PSI-REP-DNET CAN - Repeater

2313423

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Modular repeater for electrical isolation and increasing the range for DeviceNet™, SDS, CANopen®, data rate of up to 1 Mbps, high-quality electrical isolation between the interfaces, DIN-rail mountable, 24 V DC supply

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
- Data rates of up to 1 Mbps
- High-quality 4-way isolation between all interfaces
- Can be combined with PSI-MOS FO converters in a modular way thanks to DIN rail connectors
- All connections can be plugged in using a COMBICON screw terminal block
- Approved for use in zone 2
- Shipbuilding approval in accordance with DNV GL

Commercial data

Item number	2313423
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DNC123
Product key	DNC123
Catalog page	Page 423 (C-6-2019)
GTIN	4046356428392
Weight per piece (including packing)	242.83 g
Weight per piece (excluding packing)	164.23 g
Customs tariff number	85176200
Country of origin	DE

Technical data

Notes

Note on application

Note on application	Only for industrial use

Utilization restriction

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

Product properties

Product type	Interface converter
MTTF	1091 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	514 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	208 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	823 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	170 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

Electrical properties

Electrical isolation	VCC // TBUS // CAN A // CAN B
Maximum power dissipation for nominal condition	1.32 W
Test voltage data interface/power supply	1.5 kV_{rms} (50 Hz, 1 min.)
Rated insulation voltage	85 V DC (In accordance with EN/IEC 60079-7, Annex H)

Supply

Supply voltage range	10 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V DC
Typical current consumption	55 mA (24 V DC)
Max. current consumption	80 mA
	≤ 2 A (For operation in a joining station, via the DIN rail connector)

Function

Status and diagnostic indicators	LEDs: VCC (supply voltage), NET A (Mod/Net status port A), NET B (Mod/Net status port B), ACT (activity/data traffic)

Output data

Switching

Output name	Relay output
Number of outputs	1
Contact switching type	N/C contact

Minimum switching voltage	10 V DC
Maximum switching voltage	30 V DC
Limiting continuous current	500 mA

Connection data

Supply

Stripping length	7.00 mm
Tightening torque	0.56 Nm ... 0.79 Nm

Interfaces

Bit distortion, input	± 35 %
Bit distortion, output	< 6.25 %
Bit delay	One telegram length (EXTENDED)
Signal	CAN
	CANopen®
	DeviceNet™

Data: CAN interface, in accordance with ISO/IS 11898 for DeviceNet™, CAN, CANopen®

Transmission speed	≤ 1 Mbps (Configurable via DIP switches)
Connection method	COMBICON plug-in screw terminal block
No. of channels	2 (CAN_High / CAN_Low)
Transmission length	≤ 5000 m (Dependent on the data rate and the protocol used)
Number of bus devices	≤ 64 (per potential segment)
	≤ 63 (DeviceNet™, can be addressed logically)
	≤ 128 (CANopen®, can be addressed logically)
Termination resistor	124 Ω (Integrated and ready to be switched)
Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²
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
Stripping length	7 mm
Transmission medium	2-wire twisted pair, shielded
Transmission method	CSMA/CA
File format/coding	Bit stuffing, NRZ

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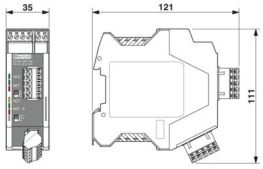
Dimensions

Dimensional drawing	
Width	35 mm
Height	111 mm
Depth	121 mm

Material specifications

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

Mechanical tests

Free fall in accordance with IEC 60068-2-32	: 1 m
Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	: 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	: 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

ATEX

Identification	II 3 G Ex ec IIC T4 Gc
Certificate	PxCIF07ATEX2313533X
Note	Please follow the special installation instructions in the documentation!

UKEX

Identification	II 3 G Ex ec IIC T4 Gc
Certificate	PxCIMA22UKEX2313423X

UL, USA/Canada

Identification	508 Listed

Corrosive gas test

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

Shipbuilding

Identification	DNV GL

Shipbuilding data

Temperature	B
Humidity	A
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

EMC data

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

Noise emission

Standards/regulations	EN 55011

Electrostatic discharge

Standards/regulations	EN 61000-4-2

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

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

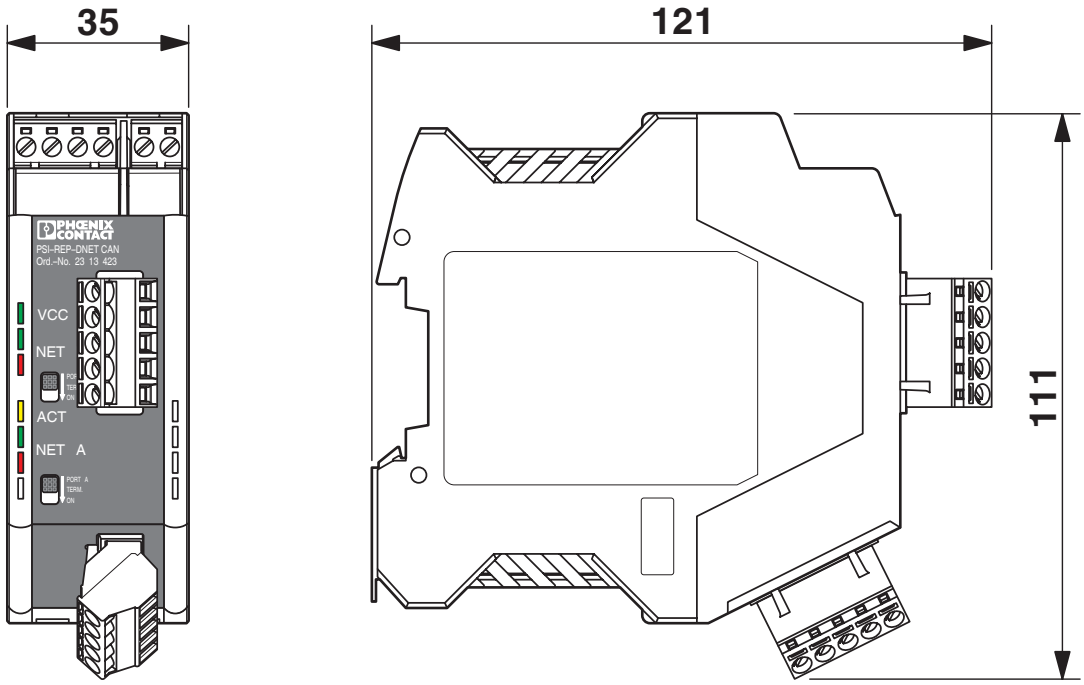
Free from substances that could impair the application of coating	VDMA 24364:2018-05

Mounting

Mounting type	DIN rail mounting
Assembly note	The product can be snapped onto all 35 mm DIN rails in accordance with EN 60715.

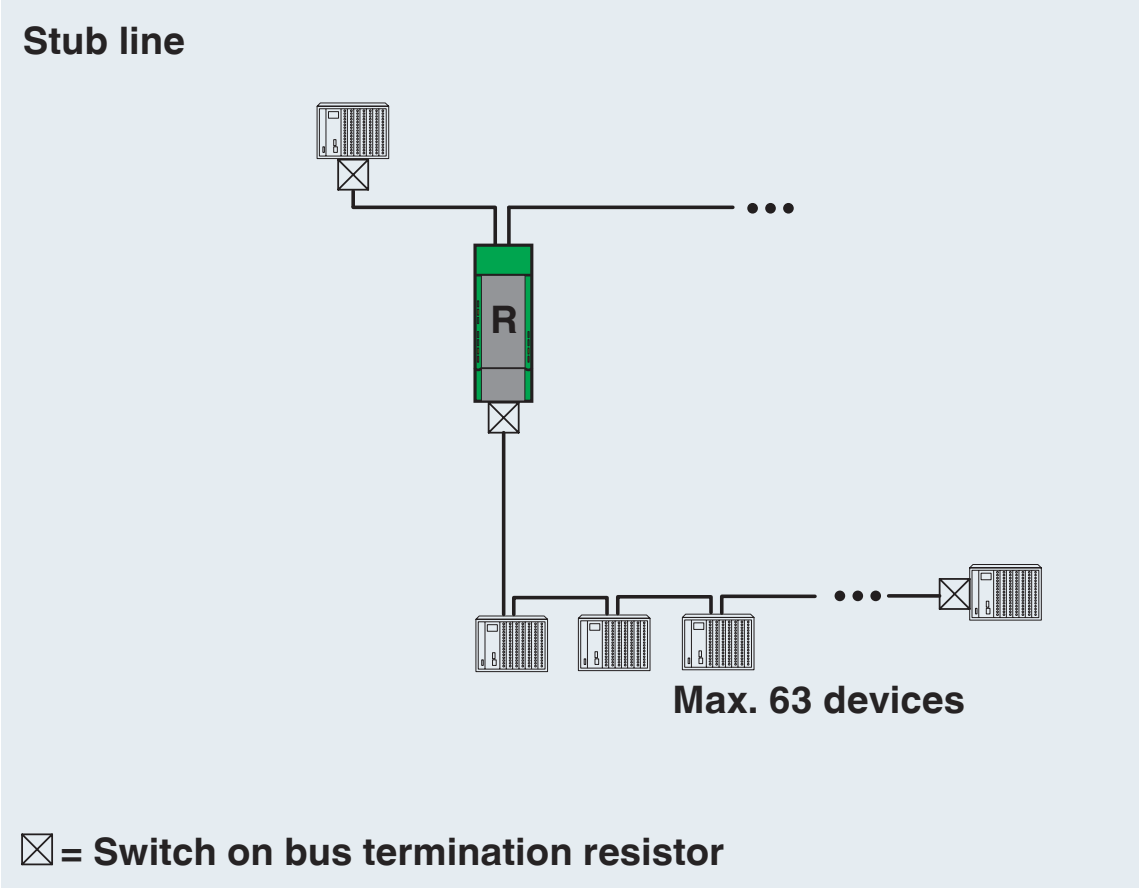
Drawings

Dimensional drawing



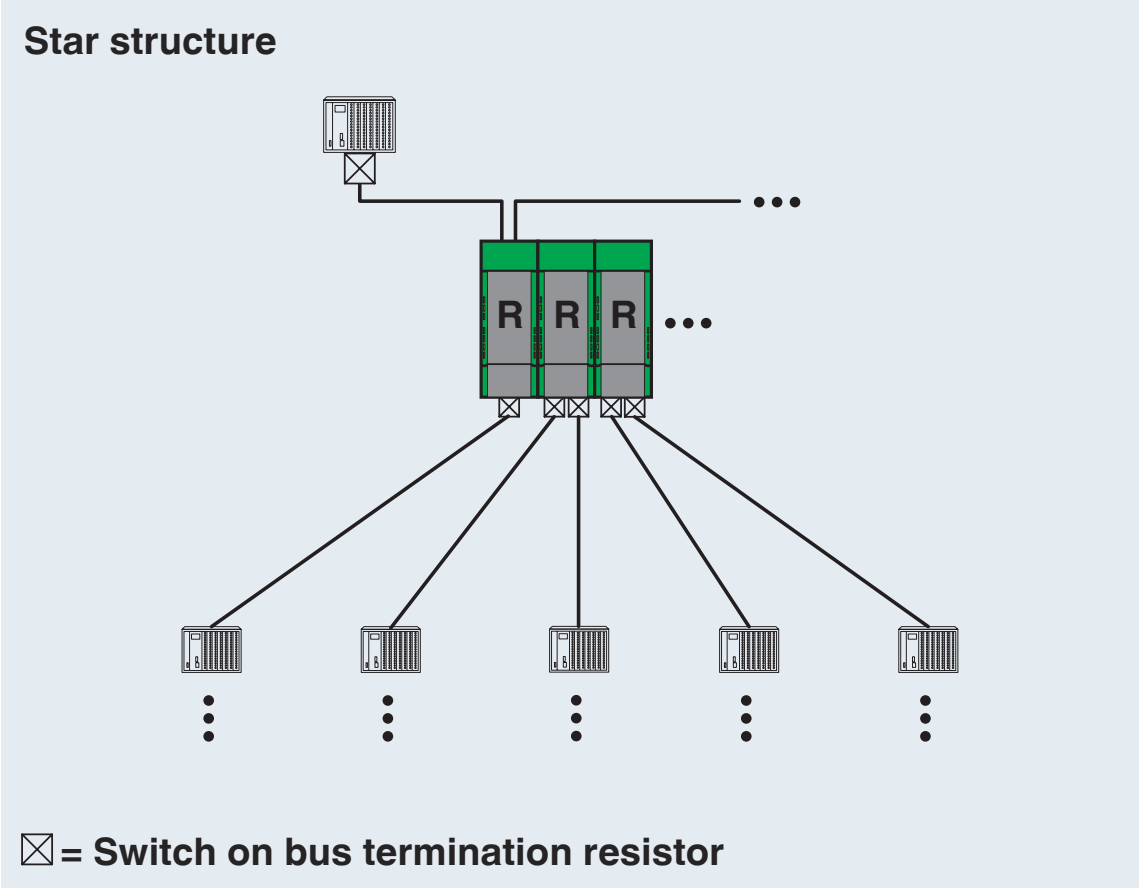
Housing dimensions

Application drawing



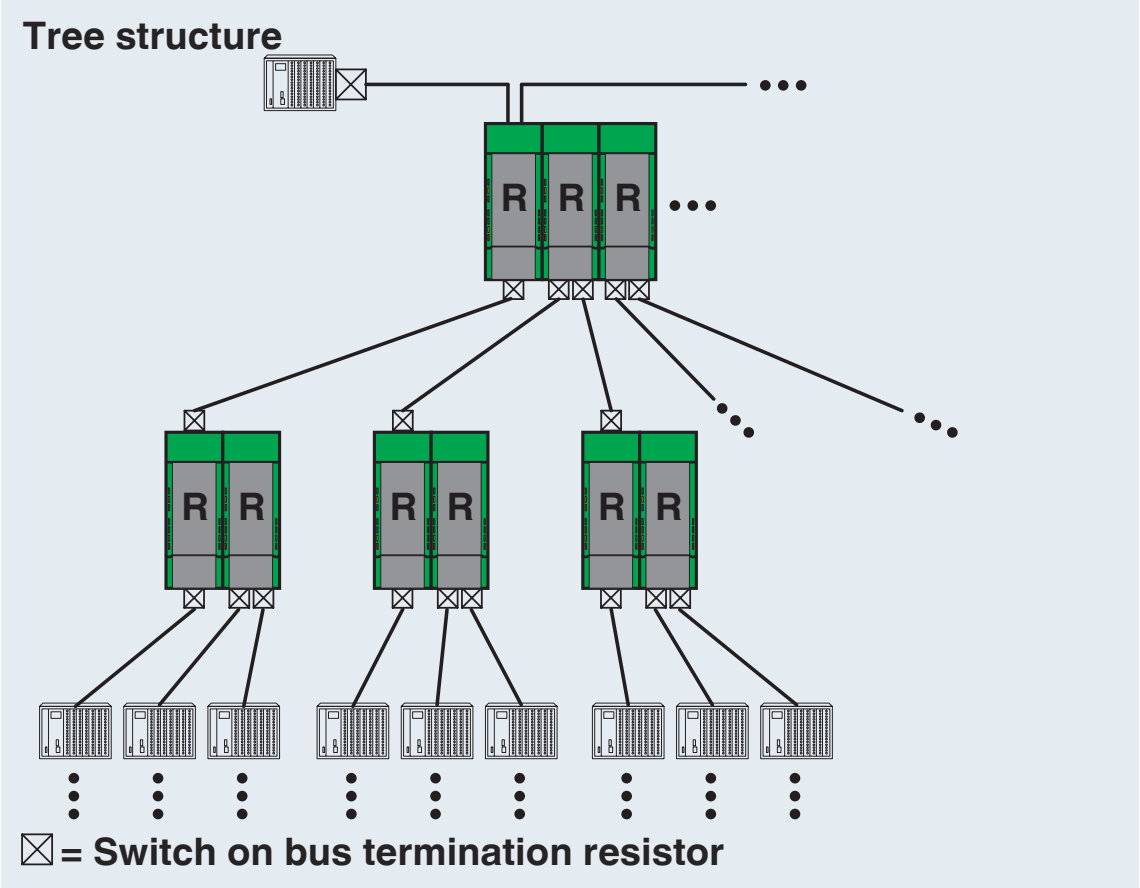
Branch line

Application drawing



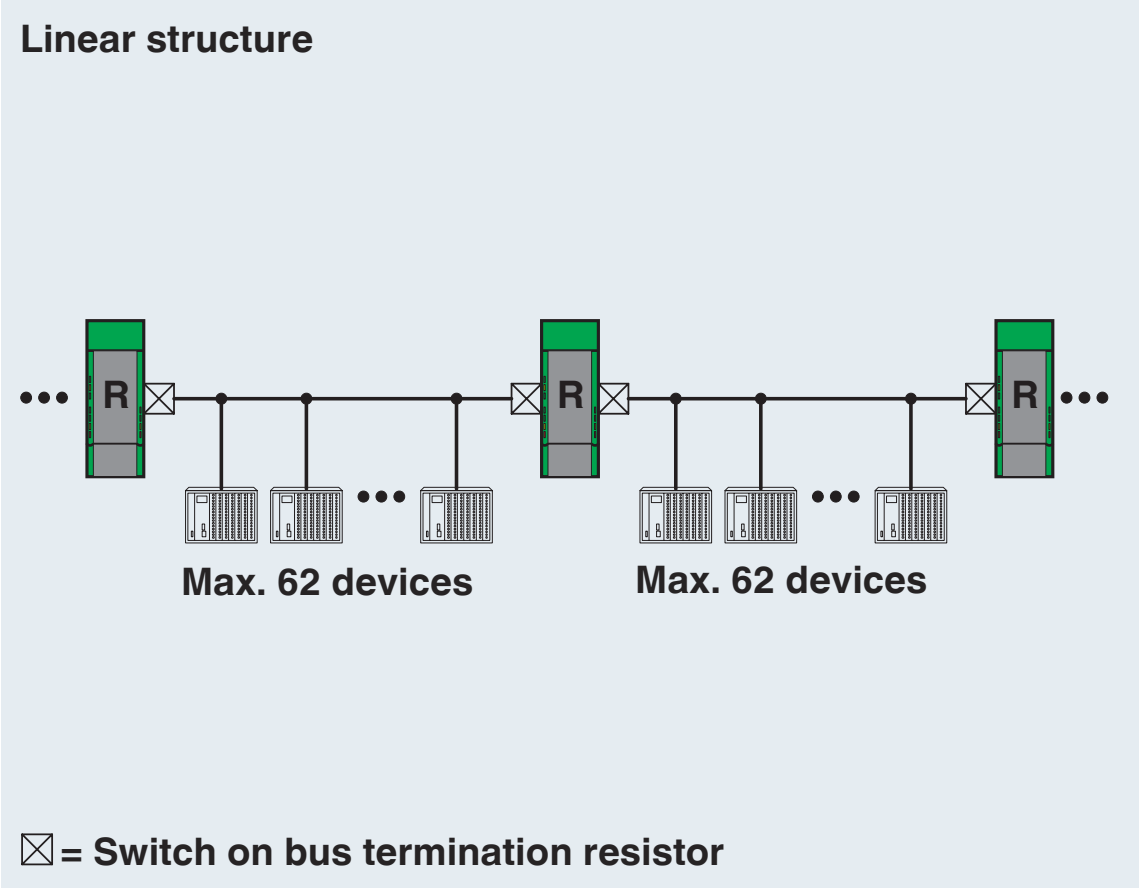
Star structure

Application drawing



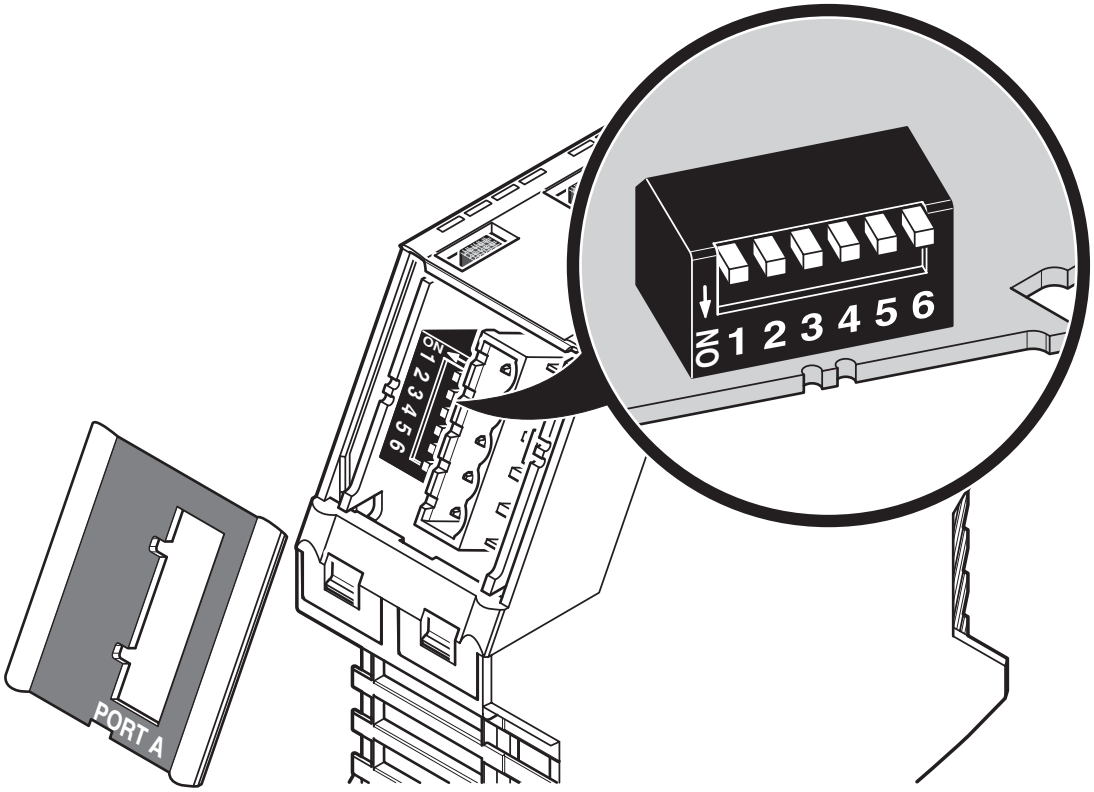
Tree structure

Application drawing



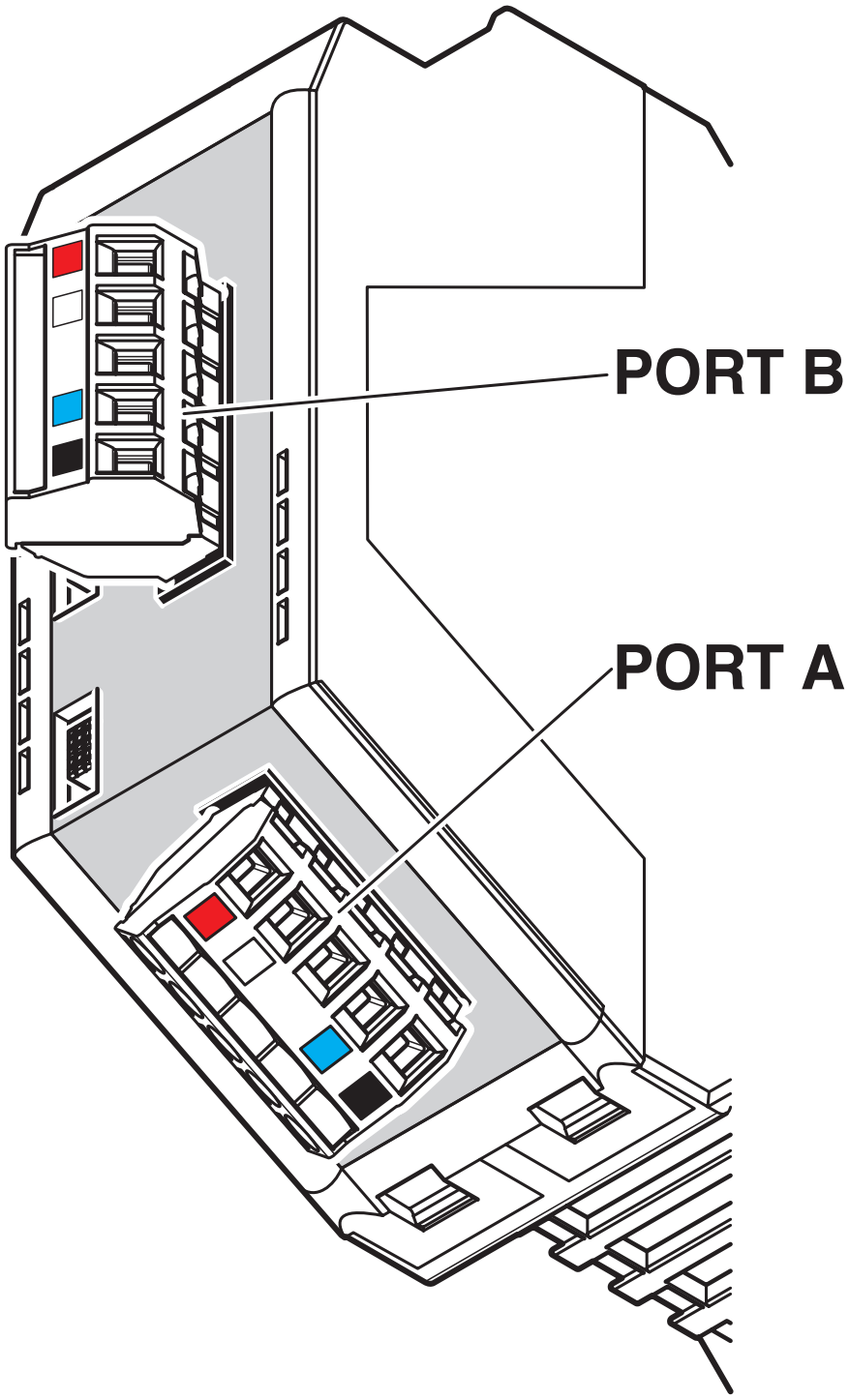
Line structure

Schematic diagram



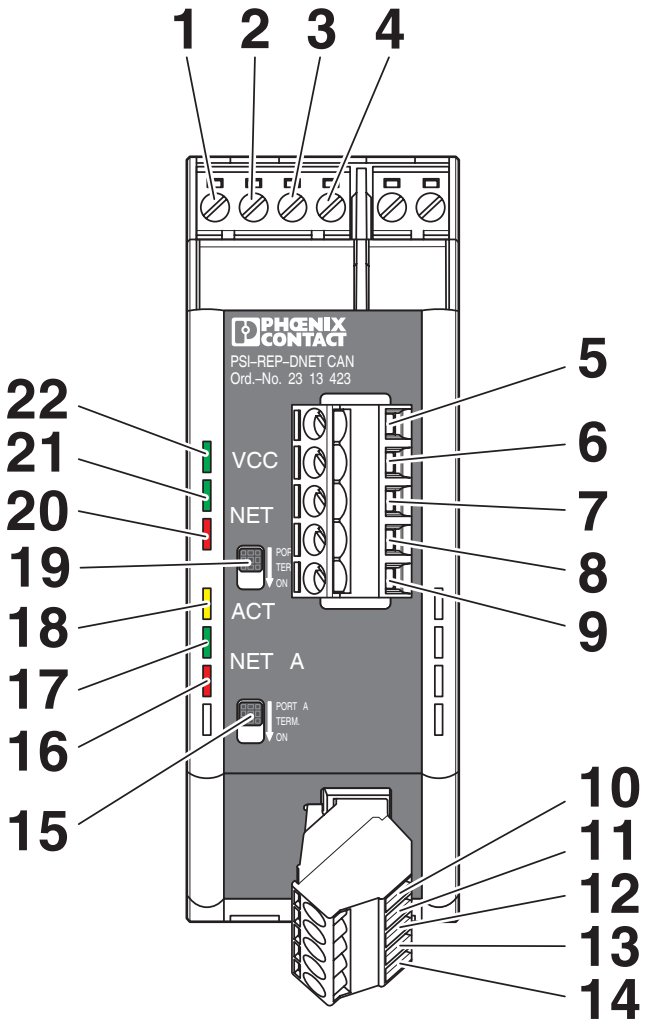
DIP switches

Schematic diagram



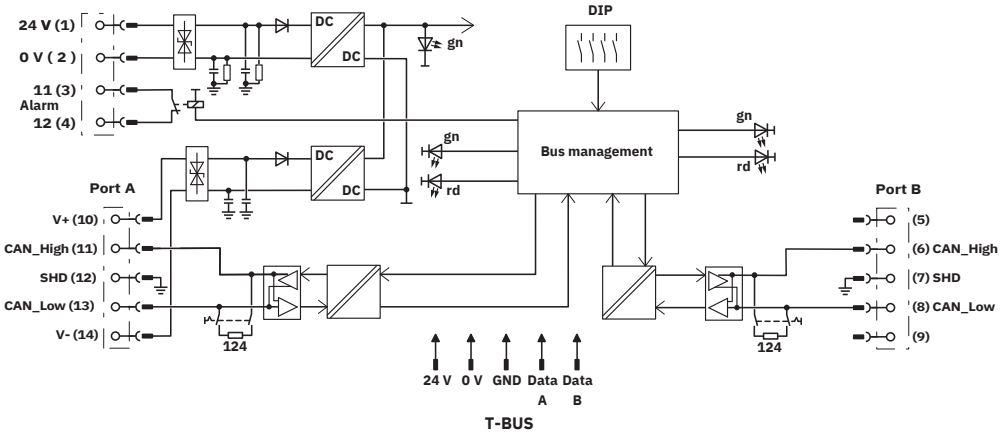
Device connections

Schematic diagram



Front view

Circuit diagram



Basic circuit diagram

Approvals

To download certificates, visit the product detail page: https://www.phoenixcontact.com/au/products/2313423

DNV GL
Approval ID: TAA00001KR

UL Listed
Approval ID: E238705

cUL Listed
Approval ID: E238705

Classifications

ECLASS

ECLASS-13.0	27242208

ETIM

ETIM 9.0	EC001423

UNSPSC

UNSPSC 21.0	32151700

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	8a76a96e-69ef-4528-8fc1-85c388799e92

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