

# PSI-REP-PROFIBUS/12MB - Repeater



2708863

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

## Commercial data

Item number	2708863
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN11
Product key	DNC121
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

#### Note on application

Note on application	Only for industrial use
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#### Utilization restriction

CCCex note	Use in potentially explosive areas is not permitted in China.
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### 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 <sub>rms</sub> (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
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

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## Connection data

### Supply

Stripping length	7.00 mm
Tightening torque	0.6 Nm ... 0.8 Nm

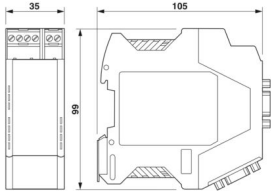
## Interfaces

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	$\leq 1200$ m (Depends on transmission speed and cable type)
Termination resistor	external
Single conductor/terminal point, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Single-wire/terminal point, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Max. AWG conductor cross-section, flexible	14
Min. AWG conductor cross-section, flexible	24
Single-wire/terminal point, rigid AWG max.	14
Single-wire/terminal point, rigid 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

## Material specifications

Color (Housing)	gray (RAL 7042)
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Material (Housing)	PA 6.6-FR
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## Mechanical tests

Free fall in accordance with IEC 60068-2-32	Free fall: 1 m
Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Vibration (operation): 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Shock (operation): 15g, 11 ms period, half-sine shock pulse

## 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)

## Approvals

### CE

Certificate	CE-compliant
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### ATEX

Identification	Ⓔ 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 21.0013X

### 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
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### KC approval for South Korea

Certificate	MSIP-REI-PCK-2708863
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### Corrosive gas test

Identification	ISA-S71.04-1985 G3 Harsh Group A
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## EMC data

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

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## Noise emission

Standards/regulations	EN 55011
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## Electrostatic discharge

Standards/regulations	EN 61000-4-2
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## Electrostatic discharge

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

## Electromagnetic HF field

Standards/regulations	EN 61000-4-3
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## 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
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## Fast transients (burst)

Input	± 2 kV
Signal	± 2 kV
Comments	Criterion B

## Surge current load (surge)

Standards/regulations	EN 61000-4-5
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## Surge current load (surge)

Input	± 0.5 kV
Signal	± 1 kV
Comments	Criterion B

## Conducted interference

Standards/regulations	EN 61000-4-6
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## Conducted interference

Comments	Criterion A
Voltage	10 V

## Emitted interference

Standards/regulations	EN 55011
Comments	Class A, industrial applications

## Criteria

Criterion A	Normal operating behavior within the specified limits.
Criterion B	Temporary impairment to operational behavior that is corrected

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	by the device itself.
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## Standards and regulations

Free from substances that could impair the application of coating	VDMA 24364:2018-05
Standards/regulations	EN 62368

## Mounting

Mounting type	DIN rail mounting
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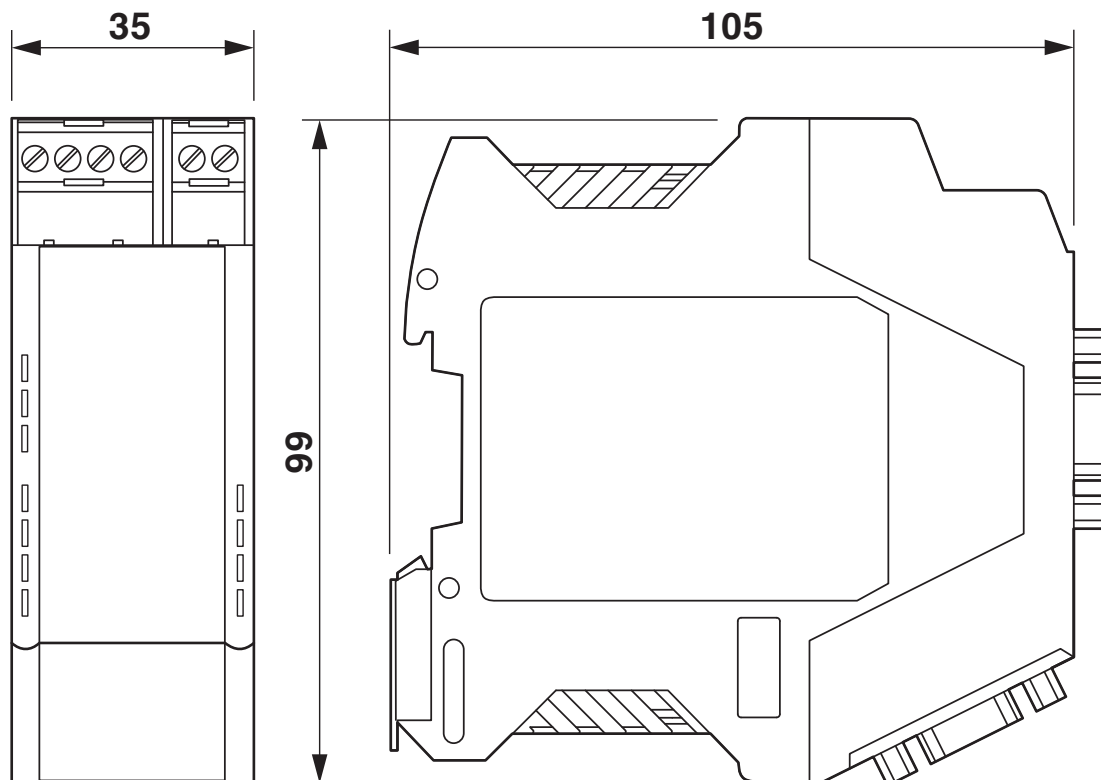
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## Drawings

Dimensional drawing



Housing dimensions

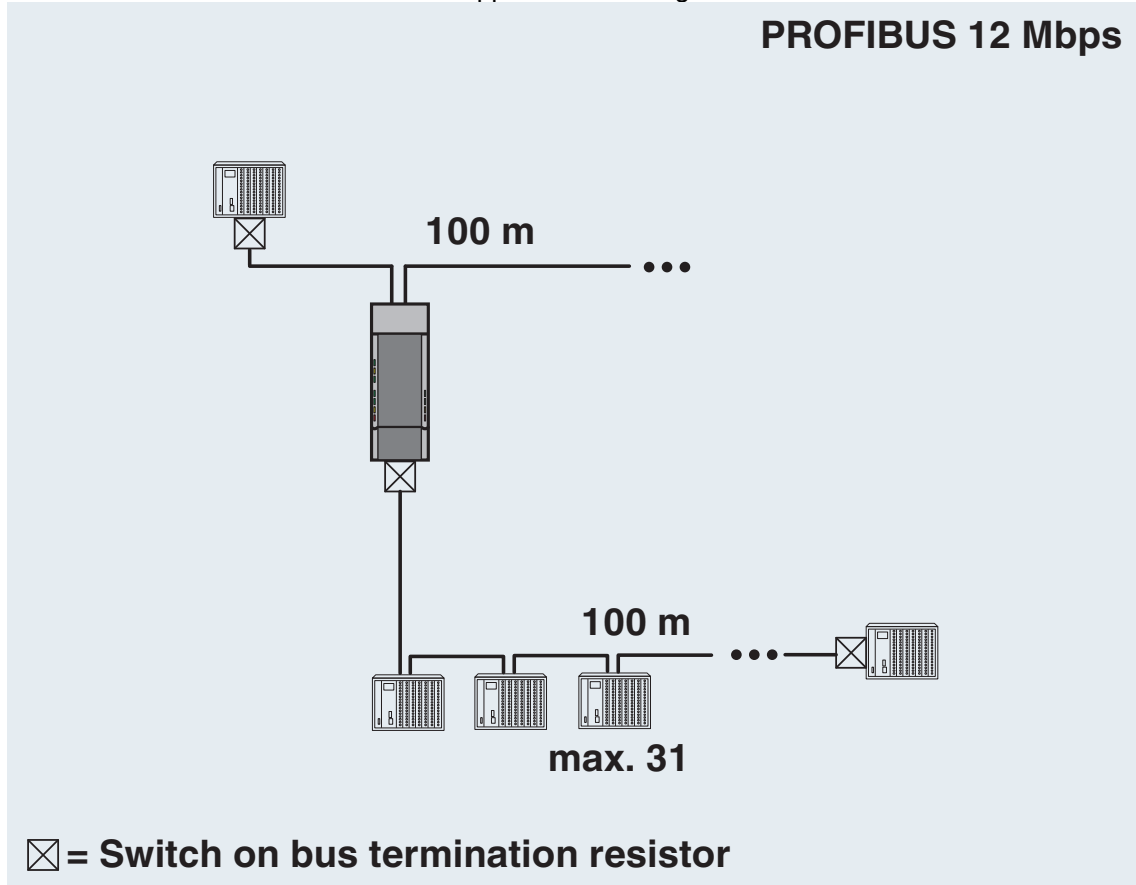
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Application drawing



Branch line



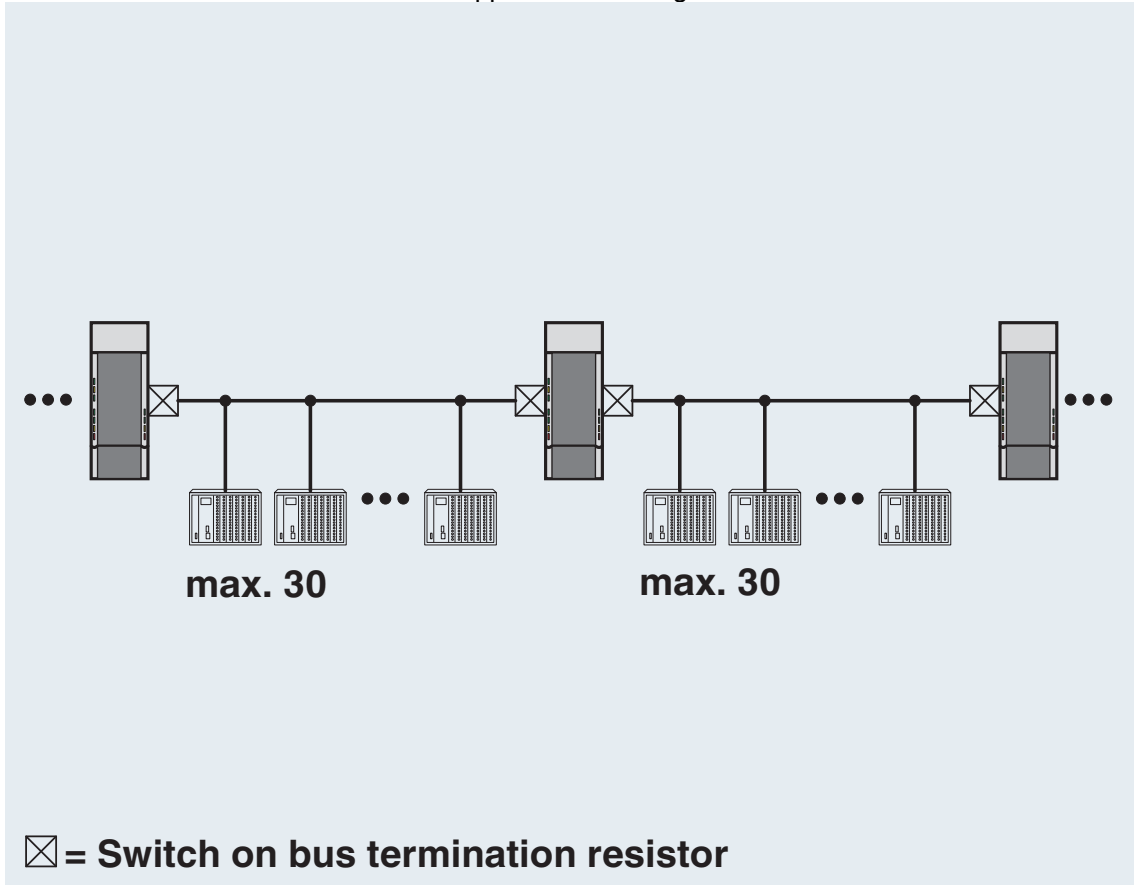
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Application drawing



Line structure

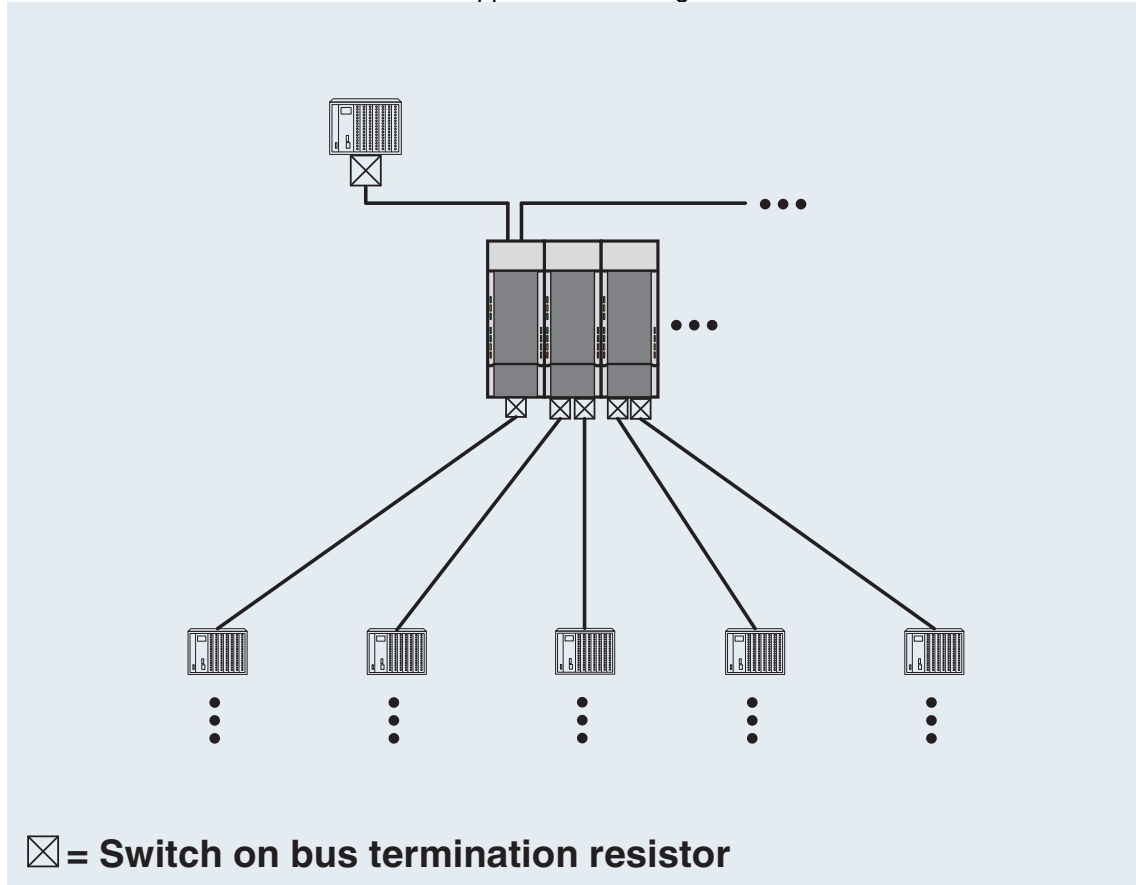
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Application drawing



Star structure

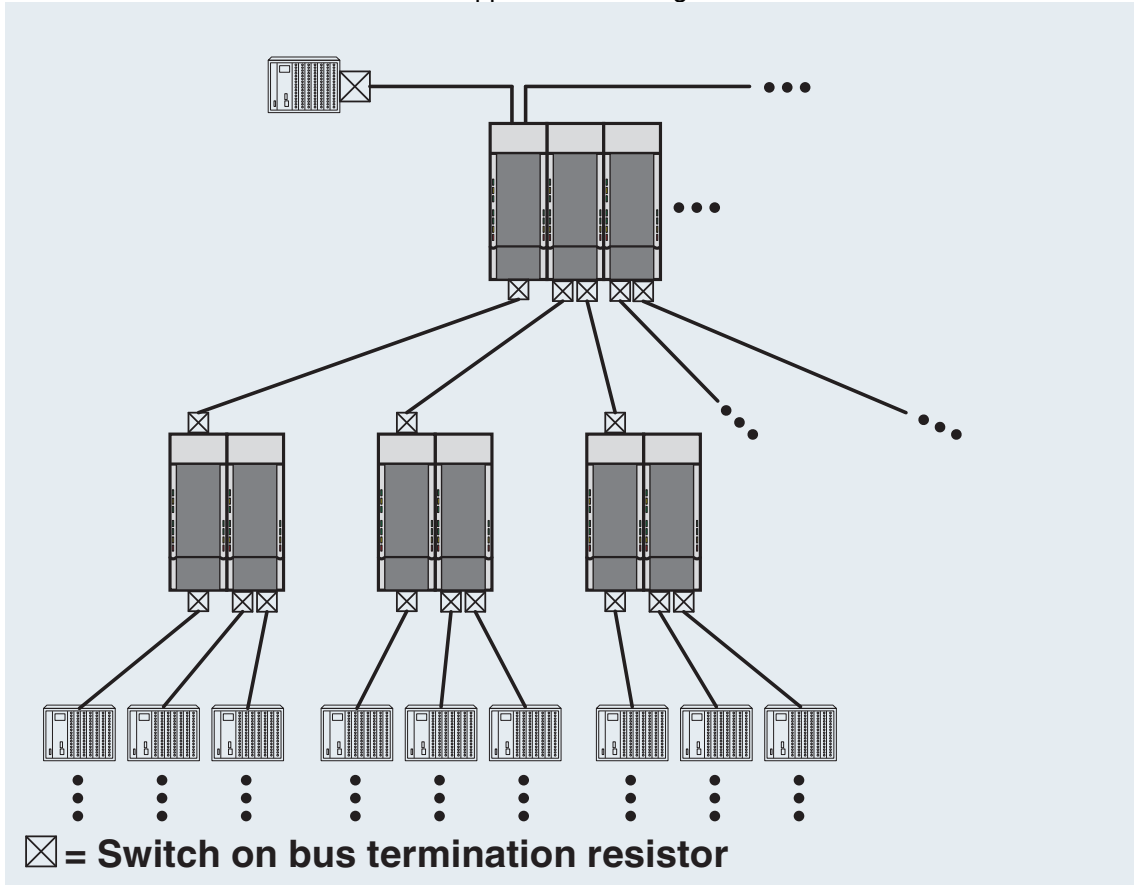
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Application drawing



Tree structure

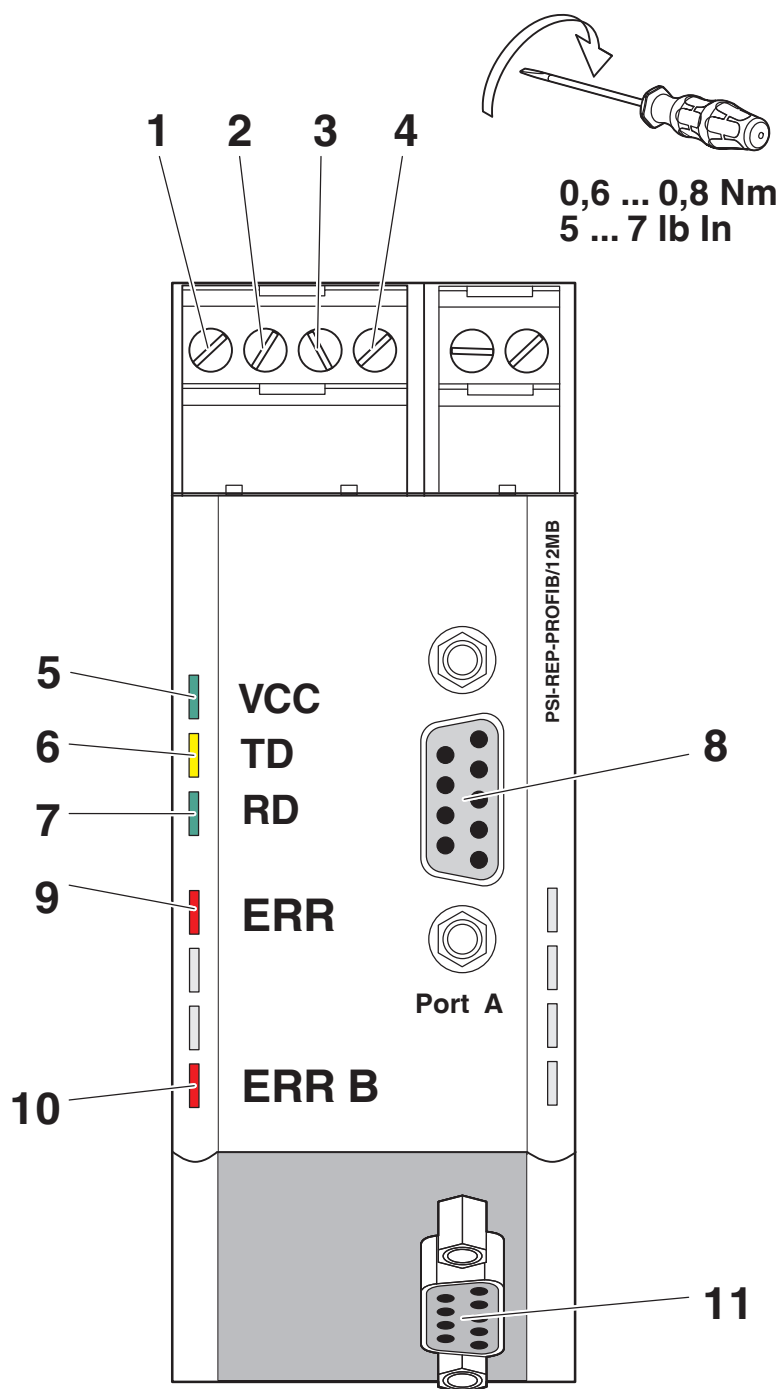
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Schematic diagram



Front view

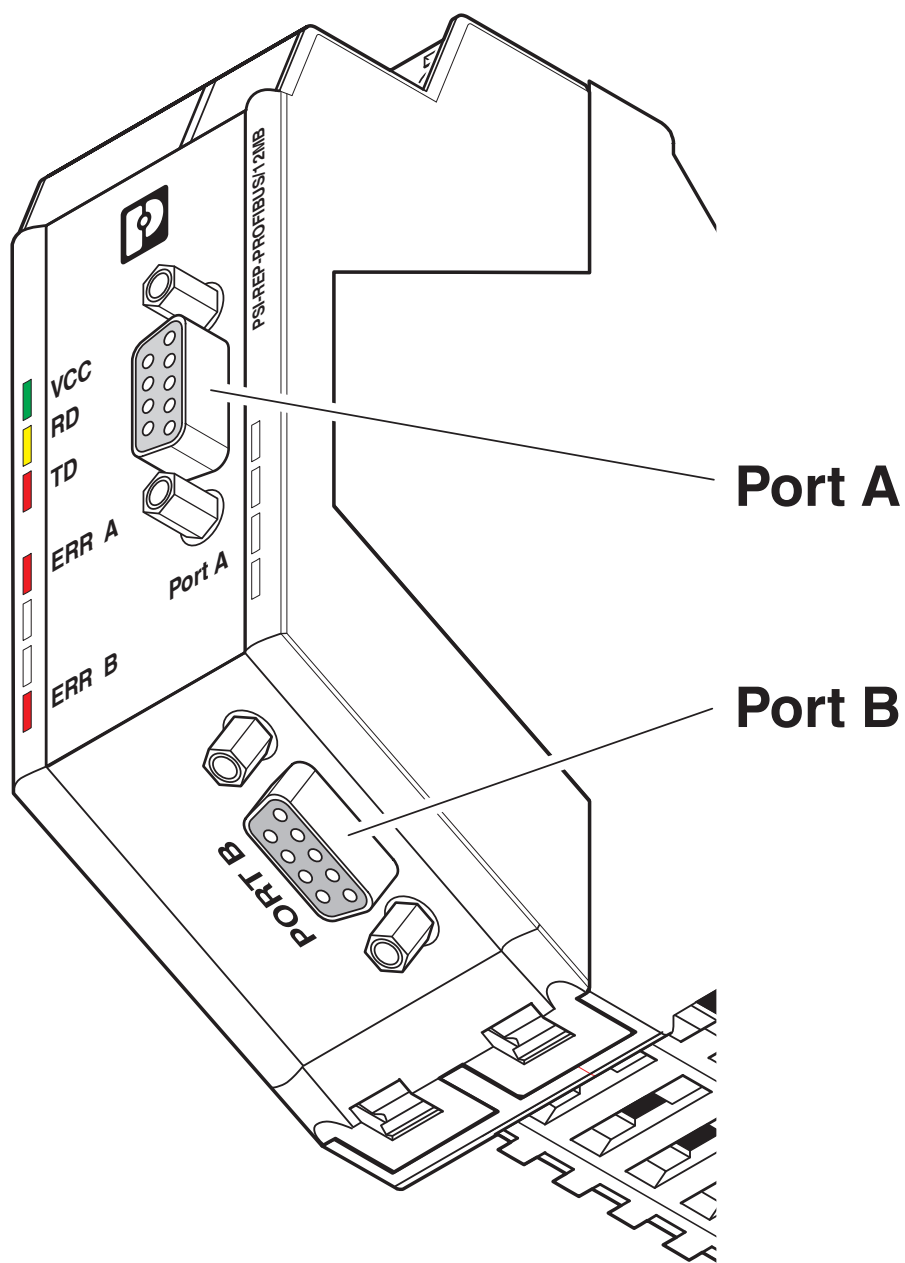
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Schematic diagram



Device connections

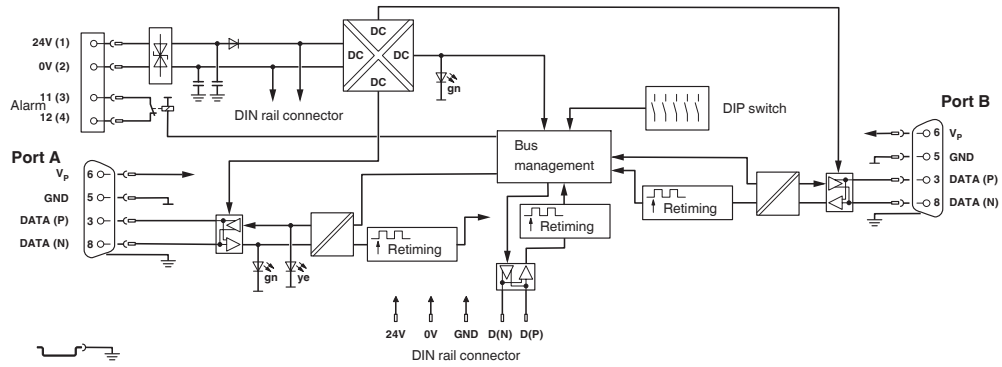
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Block diagram



Circuit diagram

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## Approvals


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**KC**  
Approval ID: MSIP-REI-PCK-2708863




**cULus Listed**  
Approval ID: E238705



**cULus Recognized**  
Approval ID: E238705



**cUL Listed**  
Approval ID: E199827



**UL Listed**  
Approval ID: E199827

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## Classifications

### ECLASS

ECLASS-13.0	27242208
ECLASS-15.0	27242208

### ETIM

ETIM 9.0	EC001423
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### UNSPSC

UNSPSC 21.0	43222600
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	7(a), 7(c)-I

### China RoHS

Environment friendly use period (EFUP)	EFUP-50
	An article-related China RoHS declaration table can be found in the download area for the respective article under "Manufacturer declaration". For all articles with EFUP-E, no China RoHS declaration table issued and required.

### EU REACH SVHC

REACH candidate substance (CAS No.)	Lead(CAS: 7439-92-1)
SCIP	9db7fad1-e573-4b3c-82c8-9fea0df51fda

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Phoenix Contact USA  
586 Fulling Mill Road  
Middletown, PA 17057, United States  
(+717) 944-1300  
[info@phoenixcon.com](mailto:info@phoenixcon.com)