

TURCK

Industrial Automation

FIELDBUS COMPONENTS FOR FOUNDATION™ FIELDBUS



FIELDBUS COMPONENTS FOR FOUNDATION™ FIELDBUS

Fieldbus systems in process automation

Fieldbus systems have become prevalent in the field of process automation in addition to decentral peripheral systems. FOUNDATION™ fieldbus and PROFIBUS-PA fieldbus systems are now the established fieldbuses in this field (for further information about the TURCK-product portfolio and in particular PROFIBUS-PA products, please see catalog D301026). 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
 - diagnostics for Asset Management
- 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.

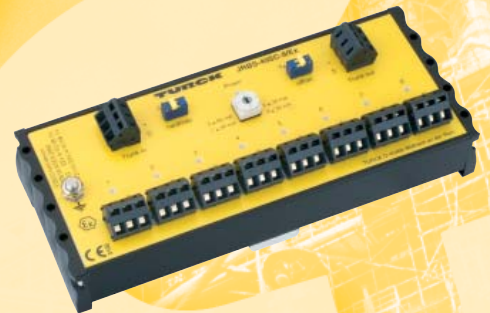
Junction modules in IP67 (1, 4 and 6 ports)

- 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-port types) or encapsulated Polyurethane (PUR) for the single channel versions.
- Connection technology: cable glands- or flange connections in 7/8" or M12 x 1, stainless steel



Junction modules in IP20 (4, 6, 8 and 12 ports)

- 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
- Degree of protection IP67
- Pressure compensation element
- Isolated shielding bus



Multibarriers in IP66 (4 ports)

- 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 x 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)



Diagnostic Power Conditioner System

- Segment and system diagnostics
- Commissioning support
- Longterm diagnostics via FF-HSE
- FF functions blocks for diagnostic alarms
- Diagnostics via DTM and/or DD
- Redundant power supply
- High output power for extended fieldbus segments (800 mA, 30 VDC)
- Complete galvanic isolation



FISCO and FNICO power supply

- Integrated repeater function
- Certified to FISCO and FNICO
- Switch-in terminating resistor
- Switch-in power supply for the host
- Output current:
 - 120 mA or 265 mA for FISCO
 - 180 mA or 320 mA for FNICO



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



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



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



Fieldbus cable available as bulk cable or premoduled

- 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 available premoduled cable lengths within 5 days.



Flange connections

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

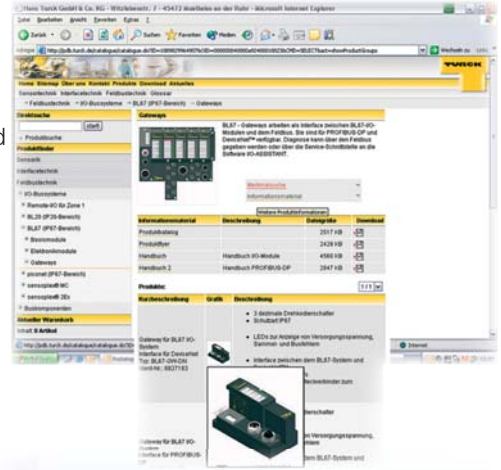


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FOUNDATION™ fieldbus Basics

FOUNDATION™ fieldbus – 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 FOUNDATION™ fieldbus and PROFIBUS-PA. 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.

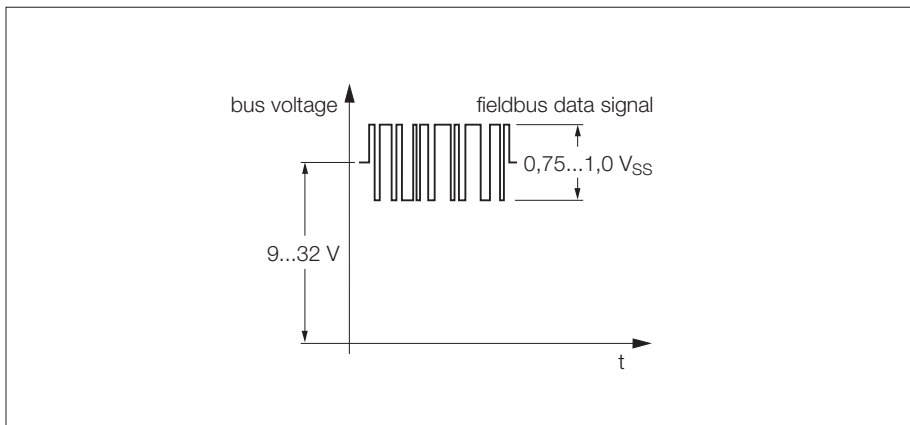


Fig. 1 Transmission of data packages to IEC 61158-2

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

FOUNDATION™ fieldbus – Topology

The FOUNDATION™ fieldbus network is either

- opened directly via a FOUNDATION™ fieldbus segment card from the process host system and supplied via the TURCK DPC system (diagnostic power conditioner system) (Fig. 2 and 3) or
- enabled via a “linking device” by high speed Ethernet (HSE).

We recommend the use of TURCK multibarriers for a FOUNDATION™ fieldbus application in the explosion hazardous area (Fig. 3) which can supply up to 32 stations (in the explosion hazardous area) when “cascaded”. The benefits compared to a simple intrinsically safe power supply device are primarily the enhanced number of stations within a bus segment. Furthermore, a higher level of security is given by the enhanced level of availability provided by the galvanic isolation to all sides in the barrier (refer to page 33 for more details).

The number of multibarriers, which can be switched in, and the usable cable lengths depend on the output power of the power conditioner and also on the cable type. TURCK recommends the long-distance cable type FBY.../LD (see page 125) for the main cable (trunk line); for the outputs the standard cable type FBY.../SD (see page 124) is recommended.

Both system configurations in Fig. 2 and 3 are operated with the TURCK DPC system (diagnostic power conditioner system, see from page 10 on). Due to the high output power of the DPC system, segments can be extended up to 1900 m.

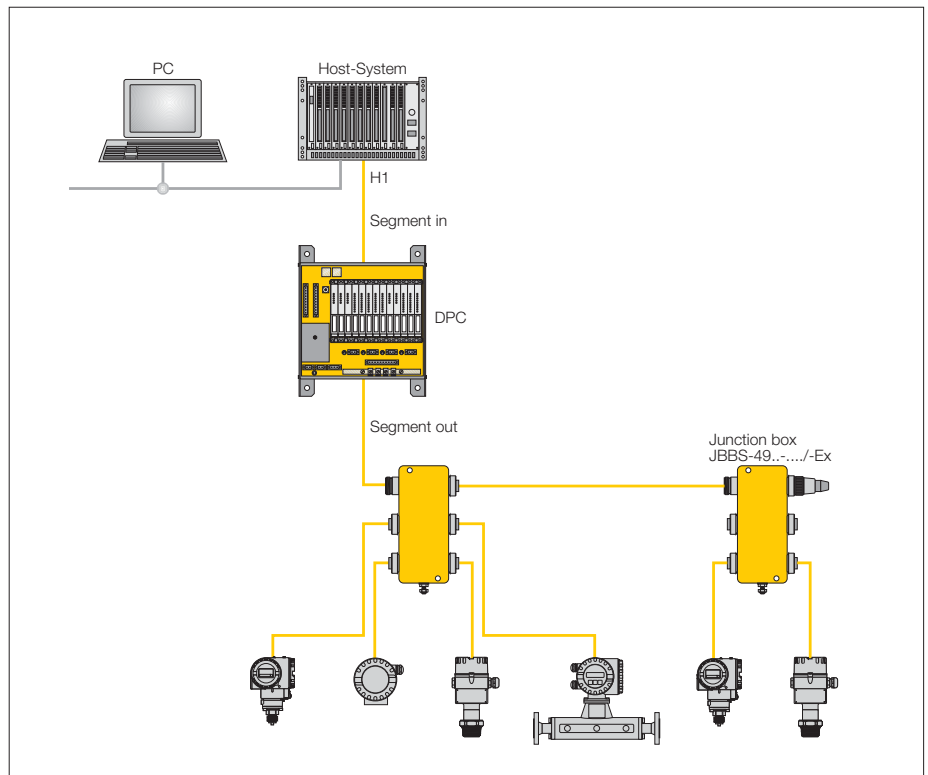


Fig. 2 Topology – FOUNDATION™ fieldbus in the non-explosion hazardous area

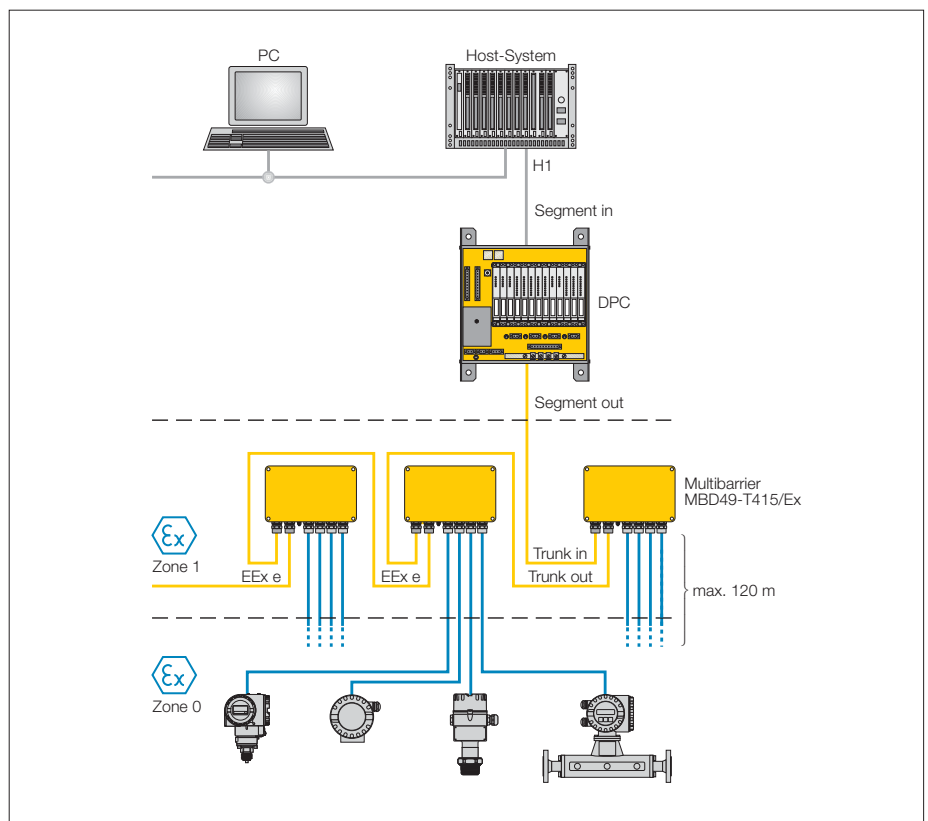


Fig. 3 Topology – FOUNDATION™ fieldbus in the explosion hazardous area

FOUNDATION™ fieldbus Basics

In zone 2 a simple but safe energy limitation is necessary. Fig. 4 shows a FOUNDATION™ fieldbus network topology for zone 2. The power limitation can of course be implemented in the power supply, e.g. with the TURCK-FNICO-Power-Supply. The advantage is, that working within zone 2 is possible while the system is under power. The disadvantages are, the low number of field devices per FNICO-Power-Supply and a limited segment extension of 1000 m maximum.

Due to these disadvantages TURCK recommends the combination of the power conditioner and the TURCK junction boxes with short circuit protection, also applicable in zone 2. The trunk line is fed with explosion protection Ex nA, as the output of the power conditioner is voltage limited. The limitation of power in the junction boxes is implemented such that the circuits of the drop line are limited according to Ex nL. Therefore working at the field devices during operation is possible and the segment can be extended up to 1900 m max. (Fig. 5).

A FOUNDATION™ fieldbus network in non-Ex and Ex areas can also be established via a HSE-H1 link. HSE stands for "High Speed Ethernet" and supports Ethernet fieldbus solutions. In addition to the Ethernet protocol family, the HSE also supports the FOUNDATION™ fieldbus H1 protocol. As a result, it is possible to access every Ethernet based network with a transmission speed of 10...1000 MBit/s in H1 fieldbus segments.

HSE and H1 have been fundamentally developed as supplementary networks. Whereas H1 has been optimized for applications in traditional process automation, HSE is more suited for high performance process control applications. Attractively-priced, commercial standard Ethernet devices can be operated in HSE applications.

The combined H1 and HSE fieldbus solution enables complete integration of fundamental and complex industrial process instrumentation and measurement into the higher level control system. This kind of integrated architecture not only helps to reduce system downtimes but also provides improved diagnostic functions and better user information.

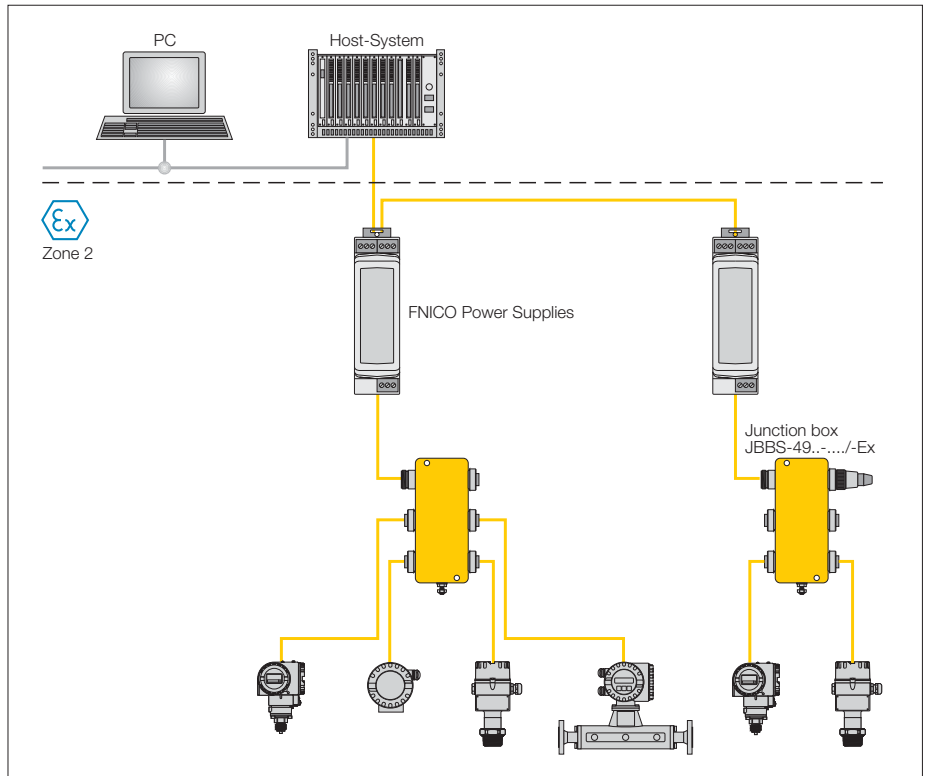


Fig. 4 Topology – FOUNDATION™ fieldbus with FNICO power supply in zone 2

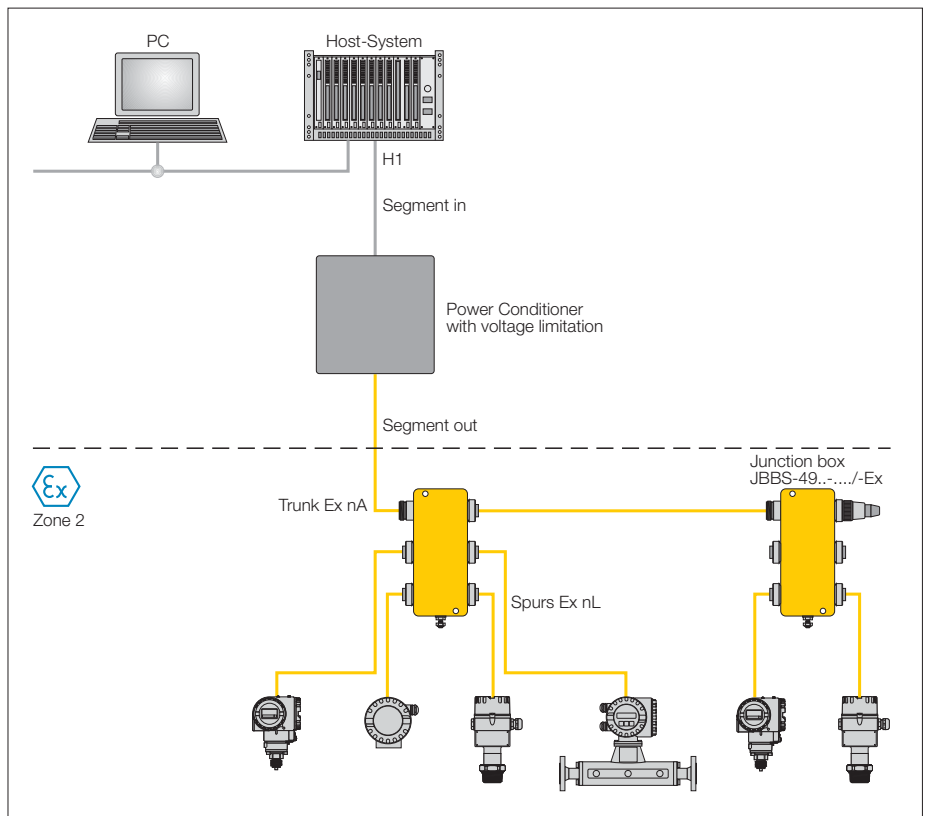


Fig. 5 Topology – FOUNDATION™ fieldbus with power conditioner in zone 2

Overview – Application areas of TURCK’s fieldbus components in the explosion hazardous and non-explosion hazardous area

	Application in EEx i circuits conform to FISCO			Application in EEx i circuits conform to EN 60079-11			Application in Ex nL circuits conform to		Installation in			Installation in the Non-Ex area
	EEx ia			EEx ia			FNICO	Entity	Zone 0	Zone 1	Zone 2	
	Zone 0	Zone 1	Zone 2	Zone 0	Zone 1	Zone 2						
Junction boxes without short-circuit protection JBBS...M.../3G JBBS...E.../3G JBBS...T.../3G	–	–	–	–	–	–	✓	✓	–	✓	✓	✓
Junction boxes with short-circuit protection JBBS...SC...M.../3G JBBS...SC...E.../3G JBBS...SC...T.../3G	–	–	–	–	–	–	✓	✓	–	–	✓	✓
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 rail mounting JRBS... ¹⁾	✓	✓	✓	✓	✓	✓	✓	✓	–	✓	✓	✓
Multibarriers MBD... ²⁾	✓	✓	✓	✓	✓	✓	–	–	–	✓	✓	✓
Power conditioner system FISCO power supply FNICO power supply	–	–	–	–	–	–	–	–	–	–	–	✓
Terminating resistors RS...-TR	–	–	–	–	–	–	–	–	–	–	–	✓
Ex terminating resistors RS...-TR/Ex	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Passive equipment without electronics (cable, connectors, flanges ...³⁾	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

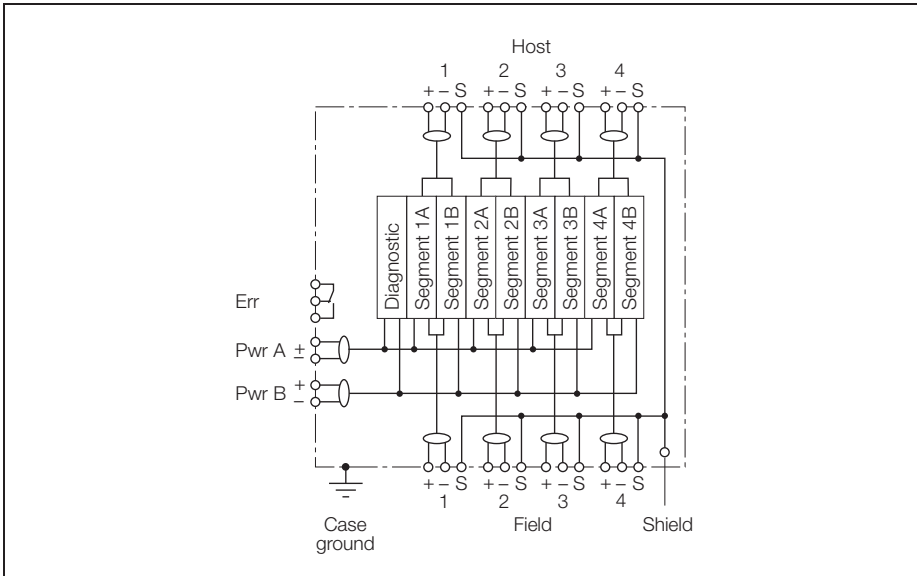
Application:
 ✓ = allowed
 – = not allowed

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 60079-0, EN 60079-11 and EN 60079-14 standards



CAUTION
 If previously operated in non-intrinsically safe applications, subsequent installation in intrinsically safe applications is not allowed.

**FOUNDATION™ fieldbus
Backplane for the DPC system
DPC-49-4RMB**



The DPC system (Diagnostic Power Conditioner) is a power supply system for the installation of FOUNDATION™ fieldbus H1 segments. It provides extensive diagnostic options for monitoring FOUNDATION™ fieldbus segments and thus supports plant-wide asset management.

A DPC system consists of one or more module racks, each with up to eight DPC-49-IPS1 power supply modules and one DPC-49-ADU resp. DPC-49-DU diagnostics module. Up to four H1 segments for each module rack can be operated and monitored redundantly in the FOUNDATION™ fieldbus network. The diagnostic data of the H1 segment can be transmitted via the HSE interface module DPC-49-HSEFD/24VDC to the higher level asset management system (only in conjunction with the diagnostics module DPC-49-ADU).

The module rack consist of a backplane and the actual rack system for the power supply modules and the diagnostics module.

The single components of the system are electrically linked via the connection terminals of the backplane. From electrical perspective, the backplane is to be considered passive.

The power can be supplied via two 2-pole screw connectors. The connection of the host system is established per segment via removable 3-pole screw terminals.

For the connection of the H1 segments to the fieldbus side, each segment is individually connected with a removable 3-pole screw terminal.

The shielding is achieved via insulated shield bus or via the 3-pole screw terminal, which is internally connected with the M5 threaded bolt for equipotential bonding. A further M5 threaded bolt for equipotential bonding is simply connected to the housing.

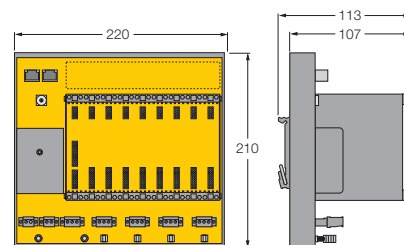
For simple diagnostics processing, a connection is provided to the relay alarm contact of the diagnostics module.

- **Module rack for up to 8 power supply modules and 1 diagnostics module for the mounting of up to 4 H1 segments.**
- **Redundant power supply**
- **Removable terminal blocks with screw connections**
- **RJ45 connector for HSE fieldbus diagnostics**

**FOUNDATION™ fieldbus
Backplane for the DPC system
DPC-49-4RMB**

Type	DPC-49-4RMB
Ident-No.	6882024
Operational voltage range:	18 ... 32 VDC
Overvoltage protection	> 250 VDC
Electrical connection	removable terminal block, reverse polarity protected, screw connection RJ45 socket
Degree of protection	IP20
Ambient temperature	-20 ...+ 60 °C
Housing material	aluminium
Housing color	black/yellow
Dimensions	220 x 210 x 113 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions

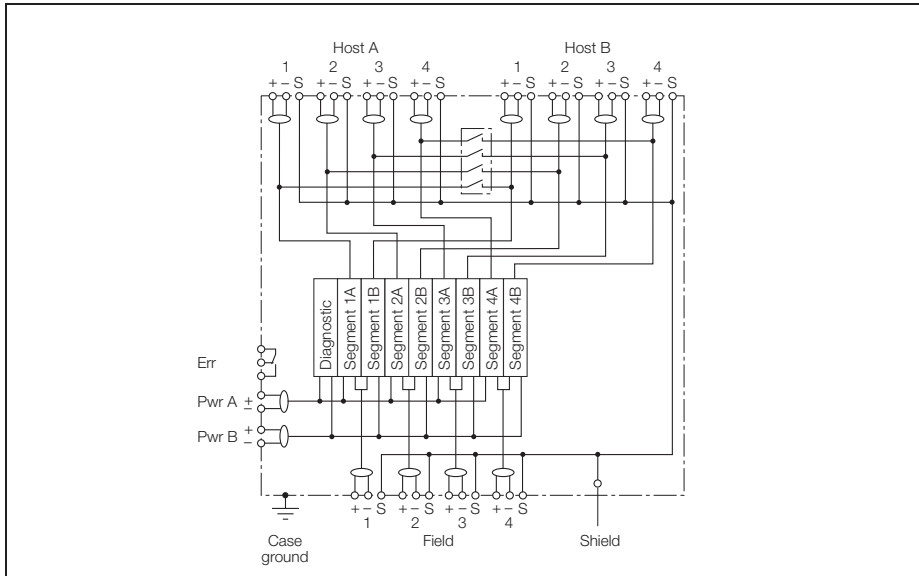


2

Accessories

Type code	Ident-No.	Short text	Dimension drawing
BM-DPC	6882015	blind module for unused slots	

**FOUNDATION™ fieldbus
Backplane for the DPC system
DPC-49-4RMB/SY**



The DPC system (Diagnostic Power Conditioner) is a power supply system for the installation of FOUNDATION™ fieldbus H1 segments. It provides extensive diagnostic options for monitoring FOUNDATION™ fieldbus segments and thus supports plant-wide asset management.

A DPC system consists of one or more module racks, each with up to eight DPC-49-IPS1 power supply modules and one DPC-49-ADU resp. DPC-49-DU diagnostics module. Up to four H1 segments for each module rack can be operated and monitored redundantly in the FOUNDATION™ fieldbus network. The diagnostic data of the H1 segment can be transmitted via the HSE interface module DPC-49-HSEFD/24VDC to the higher level asset management system (only in conjunction with the diagnostics module DPC-49-ADU).

The module rack consist of a backplane and the actual rack system for the power supply modules and the diagnostics module.

The single components of the system are electrically linked via the connection terminals of the backplane. From electrical perspective, the backplane is to be considered passive.

The power can be supplied via two 2-pole screw connectors. The connection to the host system is provided via two system cables. Premoulded system cables are optionally available at TURCK.

For the connection of the H1 segments to the fieldbus side, each segment is individually connected with a removable 3-pole screw terminal.

The shielding is achieved via insulated shield bus or via the 3-pole screw terminal, which is internally connected with the M5 threaded bolt for equipotential bonding. A further M5 threaded bolt for equipotential bonding is simply connected to the housing.

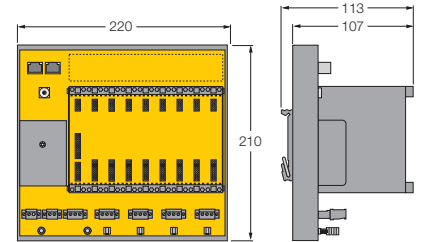
For simple diagnostics processing, a connection is provided to the relay alarm contact of the diagnostics module.

- **Module rack for up to 8 power supply modules and 1 diagnostics module for the mounting of up to 4 H1 segments.**
- **Redundant power supply**
- **Redundant HOST connection**
- **Removable terminal blocks with screw connections**
- **RJ45 connector for HSE fieldbus diagnostics**

**FOUNDATION™ fieldbus
Backplane for the DPC system
DPC-49-4RMB/SY**

Type	DPC-49-4RMB/SY
Ident-No.	6882025
Operational voltage range:	18 ... 32 VDC
Overvoltage protection	> 250 VDC
Electrical connection	removable terminal block, reverse polarity protected, screw connection RJ45 socket
Degree of protection	IP20
Ambient temperature	-20 ... + 60 °C
Housing material	aluminium
Housing color	black/yellow
Dimensions	220 x 210 x 113 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions

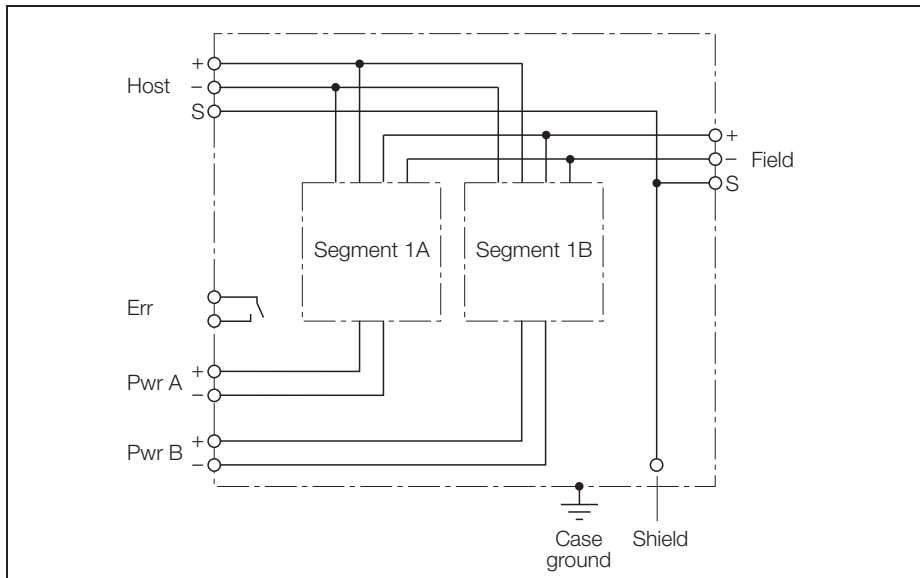


2

Accessories

Type code	Ident-No.	Short text	Dimension drawing
BM-DPC	6882015	blind module for unused slots	

**FOUNDATION™ fieldbus
Backplane for the DPC system
DPC-49-1RMB**



The DPC system (Diagnostic Power Conditioner) is a power supply system for the installation of FOUNDATION™ fieldbus H1 segments.

The module rack consist of a backplane and the actual rack system for the power supply modules.

The single components of the system are electrically linked via the connection terminals of the backplane.

Redundant power supply via two 2-pole screw connectors. The connection to the host system is established via a removable 3-pole screw terminal.

The H1 segment is connected separately on the fieldbus side via a removable 3-pole screw terminal.

The shielding is achieved via insulated shield bus or via the 3-pole screw terminal, which is internally connected with the M5 threaded bolt for equipotential bonding. A further M5 threaded bolt for equipotential bonding is simply connected to the housing.

A connection to the relay alarm contact is provided for redundancy monitoring of the external power supply and the H1 power supply modules.

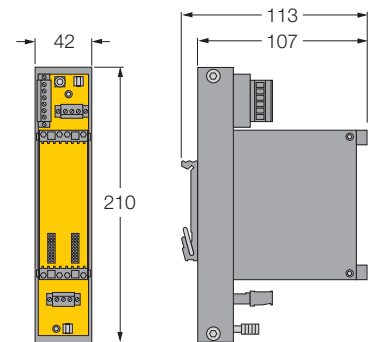


- **Module rack for two power supply modules to built a H1 segment**
- **Redundant power supply**
- **Removable terminal blocks with screw connections**

**FOUNDATION™ fieldbus
Backplane for the DPC system
DPC-49-1RMB**

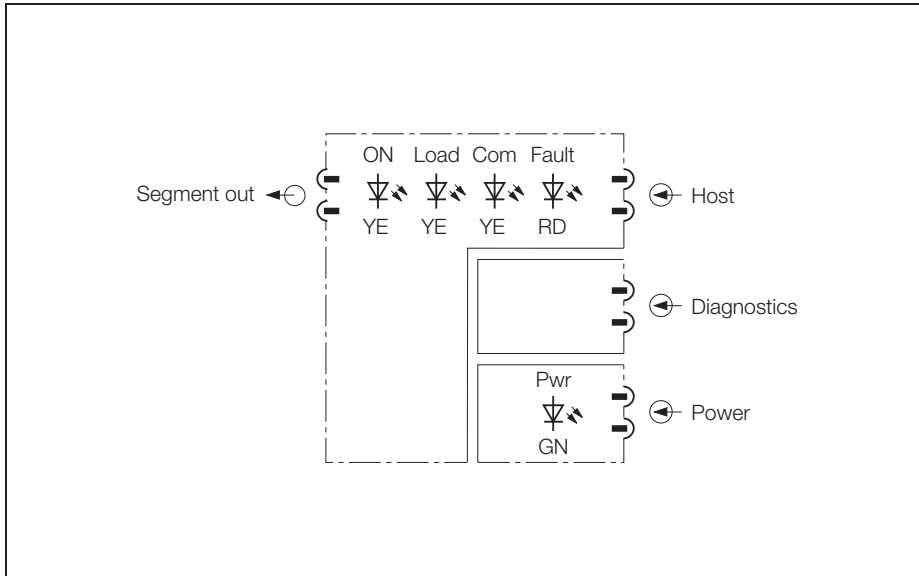
Type	DPC-49-1RMB
Ident-No.	6882026
Operational voltage range:	18 ... 32 VDC
Overvoltage protection	> 250 VDC
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Degree of protection	IP20
Ambient temperature	-20 ...+ 60 °C
Housing material	aluminium
Housing color	black/yellow
Dimensions	220 x 210 x 113 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions



2

**FOUNDATION™ fieldbus
Power supply module
DPC-49-IPS1**



The DPC system (Diagnostic Power Conditioner) is a power supply system for the installation of FOUNDATION™ fieldbus H1 segments. It provides extensive diagnostic options for monitoring FOUNDATION™ fieldbus segments and thus supports plant-wide asset management.

A DPC system consists of one or more module racks, each with up to eight DPC-49-IPS1 power supply modules and one DPC-49-ADU resp. DPC-49-DU diagnostics modules . Up to four H1 segments for each module rack can be operated and monitored redundantly in the FOUNDATION™ fieldbus network. The diagnostic data of the H1 segment can be transmitted via the HSE interface module DPC-49-HSEFD/24VDC to the higher level asset management system (only in conjunction with the diagnostics module DPC-49-ADU).

The power supply module provides up to 30 VDC and 800 mA for the installation of a H1 segment. The network topology can be extended to 1900 m, due to the high output

performance. If two power supply modules are connected, the segment can be operated redundantly. Thereby the modules can be plugged and unplugged during operation (Hot swap-able in run).

Due to complete galvanic isolation, H1 to H1, H1 to internal supply, H1 to the diagnostic module , H1 to HSE diagnostic bus, formation of parasitic voltages is avoided and error-free communication is guaranteed.

Local commissioning and diagnostics are supported by the following LED indications:

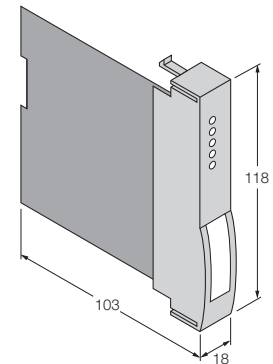
- Pwr: green: Operational readiness
- ON/OFF: yellow: Output ON:
- Load: yellow: Consumer (field device) detected at segment:
- Com: yellow: Communication display
- Fault: red: Short-circuit message

- **Supply of one FOUNDATION™ fieldbus H1 segment**
- **Output current: 800 mA**
- **Output voltage: 28...30 VDC**
- **Local diagnostics via LEDs**
- **Complete galvanic isolation**

FOUNDATION™ fieldbus
Power supply module
DPC-49-IPS1

Type	DPC-49-IPS1
Ident-No.	6882023
Supply voltage	via the backplane
Current consumption	0.8 ... 1.7 A
Test voltage	complete galvanic isolation, test voltage 500 VAC
Output circuits	Field
Output current	≤ 800 mA
Output voltage	> 28 VDC
Short-circuit protection	≤ 850 mA
Efficiency	80 %
Output circuits	HOST
Output current	< 30 mA
Output voltage	27 VDC
Indication	
Operational readiness	1 x green
Output active	1 x yellow
Output current	1 x yellow
Short-circuit message	1 x red
Bus communication	1 x yellow
Degree of protection	IP20
Ambient temperature	-20 ...+ 60 °C
Relative humidity	≤ 95% at 55 °C acc. to EN 60069-2
Housing material	plastic
	flammability class V-0 to UL 96
Housing color	yellow
Dimensions	18 x 118 x 103 mm

Dimensions



FOUNDATION™ fieldbus Diagnostic module DPC-49-DU

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Automation



The DPC system (Diagnostic Power Conditioner) is a power supply system for the installation of FOUNDATION™ fieldbus H1 segments. It provides extensive diagnostic options for monitoring FOUNDATION™ fieldbus segments and thus supports plant-wide asset management.

A DPC system consists of one or more module racks, each with up to eight DPC-49-IPS1 power supply modules and one DPC-49-ADU or DPC-49-DU diagnostic modules. Up to four H1 segments per module rack can be operated and monitored redundantly in the FOUNDATION™ fieldbus network. The diagnostic data of the H1 segment can be transmitted via the HSE

interface module DPC-49-HSEFD/24VDC to the higher level Asset Management system (only in conjunction with the diagnostics module DPC-49-ADU).

The DPC-49-DU monitors the external power supply at the module rack, the FOUNDATION™ fieldbus-H1 power modules and their redundant operation mode. The diagnostic function can be switched off separately for each segment.

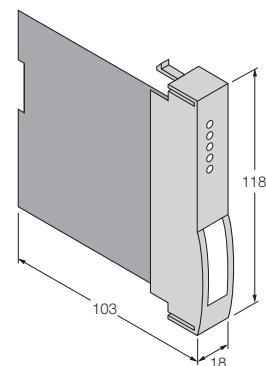
The device features three LEDs indicating the operating status. Alarm messages are indicated by a red LED. Alarm signals are also output via a relay contact.

- **Redundancy monitoring of 4 H1 segments.**
- **Local diagnostics via LEDs**
- **Alarm signal via relay contact**
- **Complete galvanic isolation**

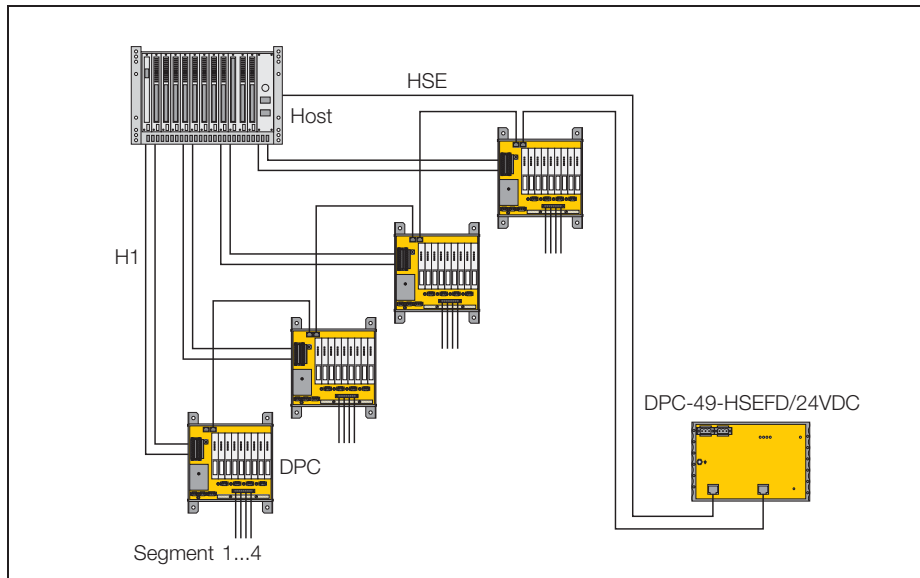
FOUNDATION™ fieldbus
Diagnostic module
DPC-49-DU

Type	DPC-49-DU
Ident-No.	6882021
Supply voltage	via the backplane
Current consumption	< 100 mA
Test voltage	complete galvanic isolation, test voltage 500 VAC
Diagnostics	1 x relay
Switching current	≤ 1000 mA
Switching voltage	≤ 30 VDC galvanically isolated from other electronic devices
Operational readiness	2 x green
Alarm	1 x red
Degree of protection	IP20
Ambient temperature	-20 ...+ 60 °C
Housing material	plastic flammability class V-0 to UL 96
Housing color	yellow
Dimensions	18 x 118 x 103 mm

Dimensions



**FOUNDATION™ fieldbus
Diagnostic module
DPC-49-ADU**



The DPC system (Diagnostic Power Conditioner) is a power supply system for the installation of FOUNDATION™ fieldbus H1 segments. It provides extensive diagnostic options for monitoring FOUNDATION™ fieldbus segments and thus supports plant-wide asset management.

A DPC system consists of one or more module racks, each with up to eight DPC-49-IPS1 power supply modules and one DPC-49-ADU resp. DPC-49-DU diagnostics modules. Up to four H1 segments for each module rack can be operated and monitored redundantly in the FOUNDATION™ fieldbus network. The diagnostic data of the H1 segment can be transmitted via the HSE interface module DPC-49-HSEFD/24VDC to the higher level asset management system (only in conjunction with the diagnostics module DPC-49-ADU).

The diagnostics module DPC-49-ADU is used as a diagnostic interface between H1 segments and the HSE interface module. The diagnostics module monitors the electrical and the communication parameters of the H1 segments. Operation without diagnostics module is possible.

The diagnostic information is collected in the device and transmitted via the HSE interface module to the higher fieldbus level (e.g. the host) as diagnostic and alarm data. Thereby the modules can be plugged and unplugged during operation (Hot swap-able in run).

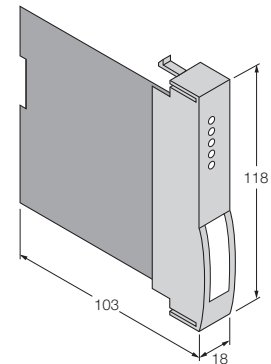
The device features LEDs indicating the operating status of the H1 segments. A pre-alarm is indicated by a yellow LED, the main alarm by a red LED. Additionally, alarm signals can be analysed via a relay contact.

- Long-term diagnostics for 4 H1 segments
- Local diagnostics via LEDs
- Alarm signal via relay contact
- Complete galvanic isolation

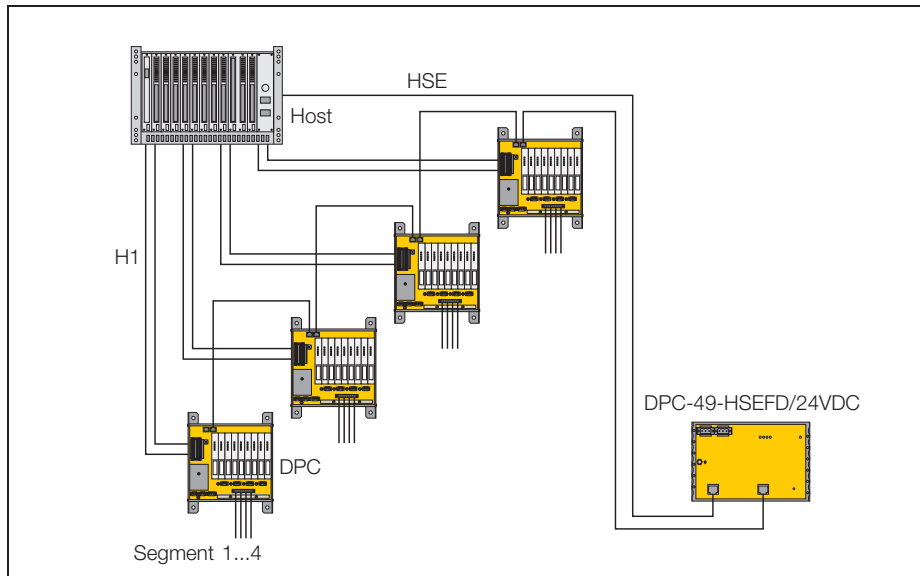
FOUNDATION™ fieldbus
Diagnostic module
DPC-49-ADU

Type	DPC-49-ADU
Ident-No.	6882012
Supply voltage	via the backplane
Current consumption	< 100 mA
Test voltage	complete galvanic isolation, test voltage 500 VAC
Diagnostics	1 x relay
Switching current	≤ 1000 mA
Switching voltage	≤ 30 VDC galvanically isolated against other electronic parts .
Operational readiness	1 x green / red
Alarm	4 x yellow / red
Degree of protection	IP20
Ambient temperature	-20 ...+ 60 °C
Housing material	plastic flammability class V-0 to UL 96
Housing color	yellow
Dimensions	18 x 118 x 103 mm

Dimensions



FOUNDATION™ fieldbus
HSE field device
DPC-49-HSEFD/24VDC



The DPC system (Diagnostic Power Conditioner) is a power supply system for the installation of FOUNDATION™ fieldbus H1 segments. It provides extensive diagnostic options for monitoring FOUNDATION™ fieldbus segments and thus supports plant-wide asset management.

A DPC system consists of one or more module racks, each with up to eight DPC-49-IPS1 power supply modules and one DPC-49-ADU resp. DPC-49-DU diagnostics modules. Up to four H1 segments for each module rack can be operated and monitored redundantly in the FOUNDATION™ fieldbus network. The diagnostic data of the H1 segment can be transmitted via the HSE interface module DPC-49-HSEFD/24VDC to the higher level asset management system (only in conjunction with the diagnostics module DPC-49-ADU).

The diagnostic data of up to 16 H1 segments are transmitted by the HSE interface module DPC-49-HSEFD/24VDC via the FOUNDATION™ fieldbus-HSE to the higher level asset management system. Only diag-

nostics data of the DPC-49-ADU are transmitted via the HSE interface module but not the process data of the H1 segments. Each diagnostics module monitors up to four H1 segments.

As a FOUNDATION™ fieldbus device the HSE interface module features a resource and transducer block as well as several standard function blocks. On the basis of these standard function blocks, suitable applications can be programmed in the control system for the analysis of diagnostic data.

Features

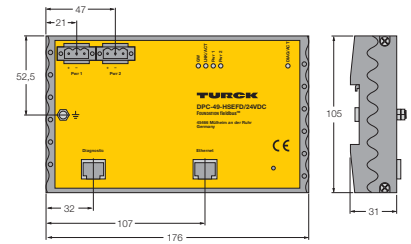
- HSE interface device for transmission of diagnostic data
- FOUNDATION™ fieldbus function blocks for remote diagnostics
- Local diagnostics via LEDs
- Long-term diagnostics for 4 H1 segments
- complete galvanic isolation

- **HSE interface device for transmission of diagnostics data**
- **FOUNDATION™ fieldbus function blocks for remote diagnostics**
- **Local diagnostics via LEDs**
- **Long-term diagnostics for 16 H1 segments**
- **Complete galvanic isolation**

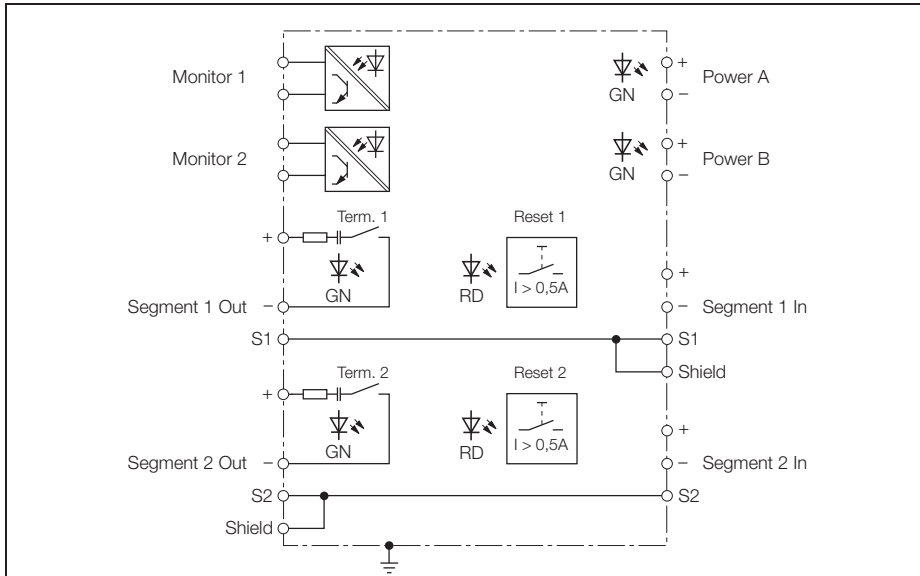
FOUNDATION™ fieldbus
HSE field device
DPC-49-HSEFD/24VDC

Type	DPC-49-HSEFD/24VDC
Ident-No.	6882014
Supply voltage	via the backplane
Current consumption	< 100 mA
Test voltage	complete galvanic isolation, test voltage 500 VAC
Indication	
Operational readiness	2 x green
State/ Fault	1 x yellow / red
Bus communication	1 x green / yellow
Int. communication (CAN)	1 x yellow / red
Electrical connection	removable terminal block, reverse polarity protected, screw connection RJ45 connector
Degree of protection	IP20
Ambient temperature	-20 ...+ 60 °C
Housing material	aluminium
Housing color	black/yellow
Dimensions	176 x 105 x 31 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions



**FOUNDATION™ fieldbus
Power conditioner, dual channel
RPC49-205**



The RPC49-205 provides two segments for the installation of a FOUNDATION™ fieldbus network. In combination with the PSU-3214, each segment provides up to 500 mA with an output voltage of at least 27.5 V. The output voltage depends on the output current.

The conditioner can be supplied redundantly by two supply devices, whereby "POWER A" is the primary input. As long as no redundant voltage supply is available, the voltage supply should be connected to "POWER B". Should the voltage at "POWER A" drop below 20 V, input "POWER B" is energized.

The two green LEDs indicate power ON. The green active LEDs also indicate power ON. The two short-circuit protected outputs of the power conditioner switch off the output in case of overload ($I > 500 \text{ mA}$). The switch-off state is indicated by a red LED for each segment. The overload protection for the correspondent segment can be reset with two reset buttons.

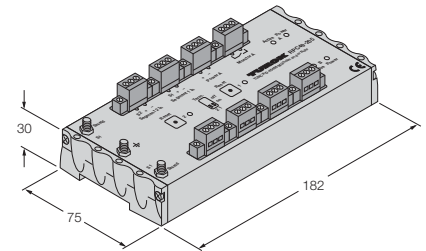
Hardware diagnostics is provided via the monitor terminals. The power conditioner is equipped with an optional terminating resistor for the bus.

- **Supply of 2 H1-segments, connection via removable screw terminals**
- **Aluminium rail housing**
- **Degree of protection IP20**
- **Connection of the housing potential via an M5 x 1 bolt**
- **Monitor function**
- **LEDs for indication of the operating status**
- **2 x 500 mA output current**
- **Redundant power supply**
- **Short-circuit protected outputs**

FOUNDATION™ fieldbus
Power conditioner, dual channel
RPC49-205

Type	RPC49-205
Ident-No.	6603801
Operational voltage range:	21 ... 32 VDC
Overvoltage protection	> 36 VDC
Current consumption	535 mA (1 x 500 mA I _{out}) 1043 mA (2 x 500 mA I _{out})
Voltage drop	≤ 4.4 V
Output circuits	
Output current	≤ 500 mA
Output voltage	$U_{out} = Pwr - [2 V + (I_{out} \times 4.4 \text{ Ohm})]$
Short-circuit protection	≤ 500 mA
Diagnostics	2 x solid state relay
Switching current	≤ 700 mA
Switching voltage	≤ 400 VDC galvanically isolated against other electronic parts .
Indication	
Operational readiness	2 x green
Output active	2 x green
Short-circuit message	2 x red
Electrical connection	8 x 3-pole removable terminal blocks, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-20 ...+ 70 °C
Relative humidity	≤ 95 %, non condensing
Housing material	aluminium
Housing color	black/yellow
Dimensions	182 x 75 x 30 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions

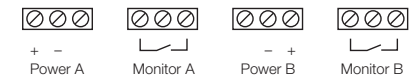


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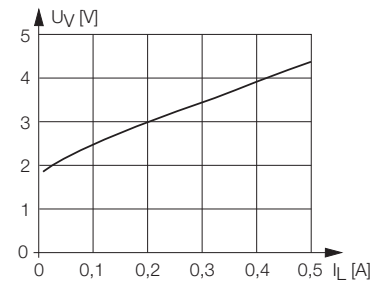
Segment (in/out):



power/monitor



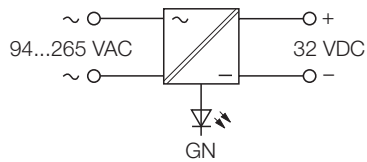
Voltage dip/ load current



Power supply single-channel PSU-3214

TURCK

Industrial
Automation



The power supply unit PSU-3214 supplies a power conditioner.

The device provides safety extra-low voltage (SELV) according to IEC/EN 60950. It features protection class II and corresponds to EMC class B.

The output voltage is 32 VDC with a maximum output current of 1.4 A. The overload protection is activated if the current exceeds 1.6 A.

Depending on the output current, the fieldbus segment is supplied with an output voltage of approx. 29 V which is provided in combination with the TURCK power conditioner RPC49-205.

Cable lengths of up to 1900 m in the Ex area can be achieved with the TURCK multibarrier MBD49-T415/Ex in combination with the power conditioner.

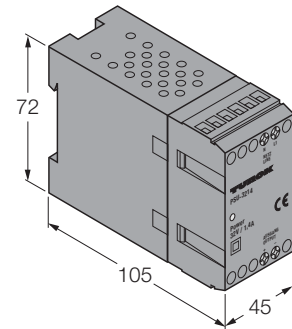
The green LED indicates operational readiness.

- **Output voltage 32 VDC**
- **Output current 1.4 A**
- **Safety extra low voltage SELV according to IEC/EN 60950**
- **Universal operating voltage (94...264 VAC)**

**Power supply
single-channel
PSU-3214**

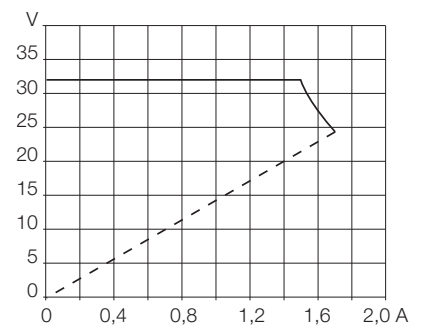
Type	PSU-3214
Ident-No.	7545024
Operational voltage range:	94 ... 265 VAC
Frequency	47 ... 63 Hz
Current consumption	0.6 A at 230 V AC / 1.1 A at 120 V AC
Starting current inrush	$i^2t < 2.8 \text{ A}^2\text{s}$
Test voltage	Input circuit to output circuit and supply voltage for 250 V _{eff} ; test voltage 3 kV _{eff}
Output circuits	
Output current	≤ 1400 mA
Output voltage	32 VDC (± 3 %)
Residual ripple	≤ 50 mV _{ss}
Short-circuit protection	≤ 1600 mA
Efficiency	89 %
Derating	2.5 %/K (starting form +60°C)
Indication	
Operational readiness	1 x green
Electrical connection	flat terminals with self-lifting pressure plates
Terminal cross-section	1 x 2.5 mm ² / 2 x 2.5 mm ²
Degree of protection	IP20
Ambient temperature	-10 ...+ 70 °C
Housing material	plastic
Housing color	blue
Dimensions	45 x 72 x 105 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions

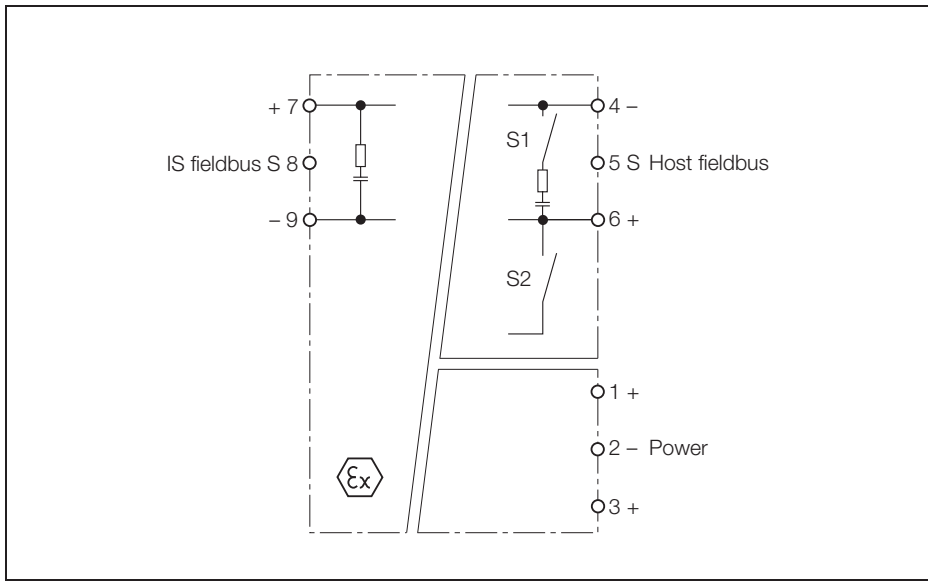


2

Output curve



**FOUNDATION™ fieldbus
FISCO Power Supply
RPC49-10120EX**



The intrinsically safe power supply RPC49-10120EX transmits the fieldbus signal from a host to an intrinsically safe fieldbus device in the Ex area, zone 2.

The RPC49-10120EX enables integrated transmission between the host and fieldbus connections and thus allows parallel connection of several devices in the fieldbus and accordingly a higher number of field devices in the segment.

Designed to operate in harsh environments and suitable for installation in zone 2, the TURCK power supply RPC49-10120EX expands the boundaries for fieldbus topologies.

The RPC49-10120EX provides up to 120 mA, powering field devices in Gas Group IIC. The device is mounted on DIN rail. It is

designed to exploit the very latest developments of the FISCO specification (Fieldbus Intrinsically Safe Concept) concerning the application in explosion hazardous areas. To reap the full potential of digital fieldbus communication without system inherent constraints is thus possible.

The excellent performance and flexibility of the RPC49-10120EX makes it easy to plan, install and mount fieldbus networks in compliance with the 31.25 kbits/s physical layer specification. Moreover, compatibility with the TURCK wiring components and accessories ensures high reliability, low installation costs and high operational safety.

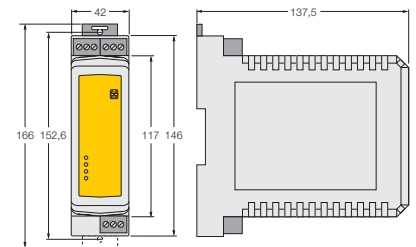
Power supply to the host is procured via a switch making additional power sources redundant.

- **FISCO compliant according to IEC TS 60079-27**
- **Protection type: [Ex ib] IIC**
- **Mounting possible in zone 2**
- **FISCO power supply for FOUNDATION™ fieldbus**
- **Output current: 120 mA**
- **Fieldbus - Repeater**
- **Temperature range: -40 ...+70°C**

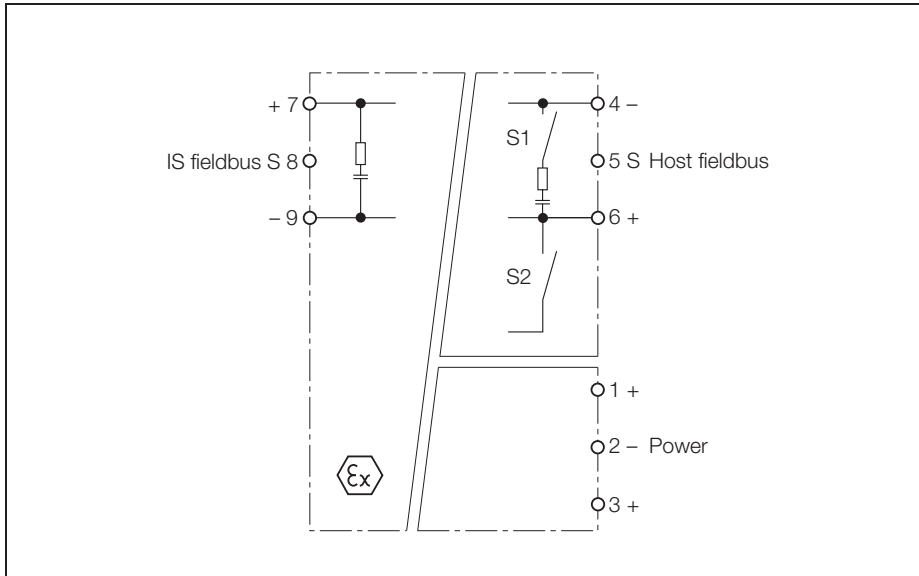
**FOUNDATION™ fieldbus
FISCO Power Supply
RPC49-10120EX**

Type	RPC49-10120EX
Ident-No.	6604157
Operational voltage range:	19.2 ... 30 VDC
Current consumption	235 mA (typ.) 330 mA (max.) at 20 V 190 mA (typ.) 265 mA (max.) at 24 V 155 mA (typ.) 215 mA (max.) at 30 V
Test voltage	Input circuit to output circuit and supply voltage for 250 V _{eff}
Output circuits	
Output current	≤ 120 mA
Output voltage	12.4 VDC
Short-circuit protection	≤ 140 mA
Indication	
Operational readiness	1 x green
Short-circuit message	1 x red
Bus communication	2 x yellow
Ex approval acc. to conformity certificate	BASEEFA 05 ATEX 0127
FISCO parameter according to IEC TS 60079-27	
Max. output voltage U _o	≤ 14 V
Max. output current I _o	≤ 180 mA
Max. output power P _o	≤ 2520 mW
External inductance/capacitance L _o /C _o	300 μH / 0.2 μF
Device designation	Ⓢ II (2) GD [EEx ib] IIC Ⓢ II 3 G EEx nA II T4 X FISCO Power Supply
Electrical connection	3 x 3-pole removable terminal blocks, reverse polarity protected, screw connection or tension spring
Terminal cross-section	2.5 mm ²
Degree of protection	IP20
Ambient temperature	-40 ... + 70 °C
Housing material	plastic
Housing color	black/yellow
Dimensions	42 x 166 x 137.5 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions



**FOUNDATION™ fieldbus
FISCO Power Supply
RPC49-10265EX**



The RPC49-10265EX transmits the fieldbus signal from a host to an intrinsically safe fieldbus device in the Ex area, zone 2.

The RPC49-10265EX enables integrated transmission between the host and fieldbus connections and thus allows parallel connection of several devices in the fieldbus and accordingly a higher number of field devices in the segment.

Designed to operate in harsh environments and suitable for installation in zone 2, the TURCK power supply RPC49-10265EX expands the boundaries for fieldbus topologies.

The RPC49-10265EX provides up to 265 mA, powering field devices in the Ex area of the Gas Group IIB. The device is mounted on DIN rail. It is designed to exploit the very

latest developments of the FISCO specification (Fieldbus Intrinsically Safe Concept) concerning the application in explosion hazardous areas. To reap the full potential of digital fieldbus communication without system inherent constraints is thus possible.

The excellent performance and flexibility of the RPC49-10265EX makes it easy to plan, install and mount fieldbus networks in compliance with the 31.25 kbits/s physical layer specification. Moreover, compatibility with the TURCK wiring components and accessories ensures high reliability, low installation costs and high operational safety.

Power supply to the host is procured via a switch making additional power sources redundant.

- **FISCO compliant according to IEC TS 60079-27**
- **Protection type: [Ex ib] IIB**
- **Mounting possible in zone 2**
- **FISCO power supply for FOUNDATION™ fieldbus**
- **Output current: 265 mA**
- **Fieldbus - Repeater**
- **Temperature range: -40 ...+70°C**

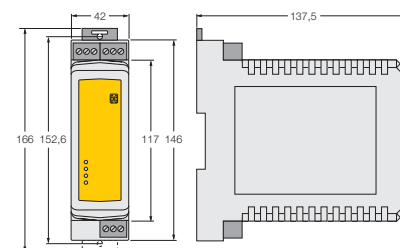
FOUNDATION™ fieldbus FISCO Power Supply RPC49-10265EX

TURCK

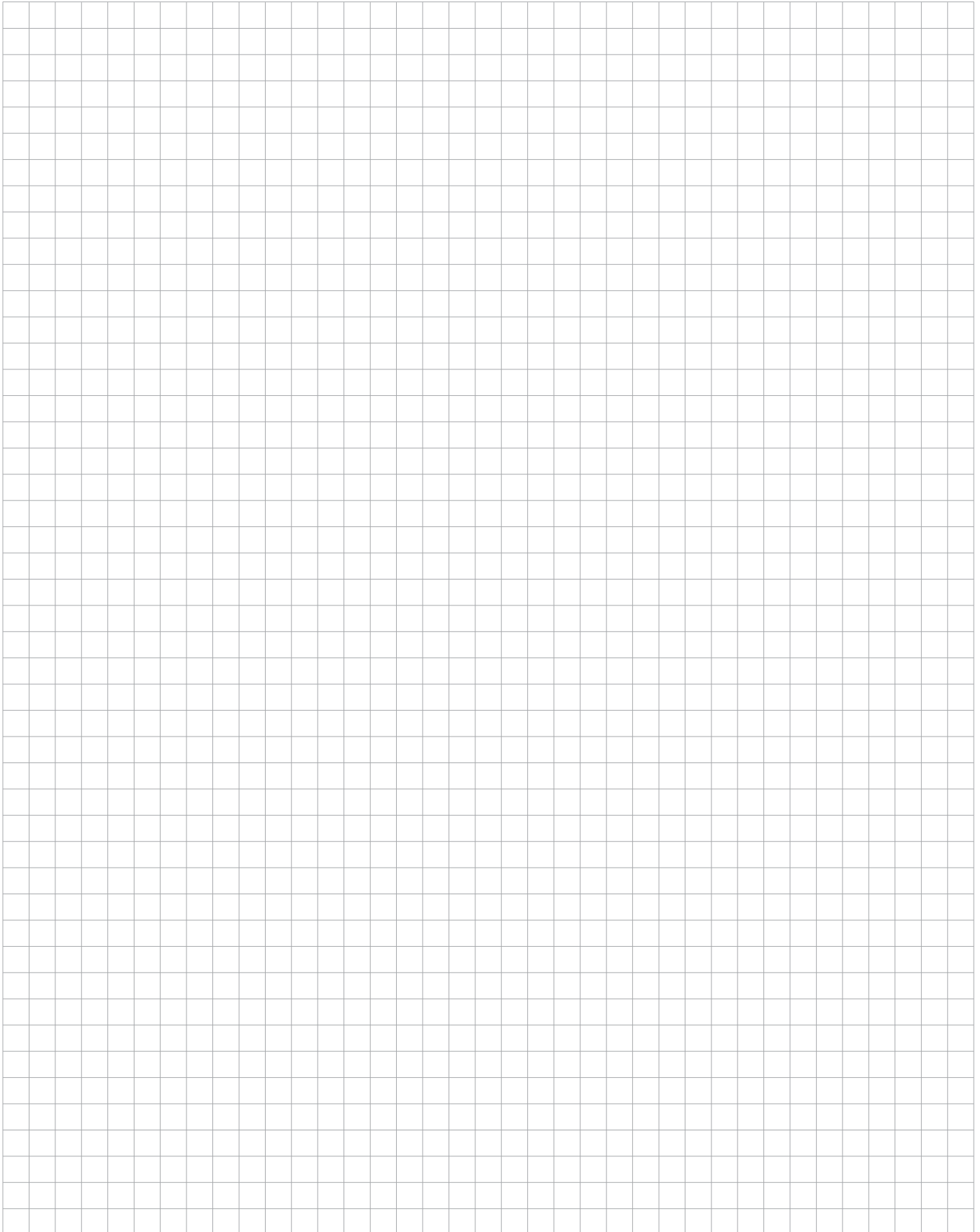
Industrial
Automation

Type	RPC49-10265EX
Ident-No.	6604158
Operational voltage range:	19.2 ... 30 VDC
Current consumption	380 mA (typ.) 495 mA (max.) at 20 V 315 mA (typ.) 410 mA (max.) at 24 V 255 mA (typ.) 330 mA (max.) at 30 V
Test voltage	Input circuit to output circuit and supply voltage for 250 V _{eff}
Output circuits	
Output current	≤ 265 mA
Output voltage	13.1 VDC
Short-circuit protection	≤ 285 mA
Indication	
Operational readiness	1 x green
Short-circuit message	1 x red
Bus communication	2 x yellow
Ex approval acc. to conformity certificate	BASEEFA 05 ATEX 0127
FISCO parameter according to IEC TS 60079-27	
Max. output voltage U _o	≤ 14.8 V
Max. output current I _o	≤ 359 mA
Max. output power P _o	≤ 5310 mW
External inductance/capacitance L _o /C _o	550 μH / 0.5 μF
Device designation	Ⓢ II (2) GD [EEx ib] IIB Ⓢ II 3 G EEx nA II T4 X FISCO Power Supply
Electrical connection	3 x 3-pole removable terminal blocks, reverse polarity protected, screw connection or tension spring
Terminal cross-section	2.5 mm ²
Degree of protection	IP20
Ambient temperature	-40 ... + 70 °C
Housing material	plastic
Housing color	black/yellow
Dimensions	42 x 166 x 137.5 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions



2



FOUNDATION™ fieldbus Multibarrier MBD49-T415/Ex – Basics and application benefits

The operating principle of the **MBD49-T415/Ex** multibarrier is physically based on IEC 61158-2. The use of multibarriers increases the number of fieldbus stations in the FOUNDATION™ fieldbus 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 hazardous 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 **MBD49-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 MBD49-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, in particular 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 equalization.

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 are conform to the demands of an Ex current supply and also conform to FISCO.

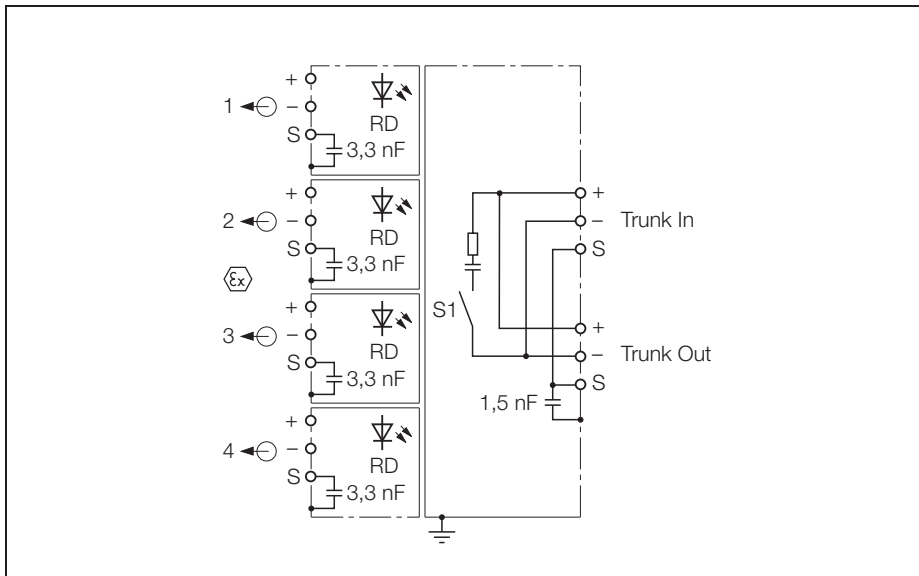
• Switch-in terminating resistors

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 equalization 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.

FOUNDATION™ fieldbus Multibarrier, 4-port MBD49-T415/EX



The 4-port multibarrier MBD49-T415/EX enables the connection of a large number of field devices to one fieldbus in the Ex-area, according to IEC 61158-2.

The number of field devices to be connected 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. The number of slaves can be extended by the EEx e fieldbus supply which can be looped through from multibarrier to multibarrier.

Inputs and outputs of the trunk line feature increased safety protection (EEx e) and the outputs to the field devices are intrinsically safe (EEx i).

The multibarrier is equipped with a selectable bus terminating resistor. This 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.

Because of complete galvanic isolation of the

- trunk line to EEx i outputs and between the
 - EEx i outputs,
- safe operation is guaranteed.

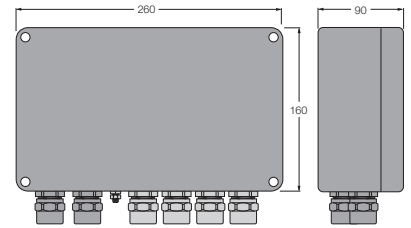


- Entity and FISCO compliant according to IEC TS 60079-27
- Galvanic isolation between the EEx i outputs and the EEx e bus line, as well as between the EEx i outputs
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the 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)

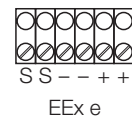
FOUNDATION™ fieldbus
Multibarrier, 4-port
MBD49-T415/EX

Type	MBD49-T415/EX
Ident-No.	6611247
Fieldbus standard	IEC 61158-2
Operational voltage range:	16 ... 32 VDC
Current self-consumption	≤ 40 mA
Test voltage	input circuits (EEx e) to output circuits (EEx i) for 253 V _{eff} ; output circuits (EEx i) to each other for 60 V _{eff}
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
External inductance/capacitance L _i /C _i	negligible
Characteristic	Linear
Device designation	Ⓔ II 2(1 G/D)G EEx m e [ia] IIC T4 FISCO / Entity multibarrier
Electrical connection	cable glands
Segment IN	1 x M20 x 1.5 (Ø 10...14 mm); plastic; black
Segment OUT	1 x M20 x 1.5 (Ø 10...14 mm); plastic; black
Drop line	4 x M20 x 1.5 (Ø 5...9 mm); plastic; blue
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP66
Ambient temperature	-20 ...+ 70 °C
Relative humidity	≤ 95 %, non condensing
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	260 x 160 x 90 mm
Connection mode	Wall mounting

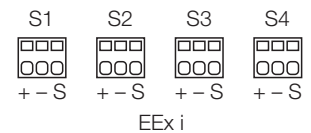
Dimensions



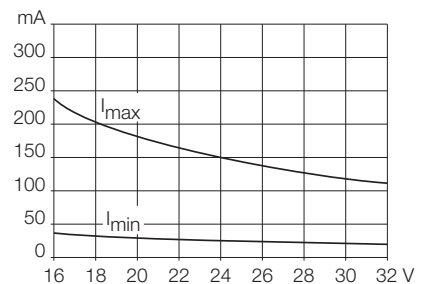
Trunk line



Outputs



Current consumption



FOUNDATION™ fieldbus
Fieldbus display, 3-port
FD-49-T317/EX

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The 3-port digital indicator FD-49-T317/EX displays the process information of the fieldbus nodes of a FOUNDATION™ fieldbus network.

The device (listener) receives and displays the values of the adjusted fieldbus addresses. Parameterization is code word protected and implemented via a keypad on the front side. Adjustments can be done for each port separately. The process value of the actuator/sensor is displayed as a 5-digit number and the process value status is displayed via limit value markers.

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 FD-49-T317/EX performs as a "listener", i.e. initialization by the host is not required (integration via software redundant) and does not appear in the network as a node with an own address.

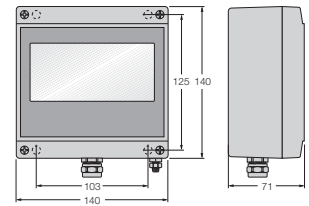
The device is supplied with energy by the fieldbus (≤ 10 mA) and can be applied in Ex areas up to temperatures of the class T6.

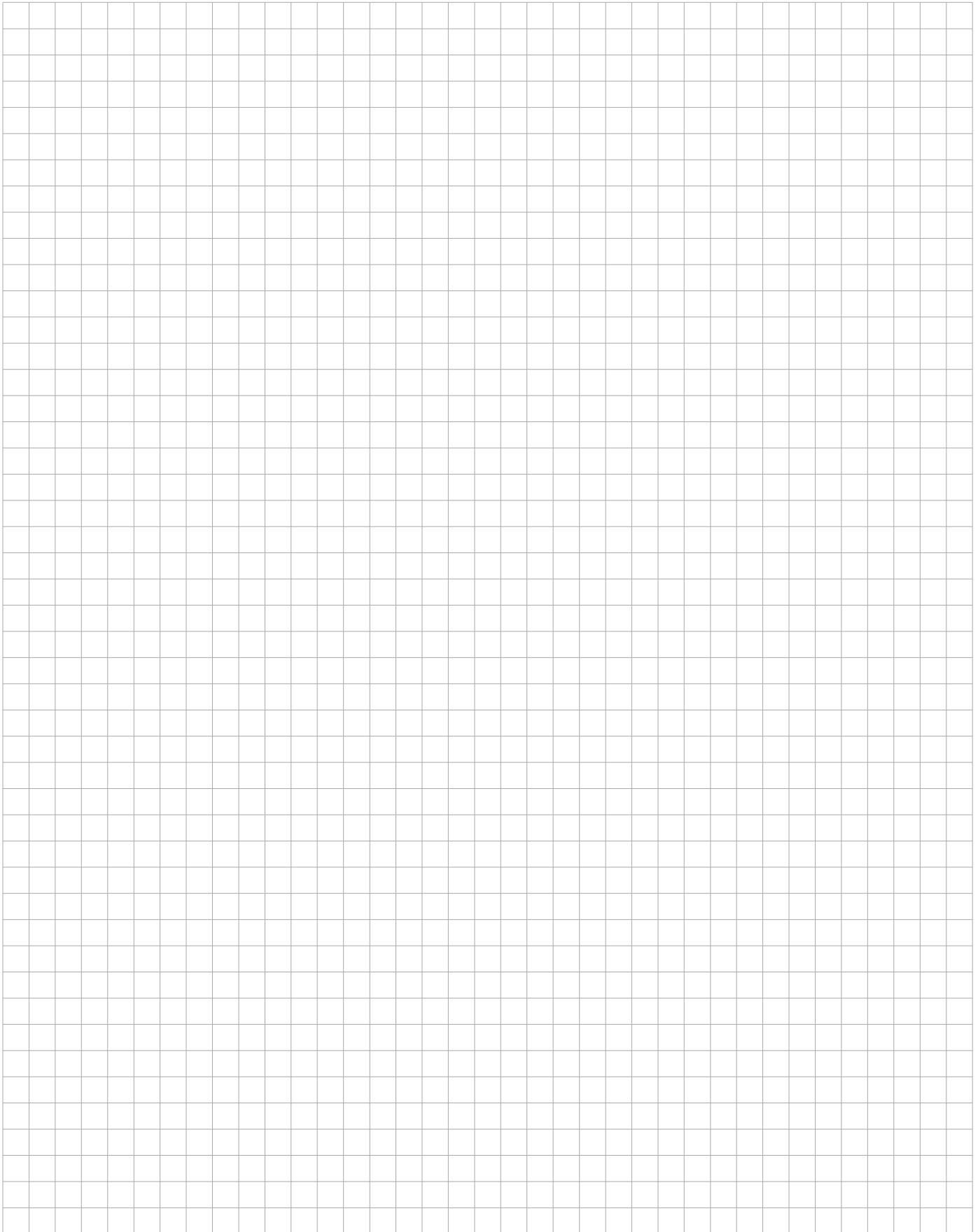
- **Entity and FISCO compliant according to IEC TS 60079-27**
- **Digital fieldbus display for the indication of process values**
- **Powder-coated die-cast aluminium housing**
- **Connection of the housing potential via external earthing**

FOUNDATION™ fieldbus
Fieldbus display, 3-port
FD-49-T317/EX

Type	FD-49-T317/EX
Ident-No.	6901312
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 30 VDC
Current self-consumption	≤ 10 mA
Indication	
Display	LCD, 5-digit, 7-segment
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
External inductance/capacitance L_i/C_i	negligible
Device designation	Ⓢ II 2(1) G EEx ia IIC T6 bzw. T5 Ⓢ II 2 D IP65 T70°C FISCO / Entity field device
Electrical connection	cable glands
Terminal cross-section	2.5 mm ²
Degree of protection	IP66
Ambient temperature	-10 ...+ 60 °C
Housing material	powder-coated die-cast aluminium
Housing color	black
Dimensions	140 x 140 x 71 mm
Connection mode	Wall mounting

Dimensions





FOUNDATION™ fieldbus Junctions by TURCK

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

The junctions differ in the number of ports, 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 T-pieces and junction boxes with or without short-circuit protection (1, 4 and 6 ports)

- 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-port 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 ports)

- 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

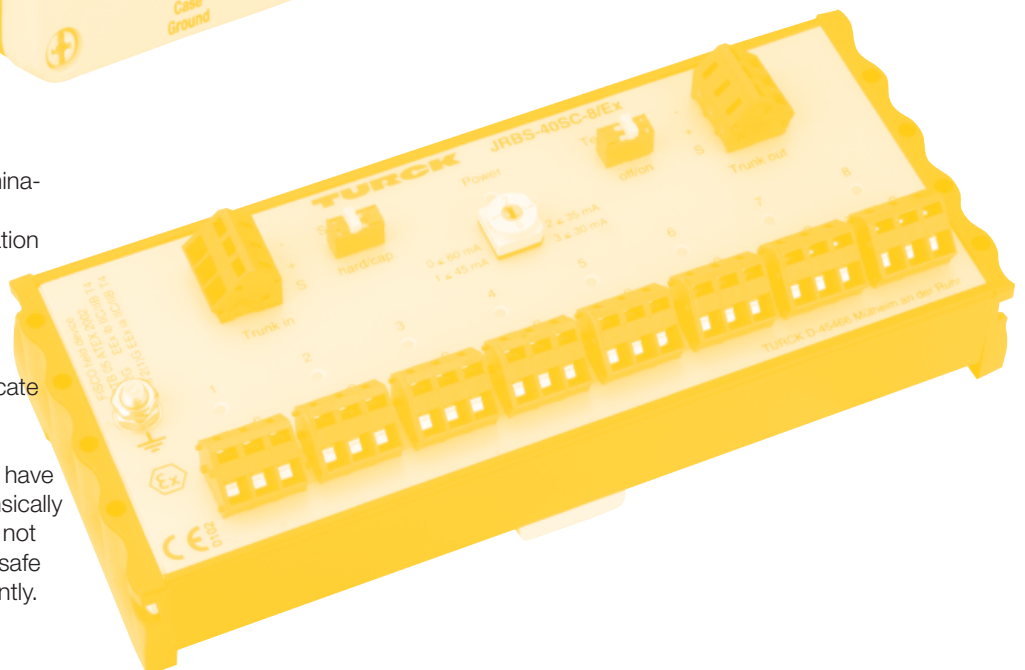


CAUTION Explosion Danger!

The EC type test examination certificate and the manufacturer's declaration of conformity must be observed.

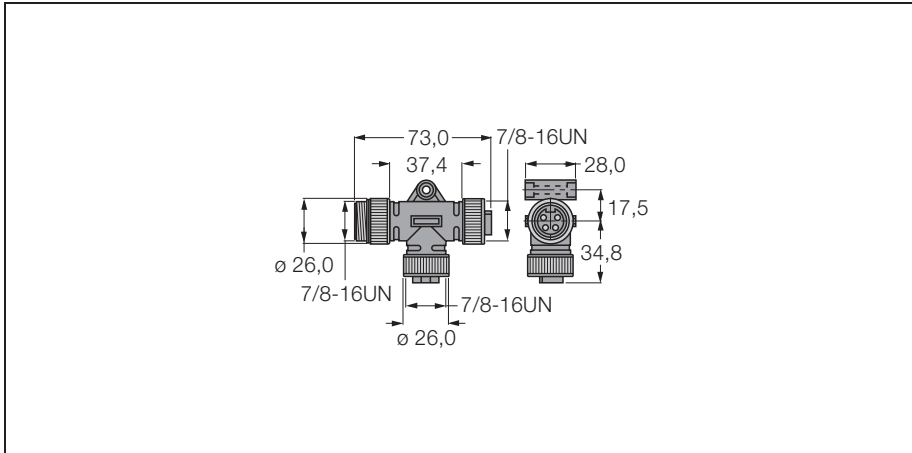
It is essential that the "special conditions" in the EU type test certificate are observed.

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



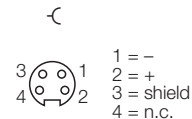
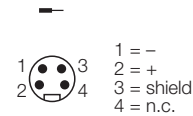
Accessories for fieldbus systems

**T-piece
RSV-2RKV49**



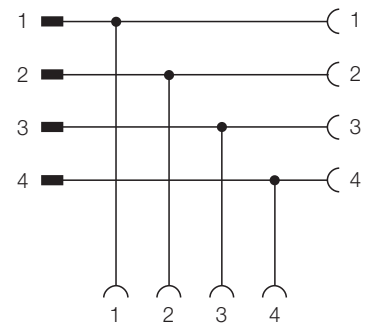
- **Version: 7/8" connector**
- **4-pole, T-piece, stainless steel coupling nut**
- **For use in FOUNDATION Fieldbus™ applications**

FOUNDATION™ fieldbus connection



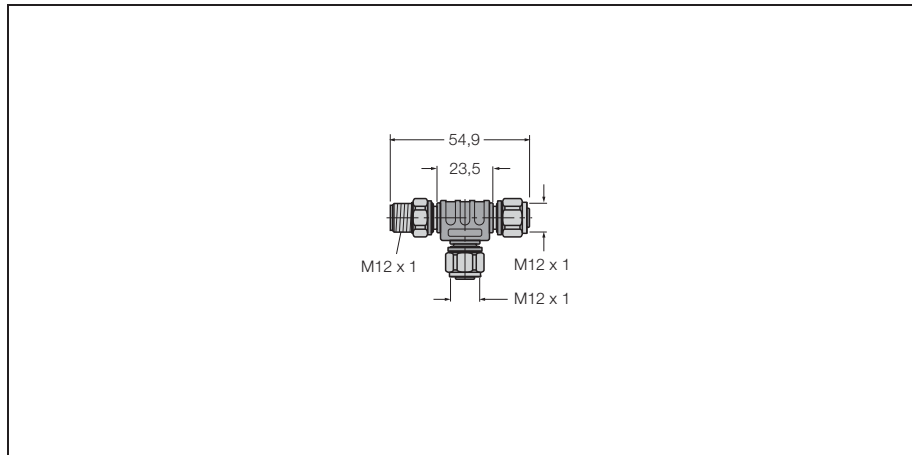
Type	RSV-2RKV49
Ident-No.	6602319
Junction box	T adapter, 7/8"
Polarity	4-pole
Grip	plastic, PUR, yellow
Connector	female connector, 2x, 7/8", straight
Grip	plastic, PUR, yellow
Contact carriers	plastic, PUR, black
Contacts	metal, CuZn, gold-plated
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic
Degree of protection	IP67, only with screws tightened
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3/2
Connector	Connector, 1x, 7/8", straight
Grip	plastic, PUR, yellow
Contact carriers	plastic, PUR, black
Contacts	metal, CuZn, gold-plated
Coupling nut/screw	stainless steel, 1.4404
Degree of protection	IP67, only when plugged in
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3/2
Rated voltage	max. 250 V
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Insulation resistance	≥ 10 ⁹ Ω
Ambient temperature junction	-40 ... + 80 °C

Wiring diagram



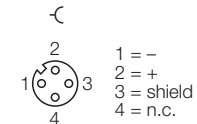
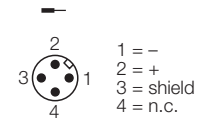
Accessories for fieldbus systems

**T-piece
RSCV-2RKCV49**



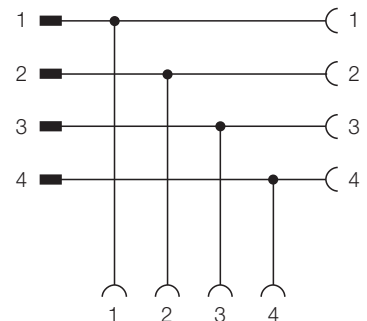
- **Version: M12 connector**
- **4-pole, T-piece, stainless steel coupling nut**
- **For use in FOUNDATION™ fieldbus applications**

FOUNDATION™ fieldbus connection



Type	RSCV-2RKCV49
Ident-No.	6603431
Junction box	T adapter, M12 x 1
Polarity	4-pole
Grip	plastic, PUR, yellow
Connector	female connector, 2x, M12 x 1, straight
Grip	plastic, PUR, yellow
Contact carriers	plastic, PA 6, black
Contacts	metal, CuZn, gold-plated
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic
Degree of protection	IP67, only with screws tightened
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3/2
Connector	Connector, 1x, M12 x 1, straight
Grip	plastic, PUR, yellow
Contact carriers	plastic, PA, black
Contacts	metal, CuZn, gold-plated
Coupling nut/screw	stainless steel, 1.4404
Degree of protection	IP67, only when plugged in
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3/2
Rated voltage	max. 250 V
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Insulation resistance	≥ 10 ⁹ Ω
Ambient temperature junction	-40 ... + 80 °C

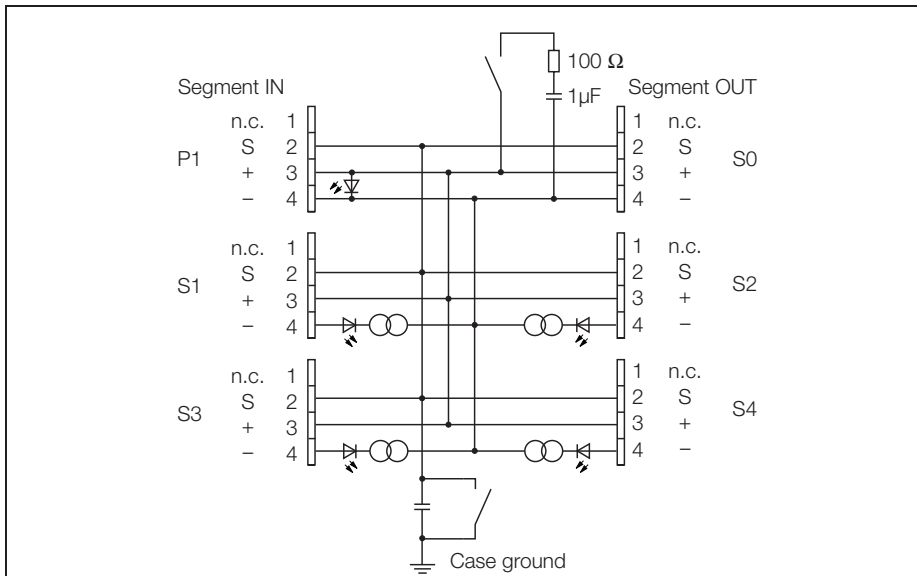
Wiring diagram



FOUNDATION™ fieldbus IP67 junction box, 4-port JBBS-49SC-T415/3G

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The 4-port Ex-junction module JBBS-49SC-T415/3G is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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.

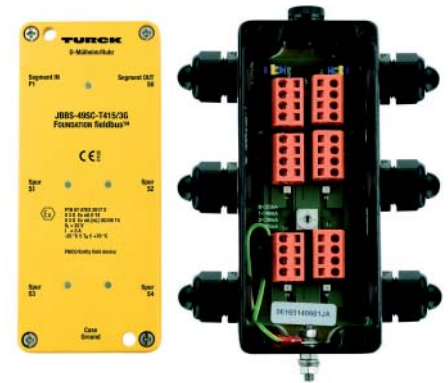
The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on

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 bolt of the housing to the system's potentializer.

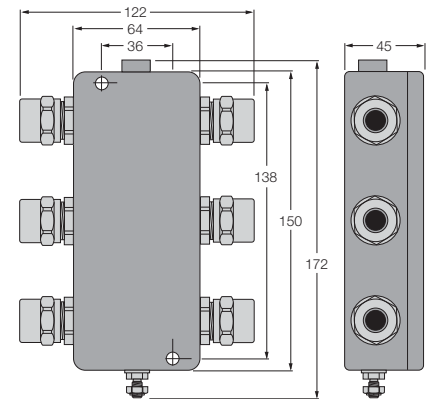


- Entity and FNICO compliant according to IEC TS 60079-27
- Mounting possible in zone 2
- Junction box for wall mounting with PVC cable glands M20 x 1.5
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

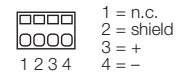
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-T415/3G**

Type	JBBS-49SC-T415/3G
Ident-No.	6611440
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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
Device designation	Ⓜ II 3 G Ex nA II T4 Ⓜ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

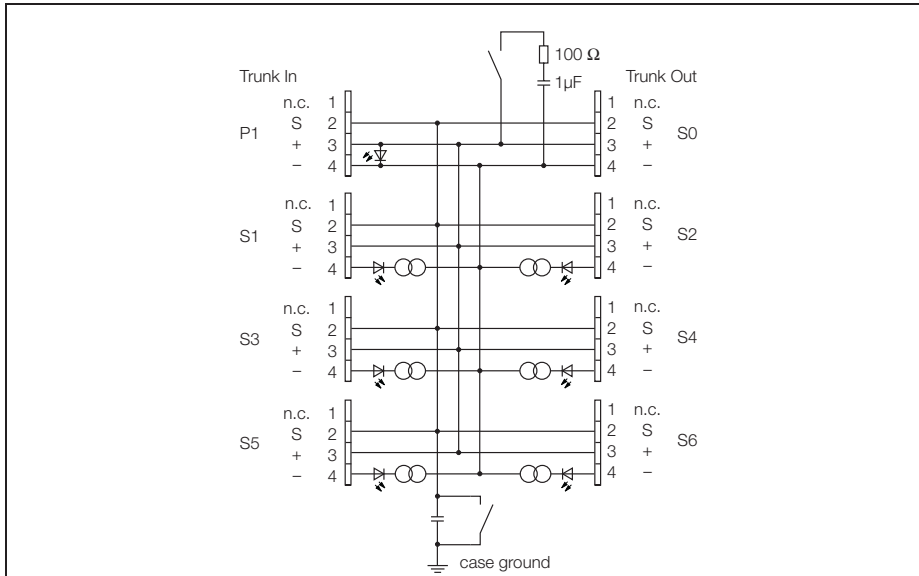
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-T615/3G**



The 6-port Ex-junction module JBBS-49SC-T615/3G is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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.

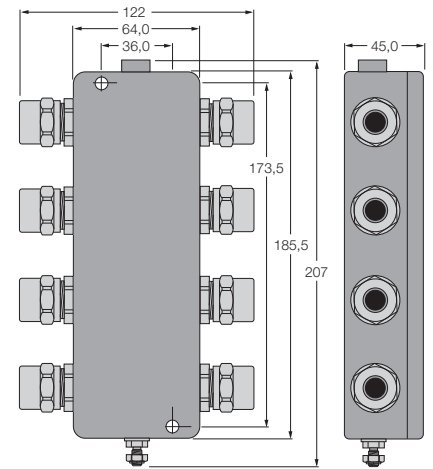
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- Entity and FNICO compliant according 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
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

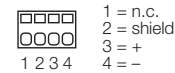
**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-T615/3G**

Type	JBBS-49SC-T615/3G
Ident-No.	6611442
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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
Device designation	ⓧ II 3 G Ex nA II T4 ⓧ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

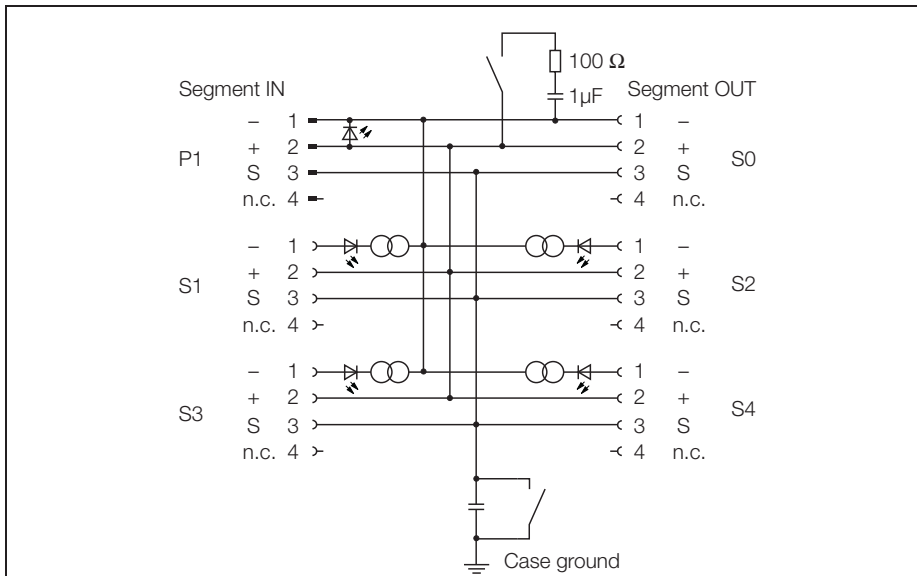
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-E413/3G**



The 4-port Ex-junction module JBBS-49SC-E413/3G is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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.

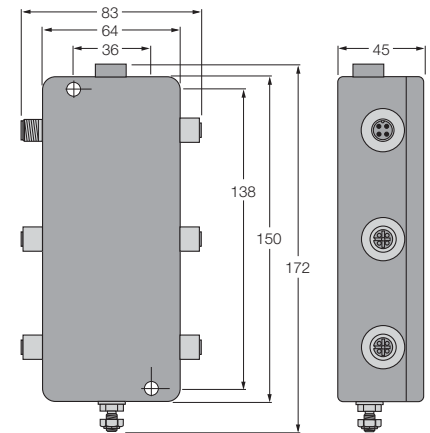
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- **Entity and FNICO compliant according 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**
- **Short-circuit protection per drop line/spur**
- **For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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**

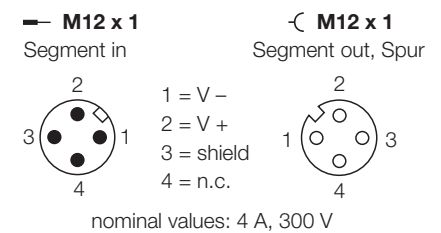
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-E413/3G**

Type	JBBS-49SC-E413/3G
Ident-No.	6611432
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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
Device designation	Ⓔ II 3 G Ex nA II T4 Ⓔ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

Dimensions



Terminal Configuration

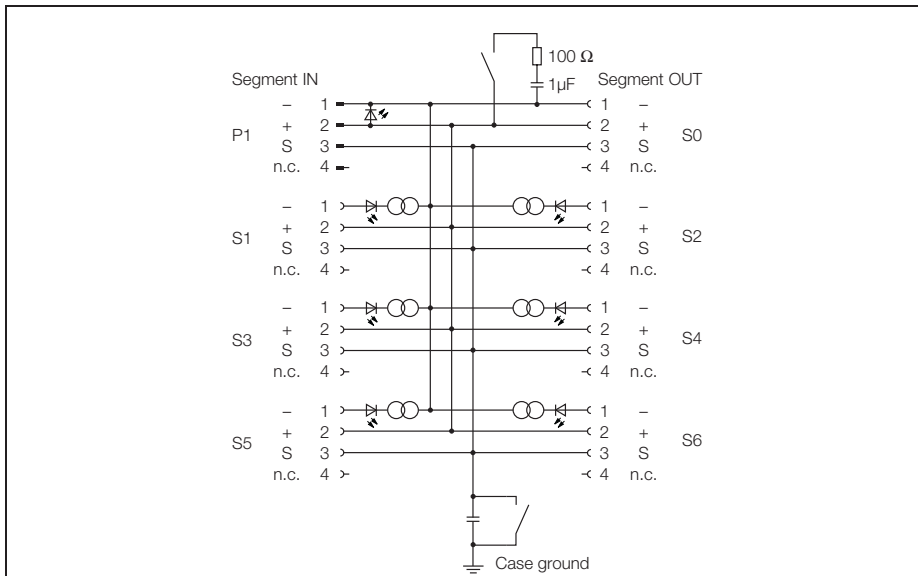


4

FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-E613/3G

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The 6-port Ex-junction module JBBS-49SC-E613/3G is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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 bolt of the housing to the system's potentializer.

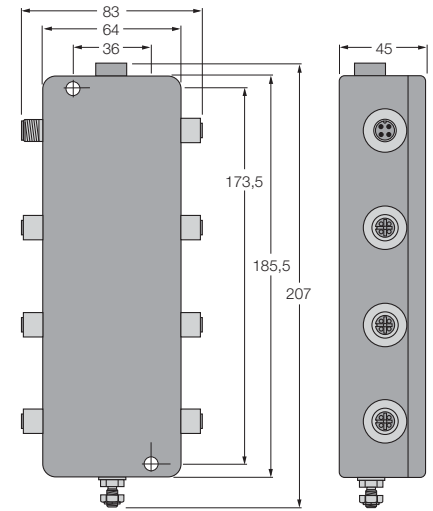


- Entity and FNICO compliant according to IEC TS 60079-27
- Mounting possible in zone 2
- Junction box for wall mounting with stainless steel M12 flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-E613/3G**

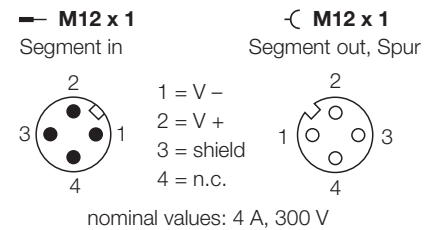
Type	JBBS-49SC-E613/3G
Ident-No.	6611434
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 0.3 V
Short-circuit protection	≤ 30 , 35 , 45 , 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓢ II 3 G Ex nA II T4 Ⓢ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions

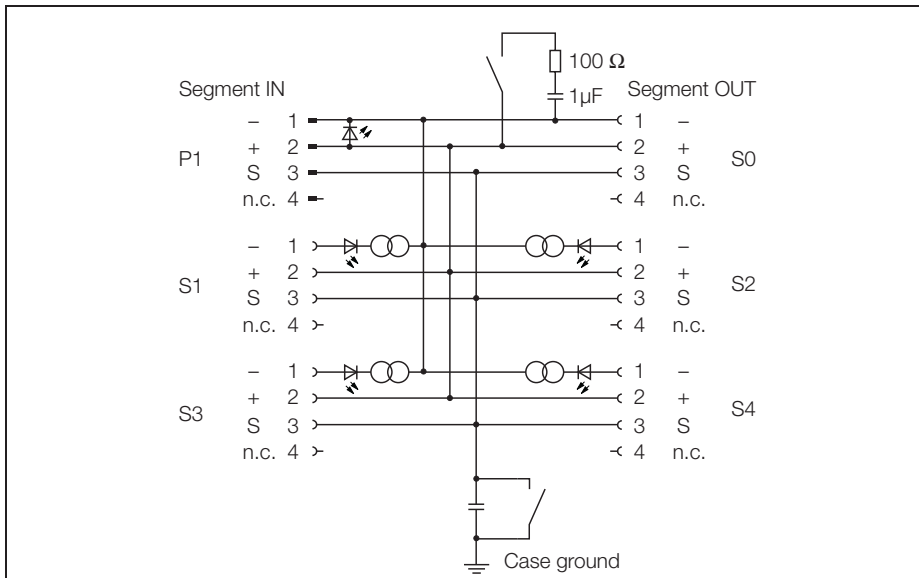


4

Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-M413/3G**



The 4-port Ex-junction module JBBS-49SC-M413/3G is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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.

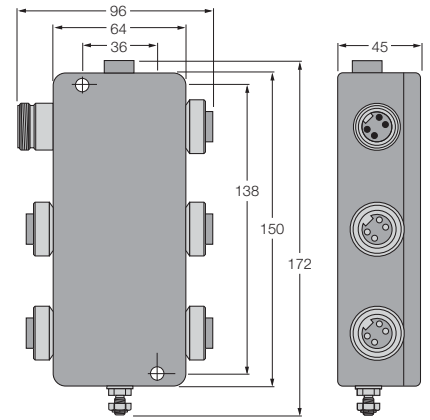
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- Entity and FNICO compliant according 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
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

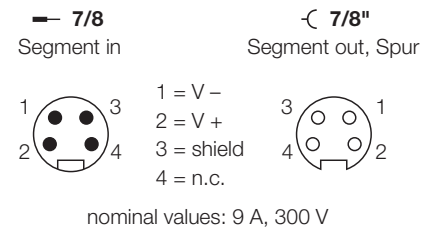
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-M413/3G**

Type	JBBS-49SC-M413/3G
Ident-No.	6611436
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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
Device designation	Ⓢ II 3 G Ex nA II T4 Ⓢ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8 "- plug
Segment OUT	1 x 7/8 "- plug
Drop line	4 x 7/8 "- plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

Dimensions



Terminal Configuration

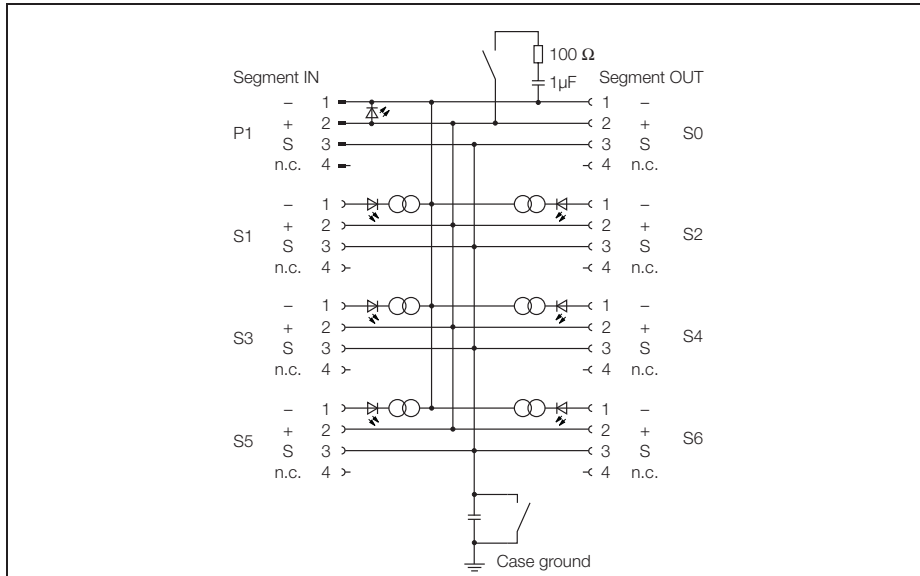


4

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-M613/3G**

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The 6-port Ex-junction module JBBS-49SC-M613/3G is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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 bolt of the housing to the system's potentializer.

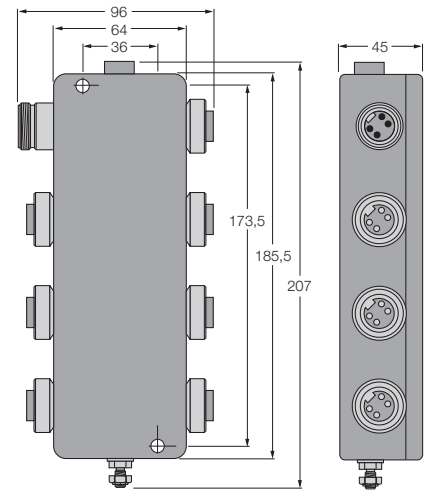


- Entity and FNICO compliant according to IEC TS 60079-27
- Mounting possible in zone 2
- Junction box for wall mounting with stainless steel 7/8" flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-M613/3G**

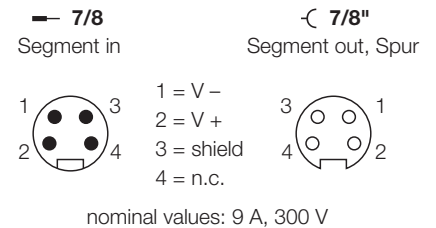
Type	JBBS-49SC-M613/3G
Ident-No.	6611438
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 0.3 V
Short-circuit protection	≤ 30 , 35 , 45 , 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓢ II 3 G Ex nA II T4 Ⓢ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8 "- plug
Segment OUT	1 x 7/8 "- plug
Drop line	6 x 7/8 "- plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions

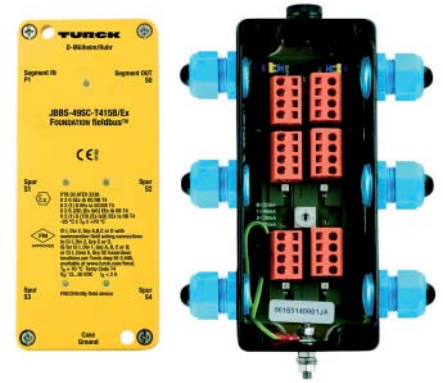
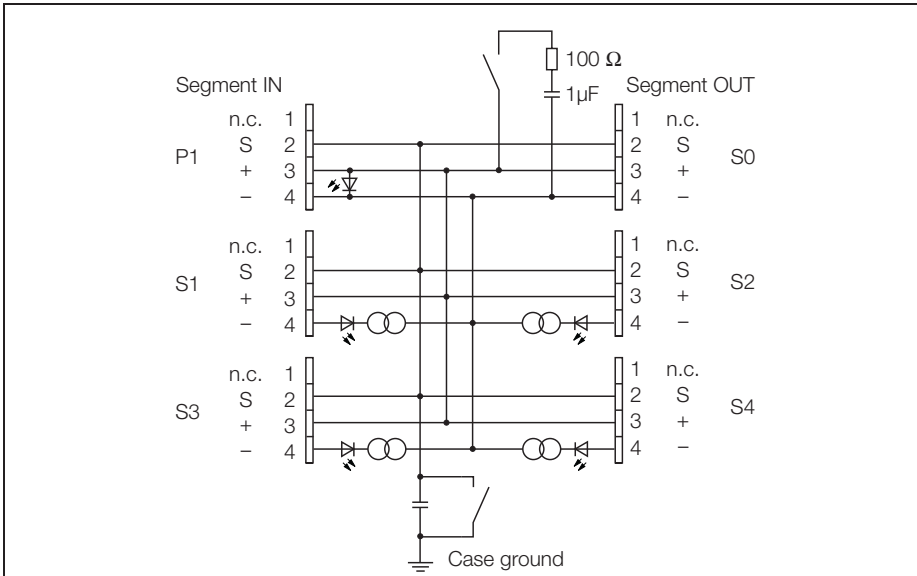


4

Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-T415B/EX**



The 4-port Ex-junction module JBBS-49SC-T415B/EX is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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.

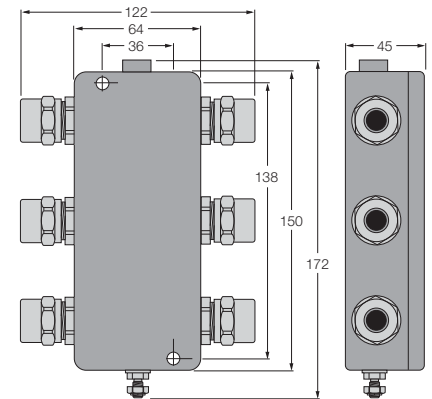
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- Entity and FISCO compliant according 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
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

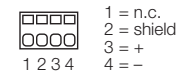
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-T415B/EX**

Type	JBBS-49SC-T415B/EX
Ident-No.	6611441
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

Dimensions



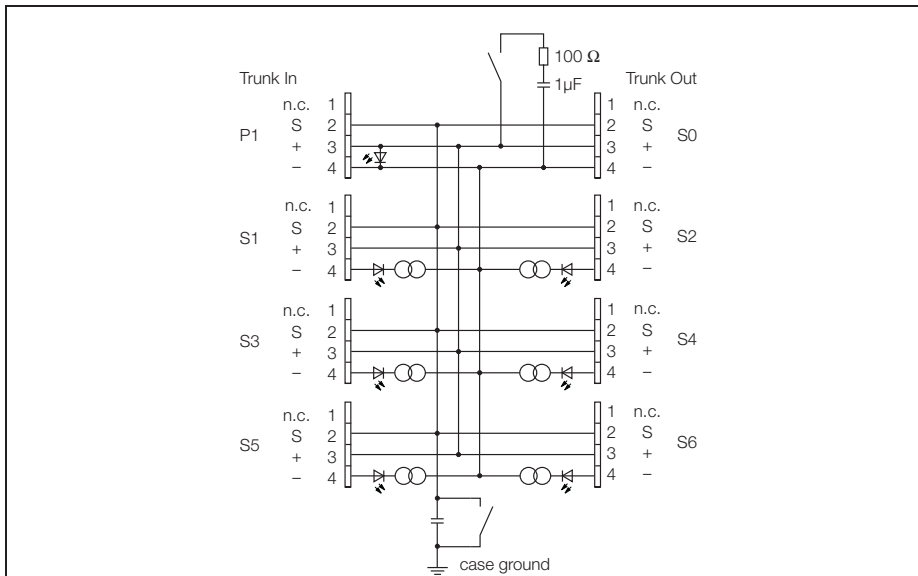
Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-T615B/EX**

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The 6-port Ex-junction module JBBS-49SC-T615B/EX is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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.

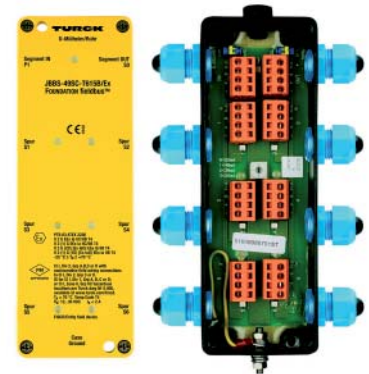
The junction box is equipped with a selectable bus terminating resistor. The according switch is integrated in the housing on

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 bolt of the housing to the system's potentializer.

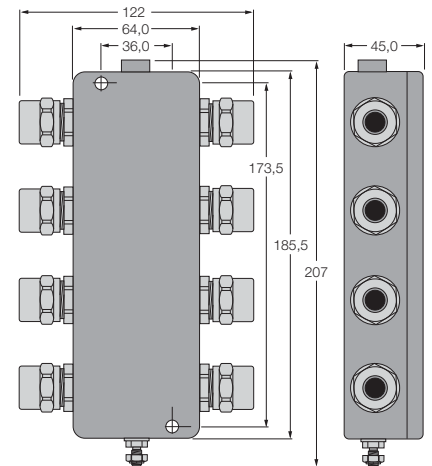


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with PVC cable glands M20 x 1.5
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

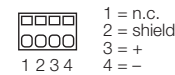
FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-T615B/EX

Type	JBBS-49SC-T615B/EX
Ident-No.	6611443
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions



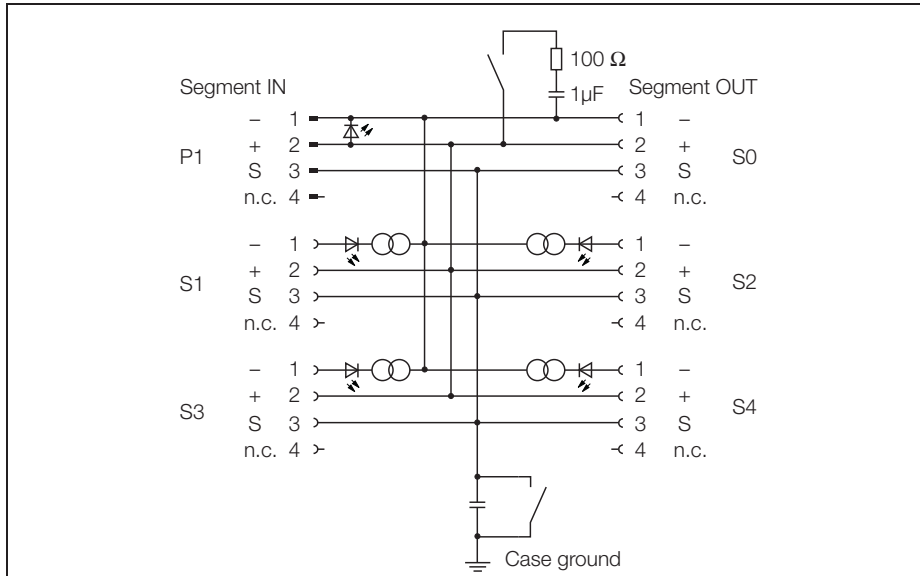
Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-E413/EX**

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The 4-port Ex-junction module JBBS-49SC-E413/EX is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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 bolt of the housing to the system's potentializer.

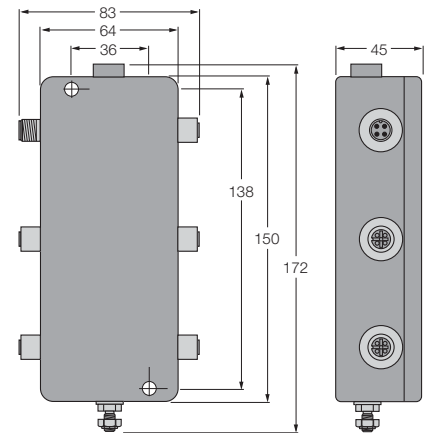


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with stainless steel M12 flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

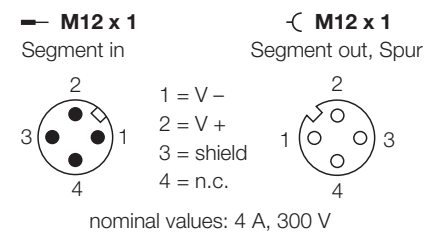
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-E413/EX**

Type	JBBS-49SC-E413/EX
Ident-No.	6611433
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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 according 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 inductance/capacitance 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
Device designation	<p>⊕ II 2 G EEx ib IIC/IIB T4</p> <p>⊕ II 2(1) G EEx ia IIC/IIB T4</p> <p>⊕ II 2 G (2D) [Ex ibD] EEx ib IIB T4</p> <p>⊕ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4</p> <p>FISCO / Entity field device</p>
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

Dimensions

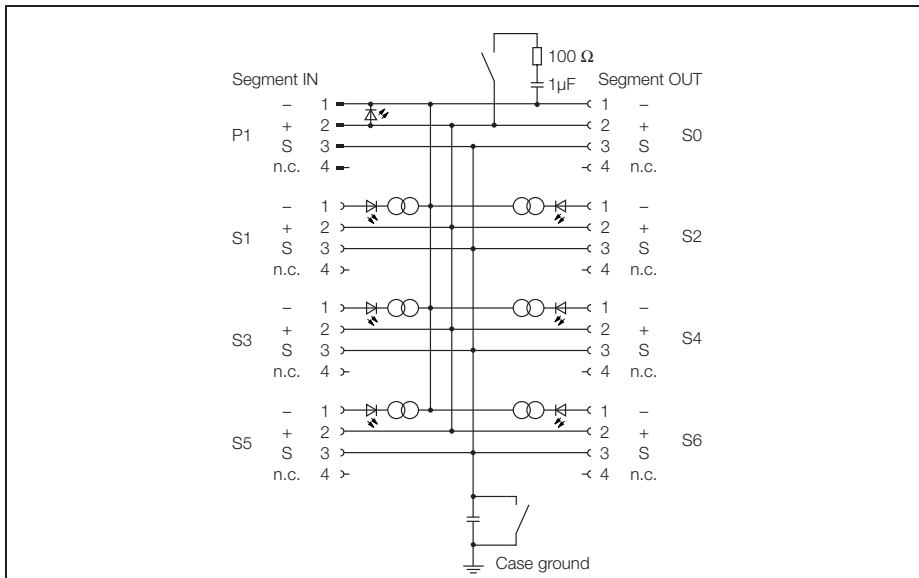


Terminal Configuration



4

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-E613/EX**



The 6-port Ex-junction module JBBS-49SC-E613/EX is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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 bolt of the housing to the system's potentializer.

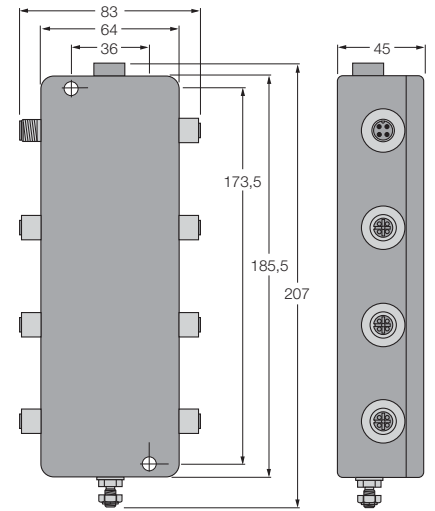


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with stainless steel M12 flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-E613/EX**

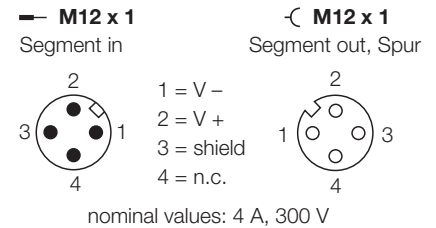
Type	JBBS-49SC-E613/EX
Ident-No.	6611435
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. 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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions

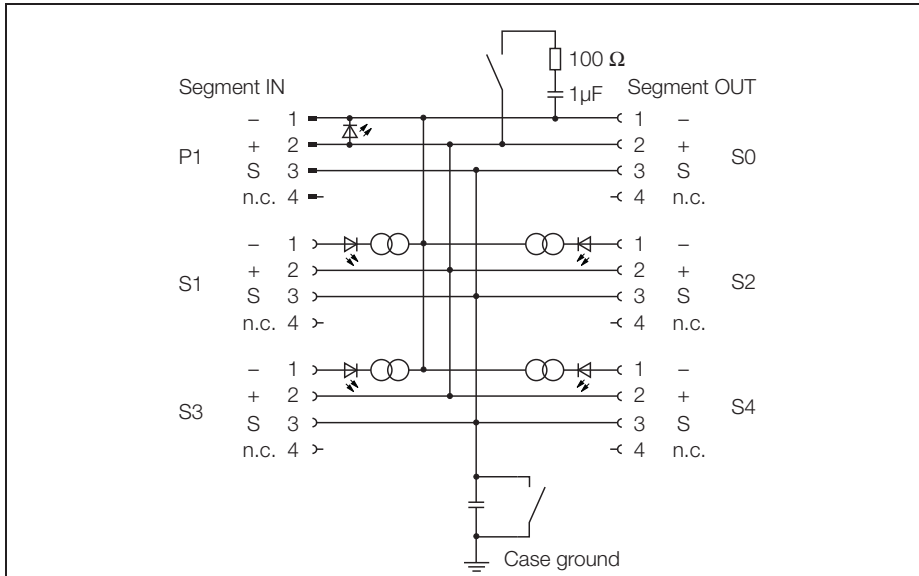


4

Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-M413/EX**



The 4-port Ex-junction module JBBS-49SC-M413/EX is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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 bolt of the housing to the system's potentializer.

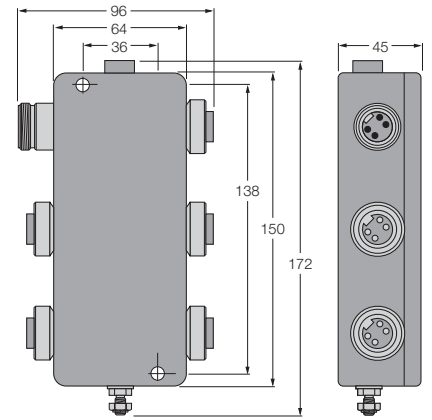


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with stainless steel 7/8" flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49SC-M413/EX**

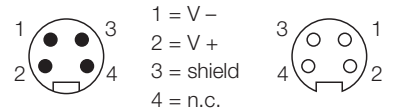
Type	JBBS-49SC-M413/EX
Ident-No.	6611437
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	4 x red
Ex approval acc. 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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8" - plug
Segment OUT	1 x 7/8" - plug
Drop line	4 x 7/8" - plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

Dimensions



Terminal Configuration

— 7/8" Segment in ⌋ 7/8" Segment out, Spur

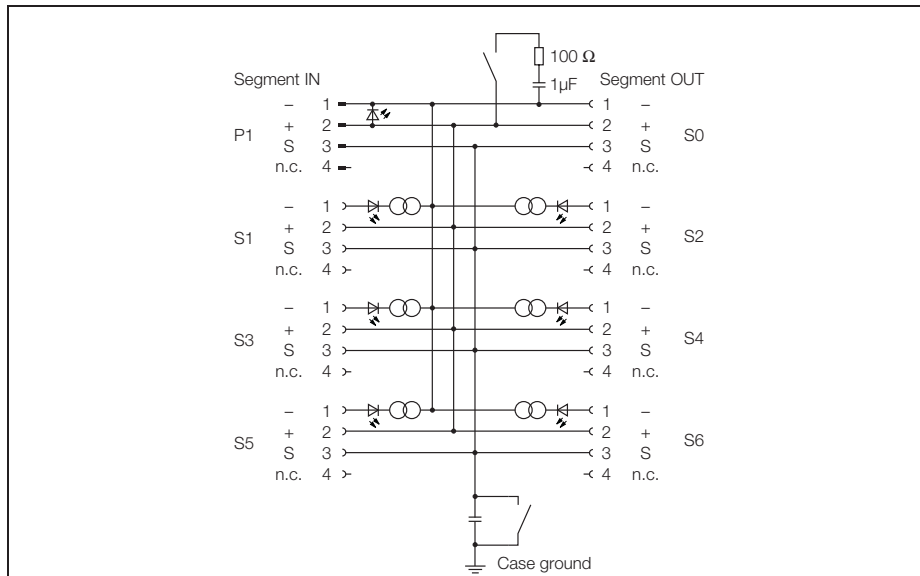


nominal values: 9 A, 300 V

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-M613/EX**

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The 6-port Ex-junction module JBBS-49SC-M613/EX is designed for FOUNDATION™ fieldbus systems.

The junction box features an adjustable short-circuit limit. The max. current limitation is selected for all ports 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 bolt of the housing to the system's potentializer.

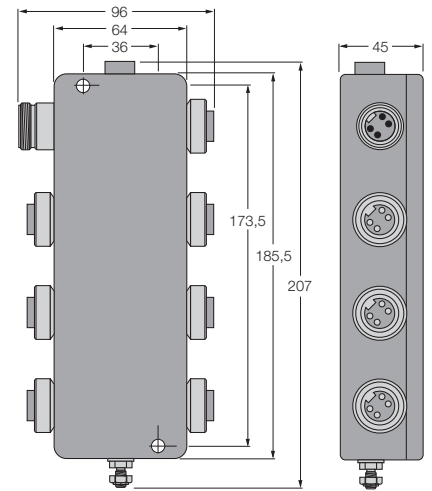


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with stainless steel 7/8" flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49SC-M613/EX**

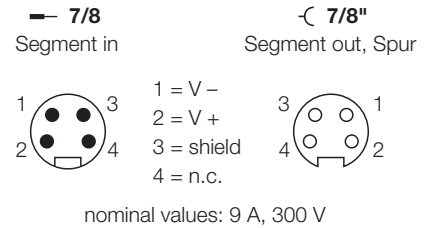
Type	JBBS-49SC-M613/EX
Ident-No.	6611439
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 0.3 V
Short-circuit protection	≤ 30, 35, 45, 60 mA
Indication	
Operational readiness	1 x green
Short-circuit message	6 x red
Ex approval acc. 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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8" - plug
Segment OUT	1 x 7/8" - plug
Drop line	6 x 7/8" - plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions

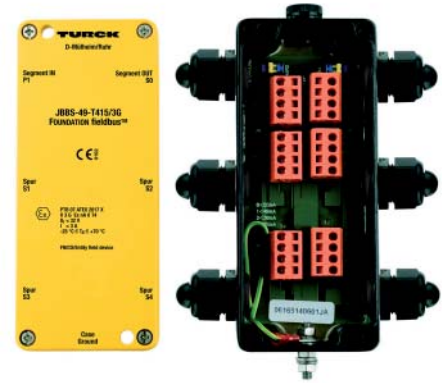
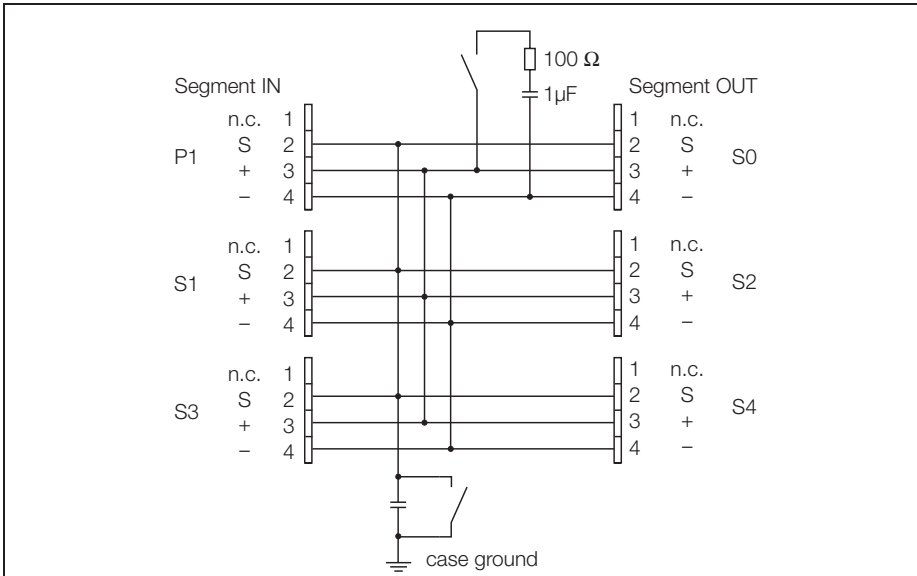


4

Terminal Configuration



FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-T415/3G



The 4-port Ex-junction module JBBS-49-T415/3G is designed for FOUNDATION™ fieldbus systems.

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.

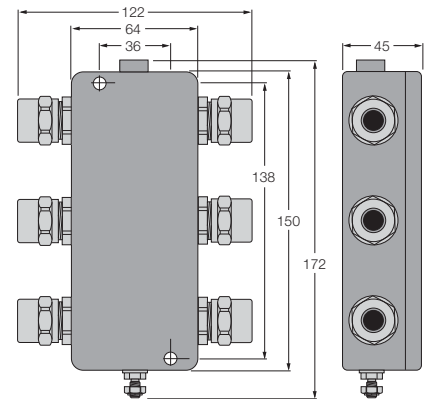
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- Entity and FNICO compliant according 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
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

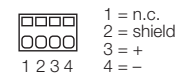
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-T415/3G**

Type	JBBS-49-T415/3G
Ident-No.	6611444
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓜ II 3 G Ex nA II T4 Ⓜ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

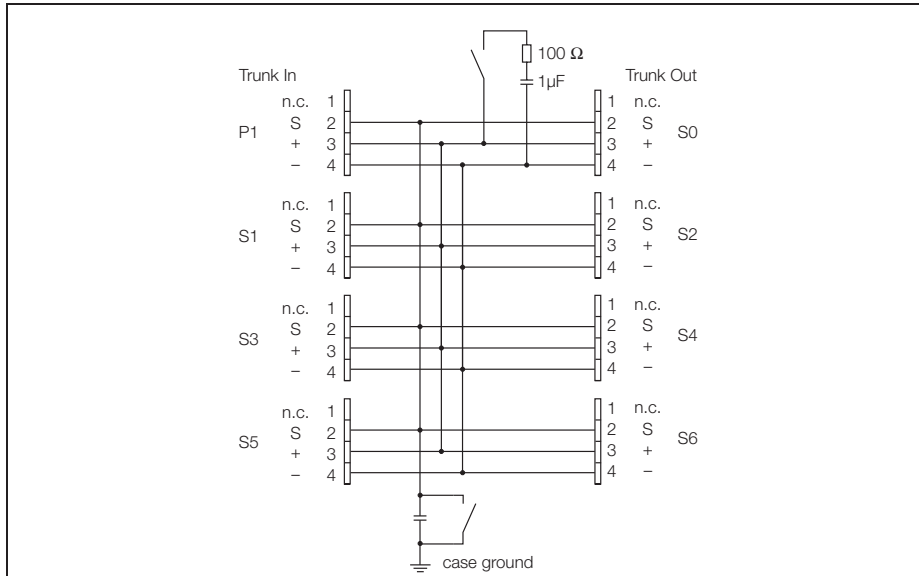
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-T615/3G**



The 6-port Ex-junction module JBBS-49-T615/3G is designed for FOUNDATION™ fieldbus systems.

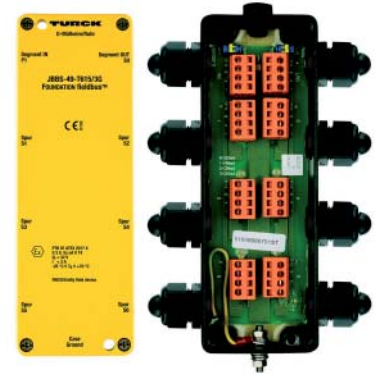
The housing is made of robust die-cast aluminium and features protection degree IP67.

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 bolt of the housing to the system's potentializer.

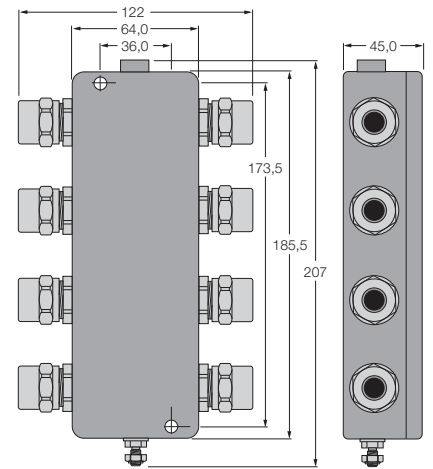


- Entity and FNICO compliant according to IEC TS 6007927
- Mounting possible in zone 2
- Junction module for wall mounting with PVC cable glands M20 x 1.5
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

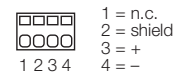
**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-T615/3G**

Type	JBBS-49-T615/3G
Ident-No.	6611446
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓜ II 3 G Ex nA II T4 Ⓜ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

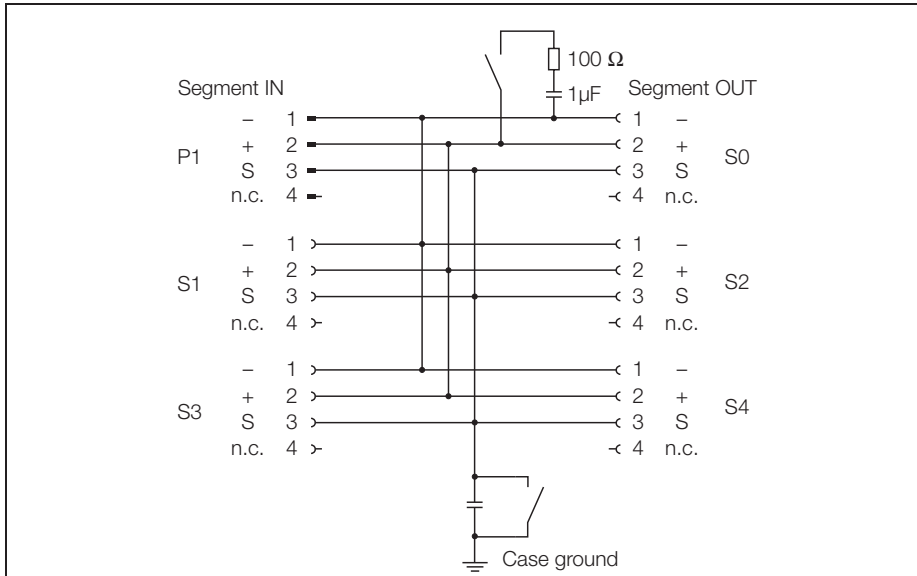
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-E413/3G**



The 4-port Ex-junction module JBBS-49-E413/3G is designed for FOUNDATION™ fieldbus systems.

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 bolt of the housing to the system's potentializer.

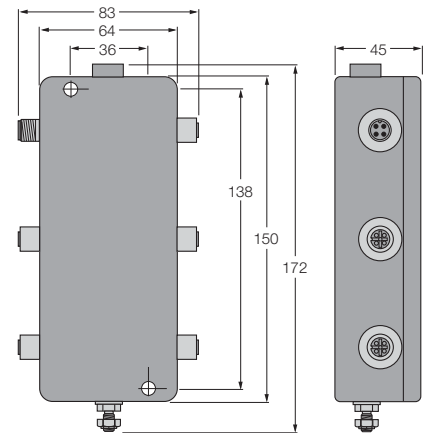


- **Entity and FNICO compliant according to IEC TS 60079-27**
- **Mounting possible in zone 2**
- **Junction box for wall mounting with stainless steel M12 flange connections**
- **Powder-coated die-cast aluminium housing**
- **Pressure compensation element for protection against condensation water**
- **Connection of the housing potential via an M5 x 1 bolt**
- **For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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**

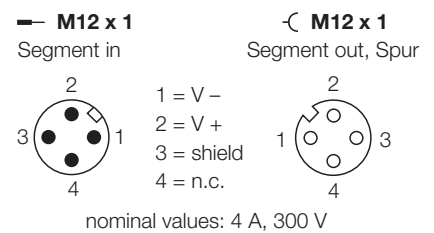
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-E413/3G**

Type	JBBS-49-E413/3G
Ident-No.	6611424
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓢ II 3 G Ex nA II T4 Ⓢ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

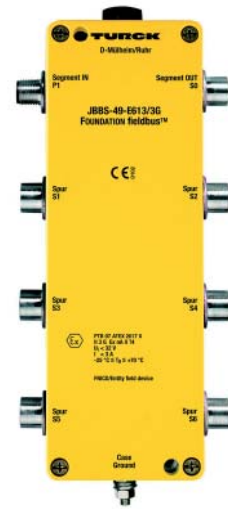
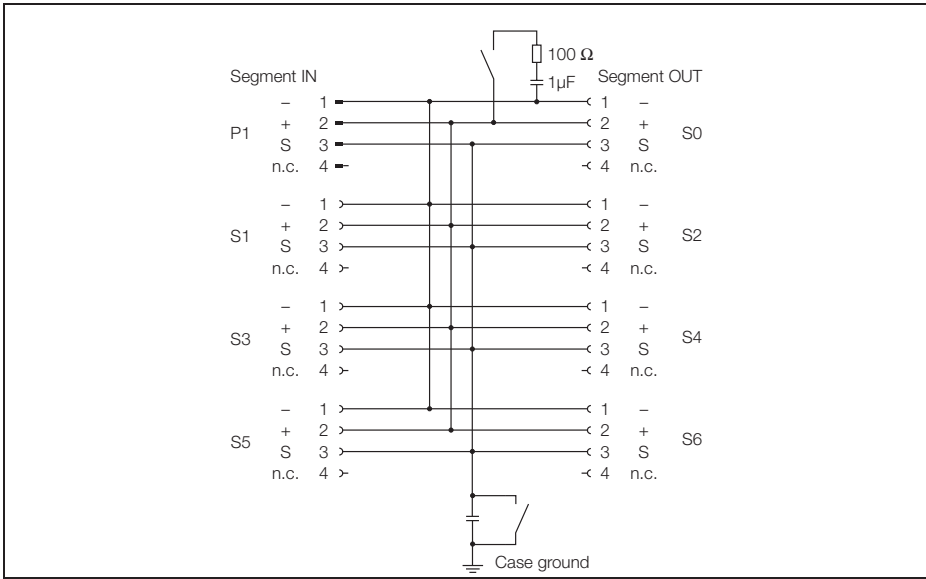
Dimensions



Terminal Configuration



FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-E613/3G



The 6-port Ex-junction module JBBS-49-E613/3G is designed for FOUNDATION™ fieldbus systems.

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.

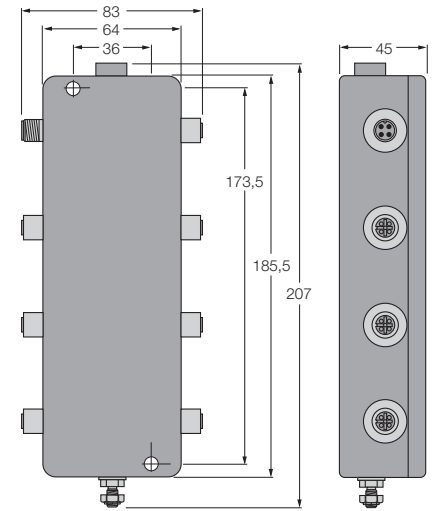
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- **Entity and FNICO compliant according to IEC TS 6007927**
- **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**
- **For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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**

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-E613/3G**

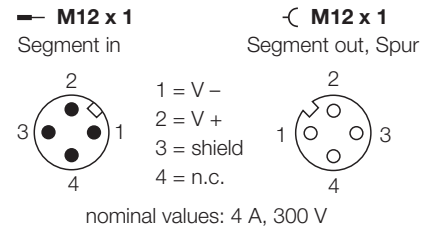
Type	JBBS-49-E613/3G
Ident-No.	6611426
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓢ II 3 G Ex nA II T4 Ⓢ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions

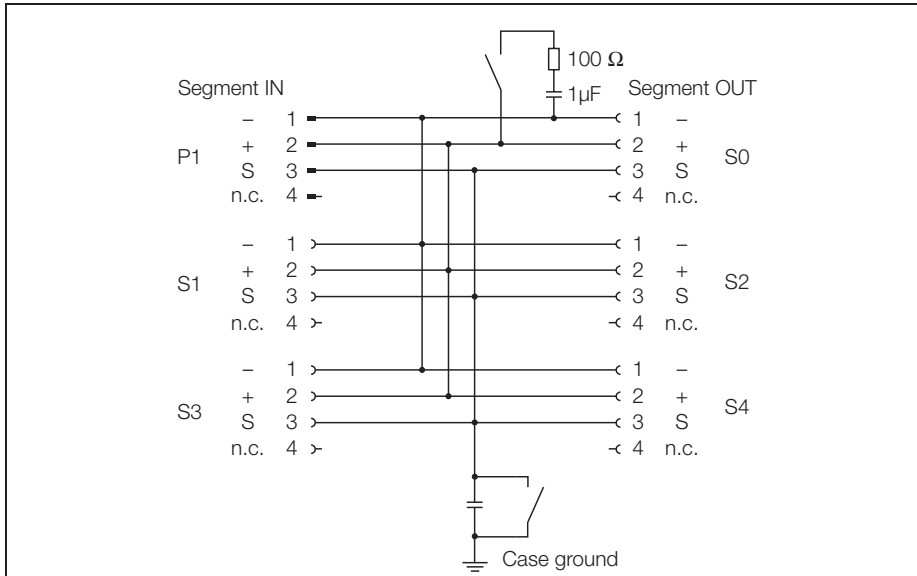


4

Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-M413/3G**



The 4-port Ex-junction module JBBS-49-M413/3G is designed for FOUNDATION™ fieldbus systems.

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.

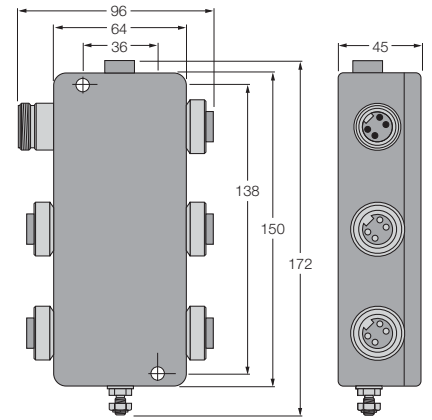
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- **Entity and FNICO compliant according to IEC TS 6007927**
- **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**
- **For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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**

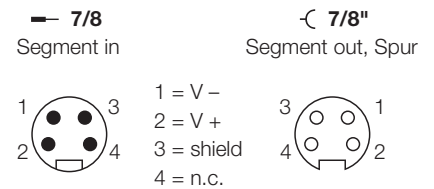
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-M413/3G**

Type	JBBS-49-M413/3G
Ident-No.	6611428
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓜ II 3 G Ex nA II T4 Ⓜ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8" - plug
Segment OUT	1 x 7/8" - plug
Drop line	4 x 7/8" - plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

Dimensions

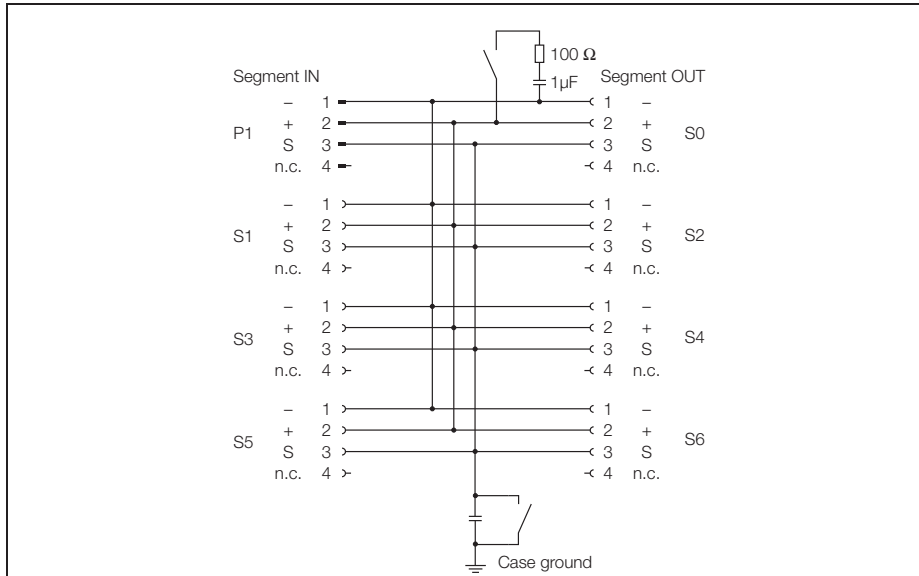


Terminal Configuration



nominal values: 9 A, 300 V

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-M613/3G**



The 6-port Ex-junction module JBBS-49-M613/3G is designed for FOUNDATION™ fieldbus systems.

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 bolt of the housing to the system's potentializer.

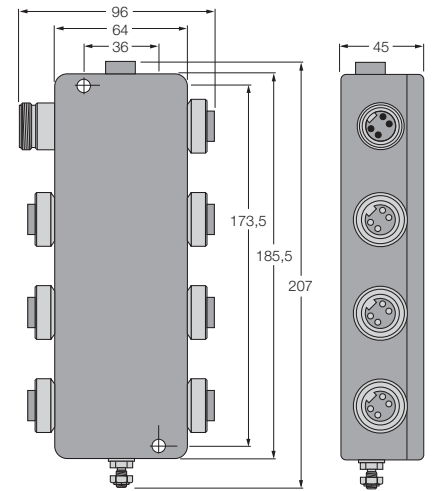


- Entity and FNICO compliant according to IEC TS 60079-27
- Mounting possible in zone 2
- Junction box for wall mounting with stainless steel 7/8" flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-M613/3G**

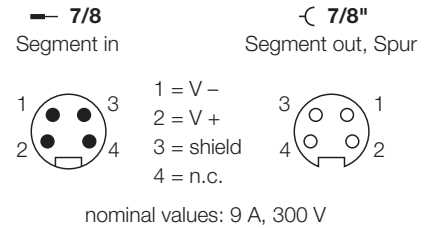
Type	JBBS-49-M613/3G
Ident-No.	6611430
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 07 ATEX 2017 X
Device designation	Ⓢ II 3 G Ex nA II T4 Ⓢ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8" - plug
Segment OUT	1 x 7/8" - plug
Drop line	6 x 7/8" - plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions



4

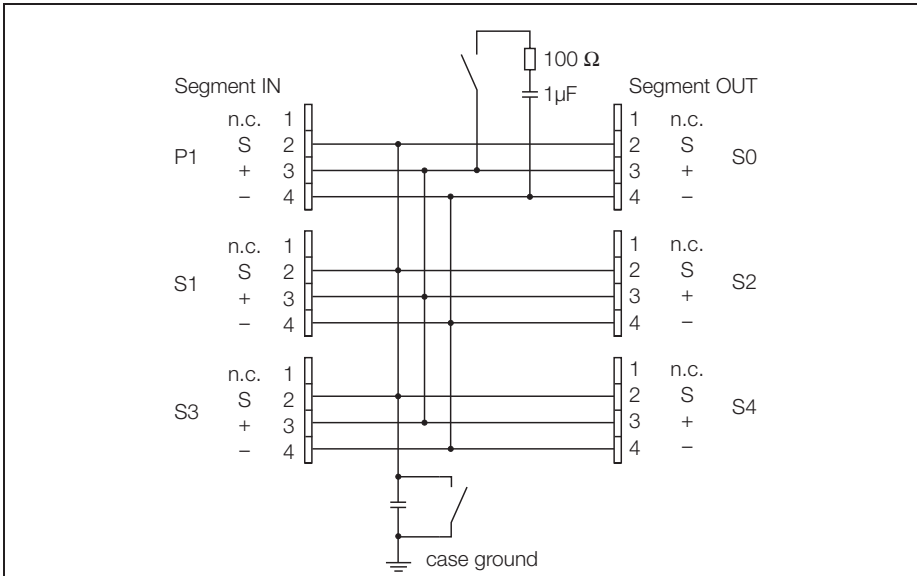
Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-T415B/EX**

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The 4-port Ex-junction module JBBS-49-E413/EX is designed for FOUNDATION™ fieldbus systems.

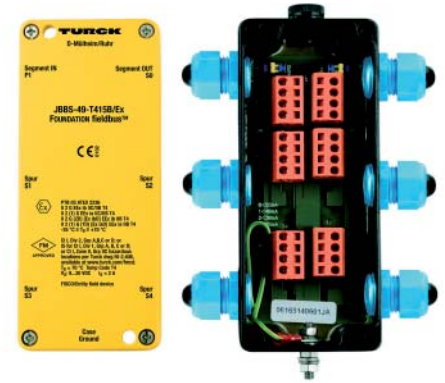
The housing is made of robust die-cast aluminium and features protection degree IP67.

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 bolt of the housing to the system's potentializer.

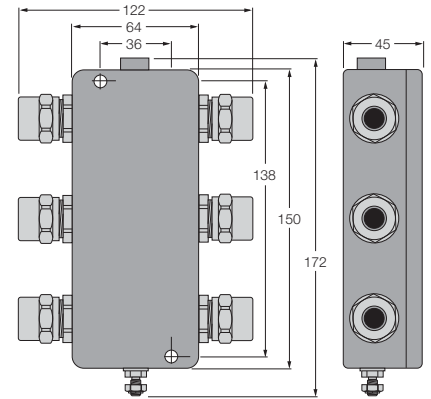


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with PVC cable glands M20 x 1.5
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

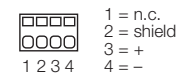
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-T415B/EX**

Type	JBBS-49-T415B/EX
Ident-No.	6611445
Fieldbus standard	IEC 61158-2
Operational voltage range:	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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

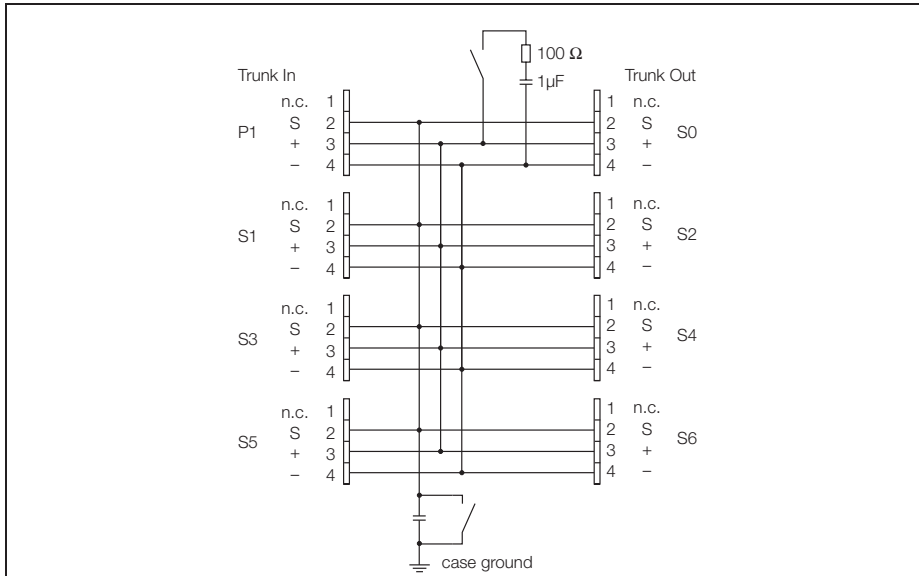
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-T615B/EX**



The 6-port Ex-junction module JBBS-49-T615B/EX is designed for FOUNDATION™ fieldbus systems.

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.

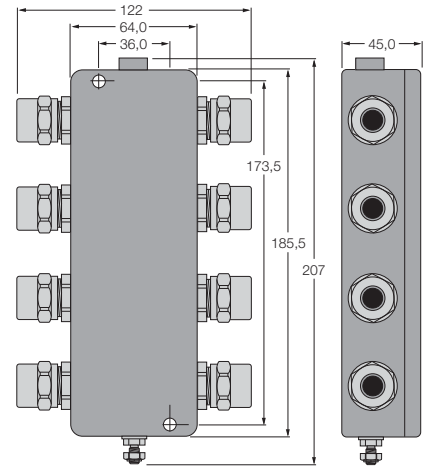
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- Entity and FISCO compliant according 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
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

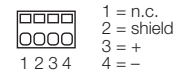
**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-T615B/EX**

Type	JBBS-49-T615B/EX
Ident-No.	6611447
Fieldbus standard	IEC 61158-2
Operational voltage range:	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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical 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)
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ...+ 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions



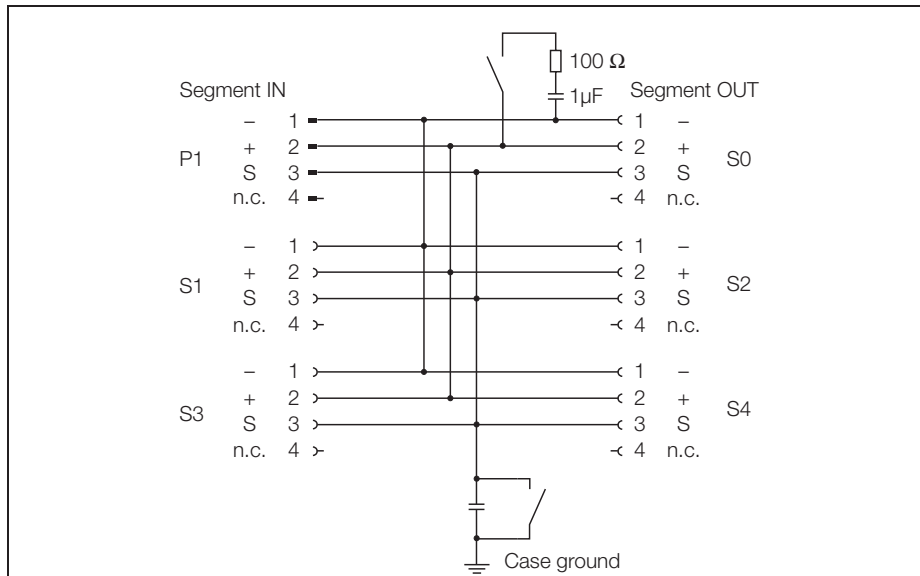
Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-E413/EX**

TURCK

Industrial
Automation



The 4-port Ex-junction module JBBS-49-E413/EX is designed for FOUNDATION™ fieldbus systems.

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 bolt of the housing to the system's potentializer.

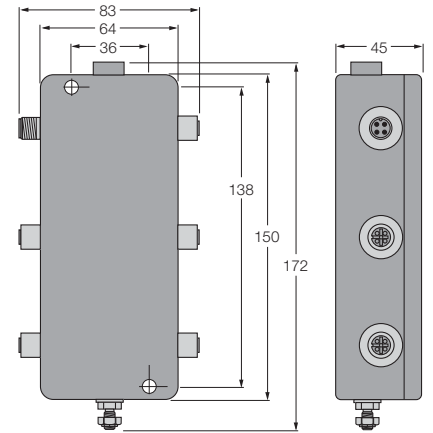


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with stainless steel M12 flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

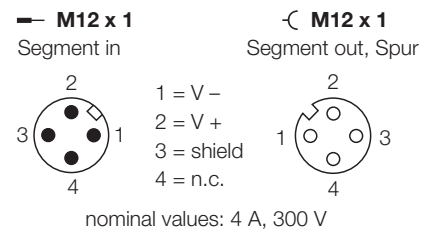
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-E413/EX**

Type	JBBS-49-E413/EX
Ident-No.	6611425
Fieldbus standard	IEC 61158-2
Operational voltage range:	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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	4 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

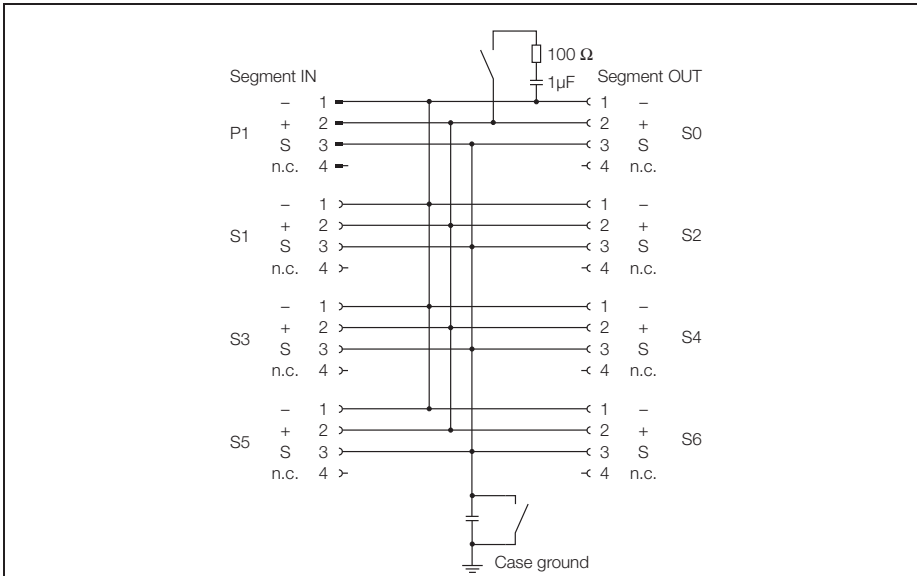
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-E613/EX**



The 6-port Ex-junction module JBBS-49-E613/EX is designed for FOUNDATION™ fieldbus systems.

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.

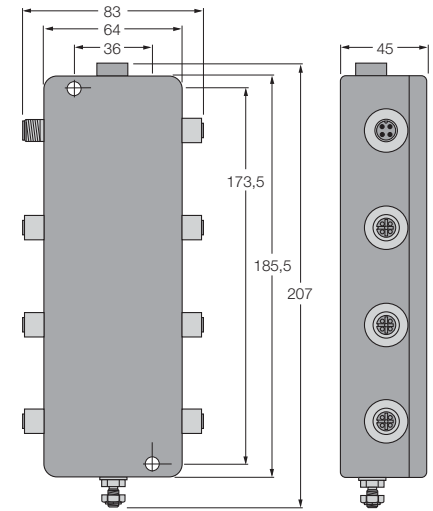
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- Entity and FISCO compliant according 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
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-E613/EX**

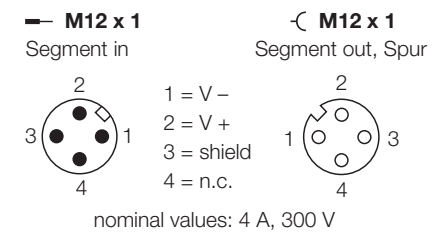
Type	JBBS-49-E613/EX
Ident-No.	6611427
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max. output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical connection	M12 flange connection
Segment IN	1 x M12 - connector
Segment OUT	1 x M12 - female connector
Drop line	6 x M12 - female connector
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions

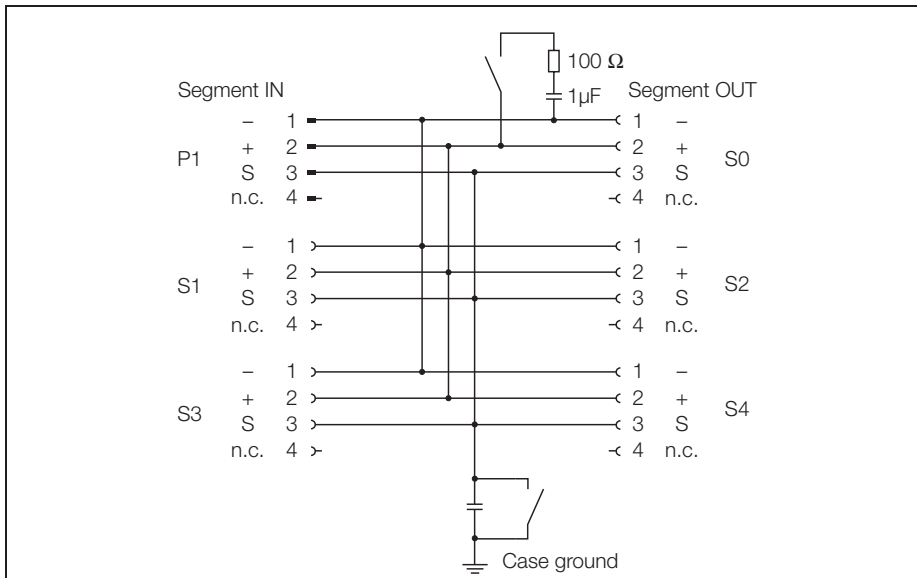


4

Terminal Configuration



**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-M413/EX**



The 4-port Ex-junction module JBBS-49-M413/EX is designed for FOUNDATION™ fieldbus systems.

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 bolt of the housing to the system's potentializer.

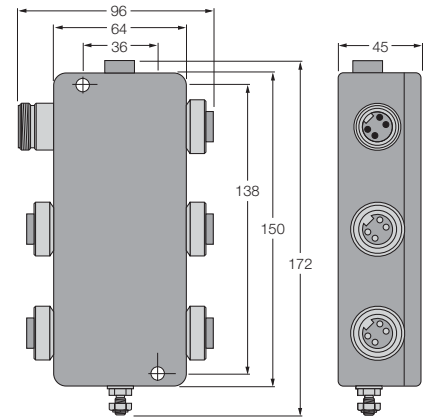


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for wall mounting with stainless steel 7/8" flange connections
- Powder-coated die-cast aluminium housing
- Pressure compensation element for protection against condensation water
- Connection of the housing potential via an M5 x 1 bolt
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

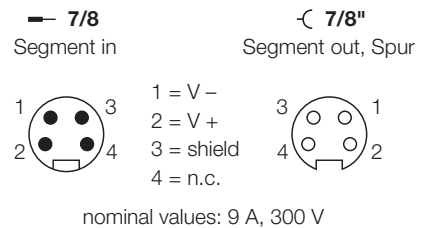
**FOUNDATION™ fieldbus
IP67 junction box, 4-port
JBBS-49-M413/EX**

Type	JBBS-49-M413/EX
Ident-No.	6611429
Fieldbus standard	IEC 61158-2
Operational voltage range:	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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8 "- plug
Segment OUT	1 x 7/8 "- plug
Drop line	4 x 7/8 "- plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 150 x 45 mm
Connection mode	Wall mounting

Dimensions

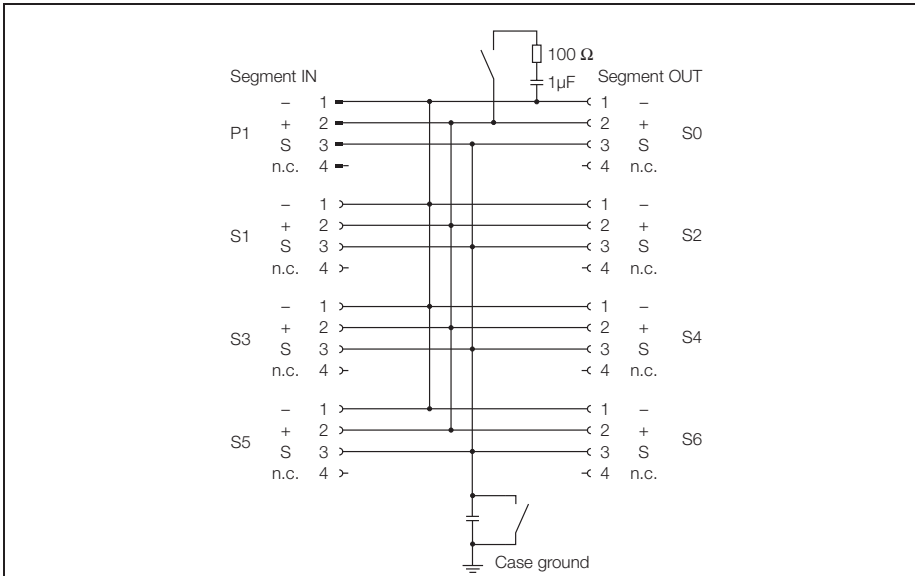


Terminal Configuration



4

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-M613/EX**



The 6-port Ex-junction module JBBS-49-M613/EX is designed for FOUNDATION™ fieldbus systems.

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.

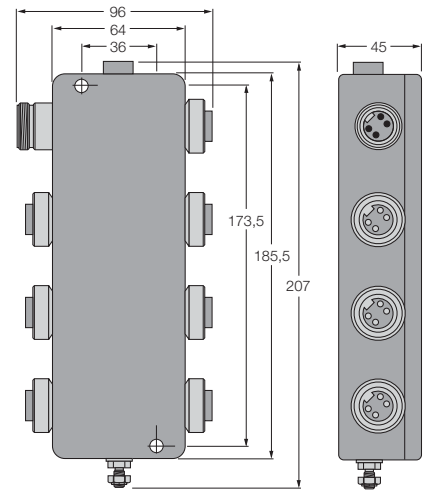
Attention: Sufficient equipotential bonding of the installation must be ensured. The device is connected via the bolt of the housing to the system's potentializer.

- Entity and FISCO compliant according 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
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+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

**FOUNDATION™ fieldbus
IP67 junction box, 6-port
JBBS-49-M613/EX**

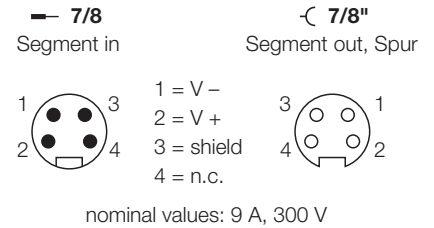
Type	JBBS-49-M613/EX
Ident-No.	6611431
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 03 ATEX 2236
Entity Parameter	
Max. output voltage U_o	≤ 24 V
Max. output current I_o	≤ 250 mA
Max. output power P_o	≤ 2560 mW
Max. input voltage U_i	≤ 24 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 2560 mW
FISCO parameter according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) [Ex ibD] EEx ib IIB T4 Ⓢ II 2 (1) G (1D) [Ex iaD] EEx ia IIB T4 FISCO / Entity field device
Electrical connection	7/8" flange connection
Segment IN	1 x 7/8" - plug
Segment OUT	1 x 7/8" - plug
Drop line	6 x 7/8" - plug
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-25 ... + 70 °C
Housing material	powder-coated die-cast aluminium
Housing color	black/yellow
Dimensions	64 x 185.5 x 45 mm
Connection mode	Wall mounting

Dimensions

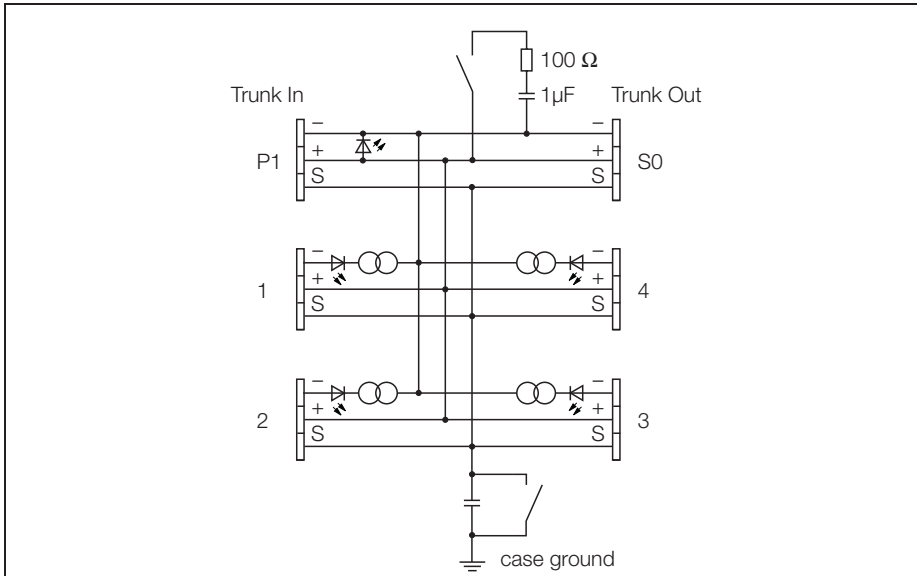


4

Terminal Configuration



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



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

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

The housing is made of 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 bolt of the housing to the system's potentializer.

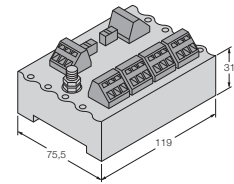
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

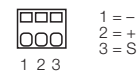
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 4-port
JRBS-40SC-4C/EX**

Type	JRBS-40SC-4C/EX
Ident-No.	6611451
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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 05 ATEX 2002
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 according 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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	⊕ II 2 G EEx ib IIC/IIB T4 ⊕ II 2(1) G EEx ia IIC/IIB T4 ⊕ II 2 G (2D) EEx ib [ibD] IIB T4 ⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4 FISCO / Entity field device
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	⊕ II 3 G Ex nA II T4 ⊕ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	119 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

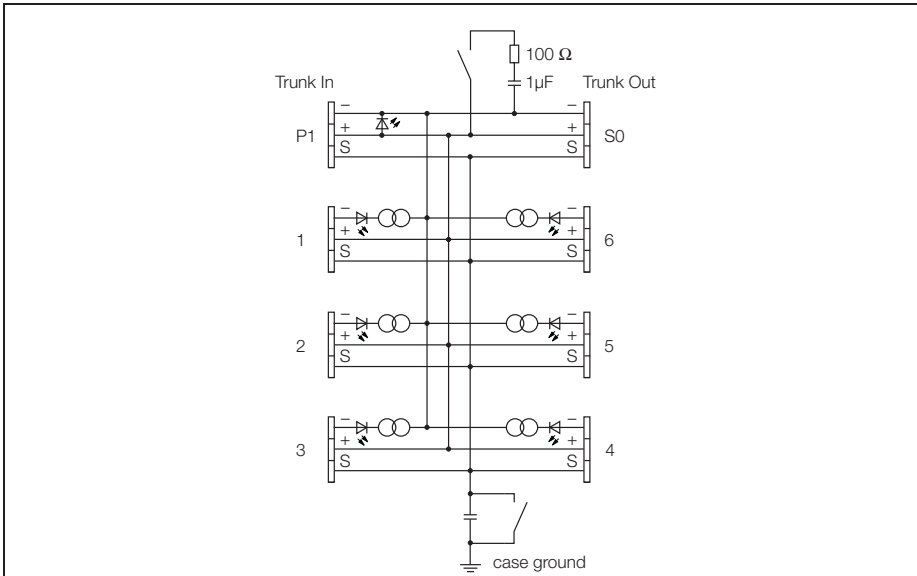
Dimensions



Terminal Configuration



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



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

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

The housing is made of 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 bolt of the housing to the system's potentializer.

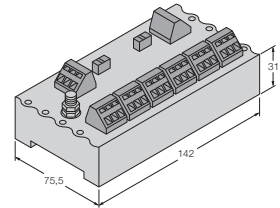
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

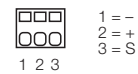
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 6-port
JRBS-40SC-6C/EX**

Type	JRBS-40SC-6C/EX
Ident-No.	6611452
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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 05 ATEX 2002
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 according 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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	⊕ II 2 G EEx ib IIC/IIB T4 ⊕ II 2(1) G EEx ia IIC/IIB T4 ⊕ II 2 G (2D) EEx ib [ibD] IIB T4 ⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4 FISCO / Entity field device
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	⊕ II 3 G Ex nA II T4 ⊕ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	142 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

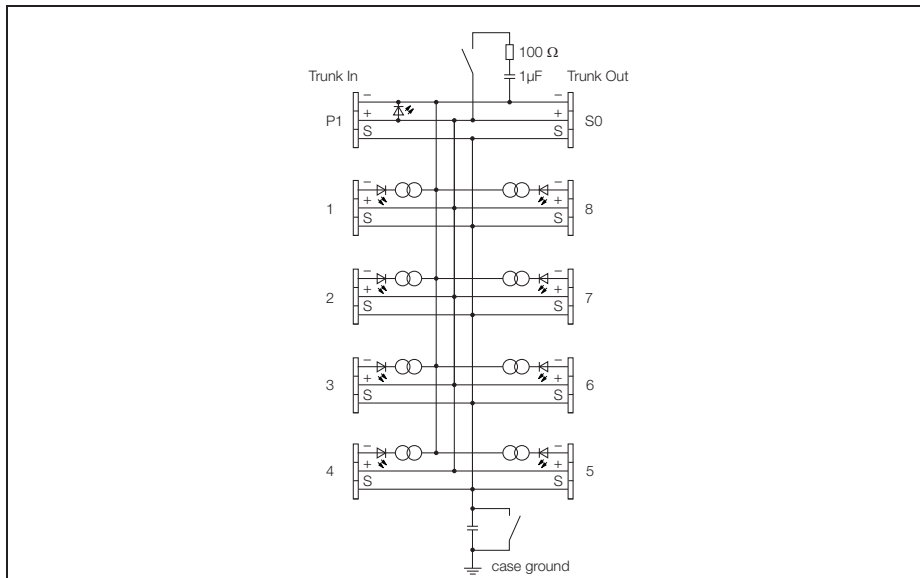
Dimensions



Terminal Configuration



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



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

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

The housing is made of 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 bolt of the housing to the system's potentializer.

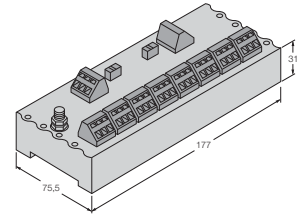
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

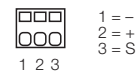
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 8-port
JRBS-40SC-8C/EX**

Type	JRBS-40SC-8C/EX
Ident-No.	6611453
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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	PTB 05 ATEX 2002
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 according 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 inductance/capacitance 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
Device designation	Ⓢ II 2 G EEx ib IIC/IIB T4 Ⓢ II 2(1) G EEx ia IIC/IIB T4 Ⓢ II 2 G (2D) EEx ib [ibD] IIB T4 Ⓢ II 2 (1) G (1D) EEx ia [iaD] IIB T4 FISCO / Entity field device
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	Ⓢ II 3 G Ex nA II T4 Ⓢ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	177 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

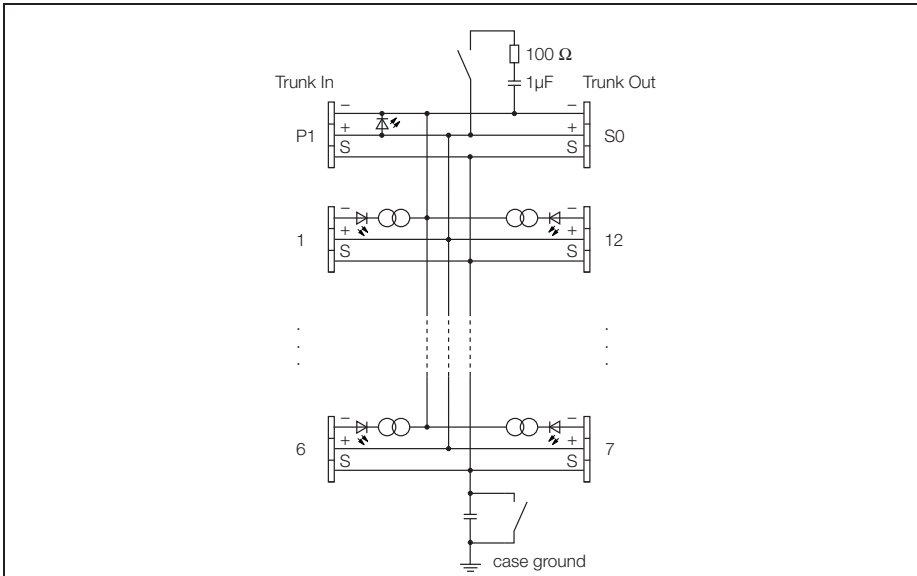
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40SC-12C/EX**



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

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

The housing is made of 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 bolt of the housing to the system's potentializer.

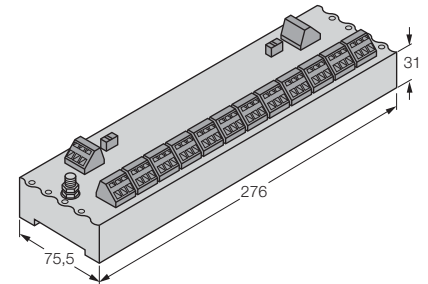
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

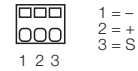
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40SC-12C/EX**

Type	JRBS-40SC-12C/EX
Ident-No.	6611455
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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	PTB 05 ATEX 2002
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 according 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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.33 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	⊕ II 2 G EEx ib IIC/IIB T4 ⊕ II 2(1) G EEx ia IIC/IIB T4 ⊕ II 2 G (2D) EEx ib [ibD] IIB T4 ⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4 FISCO / Entity field device
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	⊕ II 3 G Ex nA II T4 ⊕ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	276 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

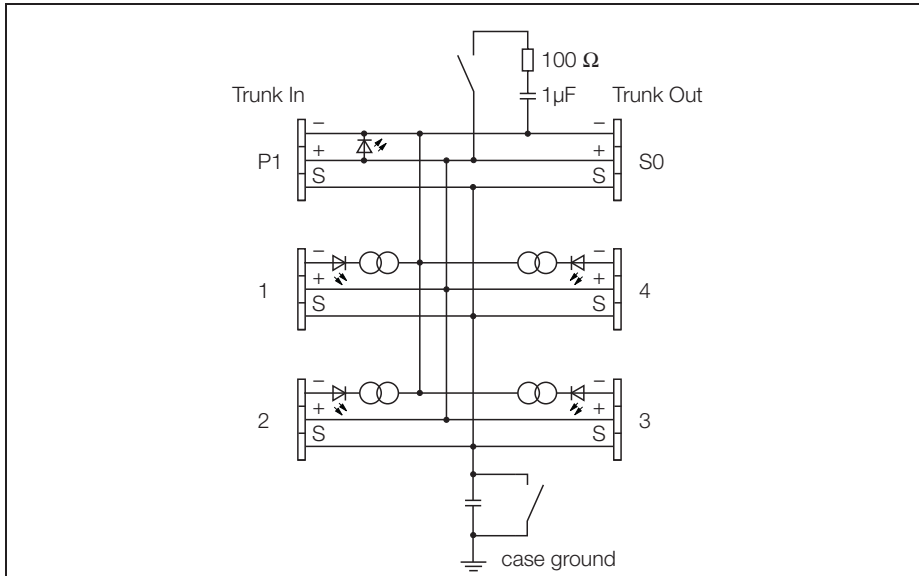
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 4-port
JRBS-40SC-4R/EX**



The 4-port Ex junction box JRBS-40SC-4R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

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

The housing is made of 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 bolt of the housing to the system's potentializer.

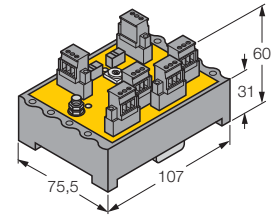
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

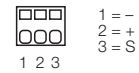
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 4-port
JRBS-40SC-4R/EX**

Type	JRBS-40SC-4R/EX
Ident-No.	6611459
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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 05 ATEX 2002
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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	⊕ II 2 G EEx ib IIC/IIB T4 ⊕ II 2(1) G EEx ia IIC/IIB T4 ⊕ II 2 G (2D) EEx ib [ibD] IIB T4 ⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4 FISCO / Entity field device
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	⊕ II 3 G Ex nA II T4 ⊕ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	119 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

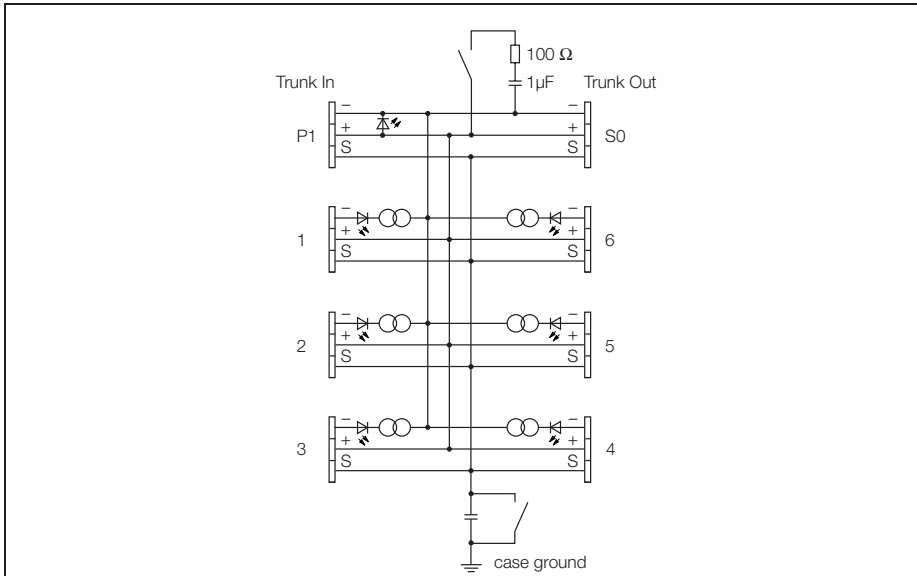
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 6-port
JRBS-40SC-6R/EX**



The 6-port Ex junction box JRBS-40SC-6R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

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

The housing is made of 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 bolt of the housing to the system's potentializer.

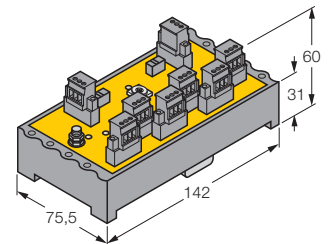
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

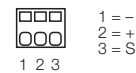
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 6-port
JRBS-40SC-6R/EX**

Type	JRBS-40SC-6R/EX
Ident-No.	6611460
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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 05 ATEX 2002
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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	<p>⊕ II 2 G EEx ib IIC/IIB T4</p> <p>⊕ II 2(1) G EEx ia IIC/IIB T4</p> <p>⊕ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p>
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	<p>⊕ II 3 G Ex nA II T4</p> <p>⊕ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	142 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

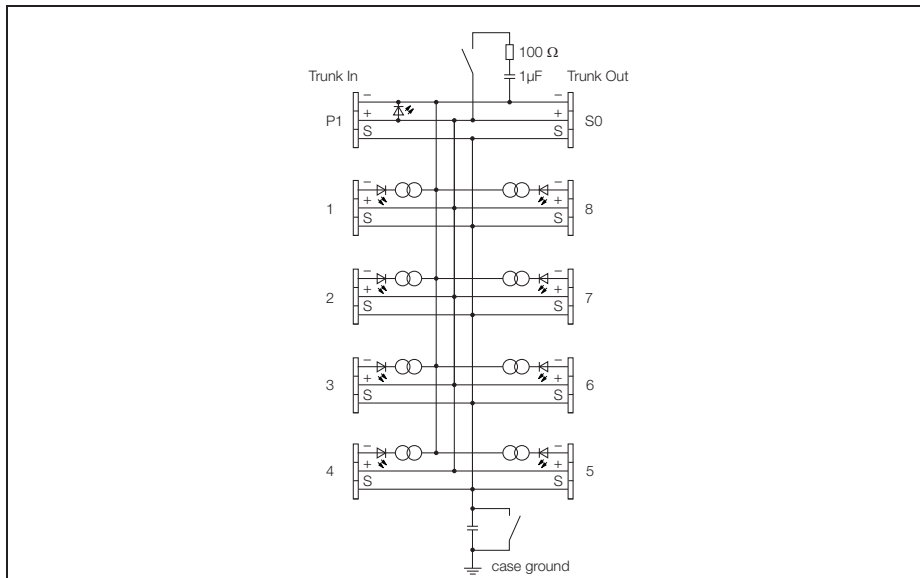
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 8-port
JRBS-40SC-8R/EX**



The 8-port Ex junction box JRBS-40SC-8R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

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

The housing is made of 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 bolt of the housing to the system's potentializer.

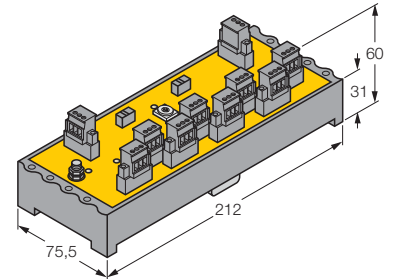
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

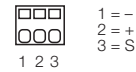
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 8-port
JRBS-40SC-8R/EX**

Type	JRBS-40SC-8R/EX
Ident-No.	6611461
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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	PTB 05 ATEX 2002
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 inductance/capacitance 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
Device designation	<ul style="list-style-type: none"> ⊕ II 2 G EEx ib IIC/IIB T4 ⊕ II 2(1) G EEx ia IIC/IIB T4 ⊕ II 2 G (2D) EEx ib [IbD] IIB T4 ⊕ II 2 (1) G (1D) EEx ia [IaD] IIB T4 FISCO / Entity field device PTB 07 ATEX 2035 X <ul style="list-style-type: none"> ⊕ II 3 G Ex nA II T4 ⊕ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Ex approval acc. to conformity certificate	
Device designation	
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	177 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

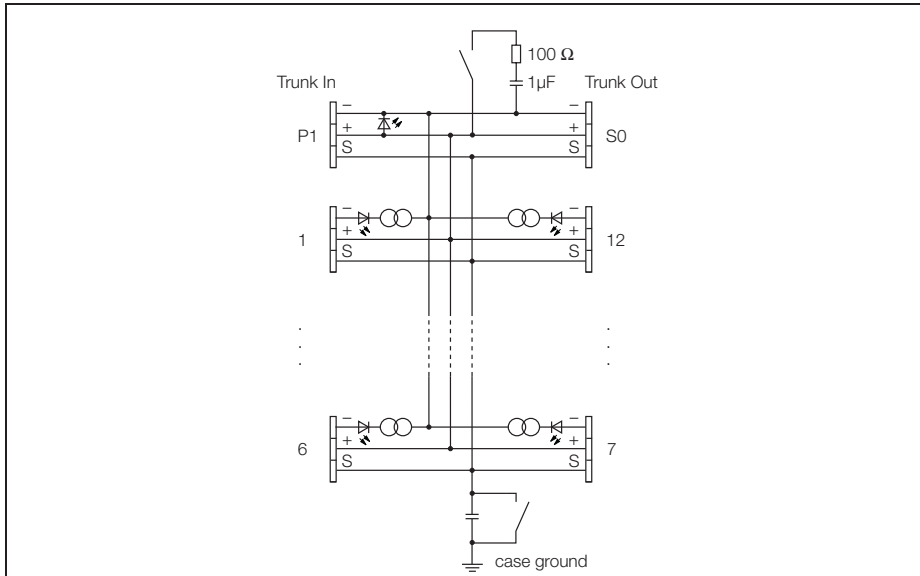
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40SC-12R/EX**



The 12-port Ex junction box JRBS-40SC-12R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

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

The housing is made of 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 bolt of the housing to the system's potentializer.

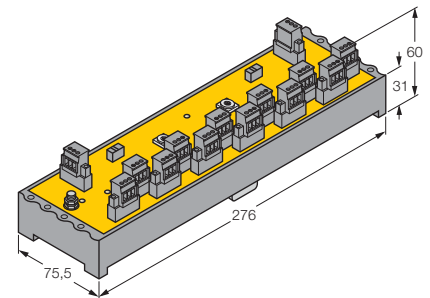
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- Short-circuit protection per drop line/spur
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

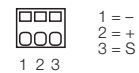
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40SC-12R/EX**

Type	JRBS-40SC-12R/EX
Ident-No.	6611463
Fieldbus standard	IEC 61158-2
Operational voltage range:	12 ... 32 VDC
Current self-consumption	≤ 7 mA
Voltage drop	≤ 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	PTB 05 ATEX 2002
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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.33 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	<p>⊕ II 2 G EEx ib IIC/IIB T4</p> <p>⊕ II 2(1) G EEx ia IIC/IIB T4</p> <p>⊕ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p> <p>PTB 07 ATEX 2035 X</p> <p>⊕ II 3 G Ex nA II T4</p> <p>⊕ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Ex approval acc. to conformity certificate	
Device designation	
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	276 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

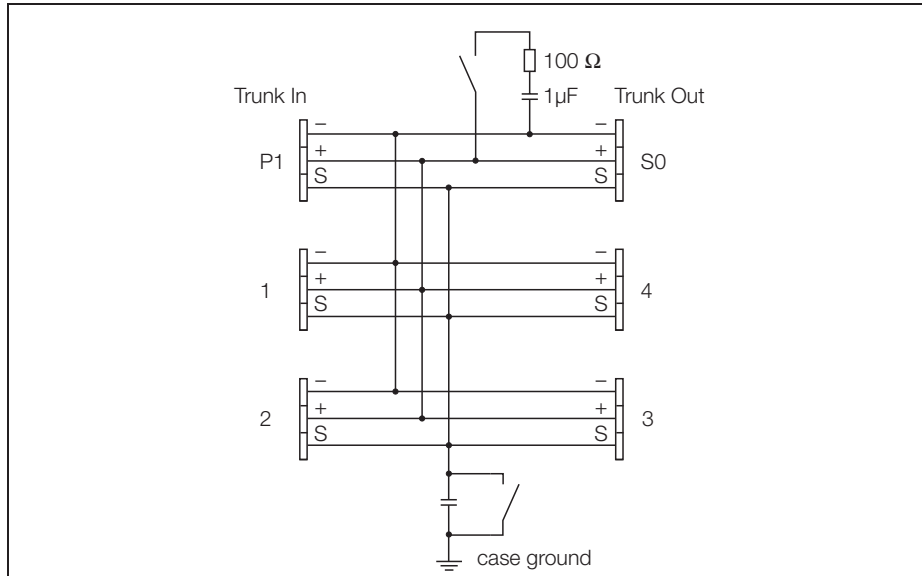
Dimensions



Terminal Configuration



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



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

The housing is made of 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 bolt of the housing to the system's potentializer.

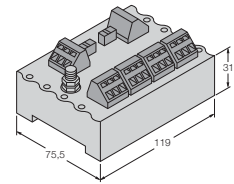
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

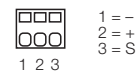
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 4-port
JRBS-40-4C/EX**

Type	JRBS-40-4C/EX
Ident-No.	6611448
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 according 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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	<p>⊕ II 2 G EEx ib IIC/IIB T4</p> <p>⊕ II 2(1) G EEx ia IIC/IIB T4</p> <p>⊕ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p>
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	<p>⊕ II 3 G Ex nA II T4</p> <p>⊕ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	119 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

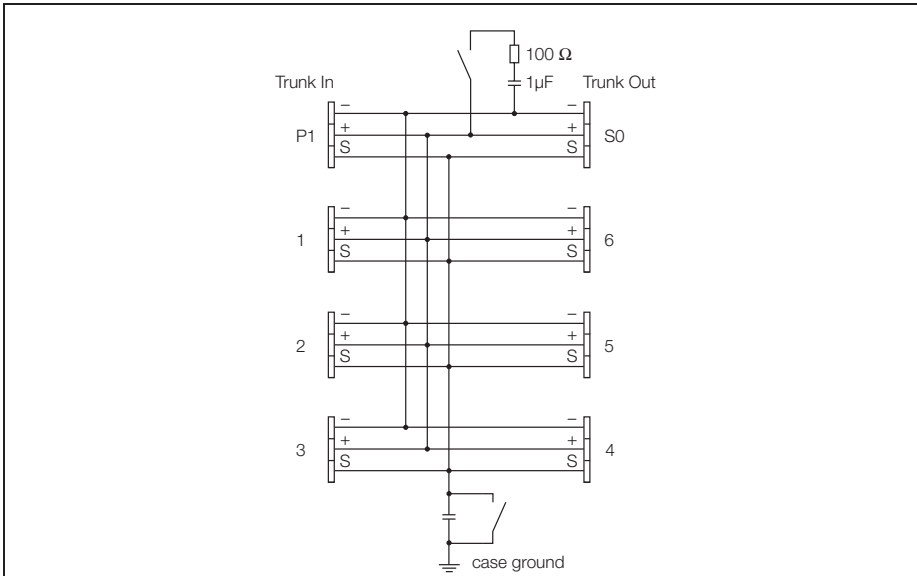
Dimensions



Terminal Configuration



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



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

The housing is made of 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 bolt of the housing to the system's potentializer.

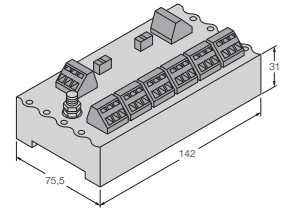
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

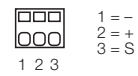
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 6-port
JRBS-40-6C/EX**

Type	JRBS-40-6C/EX
Ident-No.	6611449
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 according 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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	⊕ II 2 G EEx ib IIC/IIB T4 ⊕ II 2(1) G EEx ia IIC/IIB T4 ⊕ II 2 G (2D) EEx ib [ibD] IIB T4 ⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4 FISCO / Entity field device
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	⊕ II 3 G Ex nA II T4 ⊕ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	142 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

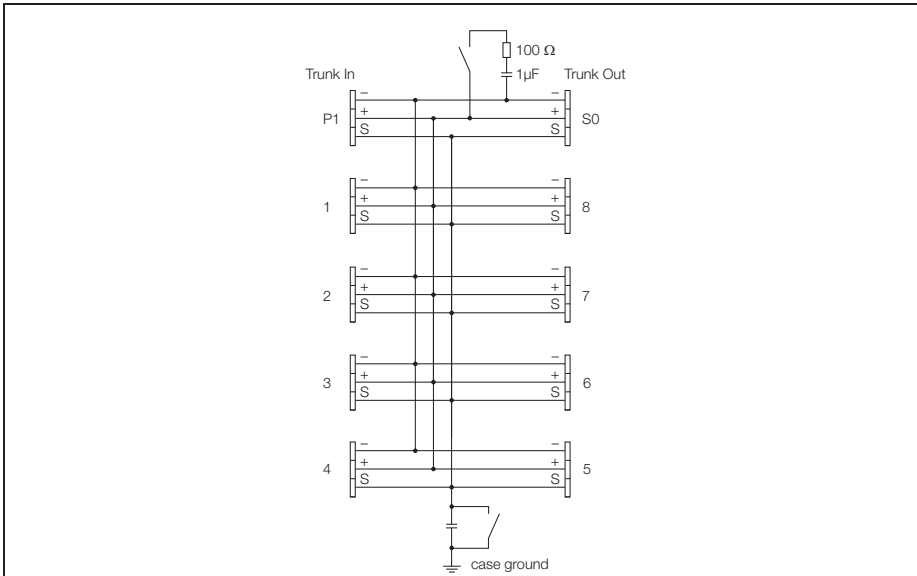
Dimensions



Terminal Configuration



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



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

The housing is made of 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 bolt of the housing to the system's potentializer.

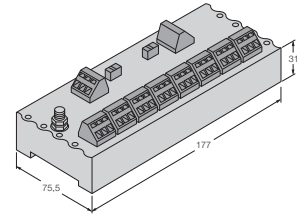
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

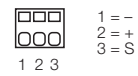
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 8-port
JRBS-40-8C/EX**

Type	JRBS-40-8C/EX
Ident-No.	6611450
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 according 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 inductance/capacitance 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
Device designation	⊕ II 2 G EEx ib IIC/IIB T4 ⊕ II 2(1) G EEx ia IIC/IIB T4 ⊕ II 2 G (2D) EEx ib [ibD] IIB T4 ⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4 FISCO / Entity field device
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	⊕ II 3 G Ex nA II T4 ⊕ II 3 G Ex nA [nL] IIC/IIB T4 FNICO / Entity field device
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	177 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

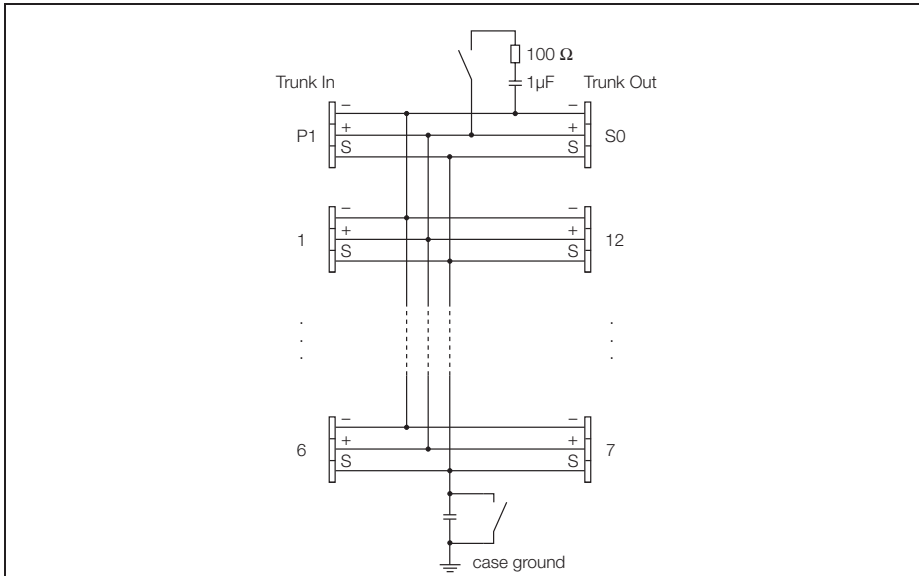
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40-12C/EX**



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

The housing is made of 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 bolt of the housing to the system's potentializer.

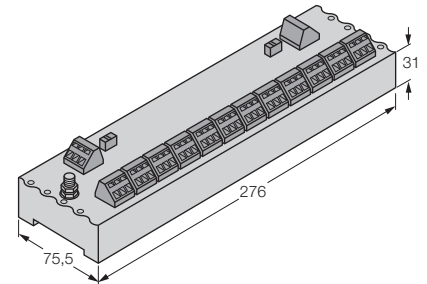
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

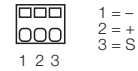
**FOUNDATION™ fieldbus and PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40-12C/EX**

Type	JRBS-40-12C/EX
Ident-No.	6611454
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 according 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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.33 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	<p>⊕ II 2 G EEx ib IIC/IIB T4</p> <p>⊕ II 2(1) G EEx ia IIC/IIB T4</p> <p>⊕ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p>
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	<p>⊕ II 3 G Ex nA II T4</p> <p>⊕ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Electrical connection	cage clamp terminals
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	276 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

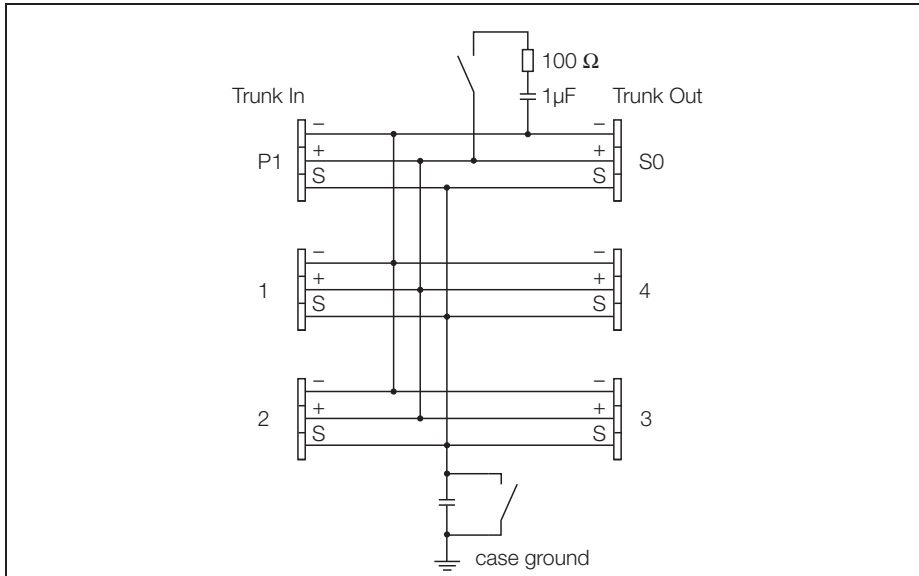
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 4-port
JRBS-40-4R/EX**



The 4-port Ex junction box JRBS-40-4R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

The housing is made of 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 bolt of the housing to the system's potentializer.

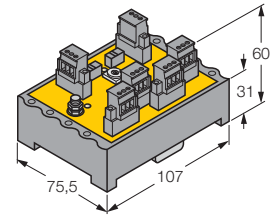
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

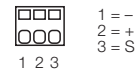
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 4-port
JRBS-40-4R/EX**

Type	JRBS-40-4R/EX
Ident-No.	6611456
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	<p>⊕ II 2 G EEx ib IIC/IIB T4</p> <p>⊕ II 2(1) G EEx ia IIC/IIB T4</p> <p>⊕ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>⊕ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p>
Ex approval acc. to conformity certificate	PTB 07 ATEX 2035 X
Device designation	<p>⊕ II 3 G Ex nA II T4</p> <p>⊕ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	119 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

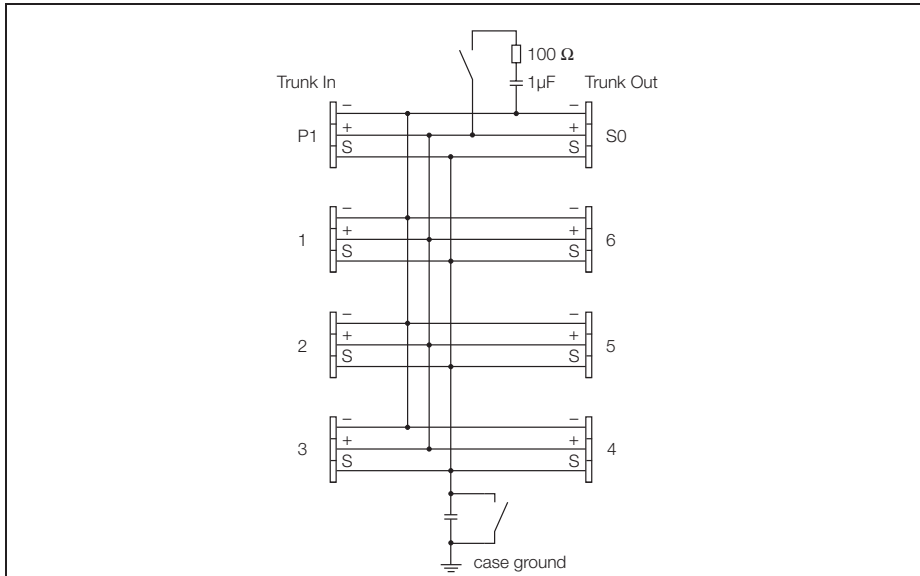
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 6-port
JRBS-40-6R/EX**



The 6-port Ex junction box JRBS-40-6R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

The housing is made of 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 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.

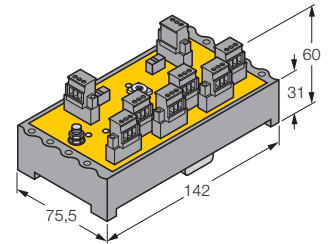


- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

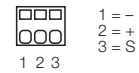
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 6-port
JRBS-40-6R/EX**

Type	JRBS-40-6R/EX
Ident-No.	6611457
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.82 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	<p>Ⓔ II 2 G EEx ib IIC/IIB T4</p> <p>Ⓔ II 2(1) G EEx ia IIC/IIB T4</p> <p>Ⓔ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>Ⓔ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p> <p>PTB 07 ATEX 2035 X</p> <p>Ⓔ II 3 G Ex nA II T4</p> <p>Ⓔ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Ex approval acc. to conformity certificate	
Device designation	
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	142 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

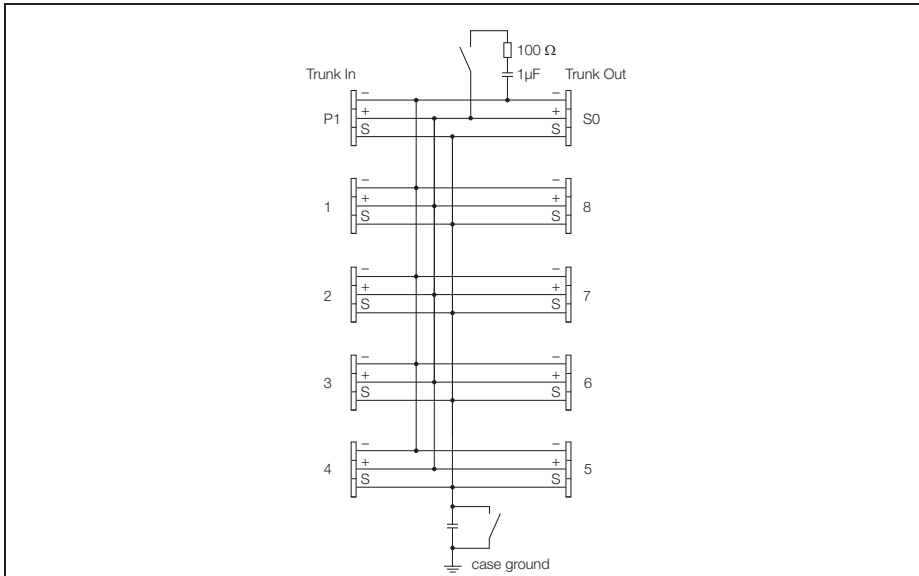
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 8-port
JRBS-40-8R/EX**



The 8-port Ex junction box RBS-40-8R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

The housing is made of 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 bolt of the housing to the system's potentializer.

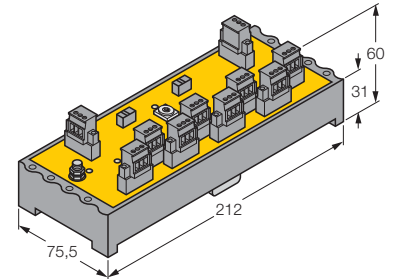
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

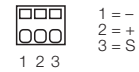
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 8-port
JRBS-40-8R/EX**

Type	JRBS-40-8R/EX
Ident-No.	6611458
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 inductance/capacitance 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
Device designation	<p>Ⓔ II 2 G EEx ib IIC/IIB T4</p> <p>Ⓔ II 2(1) G EEx ia IIC/IIB T4</p> <p>Ⓔ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>Ⓔ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p> <p>PTB 07 ATEX 2035 X</p> <p>Ⓔ II 3 G Ex nA II T4</p> <p>Ⓔ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Ex approval acc. to conformity certificate	
Device designation	
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	177 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

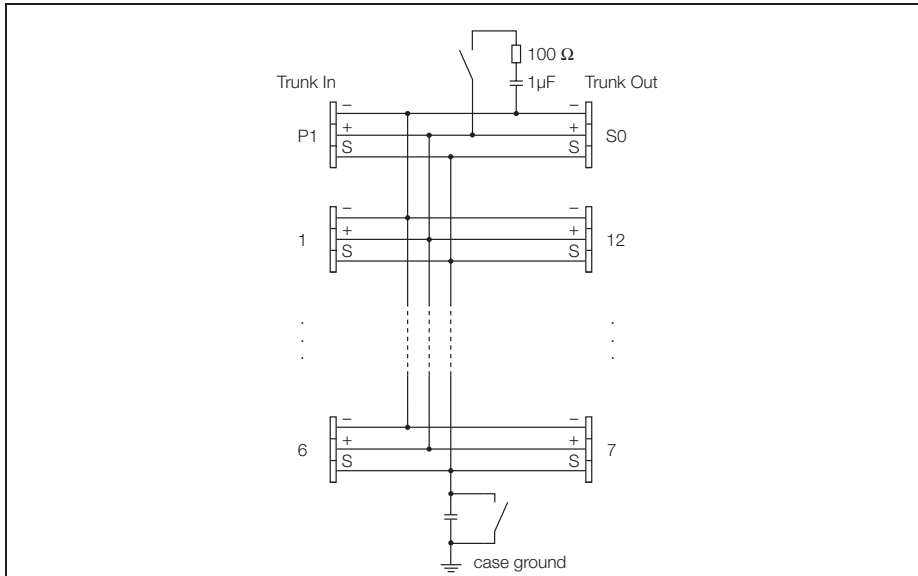
Dimensions



Terminal Configuration



**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40-12R/EX**



The 12-port Ex junction box JRBS-40-12R/EX is designed for fieldbus systems according to IEC 61158-2, i.e. it is suited for both PROFIBUS PA and FOUNDATION™ fieldbus.

The housing is made of 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 bolt of the housing to the system's potentializer.

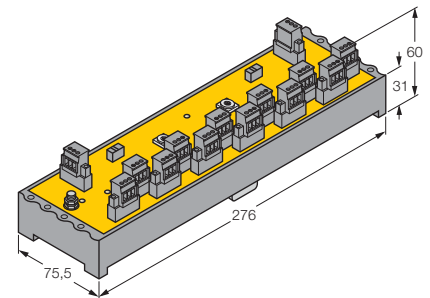
Accessories: To increase the degree of protection, there are various aluminium and stainless steel housings with IP6x rating and various cable glands available on request.

- Entity and FISCO compliant according to IEC TS 60079-27
- Junction box for DIN rail mounting
- Aluminium housing
- For Ex applications: -25...+70 °C (-13...+158 °F); for non-Ex applications: -40...+70 °C (-40...+158 °F)
- Switch-in terminating resistor
- Cable shielding: Capacitive or direct connection with housing potential selectable via switch

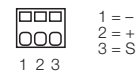
**FOUNDATION™ fieldbus und PROFIBUS-PA
IP20 junction box, 12-port
JRBS-40-12R/EX**

Type	JRBS-40-12R/EX
Ident-No.	6611462
Fieldbus standard	IEC 61158-2
Operational voltage range:	9 ... 32 VDC
Ex approval acc. to conformity certificate	PTB 05 ATEX 2002
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 inductance/capacitance L_i/C_i	Trunk (In/Out): negligible / ≤ 5.00 nF per field current circuit: negligible / ≤ 0.33 nF Σ field current circuits: negligible / ≤ 5.00 nF
Device designation	<p>Ⓔ II 2 G EEx ib IIC/IIB T4</p> <p>Ⓔ II 2(1) G EEx ia IIC/IIB T4</p> <p>Ⓔ II 2 G (2D) EEx ib [ibD] IIB T4</p> <p>Ⓔ II 2 (1) G (1D) EEx ia [iaD] IIB T4</p> <p>FISCO / Entity field device</p> <p>PTB 07 ATEX 2035 X</p> <p>Ⓔ II 3 G Ex nA II T4</p> <p>Ⓔ II 3 G Ex nA [nL] IIC/IIB T4</p> <p>FNICO / Entity field device</p>
Ex approval acc. to conformity certificate	
Device designation	
Electrical connection	removable terminal block, reverse polarity protected, screw connection
Terminal cross-section	2.5 mm ²
Earthing bolt	M5 x 1
Degree of protection	IP20
Ambient temperature	-25 ... + 70 °C
Housing material	aluminium
Housing color	black
Dimensions	276 x 31 x 75.5 mm
Connection mode	snap-on DIN rail (EN 60715)

Dimensions



Terminal Configuration



FOUNDATION™ fieldbus

Cable technology – Basics

A two or three wire cable is prescribed by IEC 61158-2 as the transmission medium for transmission 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 $a(f = 39 \text{ kHz}) - a(f = 7.8 \text{ kHz})$, 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 spur lines (spur), connection elements (connectors or junction boxes) and a terminating resistor (see Fig. 1).

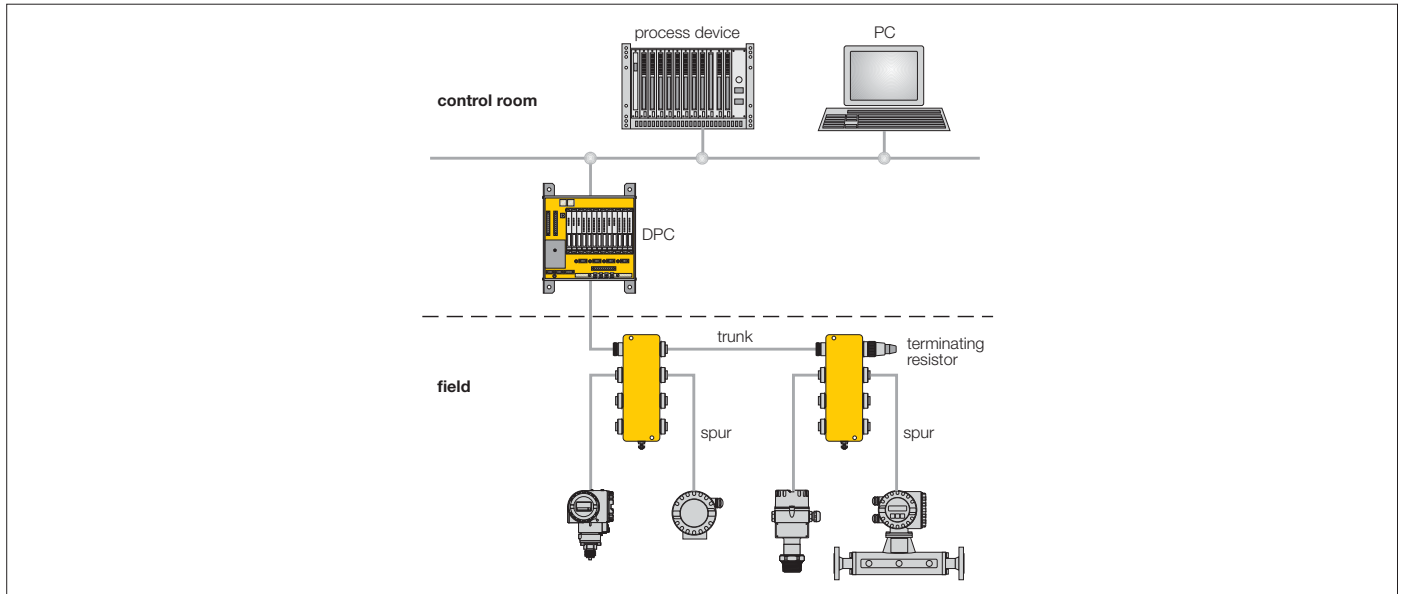


Fig. 1 Network topology

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

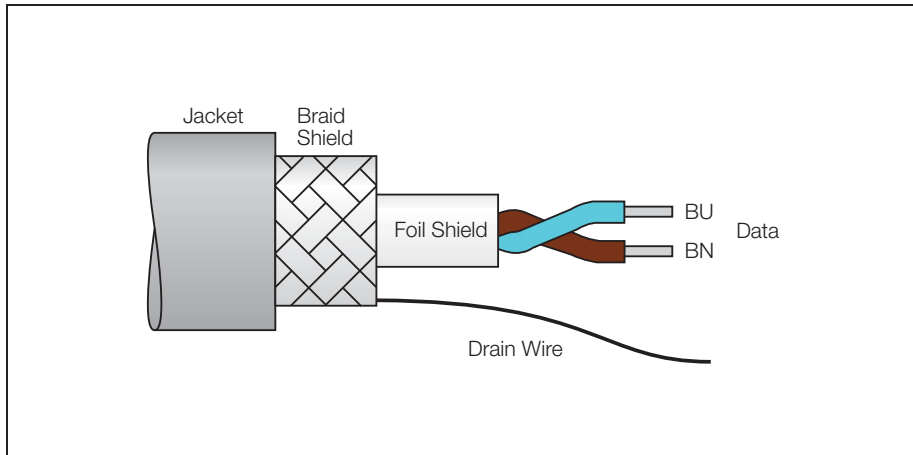
Instrumentation to FISCO

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

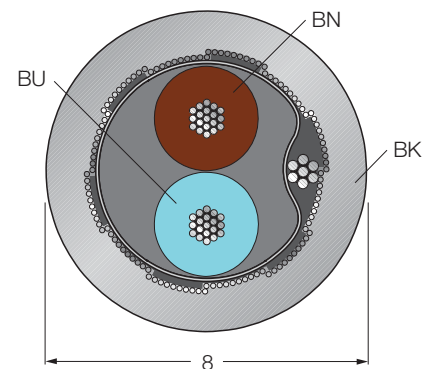
According to IEC61158-2

CABLE FBY-.../SD-...M



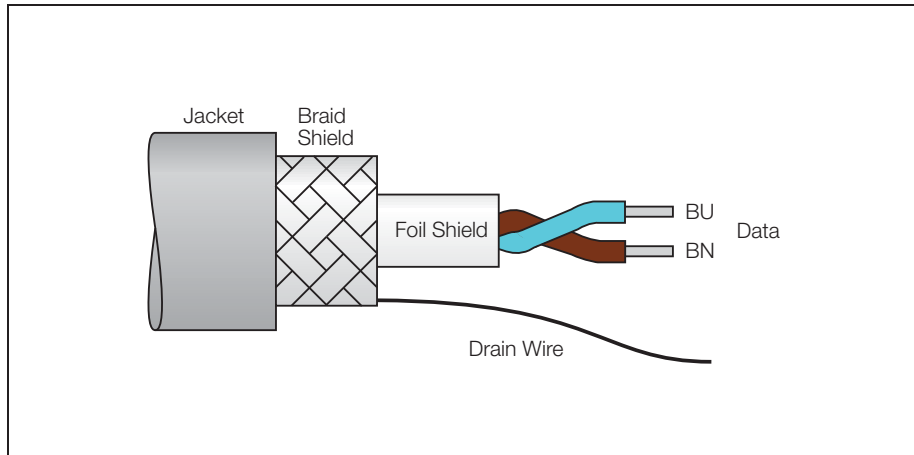
- Fieldbus cables, type A, IEC 61158-2
- PVC cable jacket, colour blue, black, yellow or orange
- Oil, gas and sunlight resistant
- Temperature range -40... +75 °C
- Cable conductor cross section: 18/7 AWG (0.8 mm²)

Conductor cross-section



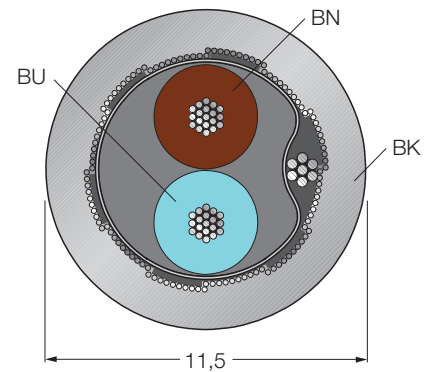
Type	CABLE FBY-.../SD-...M
Ident-No.	depending on length and colour, Ident-No. on request
Cable	18/7 AWG (0.8 mm ²), stranded plain copper
Cable jacket	PVC (blue, black, yellow or orange)
Shield	aluminium foil, tinned copper braid and stranded filler litz wire
Max. tensile strength	≤ 90 N
Bending radius	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

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



- 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 mm²)

Conductor cross-section

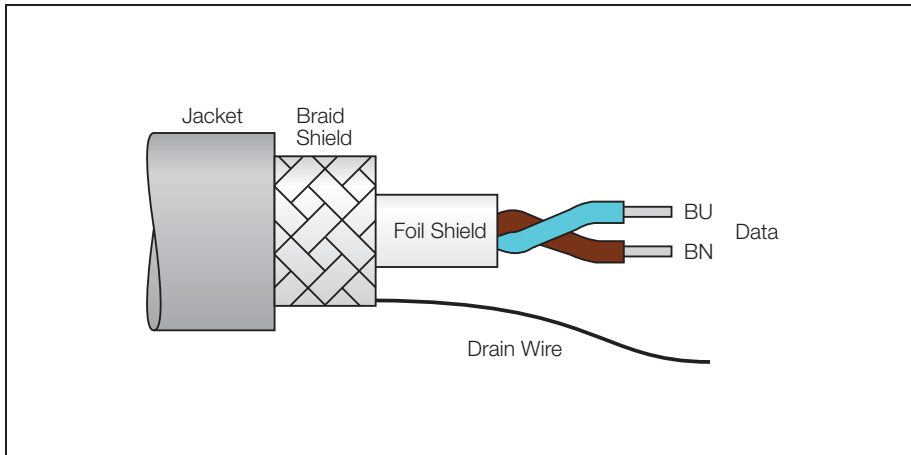


Type	CABLE FBY-BK/LD-...M
Ident-No.	depending on the length, Ident-No. on request
Cable	14/7 AWG (2.1 mm ²), stranded plain copper
Cable jacket	PVC, black
Shield	aluminium foil, tinned copper braid and stranded filler litz wire
Max. tensile strength	≤ 90 N
Bending radius	minimum 5 x cable diameter
Core 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

Fieldbus cables for fieldbus systems

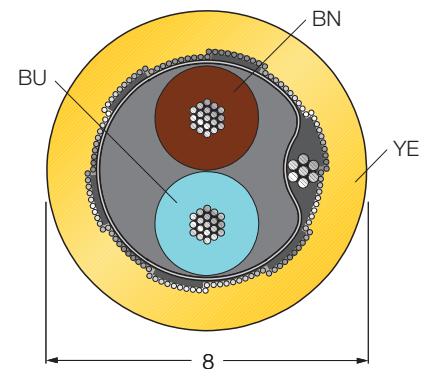
According to IEC61158-2

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

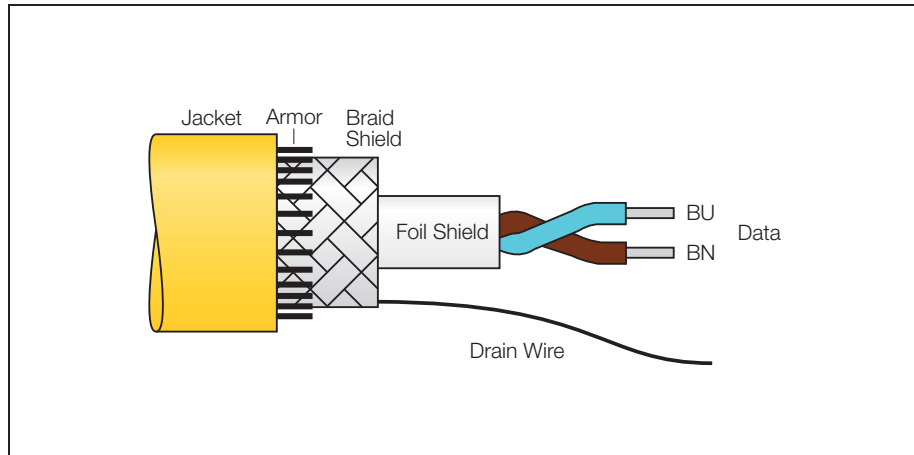


Type	CABLE FBH-YE/SD-...M
Ident-No.	depending on the length, Ident-No. on request

Cable	18/7 AWG (0.8 mm ²), 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 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

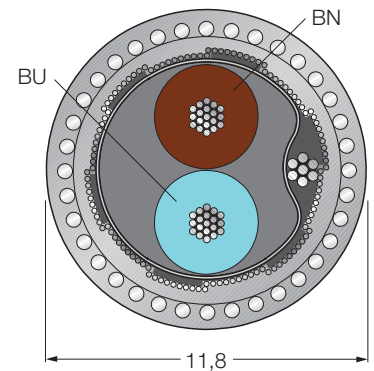
Rated voltage	max. 300 V
Ambient temperature	
At rest	-40... + 75 °C
In moving state	-5... + 50 °C
Approvals	UL
UV resistance	according to UL 1581, section 1200
Resistance to oil	according to ICEA S82-552
Flame retardant	yes
Halogen-free	yes

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



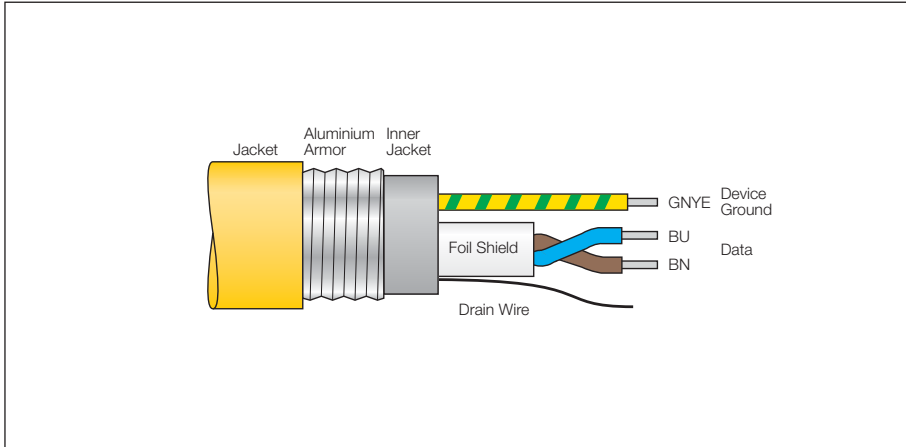
- Fieldbus cables, type A, acc. to IEC 61158-2
- PVC cable jacket, colour yellow
- Armouring Steel round wire
- Oil, gas and sunlight resistant
- Temperature range -40 ... +75 °C
- Cable conductor cross section: 18/7 AWG (0.8 mm²)

Conductor cross-section



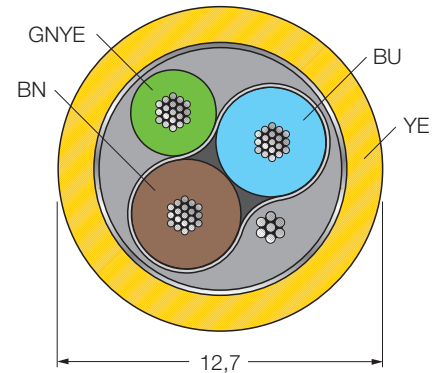
Type	CABLE FBA-YE/SD...M
Ident-No.	depending on the length, Ident-No. on request
Cable	18/7 AWG (0.8 mm ²), stranded plain copper
Cable jacket	PVC, yellow
Shield	aluminium foil, tinned copper braid and stranded filler litz wire
Max. tensile strength	≤ 90 N
Core insulation material	PE-foam with PE-casing
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

Fieldbus cables for fieldbus systems
According to IEC 61158-2
Cable 492A-...M, 492BA-...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 yellow cable jacket
- Cable 492BA with blue cable jacket

Conductor cross-section



Type designation and Ident-No.

Type Cable 492A-...M
 Type Cable 492BA-...M

depending on the length, Ident-No. on request
 depending on the length, Ident-No. on request

Cable

Insulation
 Color code

18/7 AWG (0.8 mm²), stranded bare copper
 XLPE foam
 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
 Armoured

Polyvinyl chloride (PVC)
 Aluminium
 approx. 12.7 mm

Overall diameter

**Physical properties/
 fire resistance**

Minimum bending radius
 Ambient temperature
 At rest
 In moving state
 UV resistance
 Flame retardant

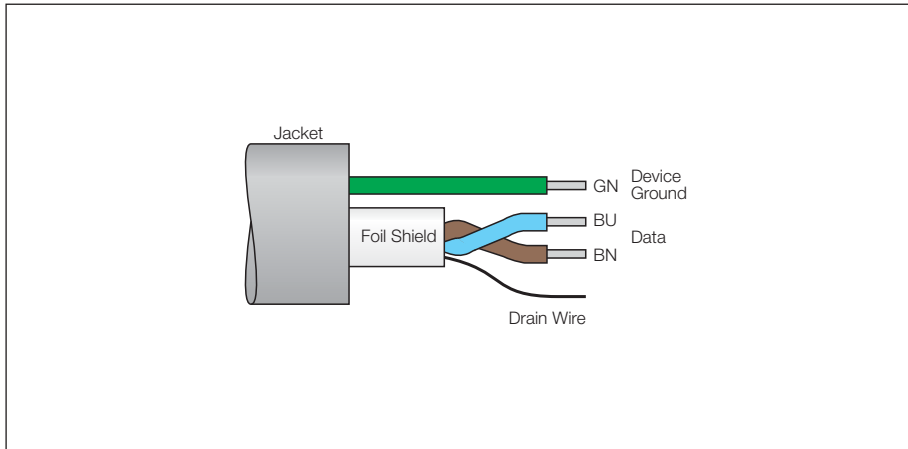
once: 40 mm/repeated: 60 mm
 -40 ... +75 °C
 -5 ... +50 °C
 conform to UL 1581, section 1200
 PLTC cable, flame resistant conform to CSA-
 FT4

Electrical properties at 20° C

Inductance
 Total capacitance
 Impedance (at 31.25 kBit/s)
 DC resistance
 High voltage test (conductor/conductor
 and conductor/shield)
 Operational voltage

max. 0.44 mH/km
 max. 52.43 nF/km
 100 Ω /± 20 Ω
 2 x 21.3 Ω/Km
 1500 V
 max. 300 V

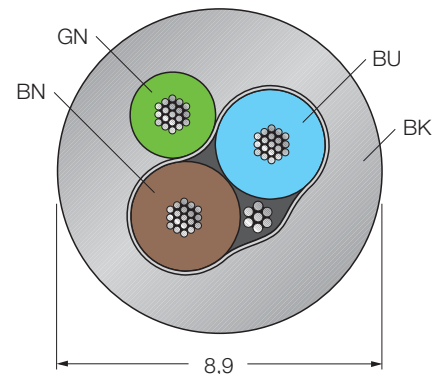
Fieldbus cables for fieldbus systems
According to IEC 61158-2
Cable FB4910-BK...M



- Fieldbus cables, type A, IEC 61158-2
- Special cable for FOUNDATION fieldbus™
- 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

Type	Cable FB4910-BK-...M
Ident-No.	depending on the length, Ident-No. on request
Cable	18/7 AWG (0.8 mm ²), stranded bare copper
Insulation	XLPE foam
Color 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

Conductor cross-section



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

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

5

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



1. Workday

**Ordering until
12 p.m.**

Production



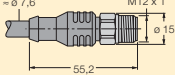

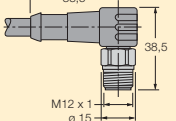

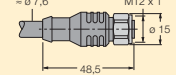

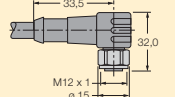




**Delivery
3 workdays after
ordering**

**Arrival
at the
customer**





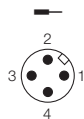
5. Workday*

* valid for deliveries
within the European Union (EU)

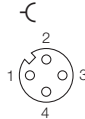
M12 x 1		Type designation cable type FBY49x, x = colour (BU, BK, OG, YE), *M = variable length in m			
	 one-sided pre-moulded	RSCV  	WSCV  	RKCV  	WKCV  
RSCV 	RSCV-FBY49x-*M/5D	RSCV-RSCV-FBY49x-*M/5D	—	RSCV-RKCV-FBY49x-*M/5D	—
WSCV 	WSCV-FBY49x-*M/5D	—	WSCV-WSCV-FBY49x-*M/5D	—	WSCV-WKCV-FBY49x-*M/5D
RKCV 	RKCV-FBY49x-*M/5D	—	—	RKCV-RKCV-FBY49x-*M/5D	—
WKCV 	WKCV-FBY49x-*M/5D	—	—	—	WKCV-WKCV-FBY49x-*M/5D

Pin configuration:



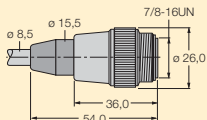

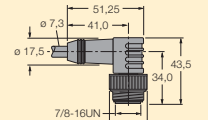

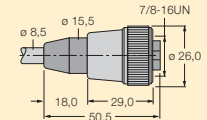

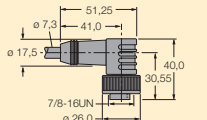




Male 
Female 





1 = - (BU)
2 = + (BN)
3 = S (Shield)
4 = n.c.



1 = - (BU)
2 = + (BN)
3 = S (Shield)
4 = n.c.

7/8"		Type designation cable type FBY49x, x = colour (BU, BK, OG, YE), *M = variable length in m			
	 one-sided pre-moulded	RSV  	WSV  	RKV  	WKV  
RSV 	RSV-FBY49x-*M/5D	RSV-RSV-FBY49x-*M/5D	—	RSV-RKV-FBY49x-*M/5D	—
WSV 	WSV-FBY49x-*M/5D	—	WSV-WSV-FBY49x-*M/5D	—	WSV-WKV-FBY49x-*M/5D
RKV 	RKV-FBY49x-*M/5D	—	—	RKV-RKV-FBY49x-*M/5D	—
WKV 	WKV-FBY49x-*M/5D	—	—	—	WKV-WKV-FBY49x-*M/5D

Pin configuration:

Male 
Female 



1 = - (BU)
2 = + (BN)
3 = S (Shield)
4 = n.c.





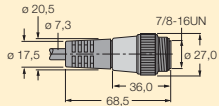

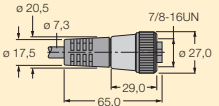


1 = - (BU)
2 = + (BN)
3 = S (Shield)
4 = n.c.

Connectors



Coupling nut: Stainless steel
Contacts: Gold-plated
Grip: PA
Protection degree: IP67

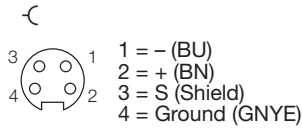
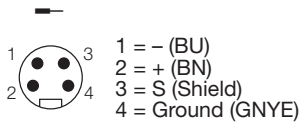
Cable layout

Outer jacket: Polyvinyl chloride (PVC)
Core isolation: PE-foam with PR-jacket
Colour code: BN, BU
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

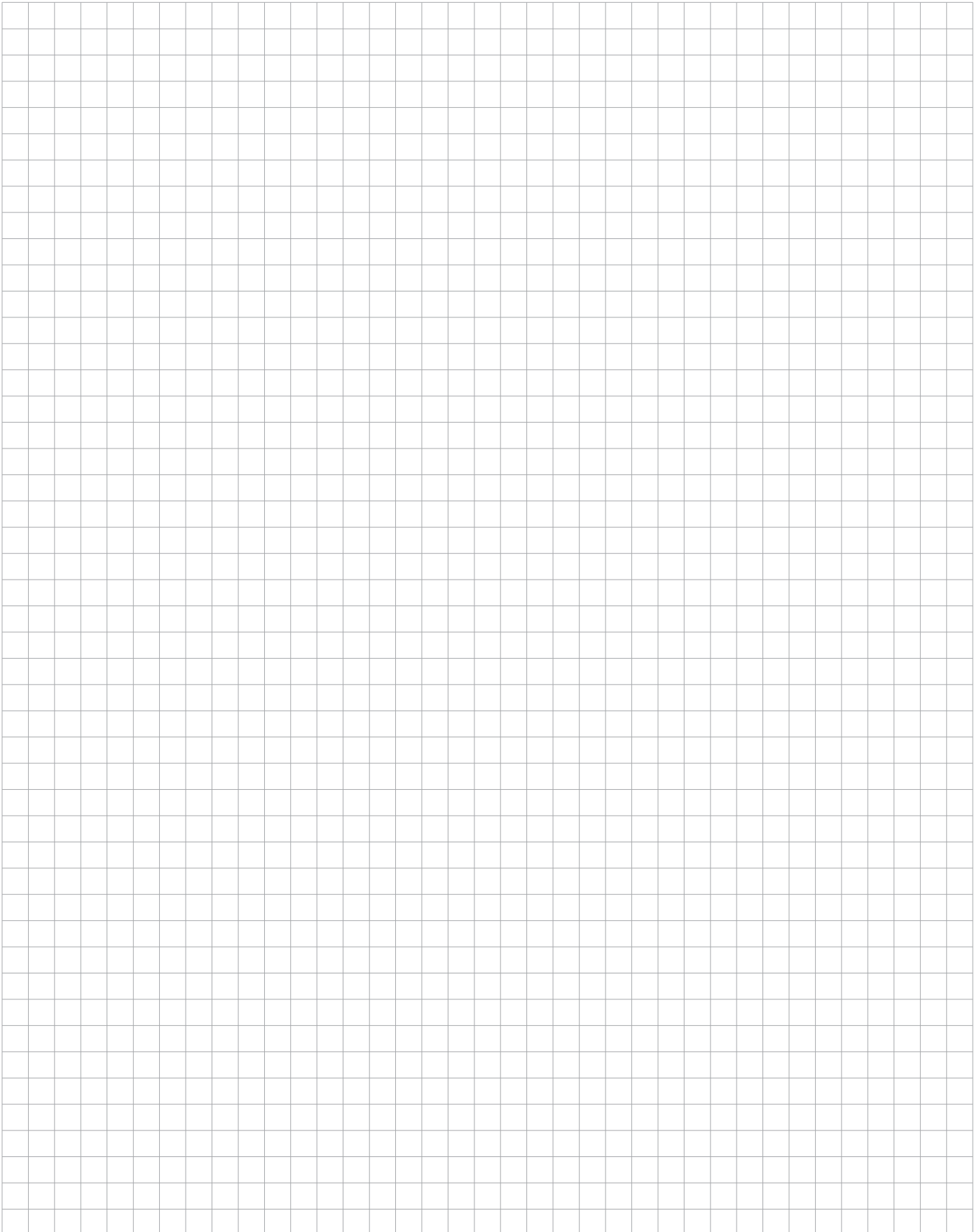
7/8"		Type designation armoured cable type 492A, 492 BA, *M = variable length in m			
	 one-sided premoulded	RSV  	RKV  		
RSV 	RSV492A-*M RSV492BA-*M	—	RSV-RKV492A-*M RSV-RKV492BA-*M		
RKV 	RKV492A-*M RKV492BA-*M	—	—		

Pin configuration:

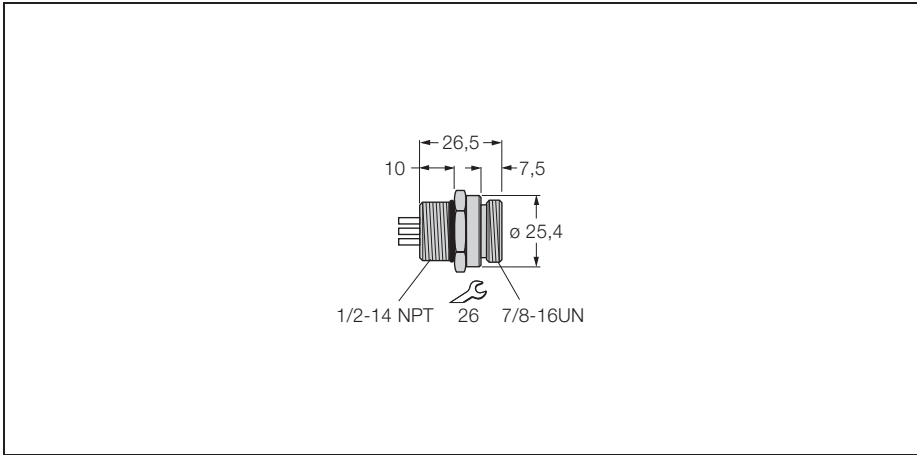
Male 
Female 



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

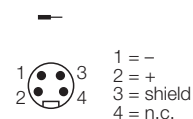


Accessories for fieldbus systems
Flange connector
RSFV49



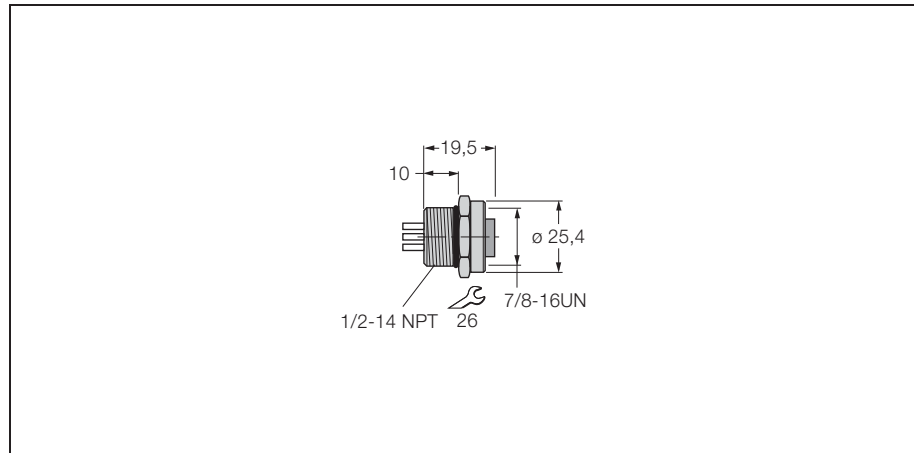
- **Version: male 7/8" connector**
- **1/2-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, solderable**
- **For FOUNDATION™ fieldbus applications**

FOUNDATION™ fieldbus connection



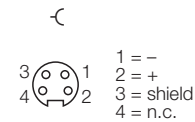
Type	RSFV49
Ident-No.	6602199
Connector	Male flange connector, 7/8"
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3
Rated voltage	max. 600 V
Insulation resistance	$\geq 10^9 \Omega$
Ampacity	9 A
Forward resistance	$\leq 5 \text{ m}\Omega$
Ambient temperature Connector	-40 ... + 105 °C

Accessories for fieldbus systems
Flange connector
RKFBV49



- Version: female 7/8" connector
- 1/2-14 NPT screw-in thread
- Stainless steel flange housing
- 4-pole, solderable
- For FOUNDATION™ fieldbus applications

FOUNDATION™ fieldbus connection

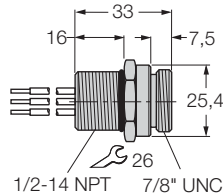


Type	RKFBV49
Ident-No.	6602198
Connector	female flange connector, 7/8"
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3
Rated voltage	max. 600 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 °C

Accessories for fieldbus systems

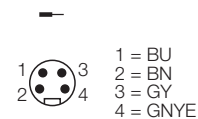
Flange connector

RSFV49-0,3M/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 FOUNDATION™ fieldbus applications

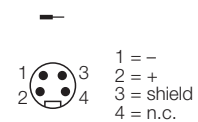
Pin configuration



Type	RSFV49-0,3M/14,5/C1117
Ident-No.	6603396

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, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	1/2-14 NPT
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3

FOUNDATION™ fieldbus connection



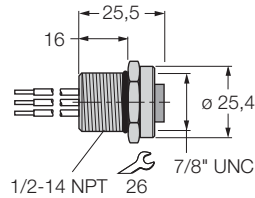
Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm ²

Rated voltage	max. 600 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

Accessories for fieldbus systems

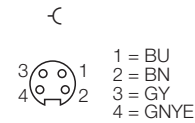
Flange connector

RKFBV49-0,3M/14,5

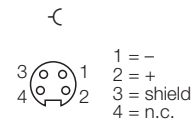


- Version: female 7/8" connector
- 1/2-14 NPT screw-in thread
- Stainless steel flange housing
- 4-pole, litz wire length 0.3 m
- For FOUNDATION™ fieldbus applications

Pin configuration



FOUNDATION™ fieldbus connection

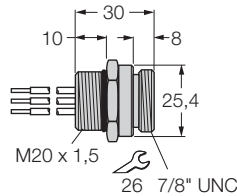


Type	RKFBV49-0,3M/14,5
Ident-No.	6602475
Connector	female flange connector, 7/8", with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Screw-in thread seal	NBR
Flange housing	stainless steel, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
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
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

Accessories for fieldbus systems

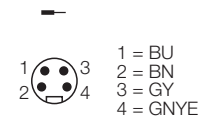
Flange connector

RSFV49-0,3M/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 FOUNDATION™ fieldbus applications

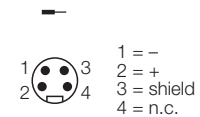
Pin configuration



Type	RSFV49-0,3M/M20/C1117
Ident-No.	6603583

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, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3

FOUNDATION™ fieldbus connection

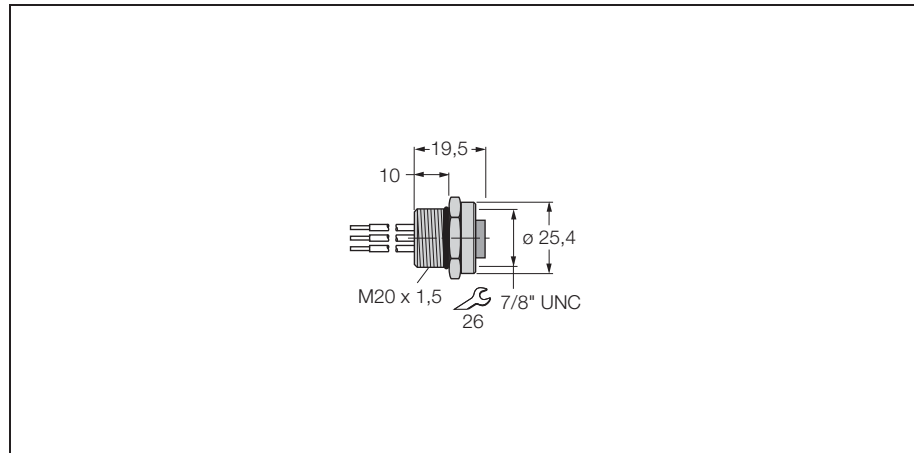


Litz wire length	0.3 m
Core insulation material	PVC
Core insulation colours	BU, BN, GY, GNYE
Core cross-section	4 x 0.8 mm ²

Rated voltage	max. 600 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

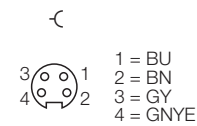
Accessories for fieldbus systems

**Flange connector
RK FV49-0,3M/M20**



- 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 FOUNDATION™ fieldbus applications

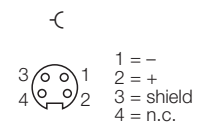
Pin configuration



Type	RK FV49-0,3M/M20
Ident-No.	6603584

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, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3

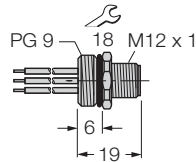
FOUNDATION™ fieldbus connection



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

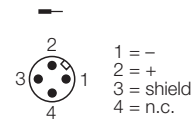
Rated voltage	max. 600 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

Accessories for fieldbus systems
Flange connector
FSV49



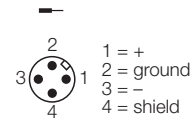
- **Version: M12 connector**
- **PG 9 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, solderable**
- **For use in Foundation™ fieldbus and PROFIBUS-PA applications**

FOUNDATION™ fieldbus connection



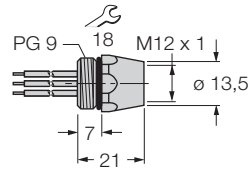
Type	FSV49
Ident-No.	6604378
Connector	Male flange connector, M12 x 1
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	PG 9
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3

PROFIBUS-PA connection



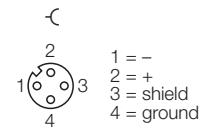
Rated voltage	max. 250 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

Accessories for fieldbus systems
Flange connector
FKV49

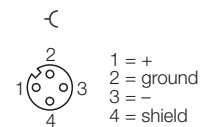


- Version: female M12 connector
- PG 9 screw-in thread
- Stainless steel flange housing
- 4-pole, solderable
- For use in Foundation™ fieldbus and PROFIBUS-PA applications

FOUNDATION™ fieldbus connection

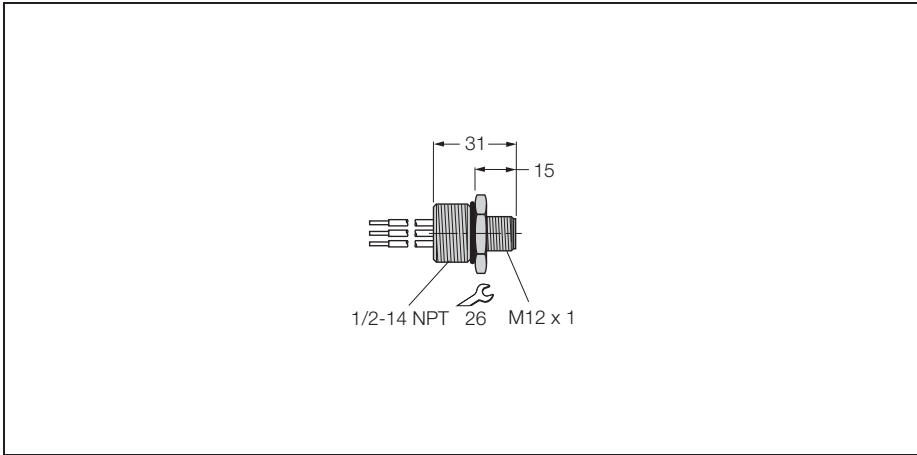


PROFIBUS-PA connection



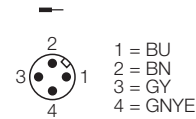
Type	FKV49
Ident-No.	6603426
Connector	female flange connector, M12 x 1
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	PG 9
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

Accessories for fieldbus systems
Flange connector
FSV49-0,3M/14,5/C1117



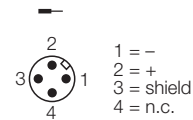
- **Version: M12 connector**
- **1/2-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For FOUNDATION™ fieldbus applications**

Pin configuration

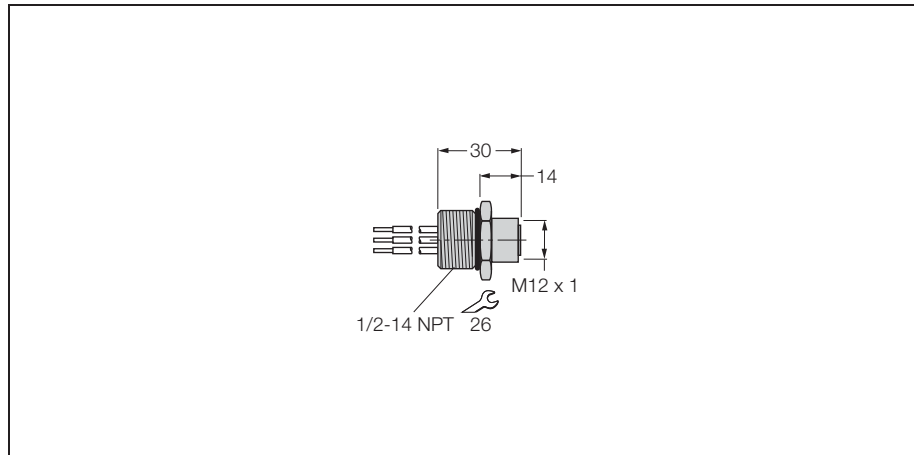


Type	FSV49-0,3M/14,5/C1117
Ident-No.	6602107
Connector	Male flange connector, M12 x 1, with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4401 (316)
Degree of protection	IP67, only with screws 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
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

FOUNDATION™ fieldbus connection

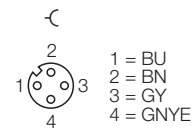


Accessories for fieldbus systems
Flange connector
FKV49-0,3M/14,5/C1117

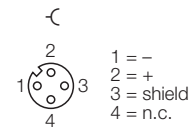


- **Version: female M12 connector**
- **1/2-14 NPT screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For FOUNDATION™ fieldbus applications**

Pin configuration



FOUNDATION™ fieldbus connection

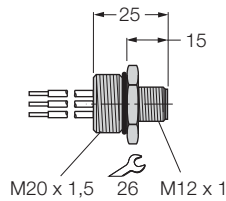


Type	FKV49-0,3M/14,5/C1117
Ident-No.	6603298
Connector	female flange connector, M12 x 1, with litz wire
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PA, black
Screw-in thread seal	plastic
Flange housing	stainless steel, 1.4401 (316)
Degree of protection	IP67, only with 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
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

Accessories for fieldbus systems

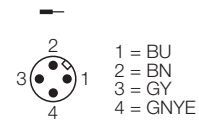
Flange connector

FSV49-0,3M/M20/C1117



- **Version: M12 connector**
- **M20 x 1.5 screw-in thread**
- **Stainless steel flange housing**
- **4-pole, litz wire length 0.3 m**
- **For FOUNDATION™ fieldbus applications**

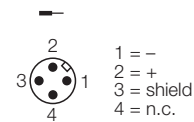
Pin configuration



Type	FSV49-0,3M/M20/C1117
Ident-No.	6603682

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, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3

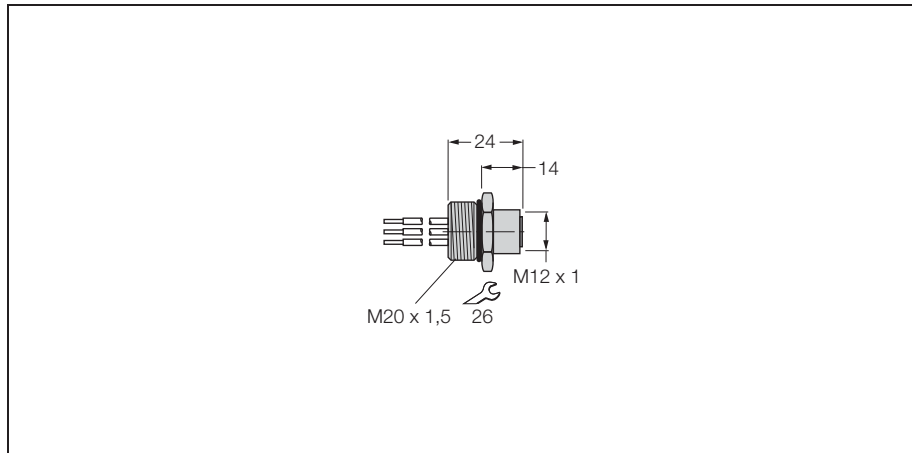
FOUNDATION™ fieldbus connection



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

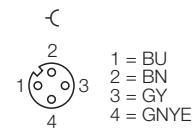
Rated voltage	max. 600 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

Accessories for fieldbus systems
Flange connector
FKV49-0,3M/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 FOUNDATION™ fieldbus applications

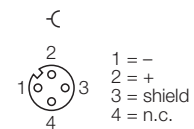
Pin configuration



Type	FKV49-0,3M/M20/C1117
Ident-No.	6603683

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, 1.4401 (316)
Degree of protection	IP67, only with screws tightened
Screw-in thread	M20 x 1,5
Mechanical lifespan	min. 100 Contact durability
Pollution degree	3

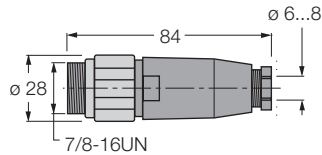
FOUNDATION™ fieldbus connection



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

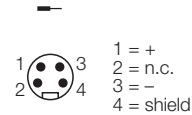
Rated voltage	max. 300 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 105 °C

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

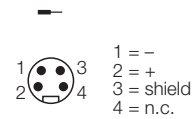


- **Version: Connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw/terminal connection**
- **4-pole, straight anodised aluminium coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications and as auxiliary supply for DeviceNet™ slaves**

PROFIBUS-PA connection

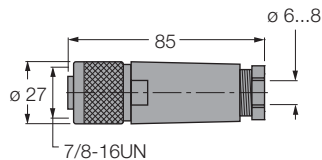


FOUNDATION™ fieldbus connection



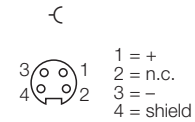
Type	BS4140-0/9
Ident-No.	6914550
Connector	field-wireable male connector, 7/8", straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	metal, Al, anodized
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Degree of protection	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
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

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

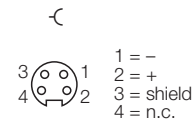


- **Version: female connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw/terminal connection**
- **4-pole, straight anodised aluminium coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications and as auxiliary supply for DeviceNet™ slaves**

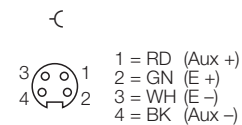
PROFIBUS-PA connection



FOUNDATION™ fieldbus connection

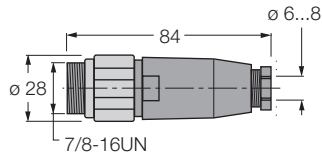


Voltage supply



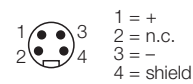
Type	BK4140-0/9
Ident-No.	6914551
Connector	field-wireable female connector, 7/8", straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	metal, Al, anodized
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Degree of protection	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
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

Accessories for fieldbus systems
Field wireable connectors
BSV4140-0/9

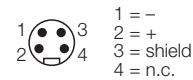


- **Version: Connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw/terminal connection**
- **4-pole, straight, stainless steel coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications**

PROFIBUS-PA connection

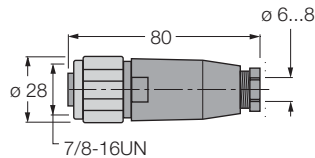


FOUNDATION™ fieldbus connection



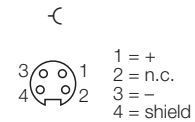
Type	BSV4140-0/9
Ident-No.	6914542
Connector	field-wireable male connector, 7/8", straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Degree of protection	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
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

Accessories for fieldbus systems
Field wireable connectors
BKV4140-0/9

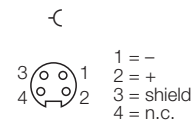


- **Version: female connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw/terminal connection**
- **4-pole, straight, stainless steel coupling nut**
- **Cable exit 6 ... 8 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications**

PROFIBUS-PA connection

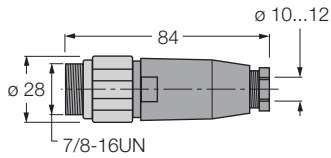


FOUNDATION™ fieldbus connection



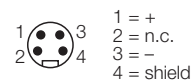
Type	BKV4140-0/9
Ident-No.	6914543
Connector	field-wireable female connector, 7/8", straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Degree of protection	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. 240 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

Accessories for fieldbus systems
Field wireable connectors
BSV4140-0/13.5

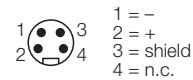


- **Version: Connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw/terminal connection**
- **4-pole, straight, stainless steel coupling nut**
- **Cable exit 10 ... 12 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications**

PROFIBUS-PA connection

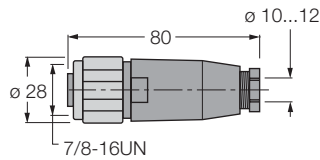


FOUNDATION™ fieldbus connection



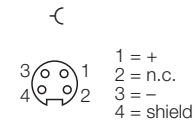
Type	BSV4140-0/13.5
Ident-No.	6914562
Connection mode	Screw terminals
Junction box	field-wireable male connector, 7/8", straight
Polarity	4-pole
Grip	plastic, PA, black
Contact carriers	plastic, TPU, black
Contacts	metal, CuZn, gold-plated
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Degree of protection	IP67, only with screws tightened
Pollution degree	3
External diameter of cable	max. 12 mm
Rated voltage	max. 250 V
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Insulation resistance	≥ 10 ⁹ Ω
Ambient temperature junction	-40 ... + 90 °C

Accessories for fieldbus systems
Field wireable connectors
BKV4140-0/13.5

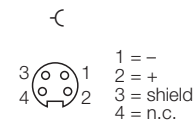


- **Version: female connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw/terminal connection**
- **4-pole, straight, stainless steel coupling nut**
- **Cable exit 10 ... 12 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications**

PROFIBUS-PA connection

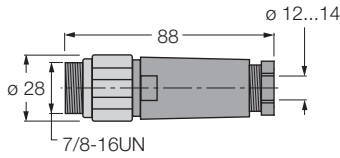


FOUNDATION™ fieldbus connection



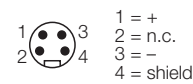
Type	BKV4140-0/13.5
Ident-No.	6914563
Connector	field-wireable female connector, 7/8", straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Degree of protection	IP67, only with screws tightened
External diameter of the cable	10 ... 12 mm
Core cross-section/Clamping ability	max. 1 mm ²
Screw-in thread	PG 13,5
Connection mode	Screw terminals
Pollution degree	3
Rated voltage	max. 240 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

Accessories for fieldbus systems
Field wireable connectors
BSV4140-0/16

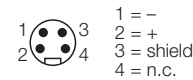


- **Version: Connector**
- **Round connector 7/8"**
- **Field-wireable**
- **Screw/terminal connection**
- **4-pole, straight, stainless steel coupling nut**
- **Cable exit 12 ... 14 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications**

PROFIBUS-PA connection

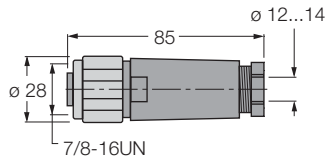


FOUNDATION™ fieldbus connection



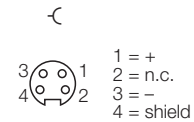
Type	BSV4140-0/16
Ident-No.	6914541
Connector	field-wireable male connector, 7/8", straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Degree of protection	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
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

Accessories for fieldbus systems
Field wireable connectors
BKV4140-0/16

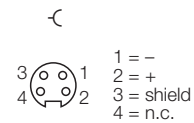


- Version: female connector
- Round connector 7/8"
- Field-wireable
- Screw/terminal connection
- 4-pole, straight, stainless steel coupling nut
- Cable exit 12 ... 14 mm
- For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications

PROFIBUS-PA connection

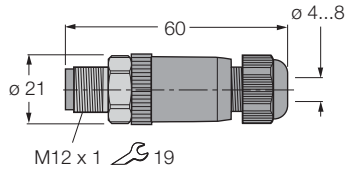


FOUNDATION™ fieldbus connection



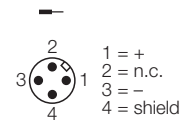
Type	BKV4140-0/16
Ident-No.	6914544
Connector	field-wireable female connector, 7/8", straight
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, TPU, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, NBR
Screw-in thread seal	plastic, NBR
Degree of protection	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. 240 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	9 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-40 ... + 90 °C

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



- **Version: M12 connector**
- **Field-wireable**
- **4-pole, straight, stainless steel coupling nut**
- **Cable exit 4.0 ... 8.0 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications**

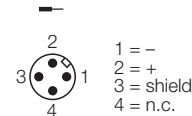
PROFIBUS-PA connection



Type	BSV8140-0/9
Ident-No.	6914537

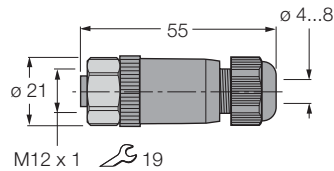
Connector	field-wireable male connector, M12 x 1, straight
Polarity	4-pole
Contacts	metal, CuZn,CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Degree of protection	IP67, 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	PG 9
Connection mode	Screw terminals
Pollution degree	3

FOUNDATION™ fieldbus connection



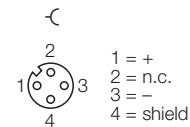
Rated voltage	max. 250 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-25 ... + 90 °C

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

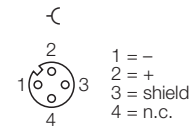


- **Version: female M12 connector**
- **Field-wireable**
- **4-pole, straight, stainless steel coupling nut**
- **Cable exit 4.0 ... 8.0 mm**
- **For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications**

PROFIBUS-PA connection

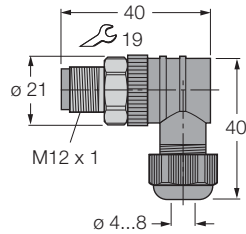


FOUNDATION™ fieldbus connection



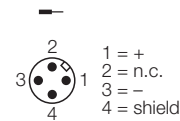
Type	BKV8140-0/9
Ident-No.	6914538
Connector	field-wireable female connector, M12 x 1, straight
Polarity	4-pole
Contacts	metal, CuZn,CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Degree of protection	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	PG 9
Connection mode	Screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-25 ... + 90 °C

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



- **Version: 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**

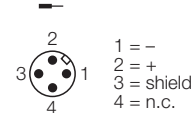
PROFIBUS-PA connection



Type	BSV8240-0/9
Ident-No.	6914539

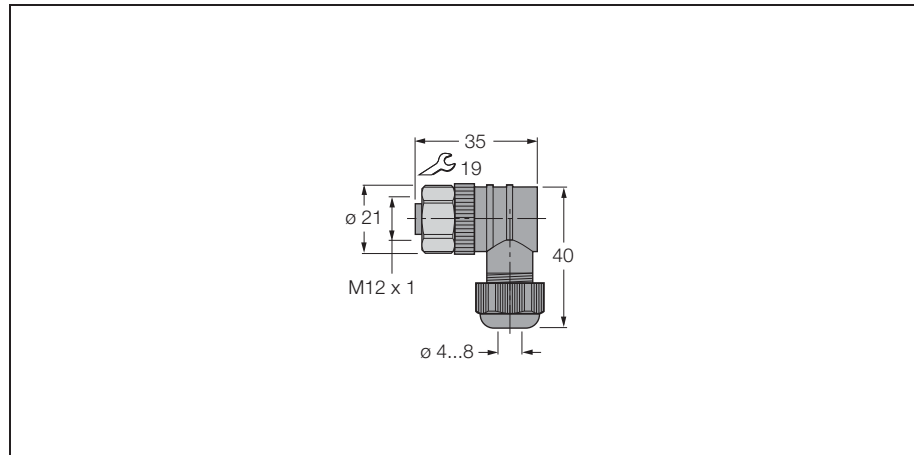
Connector	field-wireable male connector, M12 x 1, angled
Polarity	4-pole
Contacts	metal, CuZn,CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Degree of protection	IP67, 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	PG 9
Connection mode	Screw terminals
Pollution degree	3

FOUNDATION™ fieldbus connection



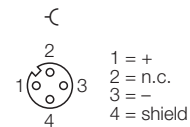
Rated voltage	max. 250 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-25 ... + 90 °C

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

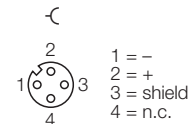


- Version: female M12 connector
- Field-wireable
- 4-pole, angled, stainless steel coupling nut
- Cable exit 4.0 ... 8.0 mm
- For use in PROFIBUS-PA and FOUNDATION™ fieldbus applications

PROFIBUS-PA connection



FOUNDATION™ fieldbus connection



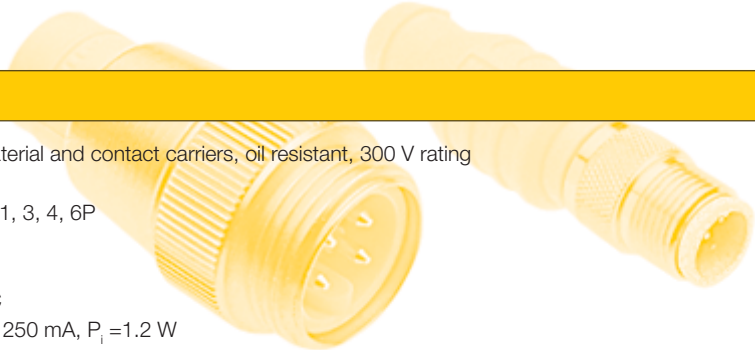
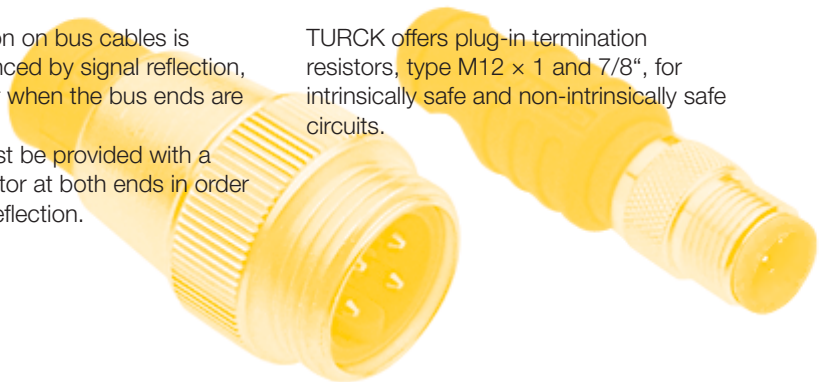
Type	BKV8240-0/9
Ident-No.	6914540
Connector	field-wireable female connector, M12 x 1, angled
Polarity	4-pole
Contacts	metal, CuZn,CuSnZn, Optalloy coated
Contact carriers	plastic, PA, black
Grip	plastic, PA, black
Coupling nut/screw	stainless steel, 1.4404
Seal	plastic, FKM/FPM
Screw-in thread seal	plastic, NBR
Degree of protection	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	PG 9
Connection mode	Screw terminals
Pollution degree	3
Rated voltage	max. 250 V
Insulation resistance	≥ 10 ⁹ Ω
Ampacity	4 A
Forward resistance	≤ 5 mΩ
Ambient temperature Connector	-25 ... + 90 °C

FOUNDATION™ fieldbus 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 and non-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	
- RSV49-TR, RSEV49-TR	$U_{\max} = 50 \text{ VDC}$
	$T_a = -40...+80 \text{ °C}$
- RSV-49-TR-Ex	$U_i = 25 \text{ VDC}, I_i = 250 \text{ mA}, P_i = 1.2 \text{ W}$
	$T_a = -40...70 \text{ °C (EEx ia IIC T4)}$
	$-40...40 \text{ °C (EEx ia IIC T6)}$

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-49-TR-Ex termination resistor 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.

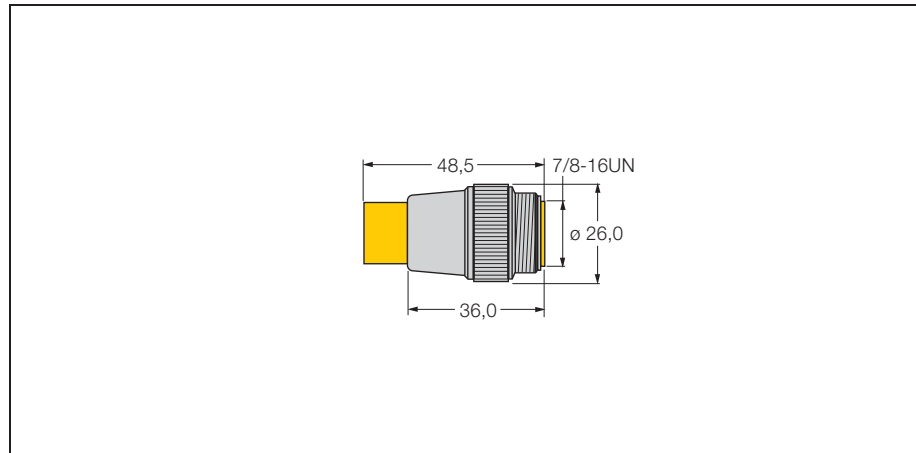
It is essential that the "special conditions" in the EU type test examination certificate are observed.



NOTE

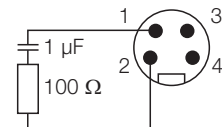
The TURCK JBBS... junctions to IP67 (4 and 6 ports) and JRBS... to IP20 are already provided with integrated switch-in bus termination resistors. Special versions excepted.

Accessories for fieldbus systems
Bus termination resistor
RSV49-TR



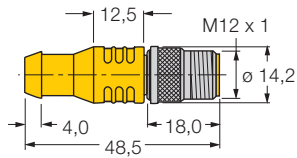
- Version: male 7/8" connector
- 4-pole, straight, stainless steel coupling nut
- For use in FOUNDATION™ fieldbus applications

Wiring diagram



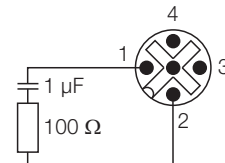
Type	RSV49-TR
Ident-No.	6602094
Connector	Connector, 7/8"
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Grip	plastic, PUR, yellow
Coupling nut/screw	stainless steel, 1.4404
Degree of protection	IP67, only with screws tightened
Ambient temperature	-40...+ 70 °C

Accessories for fieldbus systems
Bus termination resistor
RSEV49-TR



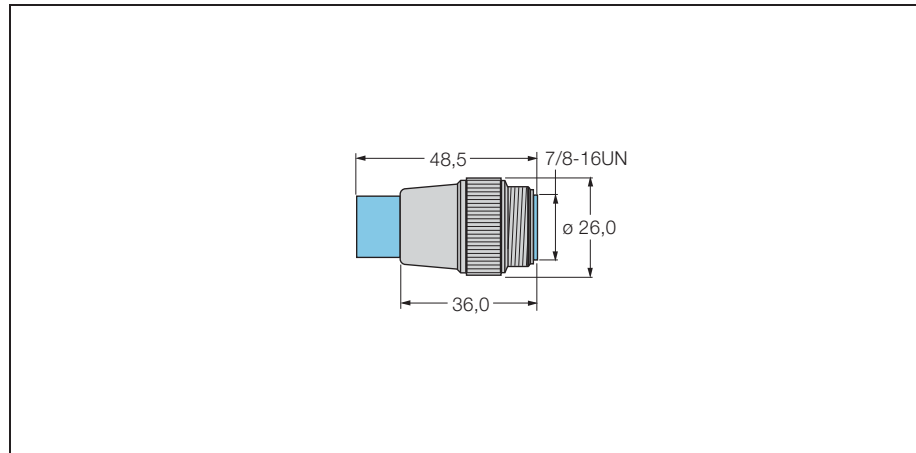
- **Version: M12 connector**
- **4-pole, straight, stainless steel coupling nut**
- **For use in FOUNDATION™ fieldbus applications**

Wiring diagram



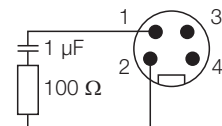
Type	RSEV49-TR
Ident-No.	6602096
Connector	Connector, M12 x 1
Polarity	4-pole
Contacts	metal, CuZn, gold-plated
Contact carriers	plastic, PUR, black
Grip	plastic, PUR, black
Coupling nut/screw	stainless steel, 1.4404
Degree of protection	IP67, only with screws tightened
Ambient temperature	-40...+ 70 °C

Accessories for fieldbus systems
Bus termination resistor
RSV-49TR-EX



- FISCO compliant according to IEC TS 60079-27
- Version: male 7/8" connector
- 4-pole, straight, stainless steel coupling nut
- For use in FOUNDATION™ fieldbus applications

Wiring diagram



Type	RSV-49TR-EX
Ident-No.	6602709
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
Degree of protection	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	≤ 25 V
Max. input current I_i	≤ 250 mA
Max. input power P_i	≤ 1200 mW
External inductance/capacitance L_i/C_i	negligible
Device designation	Ⓜ II 1 G EEx ia IIC T6 FISCO / Entity field device

Accessories for fieldbus systems

IP67 stainless steel housing

EG-VA2020/BV67-T105



The stainless steel housing EG-VA2020/BV67-T105 is suited for the integration of TURCK junction boxes JRBS-...

The robust model is especially suited for rough and aggressive environmental conditions.

Inside the housing a hat rail is located used for retaining a 4, 6 or 8 port JRBS junction box with a maximum width of 180 mm.

The connection of the cables is attained

with ten M20 x 1.5-cable glands.

With a pressure compensation element (Protection degree IP67) a continuous and reliable ventilation is ensured. This way condensation and accumulation of water is avoided.

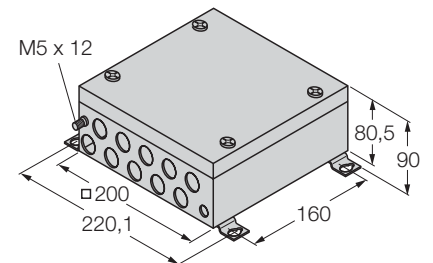
Note: Ensure sufficient equipotential bonding of the installation. The housing is connected to the equipotential bond via an M5 x 1 connector.

- **Stainless steel housing to accommodate the TURCK IP20 junction modules**
- **Protection degree IP67 (IEC/EN 60529)**
- **10 plastic cable glands M20 x 1.5 for cable guides**
- **Insulated shield terminals**
- **Wall mounting**
- **Pressure compensation element**
- **Connection of the housing potential via an M5 x 1 bolt**

Accessories for fieldbus systems
IP67 stainless steel housing
EG-VA2020/BV67-T105

Type	EG-VA2020/BV67-T105
Ident-No.	6884135
Electrical connection	cable glands 10 x M20 x 1.5 (Ø 6...13mm); plastic, black
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-30 ...+ 80 °C
Relative humidity	≤ 95 %, non condensing
Housing material	Stainless steel 1.430/AISI304
Wall thickness	1.5 mm
Housing surface	grinded and polished (240 grain size distribution)
Housing color	silver
Sealing material	PUR
Dimensions	200 x 200 x 80.5 mm
Connection mode	Wall mounting

Dimensions



Accessories for fieldbus systems
IP67 stainless steel housing
EG-VA2020/BV67-T103



The stainless steel housing EG-VA2020/ BV67-T103 is suited for the integration of TURCK junction boxes JRBS-...

The robust model is especially suited for rough and aggressive environmental conditions.

Inside the housing a hat rail is located used for retaining a 4, 6 or 8 port JRBS junction box with a maximum width of 180 mm.

The connection of the cables is attained

with ten M20 x 1.5-cable glands.

With a pressure compensation element (Protection degree IP67) a continuous and reliable ventilation is ensured. This way condensation and accumulation of water is avoided.

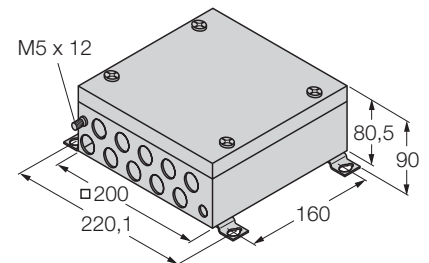
Note: Ensure sufficient equipotential bonding of the installation. The housing is connected to the equipotential bond via an M5 x 1 connector.

- **Stainless steel housing to accommodate the TURCK IP20 junction modules**
- **Protection degree IP67 (IEC/EN 60529)**
- **10 stainless steel cable glands M20 x 1.5 for cable guides**
- **Insulated shield terminals**
- **Wall mounting**
- **Pressure compensation element**
- **Connection of the housing potential via an M5 x 1 bolt**

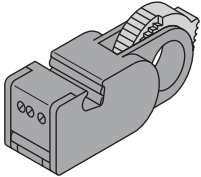
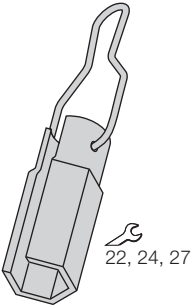
Accessories for fieldbus systems
IP67 stainless steel housing
EG-VA2020/BV67-T103

Type	EG-VA2020/BV67-T103
Ident-No.	6884136
Electrical connection	cable glands 10 x M20 x 1.5 (Ø 6...13mm); stainless steel
Earthing bolt	M5 x 1
Degree of protection	IP67
Ambient temperature	-30 ...+ 80 °C
Relative humidity	≤ 95 %, non condensing
Housing material	Stainless steel 1.430/AISI304
Wall thickness	1.5 mm
Housing surface	grinded and polished (240 grain size distribution)
Housing color	silver
Sealing material	PUR
Dimensions	200 x 200 x 80.5 mm
Connection mode	Wall mounting

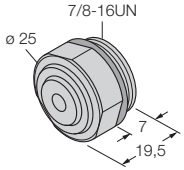
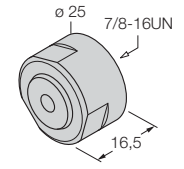
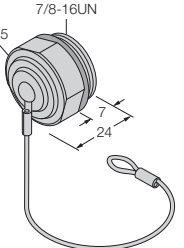
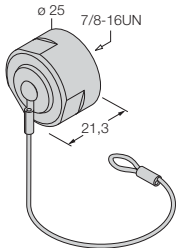
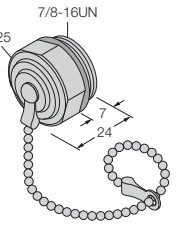
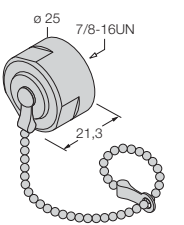
Dimensions



FOUNDATION™ fieldbus
Accessories for fieldbus systems

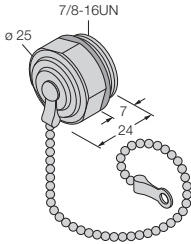
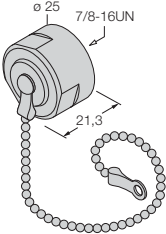
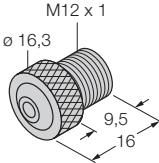
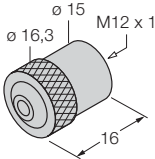
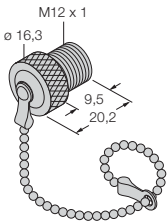
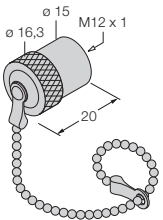
Dimensions	Application	Type designation	Ident-No.
	<p>Stripping the insulation from round (shielded) data cables from Ø 2.5...8 mm (also for FastConnect®/Fast Assembly™),</p> <p>1, 2 and 3-stage cable stripping in a single operation; Adjustment block provided for fast preadjustment of the depth, cutting edges can be used on both sides</p>	<p>TCS wire stripping tool</p>	<p>6900454</p>
	<p>Special tool for cable glands on multibarriers, <i>excom</i>®-housings¹⁾ and junctions.</p> <p>Open and close cable glands from various positions. Also work in difficult positions using the swivelling handle. Use is simplified by the slot provided in the tube (the cables fed through the cable gland are pushed through the slot on the tube). Tool sizes 22, 24 and 27, special sizes are available on request</p>	<p>VSTS22 (AF 22)</p> <p>VSTS24 (AF 24)</p> <p>VSTS27 (AF 27)</p>	<p>6884043</p> <p>6900462</p> <p>6884073</p>

¹⁾ *excom*® is the TURCK Ex remote I/O system for use in zones 1 and 2. More detailed information can be found in the product catalog.

Dimensions	Application	Material and colour	Type designation	Ident-No.
	7/8" end cap, male, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P	stainless steel	RSMV-BC	6603783
	7/8" end cap, female, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P	stainless steel	RKMV-BC	6603784
	7/8" end cap, male, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with wire rope	stainless steel	RSMV-CC	6604030
	7/8" end cap, female, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with wire rope	stainless steel	RKMV-CC	6604038
	7/8" end cap, male, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with chain, approx. 210 mm, closure closed	stainless steel	RSMV-CCC	6604490
	7/8" end cap, male, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with chain, approx. 210 mm, closure closed	stainless steel	RKMV-CCC	6604488

FOUNDATION™ fieldbus

Accessories for fieldbus systems

Dimensions	Application	Material and colour	Type designation	Ident-No.
	<p>7/8" end cap, male, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with chain, approx. 210 mm, closure open</p>	stainless steel	RSMV-CCO	6604489
	<p>7/8" end cap, female, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with chain, approx. 210 mm, closure open</p>	stainless steel	RKMV-CCO	6604485
	<p>M12 x 1 end cap, male, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P</p>	stainless steel	RSEV-BC	6902305
	<p>M12 x 1 end cap, female, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P</p>	stainless steel	RKEV-BC	6902304
	<p>M12 x 1 end cap, male, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with chain</p>	stainless steel	RSEV-CC	6604174
	<p>M12 x 1 end cap, female, oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P, with chain</p>	stainless steel	RKEV-CC	6604176

Dimensions	Application	Material and colour	Type designation	Ident-No.
	Screw-on cap for 7/8" female connectors, no internal wiring	polyamide black	VZ8	8018816
	Screw-on cap for 7/8" male connectors, no internal wiring	polyamide black	VK-7/8	6999027
	Dust cap for 7/8" flange fitting, for male flanges, no internal wiring	polyamide black	RSM-DUST-CAP	6914862
	Dust cap for 7/8" flange fitting, for female flanges, no internal wiring	polyamide black	RKM-DUST-CAP	6914863
	M12 x 1 end cap, male, oil resistant, IP54 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P	PUR yellow	VS-M12	6999003
	M12 x 1 end cap, female, oil resistant, IP54 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P	PUR yellow	VK-M12	6999025

FOUNDATION™ fieldbus

Accessories for fieldbus systems

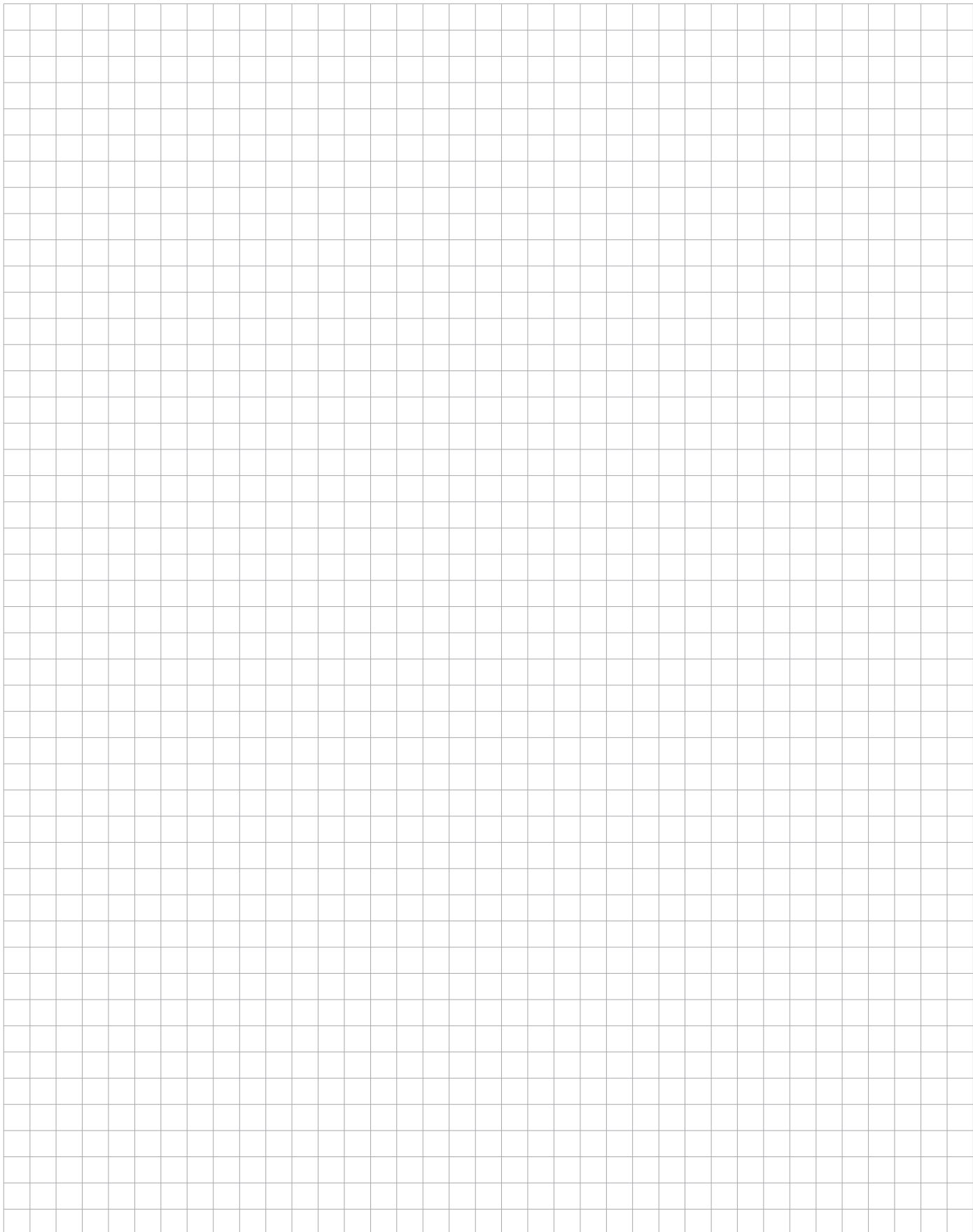
Dimensions	Application	Material and colour/ Connection technology	Type designation	Ident-No.
	M12 x 1 end cap, male oil resistant, IP67 to IEC 60529/ EN 60529 and NEMA 1, 3, 4, 6P	stainless steel/PUR grey Fig. (Fxxx)	RSEV49-CC	6603489
	7/8" feed-through receptacles, male/fe- male, IP67 to IEC 60529/EN 60529 and NEMA 1, 3, 4, 6, stainless steel	1 x 7/8" (F015) 1 x 7/8" (F016)	RSFV-RKFV49/22	6602357
	M12 x 1 feed-through receptacles, male/ female, IP67 to IEC 60529/EN 60529 and NEMA 1, 3, 4, 6, stainless steel	1 x M12 (F040) 1 x M12 (F041)	FKV-FSV49/M12	6603678

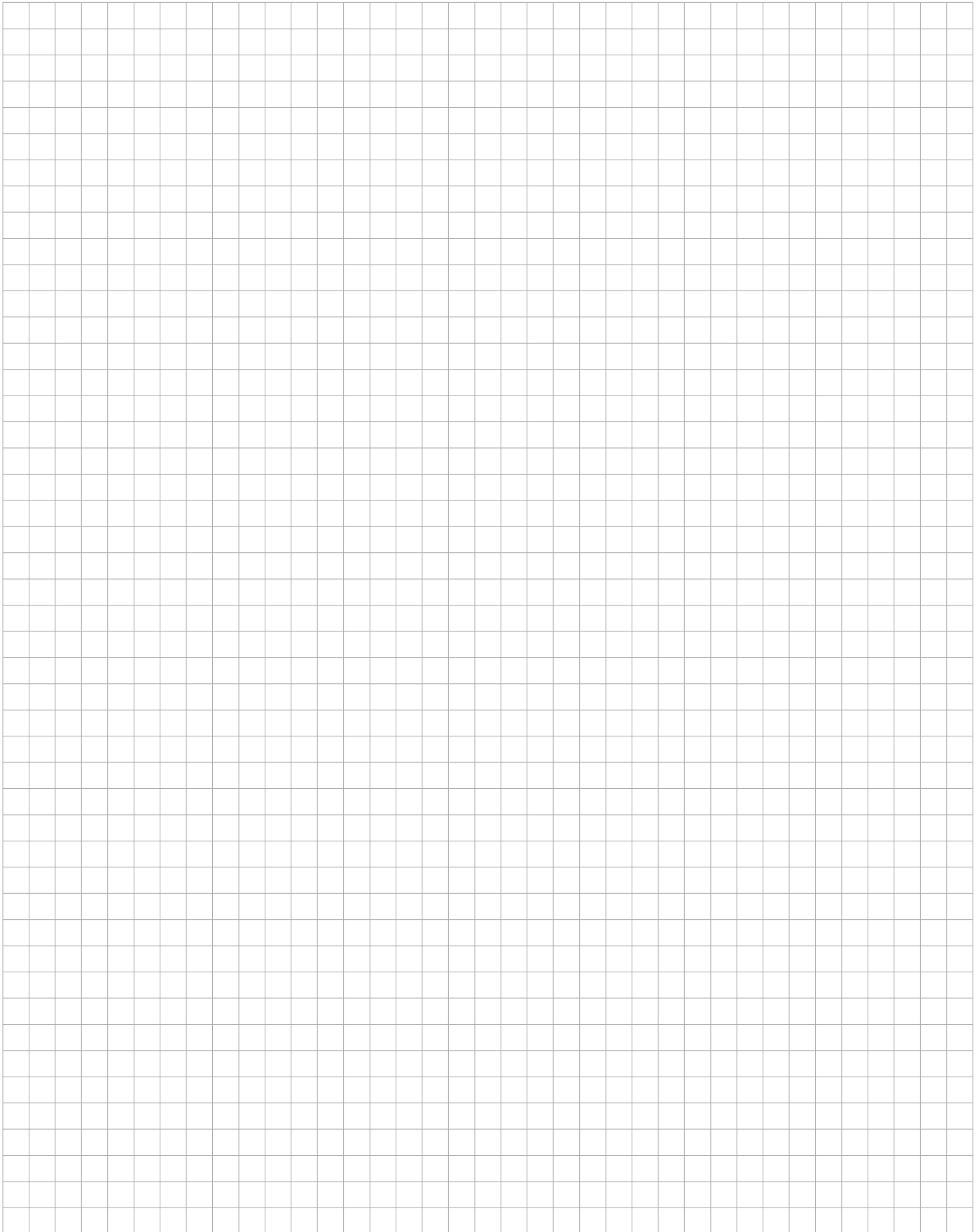
Pin assignment	(F015)	(F016)	(F040)	(F041)
<p>1 = - 2 = + 3 = shield 4 = earth</p>	<p>1 = - 2 = + 3 = shield 4 = earth</p>	<p>1 = - 2 = + 3 = shield 4 = earth</p>	<p>1 = - 2 = + 3 = shield 4 = earth</p>	



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