

M8, M12 Fieldbus, data cables and accessories

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Bus cables

The bus system lies at the heart of automation engineering. High quality products are essential here, if you hope to achieve long term, smooth functionality.

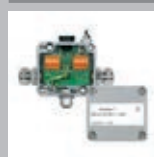
It's not only the slaves and controllers that play a significant role; the type of cables and connection mechanisms in use are also very important. Weidmüller bus cables are the ideal solution. The products, which we manufacture ourselves, (used, for example, in the Profibus, Industrial Ethernet and CANopen/DeviceNet™ sectors) have a 360 degree shielding

within the moulding. This provides effective protection for signal and data transmission.

Delivery times are another decisive factor. Our special production strategy allows us to quickly manufacture parts that are customised to a specific order. We have a dedicated department that is focussed on this strategy and which is located close to the Detmold central warehouse in order to keep delivery times to a minimum.



Bus cables: shown here in the standard colours:
blue (Profibus-PA Ex i), black (CANopen/DeviceNet or Profibus-PA), magenta (Profibus-DP) and green (Industrial Ethernet) together with the sensor cables

**Cables****M12 plug-in connector****Sub-D connector****FBCon T-distributor**

System description, fieldbus components

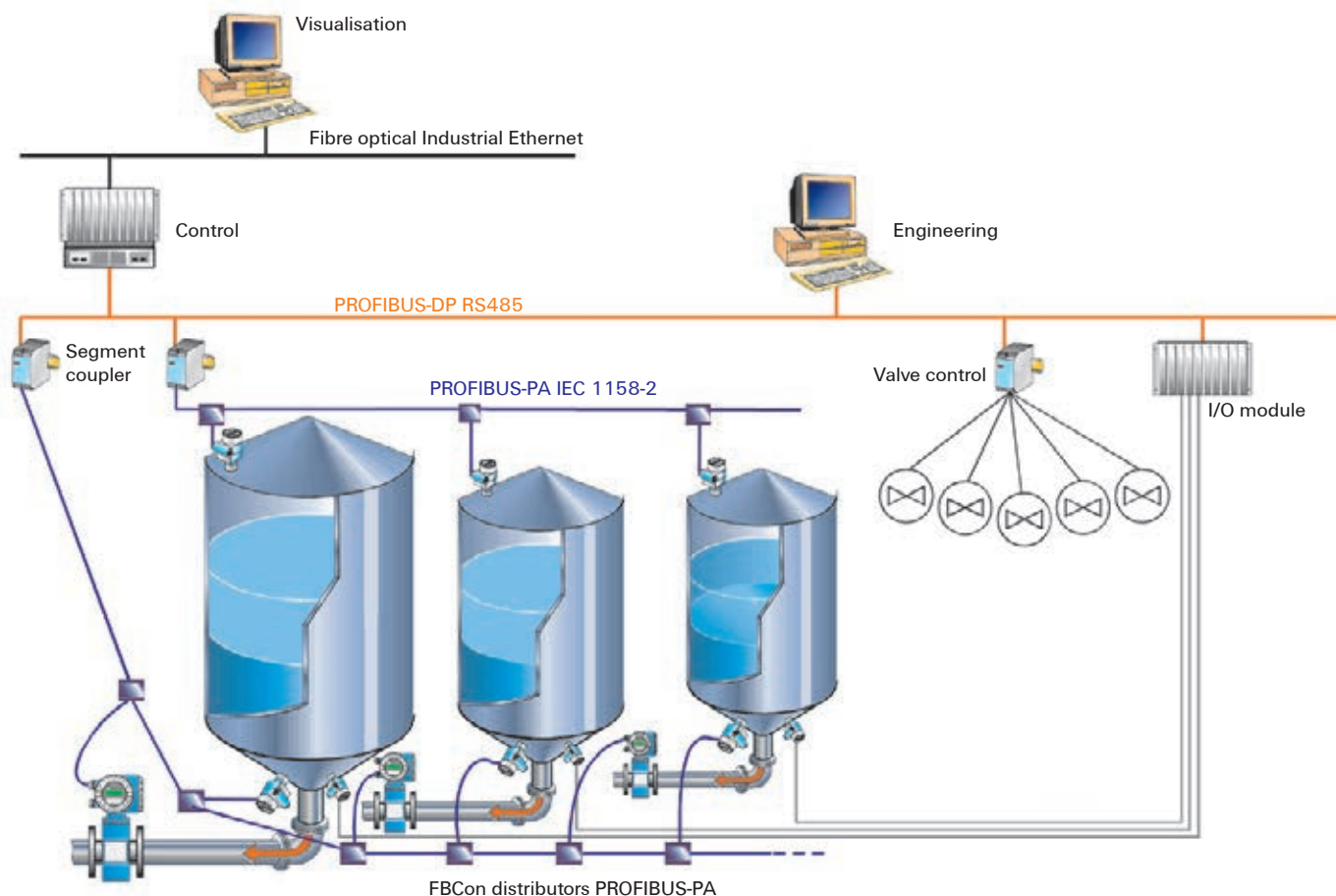
FBCon fieldbus distributors are available in industrial and Ex(ia) versions. They are used for coupling 1-8 field devices or sensors.

The connection is made via a spur. The spur is connected by an M12 plug in connector or directly via an EMC cable gland. The communication and device powering is handled by a common 2-core wire.

The distributors offer the following features irrespective of the version:

- Tension clamp connection technology
- Surge protection for the main line
- Current limiter for each stub line
- EMC cable gland
- M12 plug in connectors
- External earth stud
- Interruption-free bus operation
- Industrial specification
- Bus termination integrated (non EX)
- Ⓜ ATEX version
- Pressure equalising element
- IP 65, IP 66, IP 67 Ingress protection class
- Stainless steel versions
- PROFIBUS-PA compatible

Typical PROFIBUS system layout



Product coding

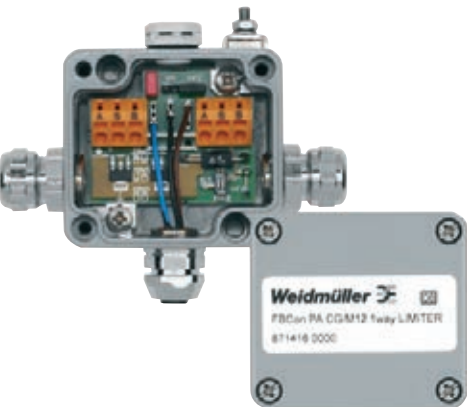
The FBCon family of distributors includes various forms. The product name indicates the respective features as follows:

FBCon	Field Bus Connection
PA	PROFIBUS-PA Process Automation
DP	PROFIBUS-DP Decentralised Periphery
SS	Stainless Steel
CG	Stainless steel cable gland on stainless steel housing. On standard aluminium housings, the cable gland is nickel-plated brass.
PCG	Plastic Cable Gland
CG/M12	M12 plug-in connector for the stub cables and cable gland for the trunk cable
1way	Number of outgoing stub lines
Limiter	Current limiter: protects the PROFIBUS-PA network in the event of an overload in the stub line
OVP	Surge protection: protects the system in the event of a voltage surge
EX	Approved for potentially explosive areas
ATEX	For explosive atmospheres

The standard distributors are grey. The Ex approved distributors are painted blue.

PROFIBUS-PA distributors are generally equipped with a switch in terminating resistor. In potentially explosive areas, the terminating resistor is manufactured with a separate box. This must be used instead of the right-hand cable gland. In the case of PROFIBUS-DP, an additional external 24 V DC power supply is required. This makes the terminator independent of the last station in the network.

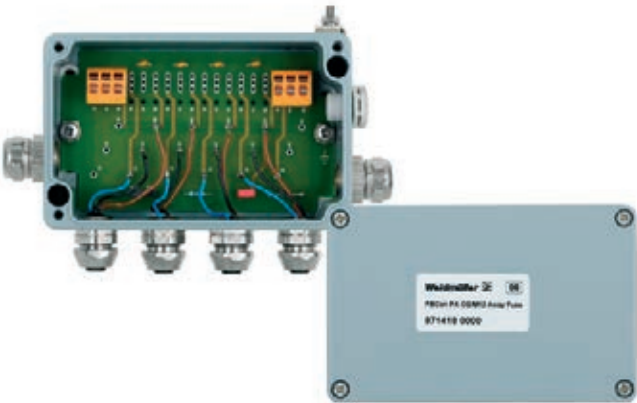
C



FBCon PA CG/M12 1way Limiter

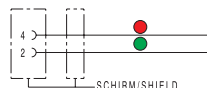


FBCon SS PCG 1way



FBCon PA CG 1way Ex

one end without connector



2-pole

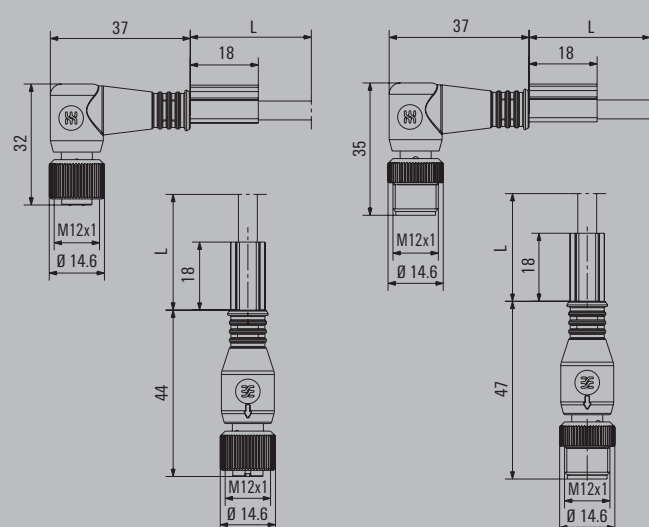
Swimming pool	
Male, straight	
PUR halogen-free	1.5 m
PVC/PVC	1.5 m
Male, angled	
PUR halogen-free	1.5 m
PVC/PVC	1.5 m
Female, straight	
PUR halogen-free	1.5 m
PVC/PVC	1.5 m
Female, angled	
PUR halogen-free	1.5 m
PVC/PVC	1.5 m
Note	

Type	Order No.
SAIL-M12G-PB-1.5D	1873300150
SAIL-M12G-PB-1.5E	1058530150
SAIL-M12W-PB-1.5D	1061970150
SAIL-M12W-PB-1.5E	1062340150
SAIL-M12BG-PB-1.5D	1873320150
SAIL-M12BG-PB-1.5E	1058540150
SAIL-M12BW-PB-1.5D	1062300150
SAIL-M12BW-PB-1.5E	1062370150
Other versions on request	

All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

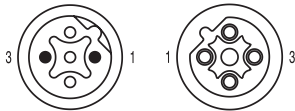
Sheathing colour	violet
Protection degree	IP 67
Wire cross section	PUR 0.24 mm ² / PVC 0.34 mm ²
Contact surface	Gold-plated
Temperature range of housing	-25...+85 °C

Dimensioned drawing



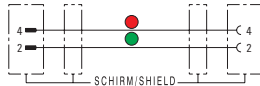
PROFIBUS-DP cables

Connecting cables



Male

Female



Ordering data

Male, straight - Female, straight	
PUR halogen-free	1.5 m
PVC/PVC	1.5 m
Male, straight - Female, angled	
PUR halogen-free	1.5 m
PVC/PVC	1.5 m
Male, angled - Female, angled	
PUR halogen-free	1.5 m
PVC/PVC	1.5 m
Note	

2-pole

Type	Order No.
SAIL-M12GM12G-PB-1.5D	1873310150
SAIL-M12GM12G-PB-1.5E	1058570150
SAIL-M12GM12W-PB-1.5D	1062310150
SAIL-M12GM12W-PB-1.5E	1062380150
SAIL-M12WM12W-PB-1.5D	1062330150
SAIL-M12WM12W-PB-1.5E	1062400150
Other versions on request	

Standard cable lengths

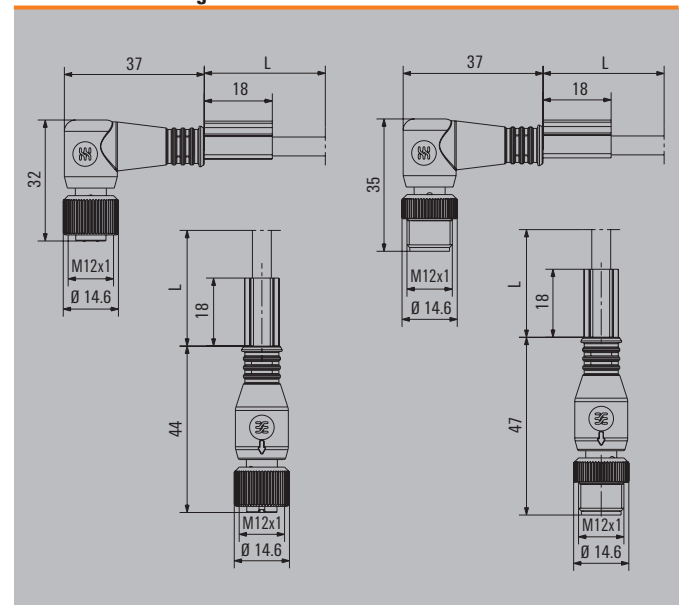
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

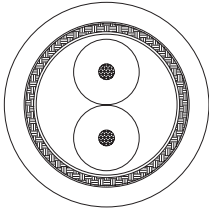
Sheathing colour	violet
Protection degree	IP 67
Wire cross section	PUR 0.24 mm ² / PVC 0.34 mm ²
Contact surface	Gold-plated
Temperature range of housing	-25...+85 °C

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



PROFIBUS-DP - cables



PROFIBUS-DP bulk lengths



Technical data

Assembly	
Wire	
Pair	
Interior sheathing	
Shield	
Outer cladding	
Electrical characteristics at 20 °C	
Conductor resistance	
Insulation resistance	
Operational capacity	
Characteristic impedance	
Attenuation	
Test voltage (50 Hz, 1 min.)	
Mechanical and thermal characteristics	
Temperature range	
Min. permitted bending radius	
Max. tensile load resistance	
Suitable for dragline cable carriers	
Halogen-free	

Conductor: 19-wire strands copper shiny, AWG 24, 0.64 mm Ø nominal	
Insulation: PE foam, 2.55 mm Ø nominal	
2 wires according to 3.2.1 (red, green) laid as a pair, 5.1 mm Ø nominal	
Coil-filling interior sheathing, 5.3 mm Ø nominal	
a) Overlapping aluminium film, 6.1 mm Ø nominal	
b) Braided tin-plated copper, coverage approx. 65%, 6.1 Ø nominal	
TPE-U free from halogens, 8.0 +/- 0.4 mm	
< 84.0 Ω/km	
> 1 GΩ ● km	
< 35 nF/km	
9.6 KHz (RW)	300 Ω
38.4 KHz (RW)	185 +/- 20 Ω
3-20 Mhz	150 +/- 15 Ω
9.6 KHz	3 dB/km
38.4 KHz	5 dB/km
4 Mhz	26 dB/km
16 Mhz	55 dB/km
Wire/wire	0.5 kV _{eff}
Wire/shield	0.5 kV _{eff}
Stationary	-40 °C to +70 °C
Moving	-20 °C to +60 °C
Once	7.5 x d
Multiple	15 x d
Static	50 N/mm ²
Dynamic	20 N/mm ²
Yes	
Yes	

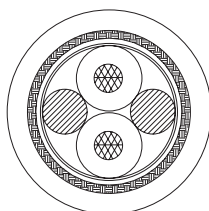
Note

Ordering data

	Metre goods
Note	

Type	Order No.
SAIH-PB-2X0.24-PUR	1232620000
Note	

PROFIBUS-DP bulk lengths



Technical data

Assembly	
Wire	Conductor: copper wire, without insulation, AWG 22, 0.64 mm Ø nominal
Pair	Insulation: PE foam, 2.55 mm Ø nominal
Interior sheathing	2 wires according to 4.1 (red, green) to pair stranded, 5.1 mm Ø nominal
Shield	Plastic foil, 5.2 mm Ø nominal
Outer cladding	a) AL foil, 5.4 mm Ø nominal
	b) Braiding tin-plated copper, coverage approx. 60 %, 6.0 mm Ø nominal
	PVC YM, 7.8 +/- 0.2 mm Ø nominal
Electrical characteristics at 20 °C	
Conductor resistance	< 55 Ω/km
Insulation resistance	> 1 GΩ • km
Operational capacity	30 pF/m nominal
Characteristic impedance	9.6 KHz (RW) 270 Ω
	38.4 KHz (RW) 185 Ω
	3-20 Mhz 150 +/- 15 Ω
Attenuation	9.6 KHz 2.2 dB/km
	38.4 KHz 3.4 dB/km
	100 KHz 4.5 dB/km
	1 Mhz 11.5 dB/km
	3 Mhz 18.2 dB/km
	10 Mhz 33.2 dB/km
	20 Mhz 48.0 dB/km
Test voltage (50 Hz, 1 min.)	Wire/wire 1.5 kV _{eff}
	Wire/shield 1.5 kV _{eff}
Mechanical and thermal characteristics	
Temperature range	Stationary -40 °C to +70 °C
	Moving -20 °C to +70 °C
Min. permitted bending radius	Once 9 x d
	Multiple 18 x d
Max. tensile load resistance	Static 50 N/mm ²
	Dynamic 20 N/mm ²
Suitable for dragline cable carriers	No
Halogen-free	No

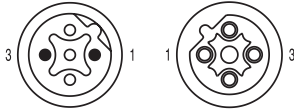
Note

Ordering data

Type	Order No.
SAIH-PB-2X0.34-PVC	1933640000
Metre goods	
Note	

PROFIBUS-DP - cables

Mounts behind wall PROFIBUS DP
B-coded, shielded



Male

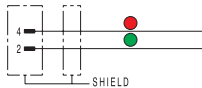
Female

Technical data

Cable gland
Housing base material
Contact socket diameter
Core cross-section
Rated current
Rated voltage
Temperature range of housing
Protection degree
Contact surface
Sheath material
Tightening torque

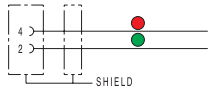
M12 built-in connector

Male, straight



M12 built-in connector

Female, straight



PG9, Mounts behind wall
Zinc diecast, nickel-plated
M12
0.25 mm ²
4 A
250 V
-20...+60 °C
IP 68 (when screwed in)
gold-plated
PUR halogen-free
1 Nm (to housing)

PG9, Mounts behind wall
Zinc diecast, nickel-plated
M12
0.25 mm ²
4 A
250 V
-20...+60 °C
IP 68 (when screwed in)
gold-plated
PUR halogen-free
1 Nm (to housing)

Note

Ordering data

PUR halogen-free	0.5 m
PUR halogen-free	1 m
PUR halogen-free	2 m
PUR halogen-free	5 m

Note

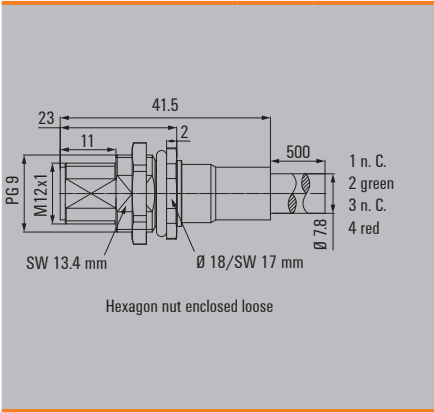
2-pole

Type	Order No.
SAIE-M12S-PB-0.5U HW	1279490050
SAIE-M12S-PB-1.0U HW	1279490100
SAIE-M12S-PB-2.0U HW	1279490200
SAIE-M12S-PB-5.0U HW	1279490300
Other versions / Lengths on request	

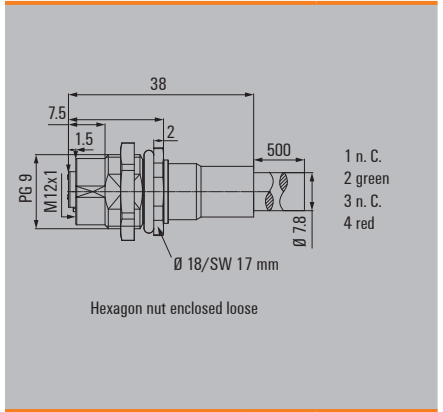
2-pole

Type	Order No.
SAIE-M12B-PB-0.5U HW	1279480050
SAIE-M12B-PB-1.0U HW	1279480100
SAIE-M12B-PB-2.0U HW	1279480200
SAIE-M12B-PB-5.0U HW	1279480300
Other versions / Lengths on request	

Dimensioned drawing



Dimensioned drawing



Tension clamp connection M12, stainless steel B-coded



SAIS / SAIB VA

straight



Ordering data

Male	5-pole. PG 9
Socket	5-pole. PG 9
Note	

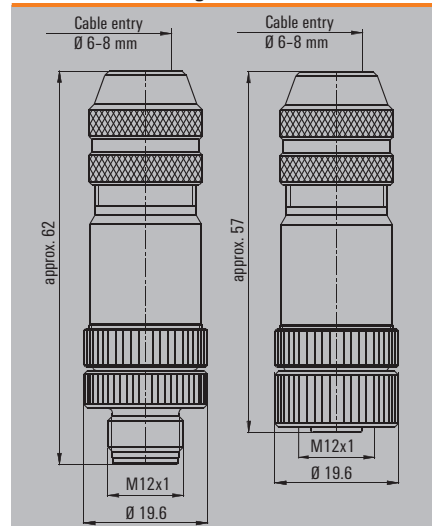
Type	QTY	Order No.
SAIS 5/9-VA-B-COD	1	1920720000
SAIB 5/9-VA-B-COD	1	1920730000

Technical data

Type of connection	Tension clamp connection
Housing main material	1.4404/316L
Contact tube diameter	M12
Cable diameter	6...8 mm (PG9)
Wire cross-section, min. / max.	0.25...0.5 mm ²
Rated current	4 A
Rated voltage	125 V
Temperature range of housing	-25...+85 °C
Protection degree	IP 69K
Contact surface	Gold-plated
Note	PB = PROFIBUS (B-COD) Torque, see E.12

Type of connection	Tension clamp connection
Housing main material	1.4404/316L
Contact tube diameter	M12
Cable diameter	6...8 mm (PG9)
Wire cross-section, min. / max.	0.25...0.5 mm ²
Rated current	4 A
Rated voltage	125 V
Temperature range of housing	-25...+85 °C
Protection degree	IP 69K
Contact surface	Gold-plated
Note	PB = PROFIBUS (B-COD) Torque, see E.12

Dimensioned drawing



PB = PROFIBUS (B-COD) Torque, see E.12

PROFIBUS DP - connectors (M12, SubD)

Screw connection M12, metal (EMC)
B-coded



Industrial Ethernet

Ordering data

Male	5-pole. PG 9
Socket	5-pole. PG 9
Note	

Technical data

Type of connection	
Housing main material	
Contact tube diameter	
Cable diameter	
Wire cross-section, min. / max.	
Rated current	
Rated voltage	
Temperature range of housing	
Protection degree	
Contact surface	
Note	

SAISM / SAIBM

straight



Type	Qty.	Order No.
SAISM 5/8S M12 5P B-COD	1	1784790000
SAIBM 5/8S M12 5P B-COD	1	1784780000

Screw connection	
CuZn	
M12	
6...8 mm (PG9)	
0.14...0.75 mm²	
4 A	
125 V	
-25...+85 °C	
IP 67	
Gold-plated	
Torque, see E.12	

SAISW / SAIBW

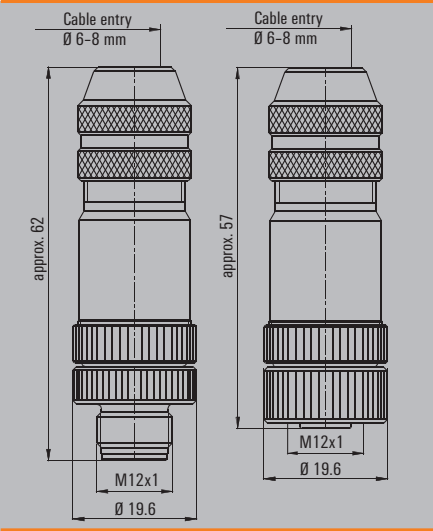
Angled



Type	Qty.	Order No.
SAISW-M-5/8 M12 B-COD	1	1944570000
SAIBW-M-5/8 M12 B-COD	1	1944580000

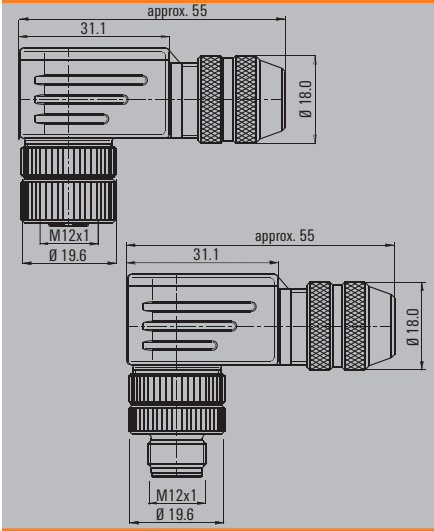
Screw connection	
CuZn	
M12	
6...8 mm (PG9)	
0.14...0.75 mm²	
4 A	
125 V	
-25...+85 °C	
IP 67	
Gold-plated	
Torque, see E.12	

Dimensioned drawing

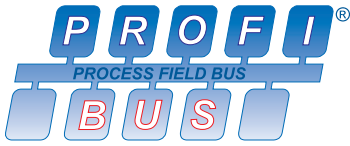


Torque, see E.12

Dimensioned drawing



IDC connection B-coded



Industrial Ethernet

SAIS / SAIB

straight



Ordering data

Male	
	3-pole. PG 9
Socket	
	3-pole. PG 9
Note	

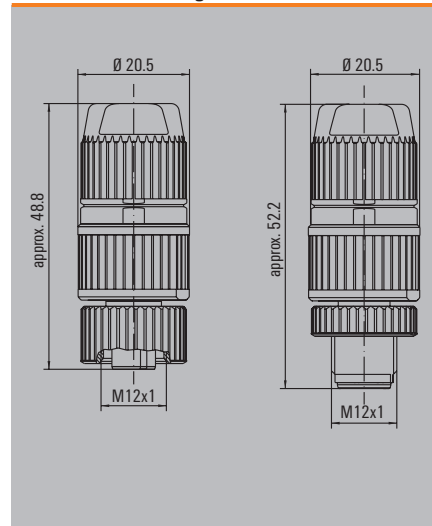
Type	Qty.	Order No.
SAIS-3-IDC-M12B-COD	1	1864730000
SAIB-3-IDC-M12B-COD	1	1864740000

Technical data

Type of connection	
Housing main material	
Contact tube diameter	
Cable diameter	
Wire cross-section, min. / max.	
Rated current	
Rated voltage	
Temperature range of housing	
Protection degree	
Contact surface	
Note	

Insulation displacement connection	
CuZn	
M12	
7...8.8 mm	
0.34...0.75 mm²	
4 A	
32 V	
-25...+85 °C	
IP 67	
tinned	
PB = PROFIBUS (B-COD)	
IE = Industrial Ethernet (D-COD)	

Dimensioned drawing



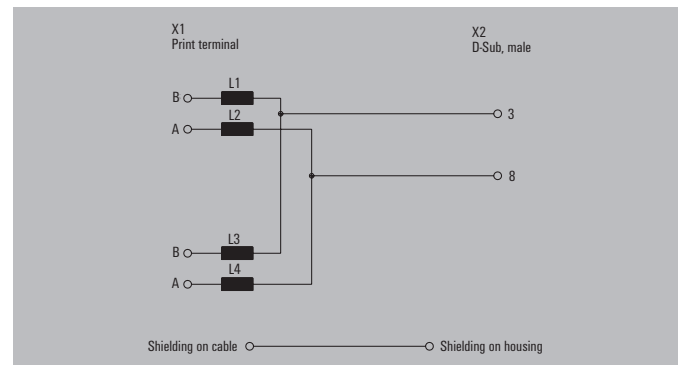
PB = PROFIBUS (B-COD)
IE = Industrial Ethernet (D-COD)

C

The 9-pin sub-D connector is available in four versions:

- T-piece functions
- Good shield contact
- Ample space for connecting the bus cable
- Cable entry can be closed off with blanking panel
- Fully insulated housing
- Reliable strain relief

Data transmission rate		max. 12 Mbps	
ESD		protection to IEC 801-2	
Operating temperature	°C	0 ... 60	
Storage temperature	°C	-25 ... +80	
Ingress protection class		IP 40	
Dimensions (LxWxH)	mm	64.6 x 47.5 x 16	
Housing material		PC UL 94 V-1	
Plug-in connector		sub-D 9-pin	
Cable connection		2 No. horizontal	
Cable diameter mm	mm	4.5 ... 8	
Single conductor cross-section	mm²	rigid	max. 1.5
		flexible	max. 1.0
Type of connection	Screw	8395500000 and 8460860000	
	IDC	1916980000	
	Tension clamp	1934200000	
Note			

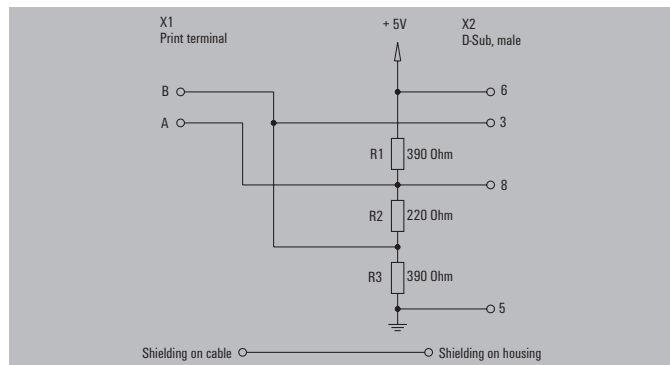


Type	Qty.	Order No.
PB-DP SUB-D	1	8395500000

Sub-D



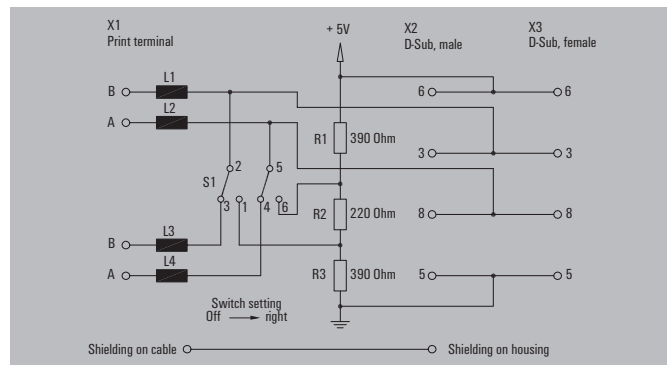
PB-DP SUB-D TERM



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D TERM	1	8460860000

PB-DP SUB-D IDC/ZF TERM PS



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D IDC TERM PS	1	1919680000
PB-DP SUB-D ZF TERM PS	1	1934200000

C

PROFIBUS-DP - connectors (M12, Sub-D)

PROFIBUS Sub-D connector with M12 (90°)

Weidmüller's new Sub-D product line features fully shielded connector variants that enable direct tapping with M12 cables. This allows you to avoid the types or errors that often occur when installing similar connectors with screw connections. The increased contact reliability of the Sub-D connectors more than compensates for the cost of the extra M12 connectors.

Special features:

- Complete shielded housing
- Compact housing for small places
- Connection without any mistakes because of the M12 connector
- 100 % certified components

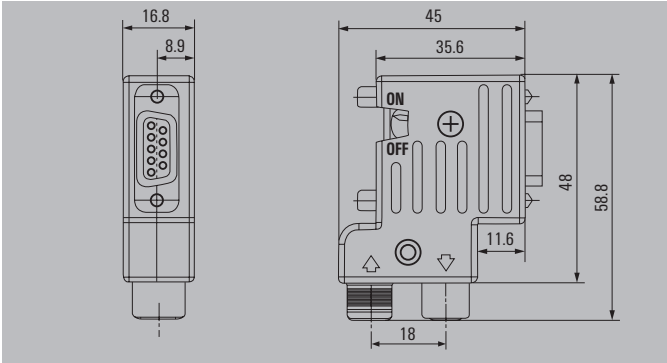
Technical data

Data rate	acc. to PROFIBUS Specification, 12 Mbit/s
Connector pinning	acc. to PROFIBUS Specification
PROFIBUS DP connector	D-Sub 9-pole, male
PROFIBUS DP program connector	D-Sub 9-pole, female
PROFIBUS cable connector	M12 B coded, male + female, Pin 2 and 4, connected, Cable output: M12 female, Cable entry: M12 male
Mechanical lifetime	200 connections
Temperature range	-20 °C to +70 °C
Permissible humidity	Max. 75 % at +25 °C, non-condensing
Ingress protection class	IP 30
Housing material	ZnAl
D-Sub screw connection	UNC 4-40

Note

PB-DP SUB-D M12 TERM

PROFIBUS-Connector 90° M12 with switch, without programming connector



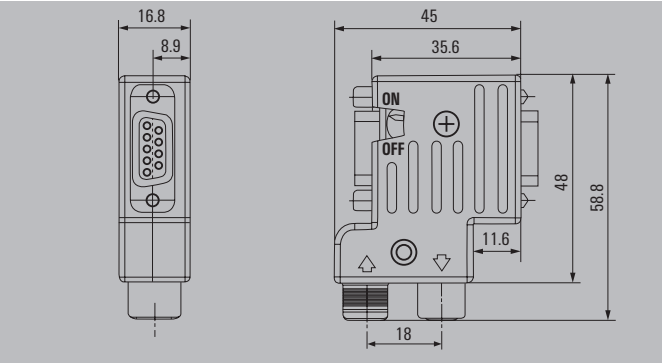
Ordering data

Type	Qty.	Order No.
PB-DP SUB-D M12 TERM	1	1140650000

PROFIBUS Sub-D connector with M12 (90°)

PB-DP SUB-D M12 TERM PS

PROFIBUS-Connector 90° M12 with switch, with programming connector



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D M12 TERM PS	1	1140640000

PROFIBUS-DP - connectors (M12, Sub-D)

PROFIBUS Sub-D Connector with tension clamp connection (35°)

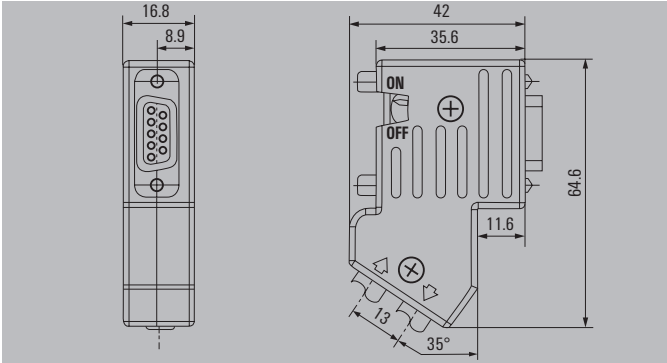
The new Sub-D Family from Weidmüller offers a fully shielded version.

Special features:

- Completely shielded housing
- Compact design for use in small spaces

PB-DP SUB-D ZF35TERM

PROFIBUS-Connector 35° with switch, without programming connector



Technical data

Data rate	acc. to PROFIBUS Specification, 12 Mbit/s
Connector pinning	acc. to PROFIBUS Specification
PROFIBUS DP connector	D-Sub 9-pole, male
PROFIBUS DP program connector	D-Sub 9-pole, female
PROFIBUS cable connector	Tension clamp
Mechanical lifetime	200 mating cycles
Temperature range	-20 °C to +70 °C
Permissible humidity	Max. 75 % at +25 °C, non-condensing
Ingress protection class	IP 30
Housing material	ZnAl
D-Sub screw connection	UNC 4-40

Note

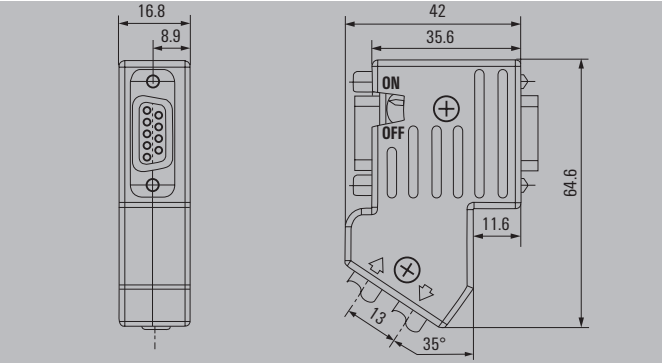
Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF35TERM	1	1173220000

PROFIBUS Sub-D Connector with tension clamp connection (35°)

PB-DP SUB-D ZF35TERM PS

PROFIBUS-Connector 35° with switch, with programming connector



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF35TERM PS	1	1173240000

PROFIBUS-DP - connectors (M12, Sub-D)

PROFIBUS Sub-D Connector with tension clamp connection (90°)

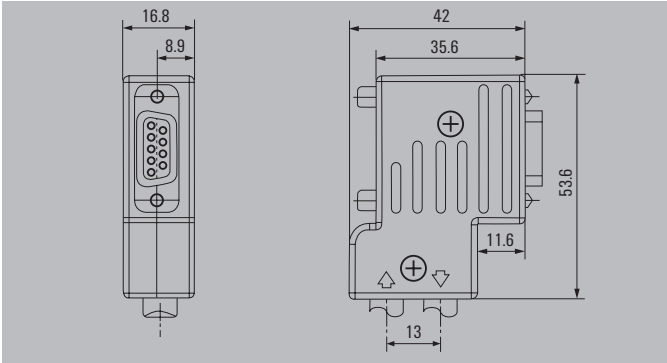
The new Sub-D Family from Weidmüller offers a fully shielded Version.

Special features:

- Completely shielded housing
- Compact design for use in small spaces

PB-DP SUB-D ZF

PROFIBUS-Connector 90° without switch, without programming connector



Technical data

Data rate	acc. to PROFIBUS Specification, 12 Mbit/s
Connector pinning	acc. to PROFIBUS Specification
PROFIBUS DP connector	D-Sub 9-pole, male
PROFIBUS DP program connector	D-Sub 9-pole, female
PROFIBUS cable connector	Tension clamp
Mechanical lifetime	200 mating cycles
Temperature range	-20 °C to +70 °C
Permissible humidity	Max. 75 % at +25 °C, non-condensingg
Ingress protection class	IP 30
Housing material	ZnAl
D-Sub screw connection	UNC 4-40

Ordering data

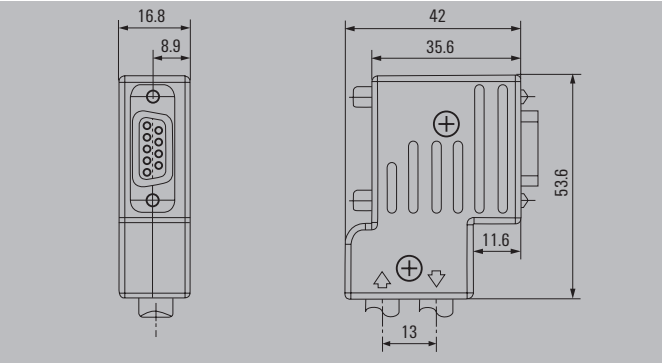
Type	Qty.	Order No.
PB-DP SUB-D ZF	1	1161890000

Note

PROFIBUS Sub-D Connector with tension clamp connection (90°)

PB-DP SUB-D ZF TERM

PROFIBUS-Connector 90° with switch, without programming connector

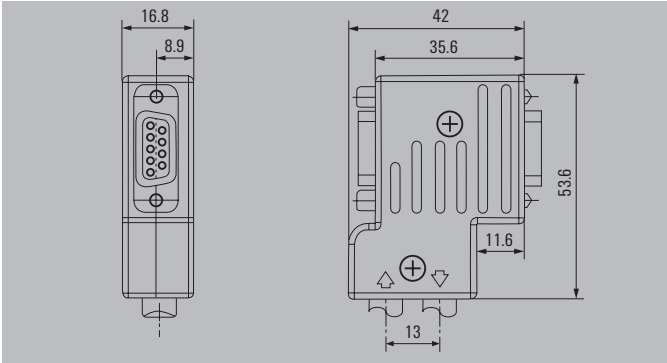


Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF TERM	1	1161870000

PB-DP SUB-D ZF TERM PS

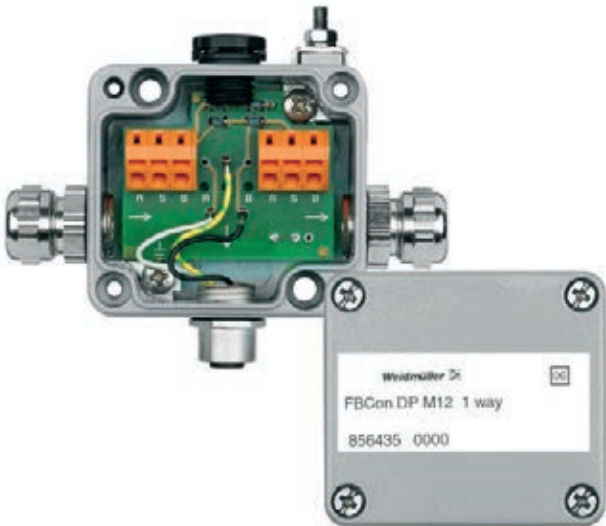
PROFIBUS-Connector 90° with switch, with programming connector



Ordering data

Type	Qty.	Order No.
PB-DP SUB-D ZF TERM PS	1	1161880000

PROFIBUS-DP distributors



PROFIBUS-DP distributor

The PROFIBUS-DP topology is a line structure. The spur (T-distributor) connects the individual field devices or remote I/Os to the bus cable. The length of the spur cable depends on the transmission rate and should be as short as possible. The total of all spur lengths for transmission rates up to 1.5 MBaud may not exceed max. 6.6 m. The trunk cable passes through an EMC cable gland into an aluminium or stainless steel enclosure where it is connected to a tension clamp terminal. The spur line to the device is connected using a B-coded M12 socket or an EMC cable gland. Terminating resistors must be wired onto the start and end of the PROFIBUS-DP network. The Terminator modules can take care of this task. The electrically isolated 24 V DC power supply for the bus terminator is routed into the cable gland on the right side. The housing features a pressure-compensation mechanism that counters the effects of climatic fluctuations. The guidelines issued by the PROFIBUS user organisation must be observed.

PROFIBUS-DP

Technical data

Operating temperature	-25 °C to 55 °C
Ingress protection class	IP 66
Enclosure material	High grade aluminium alloy (AL - SI 12)
Finish	Painted RAL 7001
PROFIBUS-DP connection	Tension clamp terminals 0.5 - 1.5 mm ²
Cable entry	Cable gland M16
Cable gland clamping range	5.5 - 9.5 mm
Contact surface	M12 plug/socket CuZnAu
Transmission rate	Max. 1.5 MBaud
Power supply bus connection	Bus terminator 24 VDC +/-10 %
Trunk cable via cable gland	

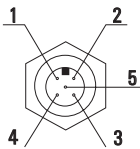
Installation advice

Torques	
M16 cable gland at enclosure	6.0 Nm
Union nut, M16 cable gland	4.0 Nm
Enclosure cover	1.8 - 2.0 N
External earthing cable	1.8 - 2.0 Nm
Adaptor/stud cable	0.5 Nm

Pin assignment

Pin no.	Connection	Wire colour
Pin 1	unassigned	
Pin 2	RxDx/TxD-N / A-wire	green
Pin 3	unassigned	
Pin 4	RxDx/TxD-N / B-wire	red
Pin 5	shield	
Cable gland	shield	

Socket B-coded



1-channel distributor

Cable gland

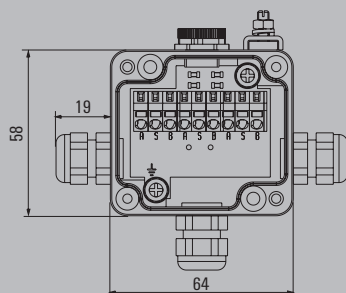


Ordering data

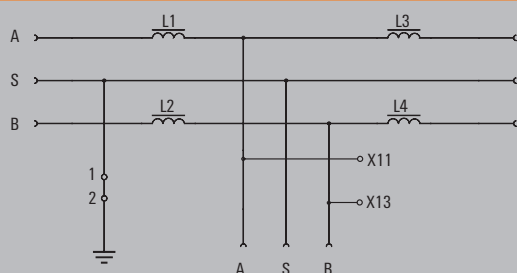
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon DP CG 1way	branch line CG	1	8564340000
Stainless steel enclosure			
FBCon SS DP PCG 1way	all connections PCG	1	8714260000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

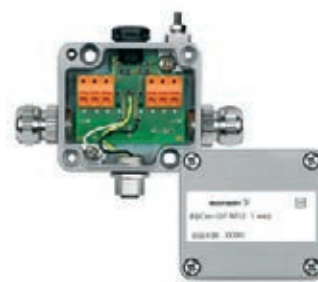


Wiring diagram



1-channel distributor

M12 connection

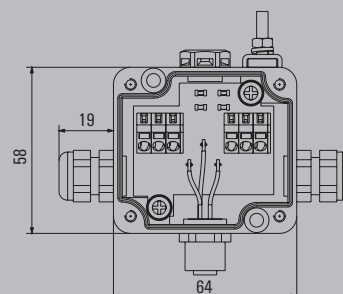


Ordering data

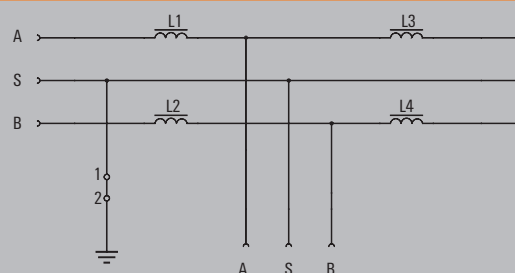
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon DP M12 1way	branch line M12	1	8564350000
Stainless steel enclosure			
FBCon SS DP M12 1way	branch line M12	1	8714270000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



PROFIBUS-DP - FBCon T-distributor

Terminator

Cable gland

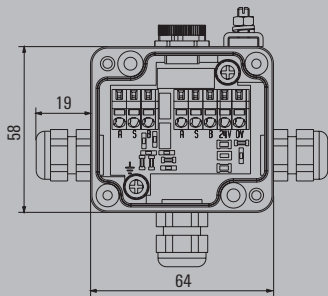


Ordering data

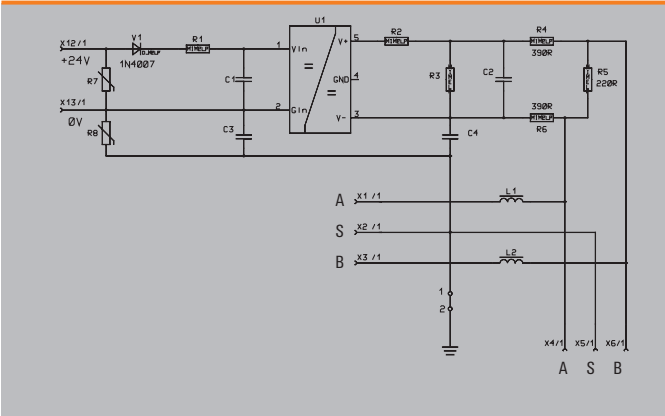
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon DP CG Term 24V	branch line CG	1	8564290000
Stainless steel enclosure			
FBCon SS DP PCG Term 24V	all connections PCG	1	8714240000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

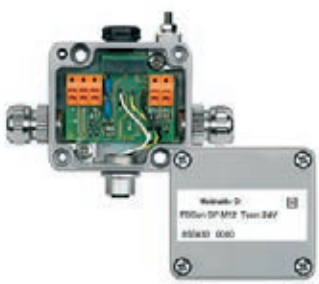


Wiring diagram



Terminator

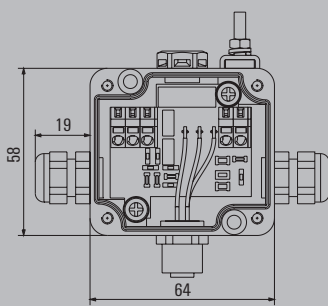
M12 connection



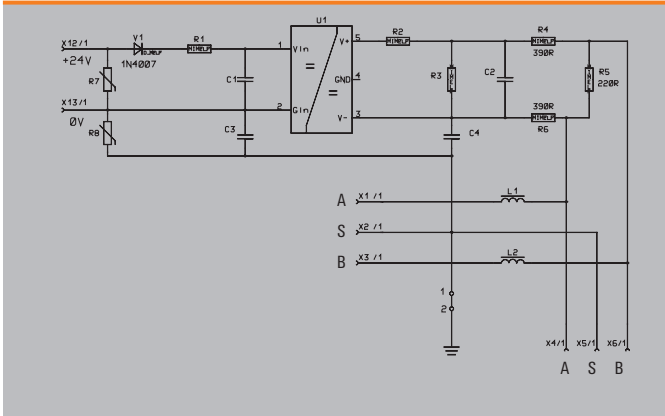
Ordering data

Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon DP M12 Term 24V	branch line M12	1	8564330000
Stainless steel enclosure			
FBCon SS DP M12 Term 24V	branch line M12	1	8714250000

Dimensioned drawing



Wiring diagram



PROFIBUS-DP IP 20 T-distributor

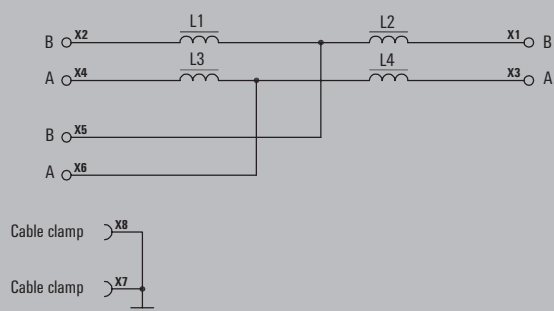


The distributor for PROFIBUS-DP enables the user to connect it conveniently in the electrical cabinet. It can be mounted on TS 32/35 rails and used to connect standardised PROFIBUS-DP lines. Spur cables can also be connected. Please note that spur cables should be kept as short as possible. Part No. 8788580000 has a 9-pin Sub-D socket for connecting analysis/programming devices.

- T-piece functions
- Good shield contact
- Ample space for connecting the bus cable
- TS 32/35 terminal rail mounting
- Standardised Sub-D connection for PROFIBUS-DP

C

RS PB-DP T



Technical data

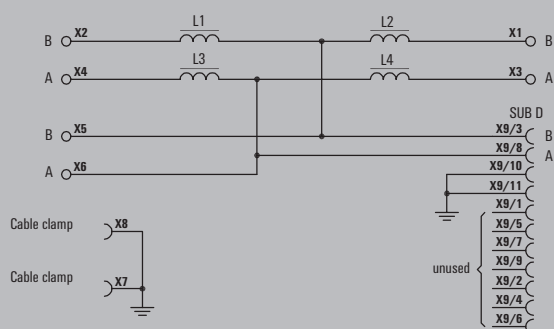
Data transmission rate		max. 1.5 Mbps (with max. 6.6 m spur line) max. 12 Mbps (no spur lines)
Operating temperature	°C	0 ... 55
Storage temperature	°C	-25 ... +70
Ingress protection class		IP 20
Dimensions (LxWxH)	mm	70 x 45 x 42
Plug-in connector		sub-D 9-pin
Cable diameter	mm	4.5 ... 8
Single conductor cross-section	mm ²	0.5 ... 2.5
Type of connection		screw

Note

Ordering data

Type	Qty.	Order No.
RS PB-DP T	1	8800040000
RS PB-DP T SUB-D	1	8788580000

RS PB-DP T SUB-D





The PROFIBUS-PA is an open fieldbus standard (EN 50170, IEC 1158-2, DIN 19245). It was specifically designed for the requirements of process engineering, such as remote powering and intrinsic safety. The PROFIBUS-PA enables operation of several PA sensors and actuators on one bus line.

The devices are powered using twin cable technology, and the transmission of process data is digital.

Integration in the PROFIBUS-DP network is done by means of a segment coupler.

Specific advantages of PROFIBUS-PA:

- Low wiring costs
- Minimal planning costs for the process control system
- Remote interrogation or programming of the field device
- Further development and support by the PROFIBUS User Organisation

Whether for servicing or system modification, the PROFIBUS-PA FB connectors from Weidmüller enable connection or replacement of field devices without interrupting the bus system.

An extensive range of accessories, such as pre-assembled cables are also available.





PROFIBUS-PA cables



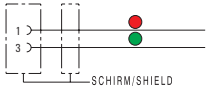
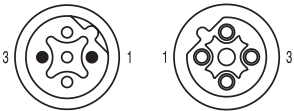
PROFIBUS-PA connectors



Profibus PA distributors

PROFIBUS-PA - cables

PROFIBUS-PAcables
One end without connector



Ordering data

Male, straight		
PVC blue	1.0 m	
PVC black	1.0 m	
Male, angled		
PVC blue	1.0 m	
PVC black	1.0 m	
Female, straight		
PVC blue	1.0 m	
PVC black	1.0 m	
Female, angled		
PVC blue	1.0 m	
PVC black	1.0 m	
Note		

Type	Order No.
FBCEX PA M12 M 1M	1785150100
FBC PA M12 M 1M	1785120100
FBCEX PA M12 MA 1M	1076580100
FBC PA M12 MA 1M	1076540100
FBCEX PA M12 FM 1M	1785140100
FBC PA M12 FM 1M	1785110100
FBCEX PA M12 FMA 1M	1076520100
FBC PA M12 FMA 1M	1076530100

Wall bushing



Ordering data

Type	Length	Qty.	Order No.
SAI-WDF-5P M12 60 mm	60 mm	1	1819450000

Standard cable lengths

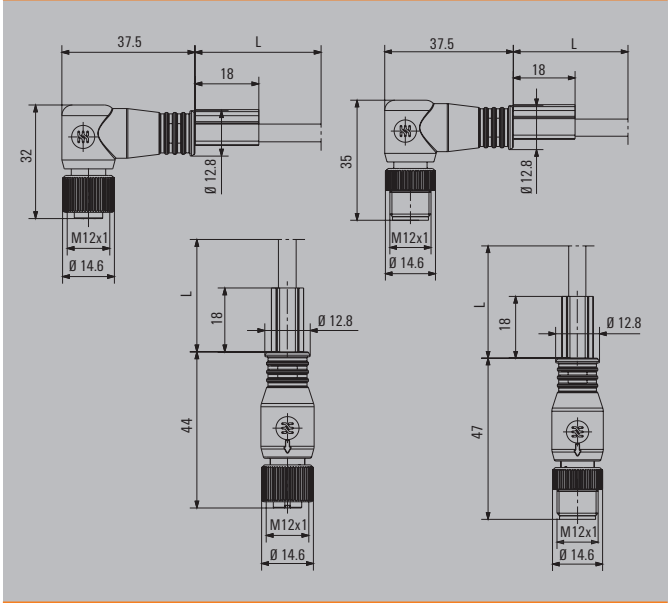
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.0 m	xxxxxx0100
	2.0 m	xxxxxx0200
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Sheathing colour	blue (RAL 5015)
Protection degree	IP 67
Core cross-section	1 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C

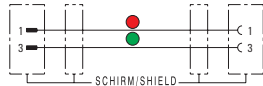
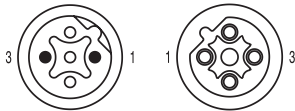
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



PROFIBUS-PAcables

Connecting line



Ordering data

Male, straight - Female, straight	
PVC blue	1.0 m
PVC black	1.0 m
Male, straight - Female, angled	
PVC blue	1.0 m
PVC black	1.0 m
Male, angled - Female, angled	
PVC blue	1.0 m
PVC black	1.0 m
Male, angled - female, straight	
PVC blue	1.0 m
PVC black	1.0 m
Note	

Type	Order No.
FBCEX PA M12 M-FM 1M	1785130100
FBC PA M12 M-FM 1M	1785100100
FBCEX PA M12 M-FMA 1M	1075390100
FBC PA M12 M-FMA 1M	1075620100
FBCEX PA M12 MA-FMA 1M	1075410100
FBC PA M12 MA-FMA 1M	1076550100
FBCEX PA M12 MA-FM 1M	1075450100
FBC PA M12 MA-FM 1M	1075460100

Wall bushing



Ordering data

Type	Length	Qty.	Order No.
SAI-WDF-5P M12 60 mm	60 mm	1	1819450000

Standard cable lengths

All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.

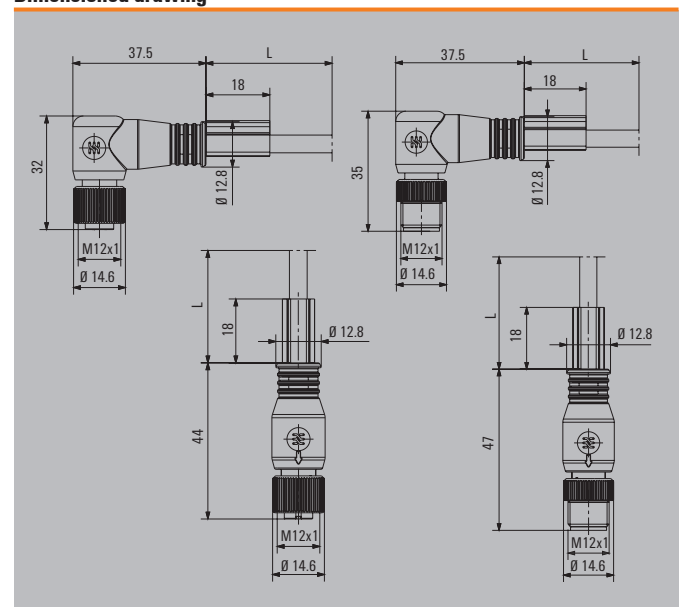
1.0 m	xxxxxx0100
2.0 m	xxxxxx0200
5.0 m	xxxxxx0500
10.0 m	xxxxxx1000

Technical data

Sheathing colour	blue (RAL 5015)
Protection degree	IP 67
Core cross-section	1 mm ²
Contact surface	gold-plated
Temperature range of housing	-25...+85 °C

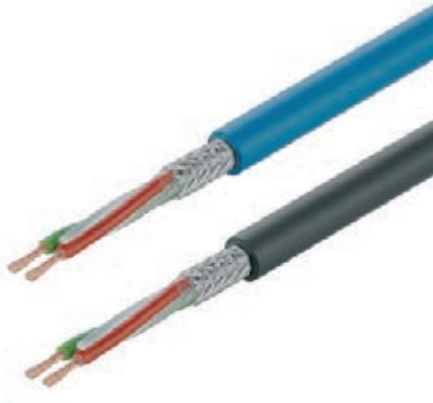
Chapter W includes additional technical specifications for the cable

Dimensioned drawing



PROFIBUS-PA - cables

PROFIBUS-PA bulk lengths



Technical data

PROFIBUS-PA bulk lengths		
Application		- Fieldbus cable for PROFIBUS-PA field networks in accordance with IEC 1158-2 - The cable is suitable for installation in both dry and humid spaces. When used with the black, UV-resistant cladding, it can also be installed outdoors.
General characteristics		None of the materials used for the cables during production are detrimental to paint adhesion (they are LBS-free). LBS = Materials detrimental to paint adhesion
Assembly		
Conductor		Copper wire, without insulation, 1.0 mm ² , finely stranded
Insulating sleeve		Foam skin (D2YS), wire Ø approx. 2.55 mm Wire colours: red and green
Stranding		2 wires with 2 drain wires approx. 1.0 mm Ø stranded
Wrapping		1 layer insulation foil
Shield		Braiding made from tin-plated copper wire, Coverage 85 % ± 5
Outer cladding		PVC, blue RAL 5015 or black Outer diameter: 8.0 mm ± 0.4
Electrical characteristics at 20 °C		
Wire resistance (loop)		max. 44 Ω/km
Insulation resistance		min. 5 GΩ x km
Working capacity at 800 Hz		nom. 52 nF/km
Inductance at 800 Hz		approx. 0.4 mH/km
Characteristic impedance	at 31.25 kHz	100 Ω ± 20 %
	at ≥ 1 MHz	nom. 80 Ω
	at 39 kHz	max. 0.3 dB/100 m
Wave attenuation	at 100 kHz	nom. 0.35 dB/100 m
	at 1 MHz	nom. 1.2 dB/100 m
		nom. 79 %
Signal dispersion speed		max. 250 mΩm/m
Coupling resistance at < 30 MHz		Peak value 100 V
Operating voltage (not for three-phase use)		U _{eff.} 1500 V
Test voltage	Wire/wire	U _{eff.} 1500 V
	Wire/shield	
Mechanical and thermal characteristics		
Min. bending radius stationary installed / during installation		65 mm
Temperature range during installation		-5 °C to +60 °C
Temperature range stationary installed		-30 °C to +80 °C
Flammability		Flame retardant in accordance with VDE 0482, part 265-2-1 / IEC 60 332-1

Note	
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Ordering data

Type	Order No.
SAIH-PB-PA-2X1.0-PVC-BL	1232630000
SAIH-PB-PA-2X1.0-PVC-SW	1232640000
Note	

Tension clamp connection M12, stainless steel
A-coded

SAIS / SAIB VA

straight



Ordering data

Male	5-pole. PG 9
Socket	5-pole. PG 9
Note	

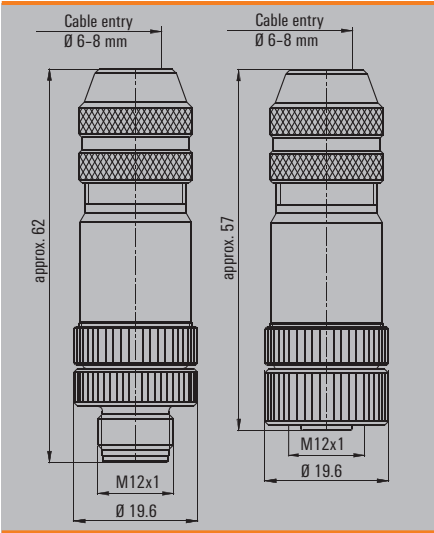
Type	QTY	Order No.
SAIS 5/9-VA	1	1920700000
SAIB 5/9-VA	1	1920710000

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Wire cross-section, min. / max.
Rated current
Rated voltage
Temperature range of housing
Protection degree
Contact surface
Note

Tension clamp connection
1.4404/316L
M12
6..8 mm (PG9)
0.25...0.5 mm ²
4 A
125 V
-25...+85 °C
IP 69K
Gold-plated
PB = PROFIBUS (B-COD) Torque, see E.12

Dimensioned drawing



PB = PROFIBUS (B-COD) Torque, see E.12

PROFIBUS PA - connectors

M12 screw connection, metal (shielded)
A-coded



FBCon / SAIS

straight



SAISW / SAIBW

Angled



Ordering data

Male	4-pole. PG 9
	5-pole. PG 9
Socket	4-pole. PG 9
	5-pole. PG 7
	5-pole. PG 9
Note	

Type	Qty.	Order No.
FBCon M12 4P M EMC	1	9455640000
SAIS-M-5/8S M12 5P A-COD	1	1784740000
FBCon M12 4P FM EMC	1	8426220000
SAIB-5/6S M12 5P A-COD	1	1191020000
SAIB-M-5/8S M12 5P A-COD	1	1784750000
Other versions on request		

Type	Qty.	Order No.
SAISW-M-4/8 M12	1	1803930000
SAISW-M-5/8 M12	1	1803940000
SAIBW-M-4/8 M12	1	1803910000
SAIBW-M-5/8 M12	1	1803920000
Other versions on request		

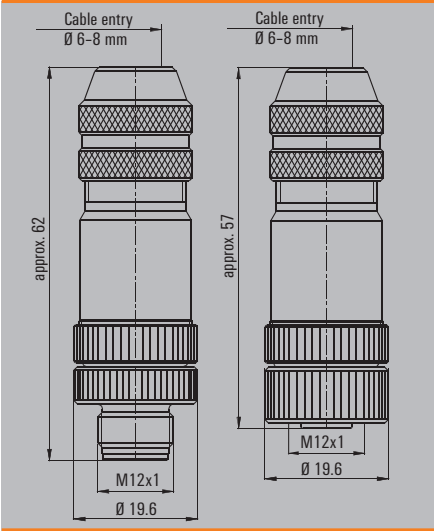
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Wire cross-section, min. / max.
Rated current
Rated voltage
Temperature range of housing
Protection degree
Contact surface
Note

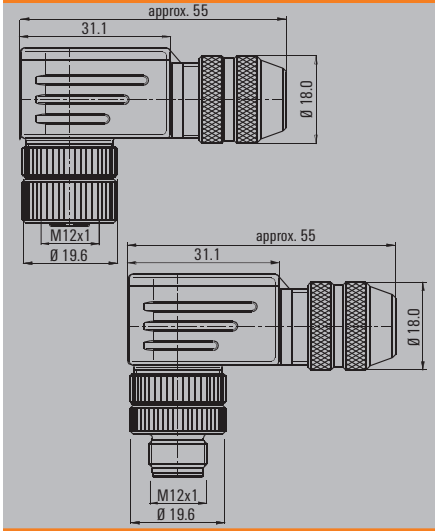
Screw connection
CuZn
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.25...0.75 mm ²
4 A
250 V
-25...+85 °C
IP 67
Gold-plated
Torque, see E.12

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14...0.5 mm ²
4 A
125 V
-25...+85 °C
IP 67
Gold-plated
Torque, see E.12

Dimensioned drawing



Dimensioned drawing



Torque, see E.12

Positioning plug connector



Positioning plug connector



Technical data

No. of poles	4
Version	pin
Temperature range	-40 °C ... 85 °C
Housing material	stainless steel (VA)
Connection thread	PG 9
Plug thread	M12
Strand cross-section	0.34 mm²
Housing class of protection to DIN 40050 IEC 529	IP 67
Strand length (fitted with wire-end ferrules)	500 mm
Nominal current per contact	4 A
Rated voltage	250 V
Contact surface	gold-plated
Type of connection	screw
Flammability class to UL-94	
Nominal voltage to VDE standard 0110/ISO Group C	
Resistance to creepage	
Contact resistance to IEC 512 Part 2	
Insulation resistance to IEC 512 Part 2	

Note

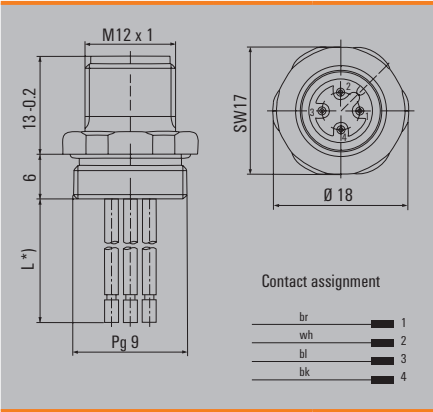
Ordering data

Positioning plug connector PG9 500 mm	
Adapter PG9 / M20	
Positioning plug connector PG 13.5 150 mm	
Positioning plug connector PG 13.5 300 mm	
Positioning plug connector M 20 150 mm	
Positioning plug connector M 20 300 mm	
Positioning plug connector M 20 300 mm B-coded	
Note	

Type	Qty.	Order No.
SAIE-M12S-4-0.5U-AEH-VA	1	1861220001
SAIE-EW-M20/PG9-SW24-VA	1	1950270000

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Dimensioned drawing

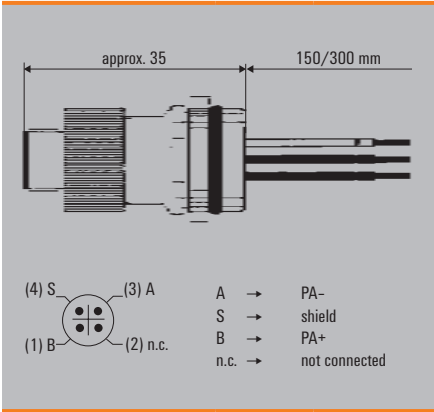


Positioning plug connector for field device connection		
Type	Qty.	Order No.
4/5		
pin		
-40 °C ... 85 °C		
Cu Zn nickel surface		
PG 13.5 / M 20		
M12		
0.34 mm²		
IP 67		
150/300 mm		
4 A		
125 V 5-pole/250 V 4-pole		
CuZnAu		
screw		
V-2		
125 V ~ 150 V =		
KC 600		
≤ 8 mΩ		
≥ 10 ¹² Ω		

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Type	Qty.	Order No.
POS-4P M12 PG13.5 150mm	1	9455650000
POS-4P M12 PG13.5 300 mm	1	8425910000
POS-4P M12 M20 150mm	1	8425930000
POS-4P M12 M20 300mm	1	8425940000
POS-5P M12/M20 300MM	1	1795500000

Dimensioned drawing



Fitting information

Torque settings	
Set screw	1.8 - 2.0 Nm
Knurled ring	hand-tight
Lock-nut	6.25 Nm
If the device is exposed to vibration, we recommend using a stub cable to isolate the device from the vibration.	

FBCon distributors for the industrial market



PROFIBUS-PA T-connector

- for industrial applications
- standard

The **PROFIBUS-PA** installation products are increasingly used in the:

- food and beverage industry
- process industries and
- chemical industry

The product range offers a wide choice of customer solutions for use in harsh conditions. This includes standard and EX versions of single and multi-way design with M12 plug-in connection or cable glands. Weidmüller offers a solution for almost every application. If you cannot find your solution here, please contact the branch / sales office responsible for you.

PROFIBUS-PA T-connector standard

- 1, 2, 4, 8-way with EMC cable gland
- Industrial + EX / ATEX
- Optional surge protection

The **PROFIBUS-PA T-connector** is intended for direct coupling of measuring devices, sensors, actuators, etc.

- IP 66 Ingress protection class
- Modular design
- Uninterruptible bus operation for service situations
- Simple handling
- Low installation costs
- External earth stud
- Pressure equalising element
- EMC cable gland



FBCon Fieldbus distributor

PROFIBUS-PA Fieldbus distributor: robust and well-tested

FBCon fieldbus distributors are available in industrial and Ex(ia) versions. They are used for coupling 1-8 field devices or sensors. The connection is made via a spur. The spur is connected by an M12 plug-in connector or directly via an EMC cable gland.

The communication and device powering is handled by a common 2-core wire.

The PROFIBUS-PA distributors normally feature a switchable terminating resistor. For the Ex zone, the terminating resistor is made with a separate box. Current limiting variants help to ensure that the facility can operate smoothly.

Weidmüller offers a comprehensive line of accessories including pre-assembled PROFIBUS-PA cables in the standard lengths, and plug in connectors for a wide variety of applications.

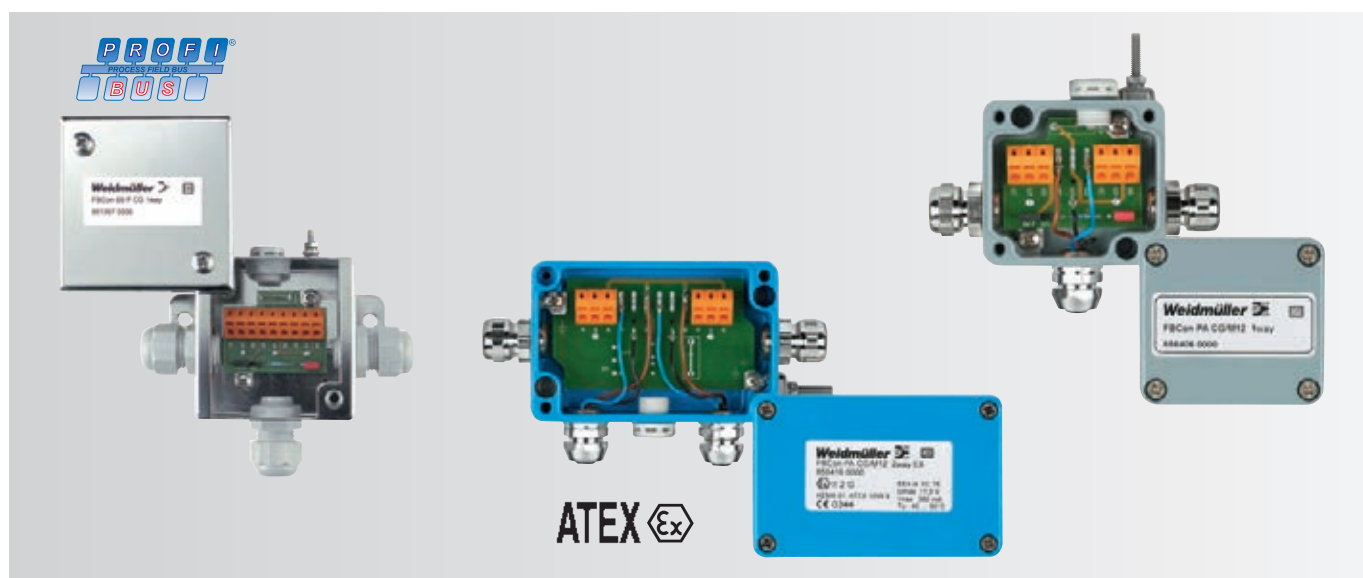
- Fieldbus distributor for PROFIBUS-PA and PROFIBUS-DP
- Standard distributor for use in the safe zone
- Aluminium housing for connecting from 1 to 8 field devices
- Stainless steel distributor for applications in the food processing industry, for connecting from 1 to 8 field devices
- Intrinsically safe (ia) Ex version in aluminium housing for connecting from 1 to 8 field devices
- EMC cable gland for a secure contact with the shielding

Technical data for PROFIBUS-PA standard distributors

Temperature range	
Operating temperature	from -40 °C to 85 °C
Ingress protection class	IP 66
Housing material	High-quality aluminium alloy (AL-Si 12)
Surface	Stove-enamelled RAL 7001
PROFIBUS-PA connection	Tension clamp connection 0.5 - 1.5 mm ²
Cable entry	Cable gland M16
Clamping range	5.5 - 9.5 mm
Measuring device connector M12 x 14-pin	Contacts MS, surface CUZnAu
Note	

Handling information

Torques	
M16 gland to housing	6.25 Nm
M16 union nut on cable gland	4.5 Nm
Housing cover	1.8 - 2.0 Nm
External earth stud	1.8 - 2.0 Nm



PROFIBUS-PA - FBCon T-distributor

1-channel distributor

Cable gland

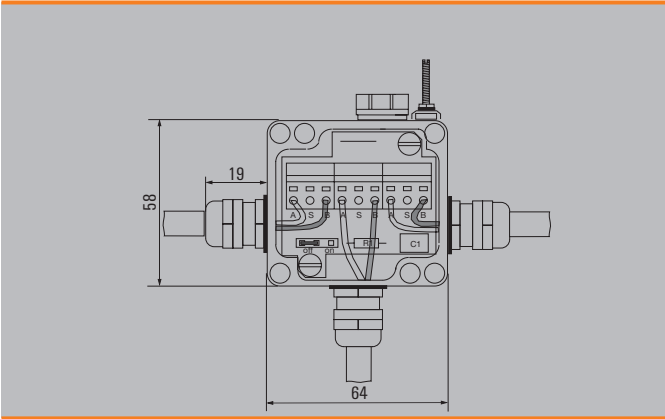


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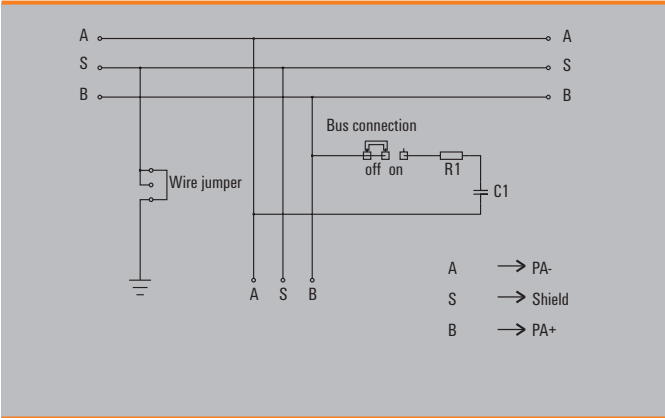
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 1way	branch line CG	1	8564090000
Stainless steel enclosure			
FBCon SS CG 1way	branch line CG	1	8703430000
FBCon SS PCG 1way	all connections PCG	1	8613670000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



1-channel distributor

M12 connection

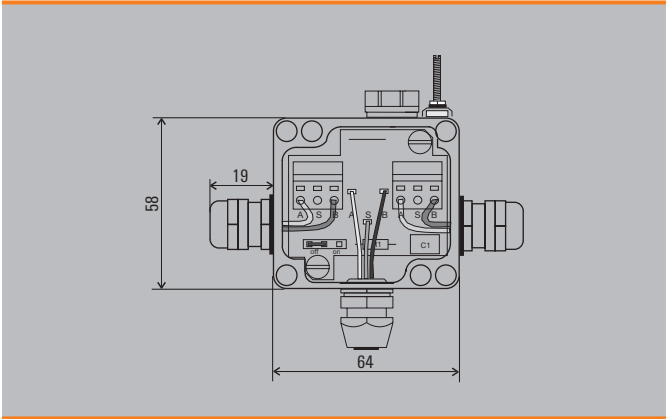


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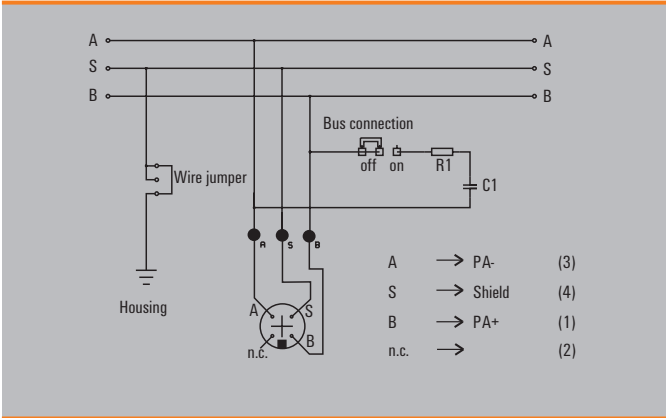
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 1way	branch line M12	1	8564060000
Stainless steel enclosure			
FBCon SS CG/M12 1way	branch line M12	1	8726020000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor

Cable gland

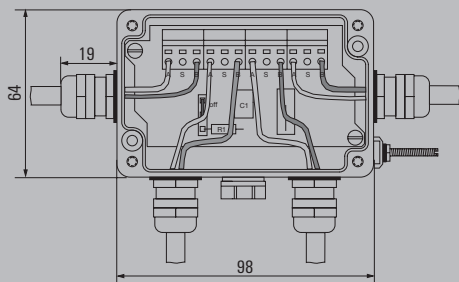


Ordering data

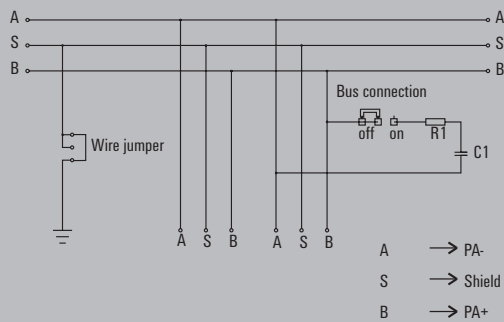
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 2way	branch line CG	1	8564100000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor

M12 connection

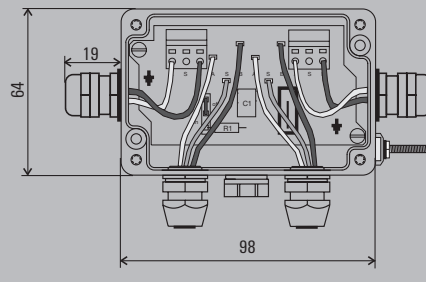


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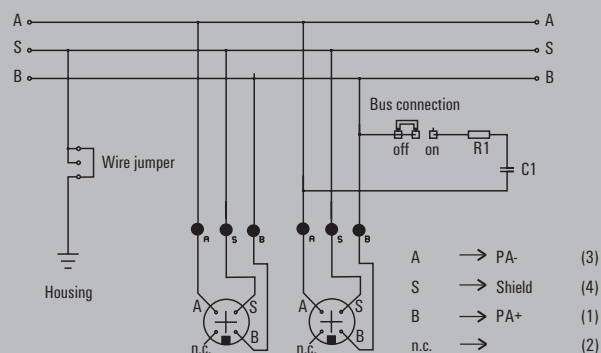
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 2way	branch line M12	1	8564070000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



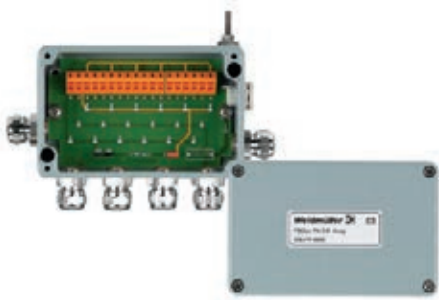
Wiring diagram



PROFIBUS-PA - FBCon T-distributor

4-channel distributor

Cable gland

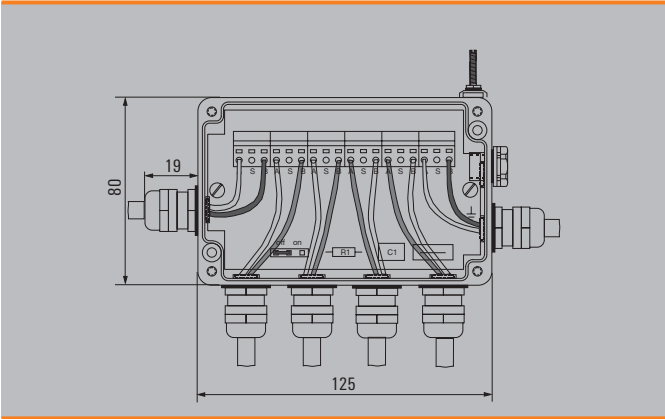


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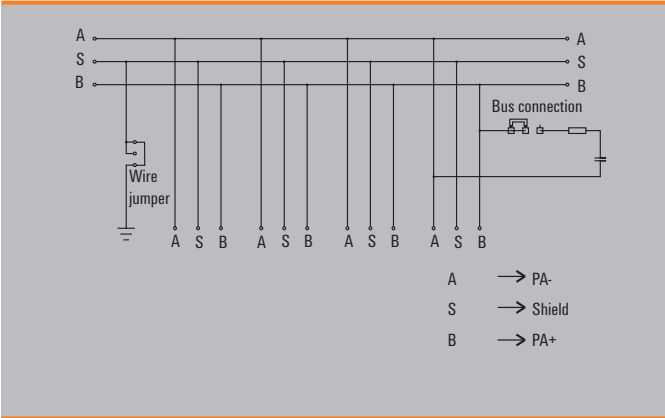
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 4way	branch line CG	1	8564110000
Stainless steel enclosure			
FBCon SS CG 4way	branch line CG	1	8703450000
FBCon SS PCG 4way	all connections PCG	1	8613680000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

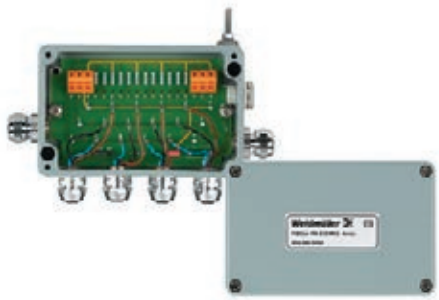


Wiring diagram



4-channel distributor

M12 connection

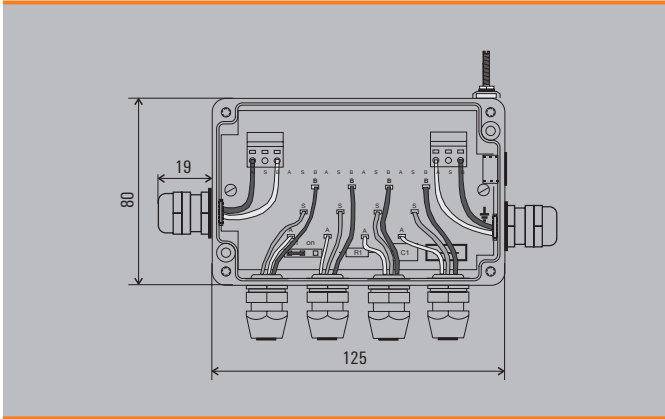


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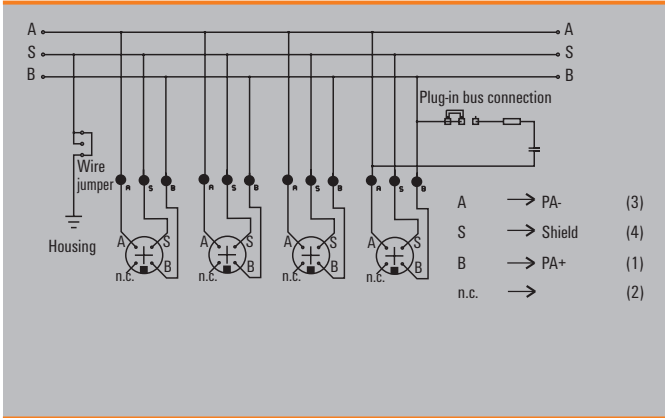
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 4way	branch line M12	1	8564080000
Stainless steel enclosure			
FBCon SS CG/M12 4way	branch line M12	1	8726040000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

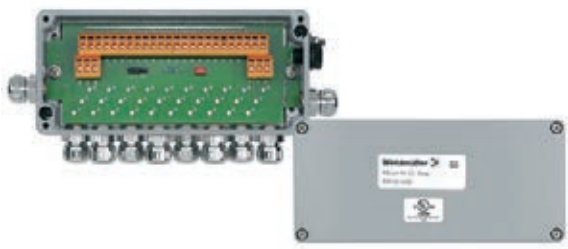


Wiring diagram



8-channel distributor

Cable gland

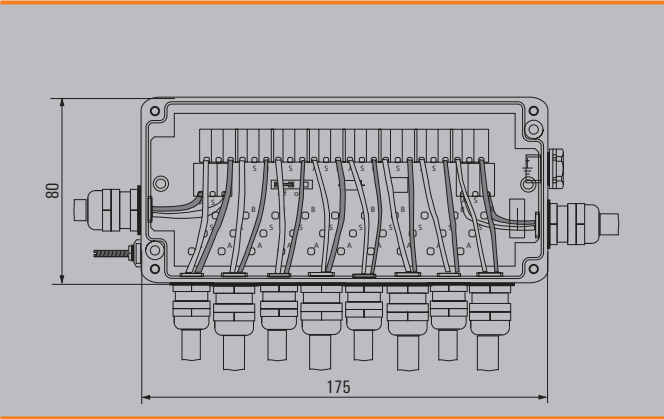


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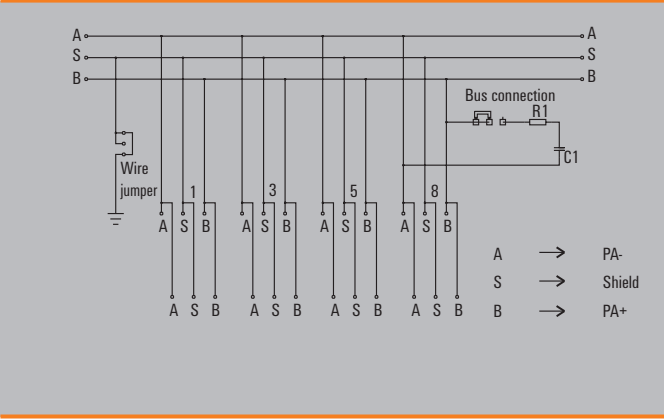
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 8way	branch line CG	1	8564300000
Stainless steel enclosure			
FBCon SS CG 8way	branch line CG	1	8703470000
FBCon SS PCG 8way	all connections PCG	1	8640720000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

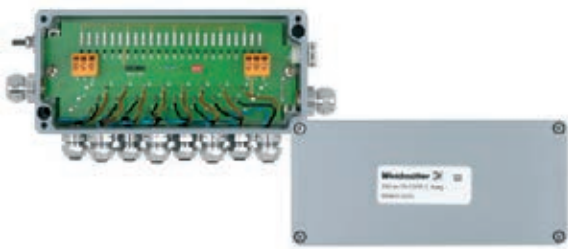


Wiring diagram



8-channel distributor

M12 connection

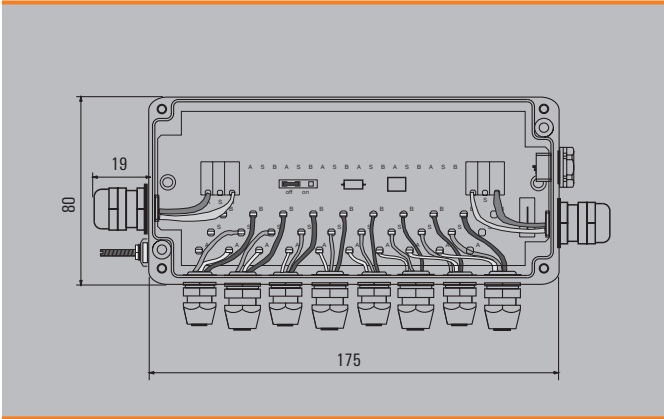


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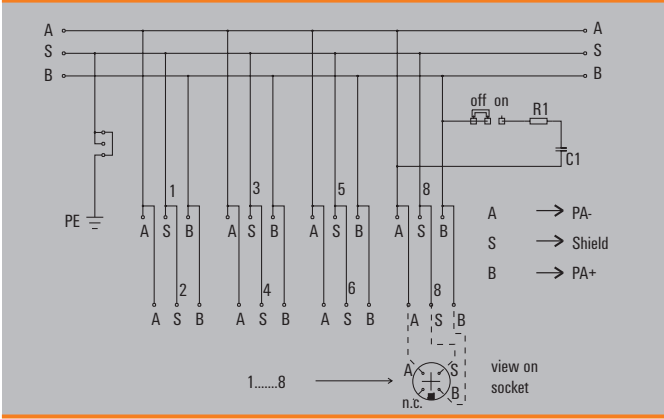
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 8way	branch line M12	1	8564310000
Stainless steel enclosure			
FBCon SS CG/M12 8way	branch line M12	1	8726050000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

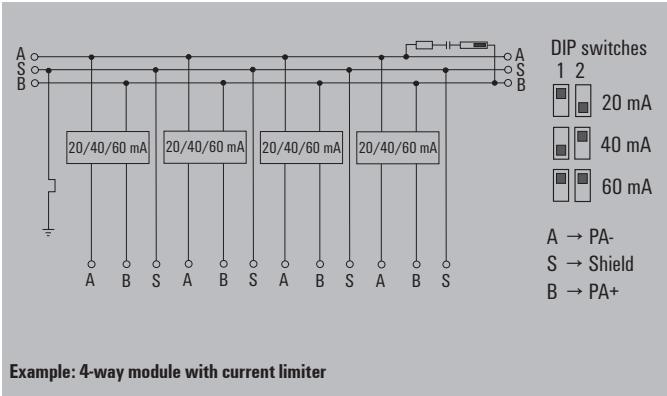
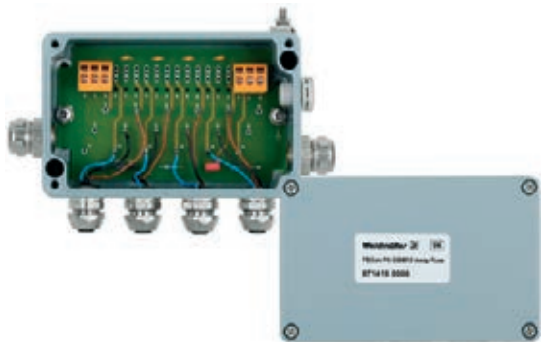


Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

Fieldbus components for industrial applications with surge protection or current limiter



PROFIBUS-PA T-connectors

Fine surge protection or integrated current limiting mechanisms are designed for protecting connected measuring devices, sensors or actuators from surge voltages. Gas-discharge tubes and suppressor diodes are voltage-limiting protection mechanisms.

If a rapidly rising voltage pulse reaches the input of a T-connector with surge protection, the gas discharge tube ignites and discharges a high current. The residual pulse is limited by a suppressor diode.

In the case of a slow rise in voltage, the pulse is processed by the diode alone. The housing is connected to the protective earth via an external earth stud. When using the connectors for current limiting, the PROFIBUS-PA network is protected against short circuits with protective circuitry. The current can be set to either 20 mA, 40 mA or 60 mA by means of two DIP switches.

Surge protection Technical data

Operating temperature	-40 °C to 85 °C
Ingress protection class	IP 67
Enclosure material	High grade aluminium alloy (AL - SI 12)
Finish	Painted RAL 7001
PROFIBUS-PA connection	Tension clamp terminals 0.5 - 1.5 mm ²
Cable entry	Cable gland M16
Branch	M12 socket (4-pin)
Cable gland clamping range	5.5 - 9.5 mm
Nominal voltage DC/AC	UN = 24 V DC/18 V AC
Max. permissible operating voltage	UC = 30 V DC/21 V AC
Rated current at 30 °C	IN = 500 mA
Trip surge voltage (1 kV/μs)	< 600 V
Rated discharge surge current (8/20 μs)	ISN = 10 KA (wire-wire, wire-PE)
Output voltage limit (8/20 μs)	UP = 65 V
PROFIBUS-PA bus terminator	Via jumper

Installation advice

Torques	
Screw terminals	0.4 Nm
M16 cable gland at enclosure	6.0 Nm
Union nut M16 cable gland	4.0 Nm
Enclosure cover	1.8 - 2.0 Nm
External earthing cable	1.8 - 2.0 Nm

Limiter Technical data

Operating temperature	-40 °C to 85 °C
Ingress protection class	IP 67
Enclosure material	High grade aluminium alloy (AL - SI 12)
Finish	Painted RAL 7001
PROFIBUS-PA connection	Tension clamp terminals 0.5 - 1.5 mm ²
Cable entry	Cable gland M16
Branch	M12 socket (4-pin)
Cable gland clamping range	5.5 - 9.5 mm
Short-circuit protection per station	20, 40, 60 mA settings
PROFIBUS-PA bus terminator	Via jumper

Installation advice

Torques	
Screw terminals	0.4 Nm
M16 cable gland at enclosure	6.0 Nm
Union nut M16 cable gland	4.0 Nm
Enclosure cover	1.8 - 2.0 Nm
External earthing cable	1.8 - 2.0 Nm

1-channel distributor (OVP)

Cable gland

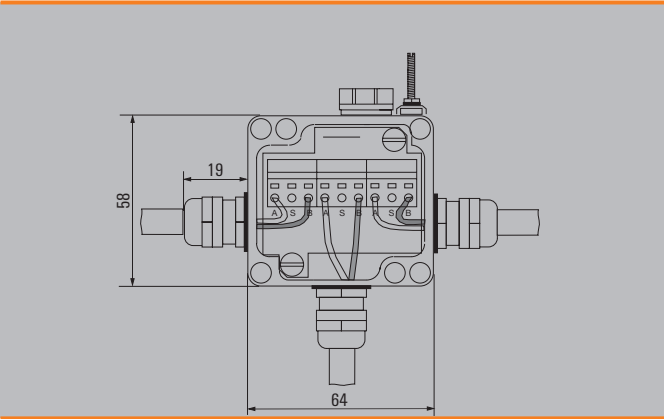


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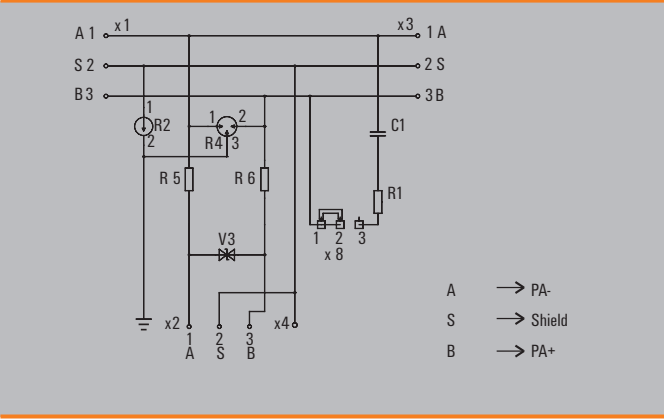
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 1way OVP	branch line CG	1	8714120000
Stainless steel enclosure			
FBCon SS PCG 1way OVP	all connections PCG	1	8715270000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



1-channel distributor (OVP)

M12 connection

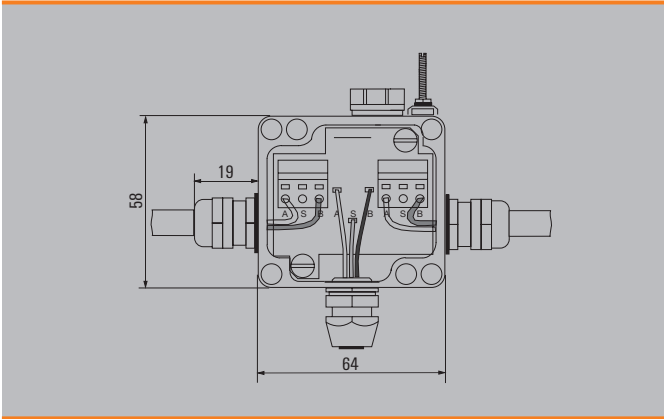


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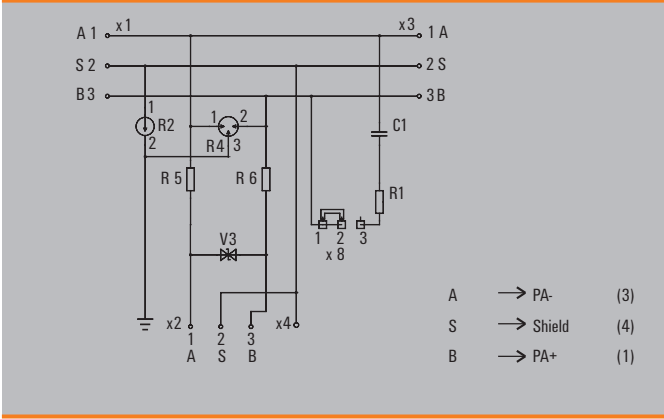
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 1way OVP	branch line M12	1	8714080000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



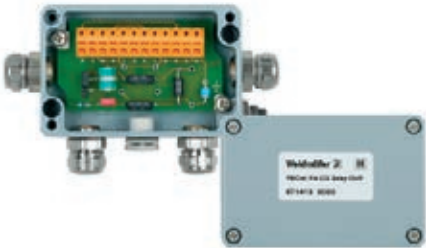
Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

2-channel distributor (OVP)

Cable gland

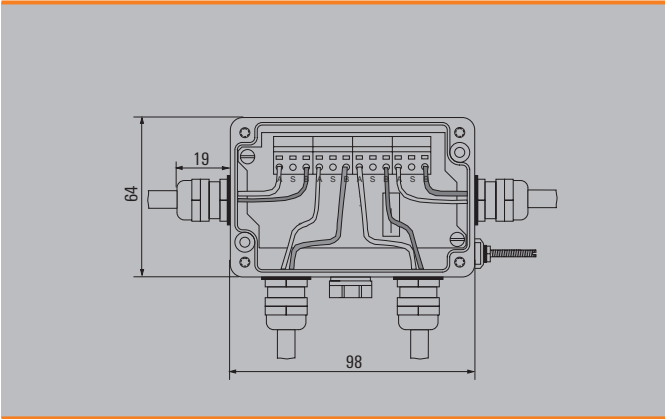


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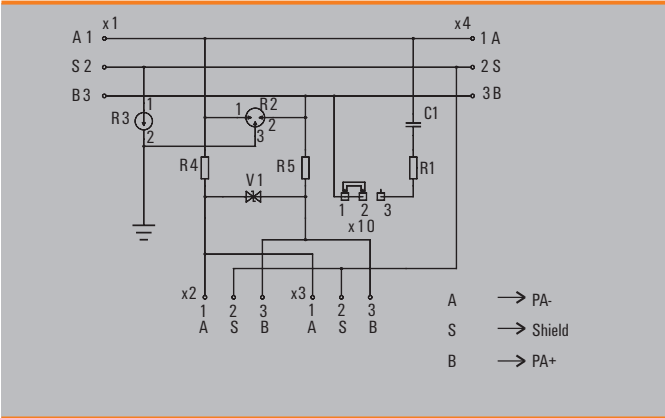
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 2way OVP	branch line CG	1	8714130000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

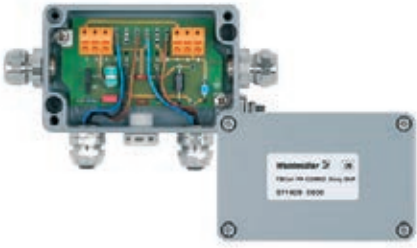


Wiring diagram



2-channel distributor (OVP)

M12 connection

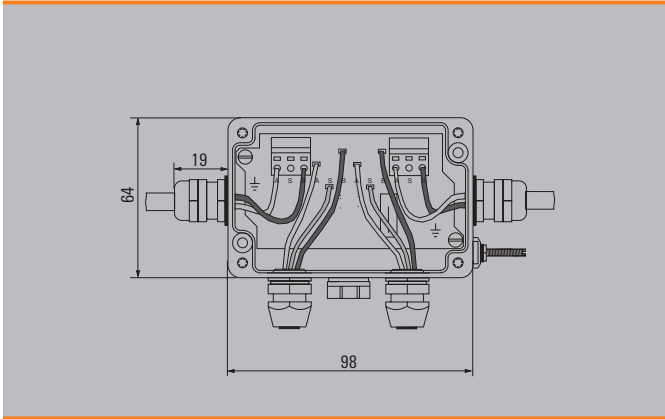


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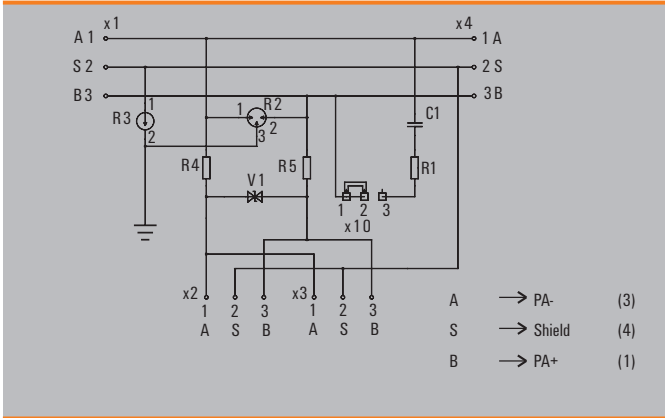
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 2way OVP	branch line M12	1	8714090000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

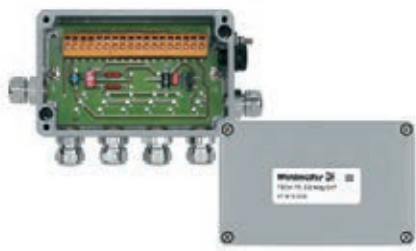


Wiring diagram



4-channel distributor (OVP)

Cable gland

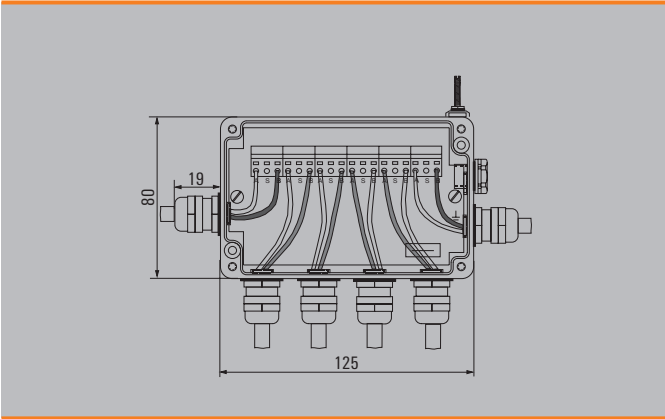


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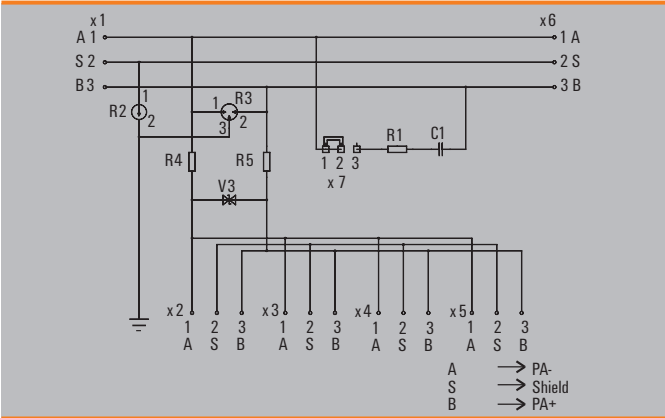
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 4way OVP	branch line CG	1	8714140000
Stainless steel enclosure			
FBCon SS PCG 4way OVP	all connections PCG	1	8726080000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



4-channel distributor (OVP)

M12 connection

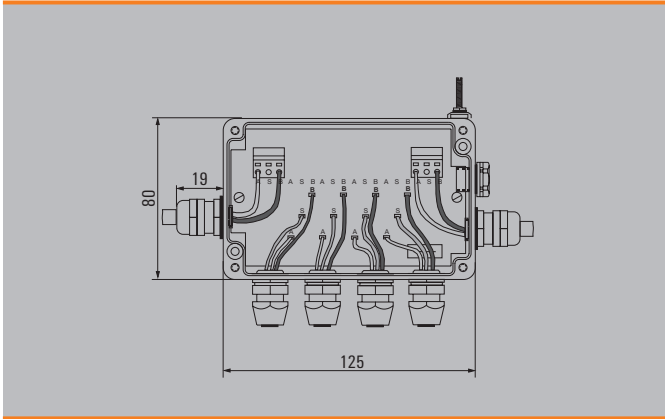


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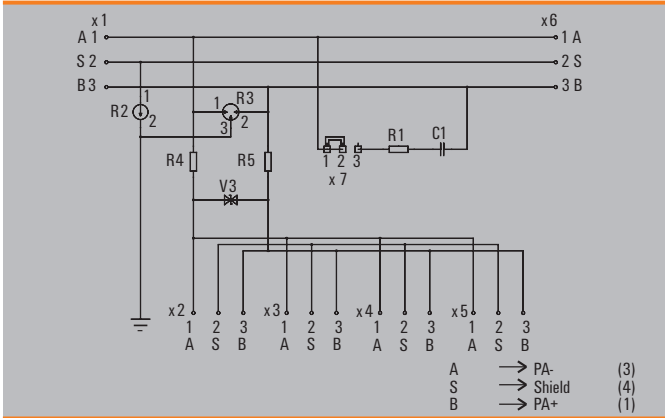
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 4way OVP	branch line M12	1	8714100000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



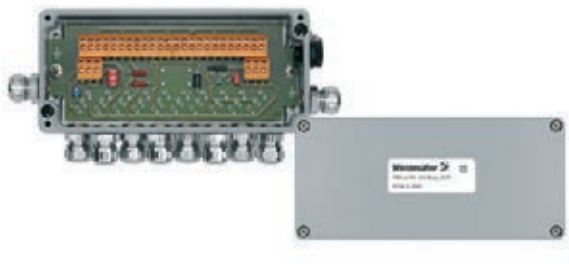
Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

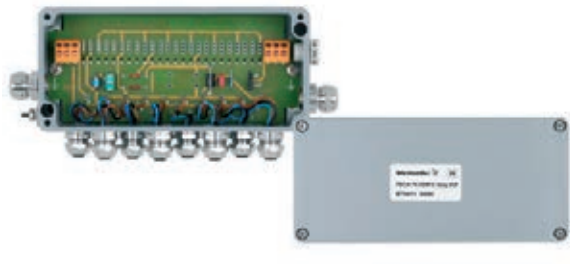
8-channel distributor (OVP)

Cable gland



8-channel distributor (OVP)

M12 connection



Ordering data

Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 8way OVP	branch line CG	1	8714150000
Stainless steel enclosure			
FBCon SS PCG 8way OVP	all connections PCG	1	8726090000

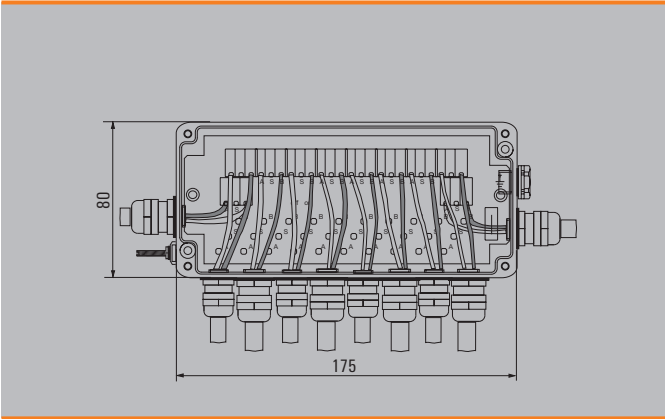
CG = brass cable gland
PCG = plastic cable gland

Ordering data

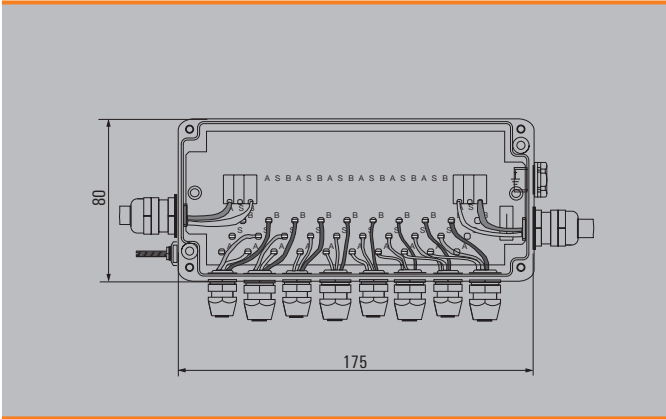
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 8way OVP	branch line M12	1	8714110000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

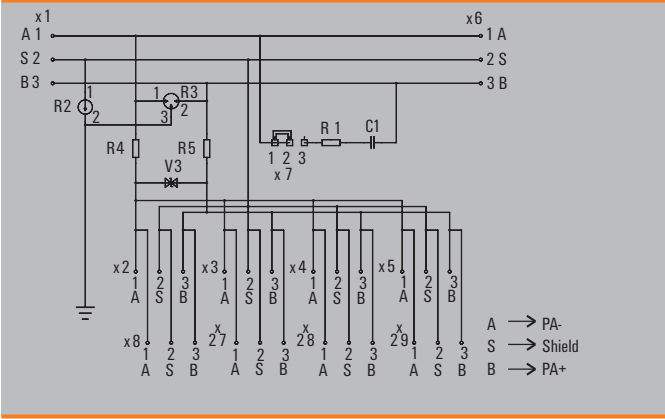
Dimensioned drawing



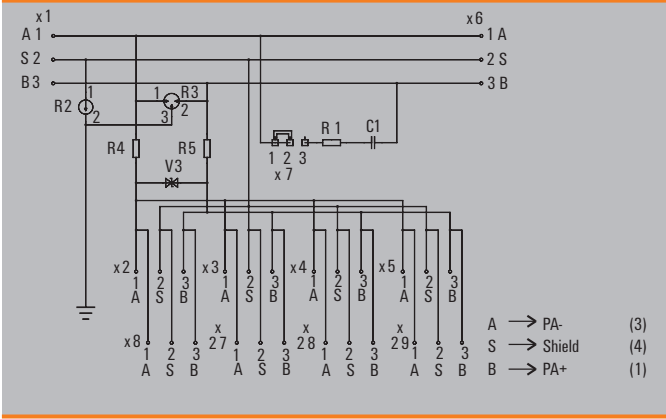
Dimensioned drawing



Wiring diagram



Wiring diagram



1-channel distributor (limiter)

Cable gland

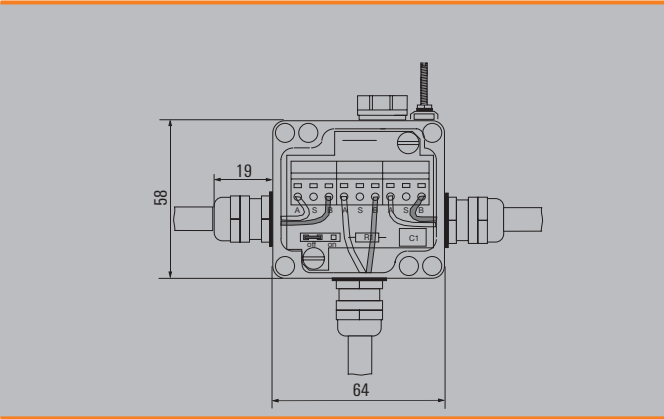


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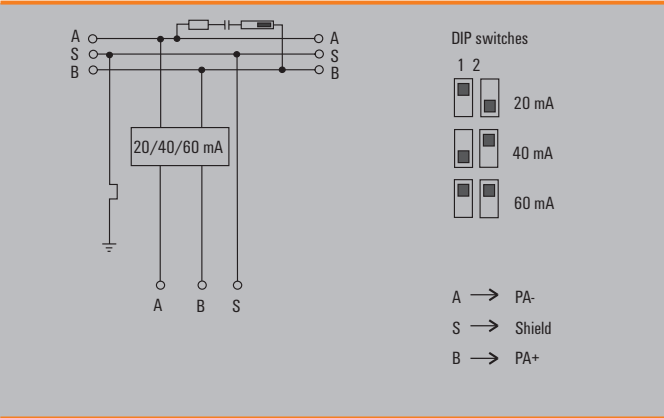
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 1way Limiter	branch line CG	1	8714200000
Stainless steel enclosure			
FBCon SS PCG 1way Limiter	all connections PCG	1	8726110000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



1-channel distributor (limiter)

M12 connection

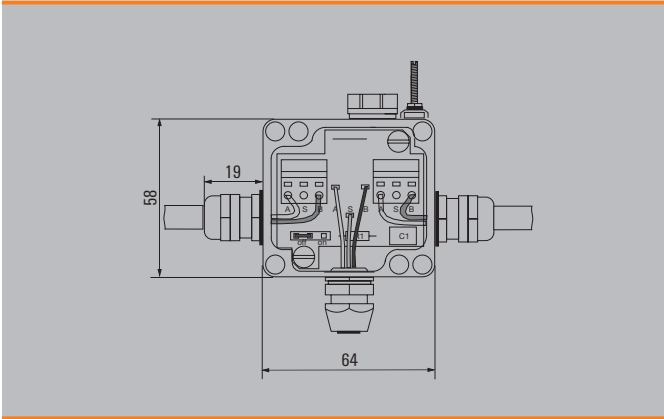


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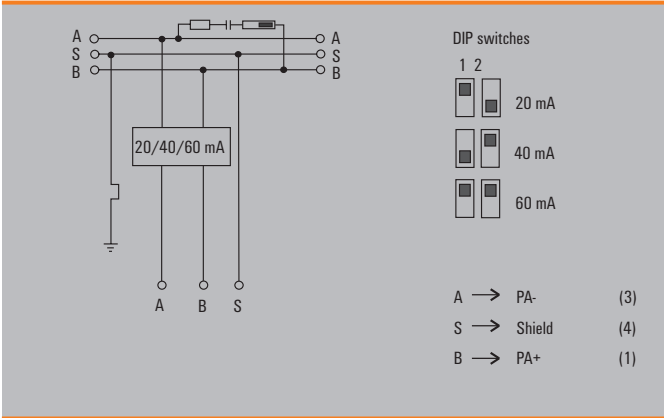
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 1way Limiter	branch line M12	1	8714160000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

2-channel distributor (limiter)

Cable gland

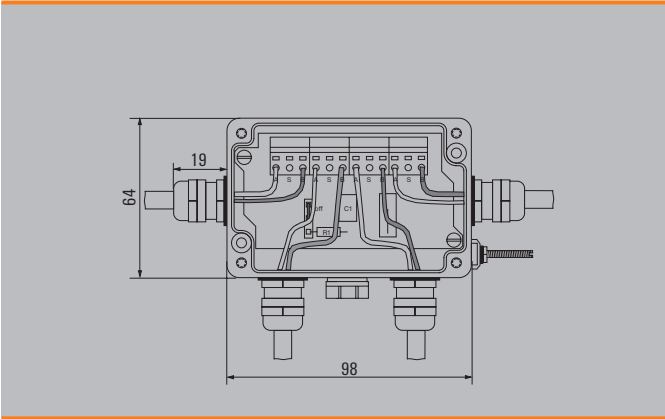


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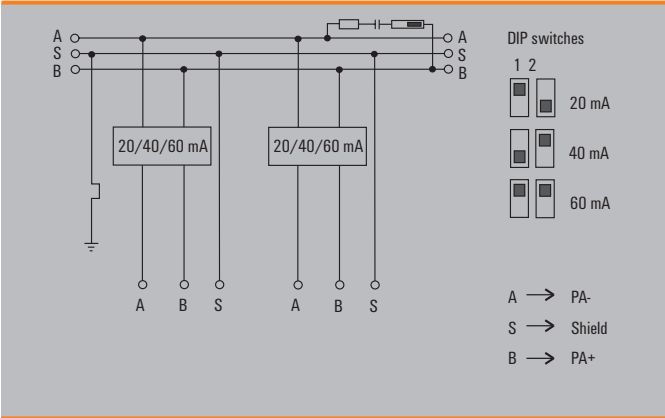
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 2way Limiter	branch line CG	1	8714210000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor (limiter)

M12 connection

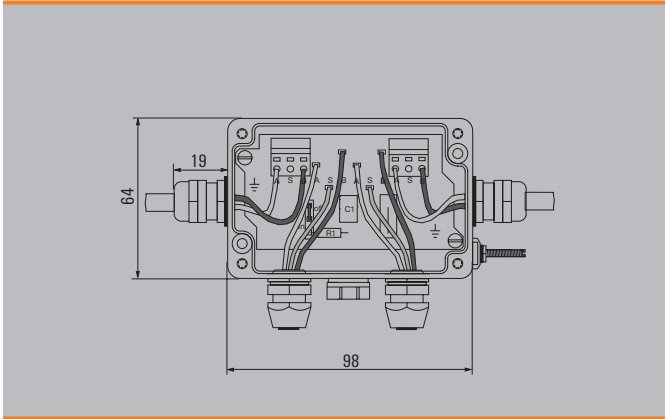


Ordering data

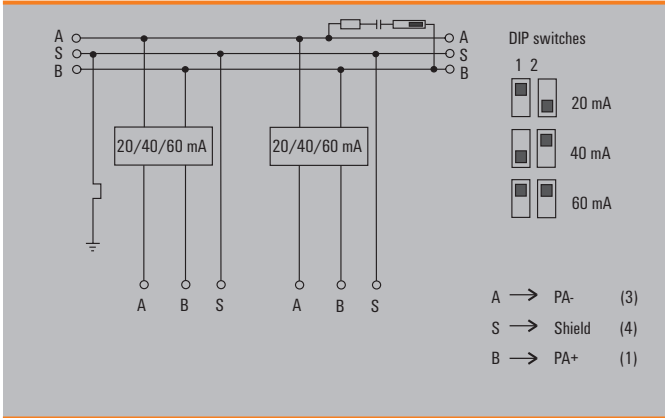
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 2way Limiter	branch line M12	1	8714170000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



4-channel distributor (limiter)

Cable gland

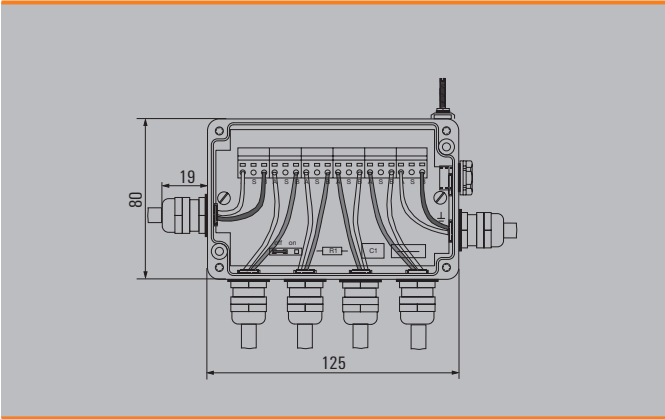


Ordering data

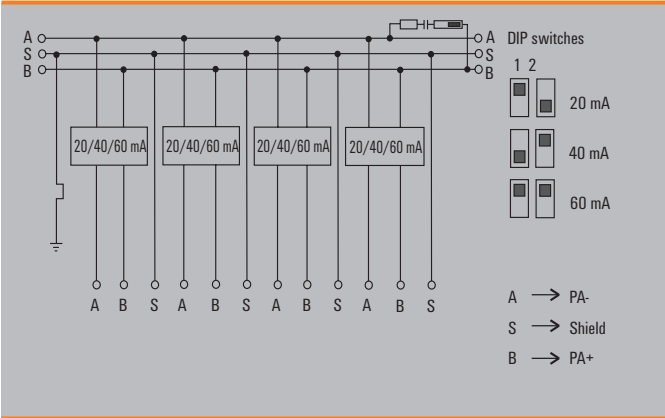
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 4way Limiter	branch line CG	1	8714220000
Stainless steel enclosure			
FBCon SS PCG 4way Limiter	all connections PCG	1	8715260000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

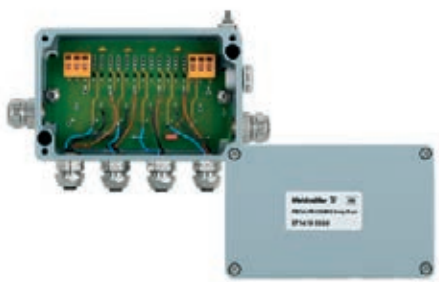


Wiring diagram



4-channel distributor (limiter)

M12 connection

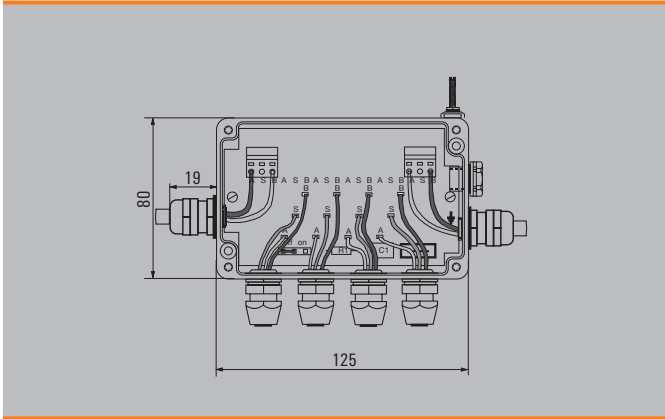


Ordering data

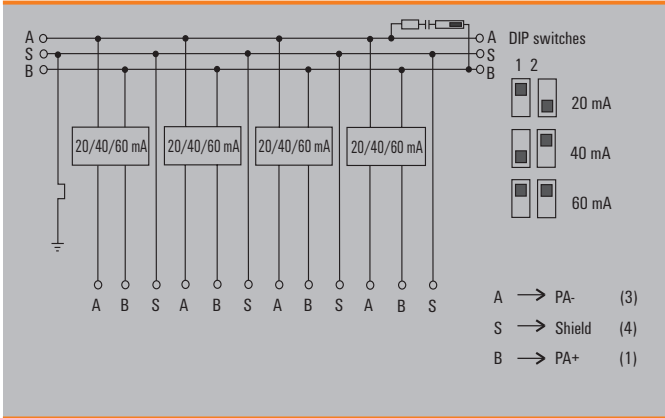
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 4way Limiter	branch line M12	1	8714180000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



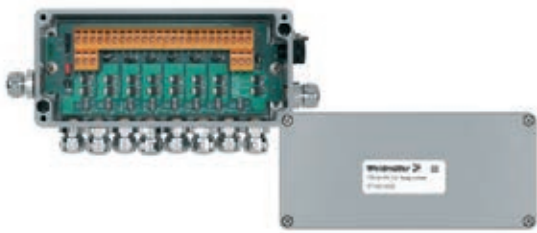
Wiring diagram



PROFIBUS-PA - FBCon T-distributor with surge protection

8-channel distributor (limiter)

Cable gland

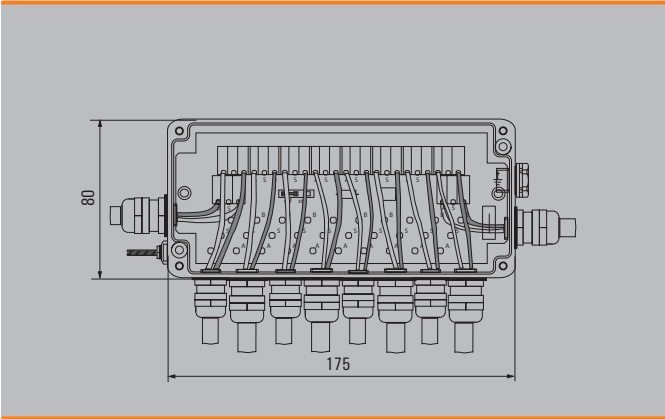


Ordering data

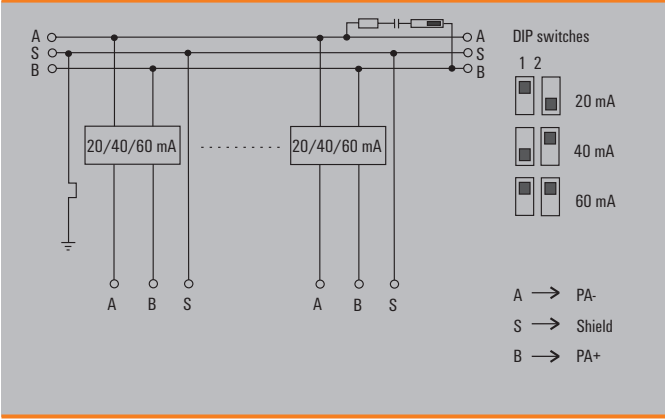
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 8way Limiter	branch line CG	1	8714230000
Stainless steel enclosure			
FBCon SS PCG 8way Limiter	all connections PCG	1	8726160000

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

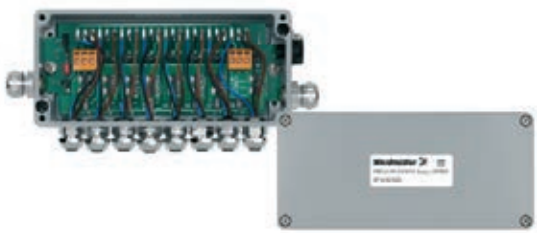


Wiring diagram



8-channel distributor (limiter)

M12 connection

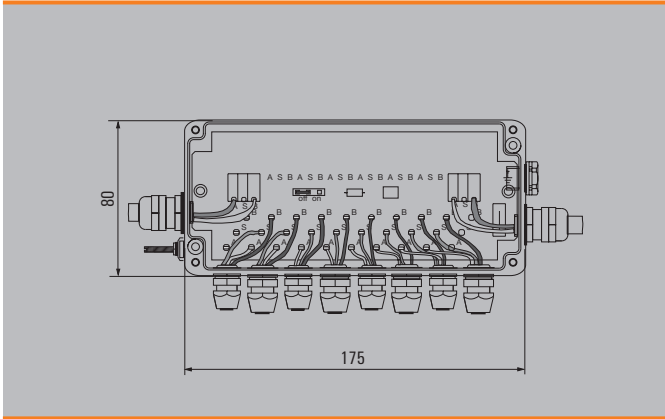


Ordering data

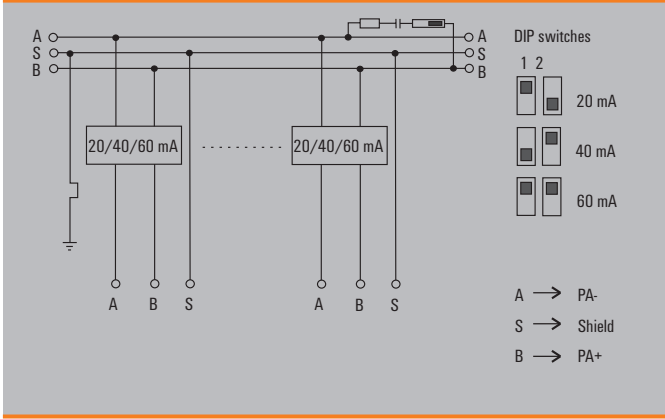
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 8way Limiter	branch line M12	1	8714190000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



FBCon distributors for Ex areas



PROFIBUS-PA T-connector

• Ex(ia)

The PROFIBUS-PA installation products are increasingly used in the

- food industry
- basic industries and
- chemical industry.

The product range offers a wide choice of customer solutions for use in harsh conditions. This includes standard and EX versions of single and multi-way design with M12 plug in connection or cable glands. Weidmüller offers a solution for almost every application. If you cannot find your solution here, please contact the branch / sales office responsible for you.

PROFIBUS-PA T-connector

- Ex(ia)

- 1-way
- 2-way
- 4-way
- 8-way

The PROFIBUS-PA T connector Ex(ia) specification is intended for direct coupling of measuring devices, sensors, actuators, etc. in potentially explosive areas.

- Approval for intrinsically safe use ATEX approval
- IP 66 Ingress Protection Class
- Modular design
- Uninterruptible bus operation
- Simple handling
- External earth terminal
- External bus terminator



C

Weidmüller

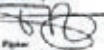
Bus Terminator 8556460000

Datum: 27.11.00, Seite 3/3

Spricht man der PBCan Bus Terminator 8556460000 für den eigensicheren Bereich EEx ia und den Bereich EEx n eingesetzt werden. Der Bus Terminator darf in Verbindung mit einem für die Zündschlüssel-EEx n und EEx ia eingesetzten Gehäuse installiert werden. Bei Anwendung mit EEx ia (EEx n Applikation) muss ein weiterer EEx ia vor in entsprechenden Gehäuse sein. Bei Anwendung mit EEx ia in einem Kurzschlussgehäuse wird der Bus Terminator mit einem zusätzlichen Erdanschluss versehen (Zeichnung 855646 Blatt 7).

Anwendungsbispiel für ein Kommunikationssystem mit Bus Terminator

Das Diagramm zeigt ein Kommunikationssystem. Ein PC ist über eine RS485-Schnittstelle mit einem CAN-Bus-Modem verbunden. Das Modem ist an einen CAN-Bus angeschlossen, der über einen Bus Terminator (8556460000) abgeschlossen ist. Der Bus Terminator ist an einen CAN-Bus angeschlossen, der über einen Bus Terminator (8556460000) abgeschlossen ist. Der Bus Terminator ist an einen CAN-Bus angeschlossen, der über einen Bus Terminator (8556460000) abgeschlossen ist. Der Bus Terminator ist an einen CAN-Bus angeschlossen, der über einen Bus Terminator (8556460000) abgeschlossen ist.

	
AMENDMENT 1	
To EC-Type Examination Certificate KEMA 01ATEX1059 X	
Manufacturer: Wabender Industrie GmbH & Co. Address: Klingenbergerstraße 18, 32758 Detmold, Germany	
Description In future, the range of Fieldbus Components is extended with a Bus Termination Module with an alternative mechanical construction and with an intrinsically safe Fieldbus Distribution Module Type FBCor-PA-CG 1 way Ex, 2 way Ex, 4 and 8 way Ex, and Type FBCor-PA-CG/MT2 1 way Ex, 2 way Ex, 4 and 8 way Ex. The following non-certified connectors and cables may be used for the connection of intrinsically safe technical systems: Connectors, male Type 545554 and female Type 842352 and loading plug-in connectors Type 545555, 842351, 842353 and 842354. The distribution modules, connectors and cables are passive components, which do not influence the properties of the intrinsically safe fieldbus system. All other data remain unchanged.	
Test Documentation	
1. Drawing No. 850949, rev. 0 (sheets 2, 3, 4, 5 and 6): 850949, rev. 0 (sheets 2, 3, 4, 5 and 6): 850949, rev. 0 (sheet 2) (sheet 2 and 3): 850929, rev. 0 (sheets 2, 3, 4, 5 and 6): 850415, rev. 0 (sheets 2, 3, 4 and 5): 850415, rev. 0 (sheets 2, 3, 4 and 5): 850417, rev. 0 (sheets 2, 3, 4 and 5): 850418, rev. 0 (sheets 2, 3, 4 and 5): 850419, rev. 0 (sheets 2, 3, 4 and 5): 850420, rev. 0 (sheets 2, 3, 4 and 5): 4-22984, rev. 1 (sheet 2): 545554, rev. 1 (sheets 2 and 3): 842022, rev. 1 (sheets 2 and 3): 942035, rev. 0 (sheet 2): 942035, rev. 2 (sheet 2): 942351, rev. 2 (sheet 2): 942351, rev. 1 (sheet 2): 942506, rev. 1 (sheet 2):	date 17.08.2001 17.08.2001 23.12.2007 23.02.2001
2. Technical delivery condition No. 5293	
Technical: 9 October 2001 KEMA Quality: 9/1  T. Pijper Certification Manager	
Code:  02-0 EE to EC TS and EE to EN 574 © This Amendment may only be reproduced in its entirety and without any change.	
[002]014 Page 1/1	

Weidmüller C.51

1-channel distributor Ex

Cable gland

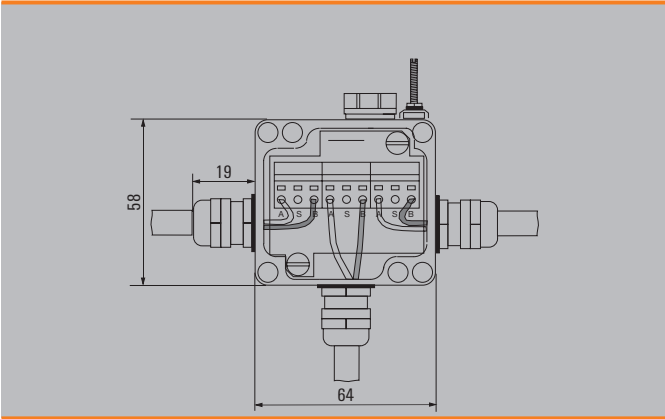


Ordering data

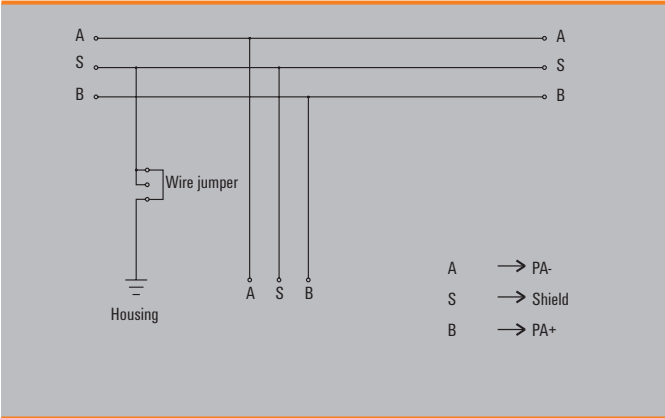
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 1way Ex	branch line CG	1	8564180000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



1-channel distributor Ex

M12 connection

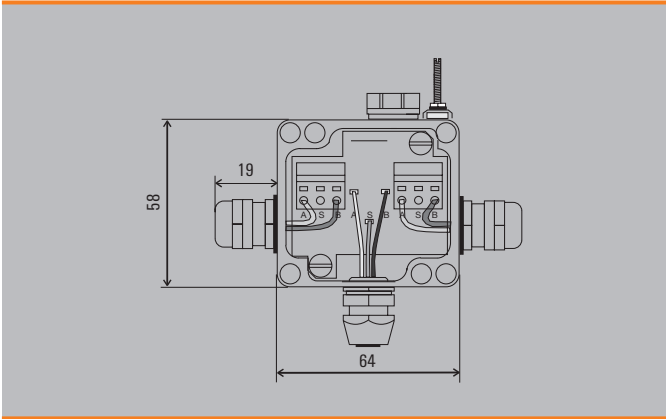


Ordering data

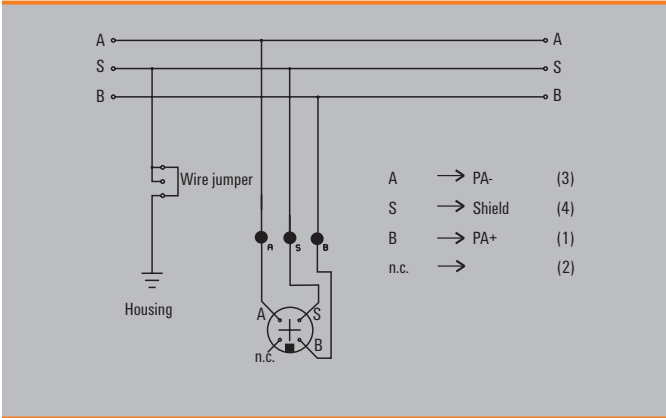
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 1way Ex	branch line M12	1	8564150000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor Ex

Cable gland

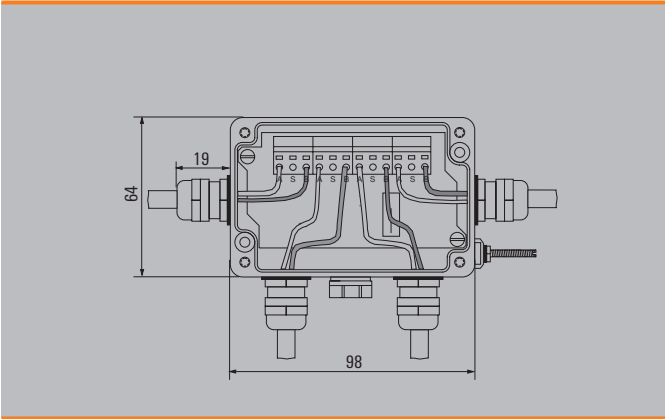


Ordering data

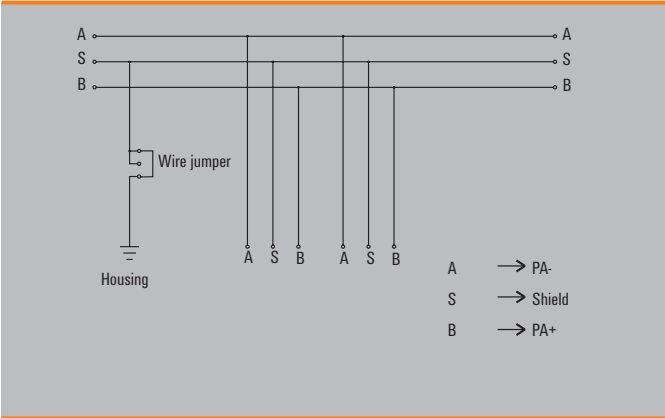
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 2way Ex	branch line CG	1	8564190000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



2-channel distributor Ex

M12 connection

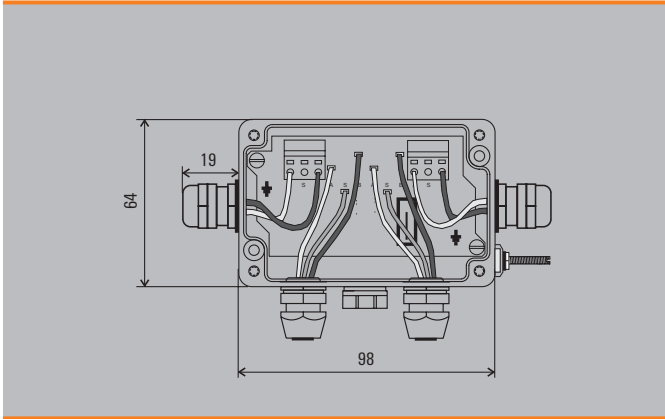


Ordering data

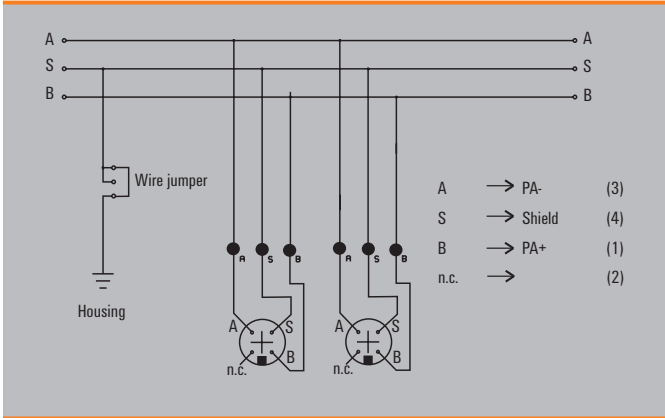
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 2way Ex	branch line M12	1	8564160000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



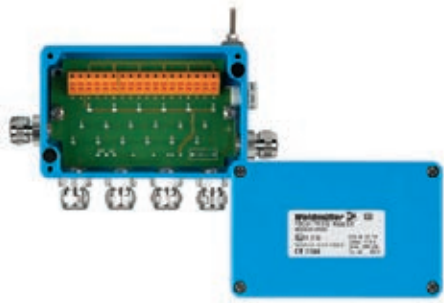
Wiring diagram



PROFIBUS-PA - FBCon T-distributor ATEX Ex(ia)

4-channel distributor Ex

Cable gland

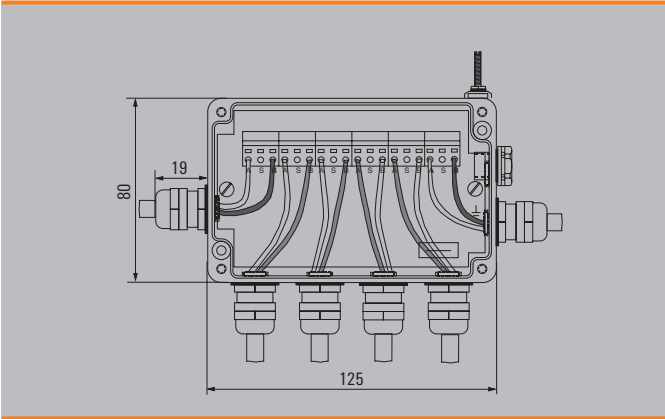


Ordering data

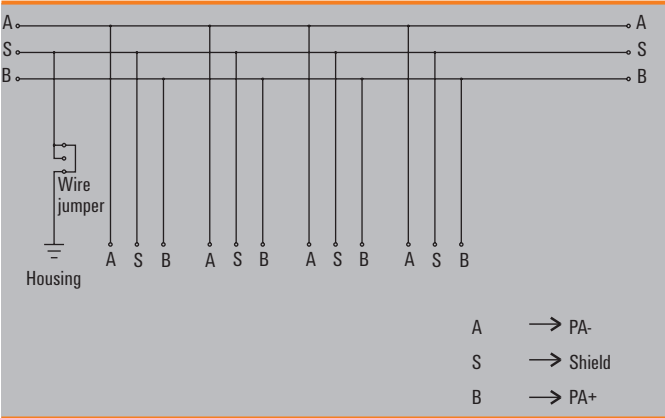
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 4way Ex	branch line CG	1	8564200000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing

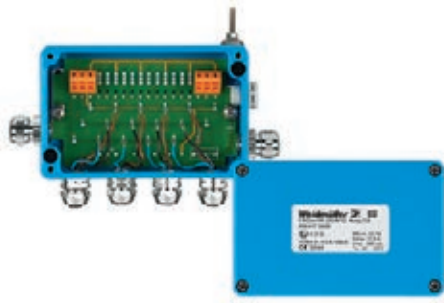


Wiring diagram



4-channel distributor Ex

M12 connection

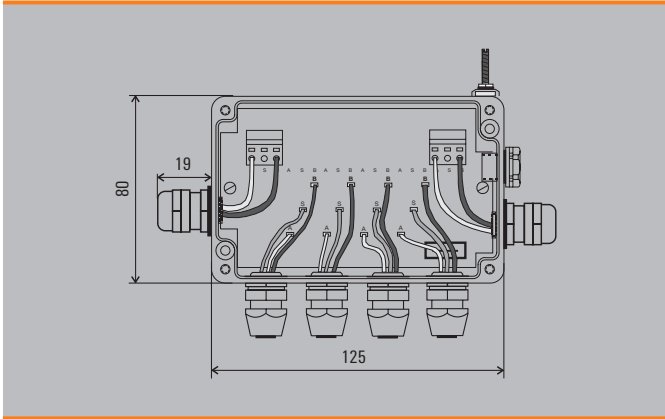


Ordering data

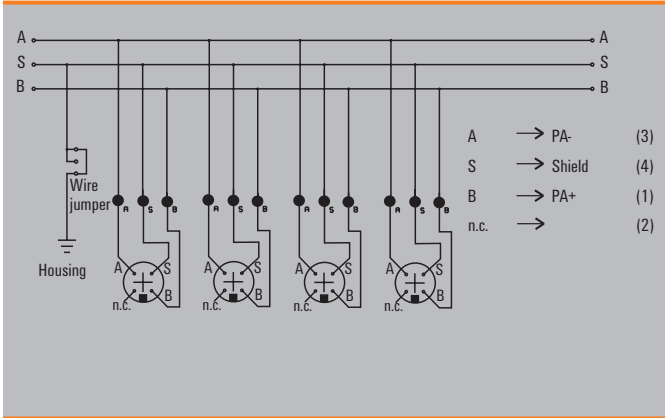
Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 4way Ex	branch line M12	1	8564170000
Stainless steel enclosure			

CG = brass cable gland
PCG = plastic cable gland

Dimensioned drawing



Wiring diagram



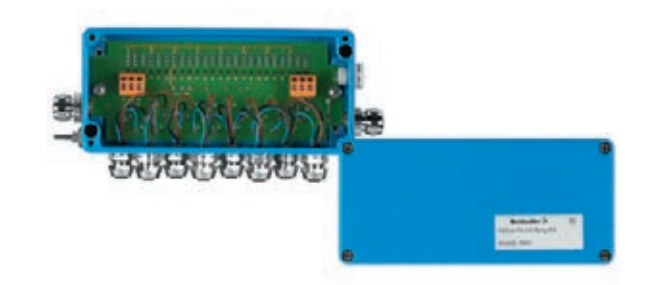
8-channel distributor Ex

Cable gland



8-channel distributor Ex

M12 connection



Ordering data

Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG 8way Ex	branch line CG	1	8564240000
Stainless steel enclosure			

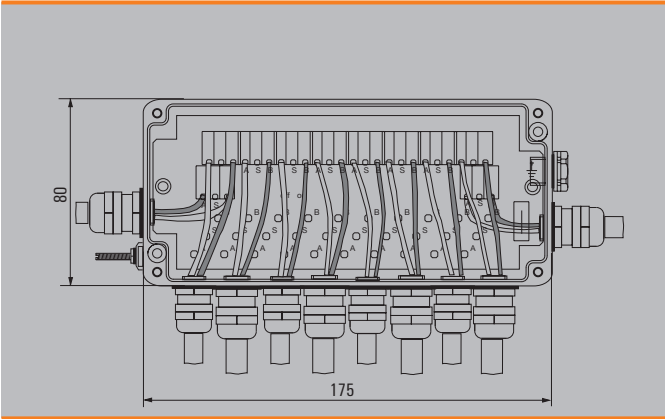
Ordering data

Type	Cable gland	QTY	Order No.
Aluminium housing			
FBCon PA CG/M12 8way Ex	branch line M12	1	8564250000
Stainless steel enclosure			

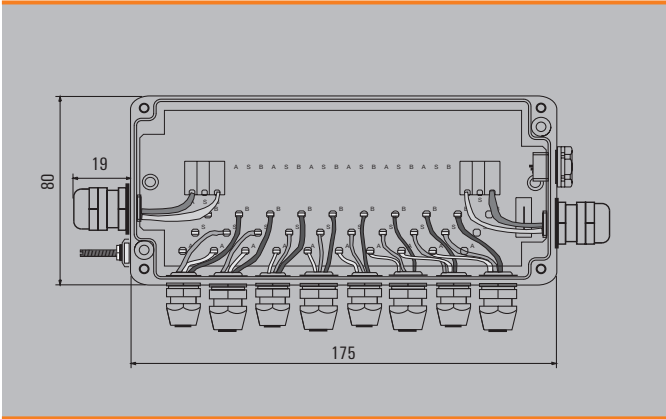
CG = brass cable gland
PCG = plastic cable gland

CG = brass cable gland
PCG = plastic cable gland

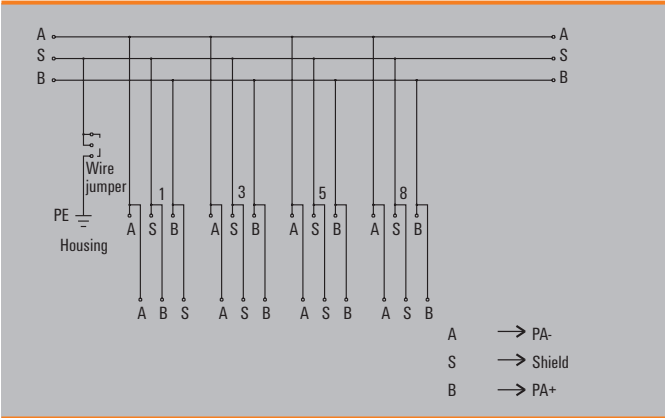
Dimensioned drawing



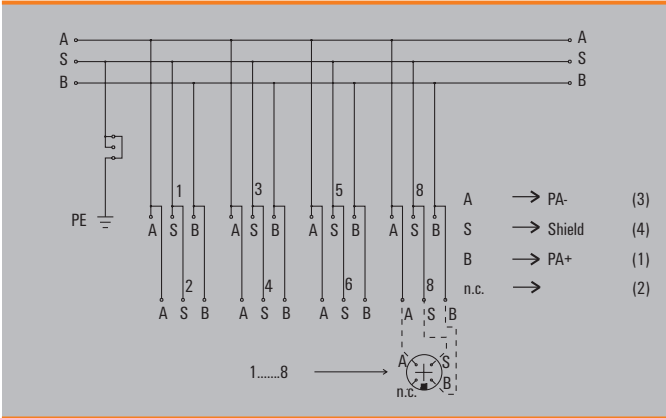
Dimensioned drawing



Wiring diagram



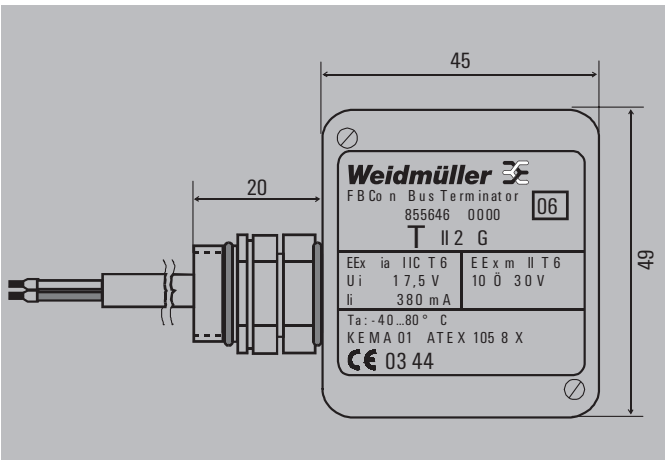
Wiring diagram



PROFIBUS-PA - FBCon T-distributor ATEX Ex(ia)

FBCon bus terminator

FBCon bus terminator without earth connection



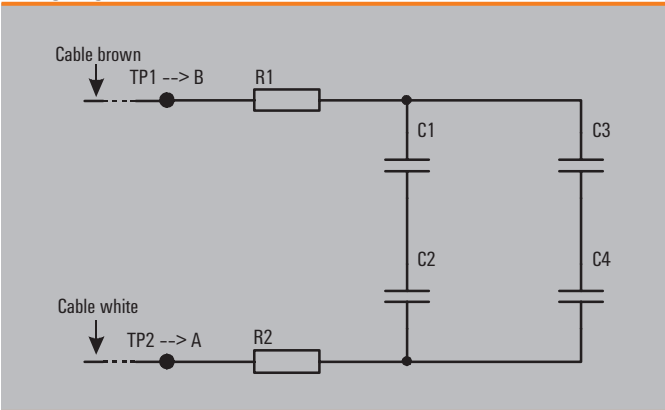
Technical data

Operating temperature	-40 °C to 80 °C
Ingress protection class	IP 66
Enclosure material	High grade aluminium alloy (Al - Si 12)
Finish	Black powder-coated
Connection lead	2 x 0.14 mm ²
Cable entry	Bus adapter M16

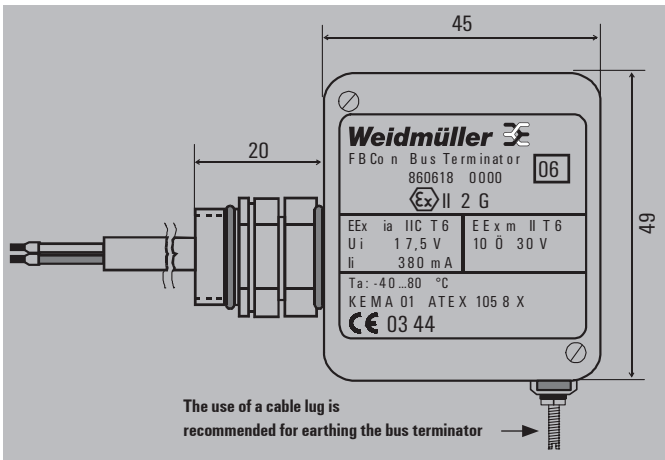
Ordering data

Type	Qty.	Order No.
FBCon Bus Terminator EEx with locking clip, without earth connection	1	8556460000
FBCon Bus Terminator EEx without locking clip, without earth connection	1	8606190000

Wiring diagram



FBCon Bus Terminator with earth connection



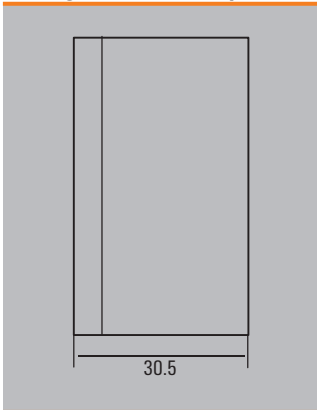
Technical data

Operating temperature	-40 °C to 80 °C
Ingress protection class	IP 66
Enclosure material	High grade aluminium alloy (Al - Si 12)
Finish	Black powder-coated
Connection lead	2 x 0.14 mm ²
Cable entry	Bus adapter M16

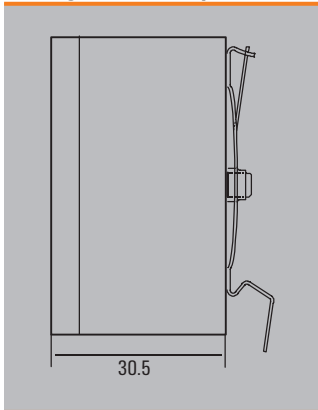
Ordering data

Type	Qty.	Order No.
FBCon Bus Terminator EEx with locking clip, with earth connection	1	8606180000
FBCon Bus Terminator EEx without locking clip, with earth connection	1	8606200000

Housing cover without clip-on foot



Housing cover with clip-on foot



Actuator-Sensor Interface Line



The new space-saving SAI AS-Interface family makes new applications possible. The narrow 24 mm form of the modules means that they can fit into a very small installation space. The length is also remarkable, since the M8 module with 4 connections is only 123 mm long.

The ribbon cable locks into the base part, while the coded cable rules out the possibility of misconnection. The piercing connectors make the module easy to connect with the help of a screwdriver. Pure input modules only require the yellow ribbon cable. The additional voltage for the outputs is fed to the module via the black cable.

The implementation of the new AS-Interface specification 3.0 means that modules with 8 inputs on one address with 62 slaves are possible in one network. Also modules with 4 inputs and 4 outputs with 62 slaves are now available. These modules require an M4 master.

All modules are certified by the AS-Interface Association and conform to the AS-Interface specifications.

The outputs, as well as the supply for sensors, are protected against short circuits and overload. These faults are signalled to the master using the peripheral bit. At the same time, the AS-I and fault LEDs blink alternately red/green in accordance with the AS-Interface specification.

All outputs can be simultaneously operated at the maximum current capacity of 0.5 A.

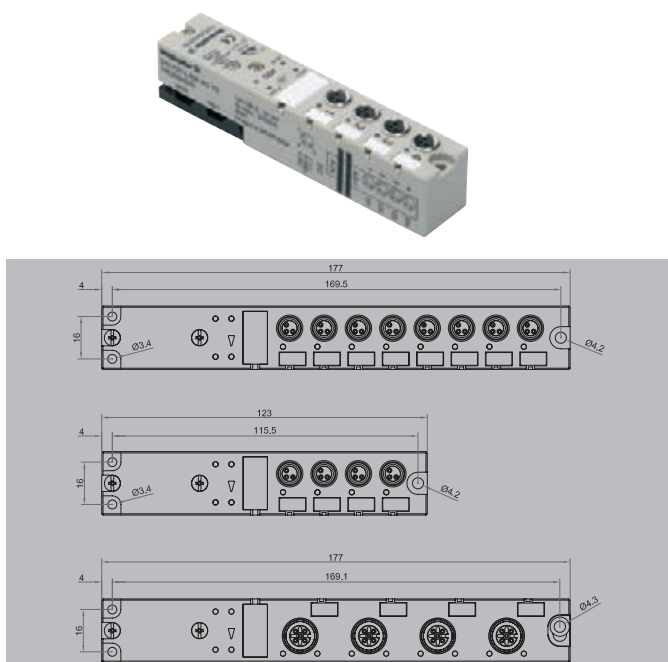
The housing has IP 67 class of protection, which guarantees resistance to water and dust. The addressing is performed via the infrared adapter with the user-friendly hand programming tool.

With the Weidmüller MultiCard markers, each I/O point can be individually marked, while a further marker is available for the complete module.

There are eight module versions, with four different I/O configurations available:

- 4 inputs
- 8 inputs
- 4 outputs
- 4 inputs and 4 outputs

Each I/O variant is available in two connection versions. The sensors or actuators can be connected with 5-pole M12 or 3-pole M8 plug-in connectors.



SAI-ASI Line V3

SAI-ASI Line

M8



SAI-ASI Line

M12



Ordering data

IO variants	
	4 inputs
	4 outputs
	4 inputs / 4 outputs
	8 inputs
Note	

Technical specifications of bus system

Bus user	Slave
No. of subscribers	62
Transmission rate	167 kbits
Diagnosis indication	red
Station addresses	Infrared
AS interface specification	V3.0

Note

Accessories

Miscellaneous accessories	
	M12 protective cap
	M8 protective cap
Note	

Type	Qty.	Order No.
SAI-ASH-M8-4I V3	1	1962640000
SAI-ASH-M8-4O V3	1	1962660000
SAI-ASH-M8-4I/4O V3	1	1962670000
SAI-ASH-M8-8I V3	1	1962650000

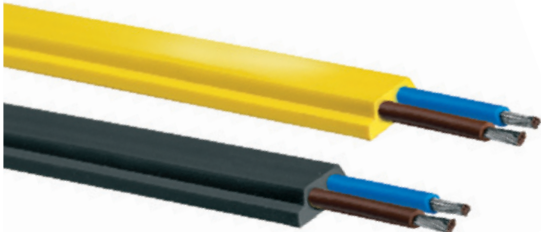
Technical data

General data	
Insulation material of housing	PBT
Flammability class UL 94	V-0
Operating temperature	-25 °C ... 60 °C
Storage temperature	-25 °C ... 85 °C
Protection class	IP 67
Electrical data	
Rated voltage	26.5 ... 31.6 V
max. current-carrying capacity per output signal	0.5 A
Output level	Short-circuit-protected
Total current max.	2 A
Digital input type	TYPE 1 to EN 61131-2
E/A function indicator	LED yellow
Sensor voltage indicator	LED green

Type	Qty.	Order No.
SAI-SK-M12	30	9456050000
SAI-SK-M8	50	1802760000

AS-Interface ribbon cables

AS-Interface ribbon cable, rubber



Technical data

Use	AS-Interface
Colour	yellow, black
Type of cable	profiled cable
Conductor cross-section	2 x 1.5 mm²
Material	EPDM (rubber)
Halogen-free	yes
Temperature range (at rest)	-40 °C ... +85 °C
Temperature range (moving)	-25 °C ... +85 °C
Flammability class	flammable
Ozone/weather-resistant	partially resistant
Minimum bending radii	fixed: 12 mm movable: 24 mm
Flexural properties	no break after 30,000 backward and forward movements

Ordering data

Type	Designation	Qty.	Order No.
AS-KG-ge	Ribbon cable yellow	100 m	9455110000
AS-KG-sw	Ribbon cable black	100 m	9455120000

Coupling module single from ribbon cable to round cable



Technical data

Connection AS-Interface	ribbon cable
No. connectable cables	1
Type of cable	ribbon cable, yellow + black
Flexible lead cross-section	1.5 mm²
Connection type	piercing technology
Outlet line	
Type of cable	PUR
Conductor cross-section	0.34 mm²
Cable length	2 m
Operating voltage	≤ 40 V
Operating current	≤ 4 A
General data	
Pollution severity DIN EN 0110	3
Ambient temperature	-25 °C ... +75 °C
Storage temperature	-40 °C ... +85 °C
Housing material	PA 6-GF-FR
Shock resistance	30 g/11 ms
Vibration resistance	10 ... 55 Hz; 1.0 mm amplitude
Specific data	
Ingress protection class DIN 40050	IP 67
Weight	20 g
M12 Pin assignment	
Pin 1: blue	AS-Interface „+“ blue
Pin 3: brown	AS-Interface „-“ brown

Ordering data

Type	Qty.	Order No.
SAI-ASI T FR	1	1925010000

Bridge module ribbon cable



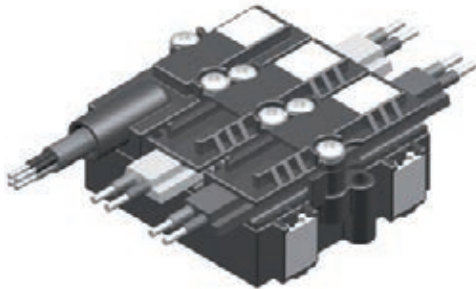
Technical data

Connection AS-Interface	ribbon cable
No. connectable cables	2
Type of cable	ribbon cable, yellow + black
Flexible lead cross-section	1.5 mm ²
Connection type	piercing technology
Outlet line	
Type of cable	PUR solid
Operating voltage	≤ 40 V
Operating current	≤ 4 A
General data	
Pollution severity DIN EN 0110	3
Ambient temperature	-25 °C ... +75 °C
Storage temperature	-40 °C ... +85 °C
Housing material	PA 6-GF-FR
Shock resistance	30 g/11 ms
Vibration resistance	10 ... 55 Hz; 1.0 mm amplitude
Specific data	
Ingress protection class DIN 40050	IP 65
Weight	20 g without cable

Ordering data

Type	Qty.	Order No.
SAI-ASI T FF small	1	1026090000

Coupling module ribbon cable
to round cable / yellow + black (2 m)



Technical data

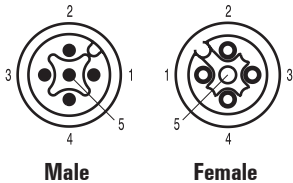
Connection AS-Interface	ribbon cable
No. connectable cables	2
Type of cable	ribbon cable, yellow + black
Flexible lead cross-section	1.5 mm ²
Connection type	piercing technology
Outlet line	
Type of cable	PUR
Conductor cross-section	0.34 mm ²
Cable length	2 m
Operating voltage	≤ 40 V
Operating current	≤ 4 A
General data	
Pollution severity DIN EN 0110	3
Ambient temperature	-25 °C ... +75 °C
Storage temperature	-40 °C ... +85 °C
Housing material	PA 6-GF-FR
Shock resistance	30 g/11 ms
Vibration resistance	10 ... 55 Hz; 1.0 mm amplitude
Specific data	
Ingress protection class DIN 40050	IP 65 / IP 67
Weight	50 g without cable
M12 Pin assignment	
Pin 1: brown	AS-Interface „+“
Pin 2: white	ext. power supply „-“
Pin 3: blue	AS-Interface „-“
Pin 4: black	ext. power supply „+“

Ordering data

Type	Qty.	Order No.
SAI-ASI T FFR	1	1924980000

CANopen & DeviceNet™ cables (M12, M8)

CAN/DeviceNet™ cables
one end without connector



Ordering data

Male, straight	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Male, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Female, straight	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Female, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Note	

5-pole	
Type	Order No.
SAIL-M12G-CD-1.5A	1964700150
SAIL-M12G-CD-1.5B	1060110150
SAIL-M12W-CD-1.5A	1062220150
SAIL-M12W-CD-1.5B	1062170150
SAIL-M12BG-CD-1.5A	1964690150
SAIL-M12BG-CD-1.5B	1060120150
SAIL-M12BW-CD-1.5A	1061980150
SAIL-M12BW-CD-1.5B	1062180150
Other versions on request	

Standard cable lengths

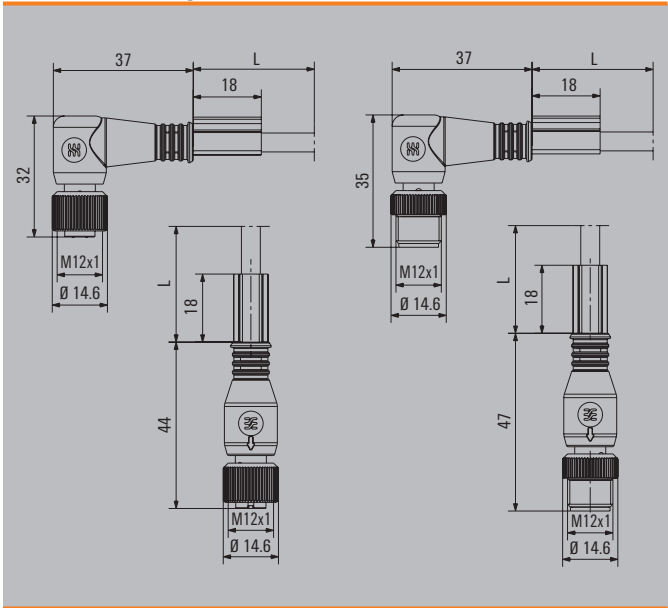
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

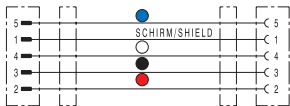
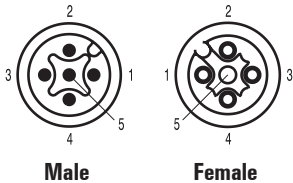
Sheathing colour	Black
Protection degree	IP 67
Wire cross section	2 x 0.34 + 2 x 0.22 mm²
Contact surface	Gold-plated
Temperature range of housing	-25...+85 °C

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



CAN/DeviceNet™ cables
connecting cables



Ordering data

Male, straight - Female, straight	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Male, straight - Female, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Male, angled - Female, angled	
PUR/TPE	1.5 m
PVC/PVC	1.5 m
Note	

5-pole

Type	Order No.
SAIL-M12GM12G-CD-1.5A	1964710150
SAIL-M12GM12G-CD-1.5B	1060130150
SAIL-M12GM12W-CD-1.5A	1061990150
SAIL-M12GM12W-CD-1.5B	1062190150
SAIL-M12WM12W-CD-1.5A	1062150150
SAIL-M12WM12W-CD-1.5B	1062210150
Other versions on request	

Standard cable lengths

All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.

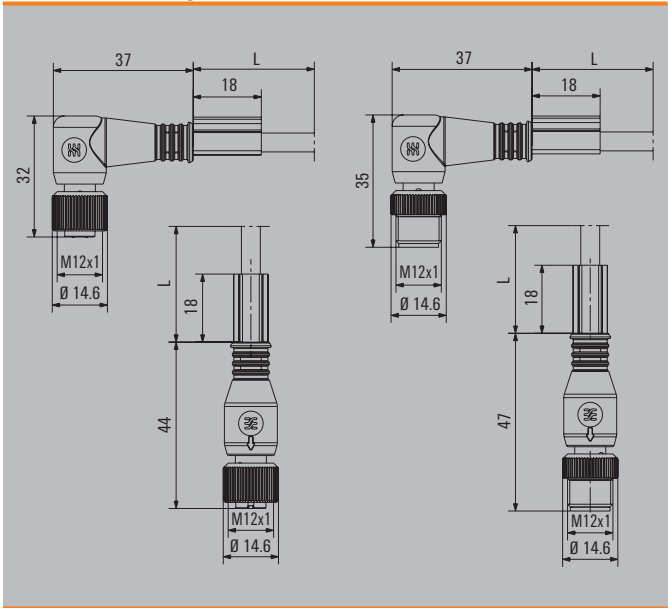
1.5 m	xxxxxx0150
3.0 m	xxxxxx0300
5.0 m	xxxxxx0500
10.0 m	xxxxxx1000

Technical data

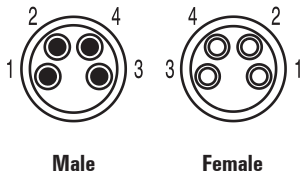
Sheathing colour	Black
Protection degree	IP 67
Wire cross section	2 x 0.34 + 2 x 0.22 mm ²
Contact surface	Gold-plated
Temperature range of housing	-25...+85 °C

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



CANopen & DeviceNet™ - cables (M12, M8)



CAN/DeviceNet™ cables Connecting cables

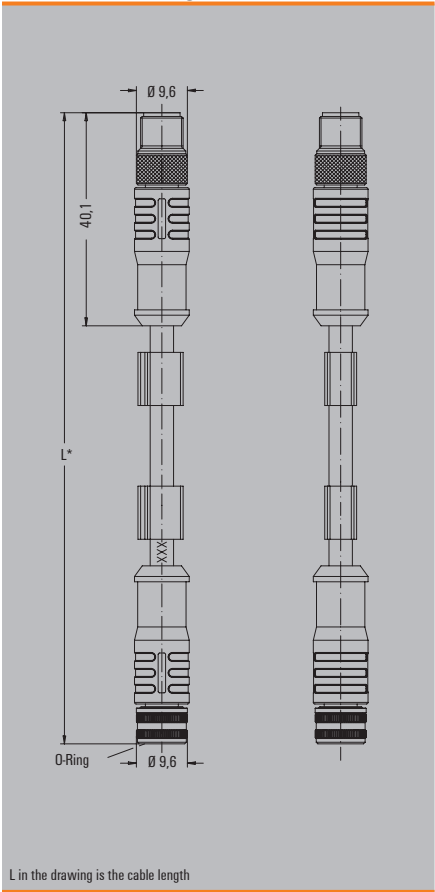


Technical data

Operating voltage
Wire
Quad
Stranding sequence
Wrapping
Shield
Outer cladding
Electrical properties
Conductor resistance (at 20 °C)
Insulation resistance
Dielectric strength (50 Hz 1 min.)
Characteristic impedance 1-1000 KHz
Operational capacity
Mechanical characteristics
Min. permitted bending radius
Max. permitted tensile load
Weight
Thermal characteristics
moving
Stationary

Max. 300 V peak
Conductor: copper wire, without insulation, AWG 24, 7-wire Insulation: PE 2Y
4 wires according to 3.1 are stranded in group of four
Brown, green, white, yellow
Plastic foil
Braiding tin-plated copper, opt. Coverage ≥ 85 %
PVC, YM
≤ 87 Ω/km
≤ 1 GΩ x km
Wire/wire 1000 V
nom. 100-120 Ω
nom. 56 pF/m
One time: 7.5 x cable diameter
Multiple times: 15 x cable diameter
Static: 50 N/mm ²
Dynamic: 20 N/mm ²
Approx. 78 kg/km
-20 °C to 70 °C
-40 °C to 70 °C

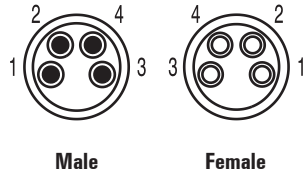
Dimensioned drawing



Note
Ordering data
0.2 m
0.25 m
0.3 m
0.5 m
0.8 m
1.0 m
1.5 m
3.0 m
3.5 m
5.0 m
7.0 m
10.0 m
Note

		2-pole
Type	Qty.	Order No.
SAIL-M8GM8G-4S-0.2-CAN		1216820020
SAIL-M8GM8G-4S-0.25-CAN		1216820025
SAIL-M8GM8G-4S-0.3-CAN		1216820030
SAIL-M8GM8G-4S-0.5-CAN		1216820050
SAIL-M8GM8G-4S-0.8-CAN		1216820080
SAIL-M8GM8G-4S-1.0-CAN		1216820100
SAIL-M8GM8G-4S-1.5-CAN		1216820150
SAIL-M8GM8G-4S-3.0-CAN		1216820300
SAIL-M8GM8G-4S-3.5-CAN		1216820350
SAIL-M8GM8G-4S-5.0-CAN		1216820500
SAIL-M8GM8G-4S-7.0-CAN		1216820700
SAIL-M8GM8G-4S-10-CAN		1216821000

The four-pole Standard M8 sensor cables are especially well suited for the Universal Pro system. With their diameter of 0.34 mm², these cables allow a system to be expanded up to 50 meters. The 360° shielding guarantees that signal transmission is error-free.



Universal Pro cables



Terminating resistor



Technical data

Cable construction

No. of poles
Sheathing colour
Material
Core cross-section
Contact surface
Nominal voltage
Rated current
Protection class
Ambient temperature, min.
Ambient temperature, max.

Note

4
grey
PUR/PUR
0.34 mm ²
Gold-plated
30 V
4 A
IP 67
-30 °C
90 °C

Ordering data

Male, straight - female, straight

0.3 m
1.0 m
1.5 m
3.0 m
5.0 m
10.0 m
15.0 m
20.0 m

Type	Qty.	Order No.
SAIL-M8GM8G-4S-0.3Q-SB	1	1981900030
SAIL-M8GM8G-4S-1.0Q-SB	1	1981900100
SAIL-M8GM8G-4S-1.5U-SB	1	1981900150
SAIL-M8GM8G-4S-3.0Q-SB	1	1981900300
SAIL-M8GM8G-4S-5.0Q-SB	1	1981900500
SAIL-M8GM8G-4S-10Q-SB	1	1981901000
SAIL-M8GM8G-4S-15Q-SB	1	1981901500
SAIL-M8GM8G-4S-20Q-SB	1	1981902000

Female, straight - open end

1.5 m
3.0 m
5.0 m
10.0 m

SAIL-M8BG-4S-1.5U-SB	1	1981910150
SAIL-M8BG-4S-3.0Q-SB	1	1981910300
SAIL-M8BG-4S-5.0Q-SB	1	1981910500
SAIL-M8BG-4S-10Q-SB	1	1981911000

Note

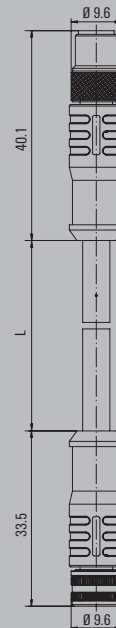
Other versions on request

Ordering data - Terminating resistor

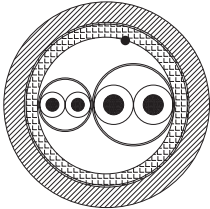
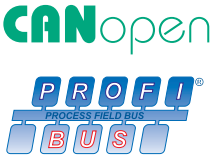
Type	Qty.	Order No.
SAI END CAN M8 4P	1	1955340000

Note

Dimensioned drawing



L in the drawing is the cable length



CAN / DeviceNet™ bulk lengths



Technical data

Component A (1x2x0.34) ST
Conductor
Insulation
Assembly
Element B (1x2x0.22) ST
Conductor
Insulation
Assembly
Complete assembly
Drain wire
Shield
Band
Outer cladding
Marking
General characteristics
Nom. impedance 0.3-20 MHz
Nominal power rating 800 Hz
Operating voltage
Test voltage
Conductor resistance
Min. bending radius
Temperature range
Reference
Attenuation (max.)
(pair 0.22 mm ²)
Max. speed
Max. acceleration
Copper weight
Total weight

Tin-plated copper 0.34 mm ² (19 wires) according to UL 1581 Tab 20.1
Polyolefine mixture according to UL Style 80 °C 30 V colour code: 2 conductor red/black
Diameter: 1.6 ±0.1 mm
Two twisted conductors + aluminium-polyester band (Ai exterior)
Tin-plated copper 0.22 mm ² (19 wires) according to UL 1581 Tab 20.1
Polyethylene foam skin
Colour code: 2 conductors white/blue
Diameter: approx. 2.0 mm
Two twisted conductors + aluminium-polyester band (Ai exterior)
Element A + Element B drilled
Tin-plated copper 0.34 mm ² (19 wires) according to UL 1581 Tab 20.1
Tin-plated copper braiding, coverage 85 ± 5 %
Fibre band
Polyurethane mixture according to UL Style 80 °C 30 V
Colour code: black RAL 9005
Not required
(pair 2 x 0.22 mm ²) - 120 ±10 % Ω
(pair 2 x 0.22 mm ²) - 39 pF/mt
Low-voltage computer cable
1000 V
Conductor A: max. 55 Ω/km at 20 °C
Conductor B: max. 90 Ω/km at 20 °C
5 x D (during installation)
10 x D (during operations)
-40 °C...+80 °C (during installation)
-10 °C ... +80 °C (during operations)
UL 1581
0.5 MHz ... 1.64 bd/100 mt
1.0 MHz ... 2.30 db/100 mt
180 mt/min
5 mt/s ²
33.6 kg/km (approx.)
79 kg/km (approx.)

Note

Ordering data

4-pole
Note

Type	Order No.
SAIH-CD-2x0.34/2x0.22-PURs	1058630000

Screw connection M12, metal (EMC)



Ordering data

Male	
	5-pole, PG 9
Socket	
	5-pole, PG 9
Note	

Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Wire cross-section, min. / max.
Rated current
Rated voltage
Temperature range of housing
Protection degree
Contact surface
Note

SAIS / SAIB

straight



Type	Qty.	Order No.
SAIS-M-5/8S M12 5P A-COD	1	1784740000
SAIB-M-5/8S M12 5P A-COD	1	1784750000
Other versions on request		

Screw connection
CuZn
M12
4...6 mm (PG7)/ 6...8 mm (PG9)
0.14...0.75 mm²
4 A
125 V
-25...+85 °C
IP 67
Gold-plated
Torque, see E.12

SAISW / SAIBW

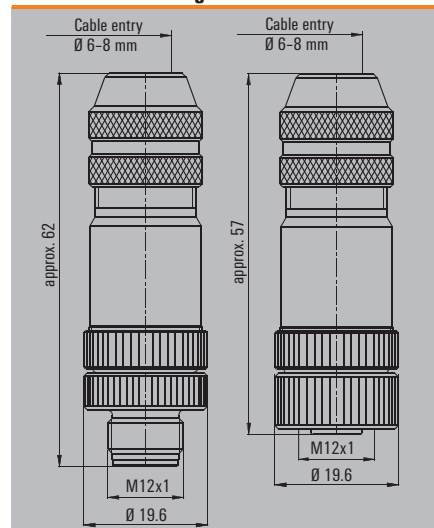
Angled



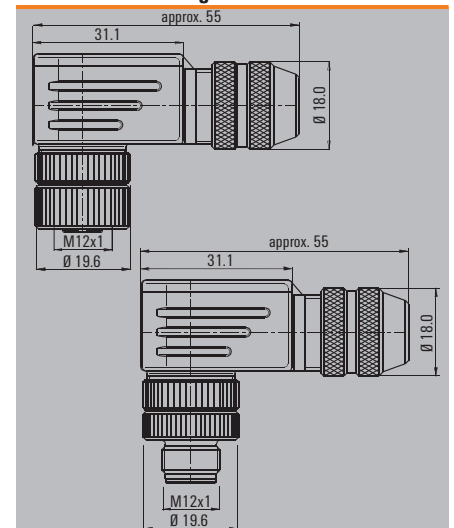
Type	Qty.	Order No.
SAISW-M-5/8 M12	1	1803940000
SAIBW-M-5/8 M12	1	1803920000
Other versions on request		

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14...0.5 mm²
4 A
125 V
-25...+85 °C
IP 67
Gold-plated
Torque, see E.12

Dimensioned drawing



Dimensioned drawing



Torque, see E.12

EtherCAT - lines (M8)

EtherCAT lines



Male



RJ45

Ordering data		M8 Male-Open-Ended		4-pole	M8 Male-Male		4-pole	M8 Male-RJ45		4-pole
		Type		Order No.	Type		Order No.	Type		Order No.
	0.1 m	SAIL-M8G-4S0.1UIE		1160820010	SAIL-M8GM8SG-4S0.1UIE		1160930010			
	0.3 m	SAIL-M8G-4S0.3UIE		1160820030	SAIL-M8GM8SG-4S0.3UIE		1160930030			
	0.5 m	SAIL-M8G-4S0.5UIE		1160820050	SAIL-M8GM8SG-4S0.5UIE		1160930050			
	1.0 m	SAIL-M8G-4S1.0UIE		1160820100	SAIL-M8GM8SG-4S1.0UIE		1160930100			
	2.0 m	SAIL-M8G-4S2.0UIE		1160820200	SAIL-M8GM8SG-4S2.0UIE		1160930200	SAIL-M8GRJ45-4S2.0UIE		1201210200
	3.0 m	SAIL-M8G-4S3.0UIE		1160820300	SAIL-M8GM8SG-4S3.0UIE		1160930300			
	4.0 m	SAIL-M8G-4S4.0UIE		1160820400	SAIL-M8GM8SG-4S4.0UIE		1160930400			
	5.0 m	SAIL-M8G-4S5.0UIE		1160820500	SAIL-M8GM8SG-4S5.0UIE		1160930500	SAIL-M8GRJ45-4S5.0UIE		1201210500
	7.5 m	SAIL-M8G-4S7.5UIE		1160820750	SAIL-M8GM8SG-4S7.5UIE		1160930750	SAIL-M8GRJ45-4S7.5UIE		1201210750
	10.0 m	SAIL-M8G-4S10UIE		1160821000				SAIL-M8GRJ45-4S10UIE		1201211000
	15.0 m				SAIL-M8GM8SG-4S15UIE		1160931500			
	20.0 m				SAIL-M8GM8SG-4S20UIE		1160932000			
	30.0 m				SAIL-M8GM8SG-4S30UIE		1160933000			
	40.0 m				SAIL-M8GM8SG-4S40UIE		1160934000			
	50.0 m				SAIL-M8GM8SG-4S50UIE		1160935000			
Note										

Standard cable lengths

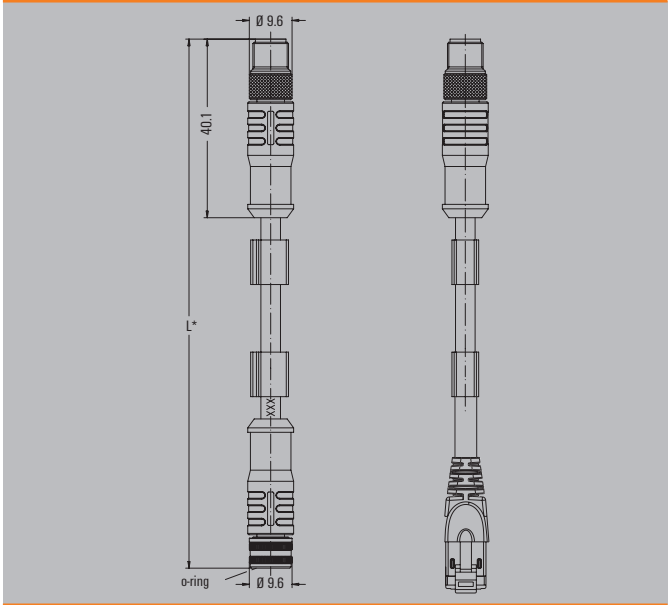
All cables listed under the ordering data have a length of 1.5 metres. The last four ordering digits must be changed when ordering other standard cable lengths.	1.5 m	xxxxxx0150
	3.0 m	xxxxxx0300
	5.0 m	xxxxxx0500
	10.0 m	xxxxxx1000

Technical data

Protection degree	IP 67
Contact surface	Gold-plated
Sheathing colour	Green
Temperature range of housing	-25...+85 °C
Core cross-section	0.15

Chapter W includes additional technical specifications for the cable

Dimensioned drawing



Assembled cable - dragline cable M12

- Cat.5
- PUR
- D-coded
- PROFINET type C

M12 / M12



M12 / M12



M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation cross-section
Min. bending radius, repetitive
Min. bending radius, once only
Bending cycles
Speed
Acceleration
Pulling force
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils

Note

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / M12 IP 67 straight male
4*AWG 22/7 - 0.36 mm ²
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 *diameter
5 *diameter
3 Mio
180 m/min
4 m/s ²
≤ 150 N
-40 °C...+70 °C
-20 °C...+60 °C
-50 °C...+70 °C
very good
in accordance with IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / M12 IP 67 straight socket
4*AWG 22/7 - 0.36 mm ²
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 *diameter
5 *diameter
3 Mio
180 m/min
4 m/s ²
≤ 150 N
-40 °C...+70 °C
-20 °C...+60 °C
-50 °C...+70 °C
very good
in accordance with IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1

Ordering data

0,5 m	
1,5 m	
3 m	
5 m	
10 m	

Type	QTY	Order No.
IE-C5DD4UG0005MCSMCS-E	1	1025950005
IE-C5DD4UG0015MCSMCS-E	1	1025950015
IE-C5DD4UG0030MCSMCS-E	1	1025950030
IE-C5DD4UG0050MCSMCS-E	1	1025950050
IE-C5DD4UG0100MCSMCS-E	1	1025950100

Type	QTY	Order No.
IE-C5DD4UG0015MSSMCS-E	1	1059330015
IE-C5DD4UG0030MSSMCS-E	1	1059330030
IE-C5DD4UG0050MSSMCS-E	1	1059330050
IE-C5DD4UG0100MSSMCS-E	1	1059330100

Note

Accessories

Sheathing stripper
For UTP and STP data cables
For coaxial and round data cables

Markers

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length
Wire and cable marker, ø 4,7 - 7,4 mm
Wire and cable marker, ø 5,8 - 7,8 mm

Type	QTY	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 NEUTRAL WS V0	160	1689470001
VT SF 6/21 NEUTRAL WS V0	160	1730560001

Type	QTY	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 NEUTRAL WS V0	160	1689470001
VT SF 6/21 NEUTRAL WS V0	160	1730560001

Note

Ethernet cables

Assembled cable -
dragline cable M12

- Cat.5
- PUR
- D-coded
- PROFINET type C

M12 / open



	M12
yellow	1
white	2
orange	3
blue	4

M12 / RJ45



RJ45		M12
1	yellow	1
3	white	2
2	orange	3
6	blue	4

Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation cross-section
Min. bending radius, repetitive
Min. bending radius, once only
Bending cycles
Speed
Acceleration
Pulling force
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to spread of flame
Resistance to oils

Note

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / Open
4*AWG 22/7 - 0.36 mm ²
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 *diameter
5 *diameter
3 Mio
180 m/min
4 m/s ²
≤ 150 N
-40 °C...+70 °C
-20 °C...+60 °C
-50 °C...+70 °C
very good
in accordance with IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / RJ45 IP 20
4*AWG 22/7 - 0.36 mm ²
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 *diameter
5 *diameter
3 Mio
180 m/min
4 m/s ²
≤ 150 N
-40 °C...+70 °C
-20 °C...+60 °C
-50 °C...+70 °C
very good
in accordance with IEC 60754-2
in accordance with IEC 60332-1
in accordance with IEC 60811-2-1

Ordering data

1 m	
1.5 m	
3 m	
5 m	
10 m	

Note

Type	QTY	Order No.
IE-C5DD4UG0015MCSXXX-X	1	1025940015
IE-C5DD4UG0030MCSXXX-X	1	1025940030
IE-C5DD4UG0050MCSXXX-X	1	1025940050
IE-C5DD4UG0100MCSXXX-X	1	1025940100

Type	QTY	Order No.
IE-C5DD4UG0010MCSA20-E	1	1044470010
IE-C5DD4UG0015MCSA20-E	1	1044470015
IE-C5DD4UG0030MCSA20-E	1	1044470030
IE-C5DD4UG0050MCSA20-E	1	1044470050
IE-C5DD4UG0100MCSA20-E	1	1044470100

Accessories

Sheathing stripper	
	For UTP and STP data cables
	For coaxial and round data cables

Markers	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length
	Wire and cable marker, ø 4,7 - 7,4 mm
	Wire and cable marker, ø 5,8 - 7,8 mm

Note

Type	QTY	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 NEUTRAL GE	320	1718411687
TM-H 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 NEUTRAL WS V0	160	1689470001
VT SF 6/21 NEUTRAL WS V0	160	1730560001

Type	QTY	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-H 12 NEUTRAL GE	320	1718411687
TM-H 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 NEUTRAL WS V0	160	1689470001
VT SF 6/21 NEUTRAL WS V0	160	1730560001

Assembled cable -**M12 dragline cable, angled**

- Cat.5
- PUR
- D-coded
- PROFINET type C

M12 / M12**M12 / M12****Technical data**

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation cross-section
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / M12 IP 67 angled male
4*AWG 22/7 - 0.36 mm ²
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 *diameter
-40 °C...+70 °C
-20 °C...+60 °C
-50 °C...+70 °C
very good
in accordance with IEC 60754-2
in accordance with IEC 60811-2-1

Dragline cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 angled male / M12 IP 67 angled male
4*AWG 22/7 - 0.36 mm ²
6.7 mm
PUR
green (RAL 6018)
1.5 mm
7.5 *diameter
-40 °C...+70 °C
-20 °C...+60 °C
-50 °C...+70 °C
very good
in accordance with IEC 60754-2
in accordance with IEC 60811-2-1

Note**Ordering data**

Cat.5 PROFINET, PUR, M12 straight-M12 angled	
1,5 m	
3,0 m	
5,0 m	
10,0 m	
Cat.5 PROFINET, PUR, M12 angled-M12 angled	
1,5 m	
3,0 m	
5,0 m	
10,0 m	
Cat.5, PUR, M12 angled-open	
1,5 m	
3,0 m	
5,0 m	
10,0 m	

Note**Accessories**

Markers	
	Insertion label, yellow, 12 mm
	Insertion label, yellow, 18 mm
	Transparent sleeves, 12-mm length
	Transparent sleeves, 18-mm length

Note

Type	QTY	Order No.
IE-C5DD4UG0015MCSMCA-E	1	1059770015
IE-C5DD4UG0030MCSMCA-E	1	1059770030
IE-C5DD4UG0050MCSMCA-E	1	1059770050
IE-C5DD4UG0100MCSMCA-E	1	1059770100

Type	QTY	Order No.
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	QTY	Order No.
IE-C5DD4UG0015MCAMCA-E	1	1059890015
IE-C5DD4UG0030MCAMCA-E	1	1059890030
IE-C5DD4UG0050MCAMCA-E	1	1059890050
IE-C5DD4UG0100MCAMCA-E	1	1059890100

Type	QTY	Order No.
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Assembled cable -

M12 dragline cable, angled

- Cat.5
- PUR
- D-coded
- PROFINET type C

M12 / open



Technical data

Product type	Dragline cable
Category	Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
Shielding	SF/UTP
Version connector left / Version connector right	M12 IP 67 angled male / Open
Cross-section	4*AWG 22/7 - 0.36 mm ²
Sheath diameter, max.	6.7 mm
Material sheath	PUR
Sheathing colour	green (RAL 6018)
Insulation cross-section	1.5 mm
Min. bending radius, repetitive	7.5 *diameter
Ambient temperature (operational)	-40 °C...+70 °C
Installation temperature	-20 °C...+60 °C
Storage temperature	-50 °C...+70 °C
Abrasion resistance	very good
Halogen	in accordance with IEC 60754-2
Resistance to oils	in accordance with IEC 60811-2-1
Fire safety for railway vehicles	

Note

Ordering data

Cat.5 PROFINET, PUR, M12 straight-M12 angled	Type	QTY	Order No.
1,5 m			
3,0 m			
5,0 m			
10,0 m			
Cat.5 PROFINET, PUR, M12 angled-M12 angled			
1,5 m			
3,0 m			
5,0 m			
10,0 m			
Cat.5, PUR, M12 angled-open			
1,5 m	IE-C5DD4UG0015MCAXXX-X	1	1059750015
3,0 m	IE-C5DD4UG0030MCAXXX-X	1	1059750030
5,0 m	IE-C5DD4UG0050MCAXXX-X	1	1059750050
10,0 m	IE-C5DD4UG0100MCAXXX-X	1	1059750100

Note

Accessories

Markers	Type	QTY	Order No.
Insertion label, yellow, 12 mm	TM-I 12 NEUTRAL GE	320	1718411687
Insertion label, yellow, 18 mm	TM-I 18 NEUTRAL GE	320	1718431687
Transparent sleeves, 12-mm length	TM 4/12 HF/HB	500	1719840000
Transparent sleeves, 18-mm length	TM 4/18 HF/HB	500	1719850000

Note

Assembled cable - railway cable M12

- Cat.5
- Radox
- D-coded

M12 / M12



M12 / M12



M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

M12		M12
1	yellow	1
2	white	2
3	orange	3
4	blue	4

Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation cross-section
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / M12 IP 67 straight male
2*2*AWG 22/7 - 2*2*0.36 mm ²
7.55 mm
Radox GKW S
Black
1.95 mm
6 *diameter
-40 °C...+90 °C
-25 °C...+90 °C
-40 °C...+90 °C
very good
in accordance with IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / M12 IP 67 straight socket
2*2*AWG 22/7 - 2*2*0.36 mm ²
7.55 mm
Radox GKW S
Black
1.95 mm
6 *diameter
-40 °C...+90 °C
-25 °C...+90 °C
-40 °C...+90 °C
very good
in accordance with IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2

Note

Ordering data

	1,5 m
	3 m
	5 m
	10 m

Type	QTY	Order No.
IE-C5DB4RE0015MCSMCS-E	1	1010850015
IE-C5DB4RE0030MCSMCS-E	1	1010850030
IE-C5DB4RE0050MCSMCS-E	1	1010850050
IE-C5DB4RE0100MCSMCS-E	1	1010850100

Type	QTY	Order No.
IE-C5DB4RE0015MSSMCS-E	1	1059340015
IE-C5DB4RE0030MSSMCS-E	1	1059340030
IE-C5DB4RE0050MSSMCS-E	1	1059340050
IE-C5DB4RE0100MSSMCS-E	1	1059340100

Note

Accessories

Sheathing stripper	
	For UTP and STP data cables
	For coaxial and round data cables

Type	QTY	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000

Type	QTY	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000

Markers

Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length
Wire and cable marker, ø 4,7 - 7,4 mm
Wire and cable marker, ø 5,8 - 7,8 mm

Type	QTY	Order No.
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 NEUTRAL WS V0	160	1689470001
VT SF 6/21 NEUTRAL WS V0	160	1730560001

Type	QTY	Order No.
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 NEUTRAL WS V0	160	1689470001
VT SF 6/21 NEUTRAL WS V0	160	1730560001

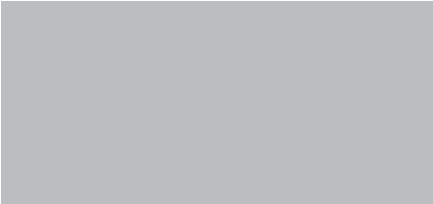
Note

Ethernet cables

Assembled cable - railway cable M12

- Cat.5
- Radox
- D-coded

M12 / open



	M12
yellow	1
white	2
orange	3
blue	4

Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation cross-section
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles
Note

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / Open
2*2*AWG 22/7 - 2*2*0.36 mm ²
7.55 mm
Radox GKW S
Black
1.95 mm
6 *diameter
-40 °C...+90 °C
-25 °C...+90 °C
-40 °C...+90 °C
very good
in accordance with IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2
Note

Ordering data

	1,5 m
	3 m
	5 m
	10 m
Note	

Type	QTY	Order No.
IE-C5DB4RE0015MCSXXX-X	1	1010840015
IE-C5DB4RE0030MCSXXX-X	1	1010840030
IE-C5DB4RE0050MCSXXX-X	1	1010840050
IE-C5DB4RE0100MCSXXX-X	1	1010840100
Note		

Accessories

Sheathing stripper
For UTP and STP data cables
For coaxial and round data cables
Markers
Insertion label, yellow, 12 mm
Insertion label, yellow, 18 mm
Transparent sleeves, 12-mm length
Transparent sleeves, 18-mm length
Wire and cable marker, ø 4,7 - 7,4 mm
Wire and cable marker, ø 5,8 - 7,8 mm

Type	QTY	Order No.
AM 12	1	9030060000
IE-CST	1	9204350000
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000
VT SF 5/21 NEUTRAL WS V0	160	1689470001
VT SF 6/21 NEUTRAL WS V0	160	1730560001

Note

Note

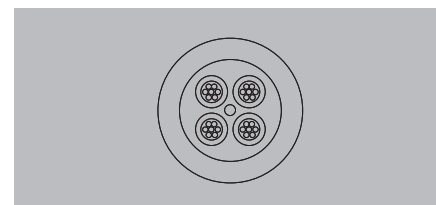
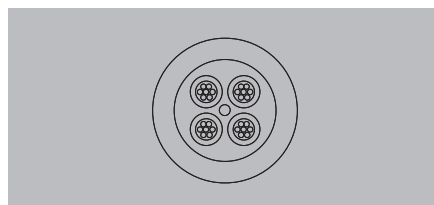
Assembled cable - railway cable M12

- Cat.5
- Radox
- D-coded

M12 / M12



M12 / M12



Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation cross-section
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 straight male / M12 IP 67 angled male
2*2*AWG 22/7 - 2*2*0.36 mm ²
7.55 mm
Radox GKW S
Black
1.95 mm
6 *diameter
-40 °C...+90 °C
-25 °C...+90 °C
-40 °C...+90 °C
very good
in accordance with IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 angled male / M12 IP 67 angled male
2*2*AWG 22/7 - 2*2*0.36 mm ²
7.55 mm
Radox GKW S
Black
1.95 mm
6 *diameter
-40 °C...+90 °C
-25 °C...+90 °C
-40 °C...+90 °C
very good
in accordance with IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2

Note

Ordering data

	1,5 m
	3 m
	5 m
	10 m

Type	QTY	Order No.
IE-C5DB4RE0015MCSMCA-E	1	1059940015
IE-C5DB4RE0030MCSMCA-E	1	1059940030
IE-C5DB4RE0050MCSMCA-E	1	1059940050
IE-C5DB4RE0100MCSMCA-E	1	1059940100

Type	QTY	Order No.
IE-C5DB4RE0015MCAMCA-E	1	1059970015
IE-C5DB4RE0030MCAMCA-E	1	1059970030
IE-C5DB4RE0050MCAMCA-E	1	1059970050
IE-C5DB4RE0100MCAMCA-E	1	1059970100

Note

Accessories

Markers	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	

Type	QTY	Order No.
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Type	QTY	Order No.
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

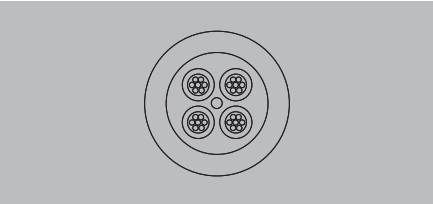
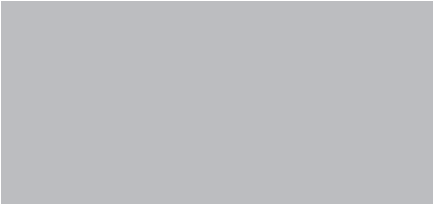
Note

Ethernet cables

Assembled cable - railway cable M12

- Cat.5
- Radox
- D-coded

M12 / open



Technical data

Product type
Category
Shielding
Version connector left / Version connector right
Cross-section
Sheath diameter, max.
Material sheath
Sheathing colour
Insulation cross-section
Min. bending radius, repetitive
Ambient temperature (operational)
Installation temperature
Storage temperature
Abrasion resistance
Halogen
Resistance to oils
Fire safety for railway vehicles

System cable
Cat.5 (ISO/IEC 11801) / Cat.5e (TIA T568-B)
SF/UTP
M12 IP 67 angled male / Open
2*2*AWG 22/7 - 2*2*0.36 mm ²
7.55 mm
Radox GKW S
Black
1.95 mm
6 *diameter
-40 °C...+90 °C
-25 °C...+90 °C
-40 °C...+90 °C
very good
in accordance with IEC 60754-2
in accordance with EN 50306-3
According to DIN 5510-2 fire safety levels 1,2,3,4, According to BS 6853, According to EN50288-2-2

Note

Ordering data

	1,5 m
	3 m
	5 m
	10 m

Type	QTY	Order No.
IE-C5DB4RE0015MCAXXX-X	1	1059900015
IE-C5DB4RE0030MCAXXX-X	1	1059900030
IE-C5DB4RE0050MCAXXX-X	1	1059900050
IE-C5DB4RE0100MCAXXX-X	1	1059900100

Note

Accessories

Markers	
Insertion label, yellow, 12 mm	
Insertion label, yellow, 18 mm	
Transparent sleeves, 12-mm length	
Transparent sleeves, 18-mm length	

Type	QTY	Order No.
TM-I 12 NEUTRAL GE	320	1718411687
TM-I 18 NEUTRAL GE	320	1718431687
TM 4/12 HF/HB	500	1719840000
TM 4/18 HF/HB	500	1719850000

Note

Screw connection M12, metal (EMC)
D-coded

SAISM / SAIBM

straight

SAISW

angled

Industrial Ethernet

Ordering data

Male	4-pole, PG 9
Socket	4-pole, PG 9
Note	

Type	Qty.	Order No.
SAISM-4/8S-M12-4P D-COD	1	1892120000
SAIBM-4/8S-M12-4P D-COD	1	1892130000

Type	Qty.	Order No.
SAISW-4/8S-M12-4P D-COD	1	1160550000

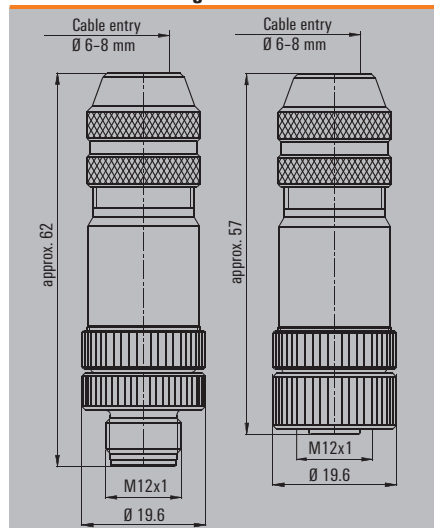
Technical data

Type of connection
Housing main material
Contact tube diameter
Cable diameter
Wire cross-section, min. / max.
Rated current
Rated voltage
Temperature range of housing
Protection degree
Contact surface
Note

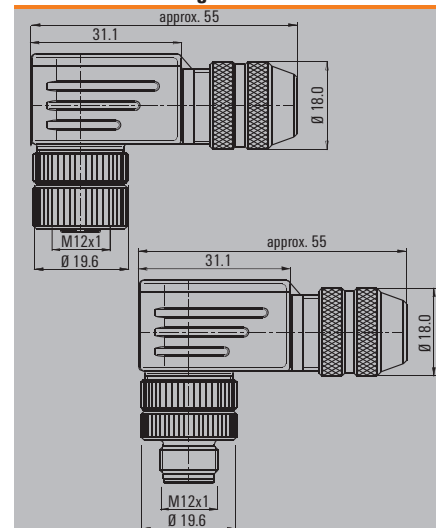
Screw connection
CuZn
M12
6...8 mm (PG9)
0.25...0.75 mm ²
4 A
250 V
-25...+85 °C
IP 67
Gold-plated
Torque, see E.12

Screw connection
CuZn
M12
6...8 mm (PG9)
0.14...0.75 mm ²
4 A
250 V
-25...+85 °C
IP 67
Gold-plated
Torque, see E.12

Dimensioned drawing



Dimensioned drawing



Torque, see E.12

Ethernet plug-in connector

M12 tension-clamp connection, stainless steel
D-coded

SAIS / SAIB VA

Industrial Ethernet



Ordering data

Male		
Tension-clamp connection, straight, stainless steel	5-pole, PG 9	
Note		

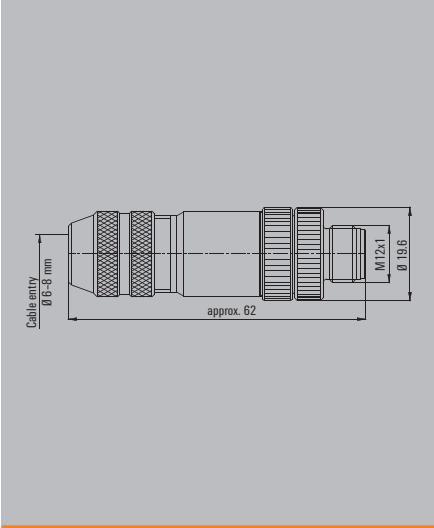
Type	Qty.	Order No.
SAIS 5/9-VA D-COD	1	1920700001

Technical data

Note	
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Tension clamp connection
1.4404/316L
M12
6...8 mm (PG9)
0.25...0.5 mm ²
4 A
125 V
-25...+85 °C
IP 69K
Gold-plated
Torque, see E.12

Dimensioned drawing



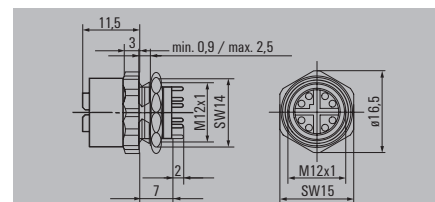
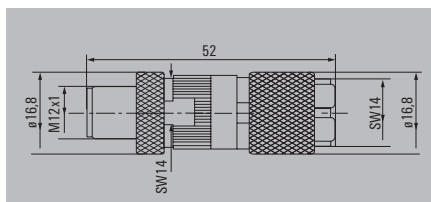
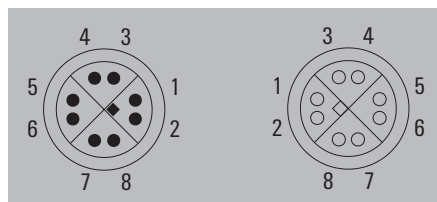
Torque, see E.12

M12 connector / PCB socket

M12 X-type cat. 6_A

Plug

PCB socket



Technical data

Category
Protection degree
Connection 1
Housing main material
Contact holder materials
Contact tube diameter
Contact material / Contact surface
Ambient temperature (operational)
Connector standard
Current-carrying capacity at 50 °C
Rated voltage
Insulation resistance
Plugging cycles
Configuration
Shielding
Conductor diameter, finely stranded min./max.
Wire cross-section, finely stranded, min. (AWG)
Conductor diameter, solid min./max.
Wire cross-section, solid, min. (AWG)
Insulation cross-section, max.
Sheath diameter, min. / Sheath diameter, max.

Note

Cat.6 _A / Class E _A (ISO/IEC 11801 2010)
IP 65, IP 67
M12
Zinc diecast
PA
M12
CuZn / Gold-plated
-25 / +85 °C
IEC 61076-2-109
0.5 A @ 40 °C
48 V
100 MΩ
≥ 100
360° all-round enclosure
0.48 / 0.76 mm
AWG 26 / AWG 22
0.4 / 0.64 mm
AWG 24 / AWG 22
1.6 mm
5 / 9.7 mm

Cat.6 _A / Class E _A (ISO/IEC 11801 2010)
IP 67 (when screwed in)
M12
CuZn
M12
-25 / +85 °C
IEC 61076-2-109
0.5 A @ 40 °C
48 V
100 MΩ
≥ 100
Reflow compatible
360° all-round enclosure
/ mm
/ mm
/ mm

Ordering data

pre-assembled
2-piece design

Type	QTY	Order No.
IE-PS-M12X-P-FH	10	1324020000

Type	QTY	Order No.
IE-PCB-M12X-S-180	10	1324010000
IE-PCB2-M12X-S-180	10	1393080000

Note

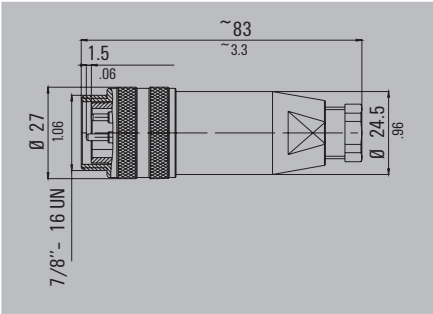
Accessories

Note

FOUNDATION Fieldbus - connector (7/8")

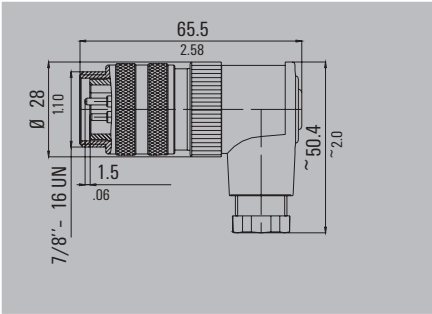
Plug-in connector FBCon 7/8"

Plug-in connector straight (plug)



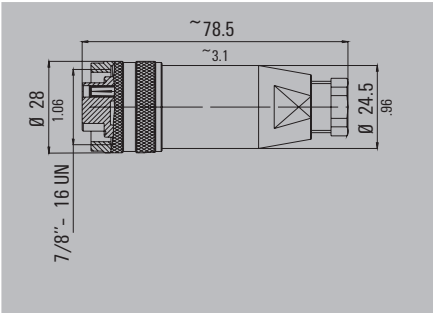
Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P M	1	1808840000

Plug-in connector 90° (plug)



Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P M (A)	1	1808830000

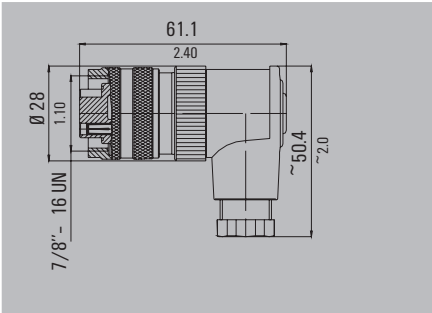
Plug-in connector straight (socket)



Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P FM	1	1812480000

Note: refer also to chapter 7/8"

Plug-in connector 90° (socket)



Ordering data		4-pole
Type	Qty.	Order No.
FBCon 7/8" 4P FM (A)	1	1812470000

Technical data

No. of poles	4
Lock	Screw 7/8" UNF
Cable gland	PG 9
Connection	Screw
Connection cross-section	max. 1,5 mm²
Connection cross-section	16 AWG
Enclosure protection class	IP 67
Mechanical service life	> 500 plugging cycles
Upper limit temperature	+ 85 °C
Lower limit temperature	- 40 °C

Electrical data

Rated voltage	250 V
Rated surge voltage	4000 V
Pollution severity	3
Surge category	II
Insulation material group	III
Test surge voltage	4800 V
Rated current	9 A (40°)
Volume resistivity	≤ 5 mΩ
Insulation resistance	> 10 ¹⁰ Ω

Materials

Contact pins	CuZn	(brass)
Contact surface	Au	(gold)
Socket body	PUR/PA	(UL 94 HB)
Enclosure cable plug	PBT	(UL 94 V-0)
Threaded ring	Anodised aluminium	

Accessories for fieldbus distributors

Cable glands – plastic – IP 68



Ordering data

Type	Qty.	Order No.
VG M16-1/K68	50	1909860000

Cable glands – brass – IP 68



Ordering data

Type	Qty.	Order No.
VG M16-1/MS68	50	1909910000

Cable glands – brass – 1/EMC



Ordering data

Type	Qty.	Order No.
VG M16-MS 1/EMV	50	1909500000

Cable glands – brass – EEx e, IP 68



Ordering data

Type	Qty.	Order No.
VG M16-EXE MS	50	1737210000

Sealing rings – 9005



Ordering data

Type	Qty.	Order No.
GWDR M16-NP	50	1736230000

Blanking plugs – brass



Ordering data

Type	Qty.	Order No.
VP M16-MS65	100	1777730000

Blanking plugs – plastic – EEx e



Ordering data

Type	Qty.	Order No.
VG M16-EXE SW	50	1737070000

Pressure compensation element – plastic – DAE



Ordering data

Type	Qty.	Order No.
DAE M12 PA short	10	1868560000

For technical data, refer to Catalogue 5 – Enclosures and Cable Glands

