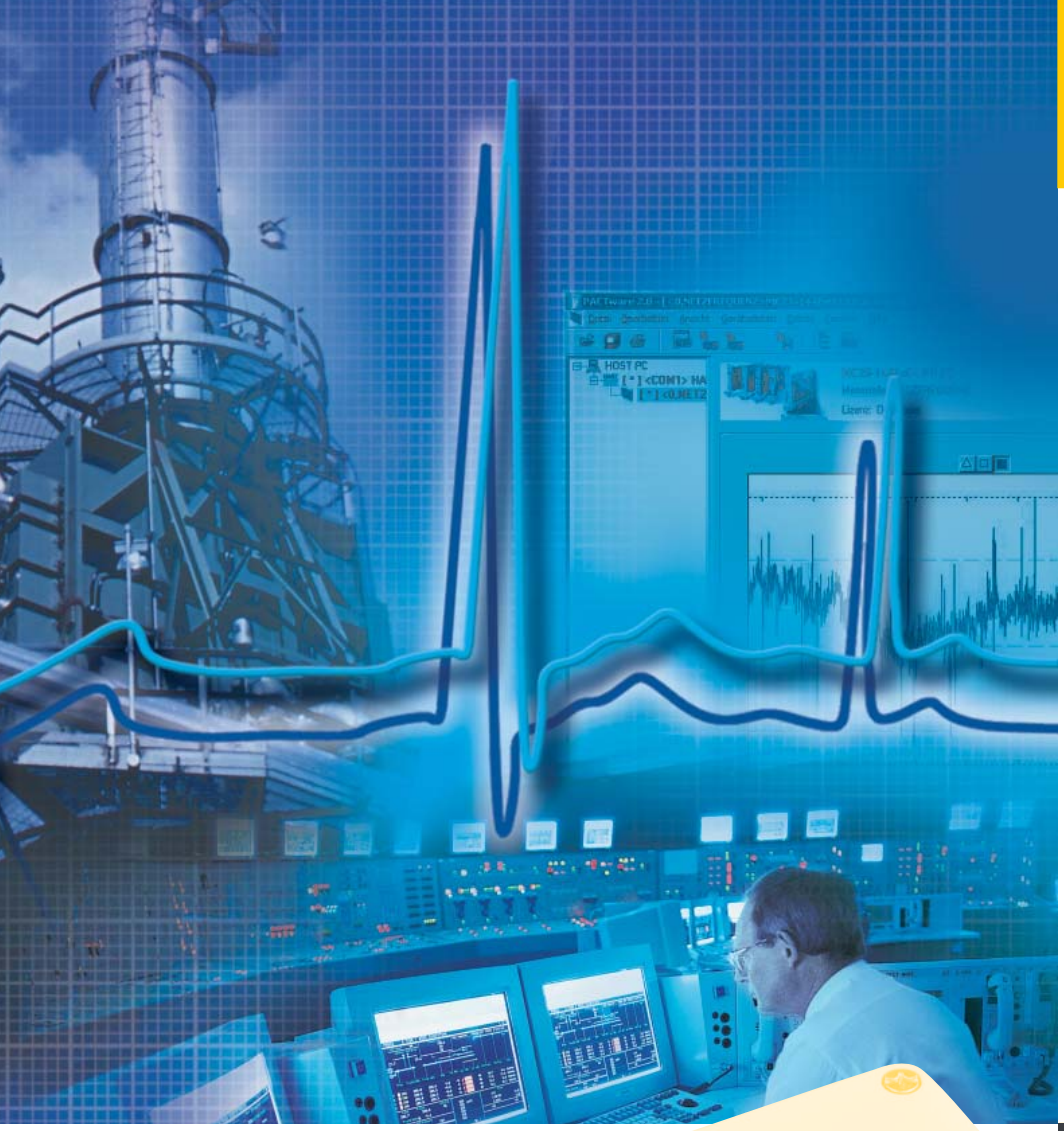
TURCK

Industrial Automation

FIELDBUS COMPONENTS FOR PROFIBUS-PA



PROFI® PROCESS FIELD BUS

F1026/01

FIELDBUS COMPONENTS FOR PROFIBUS-PA

Fieldbus systems in process automation
Fieldbus systems have become prevalent in the field of process automation in addition to decentral peripheral systems. PROFIBUS-PA and FOUNDATION fieldbus™ fieldbus systems are now the established fieldbuses in this field (for further information about the TURCK-product portfolio and in particular FOUNDATION fieldbus™ products, please see catalogue D301024).
The advantages of both of these systems are the process adapted specification and the real interoperability of field devices from various manufacturers and their compatibility with external host systems.

Both the FOUNDATION fieldbus™ and PROFIBUS-PA fieldbus fulfil the demands of the chemical, pharmaceutical and petrochemical industries. The most important features are :
- standardised user profile
- suited for use in explosion hazardous areas
- bus supply and fieldbus communication via shielded and twisted pair cables
- online device exchange without affecting system processes

Comprehensive tests performed by the industry, interest groups and committees confirm the unlimited suitability of both bus systems for use in process engineering.

TURCK fieldbus components
With TURCK products you are not tied down to company-specific fieldbus technologies, but can choose the most suitable bus product for your application from a comprehensive product spectrum.

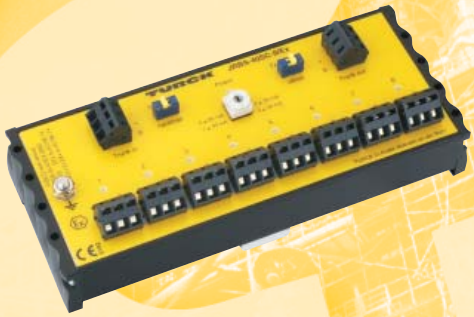
TURCK offers the complete range for all conventional industrial fieldbus systems in factory and process automation, no matter whether you require junction modules, connection products or even complete systems.

TURCK fieldbus components are specially designed for the harsh industrial environment. The extensive product line for diverse applications fulfils all demands and provides Plug & Play connectivity to ensure fast and easy connection of the field device to the control system.
Fieldbus cables and cordsets in various fieldbus standards and materials and with different connector types are available for data transfer and voltage supply of the stations.

Junction modules in IP67 (1, 4 and 6 channels)
- Device versions for use in:
  - zone 1
  - zone 2
  - Non-Ex area
- Adjustable current limitation
- Switch-in terminating resistors
- Housing material: powder-coated aluminium die-cast (4 and 6-channel types) or encapsulated Polyurethane (PUR) for the single channel versions.
- Connection technology: cable glands or flange connections in 7/8“ or M12 × 1, stainless steel

Multibarriers in IP66 (4 channels)
- Installation in explosion hazardous areas (zone 1)
- Galvanic isolation between the EEx i outputs and the EEx e main cable as well as between the individual EEx i outputs
- Fieldbus power supply according to enhanced safety EEx e
- Four intrinsically safe EEx ia outputs, 4 × 40 mA, short-circuit protected and non-interacting
- FISCO and Entity conform outputs (IEC TS 60079-27)
- Short-circuit indication via LEDs (inside housing)
- Integrated terminating resistors (switch-in)

Junction modules in IP20 (4, 6, 8 and 12 channels)
- Device versions for use in:
  - zone 1
  - zone 2
  - Non-Ex area
- Adjustable current limitation
- Switch-in terminating resistors
- Housing material: aluminium
- Connection technology: cage clamp terminals or removeable connectors



Stainless steel housing for IP20 junction boxes
- Plastic or stainless steel cable glands I
- Degree of protection IP67
- Pressure compensation element
- Isolated shielding bus

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PROFIBUS PROCESS FIELD BUS

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Temperature transmitters
- Automatic protocol conversion
- Ex-approval (EEx ia and EEx n)
- DIN type B connector
- Linear resistance, compensator and bipolar mV measurements

Terminating resistors
- Versions for intrinsically-safe and non-intrinsically safe circuits
- M12 × 1 or 7/8“
- Plug-and-Play technology
- Connector pin assignment conform to CENELEC standard EN 50044

Field device overvoltage protection
- Aluminium die-cast housings
- Connection to potential equalisation via M5 × 1 bolt on housing
- Degree of protection: IP67 and IP20

The data sheets are available under www.turck.com

Fieldbus cable available as bulk cable or prefabricated
- For indoor and outdoor use
- For connection to field-wireable M12 × 1 or 7/8” connectors, PG9 or M16/M20 cable glands
- Simple installation via Fast-*Assembly*™ technology
- Just-In-Time delivery by the TURCK-JIT-5D-programme: Delivery of all avaliable premoulded cable lenghts within 5 days

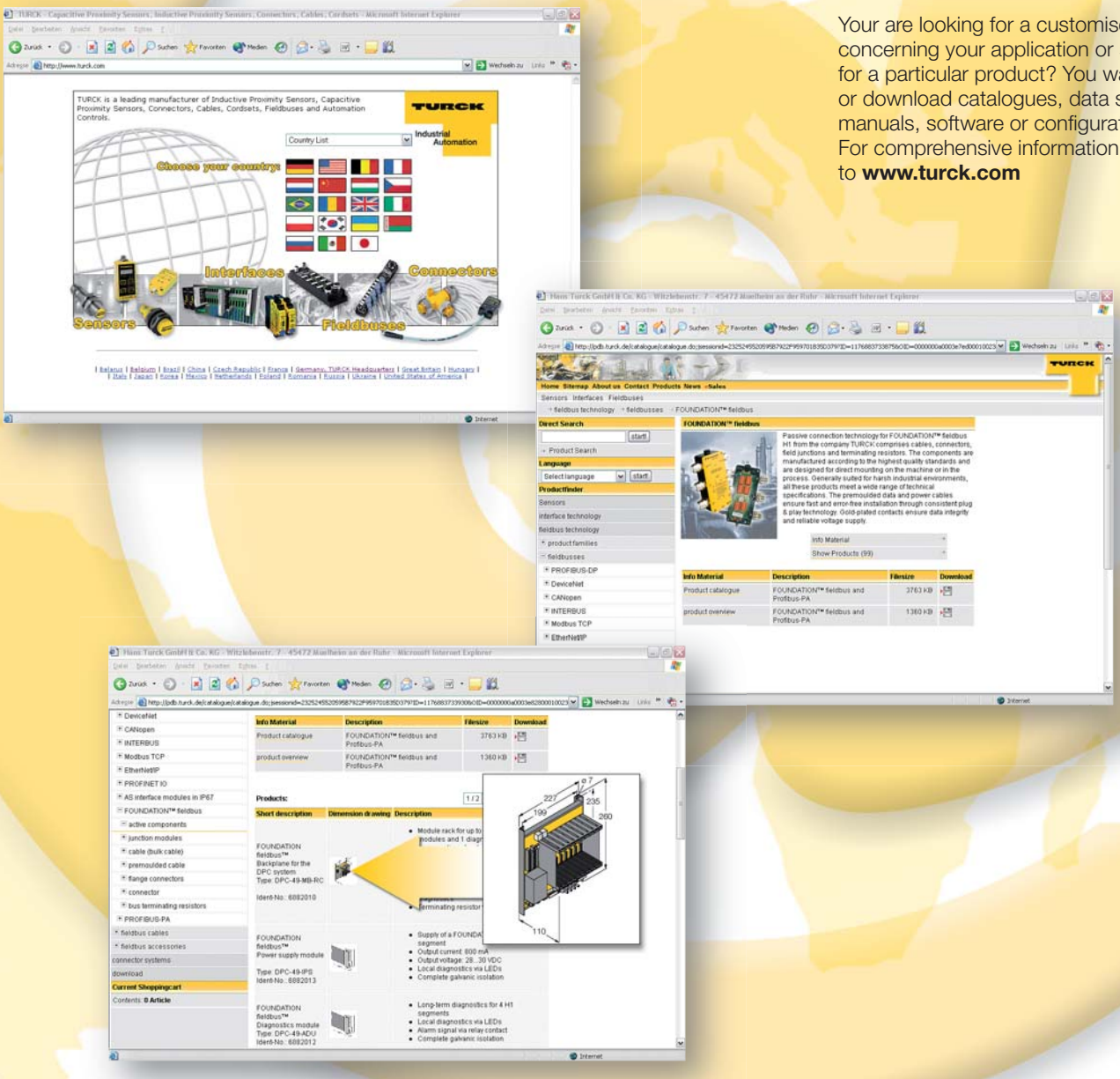
Connectors
- Connector size: M12 × 1 or 7/8“, type: straight or angled (angled M12 × 1 only)
- Plug-and-Play technology
- Load capacity: 7/8“ with 9 A, M12 × 1 with 4 A
- Connector pin assignment conform to CENELEC standard EN 50044

Special accessories
- Stripping tool, stripping of round (shielded) data conductors from 2.5...8 mm Ø (also for FastConnect®/Fast *Assembly*™)
- Special tool for cable glands on multibarrier and junction modules
- Closure caps and feed-throughs in 7/8“ and M12 × 1

Flange connections
- Field-wireable or prefabricated
- Connector size: M12 × 1 or 7/8“
- Solderable and screw-type versions
- Standard installation thread
- Stainless steel housings

THE TURCK PRODUCT DATA BASE IN THE WORLD WIDE WEB

www.turck.com



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FIELDBUS COMPONENTS FOR PROFIBUS-PA

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Industrial Automation

PROFIBUS-PA
Basics

PROFIBUS-PA – bus physics

With the publication of the international standard IEC 61158-2 in October 1994, a suitable transmission technology was determined and internationally specified for the application areas of PROFIBUS-PA and FOUNDATION fieldbus™. This was later integrated into the European standards as EN 61158-2.

Both systems comply with IEC 61158-2 and operate on the voltage mode with a transmission speed of 31.25 kBit/s. In this way the data packages are modulated onto the supply voltage for the fieldbus station and transmitted via a shielded two-wire cable (see Fig. 1).

These bus physics offer a decisive advantage: fieldbus communication and power supply of the bus station can be implemented using a single cable. These bus physics lead to enhanced operational safety and lower costs compared with the conventional fieldbus solution used up to this point with its additional wiring effort.

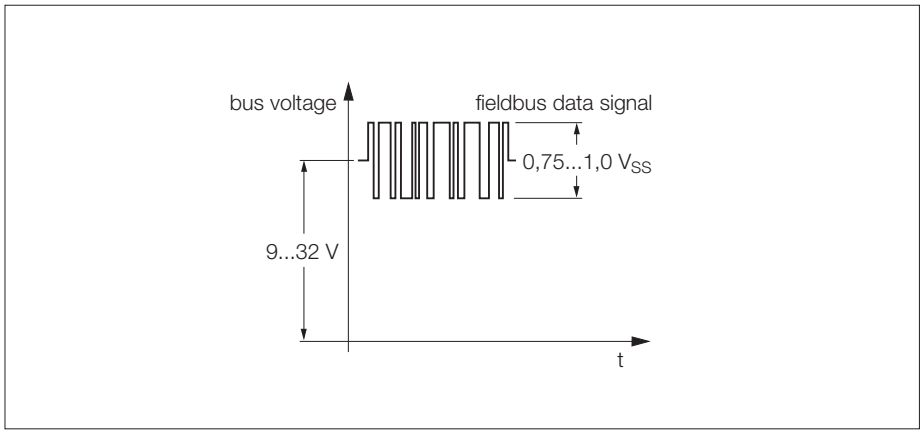

Fig. 1 Transmission of data packages to IEC 61158-2

Characteristic features of the IEC 61158-2 transmission physics

Data transmission	digital, bit synchronous, Manchester coding
Transmission speed	31.25 kBit/s, voltage mode
Data security	preamble, fault protected start and end delimiter
Cable	shielded and twisted 2-wire cable
Remote supply of the stations	optionally via signal cables
Protection classes	intrinsically safe (Ex ia/ib or Ex nL), increased safe (Ex e or Ex nA) and explosion protected (EEx d/m/p/q)
Topology	spur and tree topologies; also in combination
Number of stations	up to 32 stations per cable segment
Repeater	can be extended with a maximum of 4 repeaters

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PROFIBUS PA – topology

System integration with PROFIBUS-PA is implemented via a DP/PA segment coupler originating from the PROFIBUS-DP fieldbus. The segment coupler adapts the RS485 transmission physics to the transmission physics determined in IEC 61158-2. If the DP segment operates with a higher speed, an additional link is required.

The segment coupler for non-explosion hazardous applications provides enough power for a sufficient number of fieldbus stations (Fig. 2).

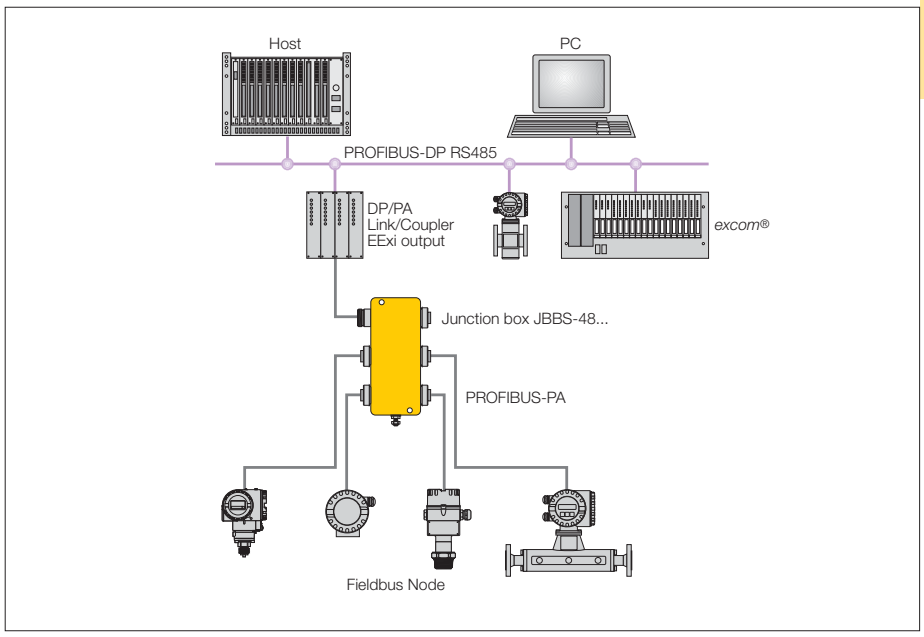


Fig. 2 Topology – PROFIBUS PA in the non-explosion hazardous area with DP/PA coupler

A coupler with an intrinsically-safe output is necessary for use in explosion-hazardous areas. This, however, reduces the output power and the number of connectable bus stations. Only a few stations can be powered (Fig. 3) due to the current consumption of the bus stations.

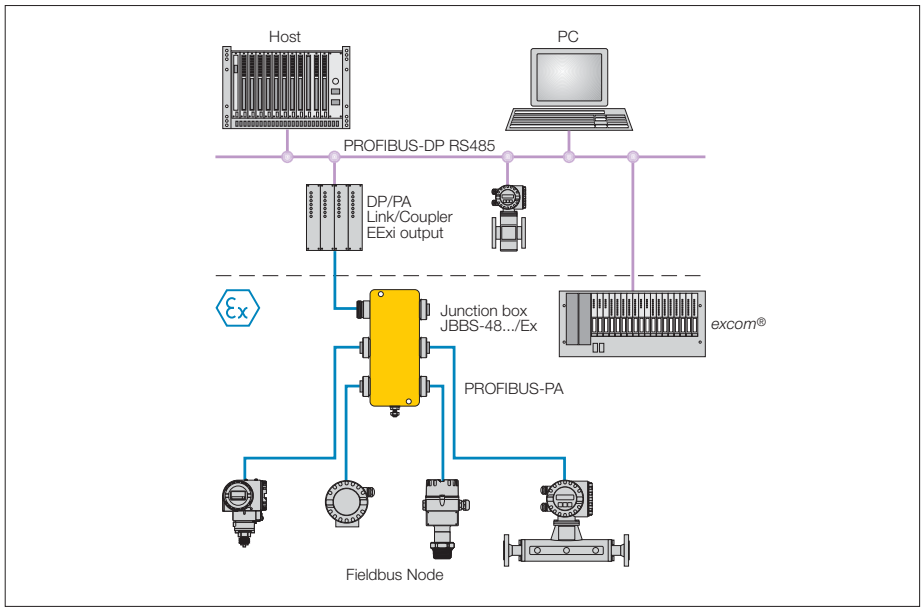


Fig. 3 Topology – PROFIBUS-PA in the explosion hazardous area with DP/PA couplers with intrinsically safe outputs

This situation can be remedied by a topology which is based on the use of main line (trunk line) featuring “enhanced safety” and intrinsically safe outputs.
This is where the multibarrier is employed, permitting a current of up to 10 A in the trunk line area, and when connected in series, supplying up to intrinsically safe 32 stations in the explosion-hazardous area.

Fig. 4 shows the typical configuration of a PROFIBUS-PA network with TURCK multibarriers. The number of multibarriers which can be switched in and the maximum cable lengths depend on the output power of the DP/PA coupler and on the cable type.

TURCK recommends the long-distance cable FBY.../LD (see page 89) for the trunk line; for the outputs the standard cable FBY.../SD is recommended (see page 88).

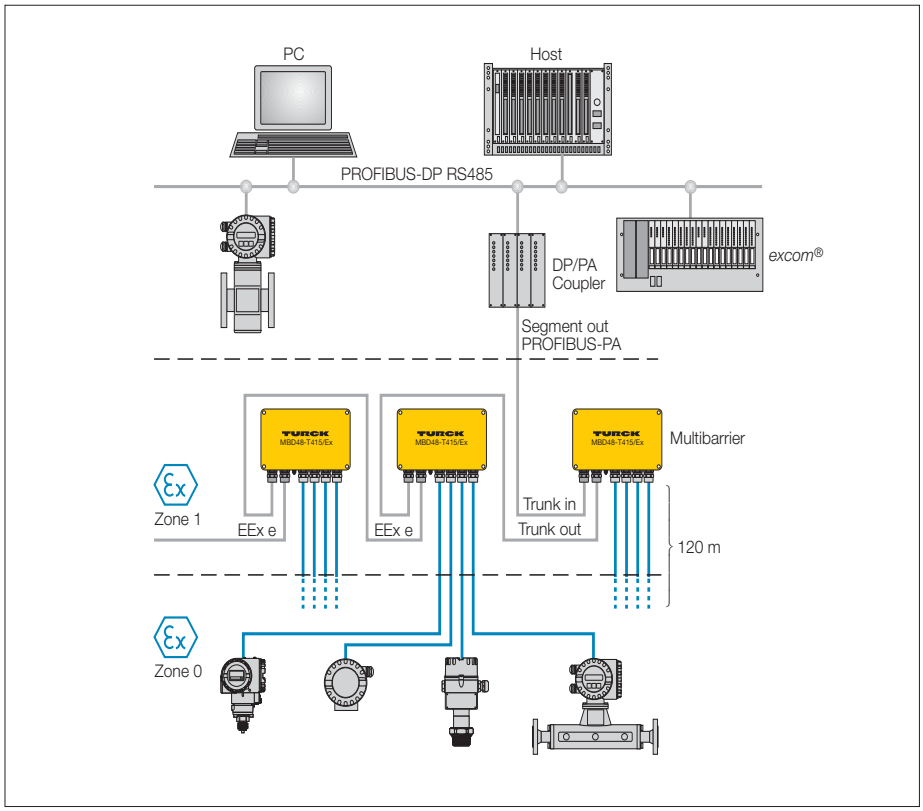


Fig. 4 Topology – PROFIBUS-PA in the explosion-hazardous area with multibarriers

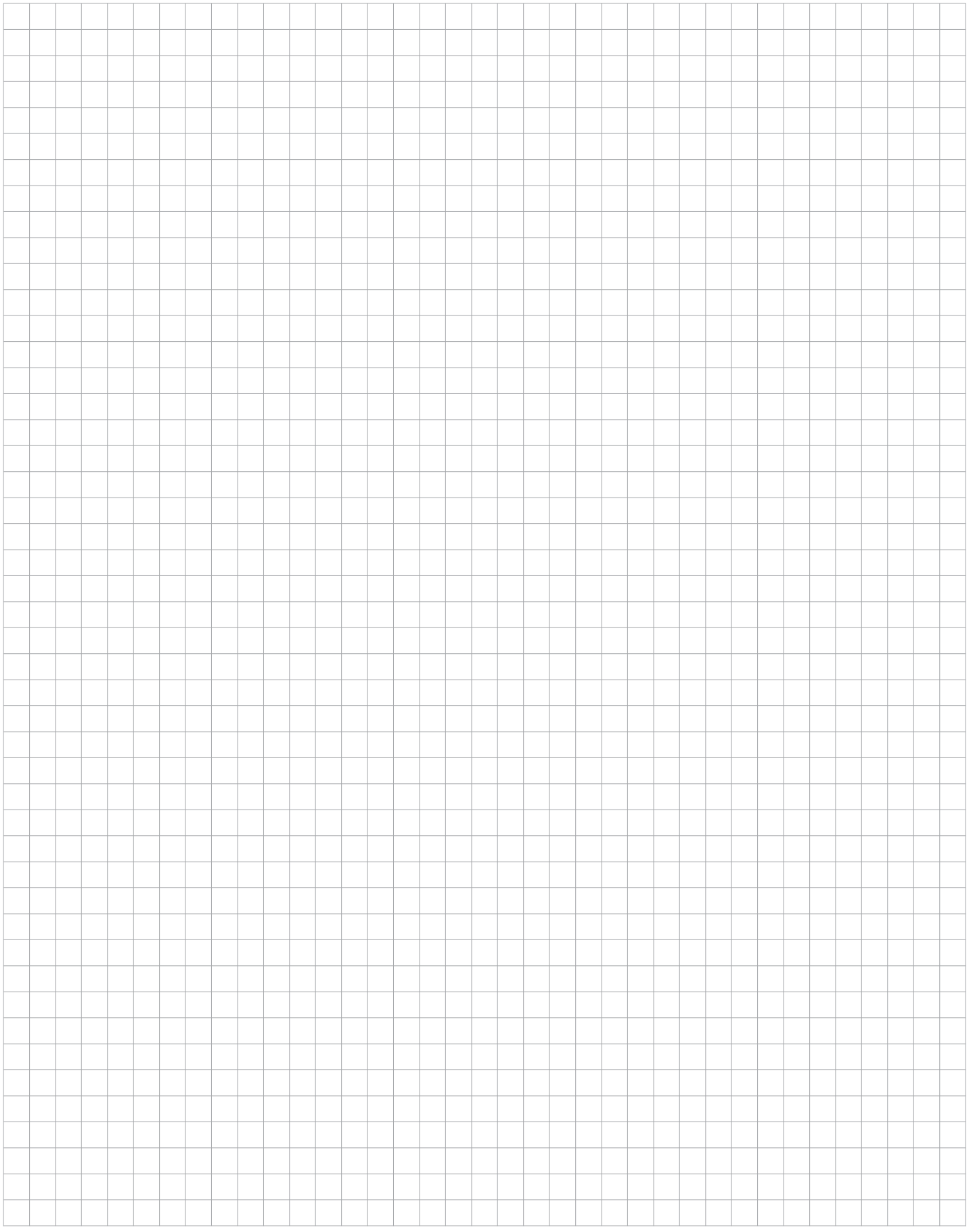
Overview – application of TURCK's fieldbus components in the explosion hazardous and non-explosion hazardous areas

	Application in EEx i circuits conform to FISCO			Application in EEx i circuits conform to EN 50020			Application in Ex nL circuits conform to		Installation in			Installation in the Non-Ex area
	EEx ia / EEx ib			EEx ia / EEx ib								
	Zone 0	Zone 1	Zone 2	Zone 0	Zone 1	Zone 2	FNICO	Entity	Zone 0	Zone 1	Zone 2	
Junction boxes without short-circuit protection												
JBBS...M...	–	–	–	–	–	–	✔	✔	–	✔	✔	✔
JBBS...E...	–	–	–	–	–	–	✔	✔	–	✔	✔	✔
JBBS...T...	–	–	–	–	–	–	✔	✔	–	✔	✔	✔
Junction boxes with short-circuit protection												
JBBS...SC...M...	–	–	–	–	–	–	✔	✔	–	–	✔	✔
JBBS...SC...E...	–	–	–	–	–	–	✔	✔	–	–	✔	✔
JBBS...SC...T...	–	–	–	–	–	–	✔	✔	–	–	✔	✔
Ex junction boxes without short-circuit protection												
JBBS...M.../Ex	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
JBBS...E.../Ex	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
JBBS...T.../Ex	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
Ex junction boxes with short-circuit protection												
JBBS...SC...M.../Ex	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
JBBS...SC...E.../Ex	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
JBBS...SC...T.../Ex	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
Ex junction boxes for DIN hat-rail mounting JRBS...[1]	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
Multibarriers MBD...[2]	✔	✔	✔	✔	✔	✔	✔	✔	–	✔	✔	✔
Temperature transmitters[1]												
KMU-40Ex/1GD	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
KMU-40Ex/3G	–	–	–	–	–	–	✔	✔	–	–	✔	✔
Terminating resistors RS...-TR	–	–	–	–	–	–	–	–	–	–	–	✔
Ex terminating resiators RS...-TR/Ex	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Passive equippment without electronics (cable, connectors, flanges ...[3]	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔

✔ = Use possible
– = Use not possible

1) Use only permitted when installed in an additional housing (minimum IP54 degree of protection)
2) Equipment with differing protection classes – only the EEx i outputs have intrinsically safe circuits
3) Taking consideration of the EN 50014, EN 50020 and EN 60079-14 standards

CAUTION
Intrinsically safe equipment, which has been used in non intrinsically safe applications, may not subsequently be used in intrinsically safe applications.



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PROFIBUS-PA
Multibarrier MBD48-T415/Ex –
Basics and application benefits

Industrial Automation

The operating principle of the **MBD48-T415/Ex** multibarrier is physically based on IEC 61158-2. The use of multibarriers increases the number of fieldbus stations in the PROFIBUS-PA network to a maximum of 32 field devices.

This high number of stations is achieved by enhanced safety of the fieldbus supply which can be looped through from multibarrier to multibarrier. The fieldbus stations in zone 0 are supplied with power via the four intrinsically safe outputs of each multibarrier device.

User benefits
The user can expect substantial cost advantages due to the possibility of cascading the multibarriers in a single segment in the explosion hazardous area, thus fully exploiting the entire function range of the bus systems.

All fieldbus devices can be operated in a single fieldbus segment in the explosion hazard area. Thus, the costs for an additional bus coupler or a segment card as well as their integration and parameter definition are eliminated. An additional trunk line and the wiring material is also spared.

The supply of power to the multibarriers is implemented via the bus which means that an additional power cable is not required.

Installation in the explosion hazardous area
The area of application to ATEX is
II 2 (1 GD) G EEx m e [ia] IIC T4.

Due to its EEx e protection rating, the **MBD48-T415/Ex** multibarrier can be installed in zone 1 (II 2 G) according to 94/9/EC (ATEX 95a).

Use in explosion hazardous areas with explosion protection group IIC – in conjunction with temperature class T4 – is the standard in the process industry.

Within zone 1, the **MBD48-T415/Ex** is connected via a cable and connections with enhanced safety (EEx e) to the main line (trunk line) of a fieldbus conform to IEC 61158-2. This offers the advantage that the connection to the bus can be implemented using a loop isolator without EX approval, but with a sufficiently high capacity.

Intrinsic safety and galvanic isolation between all outputs
For safety reasons, galvanic isolation of signals plays a decisive role in the Ex area. The multibarrier provides four intrinsically safe and galvanically isolated outputs. The complete galvanic isolation exists between the main bus cable (trunk line) **and** the output circuits as well as between all of the four individual output circuits.

Galvanic isolation of intrinsically safe circuits, as demanded by the industry, particularly for zone 0, is thus provided.

Potential transfers and potential equalization currents are thus reduced and safe data transmission is guaranteed.

Operational safety
Operational safety of the bus system must be guaranteed should a bus station fail or malfunction. The four outputs of the multibarrier each supply an output current of max. 40 mA.

If a short-circuit occurs on a fieldbus station, the integrated short-circuit protection comes into play. Only the affected output will be shut down, the main line and the other outputs of the fieldbus segment remain operational. The short-circuit is indicated for each channel by a red LED inside the housing.

Industrially suitable housing
Industrial environmental conditions are frequently harsh and aggressive. Therefore, a housing suitable for these conditions is necessary. The enhanced IP66 degree of protection and the special housing material (die-cast aluminium) – in conjunction with the encapsulated module electronics – meet these demands and provide a high level of operational safety. Direct installation of a multibarrier in the system is thus unproblematic.

The EEx e cable glands guarantee safe and quick connection technology in conjunction with the high-quality cage clamps.

Shield terminals are capacitively connected to the housing potential in order to divert possible interference voltages on the cable shield. The riveted ground bolt connects the housing to the main potential equalisation.

Functions which supplement the standard

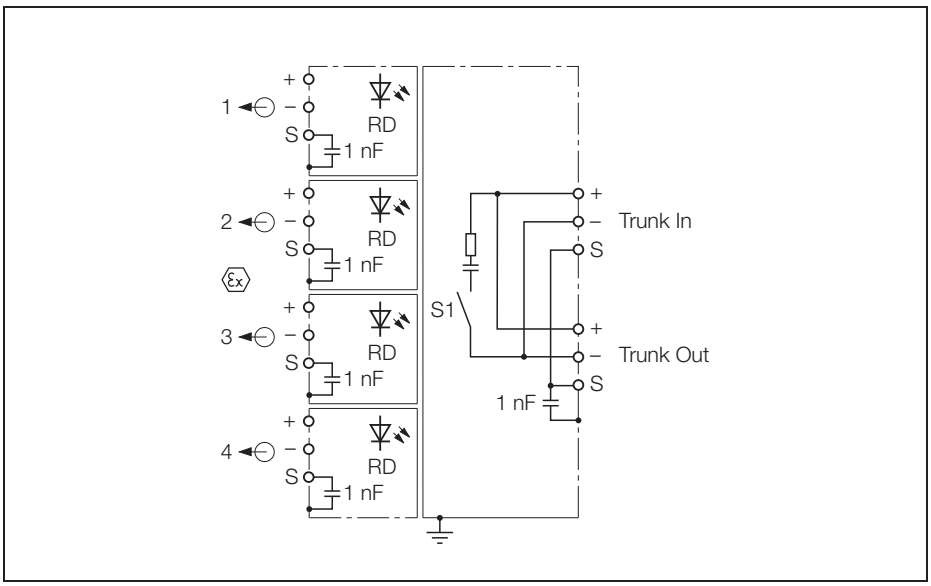
- **FISCO conformity**
  The FISCO model has been developed for the supply of power to fieldbus stations in the Ex area by the PTB in cooperation with renowned manufacturers. FISCO stands for Fieldbus Intrinsically Safe Concept.
  It is intended to simplify the verification of intrinsic safety of fieldbus systems. Intrinsically safe networks can be configured without highly complex calculations, and also expanded and operated without system certification.
  The outputs of the multibarrier conform to the demands of an Ex current supply and also conform to FISCO.

- **Switch-in terminating resistors**
  Data transmission on bus cables is frequently influenced by signal reflection, which can occur when the bus ends are not terminated. The fieldbus must be provided with a terminating resistor at both ends in order to avoid signal reflection. The multibarrier is provided with an integrated terminating resistor, which should be activated, when the multibarrier is connected as the last device on the main bus line (trunk line).

- **Climatic compensation**
  In regions subject to large temperature and air-humidity variations, it is possible that formation of condensation or a build-up of water within the housing is possible during operation. In order to avoid this, the multibarrier is fitted on the cable connection end with a pressure equalisation element to avoid the build-up of condensation.
  The pressure equalisation element features IP67 degree of protection and guarantees continuous and reliable ventilation and venting of the multibarriers. The ePTFE diaphragm in the centre of the gland features a very high water ingress pressure and repels oil. Even 100 % of salt crystals are kept out.

PROFIBUS-PA
Multibarrier, 4-channel
MBD48-T415/EX

Industrial Automation



The four-channel multibarrier MBD48-T415/EX is designed to connect a large number of field devices to the PROFIBUS-PA (acc. to IEC 61158-2).

The number of connectable field devices to the multibarrier depends on the current consumption of the individual devices. Up to 32 EEx i field devices can be connected to the bus. This extension capacity is achieved by means of the EEx e fieldbus supply which is fed through from multibarrier to multibarrier.

The inputs and outputs of the trunk line feature increased safety (EEx e) whereas the outputs to the field devices feature intrinsic safety, type EEx i.

The multibarrier is equipped with a selectable bus terminating resistor. The switch is integrated in the housing on the board.

The multibarrier is equipped with four LEDs located on the printed circuit board inside the housing to provide short-circuit indications separately for each channel.

Due to complete galvanic isolation, trunkline to EEx i-outputs and between EEx i-outputs, a safe operation is guaranteed.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Galvanic isolation between the EEx i outputs and the EEx e bus line, as well as between the EEx i outputs**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -20...+70 °C (-4...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive connection to housing potential**
- **Output data: 10 V/40 mA (short-circuit proof)**

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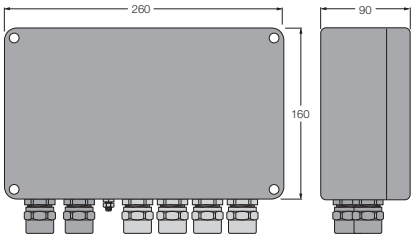
PROFIBUS-PA
Multibarrier, 4-channel
MBD48-T415/EX

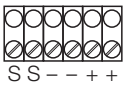
Industrial Automation

Type	MBD48-T415/EX
Ident-No.	6611270
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	16...32 VDC
Current self-consumption	≤ 40 mA
Galvanic isolation	input circuits (EEx e) to output circuits (EEx i) for 253 V_{rms}; output circuits (EEx i) to each other for 60 V_{rms}
Output circuits	
Output current	≤ 40 mA
Output voltage	≥ 10 VDC
Short-circuit protection	≤ 45 mA
Indication	
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	PTB 04 ATEX 2021
Max.output voltage U_o	≤ 14.3 V
Max. output current I_o	≤ 268 mA
Max. output power P_o	≤ 958 mW
Internal resistance R_i	53.3 Ω
Internal inductance/ capacitance L_i/C_i	negligible
Typical curve	linear
Marking of the device	Ⓔx II 2(1 G/D)G EEx m e [ia] IIC T4 FISCO / Entity multibarrier
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 10...14 mm); black
Segment OUT	1 x M20 x 1.5 (Ø 10...14 mm); black
Drop line	4 x M20 x 1.5 (Ø 5...9 mm); blue
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP66
Ambient temperature	-20...+70 °C
Relative humidity	≤ 95 %, non condensing
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	260 x 160 x 90 mm
Connection mode	wall mounting

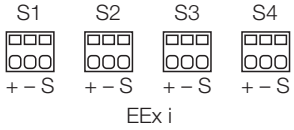
Dimensions



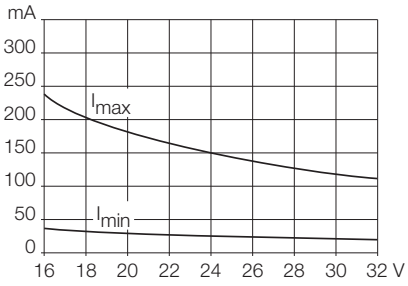
Trunk-line



Output



Current consumption



2

PROFIBUS-PA
Fieldbus display, 3-channel
FD-48-T317/EX

The three-channel digital indicator FD-48-T317/EX displays the process information of the fieldbus nodes belonging to PROFIBUS-PA-Network.

The device scans the programmed fieldbus addresses and displays their values. Parameterisation is keyword protected and implemented with the front keypad. Adjustments can be made for each channel separately. The process value of the actuator i.e. sensor is displayed as a 5 digit number and the process value status via limiting value tags.

Apart from a measuring value indicator, the display contains a 41-segment bargraph for trend monitoring, which can be scaled separately from the display value.

The indicator FD-48-T317/EX performs as a "listener", i.e. initialisation by the master is not required (integration via software redundant) and it doesn't appear in the network as a node with an own address.

The device is supplied with energy by the fieldbus (< 10 mA) and can be applied in Ex areas up to temperatures of the class T6.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Digital fieldbus display for mapping of process values**
- **Powder-coated die-cast aluminium housing**
- **Connection of the housing potential via external earthing**

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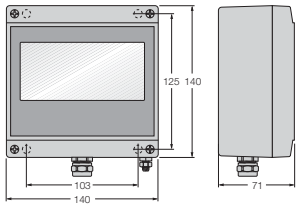
PROFIBUS-PA
Fieldbus display, 3-channel
FD-48-T317/EX

Industrial Automation

Type	FD-48-T317/EX
Ident-No.	6901315
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...30 VDC
Current self-consumption	≤ 10 mA
Indication	
Display	LCD, five-digit 7-segment display
Ex approval acc. to conformity certificate	TÜV 07 ATEX 553588
Max. input voltage U_i	≤ 30 V
Max. input current I_i	≤ 660 mA
Max. input power P_i	≤ 1600 mW
Internal inductance/ capacitance L_i/C_i	negligible
Marking of the device	⟨Ex⟩ II 2(1) G EEx ia IIC T6 resp. T5 ⟨Ex⟩ II 2 D IP65 T70°C FISCO / Entity Fielddevice
Connection	cable glands
Connection cross-section	2.5 mm^2
Protection degree	IP66
Ambient temperature	-10...+60 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black
Dimensions	140 x 140 x 71 mm
Connection mode	wall mounting

Dimensions



2

PROFIBUS-PA
Temperature Transmitter
General Information

The KMU-40Ex/3G and KMU-40Ex/1GD transmitters are intended for connection to the PROFIBUS-PA. The unique conversion function enables automatic switch-over between both protocols. The bus connection is free of polarity consid-erations.

Applications:
- Linear temperature measurements with resistance thermometers or thermocouples
- Differential, average value or redundant temperature measurements with resistance thermometers or thermocouples
- Linear resistance, compensator and bipolar mV measurements

The 24 bit A/D converter guarantees a high resolution.

Both transmitters can be mounted in a type B terminal housing (DIN standard).

Whereas the KMU-40Ex/3G is used in the explosion hazardous area in zone 2, the KMU-40Ex/1GD can also be used in zones 0, 1 and 2 in intrinsically safe circuits.

General technical data

Accuracy (general values)

Input type	Absolute accuracy	Temperature coefficient
– All	≤ ± 0.05 % of measured value	≤ ± 0.002 % of measured value/°C

Accuracy (fundamental values)

Input type	Fundamental accuracy	Temperature coefficient
– Pt100/Pt1000	≤ ± 0.1 °C	≤ ± 0.002 °C/°C
– Ni100	≤ ± 0.15 °C	≤ ± 0.002 °C/°C
– Cu10	≤ ±1.3 °C	≤ ± 0.02 °C/°C
– Linear resistor	≤ ± 0.05 Ω	≤ ± 0.002 Ω/°C
– Voltage	≤ ± 10 µV	≤ ± 0.2 µV/°C
– Thermocouple type: E, J, K, L, N, T, U	≤ ± 0.5 °C	≤ ± 0.010 °C/°C
– Thermocouple type: B, R, S, W3, W5	≤ ± 1 °C	≤ ± 0.025 °C/°C

Electrical input data (resistance thermometer and linear resistance)

Type	Minimum value	Maximum value	Standard/remarks
– Pt25...Pt1000	-200 °C	+850 °C	IEC 60751/JIS C 1604
– Ni25...Ni1000	-60 °C	+250 °C	DIN 43760
– Cu10...Cu1000	-50 °C	+200 °C	a = 0.00427
– Linear resistor	0 Ω	10 kΩ	–
– Potentiometer	0 Ω	100 kΩ	–
Conductor resistance per conductor	50 Ω		
Sensor current	nom. 0.2 mA		

Electrical input data (thermocouple and mV input)

Type	Minimum value	Maximum value	Standard
– B	+400 °C	+1820 °C	IEC 584
– E	-100 °C	+1000 °C	IEC 584
– J	-100 °C	+1200 °C	IEC 584
– K	-180 °C	+1372 °C	IEC 584
– L	-200 °C	+900 °C	DIN 43710
– N	-180 °C	+1300 °C	IEC 584
– R	-50 °C	+1760 °C	IEC 584
– S	-50 °C	+1760 °C	IEC 584
– T	-200 °C	+400 °C	IEC 584
– U	-200 °C	+600 °C	DIN 43710
– W3	0 °C	+2300 °C	ASTM E988-90
– W5	0 °C	+2300 °C	ASTM E988-90
– Ext. cold junction compensation	-40 °C	+135 °C	IEC 60751
– mV input	-800 mV	+800 mV	–
Cold junction compensation (CJC)	< ± 0.5 °C		
Sensor fault recognition	yes		
Short-circuit recognition	< 3 mV		

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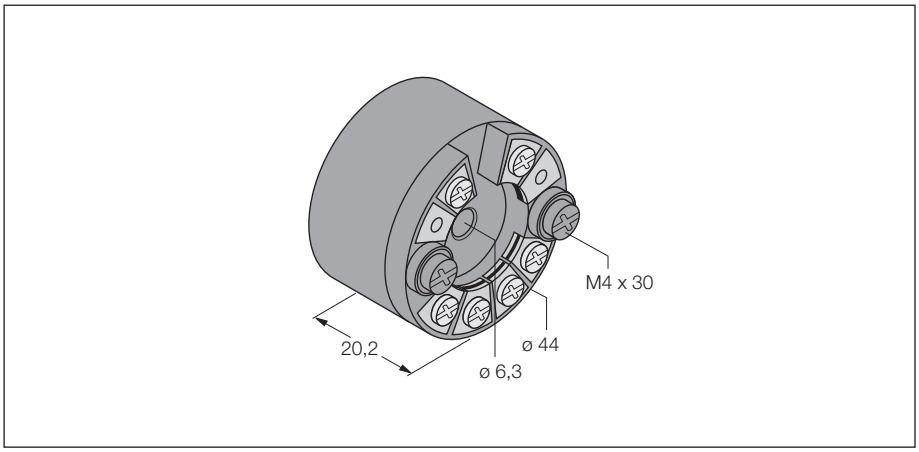
PROFIBUS-PA
Temperature Transmitter
KMU-40Ex/3G



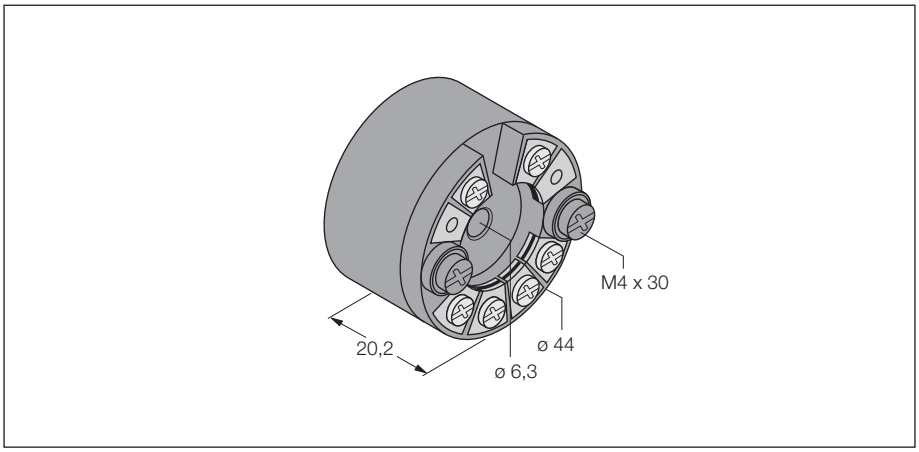
- Configuration via PROFIBUS-PA with Siemens Simatic® PDM®, ABB Melody/ Harmony, Honeywell Ax and Metso DNA software
- Suitable for use in zone 2
- Type B terminal housing

General information:
see page 16
Wiring diagrams:
see page 19

2

Type	KMU-40Ex/3G
Ident-No.	7506619
Operating voltage (Pwr)	9...32 VDC
Current consumption	< 11 mA
Insulation voltage – test/operation	1500 VAC/50 VAC
Signal to noise ratio	> 60 dB
Response time (programmable)	1...60 s
Refresh time	< 400 ms
Execution time (PID controller)	< 200 ms
Execution time (analogue input)	< 50 ms
Signal resolution (input)	24 Bit
Calibration temperature	20...28 °C
Ex approval according to	
EC type examination	KEMA 05 ATEX 1031 X
– U_0	5.71 V
– I_0	8.4 mA
– P_0	12 mW
– C_0/L_0	40 µF/200 mH
Marking of device	Ⓔx II 3 G EEX nA [L] IIC T4...T6
FM, UL and CSA approval	Class I, Div. 2, Gr. A, B, C, D; Class I, Zone 2, NIFW/FNICO
Output	
PROFIBUS-PA protocol standard	EN 50170, Vol. 2
PROFIBUS-PA function blocks	2 × analogue
PROFIBUS-PA address (ex-works)	126
Housing	
Housing material	Cycoloy
Housing and terminal degree of protection	IP68 or IP00 (IEC 60529/EN 60529)
Dimensions/weight	Ø 44 × 20.2 mm/55 g
Vibration resistance	to IEC 60068-2-6, Test FC
Relative humidity	< 95 % (non-condensating)
Ambient temperature	-40...+85 °C (-40...+185 °F)

PROFIBUS-PA
Temperature Transmitters
KMU-40Ex/1GD



- Configuration via PROFIBUS-PA with Siemens Simatic® PDM®, ABB Melody/ Harmony, Honeywell Ax and Metso DNA software
- Suitable for use in zone 0, 1 and 2, 20, 21, 22
- Type B terminal housing

General information:
see page 16
Wiring diagrams:
see page 19

Type	KMU-40Ex/1GD
Ident-No.	7506618

Operating voltage (in FISCO installations)	9...30 VDC (9...17,5 VDC)
Current consumption	< 11 mA
Insulation voltage – test/operation	1500 VAC/50 VAC
Signal to noise ratio	> 60 dB
Response time (programmable)	1...60 s
Refresh time	< 400 ms
Execution time (PID controller)	< 200 ms
Execution time (analogue input)	< 50 ms
Signal resolution (input)	24 Bit
Calibration temperature	20...28 °C

Ex approval according to				
EC type examination	KEMA 05 ATEX 1030			
$U_0/I_0/P_0/C_0/L_0$	5.71 V/8.4 mA/12 mW/40 µF/200 mH			
Zone 0, Div. 1, EEx ia IIC, Entity/FISCO	**Barriers with P_0 < 0.84 W**	**Barriers with P_0 < 1.3 W**	**FISCO (IIB)**	**FISCO (IIC)**
– U_i	30 VDC	30 VDC	17.5 VDC	15 VDC
– I_i	120 mA	300 mA	250 mA	free [1]
– P_i	0.84 W	1.3 W	2.0 W	free [1]
– L_i/C_i	1 µH/2.0 nF	1 µH/2.0 nF	1 µH/2.0 nF	1 µH/2.0 nF
Zone 1, Div. 2, EEx ib IIC, Entity/FISCO	**Barriers with P_0 < 5.32 W**	**FISCO segment coupler**		
– U_i	30 VDC	17.5 VDC		
– I_i	250 mA	free [1]		
– P_i	5.32 W	free [1]		
– L_i/C_i	1 µH/2.0 nF	1 µH/2.0 nF		
Marking of device	Ⓔx II 2(1) GD EEx ib [ia] IIC T1...T6			
FM, UL and CSA approval	Class I, Div. 1, Gr. A, B, C, D;	Class I, Zone 0/1, Gr. IIC;	Class I, Div. 2, Gr. A, B, C, D	

Output	
PROFIBUS-PA protocol standard	EN 50170, Vol. 2
PROFIBUS-PA function blocks	2 × analogue
PROFIBUS-PA address (ex-works)	126

Housing	
Housing material	Cycoloy
Housing and terminal degree of protection	IP68 or IP00 (IEC 60529/EN 60529)
Dimensions/weight	Ø 44 × 20.2 mm/55 g
Vibration resistance	to IEC 60068-2-6, Test FC
Relative humidity	< 95 % (non-condensating)
Ambient temperature	-40...+85 °C (-40...+185 °F)

[1] Transducers can be freely mounted taking consideration of L_i and C_i. Current and power are limited by the FISCO model.

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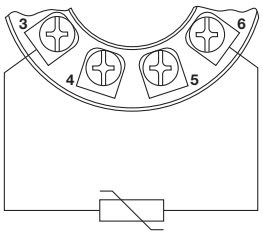
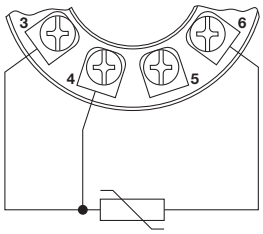
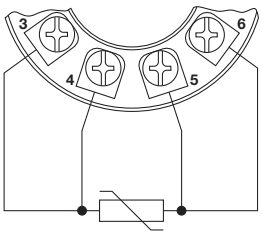
Resistance thermometer, 2-wire



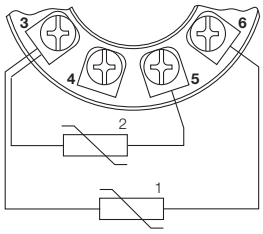
Resistance thermometer, 3-wire



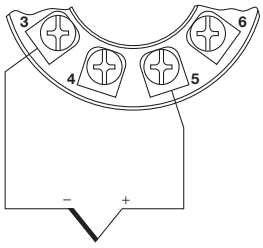
Resistance thermometer, 4-wire



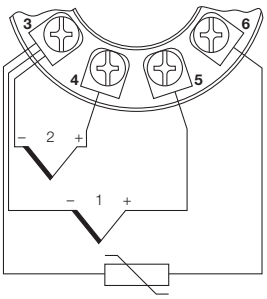
2 × resistance thermometer, 2-wire



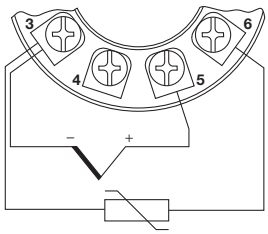
Thermcouple with internal cold junction compensation



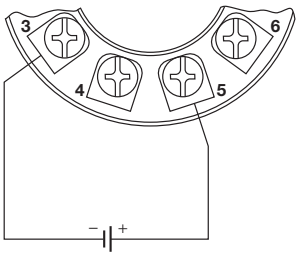
2 × thermcouple with internal cold junction compensation



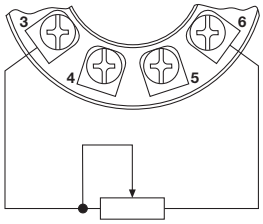
Thermcouple with external cold junction compensation



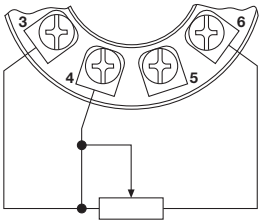
mV input



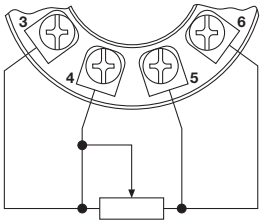
Resistor, 2-wire



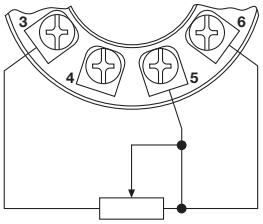
Resistor, 3-wire



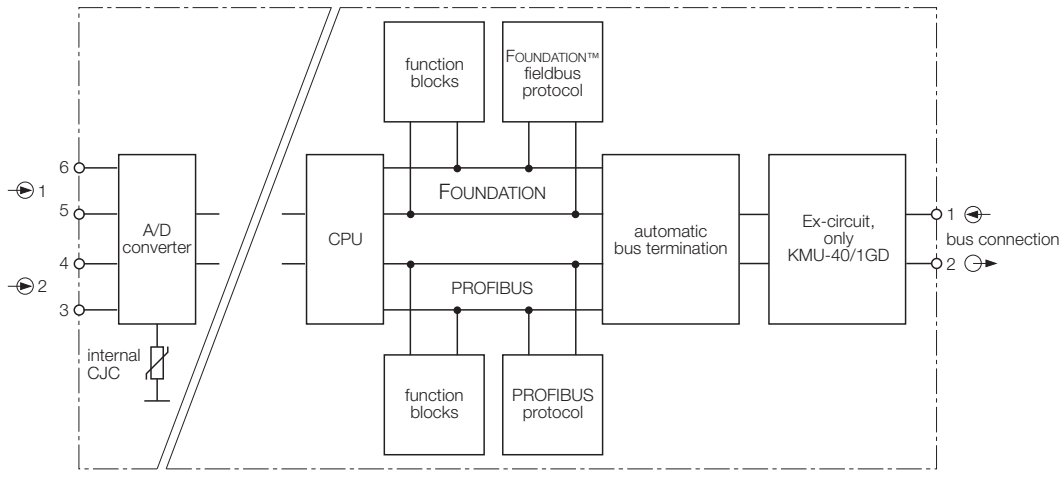
Resistor, 4-wire



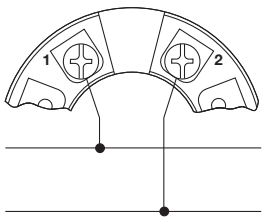
Potentiometer, 3-wire



Block diagram



Output



PROFIBUS-PA
Junction Boxes by TURCK

TURCK
Industrial Automation

TURCK offers junction boxes in various designs for the distribution of energy and data.

The junction boxes differ in the number of channels, the housing style and special features such as integrated short-circuit protection, switch-in terminating resistor and selectable shielding concept.

The following junctions are available as standard versions.
Special solutions are available on request.

IP67 junction boxes with or without short-circuit protection (1, 4 and 6 channels)

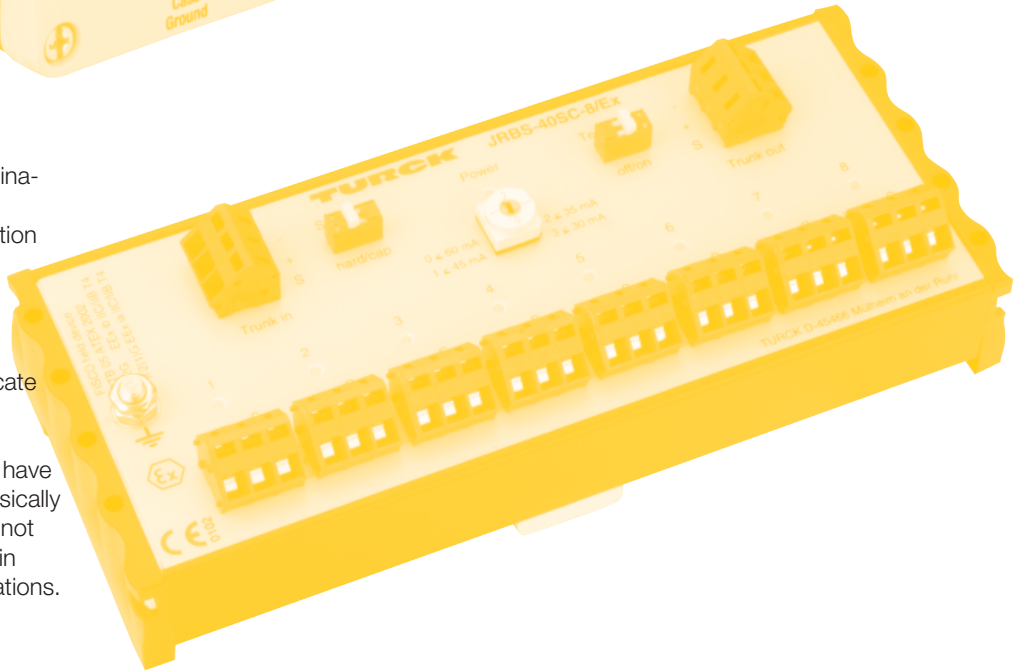
- Explosion-protected junctions (for use in zone 1 or 2, distribution of EEx ia signals in zone 0)
- Standard junctions (non-Ex)
- IP67 degree of protection
- Switch-in terminating resistor
- Selectable shielding concept (hard-wired or capacitive grounding)
- Active and passive types
- Pressure compensation element to prevent water condensation
- Housing material: powder-coated die-cast aluminium (4 and 6-channel type)
- Connection technology: stainless steel flange connectors 7/8“, M12 or cage-clamp terminals
- Cable glands: plastic, stainless steel, nickel-plated brass, EMC
- Temperature range: -25 °C ... +70 °C

IP20 junction boxes with or without short-circuit protection (4 , 6, 8 and 12 channels)

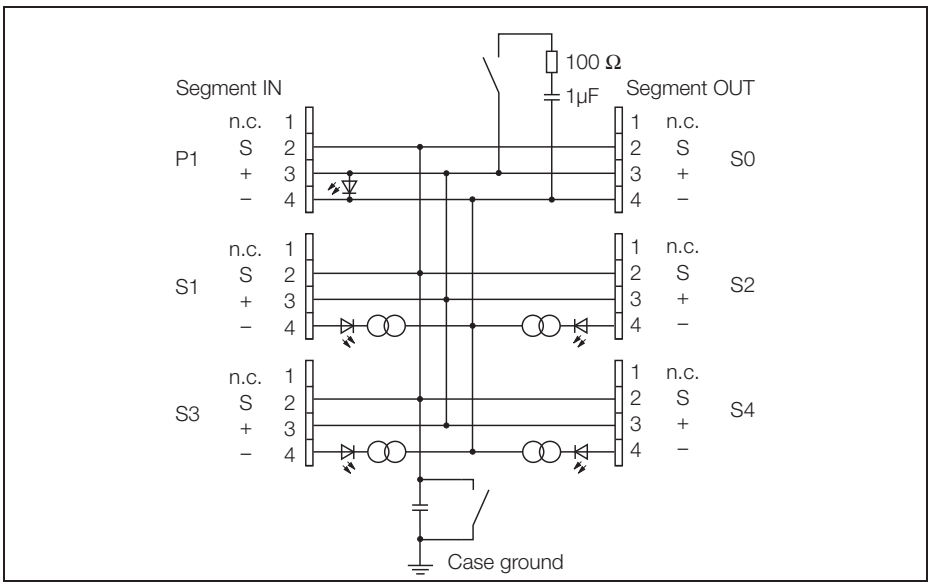
- Suitable for the explosion hazardous and the safe area
- For use in zone 1 or 2, distribution of EEx ia signals in zone 0
- IP20 degree of protection
- Switch-in terminating resistor
- Selectable shielding concept (hard-wired or capacitive grounding)
- Active and passive types
- Housing material: aluminium
- Connection technology: cage-clamp terminals or removable screw terminals
- Temperature range: -40 °C ...+70 °C

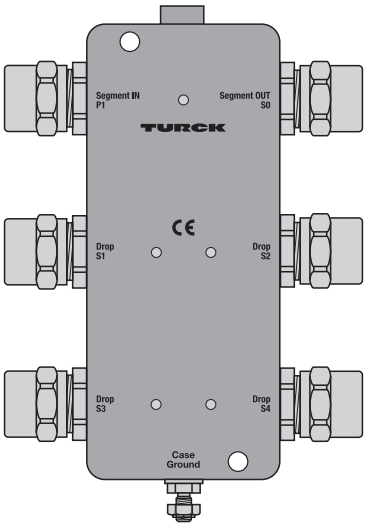
CAUTION
Explosion Danger!
The EC type test examination certificate and the manufacturer’s declaration of conformity must be observed.
It is essential that the “special conditions” in the EU type test certificate are observed.

Junction boxes, which have been used in non intrinsically safe applications, may not subsequently be used in intrinsically safe applications.



PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-T415/3G





The 4-channel Ex junction box, type JBBS-48SC-T415/3G is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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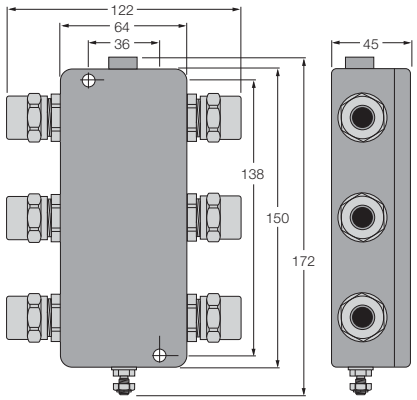
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-T415/3G

Industrial Automation

Type	JBBS-48SC-T415/3G
Ident-No.	6611416
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	4 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm²
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



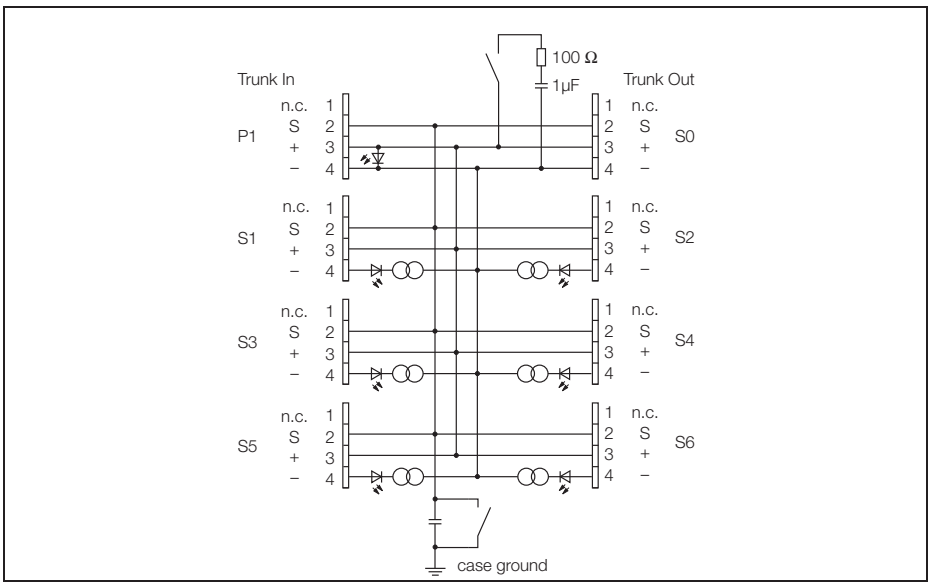
Pin configuration

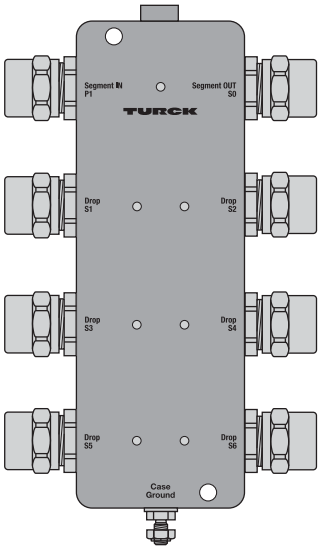
1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-T615/3G

Industrial Automation





The 6-channel Ex junction box, type JBBS-48SC-T615/3G is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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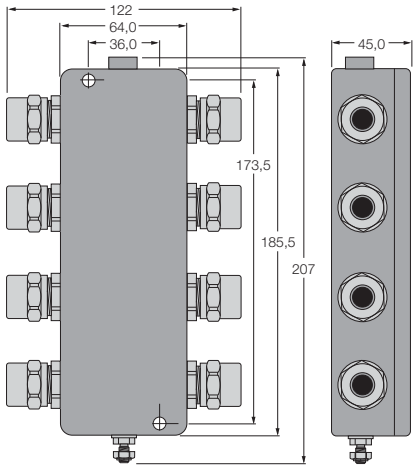
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-T615/3G

Industrial Automation

Type	JBBS-48SC-T615/3G
Ident-No.	6611418
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	6 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



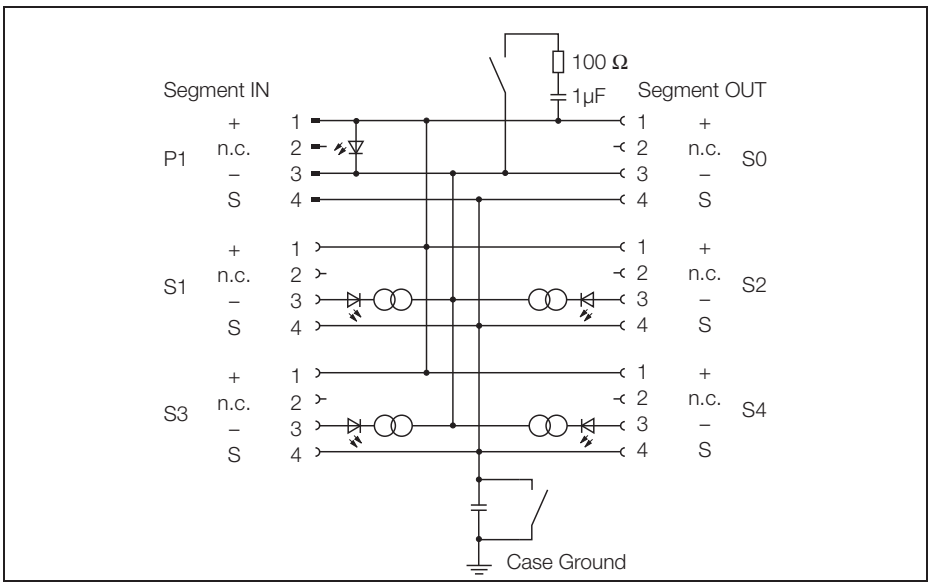
Pin configuration

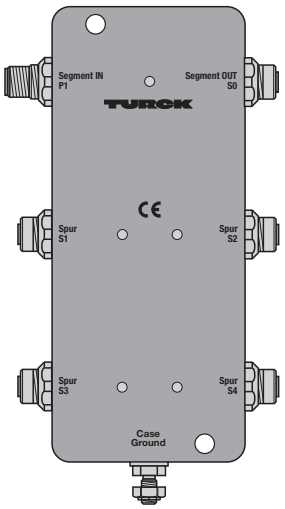
1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-E413/3G

Industrial Automation





The 4-channel Ex junction box, type JBBS-48SC-E413/3G is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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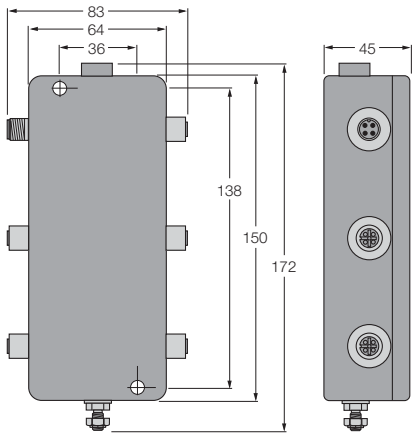
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-E413/3G

Industrial Automation

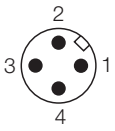
Type	JBBS-48SC-E413/3G
Ident-No.	6611408
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



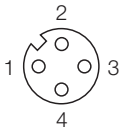
Pin configuration

M12 x 1
Segment in



1 = V +
2 = n.c.
3 = V –
4 = shield

M12 x 1
Segment out, Drop

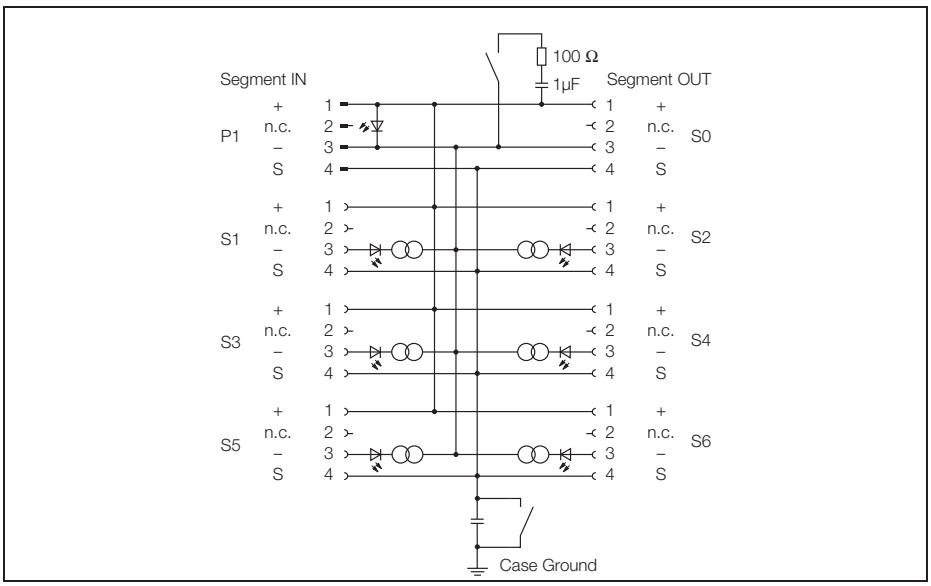


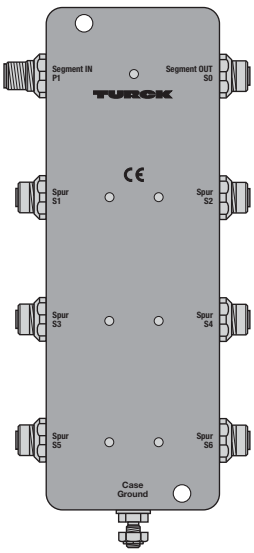
nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-E613/3G

Industrial Automation





The 6-channel Ex junction box, type JBBS-48SC-E613/3G is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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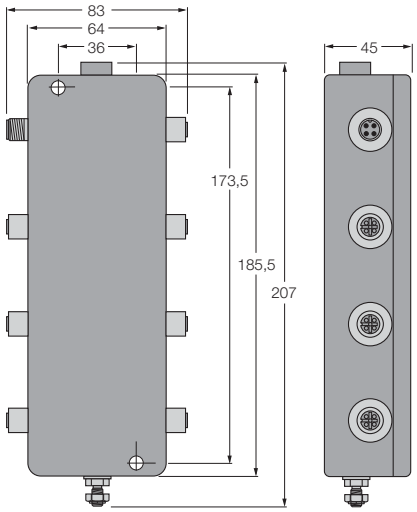
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-E613/3G

Industrial Automation

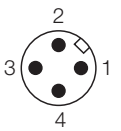
Type	JBBS-48SC-E613/3G
Ident-No.	6611410
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



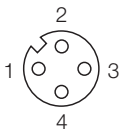
Pin configuration

M12 x 1
Segment in



1 = V +
2 = n.c.
3 = V –
4 = shield

M12 x 1
Segment out, Drop

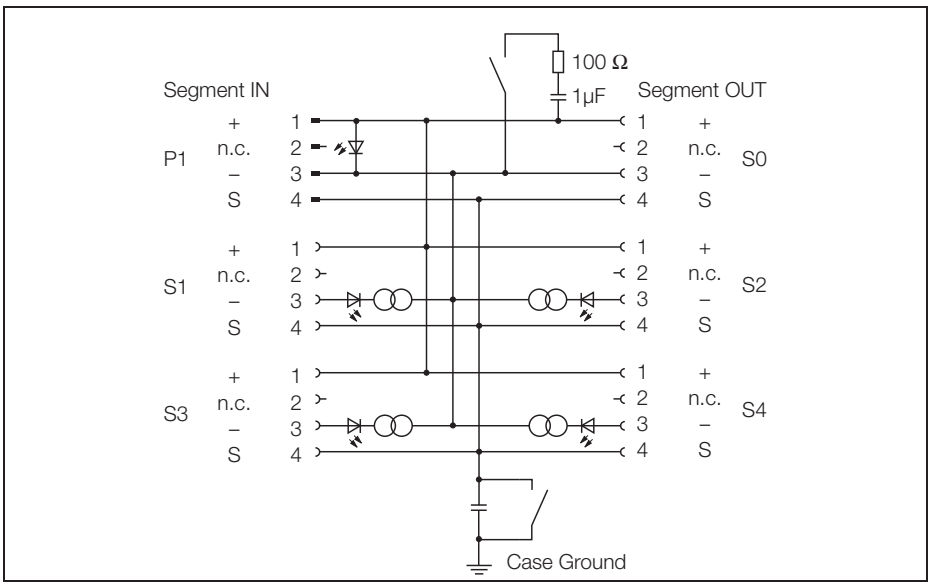


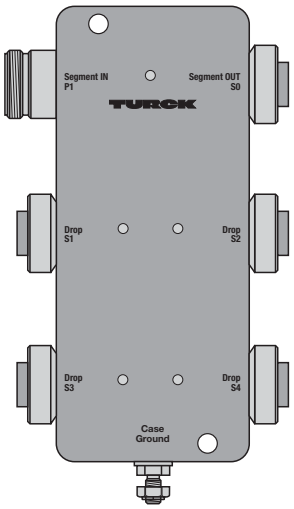
nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-M413/3G

Industrial Automation





The 4-channel Ex junction box, type JBBS-48SC-M413/3G is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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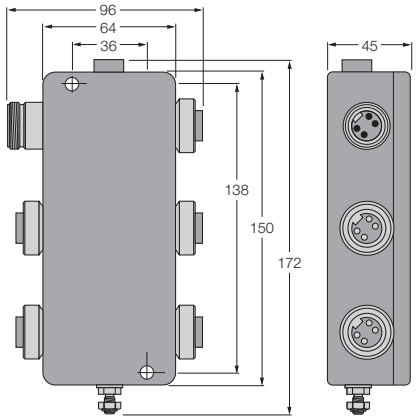
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-M413/3G

Industrial Automation

Type	JBBS-48SC-M413/3G
Ident-No.	6611412
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	4 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

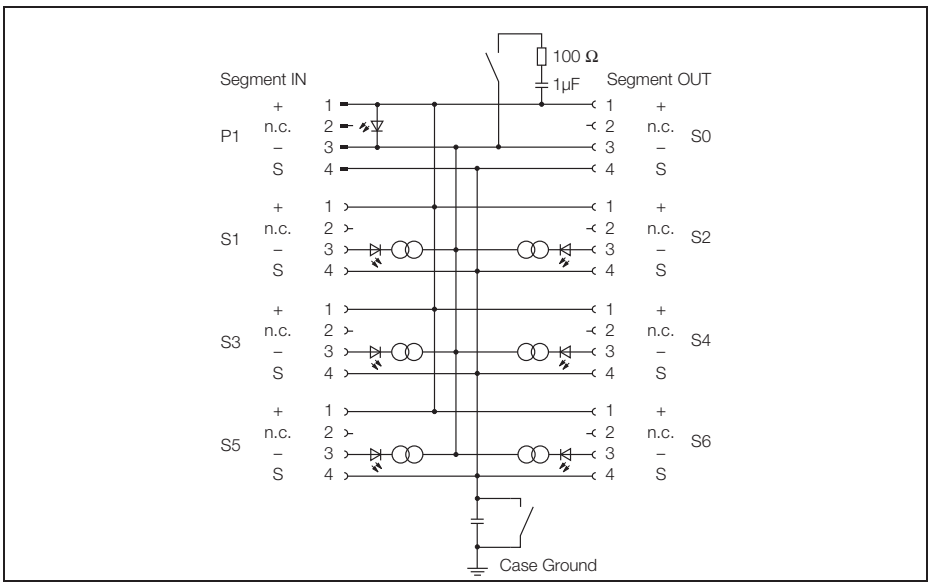
1 = V +
2 = n.c.
3 = V –
4 = shield

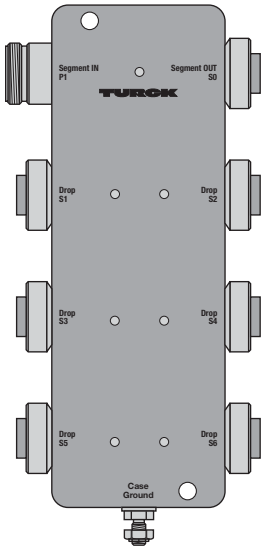
7/8"
Segment out, Drop

nominal values: 9 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-M613/3G





The 6-channel Ex junction box, type JBBS-48SC-M613/3G is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliant acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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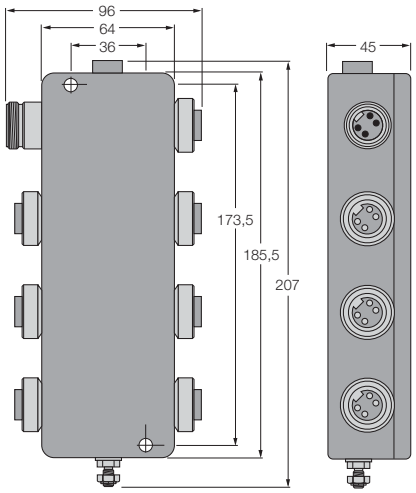
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-M613/3G

Industrial Automation

Type	JBBS-48SC-M613/3G
Ident-No.	6611414
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	6 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

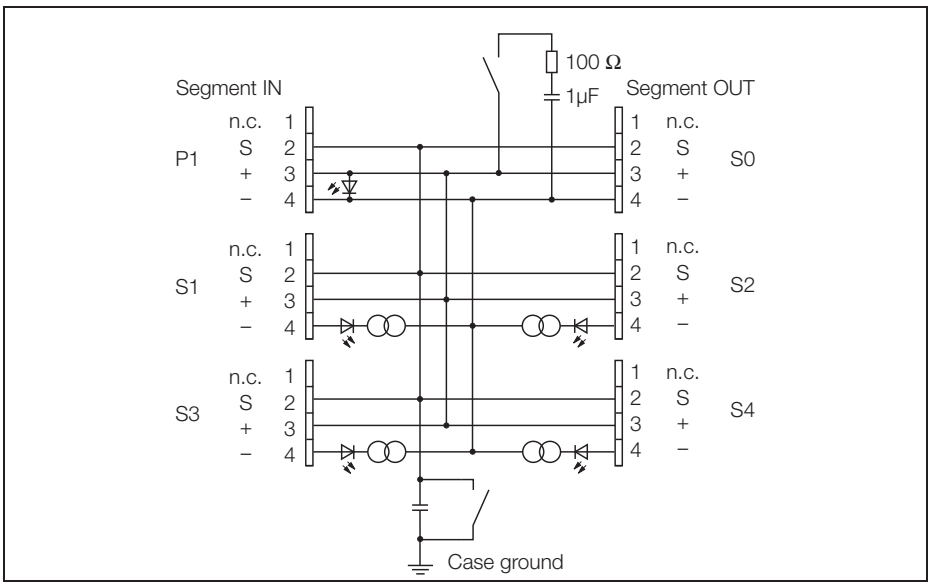
1 = V +
2 = n.c.
3 = V –
4 = shield

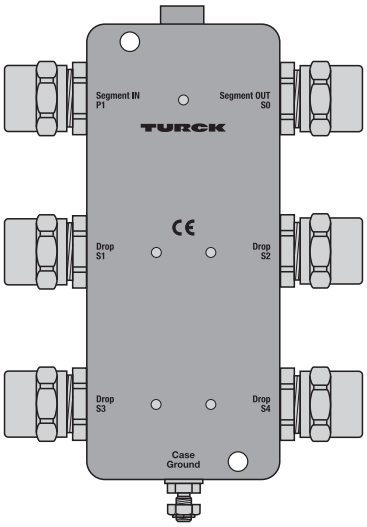
7/8"
Segment out, Drop

nominal values: 9 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-T415B/EX





The 4-channel Ex junction box, type JBBS-48SC-T415B/EX is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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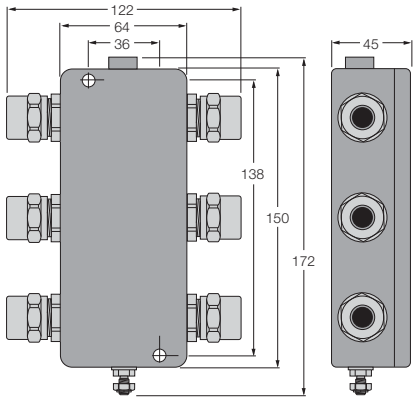
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-T415B/EX

Industrial Automation

Type	JBBS-48SC-T415B/EX
Ident-No.	6611417
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 2 G EEx ib IIC/IIB T4 ⟨Ex⟩ II 2(1) G EEx ia IIC/IIB T4 ⟨Ex⟩ II 2 G (2D) [Ex ibD] EEx ib IIB T4 ⟨Ex⟩ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	4 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



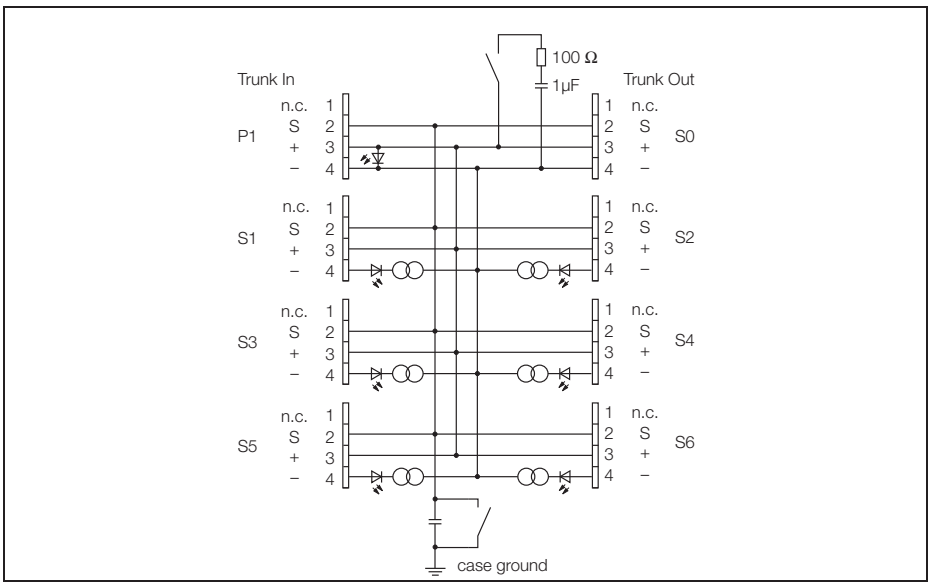
Pin configuration

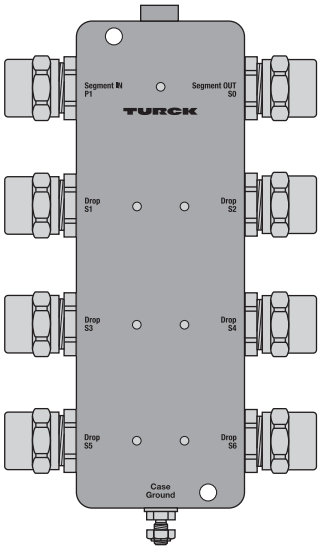
1 2 3 4

1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-T615B/EX





The 6-channel Ex junction box, type JBBS-48SC-T615B/EX is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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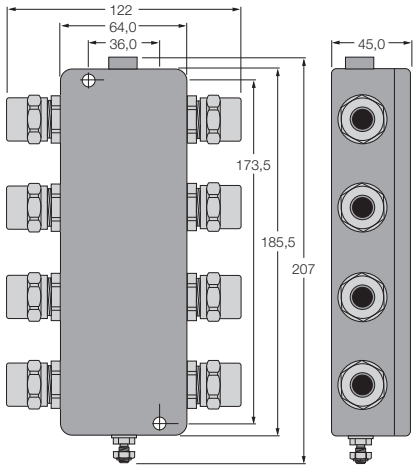
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-T615B/EX

Industrial Automation

Type	JBBS-48SC-T615B/EX
Ident-No.	6611419
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 2 G EEx ib IIC/IIB T4 ⟨Ex⟩ II 2(1) G EEx ia IIC/IIB T4 ⟨Ex⟩ II 2 G (2D) [Ex ibD] EEx ib IIB T4 ⟨Ex⟩ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	6 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



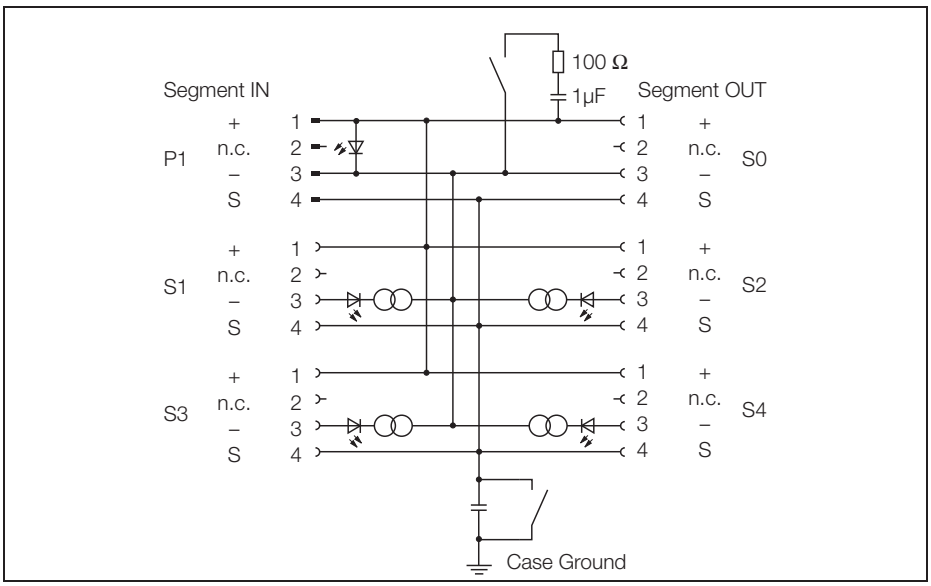
Pin configuration

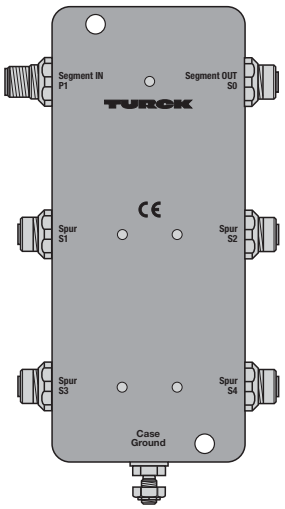
1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-E413/EX

Industrial Automation





The 4-channel Ex junction box, type JBBS-48SC-E413/EX is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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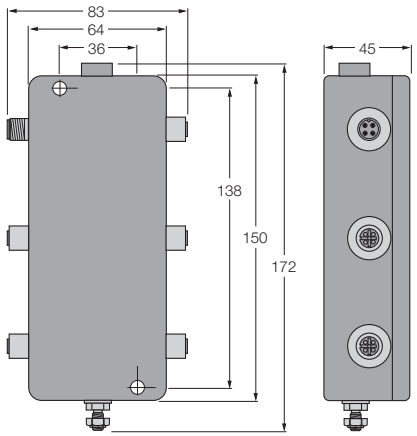
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-E413/EX

Industrial Automation

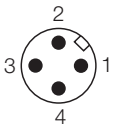
Type	JBBS-48SC-E413/EX
Ident-No.	6611409
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 2 G EEx ib IIC/IIB T4 Ⓔx II 2(1) G EEx ia IIC/IIB T4 Ⓔx II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓔx II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



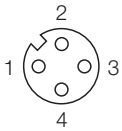
Pin configuration

M12 x 1
Segment in



1 = V +
2 = n.c.
3 = V –
4 = shield

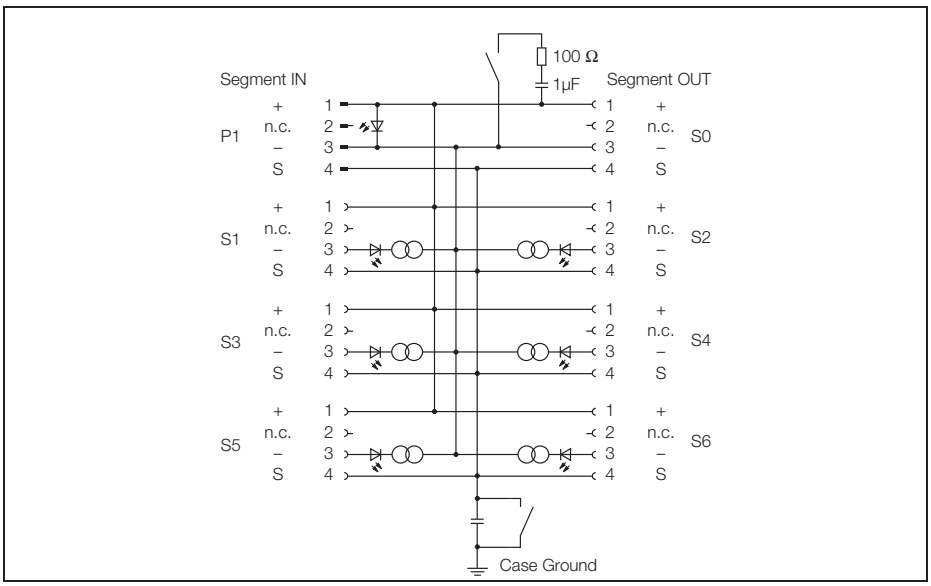
M12 x 1
Segment out, Drop

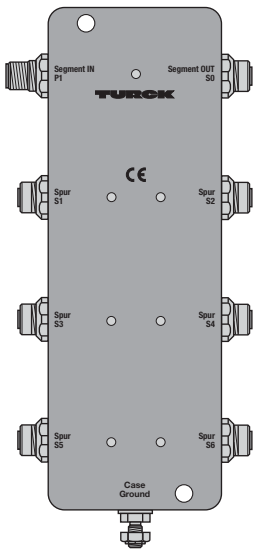


nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-E613/EX





The 6-channel Ex junction box, type JBBS-48SC-E613/EX is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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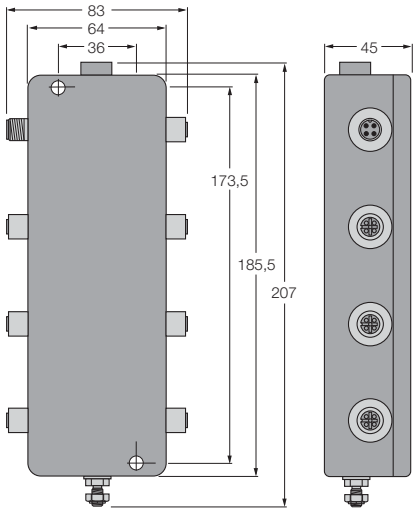
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-E613/EX

Industrial Automation

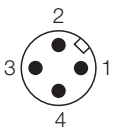
Type	JBBS-48SC-E613/EX
Ident-No.	6611411
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 2 G EEx ib IIC/IIB T4 ⟨Ex⟩ II 2(1) G EEx ia IIC/IIB T4 ⟨Ex⟩ II 2 G (2D) [Ex ibD] EEx ib IIB T4 ⟨Ex⟩ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



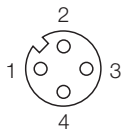
Pin configuration

M12 x 1
Segment in



1 = V +
2 = n.c.
3 = V –
4 = shield

M12 x 1
Segment out, Drop

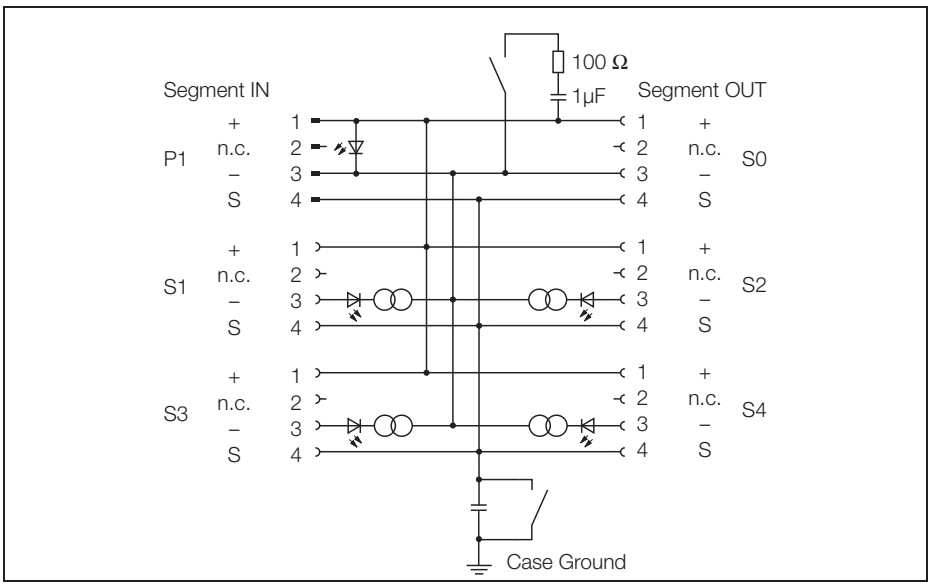


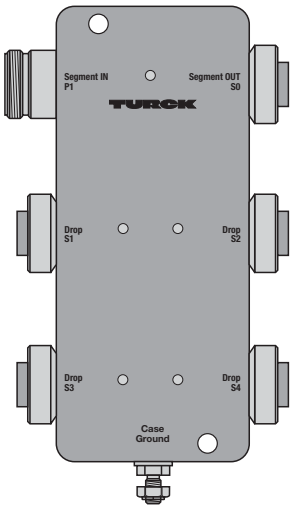
nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-M413/EX

Industrial Automation





The 4-channel Ex junction box, type JBBS-48SC-M413/EX is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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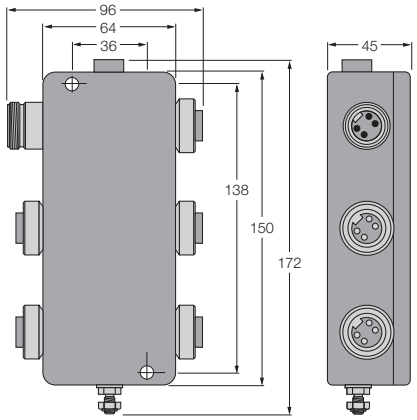
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48SC-M413/EX

Industrial Automation

Type	JBBS-48SC-M413/EX
Ident-No.	6611413
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 2 G EEx ib IIC/IIB T4 Ⓔx II 2(1) G EEx ia IIC/IIB T4 Ⓔx II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓔx II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	4 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

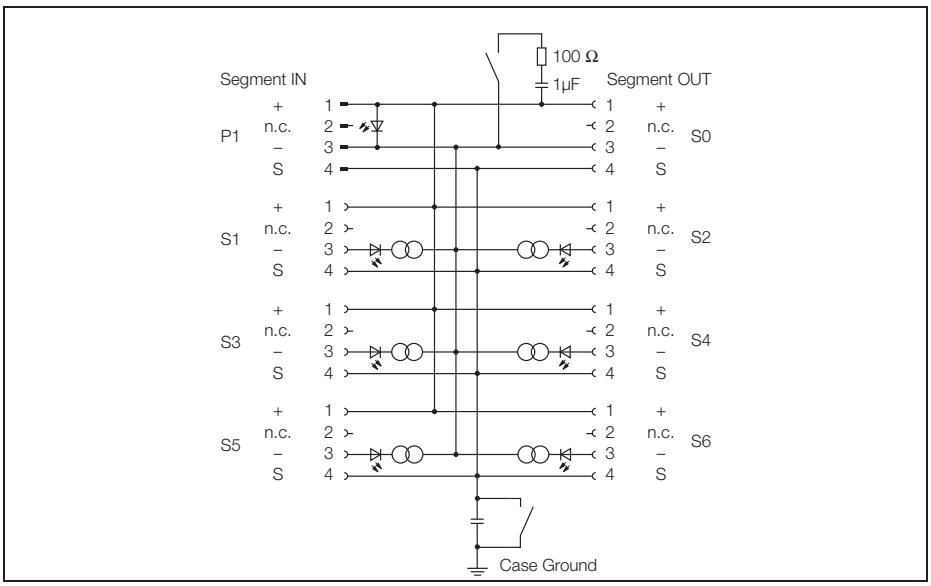
1 = V +
2 = n.c.
3 = V –
4 = shield

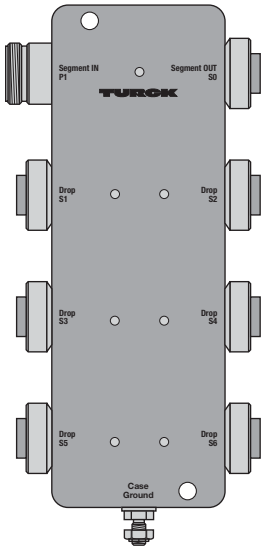
7/8"
Segment out, Drop

nominal values: 9 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-M613/EX





The 6-channel Ex junction box, type JBBS-48SC-M613/EX is designed for the PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **With drop line short-circuit protection**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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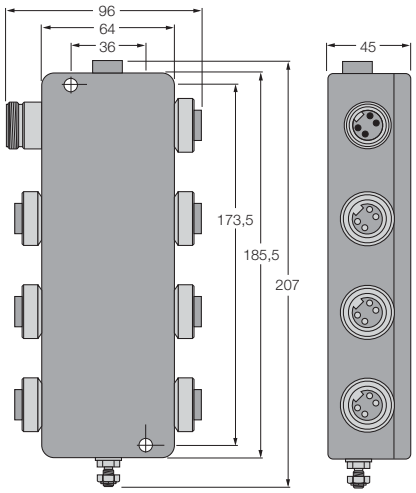
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48SC-M613/EX

Industrial Automation

Type	JBBS-48SC-M613/EX
Ident-No.	6611415
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 2 G EEx ib IIC/IIB T4 ⟨Ex⟩ II 2(1) G EEx ia IIC/IIB T4 ⟨Ex⟩ II 2 G (2D) [Ex ibD] EEx ib IIB T4 ⟨Ex⟩ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	6 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

1 = V +
2 = n.c.
3 = V –
4 = shield

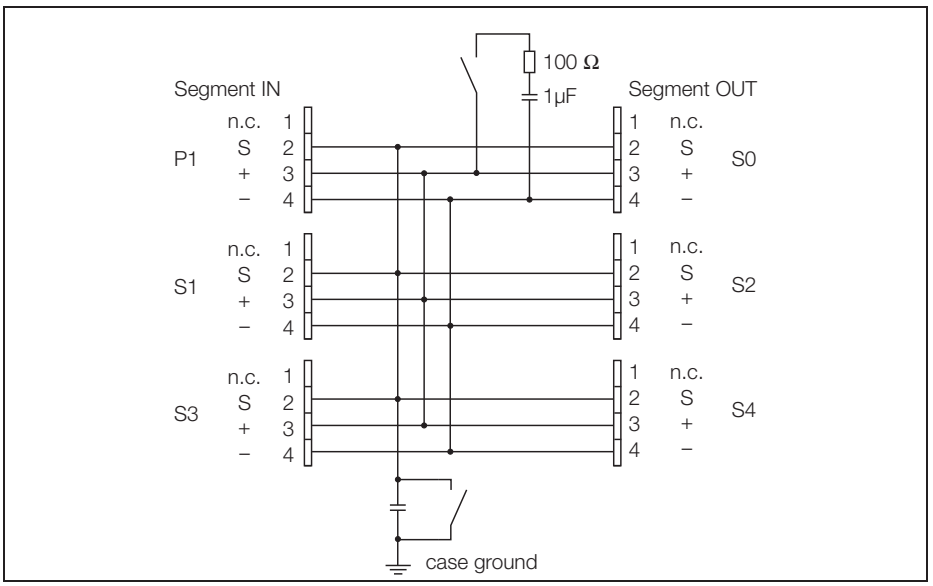
7/8"
Segment out, Drop

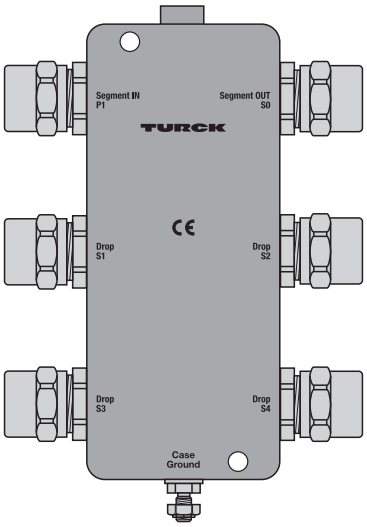
nominal values: 9 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-T415/3G

Industrial Automation





The 4-channel Ex junction box, type JBBS-48-T415/3G is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliant acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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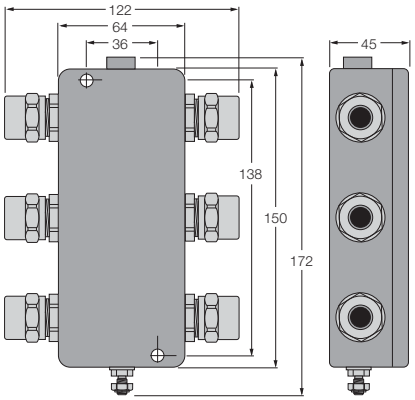
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-T415/3G

Industrial Automation

Type	JBBS-48-T415/3G
Ident-No.	6611420
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	4 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



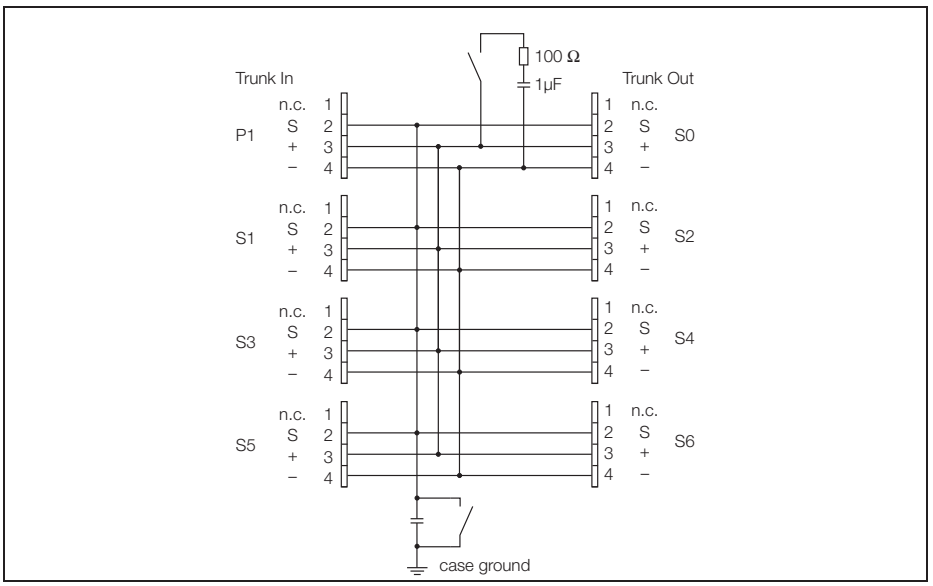
Pin configuration

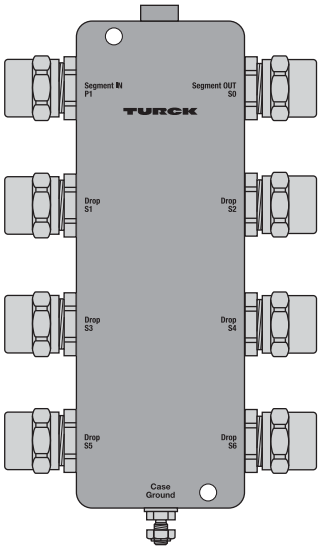
1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-T615/3G

Industrial Automation





The 6-channel Ex junction box, type JBBS-48-T615/3G is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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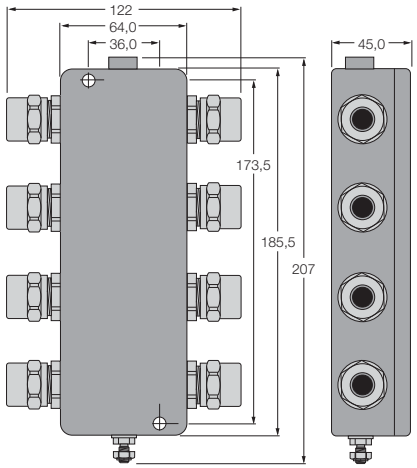
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-T615/3G

Industrial Automation

Type	JBBS-48-T615/3G
Ident-No.	6611422
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	6 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



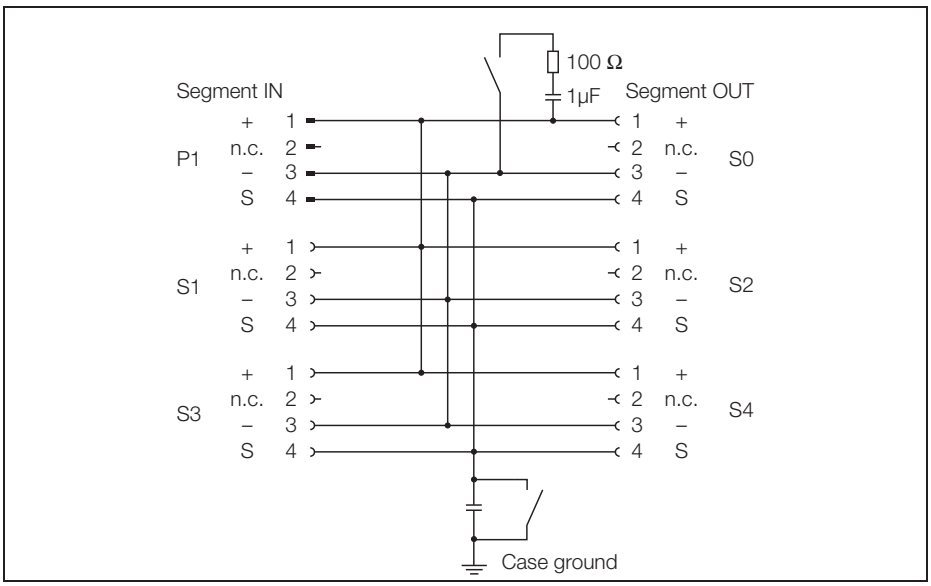
Pin configuration

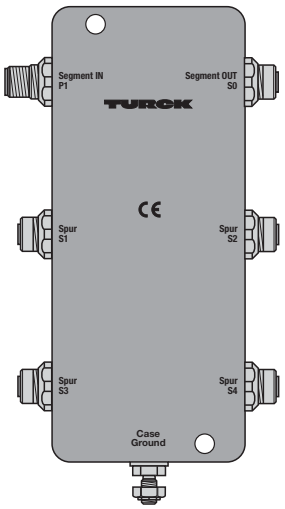
1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-E413/3G

Industrial Automation





The 4-channel Ex junction box, type JBBS-48-E413/3G is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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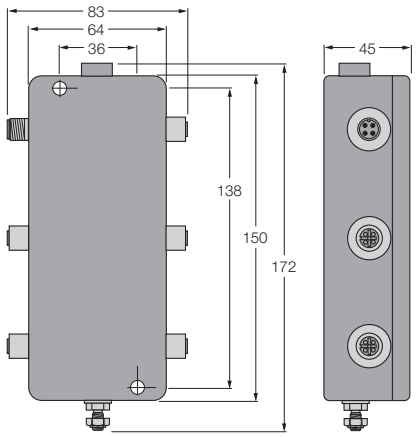
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-E413/3G

Industrial Automation

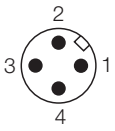
Type	JBBS-48-E413/3G
Ident-No.	6611400
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 3 G Ex nA II T4 ⟨Ex⟩ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



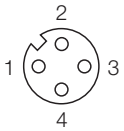
Pin configuration

M12 x 1
Segment in



1 = V –
2 = V +
3 = shield
4 = n.c.

M12 x 1
Segment out, Spur

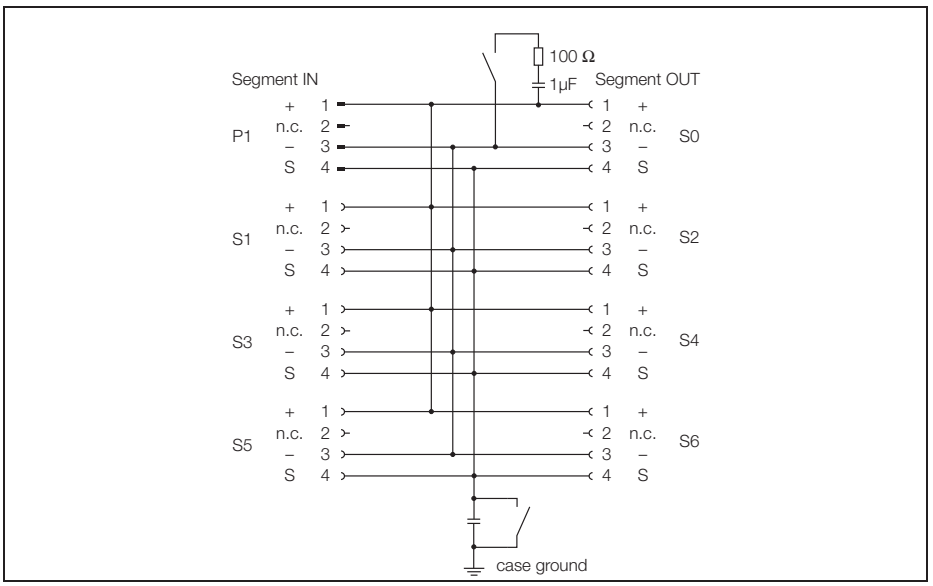


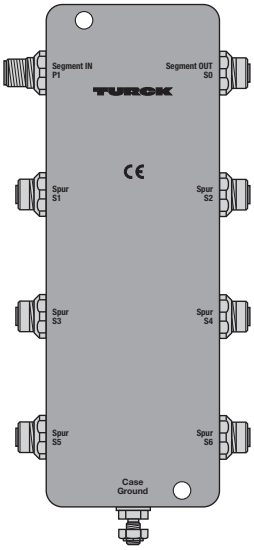
nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-E613/3G

Industrial Automation





The 6-channel Ex junction box, type JBBS-48-E613/3G is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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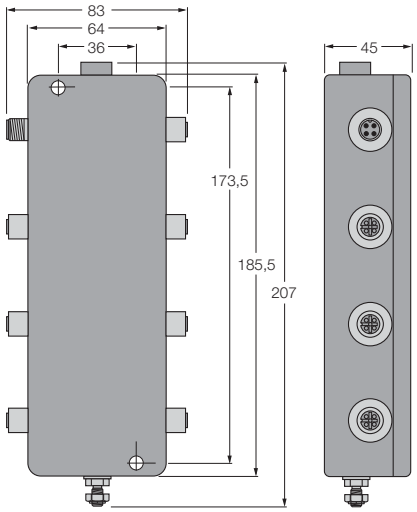
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-E613/3G

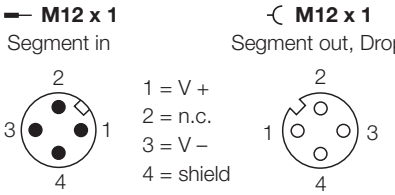
Industrial Automation

Type	JBBS-48-E613/3G
Ident-No.	6611402
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 3 G Ex nA II T4 Ⓔx II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

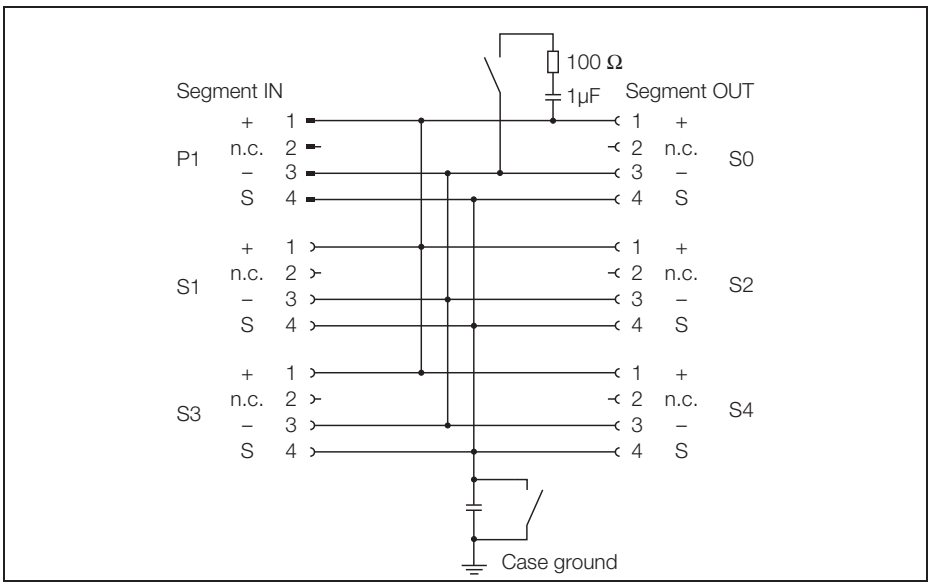


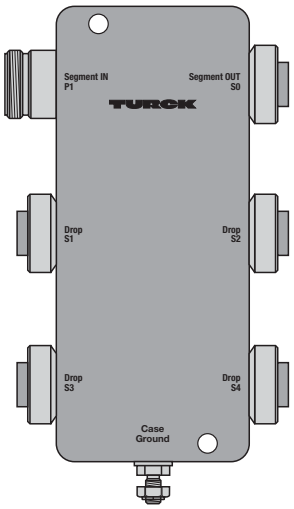
nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-M413/3G

Industrial Automation





The 4-channel Ex junction box, type JBBS-48-M413/3G is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliant acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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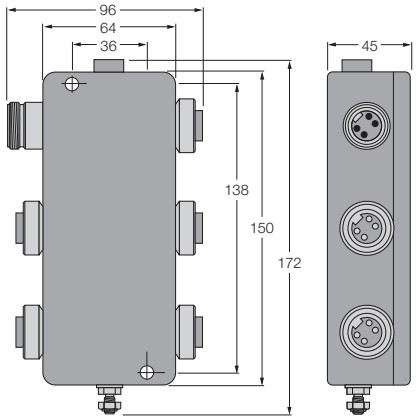
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-M413/3G

Industrial Automation

Type	JBBS-48-M413/3G
Ident-No.	6611404
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 3 G Ex nA II T4 Ⓔx II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	4 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

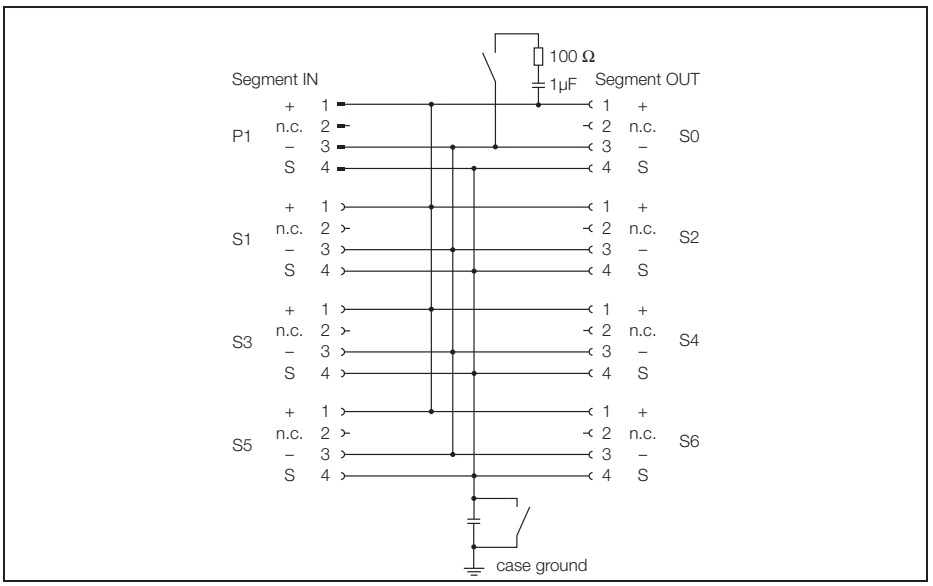
1 = V +
2 = n.c.
3 = V –
4 = shield

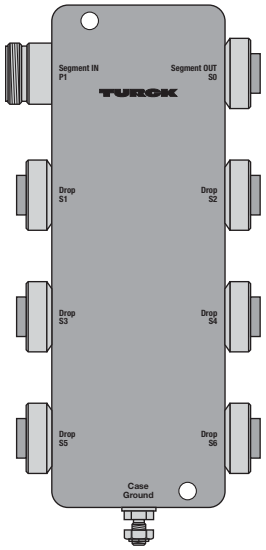
7/8"
Segment out, Drop

nominal values: 9 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-M613/3G





The 6-channel Ex junction box, type JBBS-48-M613/3G is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FNICO compliance acc. to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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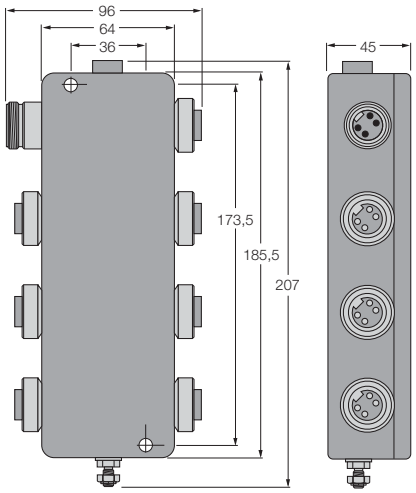
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-M613/3G

Industrial Automation

Type	JBBS-48-M613/3G
Ident-No.	6611406
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Entity Parameter	
Max.output voltage U_o	≤ 32 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 2100 mW
Max. input voltage U_i	≤ 32 V
Max. input current I_i	≤ 3000 mA
FNICO parameter according to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 63 mA
Max. output power P_o	≤ 1100 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 513 mA
Max. input power P_i	≤ 7250 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 3 G Ex nA II T4 Ⓔx II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	6 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

1 = V +
2 = n.c.
3 = V –
4 = shield

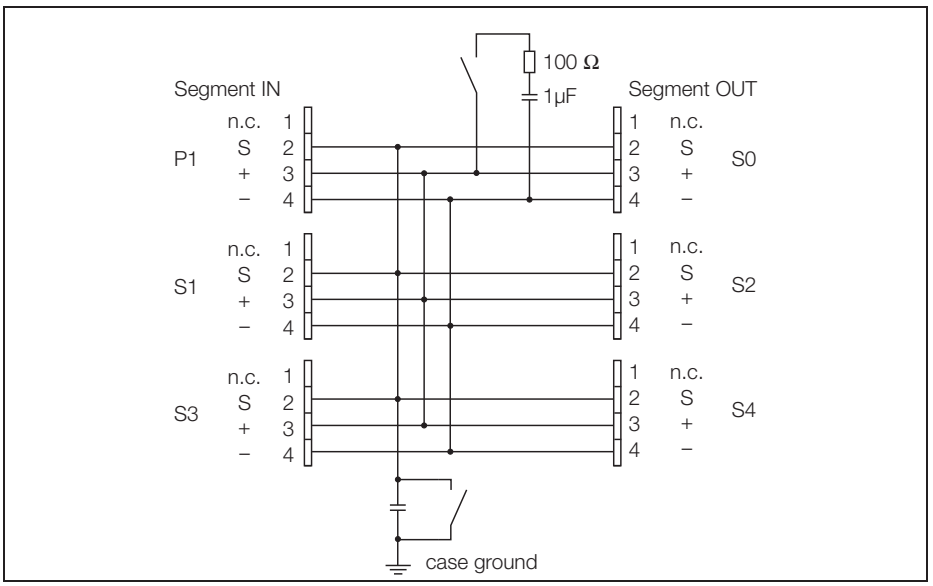
7/8"
Segment out, Drop

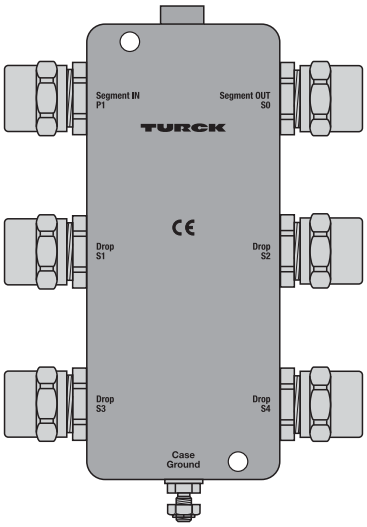
nominal values: 9 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-T415B/EX

Industrial Automation





The 4-channel Ex junction box, type JBBS-48-T415B/EX is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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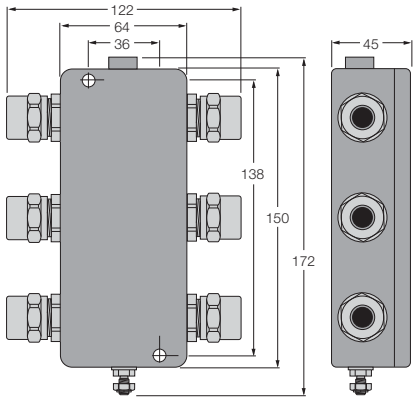
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-T415B/EX

Industrial Automation

Type	JBBS-48-T415B/EX
Ident-No.	6611421
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 2 G EEx ib IIC/IIB T4 Ⓔx II 2(1) G EEx ia IIC/IIB T4 Ⓔx II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓔx II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	4 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



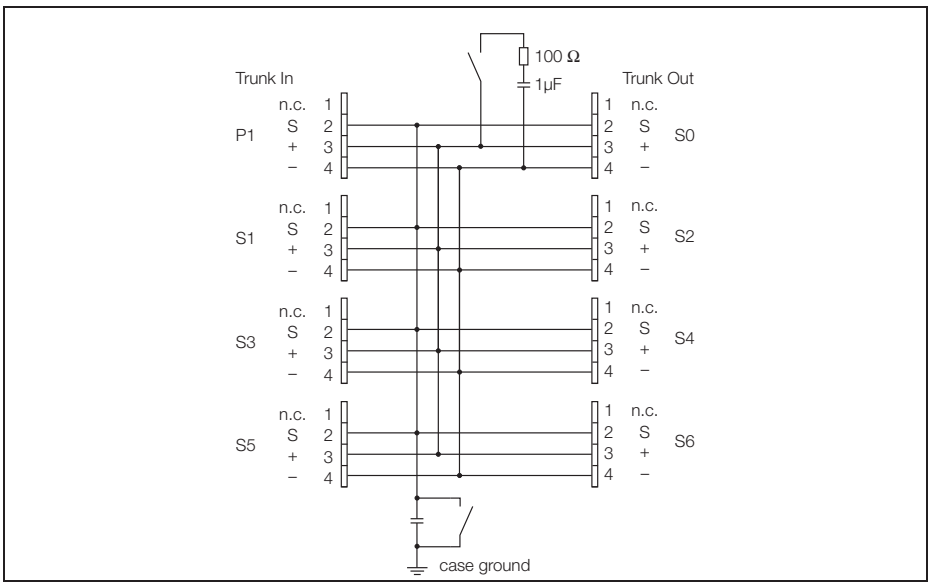
Pin configuration

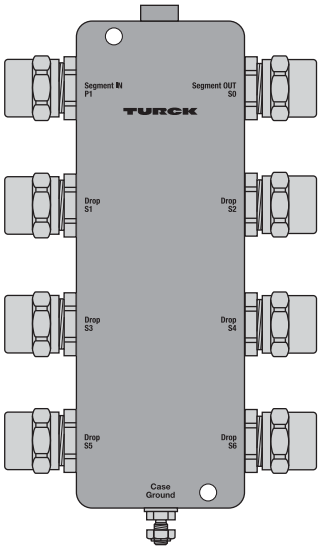
1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-T615B/EX

Industrial Automation





The 6-channel Ex junction box, type JBBS-48-T615B/EX is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with PVC cable glands M20 x 1.5**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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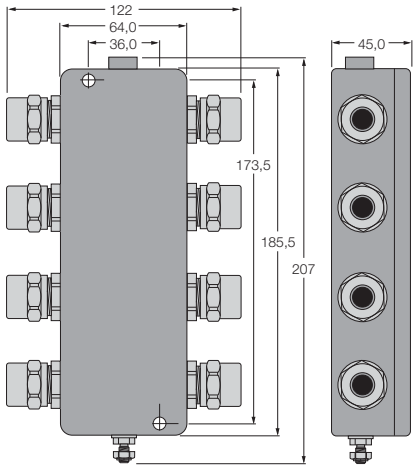
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-T615B/EX

Industrial Automation

Type	JBBS-48-T615B/EX
Ident-No.	6611423
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 2 G EEx ib IIC/IIB T4 Ⓔx II 2(1) G EEx ia IIC/IIB T4 Ⓔx II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓔx II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 6...12 mm)
Segment OUT	1 x M20 x 1.5 (Ø 6...12 mm)
Drop line	6 x M20 x 1.5 (Ø 6...12 mm)
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



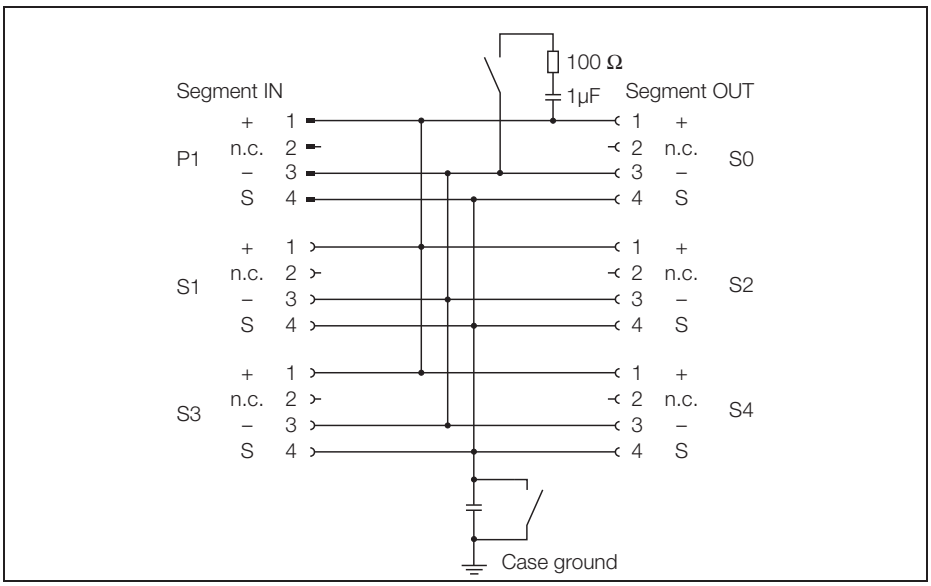
Pin configuration

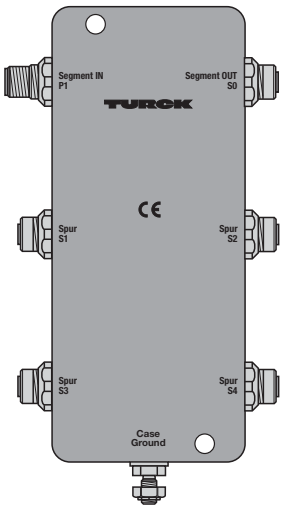
1 = n.c.
2 = shield
3 = +
4 = –

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-E413/EX

Industrial Automation





The 4-channel Ex junction box, type JBBS-48-E413/EX is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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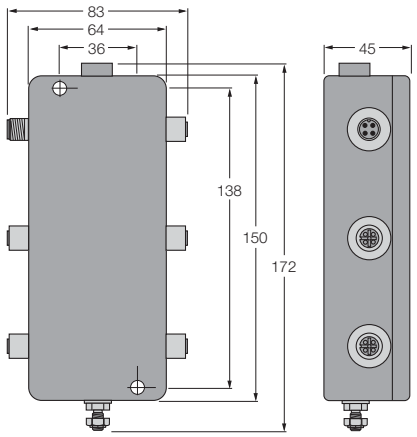
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-E413/EX

Industrial Automation

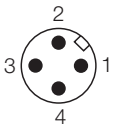
Type	JBBS-48-E413/EX
Ident-No.	6611401
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 2 G EEx ib IIC/IIB T4 Ⓔx II 2(1) G EEx ia IIC/IIB T4 Ⓔx II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓔx II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



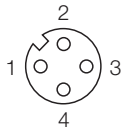
Pin configuration

M12 x 1
Segment in



1 = V –
2 = V +
3 = shield
4 = n.c.

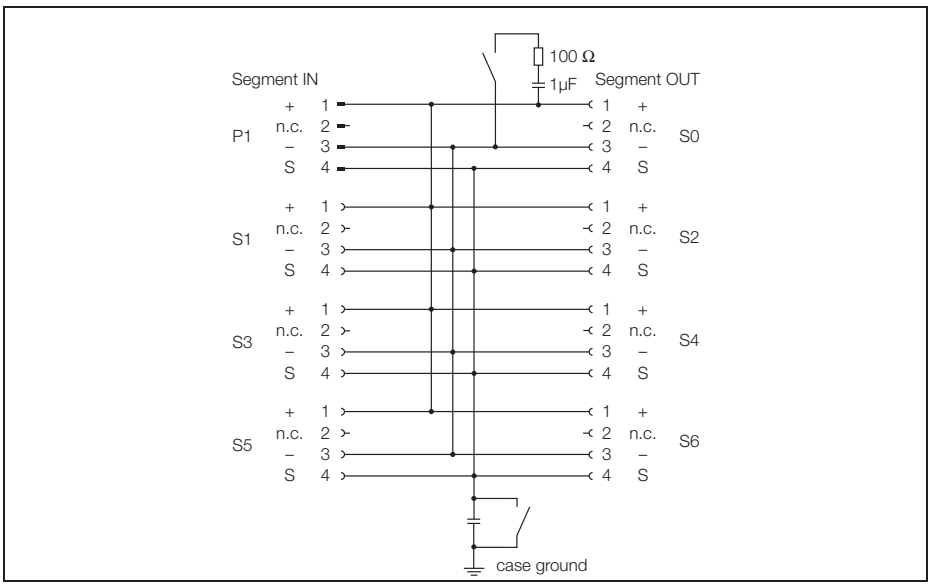
M12 x 1
Segment out, Spur

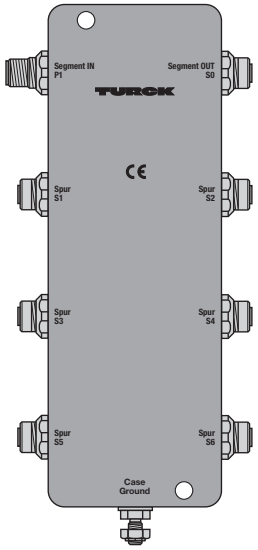


nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-E613/EX





The 6-channel Ex junction box, type JBBS-48-E613/EX is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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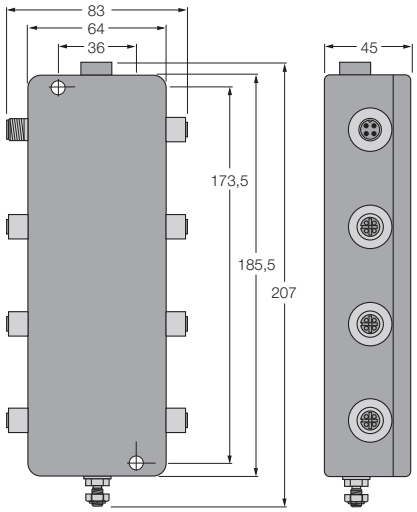
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-E613/EX

Industrial Automation

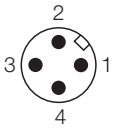
Type	JBBS-48-E613/EX
Ident-No.	6611403
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 2 G EEx ib IIC/IIB T4 Ⓔx II 2(1) G EEx ia IIC/IIB T4 Ⓔx II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓔx II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	M12 flange connection
Segment IN	1 x M12 - male connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



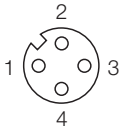
Pin configuration

M12 x 1
Segment in



1 = V +
2 = n.c.
3 = V –
4 = shield

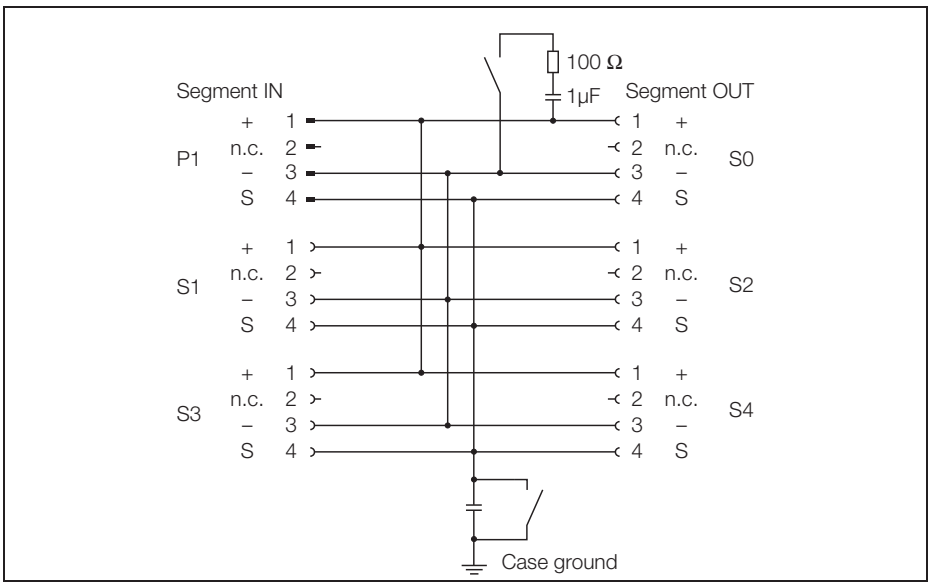
M12 x 1
Segment out, Drop

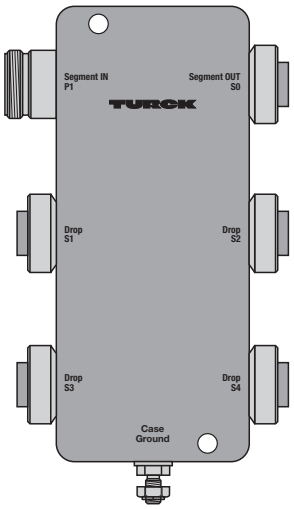


nominal values: 4 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-M413/EX





The 4-channel Ex junction box, type JBBS-48-M413/EX is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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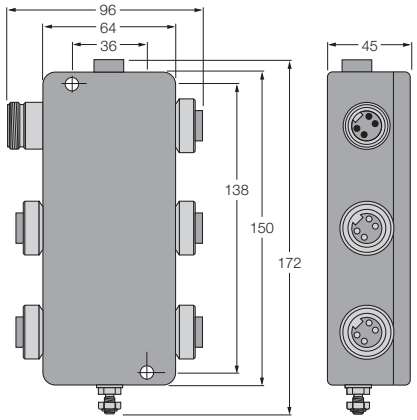
PROFIBUS-PA
IP67 junction box, 4-channel
JBBS-48-M413/EX

Industrial Automation

Type	JBBS-48-M413/EX
Ident-No.	6611405
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	Ⓔx II 2 G EEx ib IIC/IIB T4 Ⓔx II 2(1) G EEx ia IIC/IIB T4 Ⓔx II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓔx II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	4 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

1 = V +
2 = n.c.
3 = V –
4 = shield

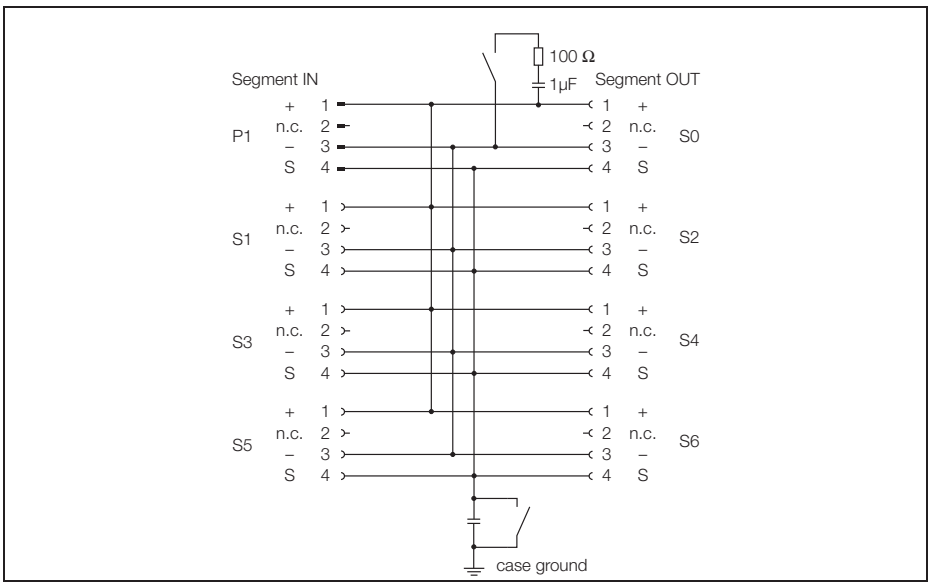
7/8"
Segment out, Drop

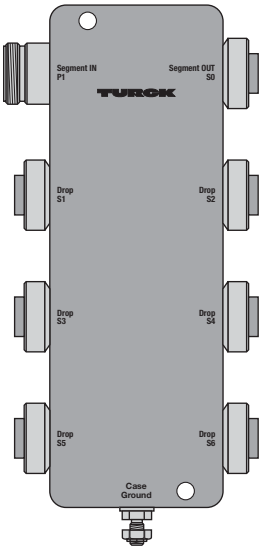
nominal values: 9 A, 300 V

3

PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-M613/EX

Industrial Automation





The 6-channel Ex junction box, type JBBS-48-M613/EX is designed for the PROFIBUS-PA.

The housing is made of robust die-cast aluminium and features protection degree IP67.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

To avoid condensation build-up in the housing, the devices are equipped with a condensate drain.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

- **Entity and FISCO compliance acc. to IEC TS 60079-27**
- **Junction box for wall mounting with stainless steel 7/8" flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Temperature range: -25...+70 °C (-13...+158 °F)**
- **Integrated terminating resistor (switch-in)**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Isolated support terminal for optional protective conductor incorporated in cable**

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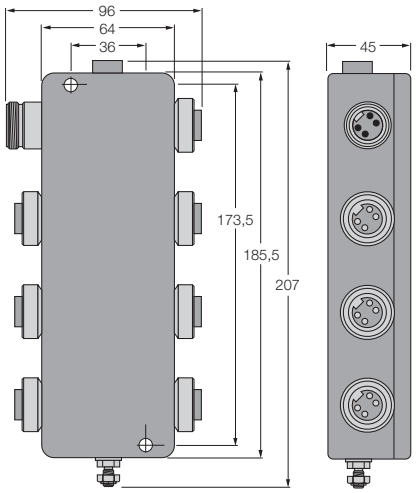
PROFIBUS-PA
IP67 junction box, 6-channel
JBBS-48-M613/EX

Industrial Automation

Type	JBBS-48-M613/EX
Ident-No.	6611407
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max.output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter acc. to IEC TS 60079-27	
Max.output voltage U_o	≤ 17.5 V
Max. output current I_o	≤ 380 mA
Max. output power P_o	≤ 5320 mW
Max. input voltage U_i	≤ 17.5 V
Max. input current I_i	≤ 380 mA
Max. input power P_i	≤ 5320 mW
External inductances/capacitances L_i/C_i	trunk (in/out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.47 nF Σ field current circuits: negligible / ≤ 5.00 nF
Marking of the device	⟨Ex⟩ II 2 G EEx ib IIC/IIB T4 ⟨Ex⟩ II 2(1) G EEx ia IIC/IIB T4 ⟨Ex⟩ II 2 G (2D) [Ex ibD] EEx ib IIB T4 ⟨Ex⟩ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Connection	7/8" flange connection
Segment IN	1 x 7/8 "- male connector
Segment OUT	1 x 7/8 "- female connector
Drop line	6 x 7/8 "- male connector
Earthing bolt	M5 x 1
Protection degree	IP67
Ambient temperature	-25...+70 °C
Housing material	powder-coated die-cast aluminium
Housing colour	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	wall mounting

Dimensions



Pin configuration

7/8
Segment in

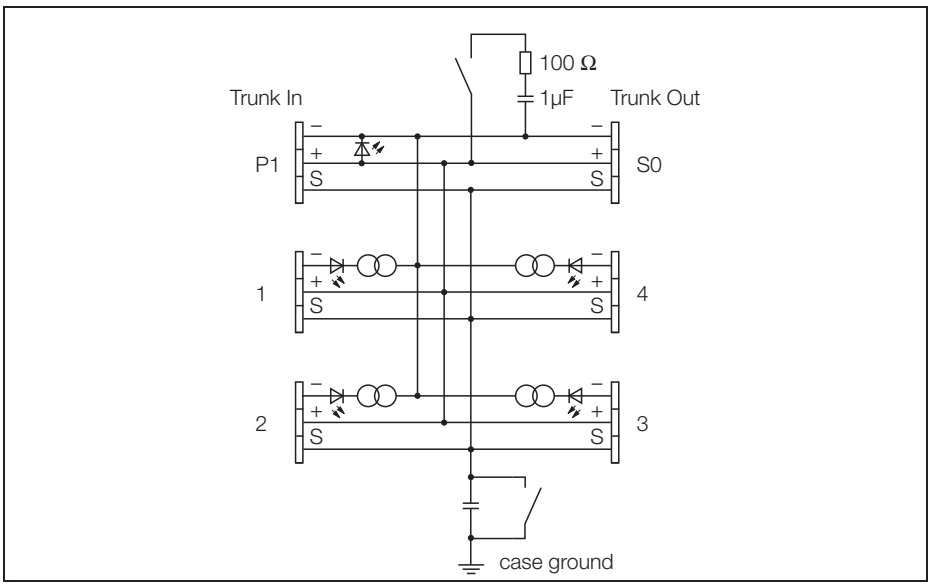
1 = V +
2 = n.c.
3 = V –
4 = shield

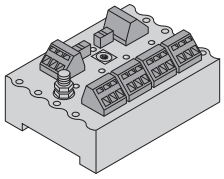
7/8"
Segment out, Drop

nominal values: 9 A, 300 V

3

FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 4-channel
JRBS-40SC-4C/EX





The 4-channel junction box, type JRBS-40SC-4C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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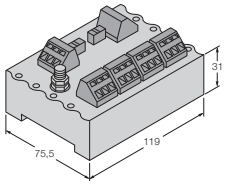
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 4-channel
JRBS-40SC-4C/EX

Industrial Automation

Type	JRBS-40SC-4C/EX
Ident-No.	6611451
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	119 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions

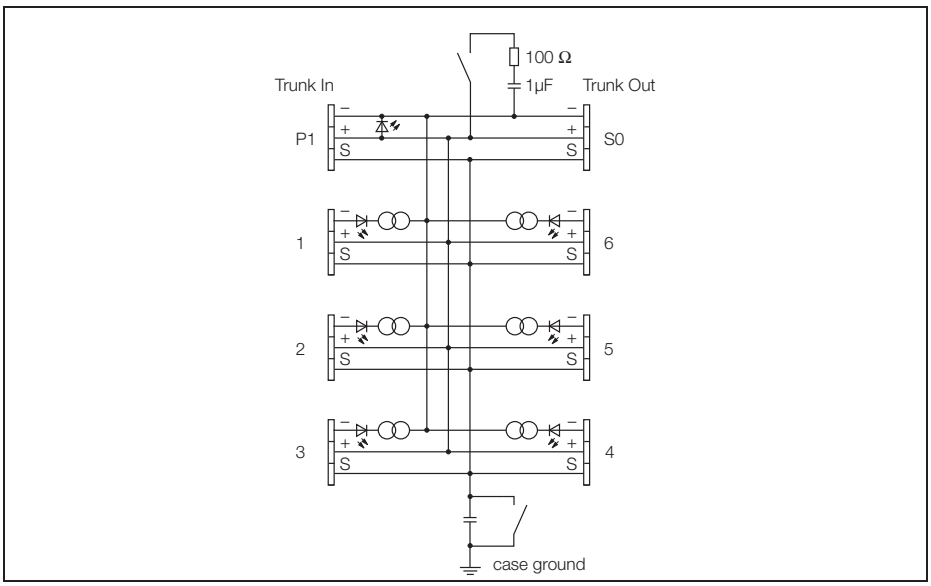


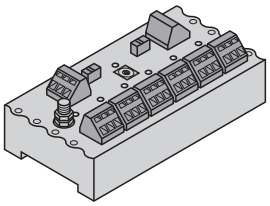
Pin configuration

1 = –
2 = +
3 = S

3

FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 6-channel
JRBS-40SC-6C/EX





The 6-channel junction box, type JRBS-40SC-6C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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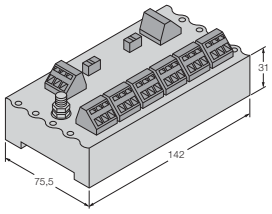
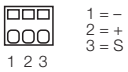
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 6-channel
JRBS-40SC-6C/EX

Type	JRBS-40SC-6C/EX
Ident-No.	6611452
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	142 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions



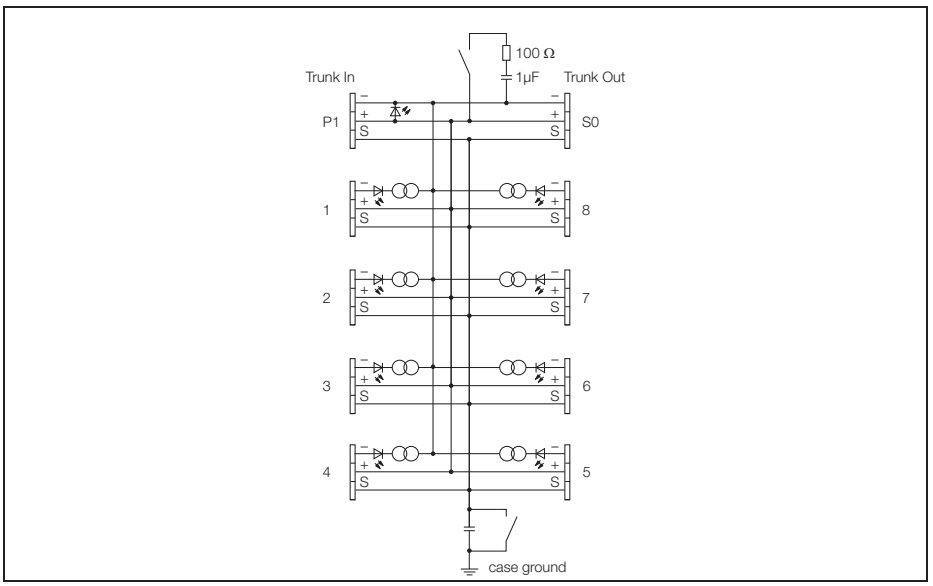
Pin configuration

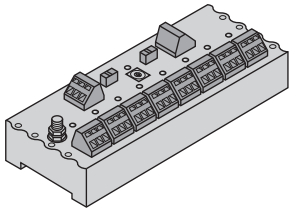


3

FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 8-channel
JRBS-40SC-8C/EX

Industrial Automation





The 8-channel junction box, type JRBS-40SC-8C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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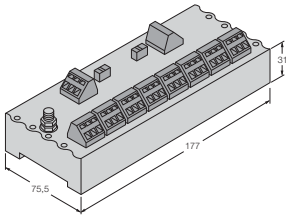
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 8-channel
JRBS-40SC-8C/EX

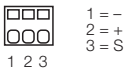
Industrial Automation

Type	JRBS-40SC-8C/EX
Ident-No.	6611453
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	8 x red
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	177 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions



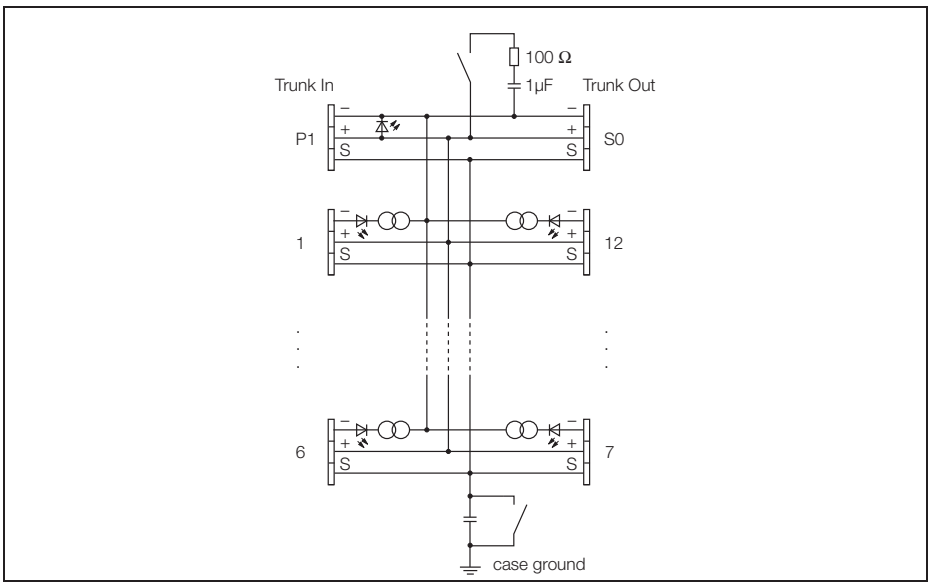
Pin configuration

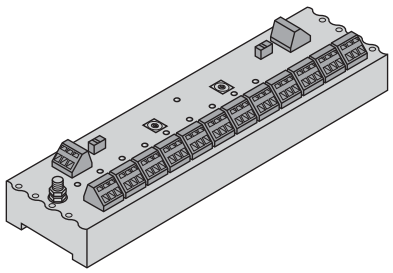


3

FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction module, 12-channel
JRBS-40SC-12C/EX

Industrial Automation





The 12-channel junction box, type JRBS-40SC-12C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all channels via a rotary switch. The following values can be selected: 30, 35, 45 and 60 mA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor.

The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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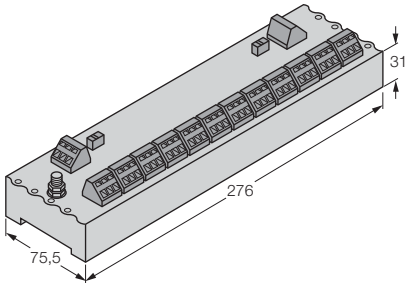
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction module, 12-channel
JRBS-40SC-12C/EX

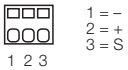
Industrial Automation

Type	JRBS-40SC-12C/EX
Ident-No.	6611455
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	12...32 VDC
Current self-consumption	≤ 7 mA
Voltage dip	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	12 x red
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	276 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions



Pin configuration



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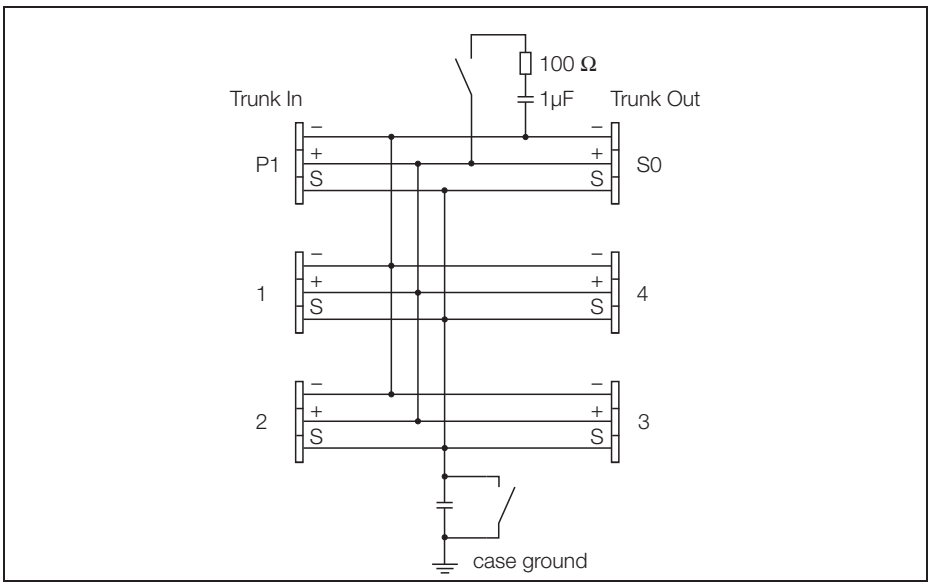
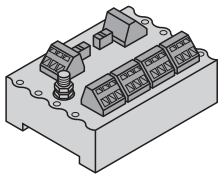
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 4-channel
JRBS-40-4C/EX

Industrial Automation





The 4-channel junction box, type JRBS-40-4C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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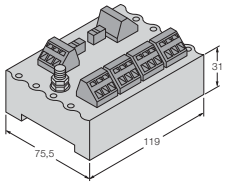
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 4-channel
JRBS-40-4C/EX

Industrial Automation

Type	JRBS-40-4C/EX
Ident-No.	6611448
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	119 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions

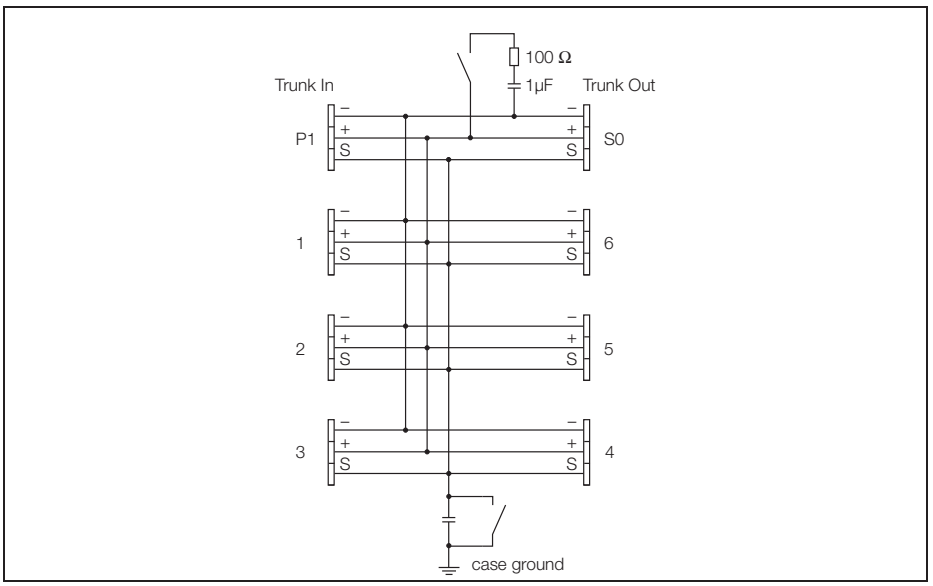


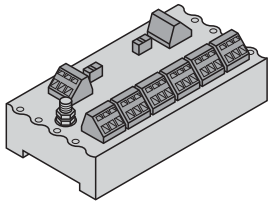
Pin configuration

1 = –
2 = +
3 = S

3

FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 6-channel
JRBS-40-6C/EX





The 6-channel junction box, type JRBS-40-6C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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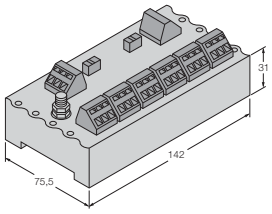
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 6-channel
JRBS-40-6C/EX

Type	JRBS-40-6C/EX
Ident-No.	6611449
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	142 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions

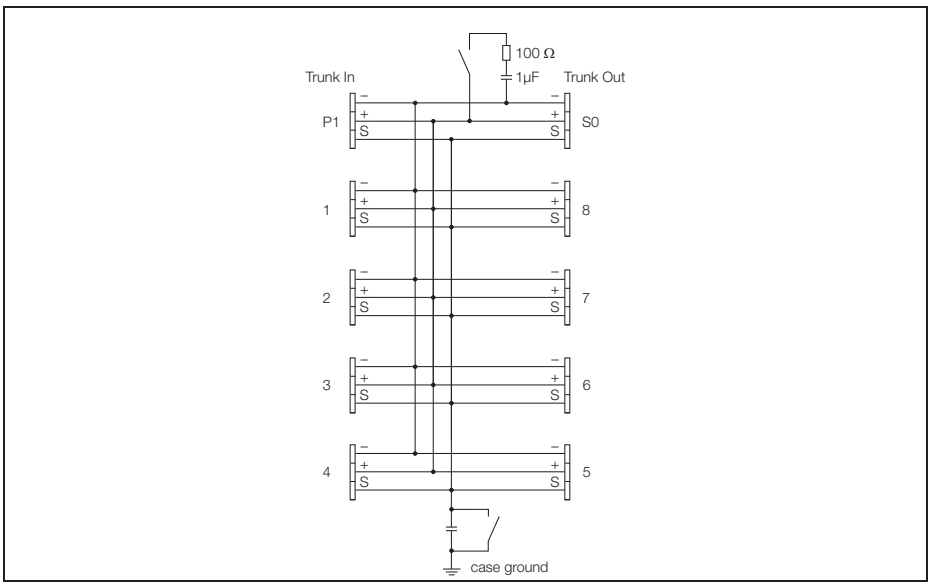


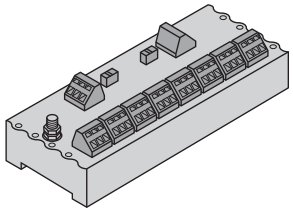
Pin configuration

1 = –
2 = +
3 = S

3

FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 8-channel
JRBS-40-8C/EX





The 8-channel junction box, type JRBS-40-8C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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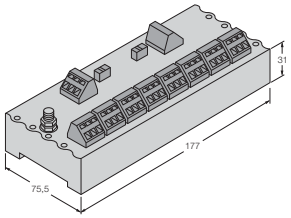
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction box, 8-channel
JRBS-40-8C/EX

Industrial Automation

Type	JRBS-40-8C/EX
Ident-No.	6611450
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	177 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions

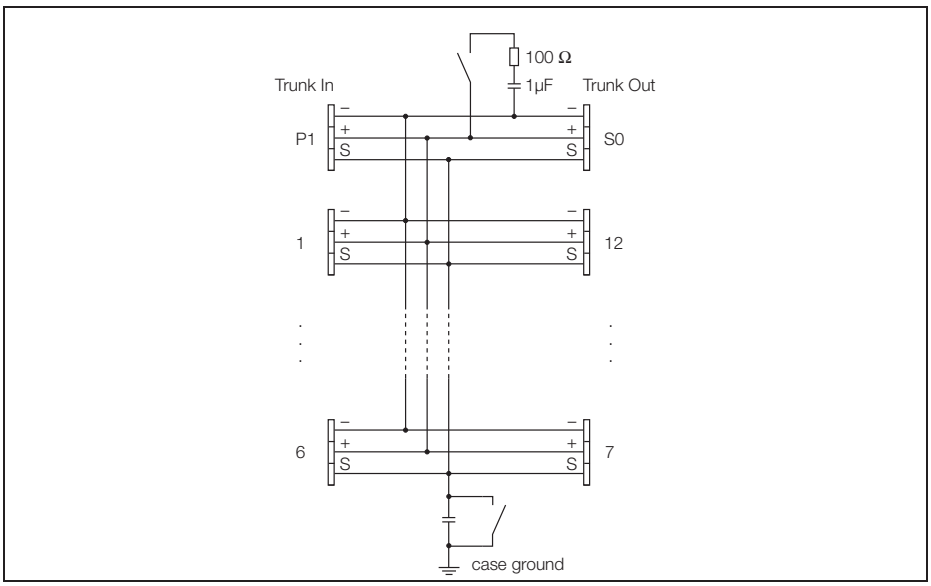


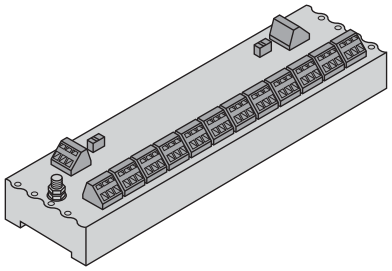
Pin configuration

1 = –
2 = +
3 = S

3

FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction module, 12-channel
JRBS-40-12C/EX





The 12-channel junction box, type JRBS-40-12C/EX is designed for fieldbus systems according to IEC 61158-2, i.e. FOUNDATION fieldbus™ and PROFIBUS-PA.

The housing is made of powder-coated aluminium and features protection degree IP20.

The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on the board.

The shield is capacitively coupled to the housing potential. A switch for direct coupling of the shield and housing is implemented.

Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the M5 x 1 bolt of the housing to the system's potentializer.

Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- **Junction box for DIN rail mounting**
- **Aluminium housing**
- **For explosion hazardous area applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)**
- **With drop line short-circuit protection**
- **Switch-in terminating resistor**
- **Cable shielding: capacitive or direct connection to housing potential selectable via switch**
- **Temperature range: -25...+70 °C (-13...+158 °F)**

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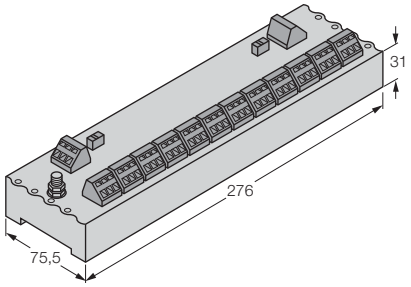
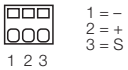
FOUNDATION fieldbus™ and PROFIBUS-PA
IP20 junction module, 12-channel
JRBS-40-12C/EX

Type	JRBS-40-12C/EX
Ident-No.	6611454
Fieldbus standard	IEC 61158-2
Operating voltage (Pwr)	9...32 VDC
Ex approval acc. to conformity certificate	pending
Connection	cage-clamp terminals
Connection cross-section	2.5 mm^2
Earthing bolt	M5 x 1
Protection degree	IP20
Housing material	aluminium
Housing colour	black
Dimensions	276 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (DIN 50022)

Dimensions



Pin configuration



3

PROFIBUS-PA
Cable technology – Basics

A two or three wire cable is prescribed by IEC 61158-2 as the transmission medium for transferring energy and data.

Cable parameters
Electrical data and permissible cable types are not prescribed. Cable parameters determine the achievable fieldbus properties such as the distances to be covered, number of connectable stations and electromagnetic compatibility.

In the following table (Tab. 1) we compare the four standard cable types (at 25 °C):

	Type A (Reference)	Type B	Type C	Type D
Cable design	Twisted conductor pair	One or multiple twisted conductor pairs, overall shield	Multiple twisted pairs, not shielded	Multiple non-twisted pairs not shielded
Conductor cross-section (nominal)	0.8 mm^2 (AWG 18)	0.32 mm^2 (AWG 22)	0.13 mm^2 (AWG 26)	1.25 mm^2 (AWG 16)
Loop impedance (DC current)	44 Ω/km	112 Ω/km	264 Ω/km	40 Ω/km
Wave resistance at 31.25 kHz	100 Ω ± 20 %	100 Ω ± 30 %	not specified	not specified
Wave attenuation at 39 kHz	3 dB/km	5 dB/km	8 dB/km	8 dB/km
Capacitive asymmetry	2 nF/km	2 nF/km	not specified	not specified
Group delay distortion (7,9...39 kHz)	1.7 µs/km	not specified	not specified	not specified
Degree of shield coverage	90 %	not specified	not specified	not specified
Recommended network expansion (incl. spur lines)	1900 m	1200 m	400 m	200 m

Tab. 1 Cable types to IEC 61158-2

Use of the individual cable types
Cables conforming to the minimum requirements of type A, should be used for new installations. Cable types C and D should only be used in so-called "Retrofit Applications" (usage of cable already installed) involving only very limited network extensions. It is necessary to consider that in these cases the immunity to interference during data transmission may not meet the demands described in the standard.

Installations conform to the FISCO model
Installations conform to the FISCO model are not subject to any technical safety limitations, if the limit values defined in Tab. 1 are observed. Operation outside of these limit values is not generally excluded, but requires that each case is considered individually.
For example, the TURCK long distance "Cable FBY../LD" is not comparable with the types and limit values listed in Tab. 1, but its particularly suitable for FOUNDATION fieldbus™ and PROFIBUS-PA fieldbus systems. All of TURCK's cables for fieldbuses compliant with IEC 61158-2 feature optimum quality even exceeding type A requirements.

Maximum cable lengths, spur lines
Each fieldbus installation must follow a defined set of rules, the "Network configuration rules" (see IEC 61158-2, Chap. 11.2.2). The following limit values for permissible attenuation, reflection and distortion (Rule 8), as well as the maximum signal delay (Rule 4) are listed (see Tab. 2).

Attenuation between any two bus interfaces (at 31.25 kHz)	10.5 dB
Attenuation distortion a (f = 39 kHz) – a (f = 7.8 kHz), monotonic increasing with frequency	6 dB
Reflection factor at any point (7.8...39 kHz)	0.2
Signal delay between any two bus interfaces	640 µs

Tab. 2 Limit values for attenuation, distortion, reflection and propagation delay

Topology
If the limit values listed on the previous page are taken into consideration, various topologies such as star, tree or linear structures, as well as every cable is permissible.

An individual calculation of the four variables listed in Tab. 2 for all possible connections between two bus interfaces is associated with a very high effort. It is advisable to define rules which set down an optimum basic topology. These rules should ensure that the limit values stated cannot be exceeded.

The basis for a network should be a tree or linear topology or a combination of both.
A network of this type consists of a main cable (trunk line), a number of drop lines (drop), connection elements (connectors or junction boxes) and a terminating resistor (see Fig. 1).

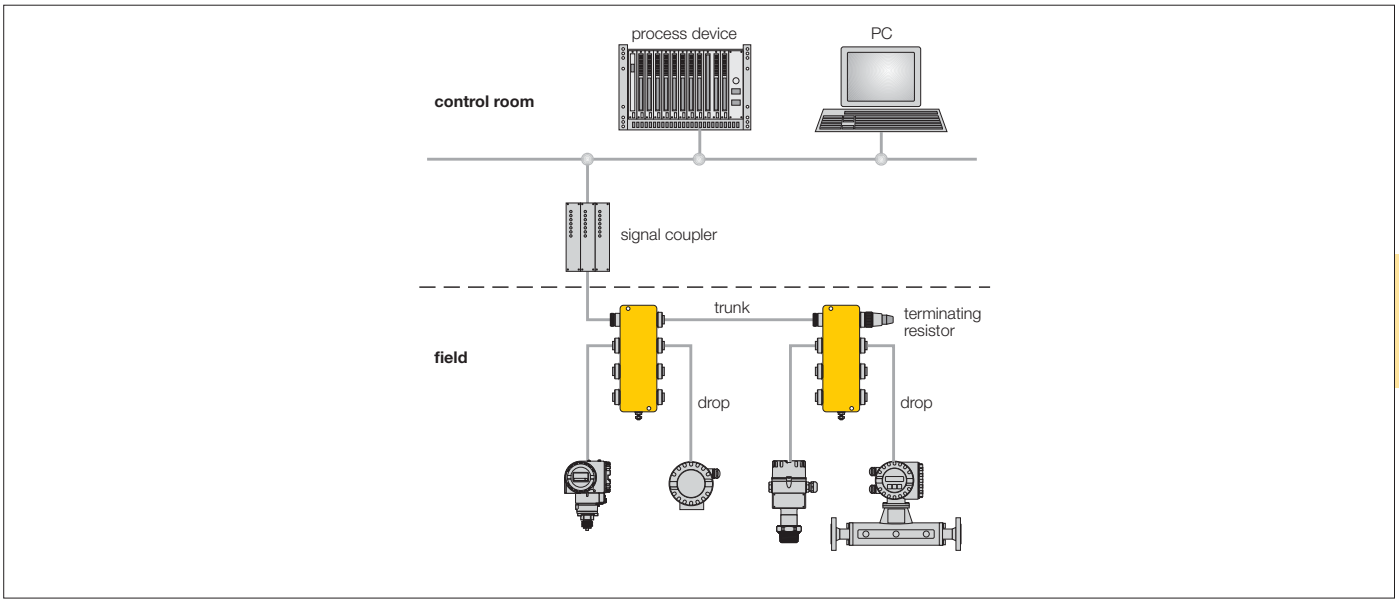


Fig. 1 Network topology

Maximum cable lengths
The sum of main cable lengths and all spur line lengths results in the overall cable length, as already defined in Tab. 1 as the network expansion (see Tab. 3).

Cable	Max. cable lengths (incl. spur lines)
Type A	1900 m
Type B	1200 m
Type C	400 m
Type D	200 m

Tab. 3 Maximum cable lengths (main cable and spur lines)

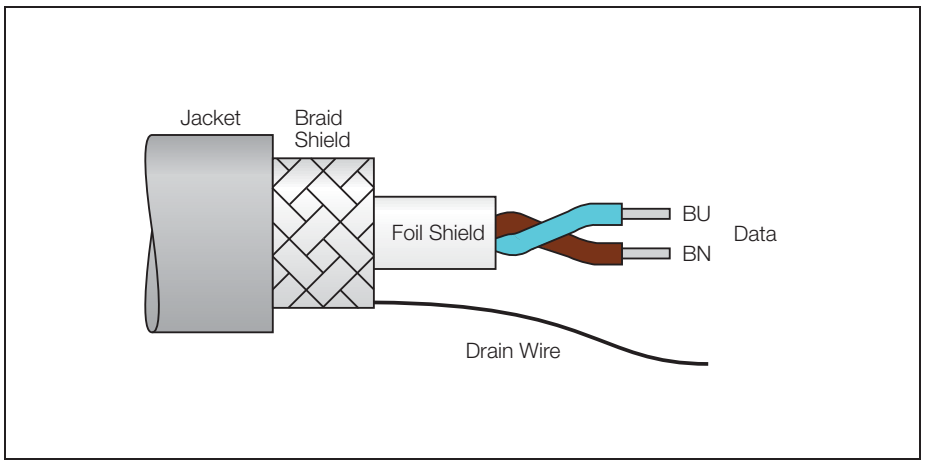
Maximum spur cable lengths
The maximum spur cable length depends on the number of field devices per spur line and is listed in Tab. 4.

Number of devices	1 device per spur line	2 devices per spur line	3 devices per spur line	4 devices per spur line
25...32	1 m	1 m	1 m	1 m
19...24	30 m	1 m	1 m	1 m
15...18	60 m	30 m	1 m	1 m
13...14	90 m	60 m	30 m	1 m
1...12	120 m	90 m	60 m	30 m

Tab. 4 Maximum spur line lengths

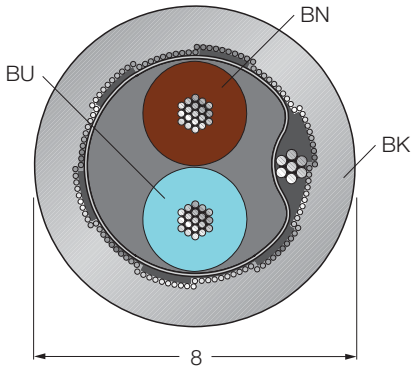
Instrumentation to FISCO
With FISCO conform EEx i instrumentation, the maximum expansion of the trunk line in the explosion hazardous area is 1000 m. A maximum spur line length of 60 m may not be exceeded.

Fieldbus cables for fieldbus systems
According to IEC61158-2
CABLE FBY-.../SD-...M



- **Fieldbus cables, type A, IEC 61158-2**
- **PVC cable jacket, colour blue, black, yellow or orange**
- **Oil, gas and sunlight resistant**
- **Temperature range -40... +75 °C**
- **Cable conductor cross section: 18/7 AWG (0.8 mm^2)**

Conductor cross-section



Type	CABLE FBY-.../SD-...M
Ident-No.	depending on length and colour, Ident-No. on request
Cable	18/7 AWG (0.8 mm^2), stranded plain copper
Cable jacket	PVC (blue, black, yellow or orange)
Shield	aluminium foil, tinned copper braid and stranded filler litz wire
Max. tensile strength	≤ 90 N
Bending radius	minimum 5 x cable diameter
Core insulation material	PE-foam with PE-casing
Core insulation colours	BN, BU
Core cross-section	2 x 0.8 mm^2
DC resistance (loop)	43.6 Ω/km
Shield resistance	nom. 9 Ω/km
Nom. Impedance	100 ± 20 (31.25 kBit/s) Ω
Working capacitance	nom. 60 nF/km
Capacitive earthing	max. 2 nF/km
Dampening	max. 3.0 dB/km (with f = 39 kHz]
Skew	max. 1.7 µs/km (7.9 kHz -39 kHz)
Inductivity	nom. 0.7 mH/km
Rated voltage	max. 300 V
Ambient temperature	
At rest	-40... + 75 °C
In moving state	-5... + 50 °C
Approvals	UL
UV resistance	according to UL 1581, section 1200
Resistance to oil	according to ICEA S82-552
Flame retardant	according to IEC 60332-1

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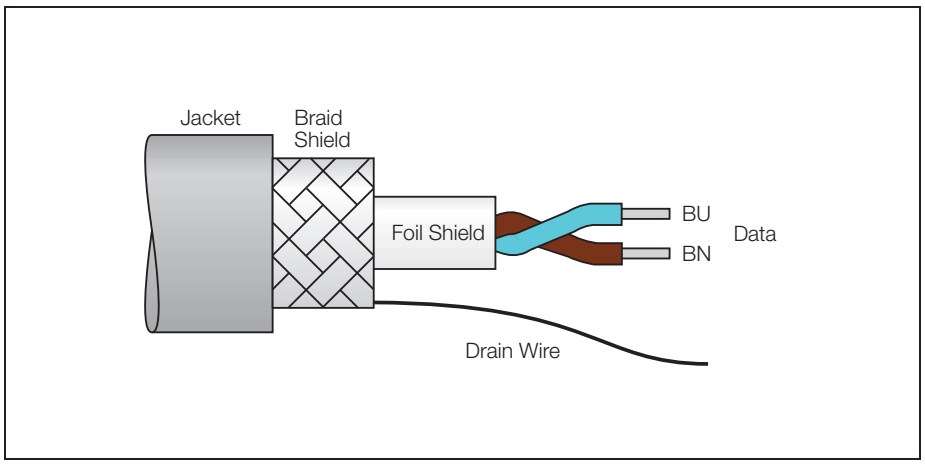
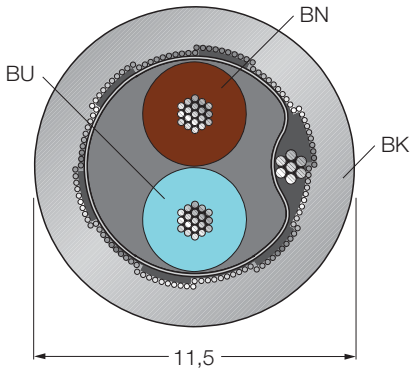
Fieldbus cables for fieldbus systems
According to IEC61158-2
CABLE FBY-BK/LD-...M



Type	CABLE FBY-BK/LD-...M
Ident-No.	depending on the length, Ident-No. on request
Cable	14/7 AWG (2.1 mm^2), stranded plain copper
Cable jacket	PVC, black
Shield	aluminium foil, tinned copper braid and stranded filler litz wire
Max. tensile strength	≤ 90 N
Bending radius	minimum 5 x cable diameter
Core insulation material	PE-foam with PE-casing
Core insulation colours	BN, BU
Core cross-section	2 x 2.1 mm^2
DC resistance (loop)	17.2 Ω/km
Shield resistance	nom. 6 Ω/km
Nom. Impedance	100 ± 20 (31.25 kBit/s) Ω
Working capacitance	nom. 60 nF/km
Capacitive earthing	max. 2 nF/km
Dampening	max. 3.0 dB/km (with f = 39 kHz]
Skew	max. 1.7 µs/km (7.9 kHz -39 kHz)
Inductivity	nom. 0.7 mH/km
Rated voltage	max. 300 V
Ambient temperature	
At rest	-40... + 75 °C
In moving state	-5... + 50 °C
Approvals	UL
UV resistance	according to UL 1581, section 1200
Resistance to oil	according to ICEA S82-552
Flame retardant	according to IEC 60332-1

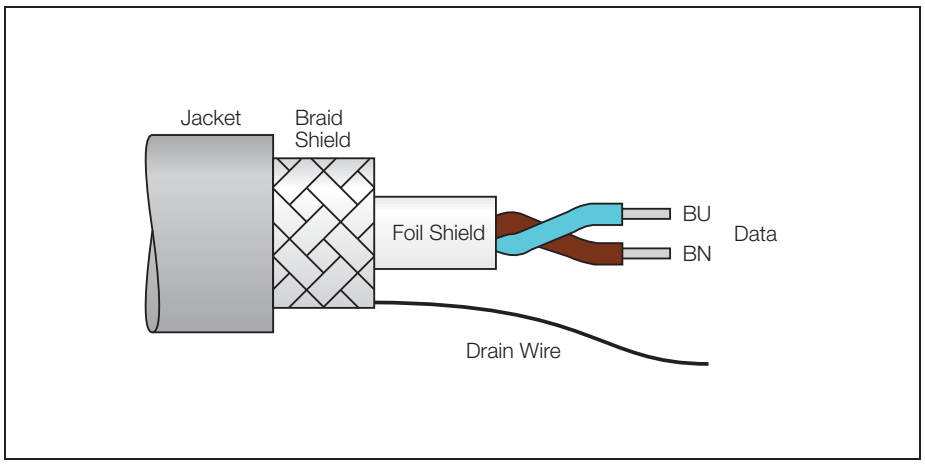
- **Long-distance fieldbus cables, type A, acc.IEC 61158-2**
- **PVC cable jacket, colour black**
- **Oil, gas and sunlight resistant**
- **Temperature range -40... +75 °C**
- **Cable conductor cross section: 14/7AWG (2.1 mm^2)**

Conductor cross-section



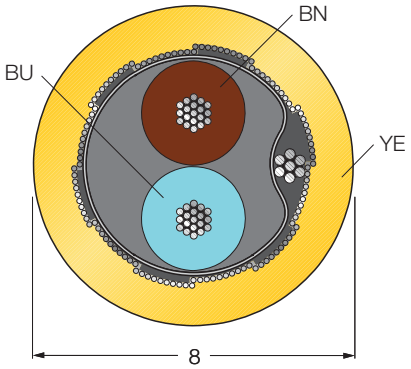
4

Fieldbus cables for fieldbus systems
According to IEC61158-2
CABLE FBH-YE/SD-...M



- **Fieldbus cables, type A, acc. to IEC 61158-2**
- **LSZH (low smoke zero halogen) mix**
- **PVC cable jacket, colour yellow**
- **Oil, gas and sunlight resistant**
- **Temperature range -40 ... +75 °C**
- **Cable cross section: 18/7 AWG (0.8 mm²)**

Conductor cross-section



Type	CABLE FBH-YE/SD-...M
Ident-No.	depending on the length, Ident-No. on request
Cable	18/7 AWG (0.8 mm²), stranded plain copper
Cable jacket	LSZH (low smoke zero halogen) mix, yellow
Shield	aluminium foil, tinned copper braid and stranded filler litz wire
Max. tensile strength	≤ 90 N
Bending radius	minimum 5 x cable diameter
Core insulation material	PE-foam with PE-casing
Core insulation colours	BN, BU
Core cross-section	2 x 0.8 mm²
DC resistance (loop)	43.6 Ω/km
Shield resistance	nom. 9 Ω/km
Nom. Impedance	100 ± 20 (31.25 kBit/s) Ω
Working capacitance	nom. 60 nF/km
Capacitive earthing	max. 2 nF/km
Dampening	max. 3.0 dB/km (with f = 39 kHz]
Skew	max. 1.7 µs/km (7.9 kHz - 39 kHz)
Inductivity	nom. 0.7 mH/km
Rated voltage	max. 300 V
Ambient temperature	
At rest	-40... + 75 °C
In moving state	-5... + 50 °C
Approvals	UL
UV resistance	according to UL 1581, section 1200
Resistance to oil	according to ICEA S82-552
Flame retardant	yes
Halogen-free	yes

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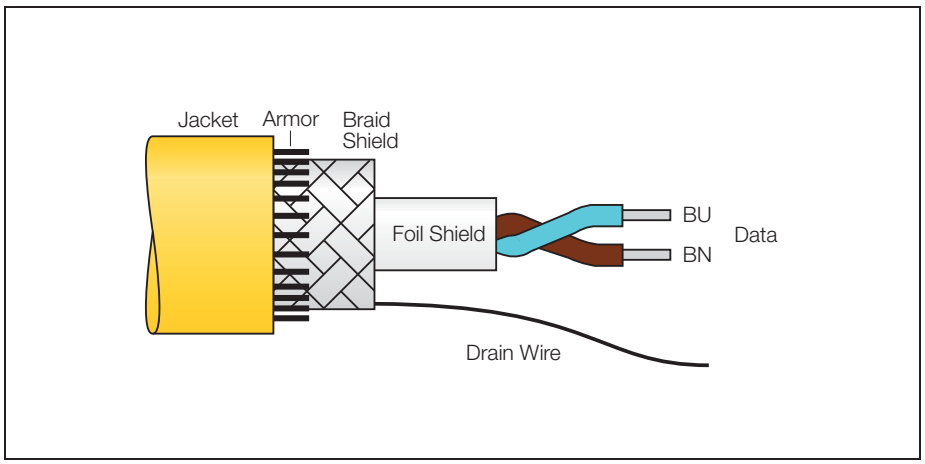
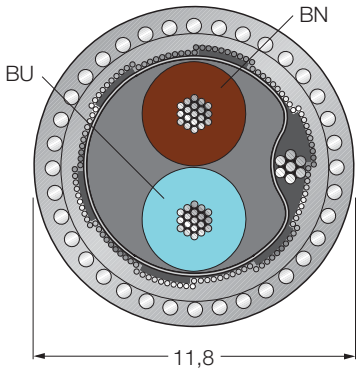
Fieldbus cables for fieldbus systems
According to IEC61158-2
CABLE FBA-YE/SD...M



- **Fieldbus cables, type A, acc. to IEC 61158-2**
- **PVC cable jacket, colour yellow**
- **Armouring Steel round wire**
- **Oil, gas and sunlight resistant**
- **Temperature range -40 ... +75 °C**
- **Cable conductor cross section: 18/7 AWG (0.8 mm^2)**

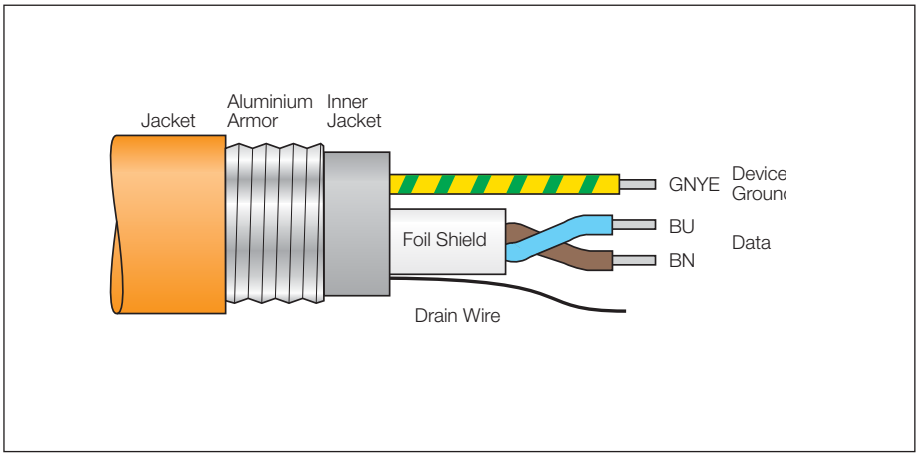
Conductor cross-section



Type	CABLE FBA-YE/SD...M
Ident-No.	depending on the length, Ident-No. on request
Cable	18/7 AWG (0.8 mm^2), stranded plain copper
Cable jacket	PVC, yellow
Shield	aluminium foil, tinned copper braid and stranded filler litz wire
Max. tensile strength	≤ 90 N
Core insulation material	PE-foam with PE-casing
Core insulation colours	BN, BU
Core cross-section	2 x 0.8 mm^2
DC resistance (loop)	43.6 Ω/km
Armouring	zinc-plated steel round wire
Diameter	0.9 mm
Shield resistance	nom. 9 Ω/km
Nom. Impedance	100 ± 20 (31.25 kBit/s) Ω
Working capacitance	nom. 60 nF/km
Capacitive earthing	max. 2 nF/km
Dampening	max. 3.0 dB/km (with f = 39 kHz]
Skew	max. 1.7 µs/km (7.9 kHz - 39 kHz)
Inductivity	nom. 0.7 mH/km
Rated voltage	max. 300 V
Ambient temperature	
At rest	-40... + 75 °C
In moving state	-5... + 50 °C
Approvals	UL
UV resistance	according to UL 1581, section 1200
Resistance to oil	according to ICEA S82-552
Flame retardant	according to IEC 60332-1

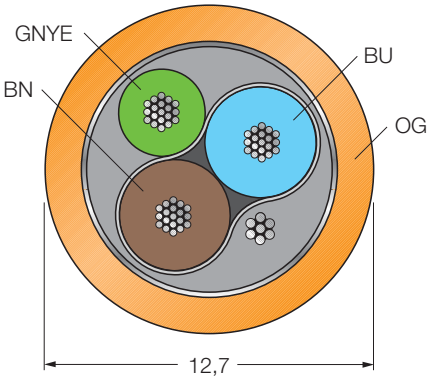
4

Fieldbus cables for fieldbus systems
According to IEC 61158-2
Cable 482A-...M, 482BA-...M



- **Fieldbus cables, type A, IEC 61158-2**
- **Suitable for harsh environmental conditions**
- **Aluminium armouring**
- **Suitable for 7/8” male connector**
- **UV resistant**
- **Temperature range -40...+75 °C**
- **Cable conductor cross section 18/7 AWG (0.8 mm²)**
- **Cable 492A with orange cable jacket**
- **Cable 492BA with blue cable jacket**

Conductor cross-section



Type designation and Ident-No.	
Type Cable 482A-...M	depending on the length, Ident-No. on request
Type Cable 482BA-...M	depending on the length, Ident-No. on request
Cable	18/7 AWG (0.8 mm²), stranded bare copper
Insulation	XLPE foam
Colour code	A-conductor: brown; B-conductor: blue; ground: green/yellow
Shield	aluminium foil, metallic external surface with contact to the tinned copper braid and stranded drain wire
Jacket	Polyvinyl chloride (PVC)
Armoured	Aluminium
Overall diameter	approx. 12.7 mm
Physical properties/ fire resistance	
Minimum bending radius	once: 40 mm/repeated: 60 mm
Ambient temperature	
At rest	-40 ... +75 °C
In moving state	-5 ... +50 °C
UV resistance	conform to UL 1581, section 1200
Flame retardant	PLTC cable, flame resistant conform to CSA-FT4
Electrical properties at 20° C	
Inductance	max. 0.44 mH/km
Total capacitance	max. 52.43 nF/km
Impedance (at 31.25 kBit/s)	100 Ω /± 20 Ω
DC resistance	2 x 21.3 Ω/Km
High voltage test (conductor/conductor and conductor/shield)	1500 V
Operational voltage	max. 300 V

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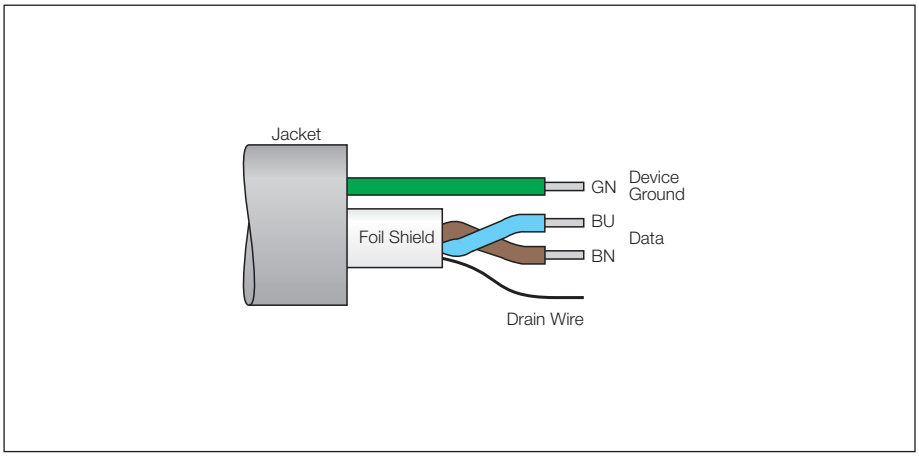
Fieldbus cables for fieldbus systems
According to IEC 61158-2
Cable FB4910-BK...M

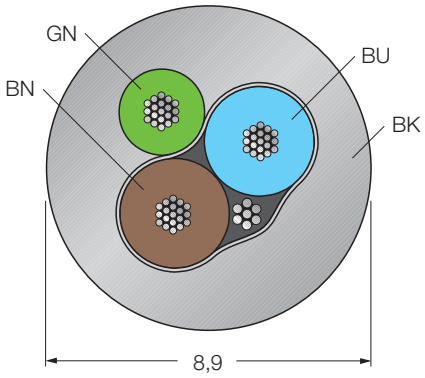


Type	Cable FB4910-BK-...M
Ident-No.	depending on the length, Ident-No. on request
Cable	18/7 AWG (0.8 mm²), stranded bare copper
Insulation	XLPE foam
Colour code	A-conductor: brown; B-conductor: blue; ground: green
Shield	aluminium foil, metallic external surface with contact to the tinned copper braid and stranded drain wire
Jacket	TPE
Overall diameter	approx. 8.9 mm
Physical properties/fire resistance	
Minimum bending radius	once: 40 mm/repeated: 60 mm
Ambient temperature	
At rest	-40 ... +90 °C
In moving state	-50 ... +50 °C
UV resistance	conform to UL 1581, section 1200
Resistance to oils	conform to ICEA S61-402
Flame resistance	conform to IEC 60332, part 3
Electrical properties at 20° C	
Inductance	max. 0.44 mH/km
Total capacitance	max. 52.43 nF/km
Impedance (at 31.25 kBit/s)	100 Ω /± 20 Ω
DC resistance	2 x 21.3 Ω/Km
High voltage test (conductor/conductor and conductor/shield)	1500 V
Operational voltage	max. 300 V

- **Fieldbus cables, type A, IEC 61158-2**
- **Special cable for PROFIBUS-PA**
- **Area of application:**
  - **offshore**
  - **extremely cold regions**
  - **tropical regions**
- **Resistant to oil, gases and sunlight**
- **Excellent tensile strength and abrasion resistance**
- **Highly flame resistant conform to IEEE 1202/FT4 and IEC 332-3, category A**
- **Temperature range -50...+90 °C**
- **Cable conductor cross section 18/7 AWG (0.8 mm²)**
- **Approvals**
  UL 1309 (Marine Shipboard) and CSA 222 No. 245

4

Conductor cross-section



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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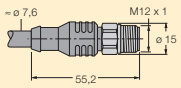
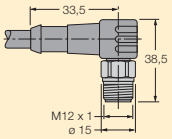
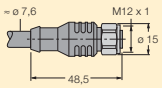
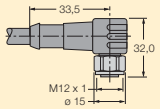
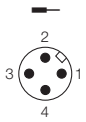
PROFIBUS-PA cables
Cable FBY48...

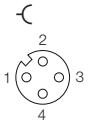
Industrial Automation

M12 x 1	Type designation cable type FBY48x, x = colour (BU, BK, OG, YE), *M = variable length in m				
	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

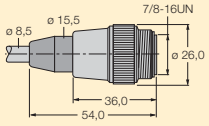
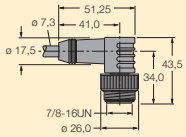
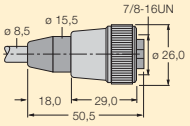
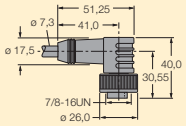
Pin configuration:
Male
Female



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				
	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

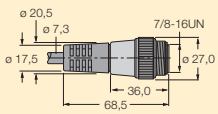
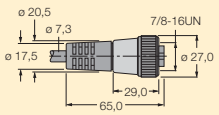
Cable layout

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

5

PROFIBUS-PA – cables
Cable 482A, 482BA

Note: This field-wireable fieldbus cable is not included in the JIT-5D-Programme.

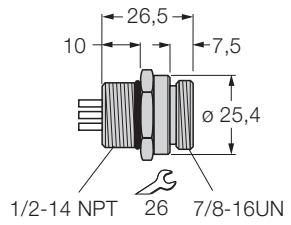
7/8“	Type designation armoured cable type 482A, 482 BA, *M = variable length in m				
	one-sided premoulded	RSV 	RKV 		
RSV	RSV482A-*M RSV482BA-*M	—	RSV-RKV482A-*M RSV-RKV482BA-*M		
RKV	RKV482A-*M RKV482BA-*M	—	—		

Pin configuration:
Male
Female

1 = – (BU)
2 = + (BN)
3 = S (Shield)
4 = Ground (GNYE)

1 = – (BU)
2 = + (BN)
3 = S (Shield)
4 = Ground (GNYE)

Accessories for fieldbus systems
Flange connector
RSFV48



- **Version: male 7/8" connector**
- **1/2´´-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, solderable**
- **For use in PROFIBUS-PA applications**

PROFIBUS-PA connection

1 = +
2 = ground
3 = –
4 = shield

Type	RSFV48
Ident-No.	6604441
Connector	male flange connector, 7/8''
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

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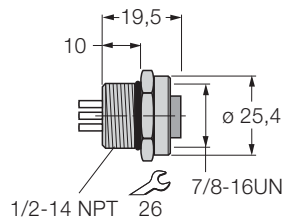
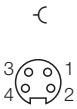
Accessories for fieldbus systems
Flange connector
RKFV48



- **Version: female 7/8" connector**
- **1/2´´-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, solderable**
- **For use in PROFIBUS-PA applications**

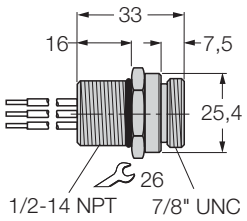
PROFIBUS-PA connection



Type	RKFV48
Ident-No.	6604406
Connector	female flange connector, 7/8''
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40 °C

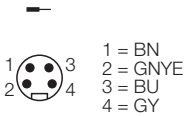
6

Accessories for fieldbus systems
Flange connector
RSFV48-0,3M/14,5/C1117

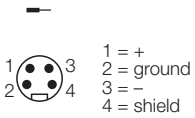


- **Version: male 7/8" connector**
- **1/2´´-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



PROFIBUS-PA connection



Type	RSFV48-0,3M/14,5/C1117
Ident-No.	6611022
Connector	male flange connector, 7/8'', with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

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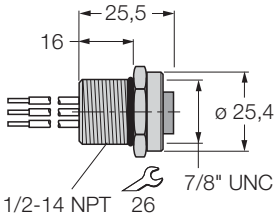
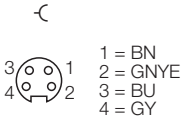
Accessories for fieldbus systems
Flange connector
RKFV48-0,3M/14,5/C1117

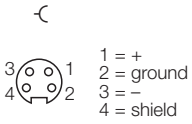


- **Version: female 7/8" connector**
- **1/2´´-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



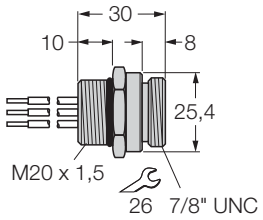
PROFIBUS-PA connection



Type	RKFV48-0,3M/14,5/C1117
Ident-No.	6611023
Connector	female flange connector, 7/8'', with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

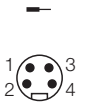
6

Accessories for fieldbus systems
Flange connector
RSFV48-0,3M/M20/C1117

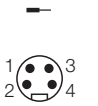


- **Version: male 7/8" connector**
- **M20 x 1.5 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



PROFIBUS-PA connection



Type	RSFV48-0,3M/M20/C1117
Ident-No.	6603617
Connector	male flange connector, 7/8'', with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

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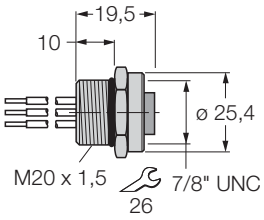
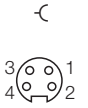
Accessories for fieldbus systems
Flange connector
RKFV48-0,3M/M20/C1117

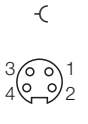


- **Version: female 7/8" connector**
- **M20 x 1.5 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



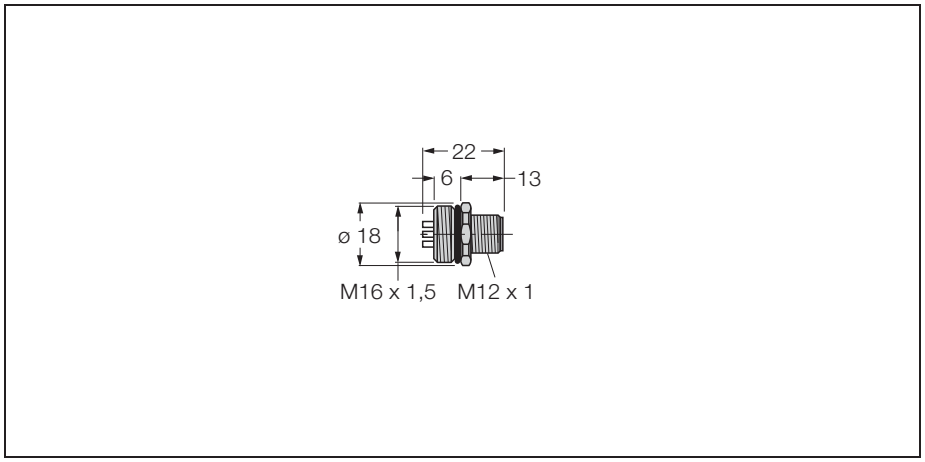
PROFIBUS-PA connection



Type	RKFV48-0,3M/M20/C1117
Ident-No.	6603610
Connector	female flange connector, 7/8'', with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

6

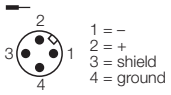
Accessories for fieldbus systems
Flange connector
FSV49



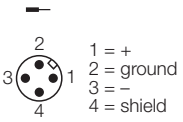
- **Version: male M12 connector**
- **M20 x 1.5 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, solderable**
- **For use in FOUNDATION fieldbus™ and PROFIBUS-PA applications**

Type	FSV49
Ident-No.	6604378
Connector	male flange connector, M12 x 1
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	PG 9
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

FOUNDATION fieldbus™ connection



PROFIBUS-PA connection



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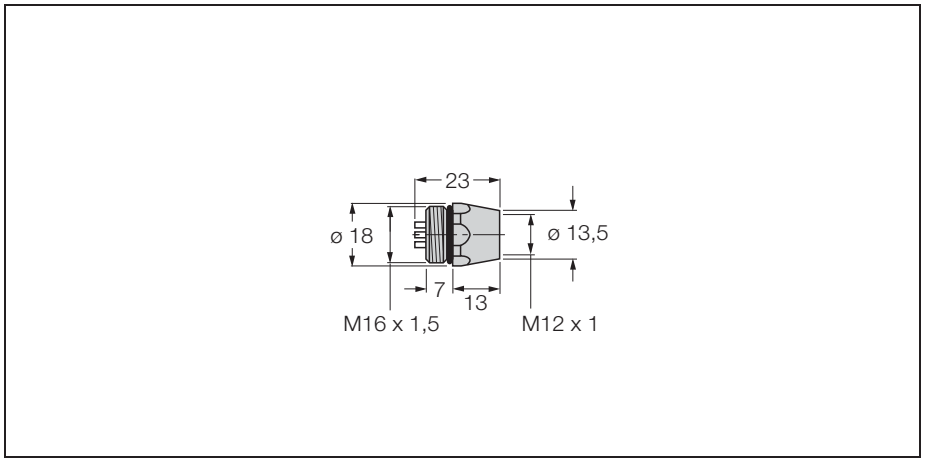
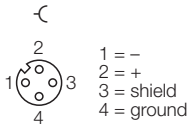
Accessories for fieldbus systems
Flange connector
FKV49

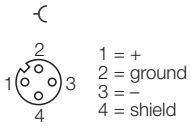


- **Version: female M12 connector**
- **M20 x 1.5 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, solderable**
- **For use in FOUNDATION fieldbus™ and PROFIBUS-PA applications**

FOUNDATION fieldbus™ connection



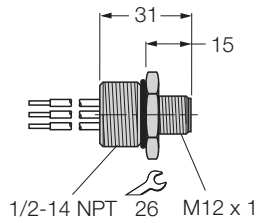
PROFIBUS-PA connection



Type	FKV49
Ident-No.	6603426
Connector	female flange connector, M12 x 1
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	PG 9
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

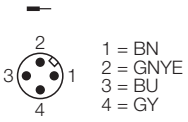
6

Accessories for fieldbus systems
Flange connector
FSV48-0,3M/14,5/C1117

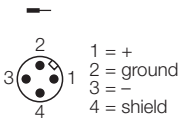


- **Version: male M12 connector**
- **1/2´´-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



PROFIBUS-PA connection



Type	FSV48-0,3M/14,5/C1117
Ident-No.	6611024
Connector	male flange connector, M12 x 1, with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

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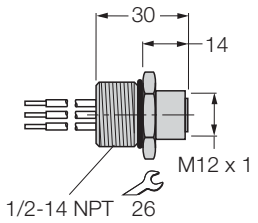
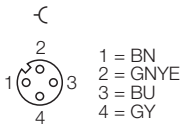
Accessories for fieldbus systems
Flange connector
FKV48-0,3M/14,5/C1117

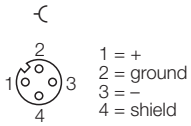


- **Version: female M12 connector**
- **1/2˝-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



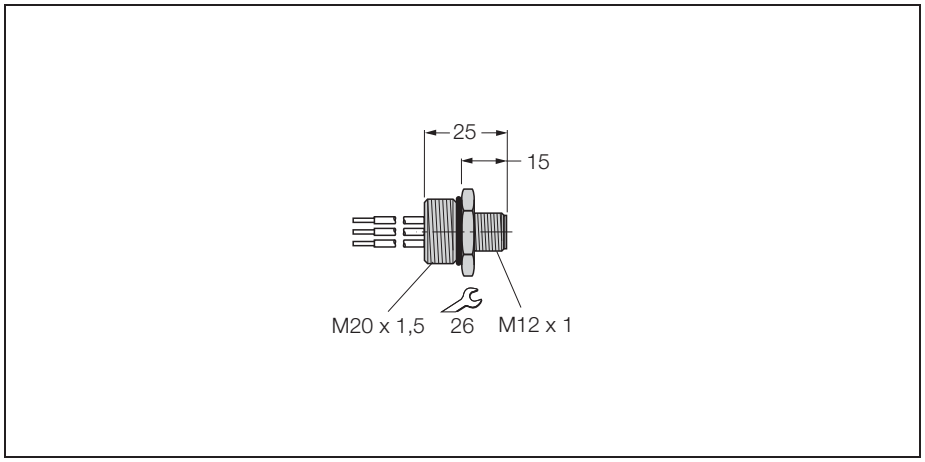
PROFIBUS-PA connection



Type	FKV48-0,3M/14,5/C1117
Ident-No.	6611025
Connector	female flange connector, M12 x 1, with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 300 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

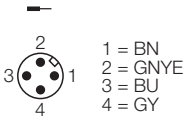
6

Accessories for fieldbus systems
Flange connector
FSV48-0,3M/M20/C1117

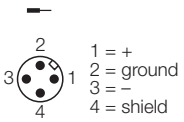


- **Version: male M12 connector**
- **M20 x 1.5 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



PROFIBUS-PA connection



Type	FSV48-0,3M/M20/C1117
Ident-No.	6611026
Connector	male flange connector, M12 x 1, with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 600 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

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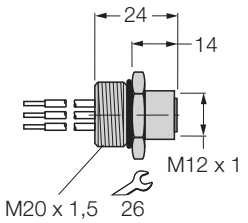
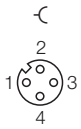
Accessories for fieldbus systems
Flange connector
FKV48-0,3M/M20/C1117

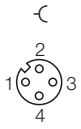


- **Version: female M12 connector**
- **M20 x 1.5 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For use in PROFIBUS-PA applications**

Pin configuration



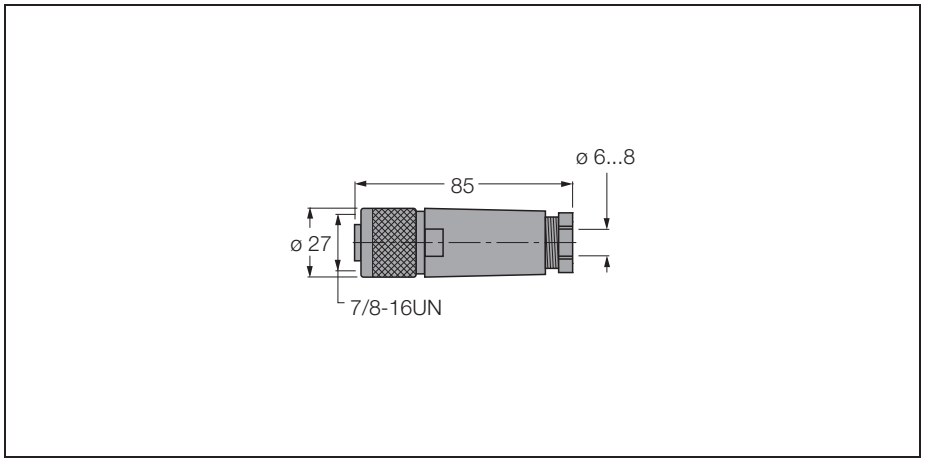
PROFIBUS-PA connection



Type	FKV48-0,3M/M20/C1117
Ident-No.	6611027
Connector	female flange connector, M12 x 1, with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 contact durability
Pollution degree	3
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm^2
Rated voltage	max. 300 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+105 °C

6

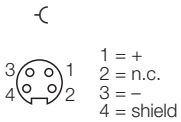
Accessories for fieldbus systems
Field wireable connectors
BK4140-0/9



- **Version: female connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw-terminal connection**
- **4-pole, straight anodised aluminium coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION fieldbus™ applications and as an Aux. supply for DeviceNet slaves**

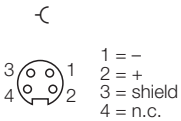
Type	BK4140-0/9
Ident-No.	6914551
Connector	field-wireable female connector, 7/8'', straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	metal, Al, anodized
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	6...8 mm
Core cross-section/clamping ability	max. 1 mm^2
Screw-in thread	PG 9
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

PROFIBUS-PA connection



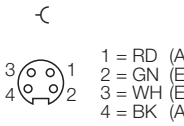
1 = +
2 = n.c.
3 = –
4 = shield

FOUNDATION fieldbus™ connection



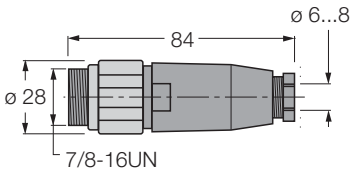
1 = –
2 = +
3 = shield
4 = n.c.

Voltage supply



1 = RD (Aux +)
2 = GN (E +)
3 = WH (E –)
4 = BK (Aux –)

Accessories for fieldbus systems
Field wireable connectors
BS4140-0/9



Type	BS4140-0/9
Ident-No.	6914550
Connector	field-wireable male connector, 7/8'', straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	metal, Al, anodized
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	6...8 mm
Core cross-section/clamping ability	max. 1 mm^2
Screw-in thread	PG 9
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

- **Version: male connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw-terminal connection**
- **4-pole, straight anodised aluminium coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION fieldbus™ applications and as an Aux. supply for DeviceNet slaves**

PROFIBUS-PA connection

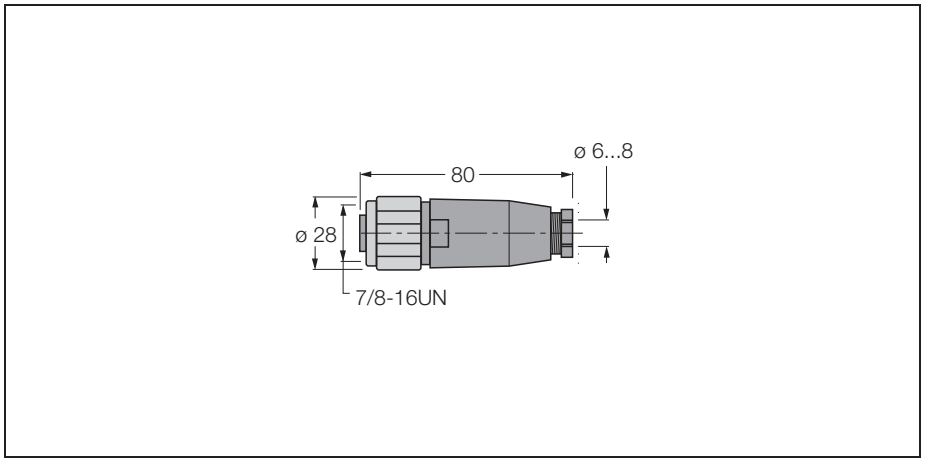
1 = +
2 = n.c.
3 = –
4 = shield

FOUNDATION fieldbus™ connection

1 = –
2 = +
3 = shield
4 = n.c.

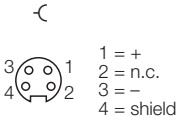
7

Accessories for fieldbus systems
Field wireable connectors
BV4148-0/9



- **Version: female connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw-terminal connection**
- **4-pole, straight stainless steel coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA applications**

PROFIBUS-PA connection



Type	BV4148-0/9
Ident-No.	6914524
Connector	field-wireable female connector, 7/8'', straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	6...8 mm
Core cross-section/clamping ability	max. 1 mm^2
Screw-in thread	PG 9
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

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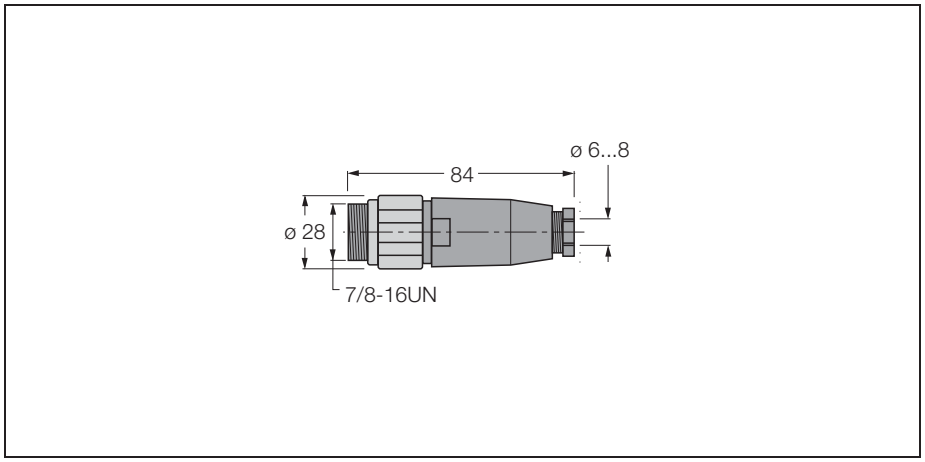
Accessories for fieldbus systems
Field wireable connectors
BSV4148-0/9



Type	BSV4148-0/9
Ident-No.	6914523
Connector	field-wireable male connector, 7/8'', straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	6...8 mm
Core cross-section/clamping ability	max. 1 mm^2
Screw-in thread	PG 9
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

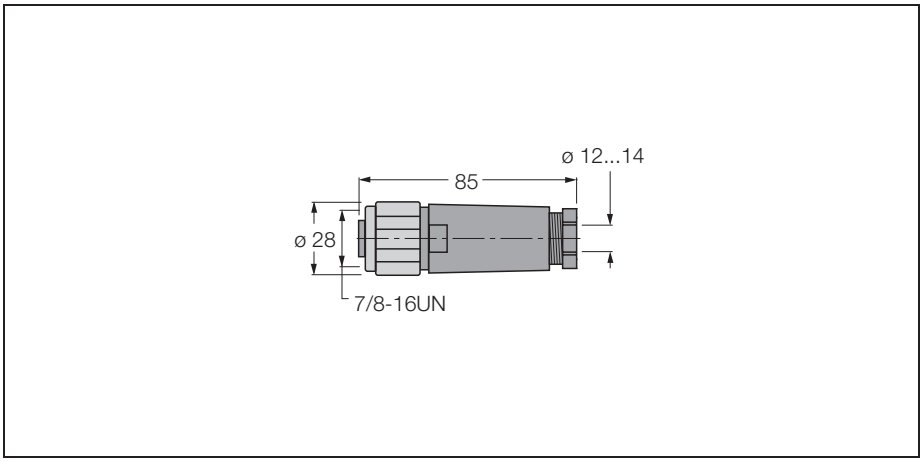
- **Version: male connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw-terminal connection**
- **4-pole, straight stainless steel coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA applications**

PROFIBUS-PA connection

1 = +
2 = n.c.
3 = –
4 = shield

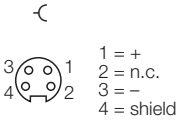
7

Accessories for fieldbus systems
Field wireable connectors
BV4148-0/16



- **Version: female connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw-terminal connection**
- **4-pole, straight stainless steel coupling nut**
- **Cable exit 12 ... 14 mm**
- **For use in PROFIBUS-PA applications**

PROFIBUS-PA connection



Type	BV4148-0/16
Ident-No.	6914530
Connector	field-wireable female connector, 7/8'', straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	12...14 mm
Core cross-section/clamping ability	max. 1 mm^2
Screw-in thread	PG 16
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

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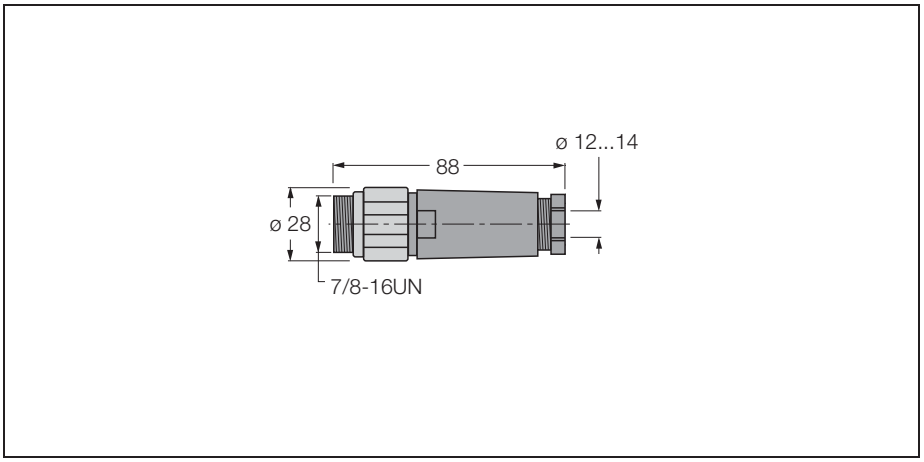
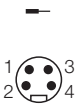
Accessories for fieldbus systems
Field wireable connectors
BSV4148-0/16



Type	BSV4148-0/16
Ident-No.	6914531
Connector	field-wireable male connector, 7/8'', straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	12...14 mm
Core cross-section/clamping ability	max. 1 mm^2
Screw-in thread	PG 16
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-40...+90 °C

- **Version: male connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw-terminal connection**
- **4-pole, straight stainless steel coupling nut**
- **Cable exit 12 ... 14 mm**
- **For use in PROFIBUS-PA applications**

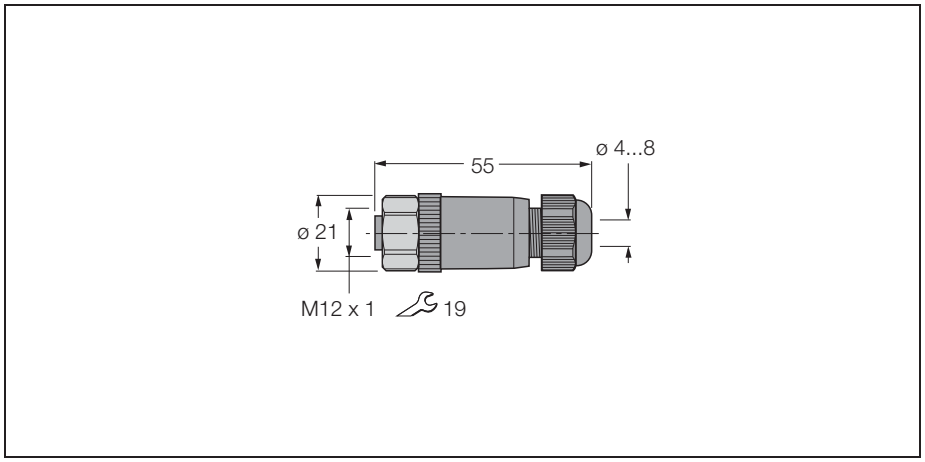
PROFIBUS-PA connection



1 = +
2 = n.c.
3 = –
4 = shield

7

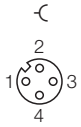
Accessories for fieldbus systems
Field wireable connectors
BKV8140-0/9



- **Version: female M12 connector**
- **Field-wireable**
- **4-pole, straight stainless steel coupling nut**
- **Cable exit 4 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION fieldbus™ applications**

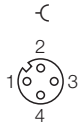
Type	BKV8140-0/9
Ident-No.	6914538
Connector	field-wireable female connector, M12 x 1, straight
Polarity	4-pole
Contacts	metal, CuZn, CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	4...8 mm
Core cross-section/clamping ability	0.14...0.75 mm^2
Screw-in thread	M12 x 1
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-25...+90 °C

PROFIBUS-PA connection



1 = +
2 = n.c.
3 = –
4 = shield

FOUNDATION fieldbus™ connection



1 = –
2 = +
3 = shield
4 = n.c.

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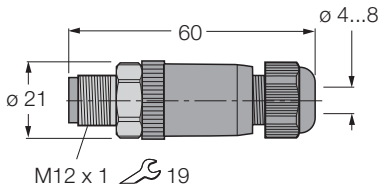
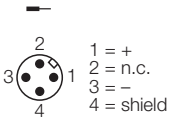
Accessories for fieldbus systems
Field wireable connectors
BSV8140-0/9



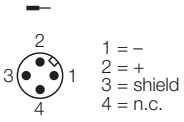
- **Version: male M12 connector**
- **Field-wireable**
- **4-pole, straight stainless steel coupling nut**
- **Cable exit 4 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION fieldbus™ applications**

Type	BSV8140-0/9
Ident-No.	6914537
Connector	field-wireable male connector, M12 x 1, straight
Polarity	4-pole
Contacts	metal, CuZn, CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	4...8 mm
Core cross-section/clamping ability	0.14...0.75 mm^2
Screw-in thread	M12 x 1
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-25...+90 °C

PROFIBUS-PA connection

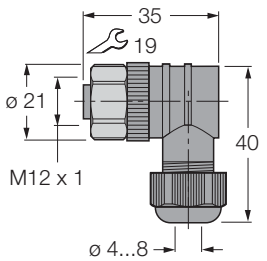


FOUNDATION fieldbus™ connection



7

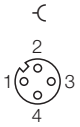
Accessories for fieldbus systems
Field wireable connectors
BKV8240-0/9



Type	BKV8240-0/9
Ident-No.	6914540
Connector	field-wireable female connector, M12 x 1, angled
Polarity	4-pole
Contacts	metal, CuZn, CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	4...8 mm
Core cross-section/clamping ability	0.14...0.75 mm^2
Screw-in thread	M12 x 1
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-25...+90 °C

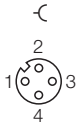
- **Version: female M12 connector**
- **Field-wireable**
- **4-pole, angled, stainless steel coupling nut**
- **Cable exit 4 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION fieldbus™ applications**

PROFIBUS-PA connection



1 = +
2 = n.c.
3 = –
4 = shield

FOUNDATION fieldbus™ connection



1 = –
2 = +
3 = shield
4 = n.c.

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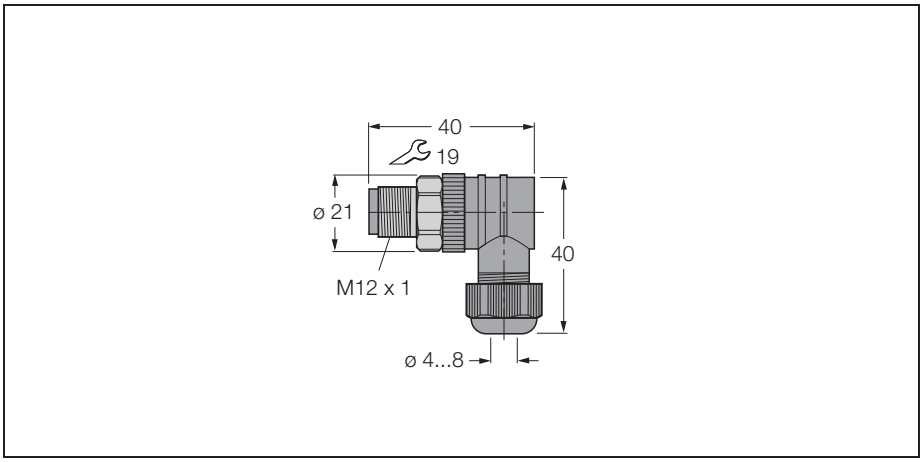
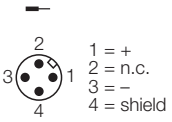
Accessories for fieldbus systems
Field wireable connectors
BSV8240-0/9



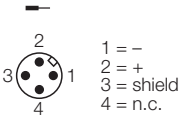
- **Version: male M12 connector**
- **Field-wireable**
- **4-pole, angled, stainless steel coupling nut**
- **Cable exit 4 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION fieldbus™ applications**

Type	BSV8240-0/9
Ident-No.	6914539
Connector	field-wireable male connector, M12 x 1, angled
Polarity	4-pole
Contacts	metal, CuZn, CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	4...8 mm
Core cross-section/clamping ability	0.14...0.75 mm^2
Screw-in thread	M12 x 1
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-25...+90 °C

PROFIBUS-PA connection

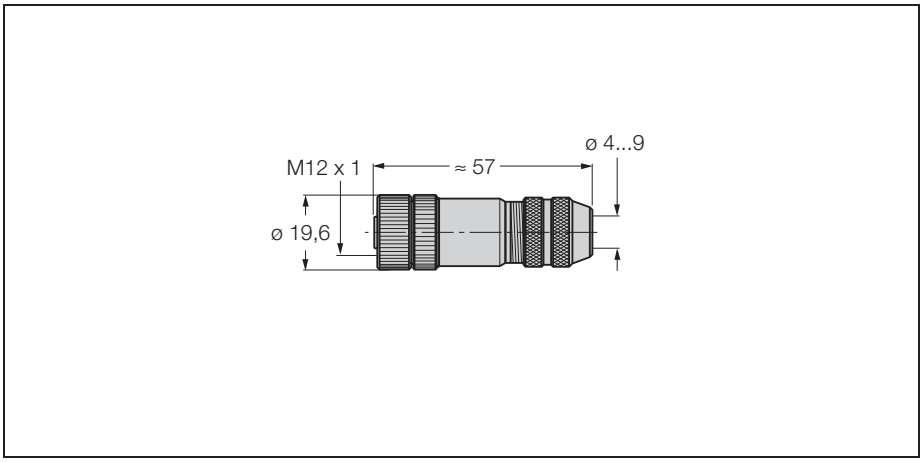


FOUNDATION fieldbus™ connection



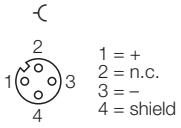
7

Accessories for fieldbus systems
Field wireable connectors
BMS 8141-0/9



- **Version: female M12 connector**
- **Field-wireable**
- **Shielding via shielding spring**
- **4-pole, straight, nickel-plated brass grip**
- **Cable exit 4 ... 9 mm**
- **For use in PROFIBUS-PA applications**

PROFIBUS-PA connection



Type	BMS 8141-0/9
Ident-No.	6904702
Connector	field-wireable female connector, shielded, M12 x 1, straight
Polarity	4-pole
Contacts	metal, CuZn, CuSnZn, Optalloy coated
Contact carriers	plastic, PA, grey
Grip	metal, GD-ZnAl, nickel-plated, grey
Coupling nut/screw	metal, CuZn, nickel-plated
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	4...9 mm
Core cross-section/clamping ability	0.14...0.75 mm^2
Screw-in thread	M12 x 1
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 125 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-25...+90 °C

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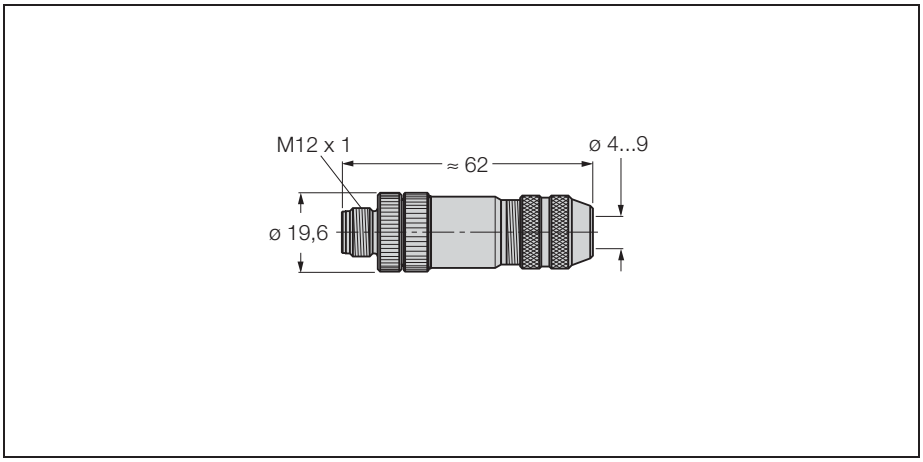
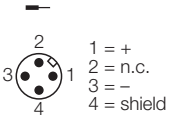
Accessories for fieldbus systems
Field wireable connectors
BMSS 8141-0/9



- **Version: male M12 connector**
- **Field-wireable**
- **Shielding via shielding spring**
- **4-pole, straight, nickel-plated brass grip**
- **Cable exit 4 ... 9 mm**
- **For use in PROFIBUS-PA applications**

PROFIBUS-PA connection



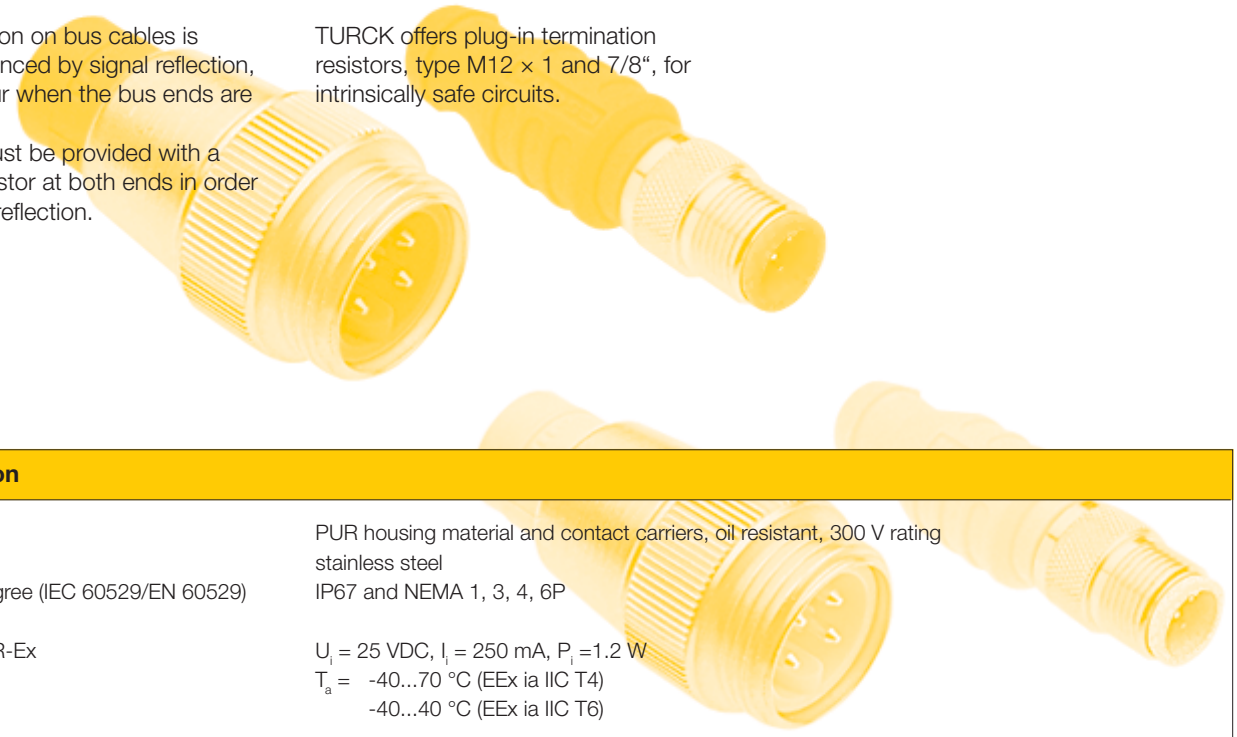
Type	BMSS 8141-0/9
Ident-No.	6904701
Connector	field-wireable male connector, shielded, M12 x 1, straight
Polarity	4-pole
Contacts	metal, CuZn, CuSnZn, Optalloy coated
Contact carriers	plastic, PA, grey
Grip	metal, GD-ZnAl, nickel-plated, grey
Coupling nut/screw	metal, CuZn, nickel-plated
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Protection degree	IP67, only with screws tightened
External diameter of the cable	4...9 mm
Core cross-section/clamping ability	0.14...0.75 mm^2
Screw-in thread	M12 x 1
Connection mode	screw terminals
Pollution degree	3
Rated voltage	max. 125 V
Insulation resistance	≥ 10^9 Ω
Current carrying capacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature connector	-25...+90 °C

7

PROFIBUS-PA
Bus termination resistors

Data transmission on bus cables is frequently influenced by signal reflection, which can occur when the bus ends are not terminated.
The fieldbus must be provided with a termination resistor at both ends in order to avoid signal reflection.

TURCK offers plug-in termination resistors, type M12 × 1 and 7/8“, for intrinsically safe circuits.



Specification

Connector	PUR housing material and contact carriers, oil resistant, 300 V rating
Coupling nut	stainless steel
Protection degree (IEC 60529/EN 60529)	IP67 and NEMA 1, 3, 4, 6P
Max. ratings	
– RS...-48-TR-Ex	U_i = 25 VDC, I_i = 250 mA, P_i =1.2 W T_a = -40...70 °C (EEx ia IIC T4) -40...40 °C (EEx ia IIC T6)

Use of the intrinsically-safe version
The intrinsically-safe fieldbus termination resistors feature protection class “intrinsic safety” and may be used in the explosion hazardous area category 1 G (zone 0), 2 G (zone 1) or 3 G (zone 2).

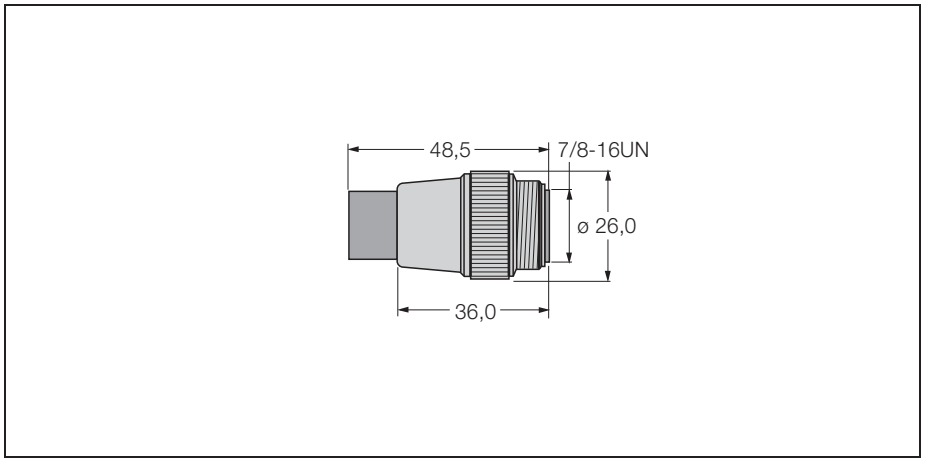
In zone 0 the power supply circuit must conform to protection class “ia”.

The RS...-48-TR-Ex termination resistors can be used in networks, which are designed conform to the FISCO model.

CAUTION
The EC type test examination certificate and the manufacturer’s declaration of conformity must be observed.
It is essential that the “special conditions” in the EU type test examination certificate are observed.

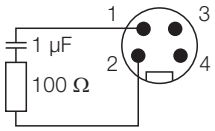
NOTE
The TURCK JBBS... junctions to IP67 (4 and 6 channels) and JRBS... to IP20 are already provided with integrated switch-in bus termination resistors.
Special versions excepted.

Accessories for fieldbus systems
Bus termination resistor
RSMV-48TR-EX



- **FISCO compliance according to IEC TS 60079-27**
- **Version: male 7/8" connector**
- **4-pole, straight stainless steel coupling nut**
- **For use in PROFIBUS-PA applications**

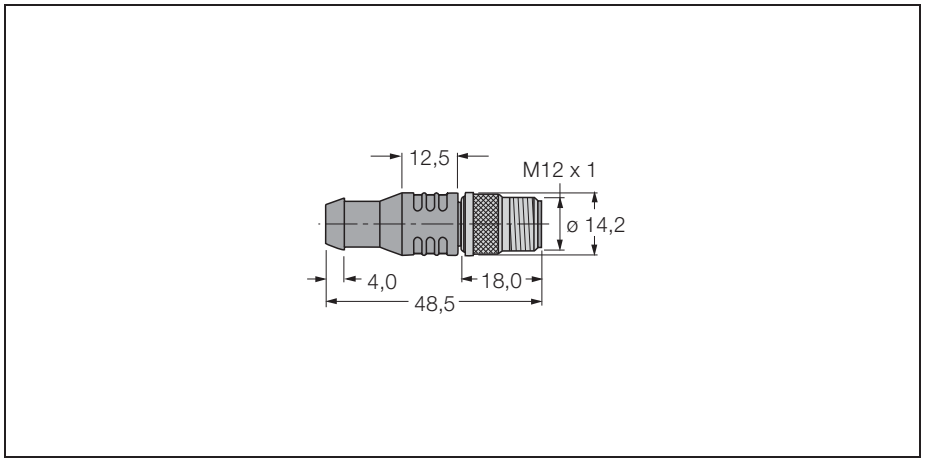
Wiring diagram



Type	RSMV-48TR-EX
Ident-No.	6602370
Connector	connector, 7/8''
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Grip	plastic, PUR, blue
Coupling nut/screw	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
ambient temperature	-40...+70 °C
Ex approval acc. to conformity certificate	TÜV 03 ATEX 2379 X
Max. input voltage U_i	≤ 16.2 V
Max. input current I_i	≤ 500 mA
Max. input power P_i	≤ 1800 mW
Internal inductance/ capacitance L_i/C_i	negligible
Marking of the device	⟨Ex⟩ II 1 G EEx ia IIC T6 FISCO / Entity field device

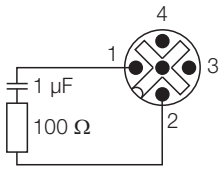
8

Accessories for fieldbus systems
Bus termination resistor
RSEV-48TR-EX



- **FISCO compliance according to IEC TS 60079-27**
- **Version: male M12 connector**
- **4-pole, straight stainless steel coupling nut**
- **For use in PROFIBUS-PA applications**

Wiring diagram



Type	RSEV-48TR-EX
Ident-No.	6602560
Connector	connector, M12 x 1
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Grip	plastic, PUR, blue
Coupling nut/screw	stainless steel, 1.4404
Protection degree	IP67, only with screws tightened
ambient temperature	-40...+70 °C
Ex approval acc. to conformity certificate	TÜV 03 ATEX 2379 X
Max. input voltage U_i	≤ 16.2 V
Max. input current I_i	≤ 500 mA
Max. input power P_i	≤ 1800 mW
Internal inductance/ capacitance L_i/C_i	negligible
Marking of the device	⟨Ex⟩ II 1 G EEx ia IIC T6 FISCO / Entity field device

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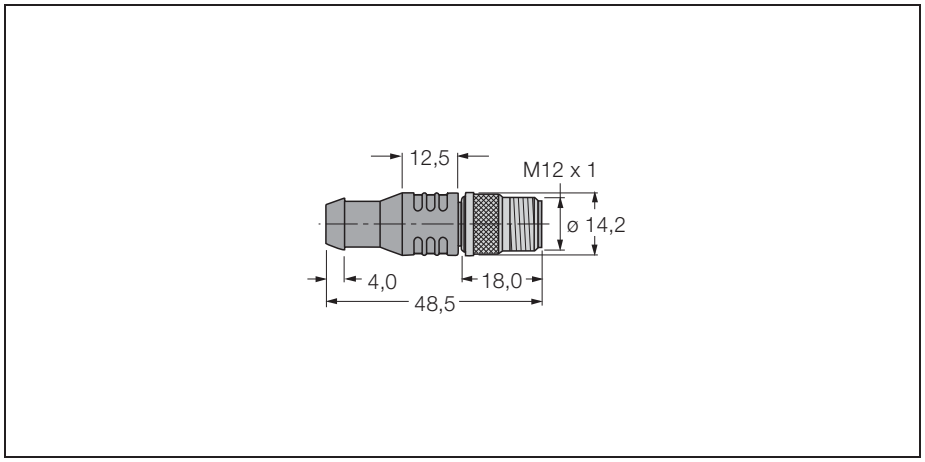
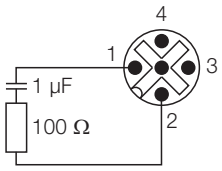
Accessories for fieldbus systems
Bus termination resistor
RSE-48TR-EX



- **FISCO compliance according to IEC TS 60079-27**
- **Version: male M12 connector**
- **4-pole, straight, nickel-plated brass coupling nut**
- **For use in PROFIBUS-PA applications**

Wiring diagram



Type	RSE-48TR-EX
Ident-No.	6602250
Connector	connector, M12 x 1
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Grip	plastic, PUR, blue
Coupling nut/screw	metal, CuZn
Protection degree	IP67, only with screws tightened
ambient temperature	-40...+70 °C
Ex approval acc. to conformity certificate	TÜV 03 ATEX 2379 X
Max. input voltage U_i	≤ 16.2 V
Max. input current I_i	≤ 500 mA
Max. input power P_i	≤ 1800 mW
Internal inductance/ capacitance L_i/C_i	negligible
Marking of the device	⟨Ex⟩ II 1 G EEx ia IIC T6 FISCO / Entity field device

8

Zubehör für Feldbussysteme
IP67-Edelstahlgehäuse
EG-VA2020/BV67-T105

Das Edelstahlgehäuse EG-VA2020/BV67-T105 dient zum Einbau von TURCK-Verteilerbausteinen vom Typ JRBS-...

Die robuste Ausführung ist besonders geeignet für raue und agressive Umgebungsbedingungen.

Im Inneren des Gehäuses befindet sich eine Hutschiene zur Aufnahme eines 4-, 6- oder 8-kanaligen JRBS...-Verteilerbausteins, der max. 180 mm breit sein darf.

Die Zuführung der Leitungen erfolgt über zehn M20 × 1,5-Kabelverschraubungen.

Durch ein Druckausgleichselement in Schutzart IP67 wird eine dauerhafte und zuverlässige Be- und Entlüftung gewährleistet. Dadurch wird die Kondensatbildung sowie die Ansammlung von Wasser vermieden.

Hinweis: Es ist auf ausreichenden Potentialausgleich in der Anlage zu achten. Das Gehäuse wird über den M5 × 1-Anschluss mit dem Potentialausgleich verbunden.

- **Edelstahlgehäuse zur Aufnahme der TURCK IP20-Verteilerbausteine**
- **Schutzart IP67 (IEC/EN 60529)**
- **10 Kunststoff-Kabelverschraubungen M20 x 1.5 zur Leitungsdurchführung**
- **Isolierte Schirmschiene**
- **Wandmontage**
- **Druckausgleichselement**
- **Anschluss des Gehäusepotentials über M5 x 1-Bolzen**

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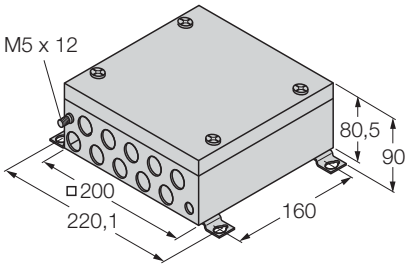
Zubehör für Feldbussysteme
IP67-Edelstahlgehäuse
EG-VA2020/BV67-T105

Industrielle Automation

Typenbezeichnung	EG-VA2020/BV67-T105
Ident-Nr.	6884135
Anschluss	Kabelverschraubung 10 x M20 x 1.5 (Ø 6...13mm), Kunststoff, schwarz
Erdungsbolzen	M5 x 1
Schutzart	IP67
Umgebungstemperatur	-30...+80 °C
Relative Luftfeuchtigkeit	≤ 95 %, nicht kondensierend
Gehäusewerkstoff	Edelstahl 1.430/AISI304
Wandstärke	1.5 mm
Gehäuseoberfläche	geschliffen und poliert (240er Körnung)
Gehäusefarbe	silber
Werkstoff Dichtung	PUR
Abmessungen	200 x 200 x 80.5 mm
Befestigungsart	Wandmontage

Abmessungen



9

Zubehör für Feldbussysteme
IP67-Edelstahlgehäuse
EG-VA2020/BV67-T103

Das Edelstahlgehäuse EG-VA2020/BV67-T103 dient zum Einbau von TURCK-Verteilerbausteinen vom Typ JRBS-...

Die robuste Ausführung ist besonders geeignet für raue und agressive Umgebungsbedingungen.

Im Inneren des Gehäuses befindet sich eine Hutschiene zur Aufnahme eines 4-, 6- oder 8-kanaligen JRBS...-Verteilerbausteins, der max. 180 mm breit sein darf.

Die Zuführung der Leitungen erfolgt über zehn M20 × 1,5-Kabelverschraubungen.

Durch ein Druckausgleichselement in Schutzart IP67 wird eine dauerhafte und zuverlässige Be- und Entlüftung gewährleistet. Dadurch wird die Kondensatbildung sowie die Ansammlung von Wasser vermieden.

Hinweis: Es ist auf ausreichenden Potentialausgleich in der Anlage zu achten. Das Gehäuse wird über den M5 × 1-Anschluss mit dem Potentialausgleich verbunden.

- **Edelstahlgehäuse zur Aufnahme der TURCK IP20-Verteilerbausteine**
- **Schutzart IP67 (IEC/EN 60529)**
- **10 Edelstahl-Kabelverschraubungen M20 x 1.5 zur Leitungsdurchführung**
- **Isolierte Schirmschiene**
- **Wandmontage**
- **Druckausgleichselement**
- **Anschluss des Gehäusepotentials über M5 x 1-Bolzen**

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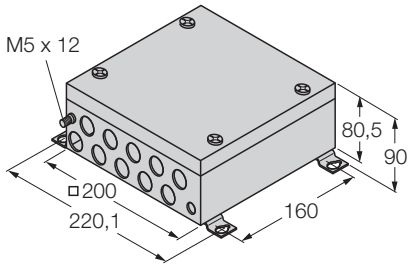
Zubehör für Feldbussysteme
IP67-Edelstahlgehäuse
EG-VA2020/BV67-T103

Typenbezeichnung	EG-VA2020/BV67-T103
Ident-Nr.	6884136
Anschluss	Kabelverschraubung 10 x M20 x 1.5 (Ø 6...13mm), Edelstahl
Erdungsbolzen	M5 x 1
Schutzart	IP67
Umgebungstemperatur	-30...+80 °C
Relative Luftfeuchtigkeit	≤ 95 %, nicht kondensierend
Gehäusewerkstoff	Edelstahl 1.430/AISI304
Wandstärke	1.5 mm
Gehäuseoberfläche	geschliffen und poliert (240er Körnung)
Gehäusefarbe	silber
Werkstoff Dichtung	PUR
Abmessungen	200 x 200 x 80.5 mm
Befestigungsart	Wandmontage

Abmessungen



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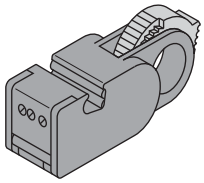
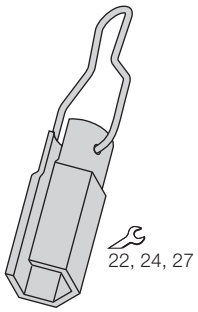
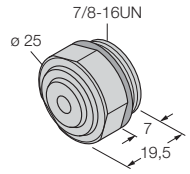
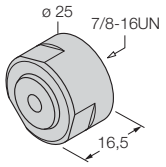
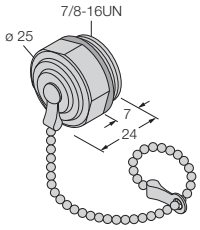
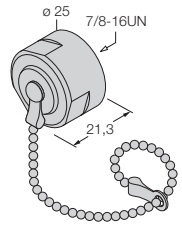
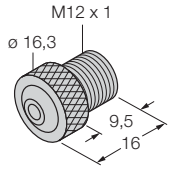
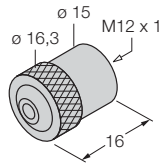
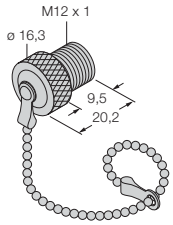
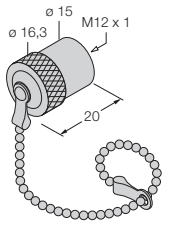
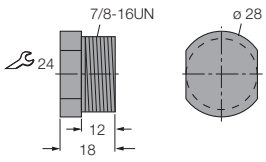
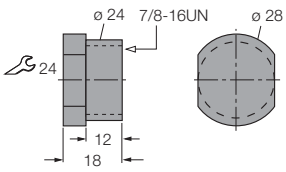
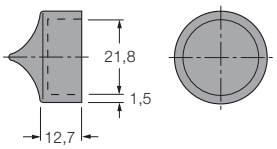
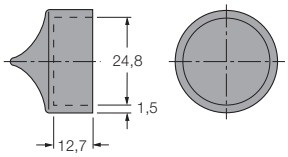
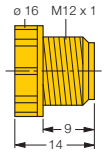
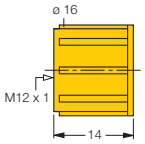
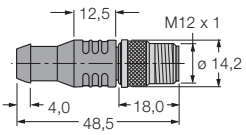
Abmessungen	Anwendung	Typenbezeichnung	Ident-Nr.
	Abisolieren von runden (geschirmten) Datenleitungen von Ø 2,5...8 mm (auch für FastConnect®/ Fast Assembly™), 1-, 2- und 3-stufiges Abisolieren in einem Arbeitsgang; Beigefügter Einstellblock für schnelle Vorjustage der Schnitttiefe, Messerkassetten zweiseitig verwendbar	**TCS-Abisolierwerkzeug**	6900454
	Spezialwerkzeug für Kabelverschraubungen an Multibarrieren, *excom*®-Gehäusen[1]) und Verteilerbausteinen. Öffnen und Schließen von Kabelverschraubungen aus verschiedenen Positionen heraus. Arbeiten auch in schwierigen Positionen durch angebrachten Schwenkgriff. Arbeitserleichterung durch Schlitz im Rohr (dabei werden die durch die Verschraubung geführten Kabel durch den Schlitz gelegt). Schlüsselweiten 22, 24 und 27, Sondergrößen sind auf Anfrage erhältlich	**VSTS22 (SW 22)** **VSTS24 (SW 24)** **VSTS27 (SW 27)**	6884043 6900462 6884073

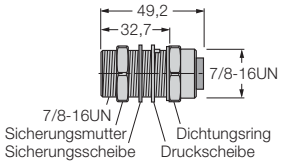
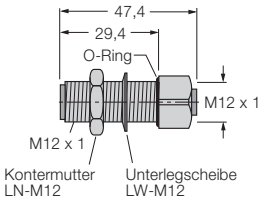
[1]) *excom*® ist das TURCK-Ex-Remote-I/O-System zum Einsatz in Zone 1 und 2. Nähere Informationen entnehmen Sie bitte dem Produktkatalog.

Abmessungen	Anwendung	Material und Farbe	Typenbezeichnung	Ident-Nr.
	7/8“-Verschlusskappe, Stecker, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P	Edelstahl	**RSMV BC**	6603783
	7/8“-Verschlusskappe, Kupplung, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P	Edelstahl	**RKMV BC**	6603784
	7/8“-Verschlusskappe, Stecker, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P, mit Kette	Edelstahl	**RSMV-CC**	6604030
	7/8“-Verschlusskappe, Kupplung, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P, mit Kette	Edelstahl	**RKMV-CC**	6604038
	M12 × 1-Verschlusskappe, Stecker, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P	Edelstahl	**RSEV-BC**	6902305
	M12 × 1-Verschlusskappe, Kupplung, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P	Edelstahl	**RKEV-BC**	6902304

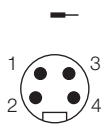
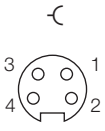
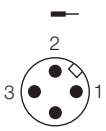
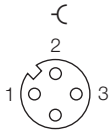
Abmessungen	Anwendung	Material und Farbe	Typenbezeichnung	Ident-Nr.
	Verschlusskappe für M12 × 1-Stecker, mit Kette	Edelstahl	**RSEV-CC**	6604174
	Verschlusskappe für M12 × 1-Kupplung, mit Kette	Edelstahl	**RKEV-CC**	6604176
	Schraubkappe für 7/8“-Kupplung, keine interne Verdrahtung	Polyamid schwarz	**VZ8**	8018816
	Schraubkappe für 7/8“-Stecker, keine interne Verdrahtung	Polyamid schwarz	**VK-7/8**	6999027
	Staubkappe für 7/8“-Flanschanschluss, für Flanschstecker, keine interne Verdrahtung	Polyamid schwarz	**RSM-DUST-CAP**	6914862
	Staubkappe für 7/8“-Flanschanschluss, für Flanschkupplung, keine interne Verdrahtung	Polyamid schwarz	**RKM-DUST-CAP**	6914863

Abmessungen	Anwendung	Material und Farbe	Typenbezeichnung	Ident-Nr.
	M12 × 1-Verschlusskappe, Stecker, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P	PUR gelb	**VS-M12**	6999003
	M12 × 1-Verschlusskappe, Kupplung, öl-resistent, IP54 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P	PUR gelb	**VK-M12**	6999025
	M12 × 1-Verschlusskappe, Stecker, öl-resistent, IP67 nach IEC 60529/ EN 60529 und NEMA 1, 3, 4, 6P	Edelstahl/PUR grau	**RSEV49-CC**	6603489

PROFIBUS-PA
Zubehör

Abmessungen	Anwendung	Verbindungs-technik Fig. (Fxxx)	Typenbezeichnung	Ident-Nr.
	7/8“-Durchführung, Stecker/Kupplung, IP67 nach IEC 60529/EN 60529 und NEMA 1, 3, 4, 6, Edelstahl	1 × 7/8“ (F015) 1 × 7/8“ (F016)	**RSFV-RKFV49/22**	6602357
	M12 × 1-Durchführung, Stecker/Kupplung, IP67 nach IEC 60529/EN 60529 und NEMA 1, 3, 4, 6, Edelstahl	1 × M12 (F040) 1 × M12 (F041)	**FKV-FSV49/M12**	6603678

Anschlussbelegung

(F015)	(F016)	(F040)	(F041)
			
1 = – 2 = + 3 = Schirm 4 = Erde	1 = – 2 = + 3 = Schirm 4 = Erde	1 = – 2 = + 3 = Schirm 4 = Erde	1 = – 2 = + 3 = Schirm 4 = Erde

Typenverzeichnis

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