Repeater - PSI-REP-PROFIBUS/12MB - 2708863

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Modular repeater for electrical isolation and range increase for PROFIBUS up to 12 Mbps, 4-way isolation, rail-mountable, supply 24 V DC

Product Description

The performance and availability of bus systems can be significantly increased by using repeaters. In addition to electrical isolation, bus segmentation with repeaters makes it possible to multiply the permissible coverage of the network and to extend the number of devices.

Your advantages

- Automatic data rate detection or fixed data rate setting via DIP switches
- Suitable for all data rates up to 12 Mbps
- High-quality 4-way isolation between all interfaces
- Bit oversampling for reliable detection of sporadic disturbances
- Bit retiming for unrestricted cascading of devices
- Filtering of faulty telegrams based on start delimiter detection
- Can be combined with PSI-MOS FO converters in a modular way thanks to DIN rail connectors

Key Commercial Data

Packing unit	1 pc
GTIN	4 046356 078993
GTIN	4046356078993

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area

Dimensions

Caption	Housing dimensions
Width	35 mm
Height	99 mm
Depth	105 mm

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Technical data

Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	30 % ... 95 % (non-condensing)
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
	≤ 2000 m (Restrictions for ATEX applications)
Degree of protection	IP20
Noise immunity	EN 61000-4-2

General

Transmission channels	2 (1/1), TD, RD, half duplex
Bit delay	1 bit (Direct mode)
Bit distortion, input	max. ± 35 %
Bit distortion, output	< 6.25 %
Electrical isolation	VCC // TBUS // PROFIBUS (A) // PROFIBUS (B)
Test voltage data interfaces	1.5 kV
Test voltage data interface/power supply	1.5 kV_{rms} (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011
Net weight	212.4 g
Housing material	PA 6.6-FR
Color	green
MTBF	1136 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	238 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))
MTTF	1638 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	812 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	340 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

Power supply

Nominal supply voltage	24 V DC (With UL approval)
Supply voltage range	18 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Typical current consumption	< 90 mA (24 V DC ⎓)

Interfaces

Interface 1	PROFIBUS acc. to IEC 61158, RS-485 2-conductor
Operating mode	Through PROFIBUS connector
Connection method	D-SUB-9 female connector
File format/coding	UART (11 Bit, NRZ)
Data direction switching	Automatic control, min. station response time 2 bits

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Technical data

Interfaces

Transmission medium	2-wire twisted pair, shielded
Transmission length	≤ 1200 m (Depends on transmission speed and cable type)
Termination resistor	external
Conductor cross section solid min.	0.2 mm²
Conductor cross section solid max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section flexible max.	2.5 mm²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Output nominal voltage	5 V DC ±5 %
Output current	50 mA

Digital outputs

Output name	Relay output
Output description	Alarm output
Number of outputs	1
Maximum switching voltage	30 V DC (1 A)
	65 V DC (0.46 A)
	150 V AC (0.46 A)

Conformance/approvals

Designation	CE
Identification	CE-compliant
Designation	EAC
Identification	EAC
Designation	ATEX
Identification	# II 3 G Ex nA nC IIC T4 Gc X
Additional text	Please follow the special installation instructions in the documentation!
Designation	UL, USA/Canada
Identification	508 Listed
	Class I, Zone 2, AEx nA nC IIC T6
	Class I, Zone 2, Ex nA nC IIC T6 Gc X
	Class I, Div. 2, Groups A, B, C, D
Designation	Corrosive gas test
Identification	ISA-S71.04-1985 G3 Harsh Group A

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Type of test	Free fall in acc. with IEC 60068-2-32
Test result	1 m
Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6
Test result	5g, 10...150 Hz, 2.5 h, in XYZ direction

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Technical data

Standards and Regulations

Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27
Test result	15g, 11 ms period, half-sine shock pulse
Noise emission	EN 55011
Noise immunity	EN 61000-4-2
Free from substances that could impair the application of coating	according to P-VW 3.10.7 57 65 0 VW-AUDI-Seat central standard
Connection in acc. with standard	CUL
Standards/regulations	EN 61000-4-2
Contact discharge	± 6 kV
Standards/regulations	EN 61000-4-3
Frequency range	80 MHz ... 3 GHz
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-4-5
Signal	± 1 kV
Standards/regulations	EN 55011
	EN 61000-4-6
Designation	Air clearances and creepage distances
Standards/regulations	DIN EN 50178, DIN EN 60950

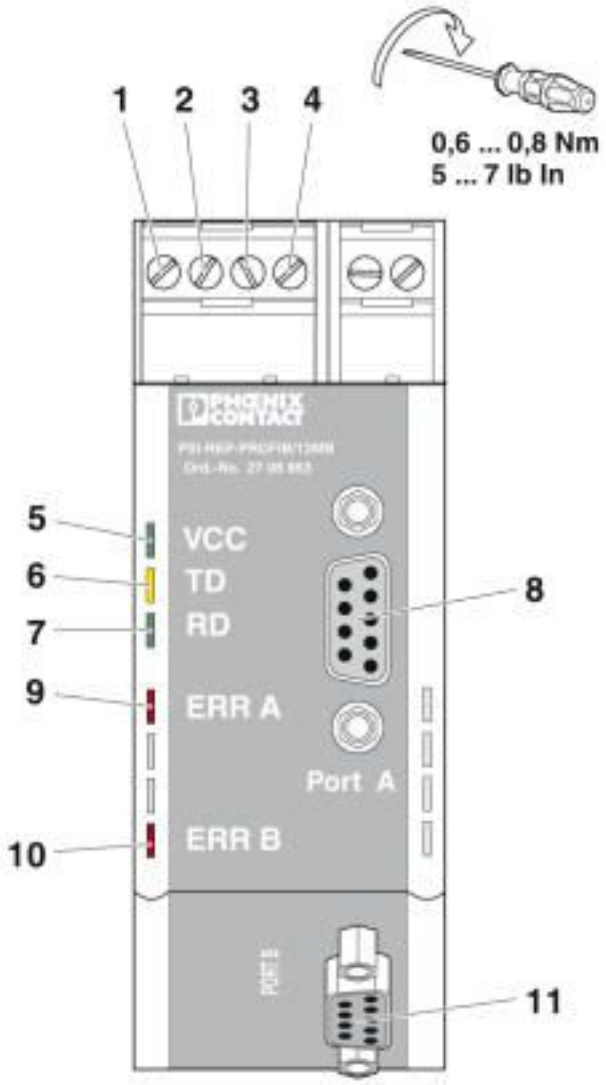
Environmental Product Compliance

REACh SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab “Downloads”, Category “Manufacturer's declaration”

Drawings

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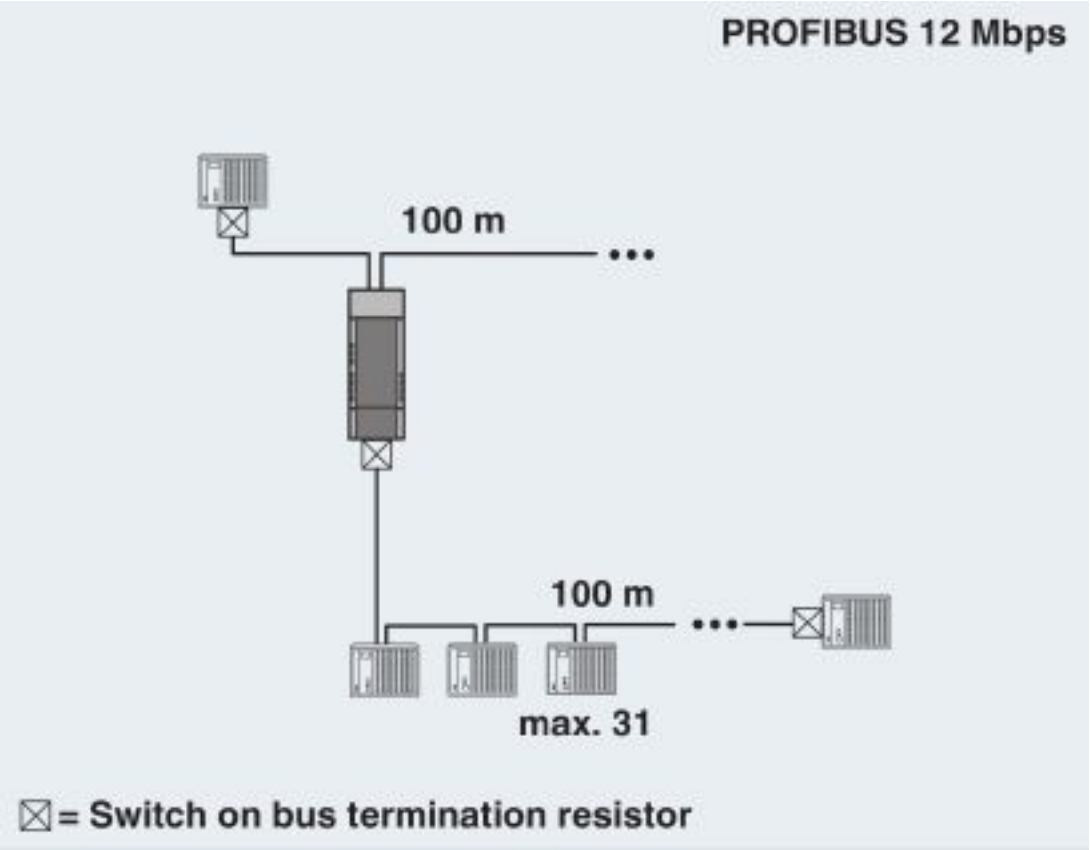
Schematic diagram



Front view

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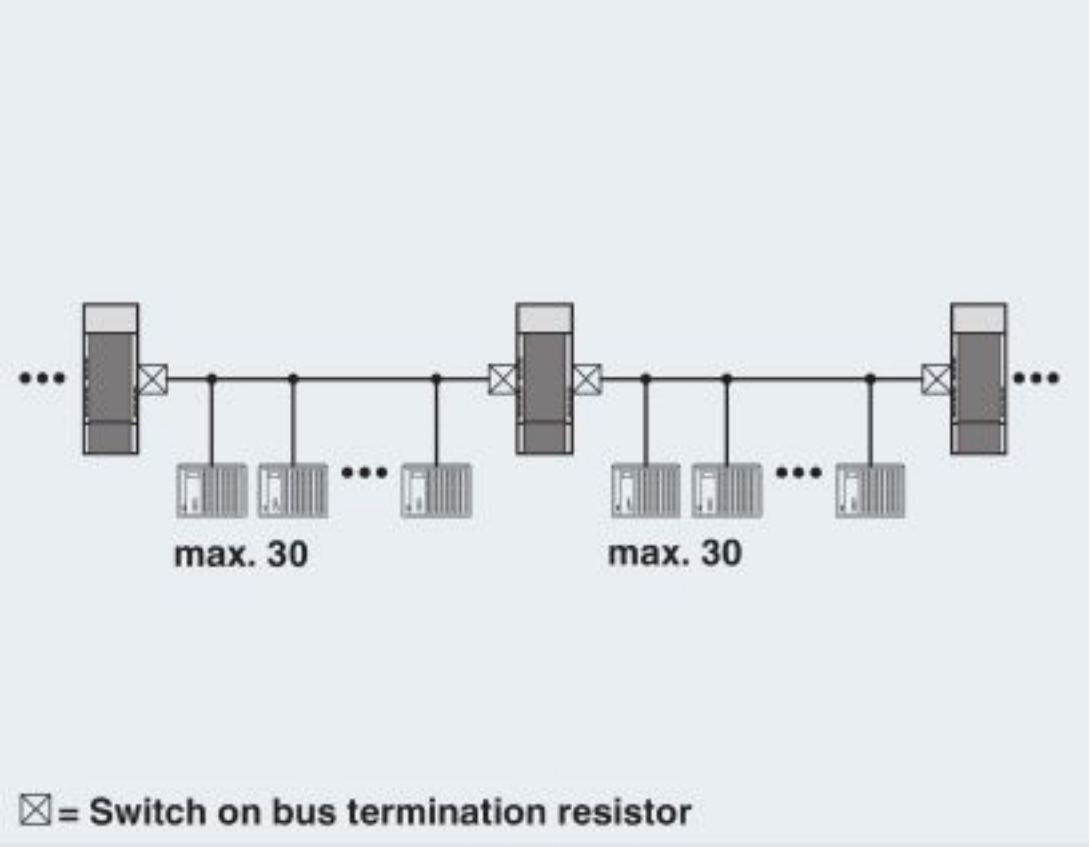
Application drawing



Branch line

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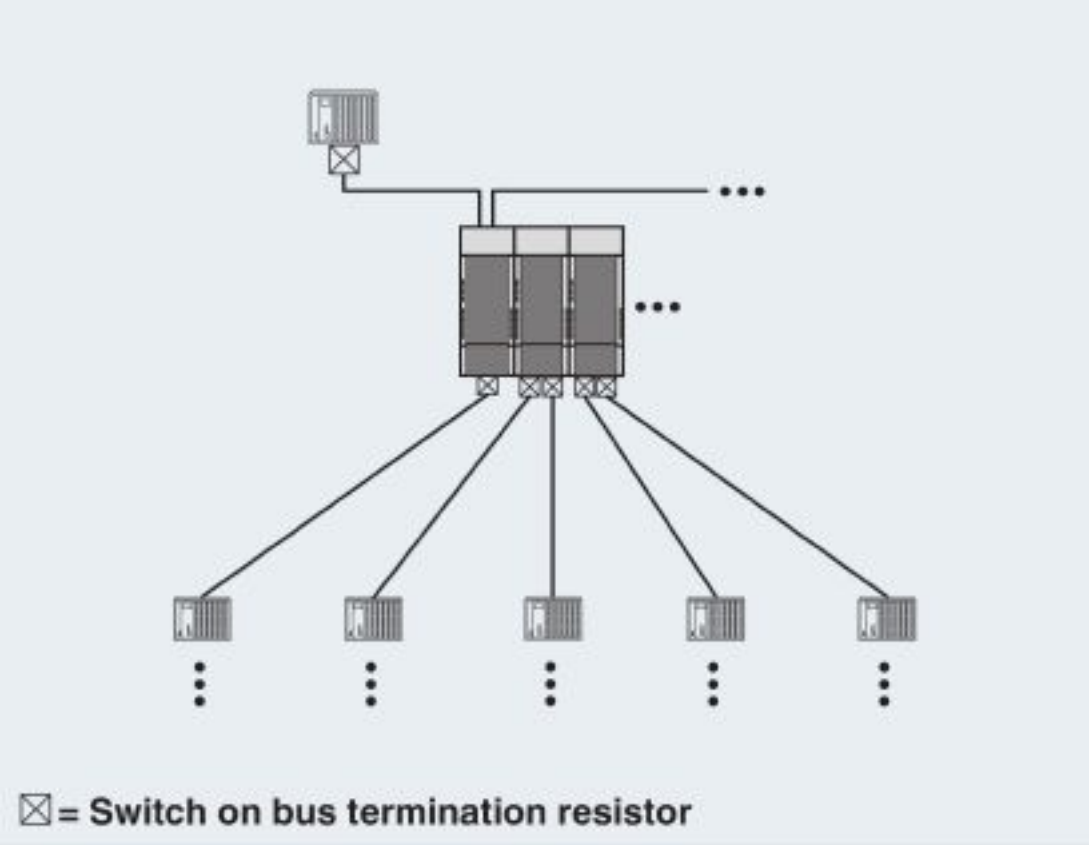
Application drawing



Line structure

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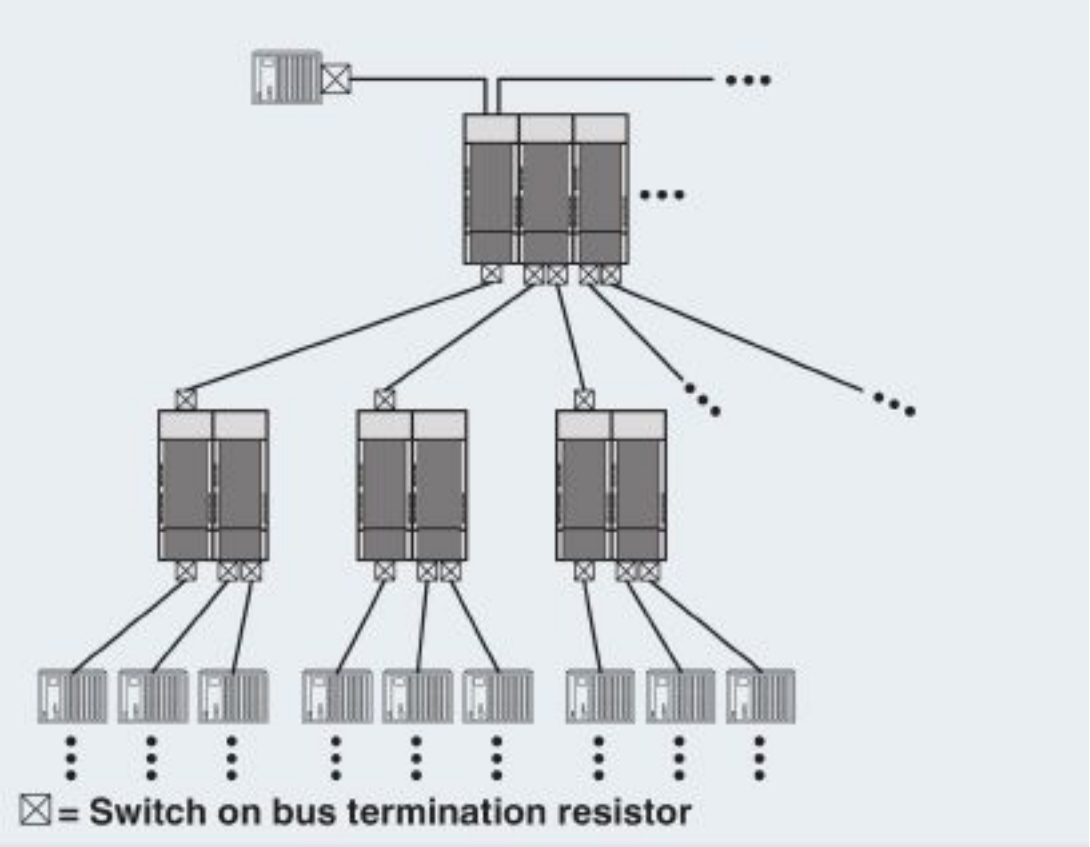
Application drawing



Star structure

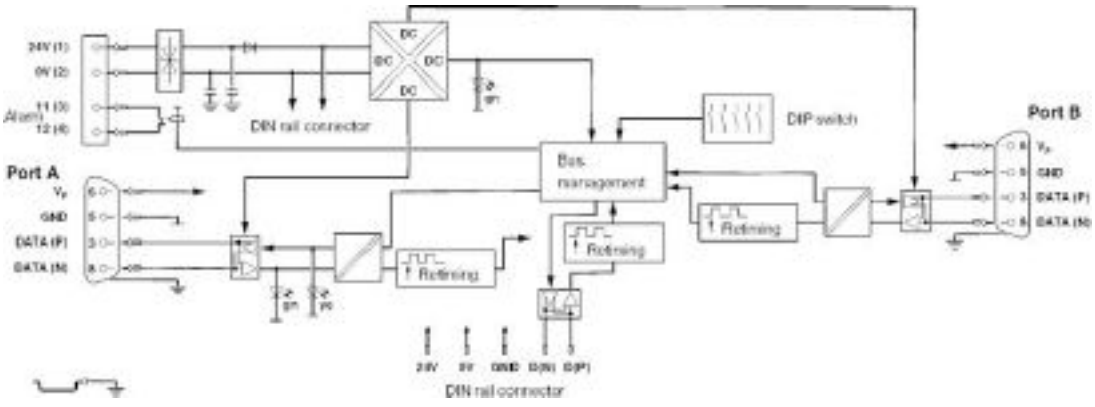
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Application drawing



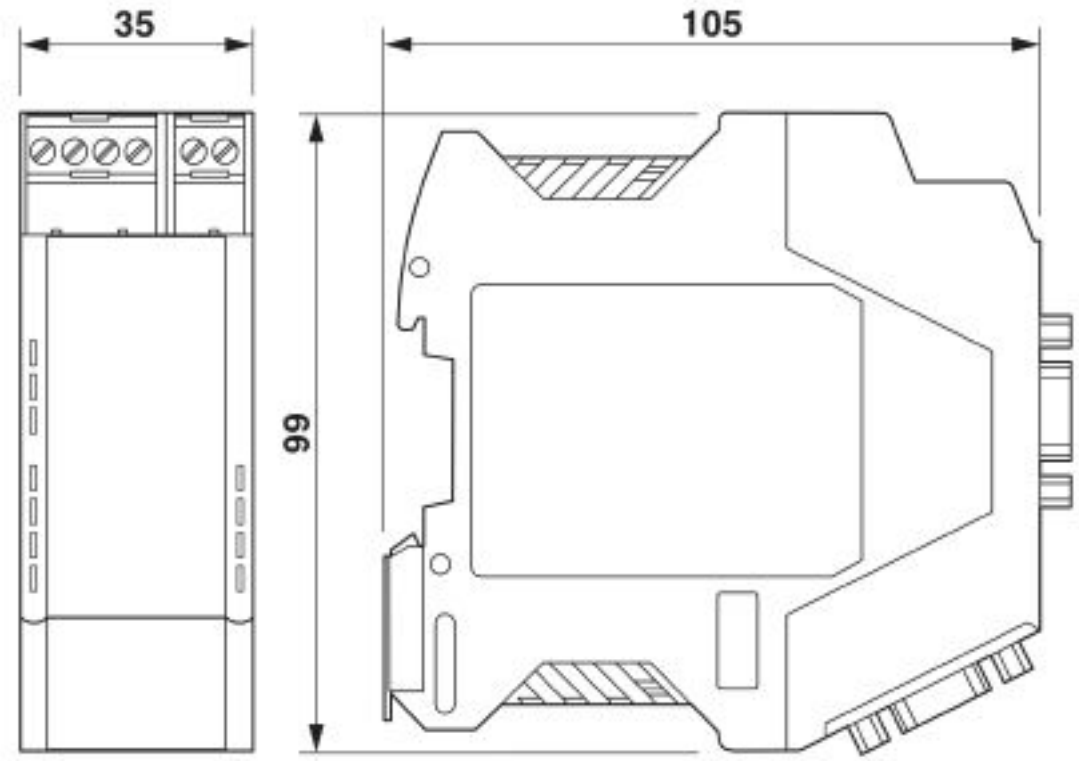
Tree structure

Block diagram



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Dimensional drawing



Housing dimensions

Classifications

eCl@ss

eCl@ss 10.0.1	19179290
eCl@ss 4.0	27250300
eCl@ss 4.1	27250300
eCl@ss 5.0	27242200
eCl@ss 5.1	27242200
eCl@ss 6.0	19179200
eCl@ss 7.0	19179290
eCl@ss 8.0	19179290
eCl@ss 9.0	19179290

ETIM

ETIM 2.0	EC000698
ETIM 3.0	EC000698

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Classifications

ETIM

ETIM 4.0	EC000698
ETIM 5.0	EC000310
ETIM 6.0	EC000310
ETIM 7.0	EC000310

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	43222604
UNSPSC 18.0	43222604
UNSPSC 19.0	43222604
UNSPSC 20.0	43222604
UNSPSC 21.0	43222604

Approvals

Approvals

Approvals

UL Recognized / cUL Recognized / KC / EAC / cULus Recognized

Ex Approvals

UL Listed / cUL Listed / ATEX / UL Listed / cUL Listed

Approval details

UL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

cUL Recognized		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705

KC		http://eng.kcc.go.kr/user/ehpMain.do	MSIP-REI-PCK-2708863

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Approvals

EAC		EAC-Zulassung

cULus Recognized	

Accessories

Accessories

Data cable by the meter

Bus system cable - PSM-CABLE-PROFIB/FC - 2744652



By the meter, Bus system cable, PROFIBUS (12 Mbps), shielded, PVC FR VI/PVC, Violet, 2-wire (1X2XAWG22/1), color single wire: Red, green, cable length: Free entry (1.0 ... 1000.0 m)

Data plug

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/SC - 2313708



D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

D-SUB bus connector - SUBCON-PLUS-PROFIB/PG/SC2 - 2708245



D-SUB connector, 9-pos., male connector, cable entry < 35°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/IDC - 2313685



D-SUB connector, 9-pos., male connector, cable entry < 90°, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection

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Accessories

D-SUB bus connector - SUBCON-PLUS-PROFIB/AX/M12 - 2902321



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 180° (axial). Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

D-SUB bus connector - SUBCON-PLUS-PROFIB/90X/M12 - 2902729



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 90°. Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator. Long version; S7-compatible.

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/M12 - 2902318



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 90°. Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

D-SUB bus connector - SUBCON-PLUS-PROFIB/35/M12 - 2902320



D-SUB plug, 9-pos., pin, assignment: 3, 5, 6, 8; two M12 cable glands (B-coded) under 35°. Bus system: PROFIBUS DP up to 12 Mbps. Termination resistor via separate M12 terminator.

DIN rail connector

DIN rail bus connectors - ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

Media converter

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Accessories

FO converters - PSI-MOS-PROFIB/FO 660 T - 2708287



FO converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, T-coupler with two FO interfaces (FSMA), 660 nm, for polymer/PCF fiber cable

FO converters - PSI-MOS-PROFIB/FO 660 E - 2708290



FO converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, terminal device with one FO interface (FSMA), 660 nm, for polymer/PCF fiber cable

FO converters - PSI-MOS-PROFIB/FO 850 T - 2708261



FO converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, T-coupler with two FO interfaces (BFOC), 850 nm, for PCF/fiberglass cable (multimode)

FO converters - PSI-MOS-PROFIB/FO 850 E - 2708274



FO converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, terminal device with one FO interface (BFOC), 850 nm, for PCF/fiberglass cable (multimode)

FO converters - PSI-MOS-PROFIB/FO1300 T - 2708892



Fiber optic converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, T-coupler with two fiber optic interfaces (SC-Duplex), 1300 nm, for fiberglass cable

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Accessories

FO converters - PSI-MOS-PROFIB/FO1300 E - 2708559



Fiber optic converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, termination device with one fiber optic interface (SC-Duplex), 1300 nm, for fiberglass cable

Modem

Modem - PSI-MODEM-SHDSL/PB - 2313656



Industrial PROFIBUS extender, for point-to-point connections, linear structures, and mixed operation with repeaters and fiber optic converters. Distances of up to 20 km, PROFIBUS data rates of up to 1.5 Mbps via simple copper wires, such as in-house phone lines.

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Terminal resistor

Termination resistor - PSI-TERMINATOR-PB-TBUS - 2702636



Active termination resistor for PROFIBUS and RS-485 bus systems, redundant power supply, routing of the supply voltage via DIN rail connector, electrical isolation, switchable termination, integrated programming interface

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