

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Please be informed that the data shown in this PDF document is generated from our Online Catalog. Please find the complete data in the user documentation. Our General Terms of Use for Downloads are valid.



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

Commercial Data

Item number	2708863
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DNC121
Catalog Page	Page 422 (C-6-2019)
GTIN	4046356078993
Weight per Piece (including packing)	232.3 g
Weight per Piece (excluding packing)	212.4 g
Customs tariff number	85176200
Country of origin	DE

Technical Data

Notes

Utilization restriction

EMC note	EMC: class A product, see manufacturer's declaration in the download area
----------	---

Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
------------	---

Product properties

Product type	Interface converter
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%)
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))

Electrical properties

Electrical isolation	VCC // TBUS // PROFIBUS (A) // PROFIBUS (B)
Maximum power dissipation for nominal condition	2.16 W
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)
Test voltage data interfaces	1.5 kV

Supply

Supply voltage range	18 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V DC (in acc. with UL)
Typical current consumption	< 90 mA (24 V DC □)
Max. current consumption	≤ 2 A (For operation in a joining station, via the DIN rail connector)

Output data

Switching

Output name	Relay output
Output description	Alarm output
Number of outputs	1
Maximum switching voltage	60 V DC (Resistive Load, General Load)
	30 V AC (Resistive load)
	42 V AC (peak, resistive load)
Limiting continuous current	0.46 A

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Connection data

Supply

Stripping length	7 mm
Tightening torque	0.6 Nm ... 0.8 Nm

Interfaces

Bit distortion, input	max. $\pm 35\%$
Bit distortion, output	$< 6.25\%$
Bit delay	1 bit (Direct mode)
Signal	PROFIBUS
Transmission channels	2 (1/1), TD, RD, half duplex

Data: PROFIBUS acc. to IEC 61158, RS-485 2-conductor

Transmission speed	9.6/19.2/45.45/93.75/187.5/500/1500/3000/6000/12000 kbps (can be set manually and automatically)
Connection method	D-SUB-9 female connector
Transmission length	≤ 1200 m (Depends on transmission speed and cable type)
Termination resistor	external
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section solid min.	0.2 mm ²
Max. AWG conductor cross section, flexible	14
Min. AWG conductor cross section, flexible	24
Single-wire/terminal point, solid AWG max.	14
Single-wire/terminal point, solid AWG min.	24
Transmission medium	2-wire twisted pair, shielded
File format/coding	UART (11 Bit, NRZ)
Data direction switching	Automatic control, min. station response time 2 bits
Output nominal voltage	5 V DC $\pm 5\%$
Output current	50 mA

Dimensions

Dimensional drawing	
Width	35 mm
Height	99 mm
Depth	105 mm

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Material specifications

Material	PA 6.6-FR (Housing)
----------	---------------------

Environmental and real-life conditions

Ambient conditions

Degree of protection	IP20
Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation) ≤ 2000 m (Hazardous locations)
Permissible humidity (operation)	30 % ... 95 % (non-condensing)

Approval data

CE

Certificate	CE-compliant
-------------	--------------

ATEX

Identification	<input type="checkbox"/> II 3 G Ex ec IIC T5 Gc
Certificate	UL 21 ATEX 2550X
Note	Please follow the special installation instructions in the documentation!

IECEX

Identification	Ex ec IIC T5 Gc
Certificate	IECEX ULD 21.00013X

UL, USA / Canada

Identification	Class I, Zone 2, AEx ec IIC T5 Gc Ex ec IIC T5 Gc X Class I, Div. 2, Groups A, B, C, D
----------------	--

KC approval for South Korea

Certificate	MSIP-REI-PCK-2708863
-------------	----------------------

Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
----------------	----------------------------------

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011
Noise immunity	EN 61000-4-2

Electrostatic discharge

Standards/regulations	EN 61000-4-2
-----------------------	--------------

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Electrostatic discharge

Contact discharge	± 6 kV
Discharge in air	± 8 kV
Comments	Criterion B

Electromagnetic HF field

Standards/regulations	EN 61000-4-3
-----------------------	--------------

Electromagnetic HF field

Frequency range	80 MHz ... 3 GHz
Field intensity	10 V/m
Comments	Criterion A

Fast transients (burst)

Standards/regulations	EN 61000-4-4
-----------------------	--------------

Fast transients (burst)

Input	± 2 kV
Signal	± 2 kV
Comments	Criterion B

Surge current load (surge)

Standards/regulations	EN 61000-4-5
-----------------------	--------------

Surge current load (surge)

Input	± 0.5 kV
Signal	± 1 kV
Comments	Criterion B

Conducted interference

Standards/regulations	EN 61000-4-6
-----------------------	--------------

Conducted interference

Comments	Criterion A
Voltage	10 V

Emitted interference

Standards/regulations	EN 55011
Comments	Class A, industrial applications
Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected by the device itself.

Standards and regulations

Free from substances that could impair the application of coating	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0
Standards/regulations	EN 62368

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Mounting

Mounting type	DIN rail mounting
---------------	-------------------

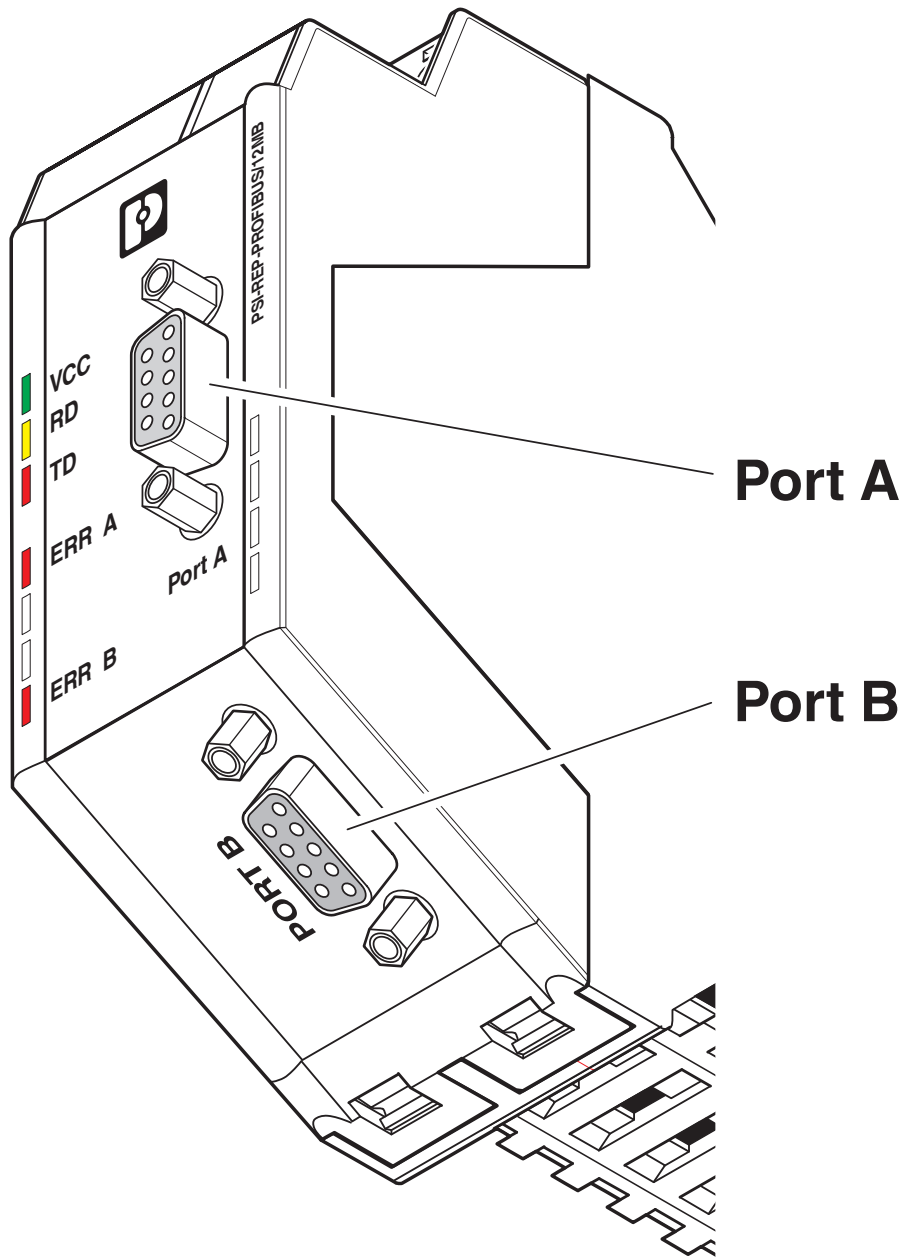
Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Drawings

Schematic diagram



Device connections

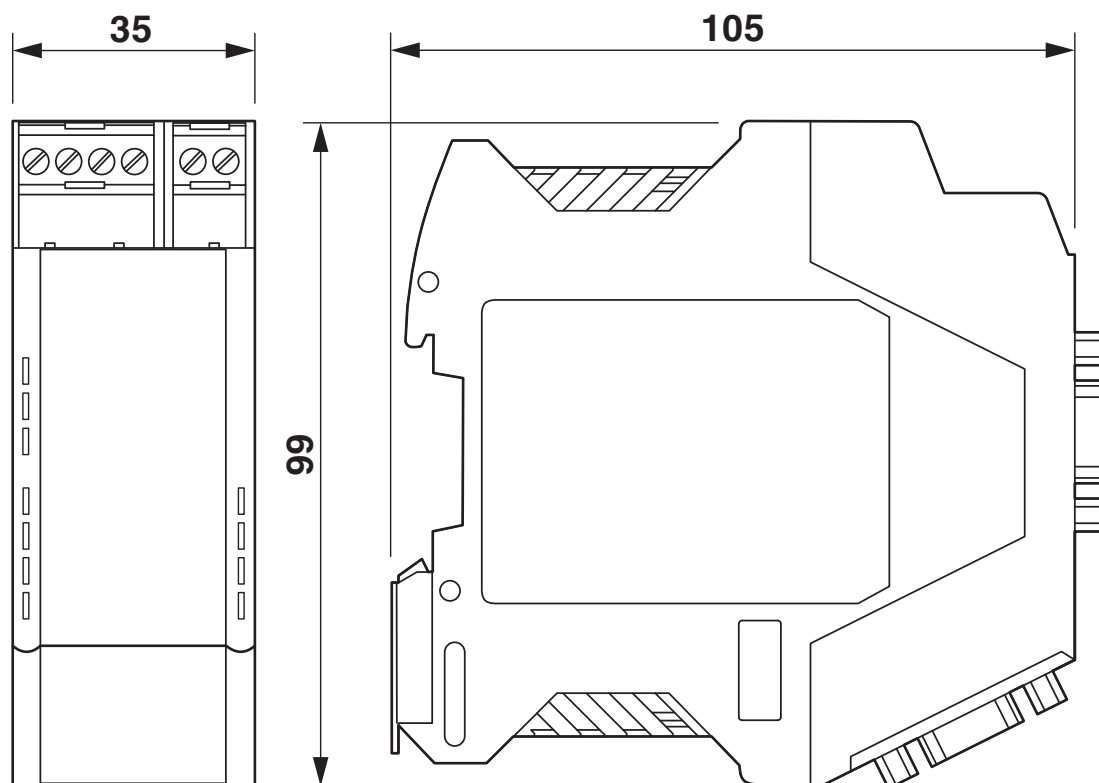
Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Dimensional drawing



Housing dimensions

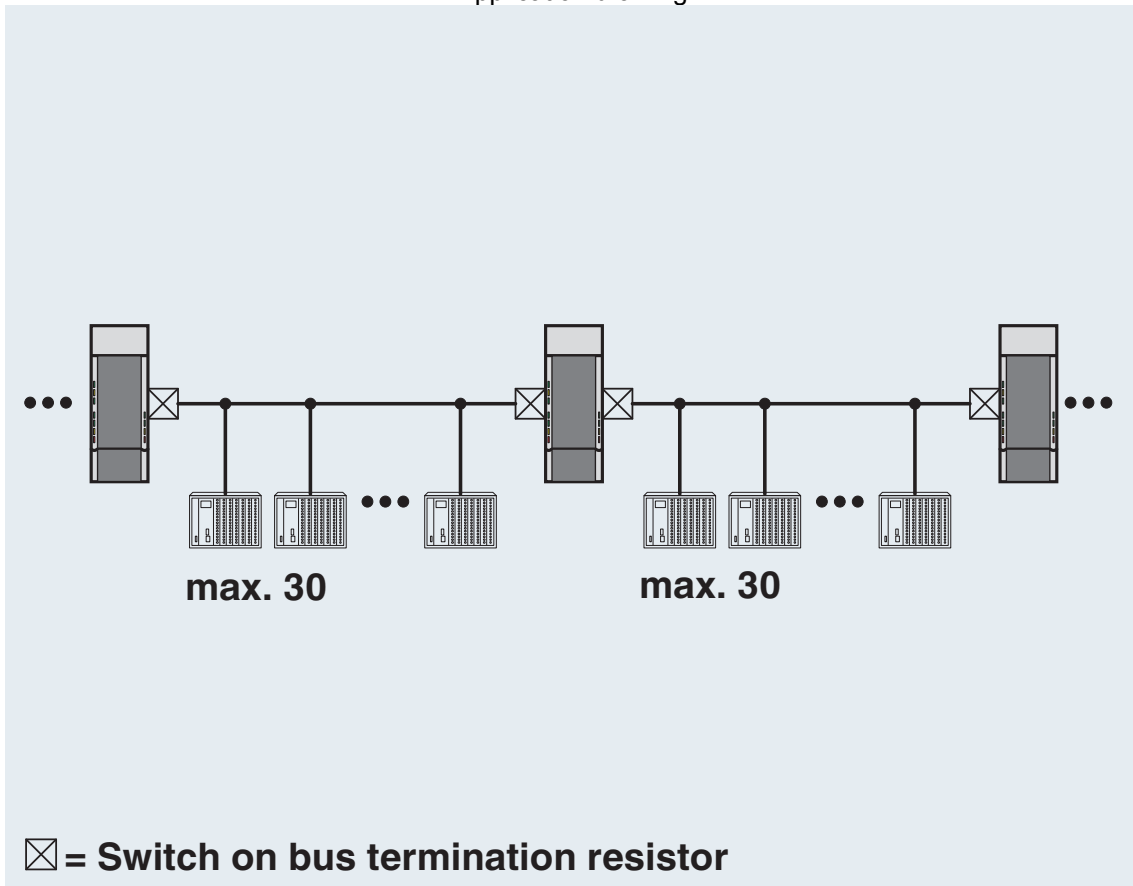
Repeater - PSI-REP-PROFIBUS/12MB



2708863

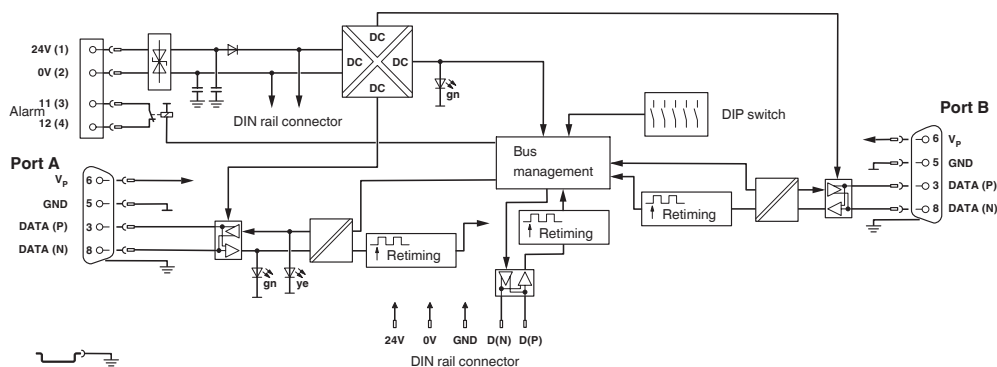
<https://www.phoenixcontact.com/pc/products/2708863>

Application drawing



Line structure

Block diagram



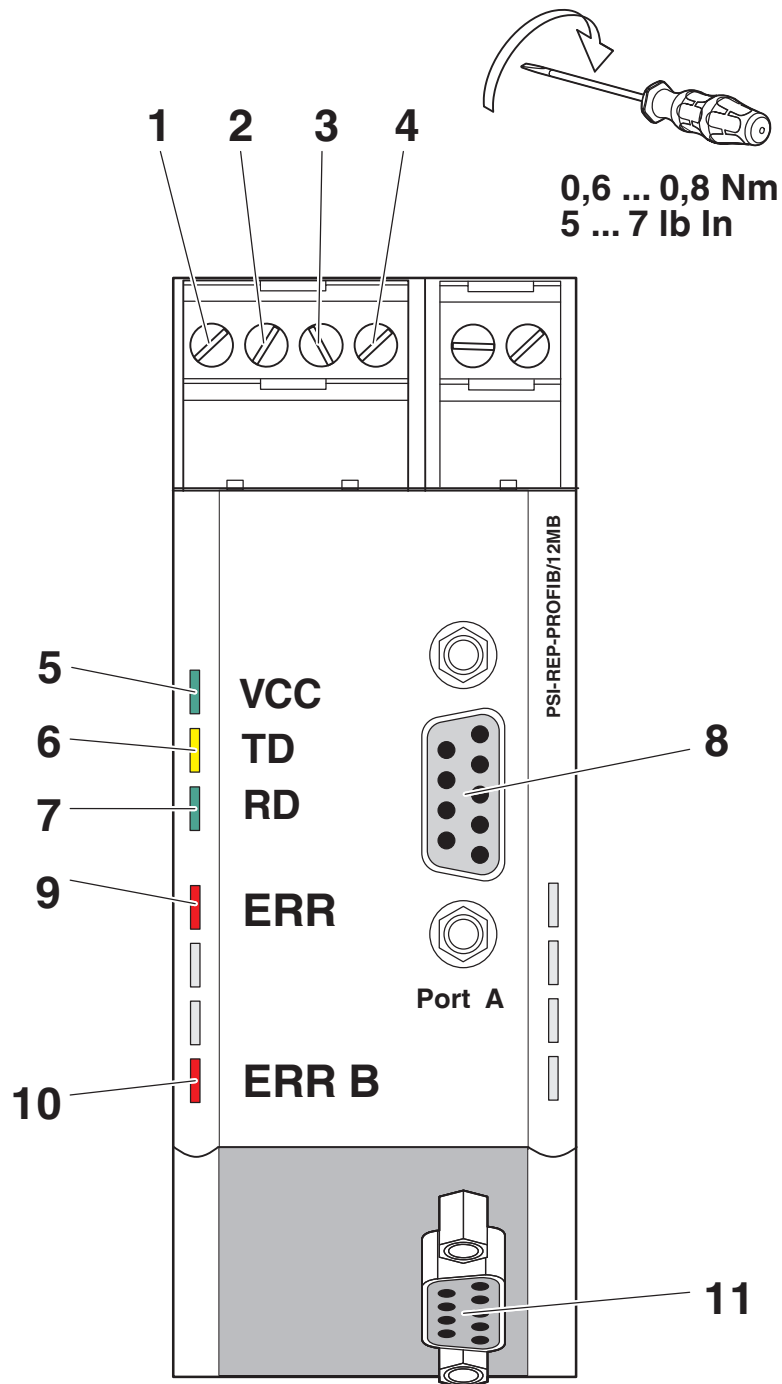
Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>



Schematic diagram



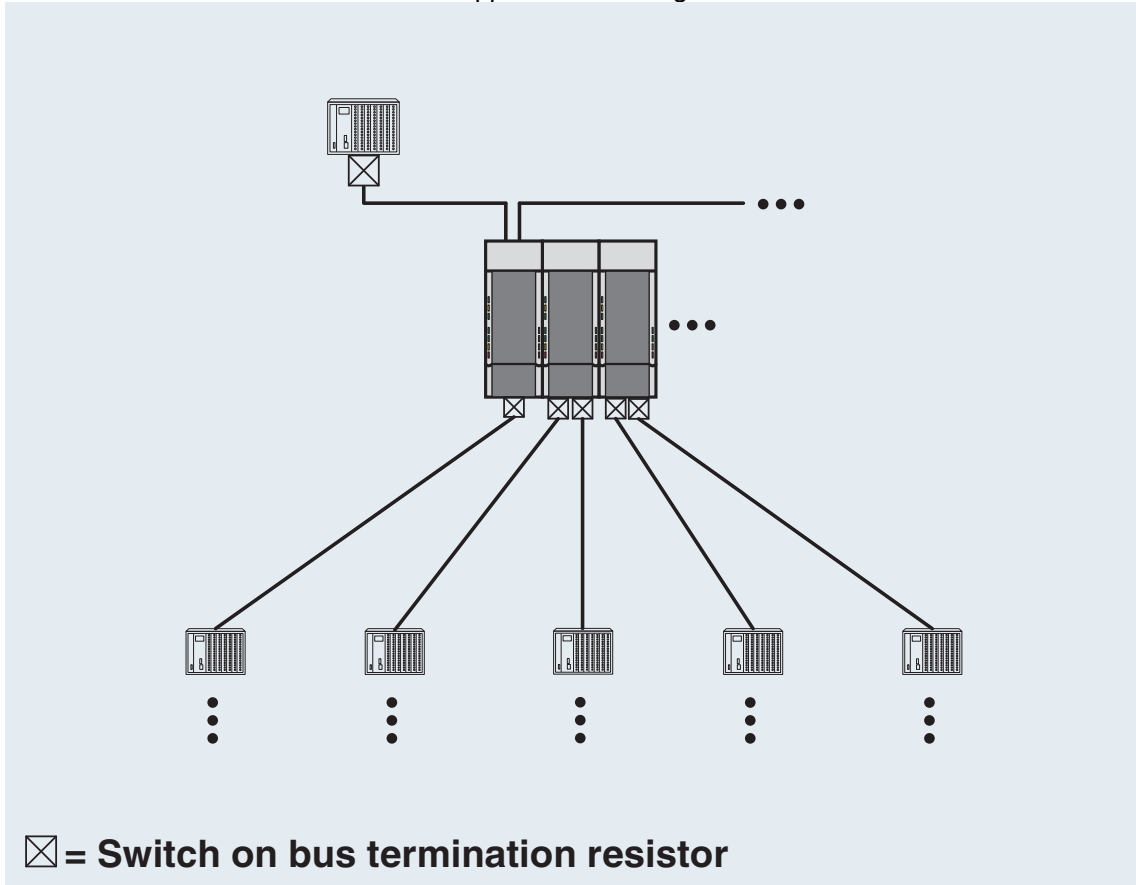
Front view

Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Application drawing



Star structure

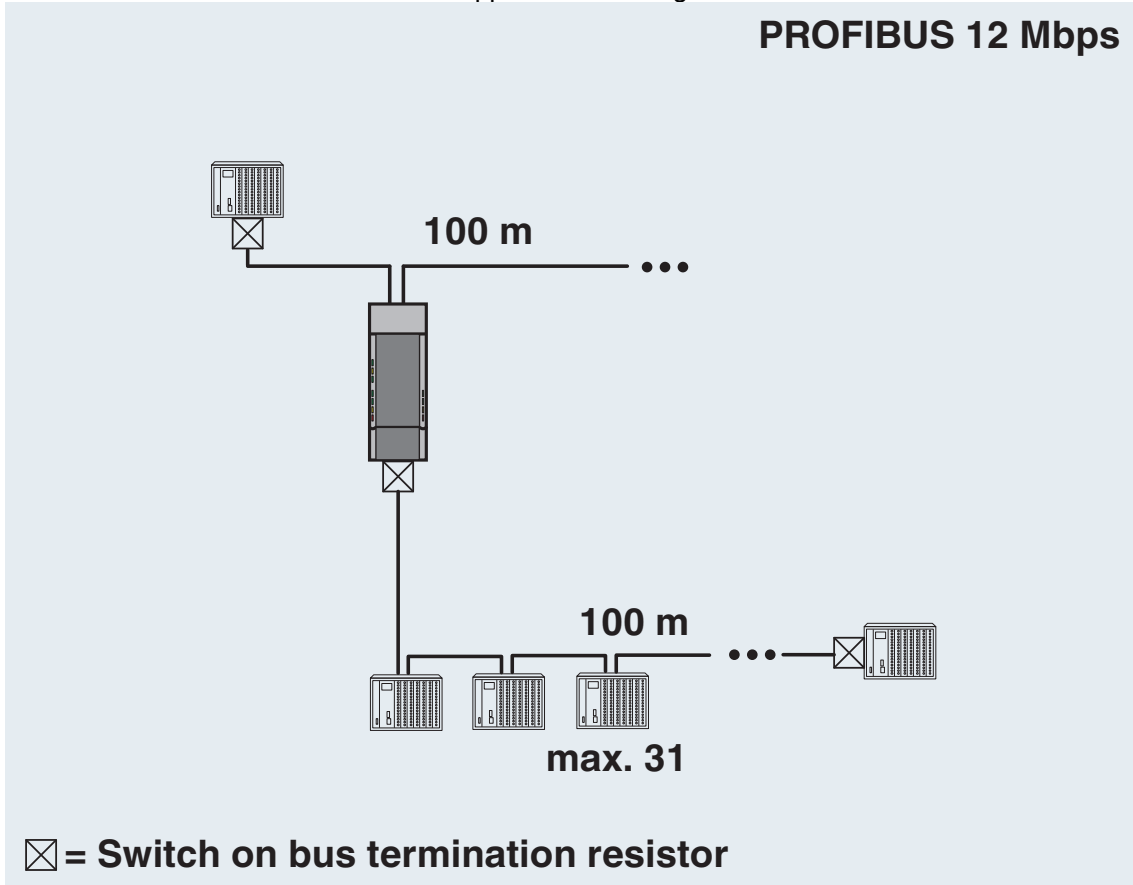
Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>



Application drawing



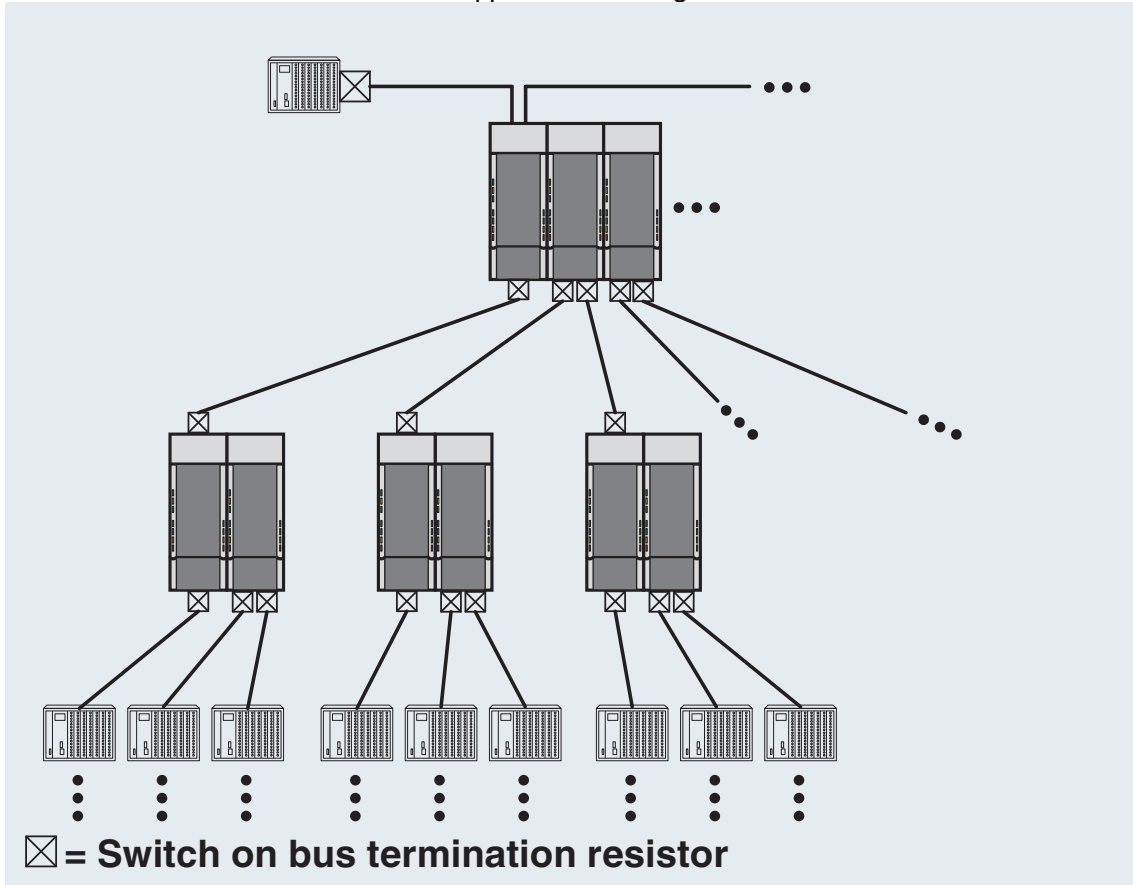
Branch line

Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Application drawing



Tree structure

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Approvals



EAC

Approval ID: TR TS_D_01871-19



KC

Approval ID: MSIP-REI-PCK-2708863



UL Listed

Approval ID: FILE E 238705



cUL Listed

Approval ID: FILE E 238705



ATEX

Approval ID: PxCIF06ATEX2708863X



cUL Listed

Approval ID: FILE E 199827



UL Listed

Approval ID: FILE E 199827



IECEx

Approval ID: IECEx ULD 21.0013X



ATEX

Approval ID: UL 21 ATEX 2550X

cULus Listed

cULus Listed

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Classifications

ECLASS

ECLASS-9.0	19179290
ECLASS-10.0.1	19179290
ECLASS-11.0	19179090

ETIM

ETIM 8.0	EC002608
----------	----------

UNSPSC

UNSPSC 21.0	43222600
-------------	----------

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For information on hazardous substances, refer to the manufacturer's declaration available under "Downloads"

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

Accessories

Bus system cable

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

<https://www.phoenixcontact.com/pc/products/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)

Power supply unit

Power supply unit - QUINT4-SYS-PS/1AC/24DC/2.5/SC - 2904614

<https://www.phoenixcontact.com/pc/products/2904614>



Primary-switched power supply unit, QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 2.5 A

Repeater - PSI-REP-PROFIBUS/12MB

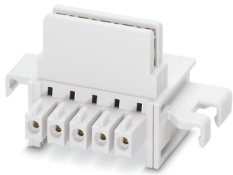
2708863

<https://www.phoenixcontact.com/pc/products/2708863>

DIN rail bus connectors

DIN rail bus connectors - ME 17,5 TBUS 1,5/ 5-ST-3,81 KMGY - 2713645

<https://www.phoenixcontact.com/pc/products/2713645>



DIN rail connector, color: light grey, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, pitch: 3.81 mm, mounting: DIN rail mounting, locking: without, mounting: without, type of packaging: packed in cardboard, Item with gold-plated contacts, bus connectors for connecting with electronics housings, 5 parallel contacts

Termination resistor

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

<https://www.phoenixcontact.com/pc/products/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

Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>

D-SUB bus connector

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

<https://www.phoenixcontact.com/pc/products/2313708>



D-SUB connector, 9-pos., male connector, 90° cable entry, 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

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

<https://www.phoenixcontact.com/pc/products/2708245>



D-SUB connector, 9-pos., male connector, 35° cable entry, 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

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

D-SUB bus connector

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

<https://www.phoenixcontact.com/pc/products/2313685>



D-SUB connector, 9-pos., male connector, 90° cable entry, 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

D-SUB bus connector

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

<https://www.phoenixcontact.com/pc/products/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.

Repeater - PSI-REP-PROFIBUS/12MB



2708863

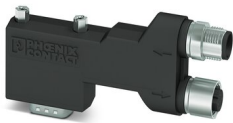
<https://www.phoenixcontact.com/pc/products/2708863>

D-SUB bus connector

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

<https://www.phoenixcontact.com/pc/products/2902729>

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



D-SUB bus connector

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

<https://www.phoenixcontact.com/pc/products/2902318>

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



Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>

D-SUB bus connector

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

<https://www.phoenixcontact.com/pc/products/2902320>

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



FO converters

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

<https://www.phoenixcontact.com/pc/products/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



Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>

FO converters

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

<https://www.phoenixcontact.com/pc/products/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

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

<https://www.phoenixcontact.com/pc/products/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)

Repeater - PSI-REP-PROFIBUS/12MB

2708863

<https://www.phoenixcontact.com/pc/products/2708863>

FO converters

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

<https://www.phoenixcontact.com/pc/products/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

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

<https://www.phoenixcontact.com/pc/products/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

Repeater - PSI-REP-PROFIBUS/12MB



2708863

<https://www.phoenixcontact.com/pc/products/2708863>

FO converters

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

<https://www.phoenixcontact.com/pc/products/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

<https://www.phoenixcontact.com/pc/products/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.

Phoenix Contact 2022 © - all rights reserved
<https://www.phoenixcontact.com>

PHOENIX CONTACT GmbH & Co. KG
Flachsmarktstraße 8
D-32825 Blomberg
+49 (0) 5235-3 00
info@phoenixcontact.com