

PSI-REP-CNET - Repeater



2313737

<https://www.phoenixcontact.com/us/products/2313737>

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Modular repeater for electrical isolation and increasing the range for ControlNet, 5 Mbps data rate, 4-way isolation, DIN-rail mountable, 24 V DC power supply

Your advantages

- Bit retiming for unrestricted cascading of devices
- Approved for use in zone 2
- Supply voltage and data signals routed through the DIN rail connectors
- All connections can be plugged in using BNC plugs or a COMBICON screw terminal block
- Can be combined with PSI-MOS FO converters in a modular way using DIN rail connectors
- High-quality electrical isolation between all interfaces (ControlNet (A) // ControlNet (B) // power supply // DIN rail connector)
- Redundant power supply possible by means of optional system power supply unit

Commercial data

Item number	2313737
Packing unit	1 pc
Minimum order quantity	1 pc
Product key	DNC124
GTIN	4046356513821
Weight per piece (including packing)	245 g
Weight per piece (excluding packing)	245 g
Country of origin	DE

Technical data

Notes

Utilization restriction

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

Product type	Interface converter
MTTF	1856 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	837 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	345 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	1187 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	254 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

Electrical properties

Electrical isolation	VCC // CNET // CNET
Maximum power dissipation for nominal condition	0.91 W
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)

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	38 mA (24 V DC)
Max. current consumption	65 mA
	≤ 2 A (For operation in a joining station, via the DIN rail connector)

Function

Status and diagnostic indicators	Port A (module status indicator), port B (module status indicator)
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Output data

Switching

Output name	Relay output
Number of outputs	1
Contact switching type	N/O contact
Minimum switching voltage	18 V DC
Maximum switching voltage	30 V DC
Limiting continuous current	500 mA

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Connection data

Supply

Tightening torque	0.56 Nm ... 0.79 Nm
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Interfaces

Bit distortion, input	± 35 %
Bit distortion, output	< 6.25 %
Signal	ControlNet™

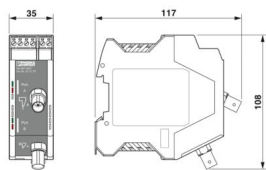
Data: ControlNet interface, in accordance with EN 50170

Serial transmission speed	5 Mbps
Connection method	BNC 75 Ω
Transmission length	≤ 1000 m
Conductor cross-section flexible max.	2.5 mm ²
Conductor cross-section flexible min.	0.2 mm ²
Conductor cross-section, rigid max.	2.5 mm ²
Conductor cross-section, rigid min.	0.2 mm ²
Conductor cross-section AWG max.	14
Conductor cross-section AWG min.	24
File format/coding	Serial asynchronous UART/NRZ

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File format/coding	Serial asynchronous UART/NRZ

Dimensions

Dimensional drawing	
Width	35 mm
Height	108 mm
Depth	117 mm

Material specifications

Color (Housing)	green (RAL 6021)
Material (Housing)	PA 6.6-FR

Mechanical tests

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)
Permissible humidity (operation)	30 % ... 95 % (non-condensing)

Approvals

CE

Certificate	CE-compliant
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ATEX

Identification	⊕ II 3 G Ex nA IIC T4 Gc X
Note	Please follow the special installation instructions in the documentation!

UL, USA/Canada

Identification	508 Listed
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EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise immunity	EN 61000-6-2

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 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
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Mounting

Mounting type	DIN rail mounting
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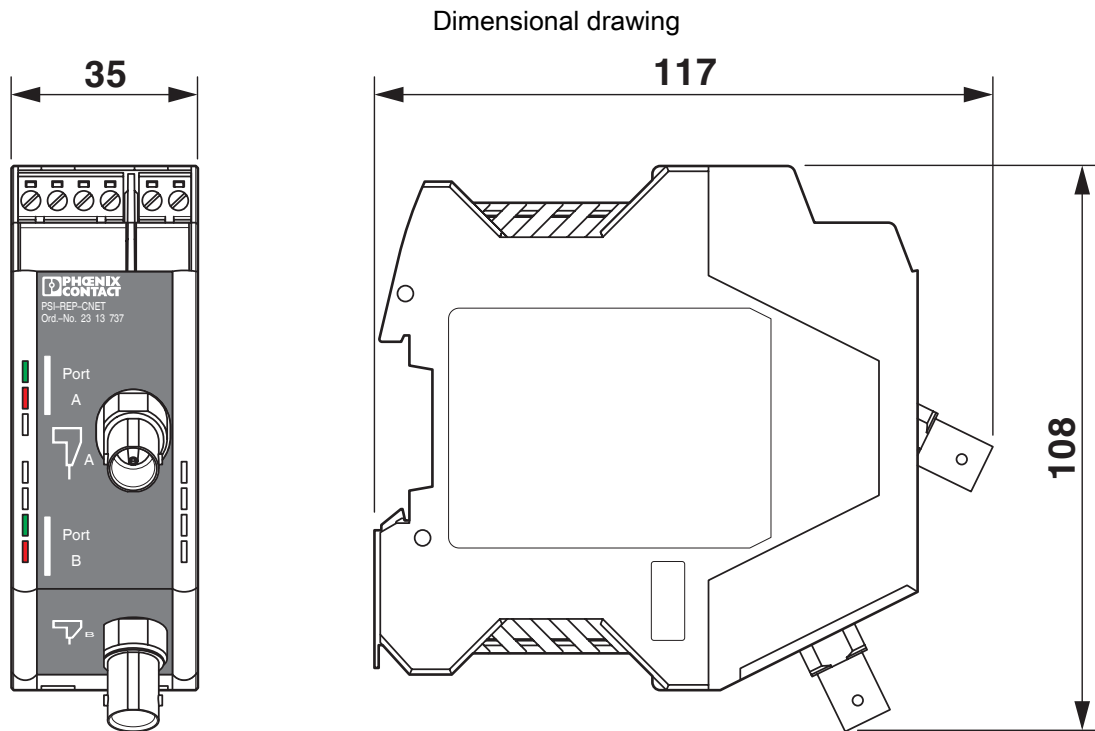
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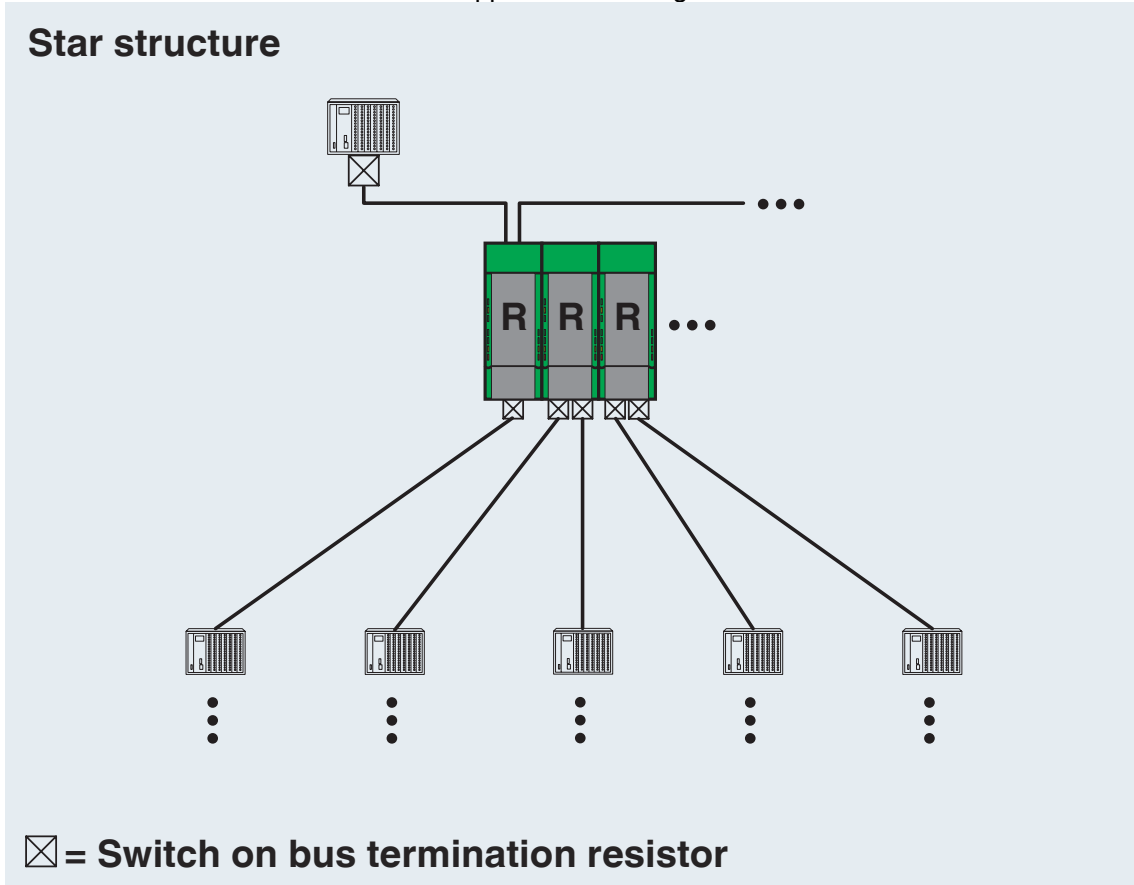


Drawings



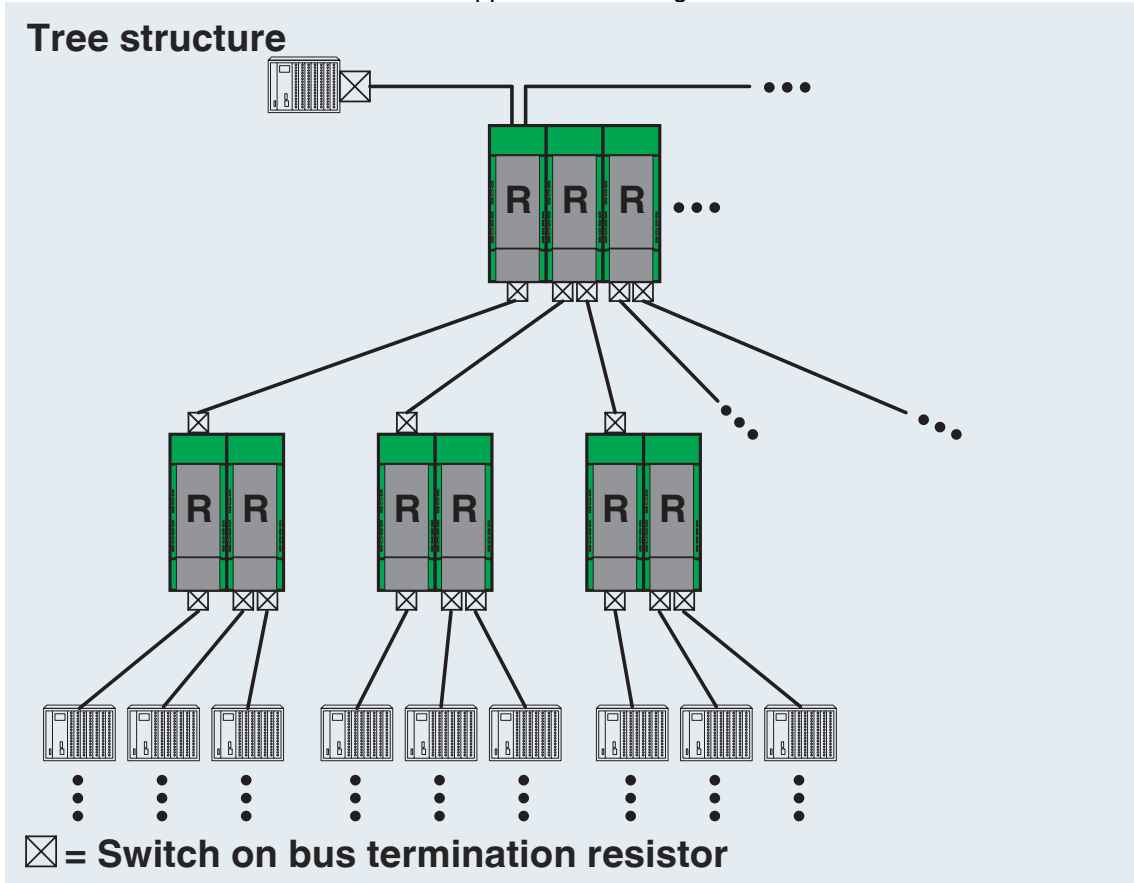
Application drawing

Star structure



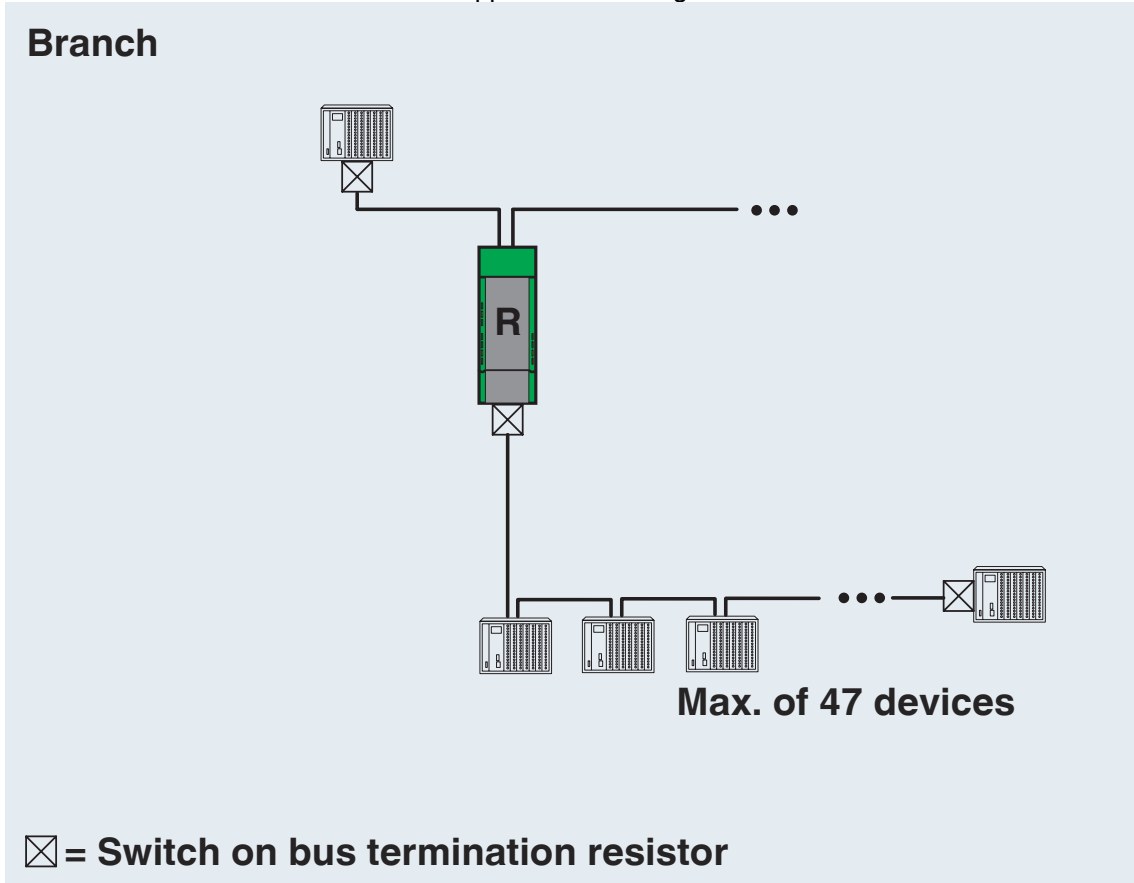
Star structure

Application drawing



Tree structure

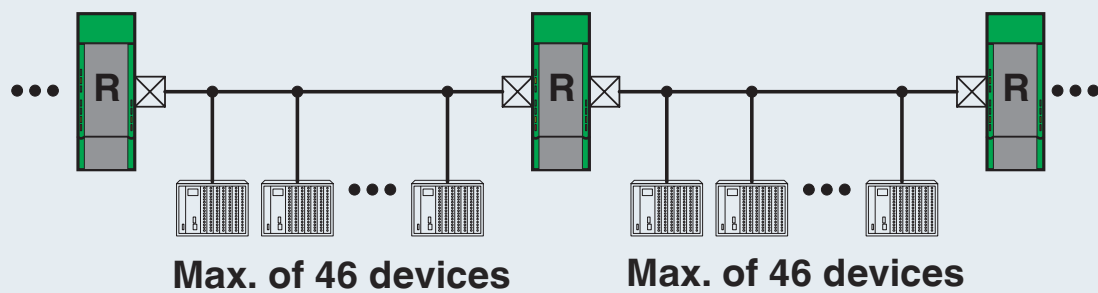
Application drawing



Branch line

Application drawing

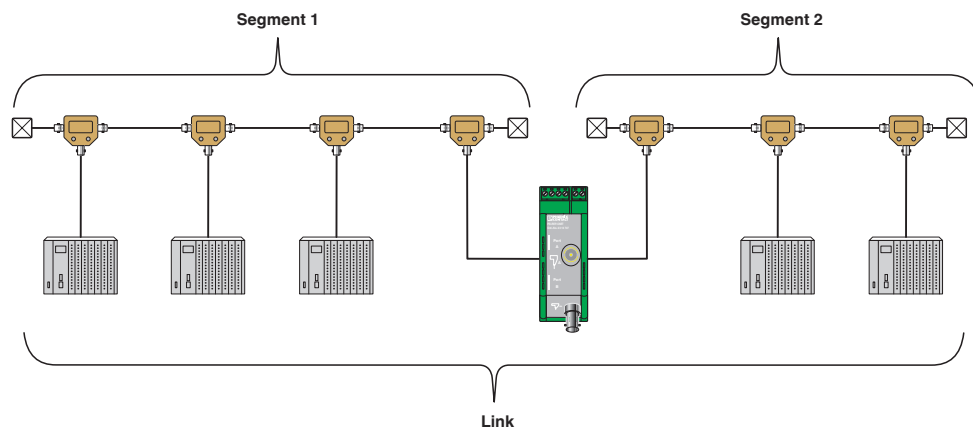
Linear structure



☒ = Switch on bus termination resistor

Line structure

Application drawing



Tap



Node



Terminator



Repeater

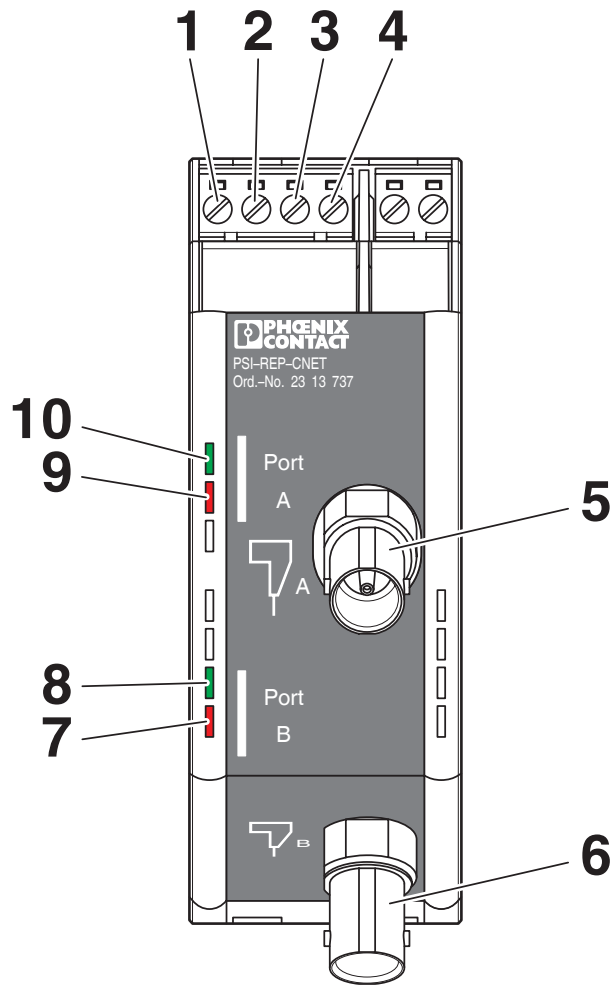
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Schematic diagram



Function elements

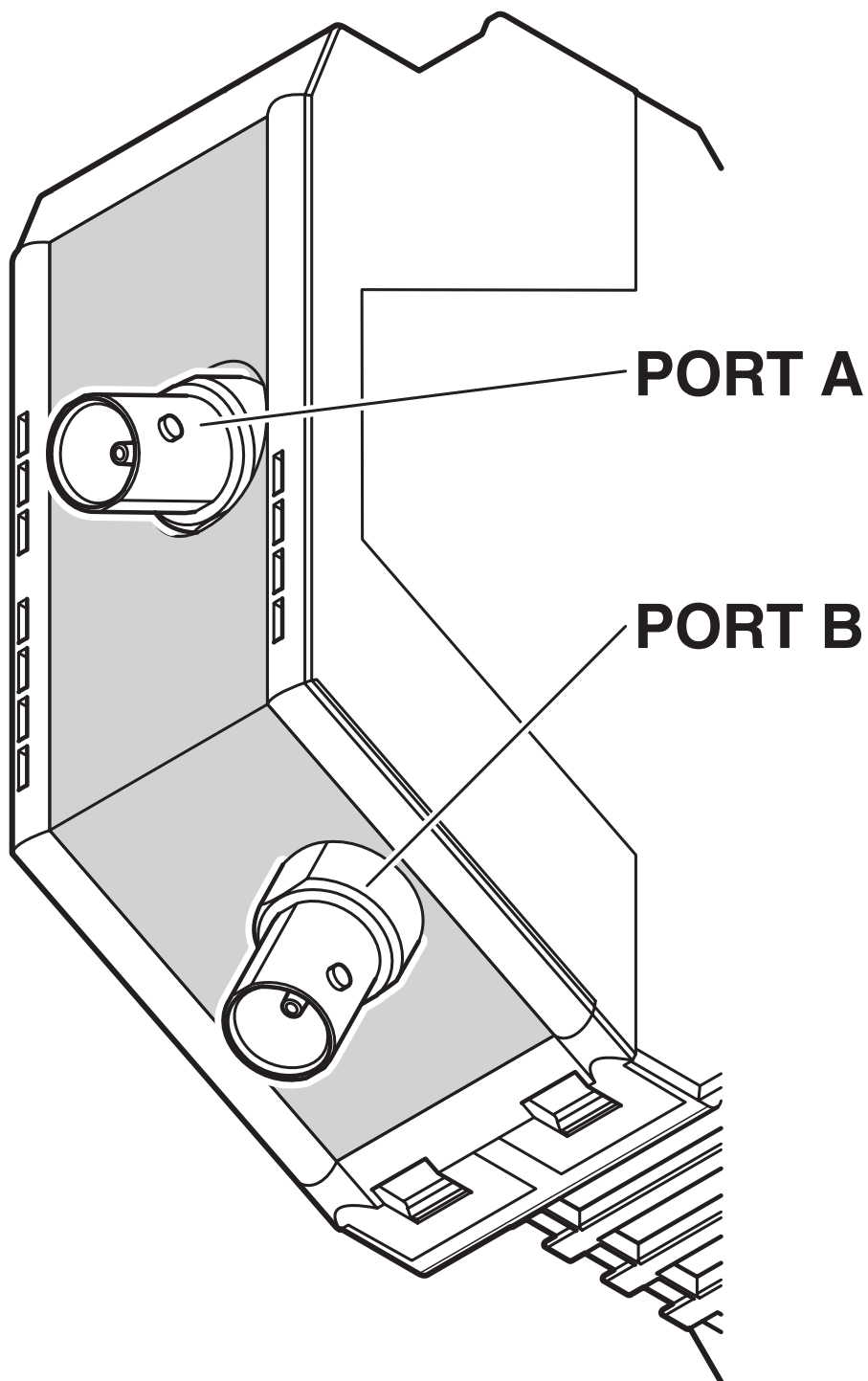
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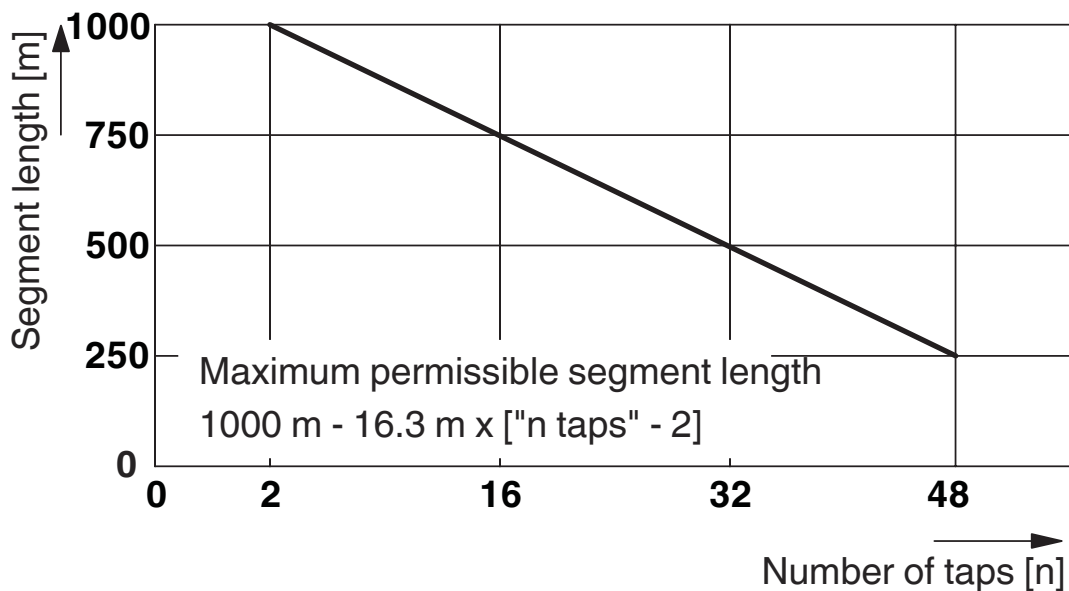


Schematic diagram

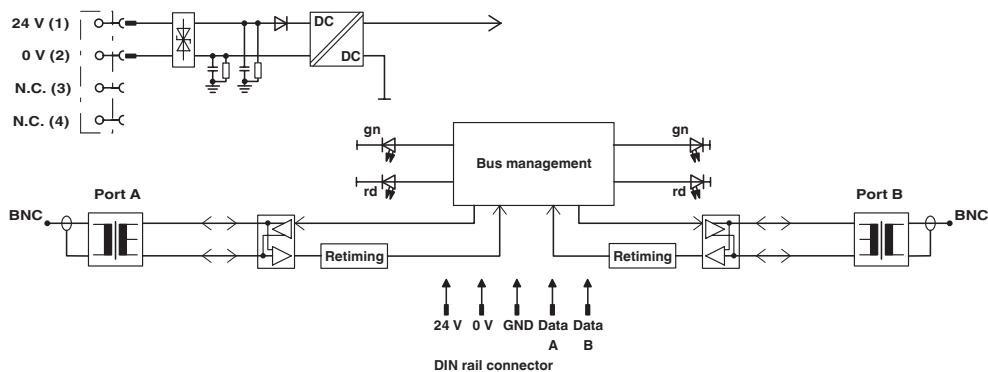


Device connections

Diagram



Block diagram



Environmental product compliance

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.)	No substance above 0.1 wt%
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