8“-Stecker, Klemmbereich: 6...8 mm Field-wireable male 7/8" connector, clamping width: 6...8 mm	1 x 7/8" (F060)	**BS4151-0/9**	6904718
	Konfektionierbare 7/8“-Kupplung, Klemmbereich: 6...8 mm Field-wireable female 7/8" connector, clamping width: 6...8 mm	1 x 7/8" (F065)	**B4251-0/9**	6901113
	Konfektionierbarer 7/8“-Stecker, Klemmbereich: 6...8 mm Field-wireable male 7/8" connector, clamping width: 6...8 mm	1 x 7/8" (F060)	**BS4251-0/9**	6901112

Anschlussbelegung
Pin Configuration

(F060)	**(F065)**		
 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)		

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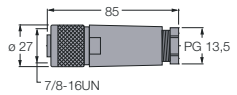
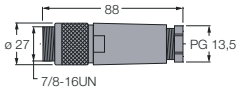
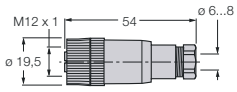
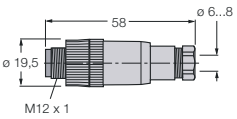
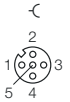
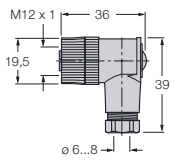
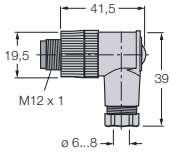
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Konfektionierbare 7/8“-Kupplung, Klemmbereich: 6...12 mm Field-wireable female 7/8" connector, clamping width: 6...12 mm	1 x 7/8" (F065)	**B4151-0/13.5**	6904715
	Konfektionierbarer 7/8“-Stecker, Klemmbereich: 6...12 mm Field-wireable male 7/8" connector, clamping width: 6...12 mm	1 x 7/8" (F060)	**BS4151-0/13.5**	6904716
	Konfektionierbare M12-Kupplung, Klemmbereich: 6...8 mm Field-wireable female M12 connector, clamping width: 6...8 mm	1 x M12 (F061)	**B8151-0/9**	6904604
	Konfektionierbarer M12-Stecker, Klemmbereich: 6...8 mm Field-wireable male M12 connector, clamping width: 6...8 mm	1 x M12 (F098)	**BS8151-0/9**	6904613

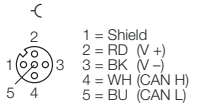
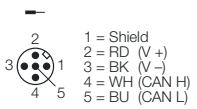
A3

Anschlussbelegung
Pin Configuration

(F060)	(F061)	(F065)	(F098)
 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Konfektionierbare M12-Kupplung, Klemmbereich: 6...8 mm Field-wireable female M12 connector, clamping width: 6...8 mm	1 x M12 (F061)	**B8251-0/9**	6904603
	Konfektionierbarer M12-Stecker, Klemmbereich: 6...8 mm Field-wireable male M12 connector, clamping width: 6...8 mm	1 x M12 (F098)	**BS8251-0/9**	6904615

Anschlussbelegung
Pin Configuration

(F061)	**(F098)**		
			

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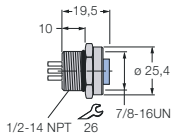
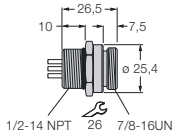
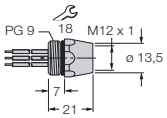
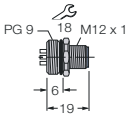
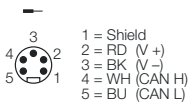
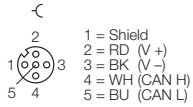
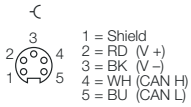
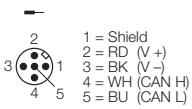
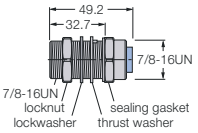
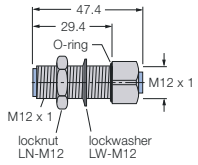
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Lötbare 7/8“-Flanschkupplung Solderable female 7/8" flange connector	1 x 7/8" (F065)	**RKF57**	6602217
	Lötbarer 7/8“-Flanschstecker Solderable male 7/8" flange connector	1 x 7/8" (F060)	**RSF57**	6602342
	Lötbare M12-Flanschkupplung Solderable female M12 flange connection	1 x M12 (F061)	**FK57**	6602216
	Lötbarer M12-Flanschstecker Solderable male M12 flange connection	1 x M12 (F098)	**FS57**	6602314

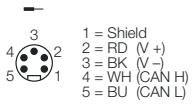
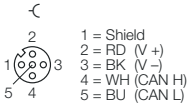
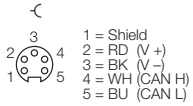
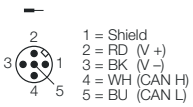
A3

Anschlussbelegung
Pin Configuration

(F060)	(F061)	(F065)	(F098)
 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	7/8“-Durchführung, Stecker, Kupplung, Lochmaß 22,5 mm 7/8" feed-through connection, male, female, hole diameter 22.5 mm	1 x 7/8" (F060) 1 x 7/8" (F065)	**RSF-RKF-57/22**	6602218
	M12-Durchführung, Stecker, Kupplung, Lochmaß 12,7mm M12 feed-through connection male, female, hole diameter 12.7 mm	1 x M12 (F098) 1 x M12 (F061)	**FKM-FS57-M12**	6602223

Anschlussbelegung
Pin Configuration

(F060)	(F061)	(F065)	(F098)
 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)	 1 = Shield 2 = RD (V +) 3 = BK (V –) 4 = WH (CAN H) 5 = BU (CAN L)

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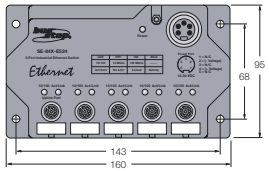
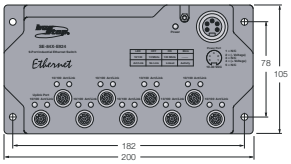
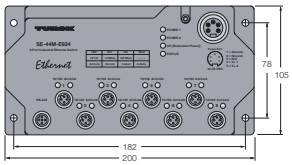
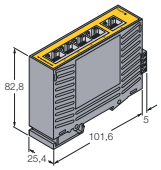
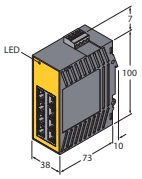
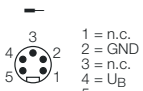
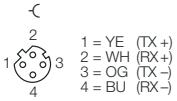
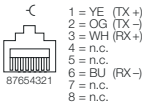
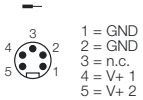
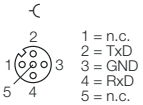
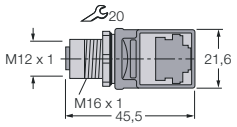
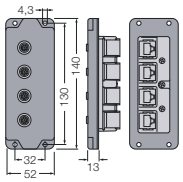
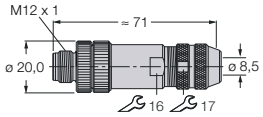
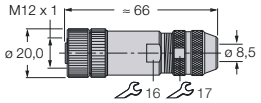
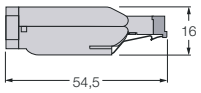
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	5-Port Ethernet Switch, M12 D-kodiert, 10/100 MBit/s, IP67 5-port Ethernet switch, M12 D-coded, 10/100 MBps, IP67	1 x 7/8" (F006) 5 x M12 (F103)	**SE-44X-E524**[1])	6607003
	9 Port Ethernet Switch, M12 D-kodiert, 10/100 MBit/s, IP67 9-port Ethernet switch, M12 D-coded, 10/100 MBps, IP67	1 x 7/8" (F006) 9 x M12 (F103)	**SE-44X-E924**[1])	6607002
	Managebarer 8 Port Ethernet Switch, VLAN-Unterstützung, IGMP-Snooping, M12 D-kodiert, 10/100 MBit/s, IP67 Manageable 8-port Ethernet switch, VLAN support, IGMP Snooping M12 D-coded, 10/100 MBps, IP67	1 x 7/8" (F115) 8 x M12 (F103) 1 x M12 (F116)	**SE-44M-E924**	6607004
	5-Port-Ethernet-Switch, RJ45 10/100 MBit/s, IP20, Hutschienengerät 5-Port Ethernet Switch, RJ45 10/100 MBit/s, IP20, DIN-rail mounting	5 x RJ45 (F105)	**SE20-84X-RJ522**	6607005
	8-Port-Ethernet-Switch, RJ45 10/100 MBit/s, IP20, Hutschienengerät 8-Port Ethernet Switch, RJ45 10/100 MBit/s, IP20, DIN-rail mounting	8 x RJ45 (F105)	**SE20-84XT-RJ822**	6607012

Anschlussbelegung
Pin Configuration

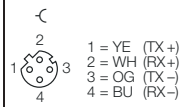
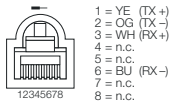
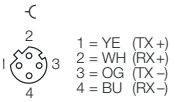
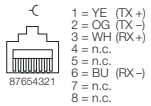
(F006)	(F103)	(F105)	(F115)	(F116)
				

[1]) Switch auch mit 8-poliger M12-Anschlusstechnik verfügbar/Switch also available with 8-pole M12 connection technology

M12/RJ45-Umsetzer/Konfektionierbare Steckverbinder
M12/RJ45 Adapter/Field-wireable Connectors

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	1-fach M12 D-codiert/ RJ45 Gehäusedurchführung 1-port M12 D-coded/RJ45 feed-through	1 x M12 (F103) 1 x RJ45 (F105)	**FKSDD-RJ45SF-44**	6611523
	4-fach M12 D-codiert/ RJ45-Gehäusedurchführung 4-port M12 D-coded/RJ45 feed-through	4 x M12 (F103) 4 x RJ45 (F105)	**BIC-44-E424**[1])	6604407
	Konfektionierbarer M12-Stecker D-codiert, gerade, Metallgehäuse, schirmbar Field-wireable male M12 connector D-coded, metall housing, shieldable	1 x M12 (C061)	**FW-M12ST5D-G-SB-ME-SH-8**	6604218
	Konfektionierbare M12-Kupplung D-codiert, gerade, Metallgehäuse, schirmbar Field-wireable female M12 connector D-coded, metall housing, shieldable	1 x M12 (C063)	**FW-M12KU5D-G-SB-ME-SH-8**	6604219
	Konfektionierbarer RJ45-Stecker, gerade, Metallgehäuse, schirmbar Field-wireable male RJ45 connector metall housing, shieldable	1 x RJ45 (C067)	**6GK1901-1BB10-2AA0/FC-RJ45**	6780031

Anschlussbelegung
Pin Configuration

(C061)	(C063)	(C067)	(F103)	(F105)
				

[1]) Gehäusedurchführung auch mit 8-poliger M12-Anschlusstechnik verfügbar/Feed-through also available with 8-pole M12 connection technology

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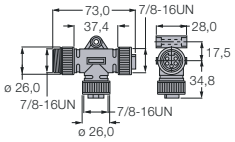
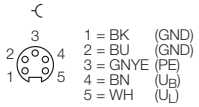
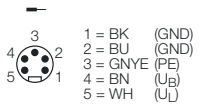
T-Stücke für Versorgungskabel, Typ 52
T-pieces for Power Cables, Type 52

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	T-Stück für Versorgung, Nennstrom: 9 A T piece for power Rated current: 9 A	2 x 7/8" (F037) 1 x 7/8" (F052)	**RSM-2RKM50**	6914950

Anschlussbelegung
Pin Configuration

(F037)	(F052)		
 1 = BK (GND) 2 = BU (GND) 3 = GNYE (PE) 4 = BN (U_B) 5 = WH (U_L)	 1 = BK (GND) 2 = BU (GND) 3 = GNYE (PE) 4 = BN (U_B) 5 = WH (U_L)		

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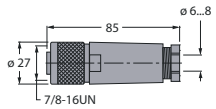
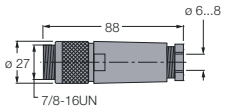
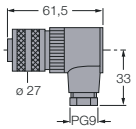
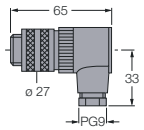
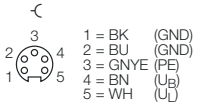
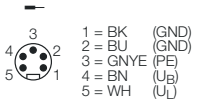
Konfektionierbare Steckverbinder für Versorgungskabel, Typ 52
Field wireable Connectors for Power Cables, Type 52

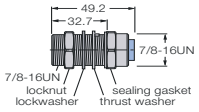
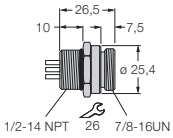
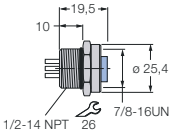
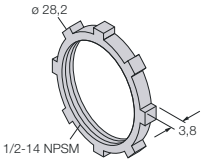
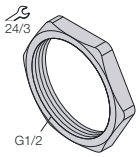
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Konfektionierbare 7/8“-Kupplung, Klemmbereich: 6...8 mm Nennstrom: 9 A Field-wireable female 7/8" connector, clamping width: 6...8 mm, Rated current: 9 A	1 x 7/8" (F037)	**B4151-0/9**	6904717
	Konfektionierbarer 7/8“-Stecker, Klemmbereich: 6...8 mm Nennstrom: 9 A Field-wireable male 7/8" connector, clamping width: 6...8 mm, Rated current: 9 A	1 x 7/8" (F052)	**BS4151-0/9**	6904718
	Konfektionierbare 7/8“-Kupplung, Klemmbereich: 6...8 mm, Nennstrom: 9 A Field-wireable female 7/8" connector, clamping width: 6...8 mm, Rated current: 9 A	1 x 7/8" (F037)	**B4251-0/9**	6901113
	Konfektionierbarer 7/8“-Stecker, Klemmbereich: 6...8 mm, Nennstrom: 9 A Field-wireable male 7/8" connector, clamping width: 6...8 mm, Rated current: 9 A	1 x 7/8" (F052)	**BS4251-0/9**	6901112

Anschlussbelegung
Pin Configuration

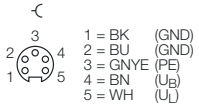
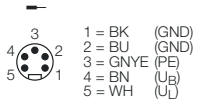
(F037)	(F052)		
			

A4

Durchführungen/Flansche für Versorgungskabel, Typ 52
Feed-through Recept./Flange Connect. for Power Cables, Type 52

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	7/8“-Durchführung, Stecker, Kupplung, Lochmaß 22,5 mm, Nennstrom: 9 A 7/8" feed-through connection, male, female, hole diameter 22.5 mm, Rated current: 9 A	1 x 7/8" (F052) 1 x 7/8" (F037)	**RSF-RKF-57/22**	6602218
	Lötbarer 7/8“-Flanschstecker, Nennstrom: 9 A Solderable male 7/8" flange connector, Rated current: 9 A	1 x 7/8" (F052)	**RSF57**	6602342
	Lötbare 7/8“-Flanschkupplung, Nennstrom: 9 A Solderable female 7/8" flange connector, Rated current: 9 A	1 x 7/8" (F037)	**RKF57**	6602217
	1/2“-Gegenmutter für NPT-Gewinde 1/2“ locknut for NPT thread	–	**LN1/2-14NPT/10**	6961002
	1/2“-Gegenmutter für G-Gewinde, 100 Stck. 1/2“ locknut for G thread, 100 pieces	–	**Locknut G1/2“**	6900493

Anschlussbelegung
Pin Configuration

(F037)	(F052)		
			

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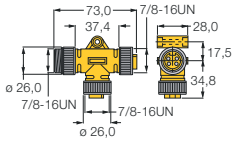
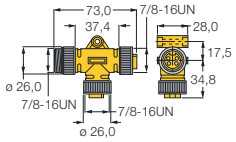
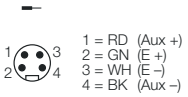
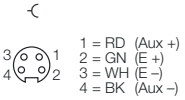
T-Stücke für Versorgungskabel, Typ 43
T-pieces for Power Cables, Type 43

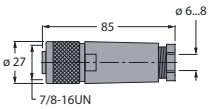
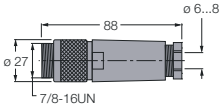
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	T-Stück für Auxiliary-Power, Nennstrom: 9 A T piece for auxiliary power, Rated current: 9 A	1 x 7/8" (F015) 2 x 7/8" (F097)	**RSM-2RKM40**	6914828
	T-Stück für Auxiliary-Power, (Keyway facing female), Nennstrom: 9 A T piece for auxiliary power, (keyway facing female), Rated current: 9 A	1 x 7/8" (F015) 2 x 7/8" (F097)	**RKM40-RKM40-L-RSM40**	6914866

Anschlussbelegung
Pin Configuration

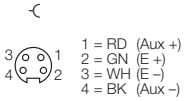
(F015)	(F097)		
			

A4

Konfektionierbare Steckverbinder für Versorgungskabel, Typ 43
Field wireable Connectors for Power Cables, Type 43

Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	Konfektionierbare 7/8“-Kupplung, Klemmbereich: 6...8 mm, Nennstrom: 9 A Field-wireable female 7/8" connector, clamping width: 6...8 mm, Rated current: 9 A	1 x 7/8" (F097)	**BK4140-0/9**	6914551
	Konfektionierbarer 7/8“-Stecker, Klemmbereich: 6...8 mm, Nennstrom: 9 A Field-wireable male 7/8" connector, clamping width: 6...8 mm, Rated current: 9 A	1 x 7/8" (F015)	**BS4140-0/9**	6914550

Anschlussbelegung
Pin Configuration

(F015)	(F097)		
			

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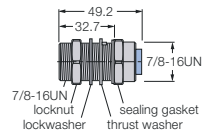
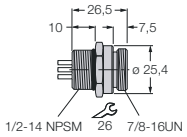
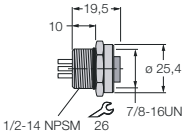
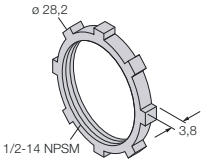
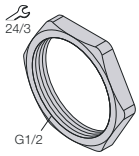
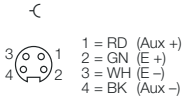
Durchführungen/Flansche für Versorgungskabel, Typ 43
Feed-through Recept./Flanged connect. for Power cables, Type 43

TURCK
Industrial Automation

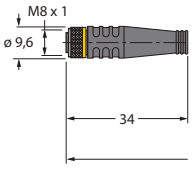
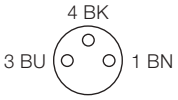
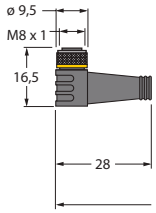
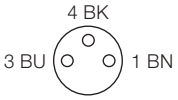
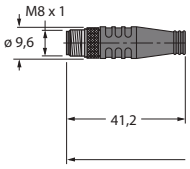
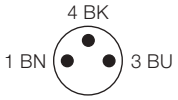
Abmessung Dimensions [mm]	Anwendung Application	Verbindungs-technik Connection Fig. (Fxxx)	Typenbezeichnung Type	Ident-Nr. Ident-no.
	7/8“-Durchführung, Stecker, Kupplung, Lochmaß 22,5 mm, Nennstrom: 9 A 7/8" feed-through connection, male, female, hole diameter 22.5 mm, Rated current: 9 A	1 x 7/8" (F015) 1 x 7/8" (F097)	**RSF-RKF-40/22**	6915014
	Lötbarer 7/8“-Flanschstecker, Nennstrom: 9 A Solderable male 7/8" flange connector, Rated current: 9 A	1 x 7/8" (F015)	**RSFL46**	6914836
	Lötbare 7/8“-Flanschkupplung Nennstrom: 9 A Solderable female 7/8" flange connector, Rated current: 9 A	1 x 7/8" (F097)	**RKFL46**	6915086
	1/2“-Gegenmutter für NPT-Gewinde 1/2“ locknut for NPT thread	–	**LN1/2-14NPT/10**	6961002
	1/2“-Gegenmutter für G-Gewinde, 100 Stck. 1/2“ locknut for G thread, 100 pieces	–	**Locknut G1/2“**	6900493

Anschlussbelegung
Pin Configuration

(F015)	(F097)		
			

A4

Steckverbinder-Systeme für Sensoren und Aktuatoren (M8 × 1)
Connector Systems for Sensors and Actuators (M8 × 1)

Abmessungen/Bauform Dimensions/Housing style [mm]	Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
M8 × 1 		3 × 0.34	43 × 0.1	2	PUR	BK	4.3
		3 × 0.34	43 × 0.1	5	PUR	BK	4.3
		3 × 0.34	43 × 0.1	10	PUR	BK	4.3
M8 × 1 		3 × 0.34	43 × 0.1	2	PUR	BK	4.3
		3 × 0.34	43 × 0.1	5	PUR	BK	4.3
		3 × 0.34	43 × 0.1	10	PUR	BK	4.3
M8 × 1 		3 × 0.34	43 × 0.1	2	PUR	BK	4.3
		3 × 0.34	43 × 0.1	5	PUR	BK	4.3
		3 × 0.34	43 × 0.1	10	PUR	BK	4.3

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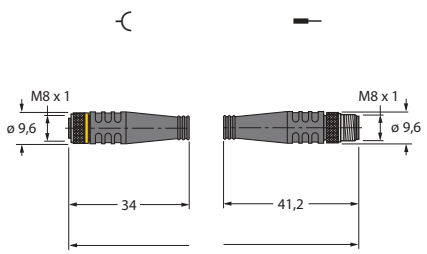
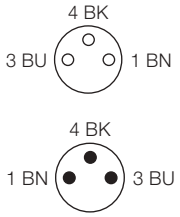
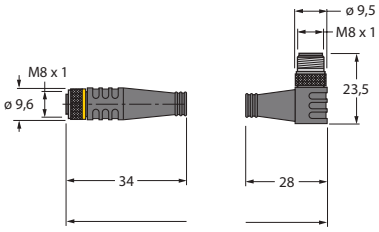
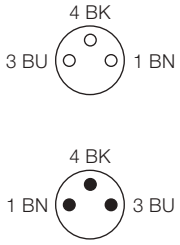
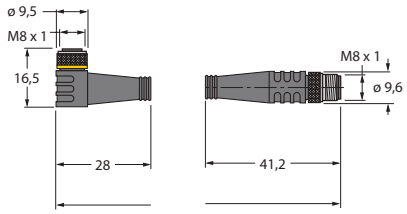
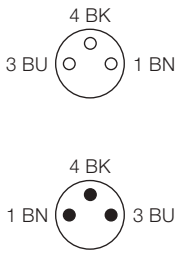
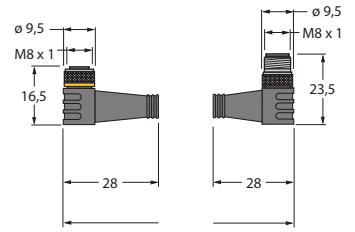
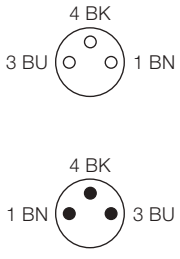
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Werkstoff/Material Überwurfmutter Material Coupling nut	Umgebungstemperatur Temperature range [°C] Stecker Connector	 Leitung Cable	Schutzart Degree of protection	LED U_B	LED ⌐‾
PKG3M-2/TXL	6625550	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-5/TXL	6625551	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-10/TXL	6625552	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-2/TXL	6625556	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-5/TXL	6625557	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-10/TXL	6625558	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PSG3M-2/TXL	6625562	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PSG3M-5/TXL	6625563	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PSG3M-10/TXL	6625564	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		

Steckverbinder-Systeme für Sensoren und Aktuatoren (M8 × 1)
Connector Systems for Sensors and Actuators (M8 × 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
	**M8 × 1 -** **M8 × 1**		3 × 0.34	43 × 0.1	0.3	PUR	BK	4.3
			3 × 0.34	43 × 0.1	0.6	PUR	BK	4.3
			3 × 0.34	43 × 0.1	1	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
	**M8 × 1 -** **M8 × 1**		3 × 0.34	43 × 0.1	0.3	PUR	BK	4.3
			3 × 0.34	43 × 0.1	0.6	PUR	BK	4.3
			3 × 0.34	43 × 0.1	1	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
	**M8 × 1 -** **M8 × 1**		3 × 0.34	43 × 0.1	0.3	PUR	BK	4.3
			3 × 0.34	43 × 0.1	0.6	PUR	BK	4.3
			3 × 0.34	43 × 0.1	1	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3
	**M8 × 1 -** **M8 × 1**		3 × 0.34	43 × 0.1	0.3	PUR	BK	4.3
			3 × 0.34	43 × 0.1	0.6	PUR	BK	4.3
			3 × 0.34	43 × 0.1	1	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3

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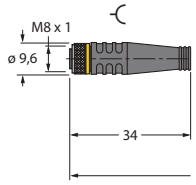
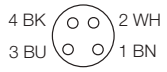
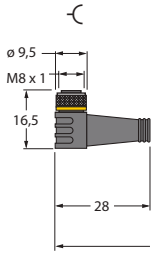
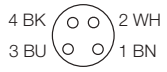
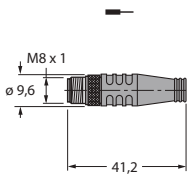
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Werkstoff/Material Überwurfmutter Material Coupling nut	Umgebungstemperatur Temperature range [°C] Stecker Connector	Leitung Cable	Schutzart Degree of protection	LED U_B	LED ⌐
PKG3M-0,3-PSG3M/TXL	6625665	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-0,6-PSG3M/TXL	6625666	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-1-PSG3M/TXL	6625667	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-2-PSG3M/TXL	6625668	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-5-PSG3M/TXL	6627147	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-0,3-PSW3M/TXL	6625674	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-0,6-PSW3M/TXL	6625675	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-1-PSW3M/TXL	6625676	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-2-PSW3M/TXL	6625677	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG3M-5-PSW3M/TXL	6626821	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-0,3-PSG3M/TXL	6627098	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-0,6-PSG3M/TXL	6627101	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-1-PSG3M/TXL	6627110	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-2-PSG3M/TXL	6627123	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-5-PSG3M/TXL	6626822	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-0,3-PSW3M/TXL	6625683	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-0,6-PSW3M/TXL	6625684	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-1-PSW3M/TXL	6625685	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-2-PSW3M/TXL	6625686	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW3M-5-PSW3M/TXL	6626823	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		

Steckverbinder-Systeme für Sensoren und Aktuatoren (M8 × 1)
Connector Systems for Sensors and Actuators (M8 × 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
	**M8 × 1**		4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
			4 × 0.34	43 × 0.1	10	PUR	BK	4.7
	**M8 × 1**		4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
			4 × 0.34	43 × 0.1	10	PUR	BK	4.7
	**M8 × 1**		4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
			4 × 0.34	43 × 0.1	10	PUR	BK	4.7

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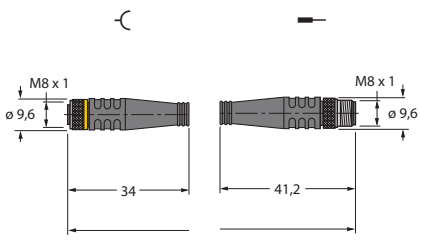
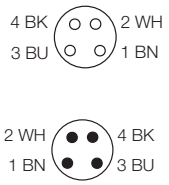
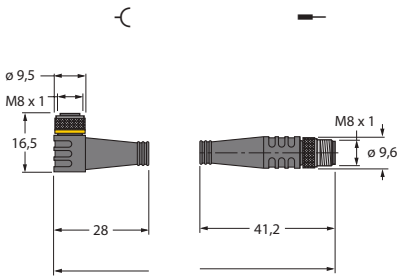
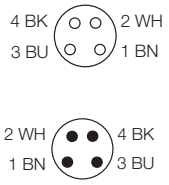
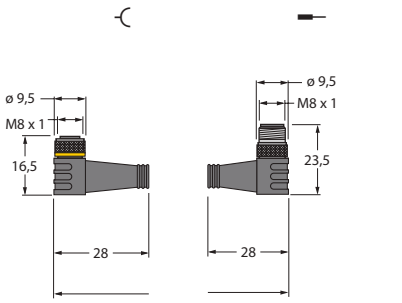
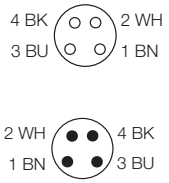
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Werkstoff/Material Überwurfmutter Material Coupling nut	Umgebungstemperatur Temperature range [°C] Stecker Connector	 Leitung Cable	Schutzart Degree of protection	LED U_B	 ⌐¬
PKG4M-2/TXL	6625553	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-5/TXL	6625554	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-10/TXL	6625555	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-2/TXL	6625559	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-5/TXL	6625560	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-10/TXL	6625561	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PSG4M-2/TXL	6625565	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PSG4M-5/TXL	6625566	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PSG4M-10/TXL	6625567	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		

A5

Steckverbinder-Systeme für Sensoren und Aktuatoren (M8 × 1)
Connector Systems for Sensors and Actuators (M8 × 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
	**M8 × 1-** **M8 × 1**		4 × 0.34	43 × 0.1	0.12	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.15	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.3	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.6	PUR	BK	4.7
			4 × 0.34	43 × 0.1	1	PUR	BK	4.7
			4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
	**M8 × 1-** **M8 × 1**		4 × 0.34	43 × 0.1	0.3	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.6	PUR	BK	4.7
			4 × 0.34	43 × 0.1	1	PUR	BK	4.7
			4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
	**M8 × 1-** **M8 × 1**		4 × 0.34	43 × 0.1	0.15	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.3	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.6	PUR	BK	4.7
			4 × 0.34	43 × 0.1	1	PUR	BK	4.7
			4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7

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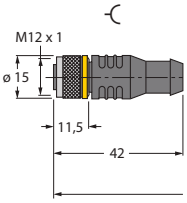
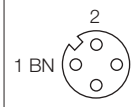
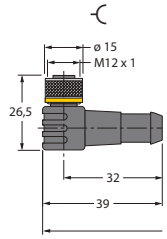
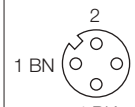
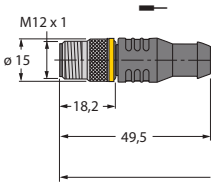
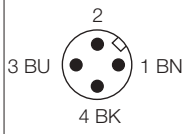
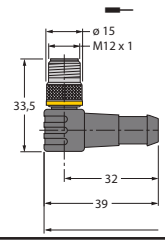
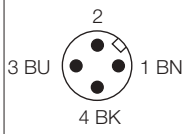
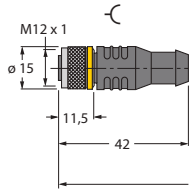
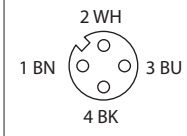
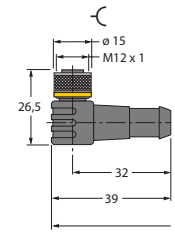
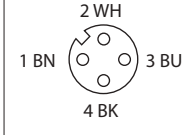
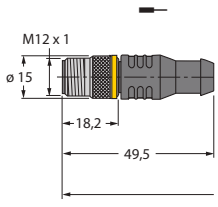
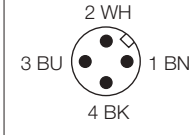
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Werkstoff/Material Überwurfmutter Material Coupling nut	Umgebungstemperatur Temperature range [°C] Stecker Connector	 Leitung Cable	Schutzart Degree of protection	LED U_B	 ⌐¬
PKG4M-0,12-PSG4M/TXL	6627043	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-0,15-PSG4M/TXL	6625669	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-0,3-PSG4M/TXL	6625670	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-0,6-PSG4M/TXL	6625671	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-1-PSG4M/TXL	6625672	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-2-PSG4M/TXL	6625673	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKG4M-5-PSG4M/TXL	6627076	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-0,3-PSG4M/TXL	6626641	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-0,6-PSG4M/TXL	6626646	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-1-PSG4M/TXL	6626851	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-2-PSG4M/TXL	6626664	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-5-PSG4M/TXL	6626686	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-0,15-PSW4M/TXL	6625687	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-0,3-PSW4M/TXL	6625688	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-0,6-PSW4M/TXL	6625689	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-1-PSW4M/TXL	6625690	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-2-PSW4M/TXL	6625691	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
PKW4M-5-PSW4M/TXL	6627077	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		

Steckverbinder-Systeme für Sensoren und Aktuatoren (M12 × 1 auf Ende offen)
Connector Systems for Sensors and Actuators (M12 × 1 to Open end)

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
	**M12 × 1**		3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
			3 × 0.34	43 × 0.1	10	PUR	BK	4.3
	**M12 × 1**		3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
			3 × 0.34	43 × 0.1	10	PUR	BK	4.3
	**M12 × 1**		3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
			3 × 0.34	43 × 0.1	10	PUR	BK	4.3
	**M12 × 1**		3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
			3 × 0.34	43 × 0.1	10	PUR	BK	4.3
	**M12 × 1**		4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
			4 × 0.34	43 × 0.1	10	PUR	BK	4.7
	**M12 × 1**		4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
			4 × 0.34	43 × 0.1	10	PUR	BK	4.7
	**M12 × 1**		4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
			4 × 0.34	43 × 0.1	10	PUR	BK	4.7

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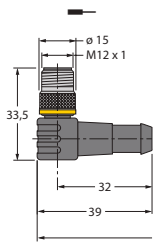
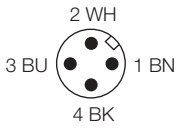
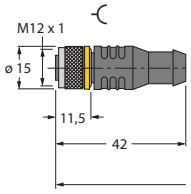
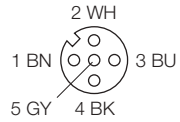
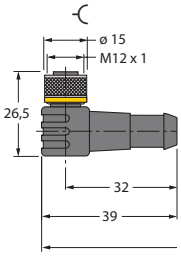
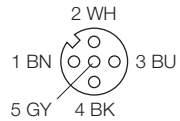
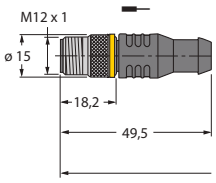
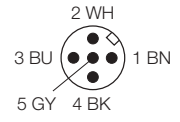
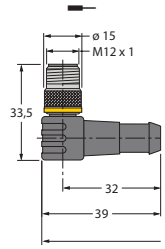
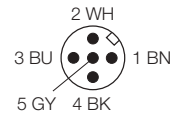
RKC4T-2/TXL	6625500	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4T-5/TXL	6625501	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4T-10/TXL	6625502	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-2/TXL	6625512	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-5/TXL	6625513	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-10/TXL	6625514	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4T-2/TXL	6625524	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4T-5/TXL	6625525	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4T-10/TXL	6625526	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4T-2/TXL	6625536	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4T-5/TXL	6625537	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4T-10/TXL	6625538	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.4T-2/TXL	6625503	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.4T-5/TXL	6625504	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.4T-10/TXL	6625505	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-2/TXL	6625515	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-5/TXL	6625516	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-10/TXL	6625517	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4.4T-2/TXL	6625527	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4.4T-5/TXL	6625528	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4.4T-10/TXL	6625529	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		

Steckverbinder-Systeme für Sensoren und Aktuatoren (M12 × 1 auf Ende offen)
Connector Systems for Sensors and Actuators (M12 × 1 to Open end)

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
	**M12 × 1**		4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
			4 × 0.34	43 × 0.1	10	PUR	BK	4.7
	**M12 × 1**		5 × 0.34	43 × 0.1	2	PUR	BK	5.3
			5 × 0.34	43 × 0.1	5	PUR	BK	5.3
			5 × 0.34	43 × 0.1	10	PUR	BK	5.3
	**M12 × 1**		5 × 0.34	43 × 0.1	2	PUR	BK	5.3
			5 × 0.34	43 × 0.1	5	PUR	BK	5.3
			5 × 0.34	43 × 0.1	10	PUR	BK	5.3
	**M12 × 1**		5 × 0.34	43 × 0.1	2	PUR	BK	5.3
			5 × 0.34	43 × 0.1	5	PUR	BK	5.3
			5 × 0.34	43 × 0.1	10	PUR	BK	5.3
	**M12 × 1**		5 × 0.34	43 × 0.1	2	PUR	BK	5.3
			5 × 0.34	43 × 0.1	5	PUR	BK	5.3
			5 × 0.34	43 × 0.1	10	PUR	BK	5.3

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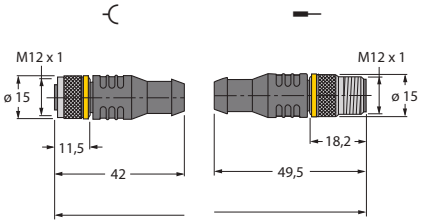
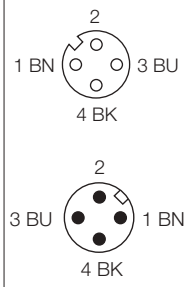
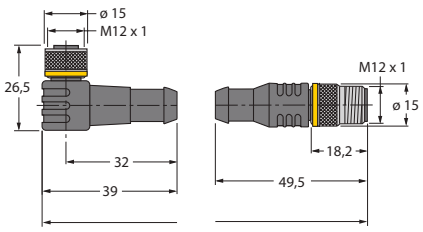
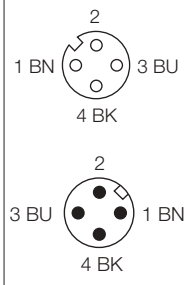
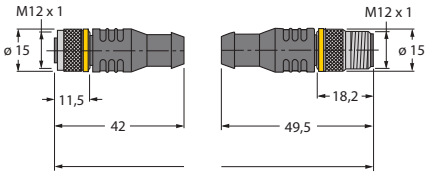
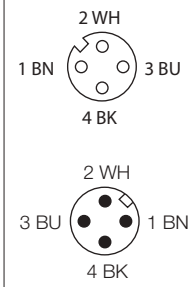
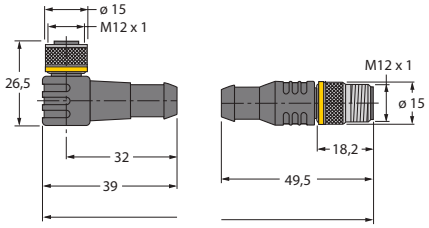
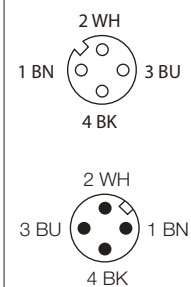
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Werkstoff/Material Überwurfmutter Material Coupling nut	Umgebungstemperatur Temperature range [°C] Stecker Connector	 Leitung Cable	Schutzart Degree of protection	LED U_B	LED ⌐
WSC4.4T-2/TXL	6625539	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4.4T-5/TXL	6625540	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4.4T-10/TXL	6625541	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.5T-2/TXL	6625506	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.5T-5/TXL	6625507	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.5T-10/TXL	6625508	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-2/TXL	6625518	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-5/TXL	6625519	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-10/TXL	6625520	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4.5T-2/TXL	6625530	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4.5T-5/TXL	6625531	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RSC4.5T-10/TXL	6625532	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4.5T-2/TXL	6625542	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4.5T-5/TXL	6625543	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WSC4.5T-10/TXL	6625544	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		

A5

Steckverbinder-Systeme für Sensoren und Aktuatoren (M12 × 1)
Connector Systems for Sensors and Actuators (M12 × 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
	**M12 × 1-** **M12 × 1**		3 × 0.34	43 × 0.1	0.3	PUR	BK	4.3
			3 × 0.34	43 × 0.1	0.6	PUR	BK	4.3
			3 × 0.34	43 × 0.1	1	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
	**M12 × 1-** **M12 × 1**		3 × 0.34	43 × 0.1	0.3	PUR	BK	4.3
			3 × 0.34	43 × 0.1	0.6	PUR	BK	4.3
			3 × 0.34	43 × 0.1	1	PUR	BK	4.3
			3 × 0.34	43 × 0.1	2	PUR	BK	4.3
			3 × 0.34	43 × 0.1	5	PUR	BK	4.3
	**M12 × 1-** **M12 × 1**		4 × 0.34	43 × 0.1	0.3	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.6	PUR	BK	4.7
			4 × 0.34	43 × 0.1	1	PUR	BK	4.7
			4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7
	**M12 × 1-** **M12 × 1**		4 × 0.34	43 × 0.1	0.3	PUR	BK	4.7
			4 × 0.34	43 × 0.1	0.6	PUR	BK	4.7
			4 × 0.34	43 × 0.1	1	PUR	BK	4.7
			4 × 0.34	43 × 0.1	2	PUR	BK	4.7
			4 × 0.34	43 × 0.1	5	PUR	BK	4.7

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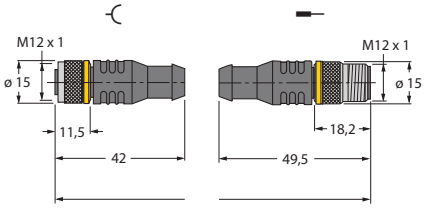
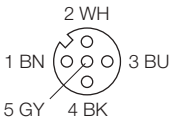
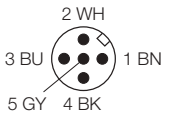
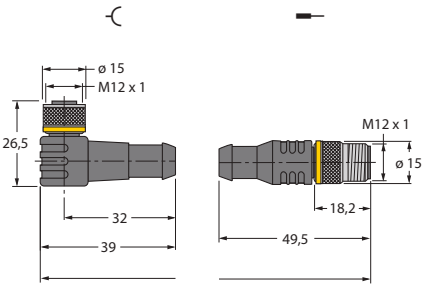
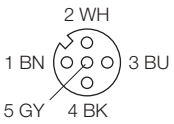
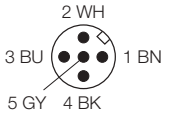
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Werkstoff/Material Überwurfmutter Material Coupling nut	Umgebungstemperatur Temperature range [°C] Stecker Connector	 Leitung Cable	Schutzart Degree of protection	LED U_B	 ⌐¬
RKC4T-0,3-RSC4T/TXL	6625601	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4T-0,6-RSC4T/TXL	6625602	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4T-1-RSC4T/TXL	6625603	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4T-2-RSC4T/TXL	6625604	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4T-5-RSC4T/TXL	6625730	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-0,3-RSC4T/TXL	6625633	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-0,6-RSC4T/TXL	6625634	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-1-RSC4T/TXL	6625635	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-2-RSC4T/TXL	6625636	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4T-5-RSC4T/TXL	6625636	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.4T-0,3-RSC4.4T/TXL	6625605	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.4T-0,6-RSC4.4T/TXL	6625606	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.4T-1-RSC4.4T/TXL	6625607	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.4T-2-RSC4.4T/TXL	6625608	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4T-5-RSC4T/TXL	6625730	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-0,3-RSC4.4T/TXL	6625637	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-0,6-RSC4.4T/TXL	6625638	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-1-RSC4.4T/TXL	6625639	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-2-RSC4.4T/TXL	6625640	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.4T-5-RSC4.4T/TXL	6626878	4	max. 250	CuZn-Ni	-30…+90	-50…+80	IP67		

Steckverbinder-Systeme für Sensoren und Aktuatoren (M12 × 1)
Connector Systems for Sensors and Actuators (M12 × 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [m]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]
	**M12 × 1-** **M12 × 1**		5 × 0.34	43 × 0.1	0.3	PUR	BK	5.3
			5 × 0.34	43 × 0.1	0.6	PUR	BK	5.3
			5 × 0.34	43 × 0.1	1	PUR	BK	5.3
			5 × 0.34	43 × 0.1	2	PUR	BK	5.3
			5 × 0.34	43 × 0.1	5	PUR	BK	5.3
	**M12 × 1-** **M12 × 1**		5 × 0.34	43 × 0.1	0.3	PUR	BK	5.3
			5 × 0.34	43 × 0.1	0.6	PUR	BK	5.3
			5 × 0.34	43 × 0.1	1	PUR	BK	5.3
			5 × 0.34	43 × 0.1	2	PUR	BK	5.3
			5 × 0.34	43 × 0.1	5	PUR	BK	5.3

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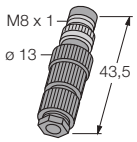
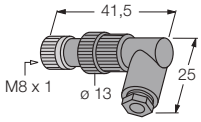
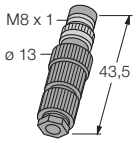
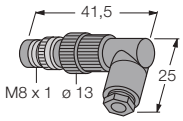
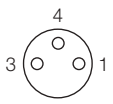
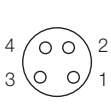
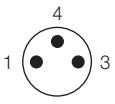
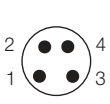
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Werkstoff/Material Überwurfmutter Material Coupling nut	Umgebungstemperatur Temperature range [°C] Stecker Connector	 Leitung Cable	Schutzart Degree of protection	LED U_B	LED ⌐¬
RKC4.5T-0,3-RSC4.5T/TXL	6625609	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.5T-0,6-RSC4.5T/TXL	6625610	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.5T-1-RSC4.5T/TXL	6625611	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.5T-2-RSC4.5T/TXL	6625612	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
RKC4.5T-5-RSC4.4T/TXL	6625732	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-0,3-RSC4.5T/TXL	6625641	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-0,6-RSC4.5T/TXL	6625642	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-1-RSC4.5T/TXL	6625643	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-2-RSC4.5T/TXL	6625644	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		
WKC4.5T-5-RSC4.5T/TXL	6625735	4	max. 60	CuZn-Ni	-30…+90	-50…+80	IP67		

Konfektionierbare Steckverbinder-Systeme (M8 x 1)
Field wireable Connector Systems (M8 x 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Leiteranzahl Number of conductors	Anschluss-technik[1] Connection technology[1] [m]	Werkstoffe/Materials Kontaktträger Contact carrier	Überwurfmutter Coupling nut	Griffteil Grip
	**M8 × 1**	3	E	PA	CuZn-Ni	PA
		4	E	PA	CuZn-Ni	PA
		3	L	PA	CuZn-Ni	PBT
		4	L	PA	CuZn-Ni	PBT
		3	S	PA	CuZn-Ni	PBT
		4	S	PA	CuZn-Ni	PBT
	**M8 × 1**	3	E	PA	GD-Zn-Ni	PA
		4	E	PA	GD-Zn-Ni	PA
		3	L	PA	CuZn-Ni	PBT
		4	L	PA	CuZn-Ni	PBT
	**M8 × 1**	3	E	PA	CuZn-Ni	PA
		4	E	PA	CuZn-Ni	PA
		3	L	PA	CuZn-Ni	PBT
		4	L	PA	CuZn-Ni	PBT
		3	S	PA	CuZn-Ni	PBT
		4	S	PA	CuZn-Ni	PBT
	**M8 × 1**	3	E	PA	GD-Zn-Ni	PA
		3	L	PA	CuZn-Ni	PBT
		4	L	PA	CuZn-Ni	PBT

Anschlussbelegung
Pin Configuration

(C015)	(C016)	(C017)	(C018)
			

[1] E = Eindringtechnik/pin penetration technology; L = Löttechnik/soldering technology; S = Schraubtechnik/screw technology

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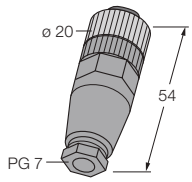
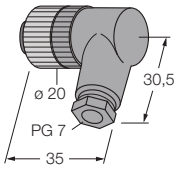
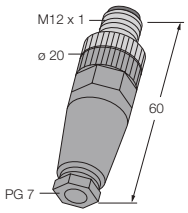
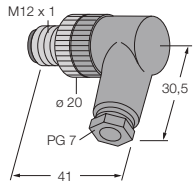
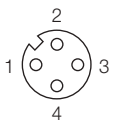
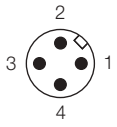
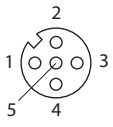
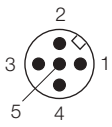
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [VAC/VDC]	Anschluss Connection	max. Kabel-querschnitt max. cable diameter [mm²]	Klemm-bereich clamping range [mm]	Umgebungstemperatur/ Temperature range [°C] Stecker Connector	Leitung Cable	Schutzart Degree of protection
HA5131-0	6905404	4	32/32	(C015)	0.34	3.2…5.4	-25…+85	–	IP67
HA5141-0	6905405	4	32/32	(C016)	0.34	3.2…5.4	-25…+85	–	IP67
B5131-0	6904910	4	60/60	(C015)	0.25	4…5	-25…+85	–	IP67
B5141-0	6904915	4	60/60	(C016)	0.25	4…5	-25…+85	–	IP67
B5133-0	6901030	4	60/60	(C015)	0.25	4…5	-40…+80	–	IP67
B5143-0	6901031	4	60/60	(C016)	0.25	4…5	-40…+80	–	IP67
H5231-0	6902800	4	60/60	(C015)	0.25	4…5	-40…+80	–	IP67
H5241-0	6902820	4	60/60	(C016)	0.25	4…5	-40…+80	–	IP67
B5231-0	6904810	4	60/60	(C015)	0.25	4…5	-40…+85	–	IP67
B5241-0	6904815	4	60/60	(C016)	0.25	4…5	-40…+85	–	IP67
HAS5131-0	6905402	4	32/32	(C017)	0.34	3.2…5.4	-25…+85	–	IP67
HAS5141-0	6905403	4	32/32	(C018)	0.34	3.2…5.4	-25…+85	–	IP67
BS5131-0	6901010	4	60/60	(C017)	0.34	4…5	-40…+80	–	IP67
BS5141-0	6901011	4	60/60	(C018)	0.25	4…5	-40…+80	–	IP67
BS5133-0	6901012	4	60/60	(C017)	0.34	4…5	-40…+80	–	IP67
BS5143-0	6901013	4	60/60	(C018)	0.25	4…5	-40…+80	–	IP67
HS5231-0	6902810	4	60/60	(C017)	0.34	4…5	-40…+80	–	IP67
BS5231-0	6901110	4	60/60	(C017)	0.34	4…5	-40…+85	–	IP67
BS5241-0	6901111	4	60/60	(C018)	0.25	4…5	-40…+85	–	IP67

Konfektionierbare Steckverbinder-Systeme (M12 x 1)
Field wireable Connector Systems (M12 x 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Leiteranzahl Number of conductors	Anschluss-technik[1] Connection technology[1]	Werkstoffe/Materials Kontaktträger Contact carrier	Überwurfmutter Coupling nut	Griffteil Grip
	**M12 × 1**	4	E	PA	CuZn-Ni	PA
		5	S	PBT	CuZn-Ni	PBT
		8	S	PA	PA	PA
	**M12 × 1**	4	E	PA	CuZn-Ni	PA
		5	S	PA	PA	PA
	**M12 × 1**	4	E	PA	CuZn-Ni	PA
		5	S	PA	CuZn-Ni	PA
		8	S	PA	CuZn-Ni	PA
	**M12 × 1**	4	E	PA	CuZn-Ni	PA
		5	S	PA	PA	PA

Anschlussbelegung
Pin Configuration

(C011)	(C012)	(C020)	(C021)
			

[1] E = Eindringtechnik/pin penetration technology; S = Schraubtechnik/screw technology

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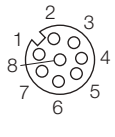
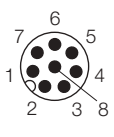
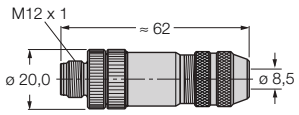
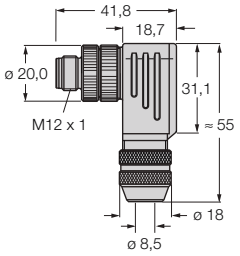
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [VAC/VDC]	Anschluss Connection	max. Kabel-querschnitt max. cable diameter [mm²]	Klemm-bereich clamping range [mm]	Umgebungstemperatur/ Temperature range [°C] Stecker Connector	Leitung Cable	Schutzart Degree of protection
HA8141-0	6905407	4	32/32	(C011)	0.34	4…5.1	-25…+85	–	IP67
B8151-0	6904601	4	30/36	(C020)	0.75	3…6.5	-40…+80	–	IP67
B8181-0	6904605	4	60/60	(C033)	0.75	4…6	-40…+85	–	IP67
HA8241-0	6905401	4	32/32	(C011)	0.34	4…5.1	-25…+85	–	IP67
B8251-0	6904602	4	125/125	(C020)	0.75	3…6.5	-25…+85	–	IP67
HAS8141-0	6905406	4	32/32	(C012)	0.34	4…5.1	-25…+85	–	IP67
BS8151-0	6904611	4	125/150	(C021)	0.75	3…6.5	-40…+85	–	IP67
BS8181-0	6901004	4	60/60	(C034)	0.5	6…8	-40… +85	–	IP67
HAS8241-0	6905400	4	32/32	(C012)	0.34	4…5.1	-25…+85	–	IP67
BS8251-0	6904612	4	125/150	(C021)	0.75	3…6.5	-40…+85	–	IP67

Anschlussbelegung
Pin Configuration

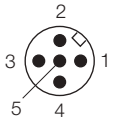
(C033)	(C034)		
			

A5

Konfektionierbare Steckverbinder-Systeme (M12 x 1) – geschirmt
Field wireable Connector Systems (M12 x 1) – shielded

Abmessungen/Bauform Dimensions/Housing style [mm]		Leiteranzahl Number of conductors	Anschluss-technik[1] Connection technology[1]	Werkstoffe/Materials Kontaktträger Contact carrier	Überwurfmutter Coupling nut	Griffteil Grip	
	**M12 × 1**	5	S	PBT	CuZn-Ni	PBT	
	**M12 × 1**	5	S	PBT	CuZn-Ni	PBT	

Anschlussbelegung
Pin Configuration

(C021)		
		

[1] S = Schraubtechnik/screw technology

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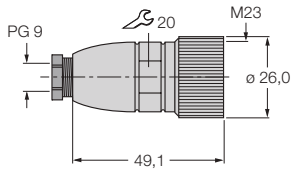
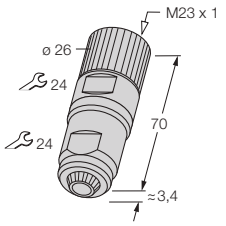
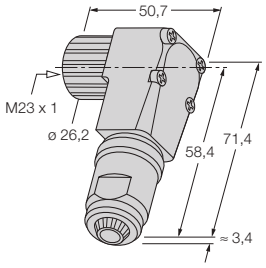
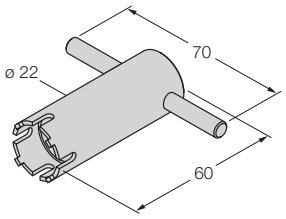
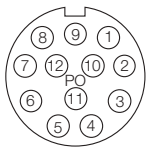
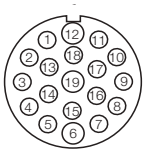
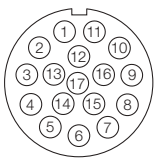
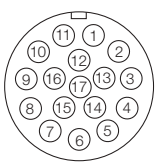
	Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [VAC/VDC]	Anschluss Connection	max. Kabel-querschnitt max. cable diameter [mm²]	Klemm-bereich clamping range [mm]	Umgebungstemperatur/ Temperature range [°C] Stecker Connector	Leitung Cable	Schutzart Degree of protection
	CMBS8151-0	6930161	4	125/150	(C021)	0.75	6…8	-40…+85	–	IP67
	CMBS8251-0	6930216	4	125/150	(C021)	0.75	6…8	-40…+85	–	IP67

[2])

Konfektionierbare Steckverbinder-Systeme (M23 × 1)
Field wireable Connector Systems (M23 × 1)

Abmessungen/Bauform Dimensions/Housing style [mm]		Leiteranzahl Number of conductors	Anschluss-technik[1] Connection technology[1]	Werkstoffe/Materials Kontaktträger Contact carrier	Überwurfmutter Coupling nut	Griffteil Grip
	**M23 × 1**	12	L	PBT	CuZn-Ni	CuZn-Ni
		19	L	PBT	CuZn-Ni	CuZn-Ni
		12	CP	PBT	CuZn-Ni	CuZn-Ni
		19	CP	PBT	CuZn-Ni	CuZn-Ni
	**M23 × 1**	17	CP	PBT	CuZn-Ni	CuZn-Ni
		17	CP	PBT	CuZn-Ni	CuZn-Ni
	**M23 × 1**	17	CP	PBT	CuZn-Ni	CuZn-Ni
		17	CP	PBT	CuZn-Ni	CuZn-Ni
	**Montagewerkzeug für M23-Steckverbinder/ Mounting tool for M23 connectors**					

Anschlussbelegung
Pin Configuration

(C028)	(C073)	(C074)	(C075)
			

[1] L = Löttechnik/Soldering technology, CP = Crimptechnik/Crimp technology

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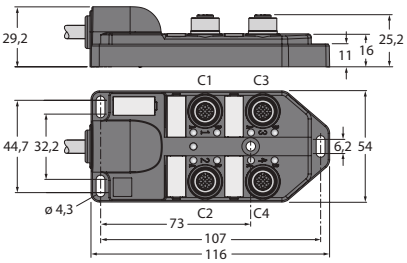
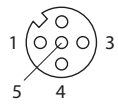
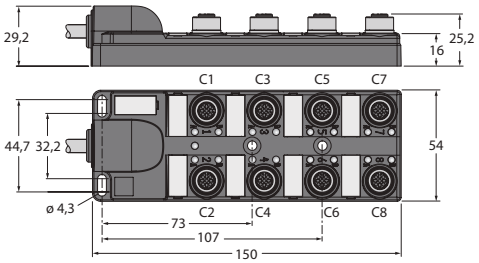
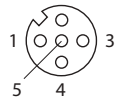
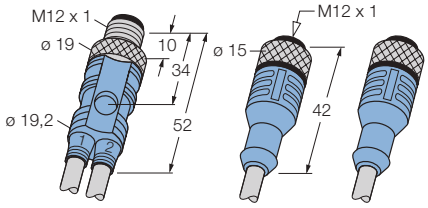
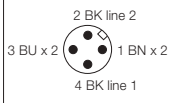
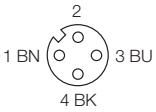
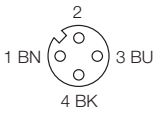
Typenbezeichnung Type	Ident-Nr. Ident no.	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [VAC]	Anschluss Connection	max. Kabel-querschnitt max. cable diameter [mm²]	Klemm-bereich clamping range [mm]	Umgebungstemperatur/ Temperature range [°C] Stecker Connector	Leitung Cable	Schutzart Degree of protection
FW-M23ST12Q-G-LT-ME-XX-10	6604070	7,5	125	(C028)	1	4…8	-30…+115	–	IP67
FW-M23ST19Q-G-LT-ME-XX-10	6604208	4/8	125	(C073)	1	4…8	-30…+115	–	IP67
FW-M23ST12Q-G-CP-ME-XX-10	6604093	7,5	125	(C028)	1	4…8	-30…+115	–	IP67
FW-M23ST19Q-G-CP-ME-XX-10	6604051	4/8	125	(C073)	1	4…8	-30…+115	–	IP67
FW-M23ST17Q-G-CP-ME-SH-14.5	6604067	9	125	(C074)	1	…14,5	-40…+125	–	IP67
FW-M23KU17Q-G-CP-ME-SH-14.5	6604069	9	125	(C075)	1	…14,5	-40…+125	–	IP67
FW-M23ST17Q-W-CP-ME-SH-14.5	6604068	9	125	(C074)	1	…14,5	-40…+125	–	IP67
FW-M23KU17Q-W-CP-ME-SH-14.5	6604066	9	125	(C075)	1	…14,5	-40…+125	–	IP67
RC-Z2466 MONTAGESCHLUESSEL	6900233								

Verteilersysteme – Aktuator-Sensor-Boxen/I/O-Y-Verteiler
Junctions – Actuator-Sensor-Boxes/I/O-Y-Junctions

Abmessungen/Bauform Dimensions/Housing style [mm]	Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [mm]	Qualität[1] Quality[1]	Farbe Colour	Durchmesser Diameter [mm]
		4 × 0.34	43 × 0.1	2	PUR-H	BK	7,5
		4 × 0.34	43 × 0.1	5	PUR-H	BK	7,5
		4 × 0.34	43 × 0.1	10	PUR-H	BK	7,5
		8 × 0.34	43 × 0.1	2	PUR-H	BK	8,2
		8 × 0.34	43 × 0.1	5	PUR-H	BK	8,2
		8 × 0.34	43 × 0.1	10	PUR-H	BK	8,2
M12 × 1 – **M12 × 1** 		4 × 0.34	43 × 0.1	0.3/0.3	PVC	GY	5,2
		4 × 0.34	43 × 0.1	0.6/0.6	PVC	GY	5,2
		4 × 0.34	43 × 0.1	1/1	PVC	GY	5,2
		4 × 0.34	43 × 0.1	0.3/0.3	PUR	GY	5,2
		4 × 0.34	43 × 0.1	0.6/0.6	PUR	GY	5,2
		4 × 0.34	43 × 0.1	1/1	PUR	GY	5,2
		4 × 0.34	43 × 0.1	0.3/0.3	PVC-I	OR	5,2
		4 × 0.34	43 × 0.1	0.6/0.6	PVC-I	OR	5,2
		4 × 0.34	43 × 0.1	1/1	PVC-I	OR	5,2

[1] PUR-H = Polyurethan, halogenfrei/Polyurethane, halogen-free

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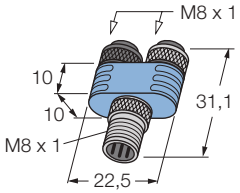
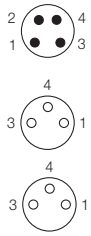
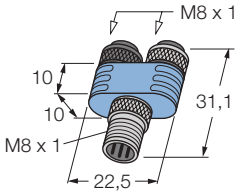
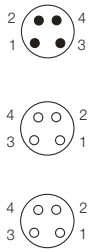
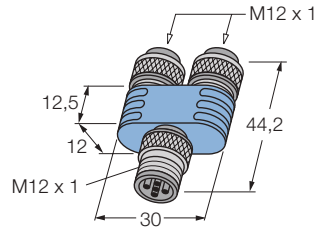
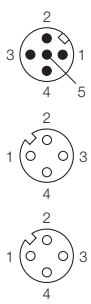
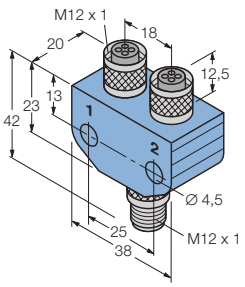
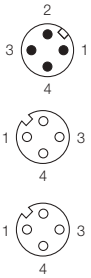
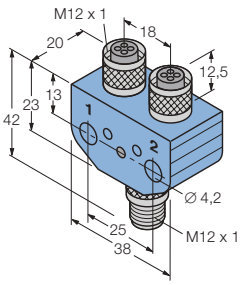
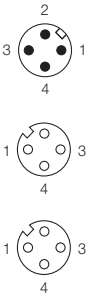
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Sensoren/ Aktuatoren Connection sensors/ actuators	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Umgebungstemperatur Temperature range [°C] Verteiler Junction	Leitung Cable	LEDs
TB-4M12-4P2-2/TXL	6611910	M12 × 1	2 / Σ 9	max. 30	-30…+ 90	-30…+ 90	5
TB-4M12-4P2-5/TXL	6611911	M12 × 1	2 / Σ 9	max. 30	-30…+ 90	-30…+ 90	5
TB-4M12-4P2-10/TXL	6611912	M12 × 1	2 / Σ 9	max. 30	-30…+ 90	-30…+ 90	5
TB-8M12-4P2-2/TXL	6611950	M12 × 1	2 / Σ 9	max. 30	-30…+ 90	-30…+ 90	9
TB-8M12-4P2-5/TXL	6611951	M12 × 1	2 / Σ 9	max. 30	-30…+ 90	-30…+ 90	9
TB-8M12-4P2-10/TXL	6611952	M12 × 1	2 / Σ 9	max. 30	-30…+ 90	-30…+ 90	9
FSM4-2WAK3-0,3/0,3/P00	8008065	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-0,6/0,6/P00	8008070	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-1/1/P00	8009560	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-0,3/0,3/S90	8008066	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-0,6/0,6/S90	8008071	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-1/1/S90	8009561	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-0,3/0,3/XOR	8008067	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-0,6/0,6/XOR	8008072	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	
FSM4-2WAK3-1/1/XOR	8009562	M12 × 1	4	max. 250	-30…+ 90	-40…+ 80	

Abmessungen/Bauform Dimensions/Housing style [mm]		Anschluss Pin configuration	Leitung/Cable Querschnitt Cross section [mm²]	Adernaufbau Conductor construction [mm]	Länge Length [mm]	Qualität Quality	Farbe Colour	Durchmesser Diameter [mm]	
	**M8 × 1 –** **M8 × 1**		–	–	–	–	–	–	
	**M8 × 1 –** **M8 × 1**		– –	– –	– –	– –	– –	– –	
	**M12 × 1 –** **M12 × 1**		– – –	– – –	– – –	– – –	– – –	– – –	
	**M12 × 1 –** **M12 × 1**		–	–	–	–	–	–	
	**M12 × 1 –** **M12 × 1**		–	–	–	–	–	–	

[1]) Gleichzeitiger Anschluss von zwei konfektionierbaren Steckverbindern nicht möglich/
Simultaneous connection of two field wireable connectors not possible

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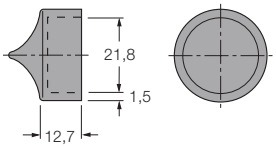
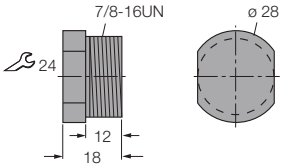
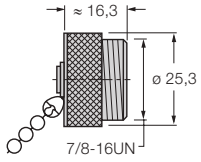
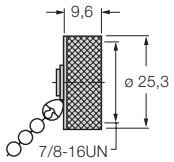
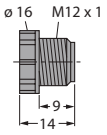
Typenbezeichnung Type	Ident-Nr. Ident no.	Anschluss Sensoren/ Aktuatoren Connection sensors/ actuators	Nennstrom Rated current [A]	Nenn-spannung Rated voltage [V]	Umgebungstemperatur Temperature range [°C] Verteiler Junction	Leitung Cable	LED U_B	
MB-SSP4-2SKP3[1])	8025693	M8 × 1	2	max. 32	-30…+ 80	–	–	–
MB-SSP4-2SKP4-S2133[1])	8030478	M8 × 1	2	max. 32	-30…+ 80	–	–	–
MB-SSP4-2SKP4P3-S2133[1])	8030477	M8 × 1	2	max. 32	-30…+ 80	–	1	2
FSM5-2FKM5.4/S55[1])	8018720	M12 × 1	4	max. 60	-30…+ 90	–	–	–
FSM5-2FKM5.4/S55/S1874[1,2])	8021378	M12 × 1	4	max. 60	-30…+ 90	–	–	–
FSM5-2FKM5.4/S55/S2292[1])	8033228	M12 × 1	4	max. 60	-30…+ 90	–	–	–
FSM4-2FKM3/S89[1])	8010464	M12 × 1	4	max. 250	-30…+ 90	–	–	–
FSM4-2FKM3P3/S89[1])	8012652	M12 × 1	4	max. 30	-30…+ 90	–	–	3

[2]) Für BL67-M12-Basismodule geeignet/Suitable for BL67 M12-base modules

Verschlusskappen 7/8" und M12 × 1
7/8" and M12 × 1 blanking plugs

Abmessungen Dimensions	Anwendung Application	Material und Farbe Material and colour	Typenbezeichnung Type	Ident-Nr. Ident no.
	Staubkappe für 7/8"-Einbauflansche, keine interne Verdrahtung, 50 Stück pro Beutel Protective dust cap for 7/8" mounting flange, no internal wiring, 50 pcs. per package	Polyamid schwarz Polyamide black	**RSM-DUST-CAP**	6914862
	Verschraubkappe für 7/8"-Kupplungen, keine interne Verdrahtung Screw cap for 7/8" female connectors, no internal wiring	Polyamid schwarz Polyamide black	**VZ 8**	8018816
	Verschraubkappe für 7/8"-Kupplungen, keine interne Verdrahtung, 150 mm Kette Screw cap for 7/8" female connectors, no internal wiring, chain 150 mm	nickelbeschichtetes Messing, schwarz nickel-plated brass black	**RSM-CC**	6914829
	Verschraubkappe für 7/8"-Stecker, keine interne Verdrahtung, 150 mm Kette Screw cap for 7/8" male connectors, no internal wiring, chain 150 mm	nickelbeschichtetes Messing, schwarz nickel-plated brass black	**RKM-CC**	6914831
	Verschraubkappe für M12 × 1- Kupplungen, keine interne Verdrahtung Screw cap for M12 × 1 female connectors, no internal wiring	Polyurethan schwarz Polyurethane black	**VZ 3**	800004

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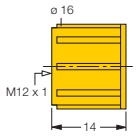
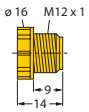
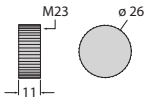
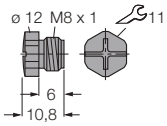
Verschlusskappen M12 × 1, M23 × 1
M12 × 1, M23 × 1 blanking plugs

Abmessungen Dimensions	Anwendung Application	Material und Farbe Material and colour	Typenbezeichnung Type	Ident-Nr. Ident no.
	Verschraubkappen für M12 × 1-Stecker (100 Stück pro Beutel) Screw cap for M12 × 1 male connectors (100 pieces per bag)	Polyutethan gelb Polyutethane yellow	**VK-M12**	6999025
	Verschraubkappen für M12 × 1-Kupplungen (100 Stück pro Beutel) Screw cap for M12 × 1 female connectors (100 pieces per bag)	Polyutethan gelb Polyutethane yellow	**VS-M12**	6999003
	Verschraubkappen für M23-Stecker Screw cap for M23 male connectors	Metall silber Metal silver	**RC-Z2104**	6900285

Verschlusskappen M8 × 1
M8 × 1 blanking plugs

Abmessungen Dimensions	Anwendung Application	Material und Farbe Material and colour	Typenbezeichnung Type	Ident-Nr. Ident no.
	Verschraubkappen für M8 × 1-Kupplungen Screw cap for M8 × 1 female connectors	Nylon schwarz Nylon black	**ISK-M8**	8015075

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