

PSI-REP-DNET CAN - Repeater



2313423

<https://www.phoenixcontact.com/us/products/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	DN11
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

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	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)
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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

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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

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)
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Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²

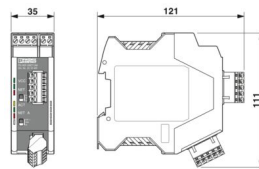
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Max. AWG conductor cross section, flexible	14
Min. AWG conductor cross section, flexible	24
Single-wire/terminal point, rigid AWG max.	14
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Transmission medium	2-wire twisted pair, shielded
Transmission method	CSMA/CA
File format/coding	Bit stuffing, NRZ

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

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 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

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UL, USA/Canada

Identification	508 Listed
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Corrosive gas test

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

Identification	DNV GL
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DNV GL 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

Noise immunity	EN 61000-6-2
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011

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

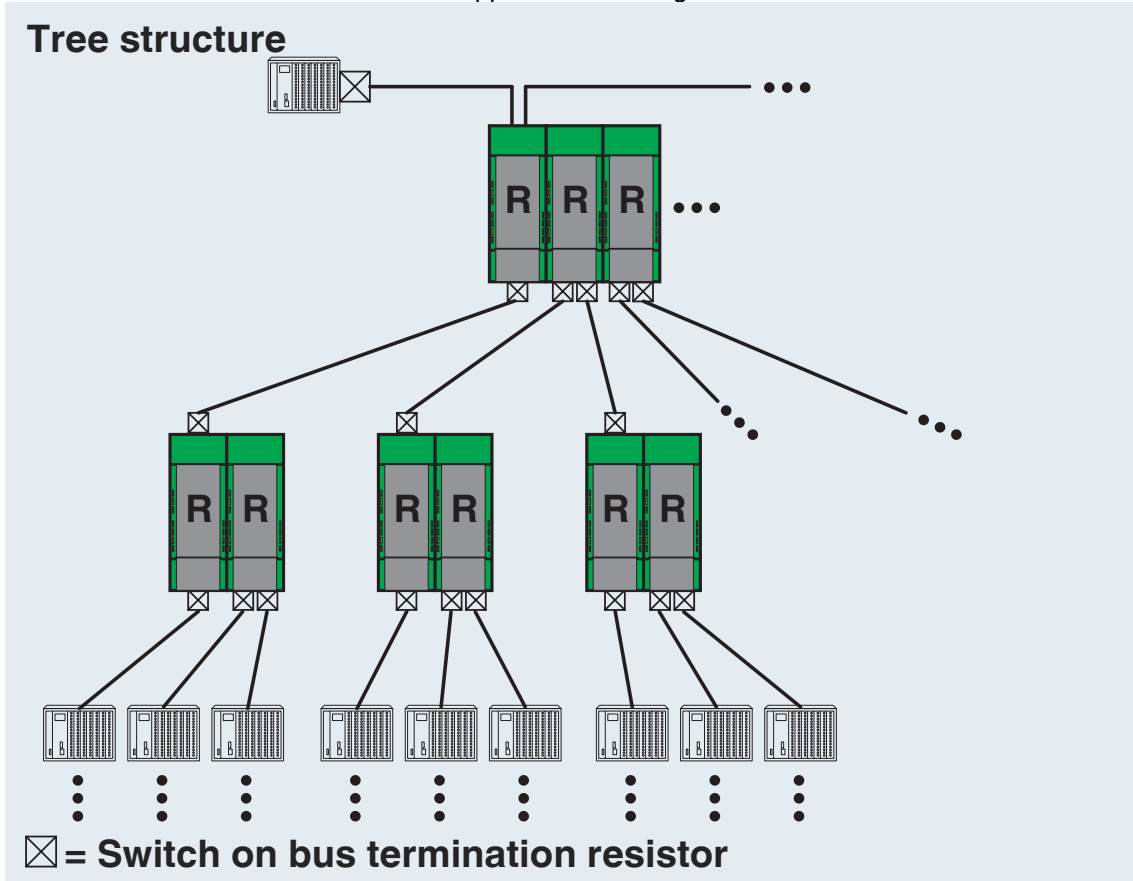
Mounting type	DIN rail mounting
Assembly note	The product can be snapped onto all 35 mm DIN rails in accordance with EN 60715.

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Drawings

Application drawing



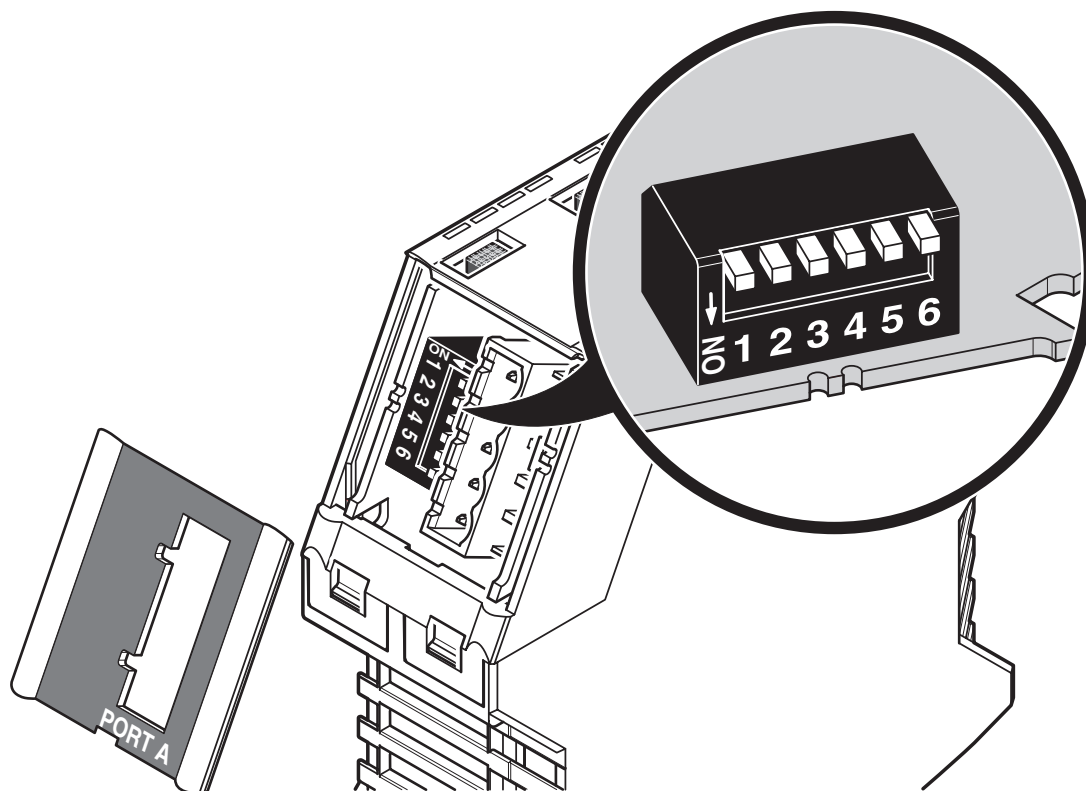
Tree structure

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Schematic diagram



DIP switches

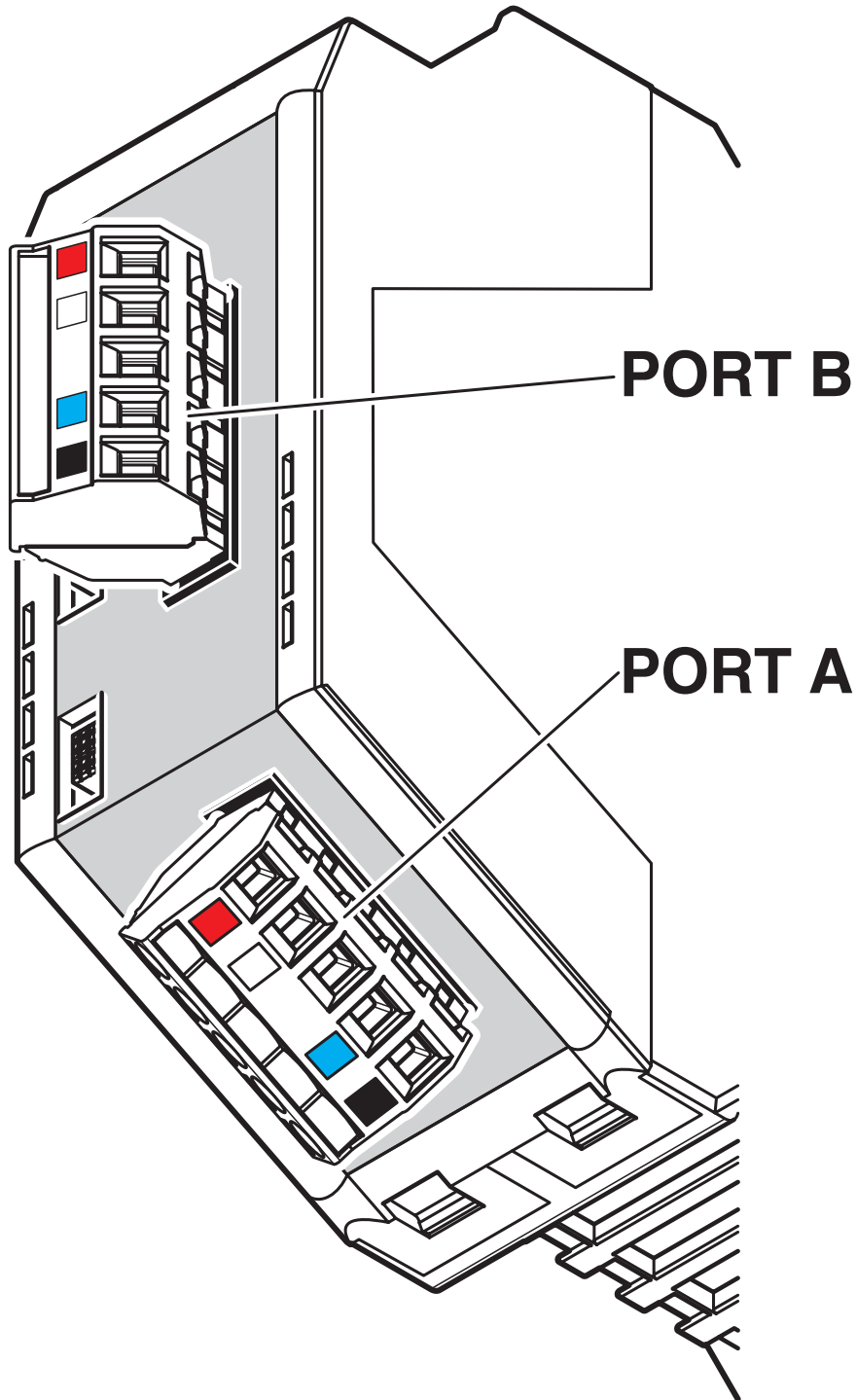
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Schematic diagram



Device connections

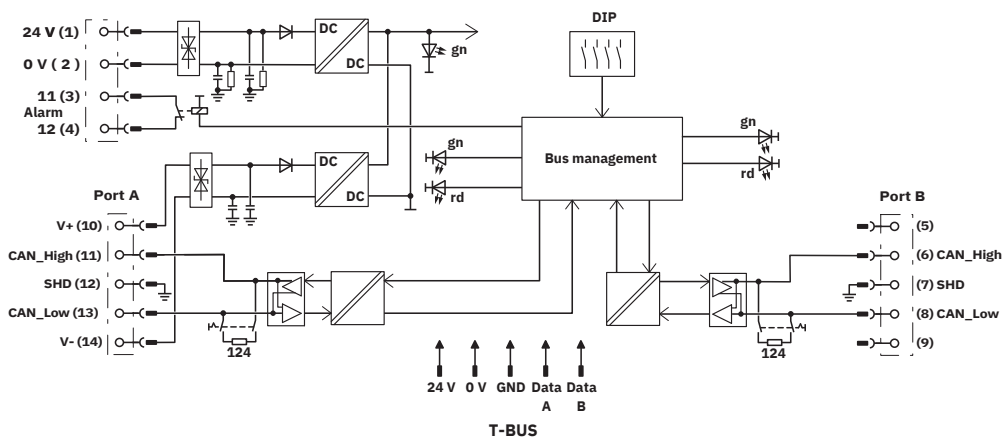
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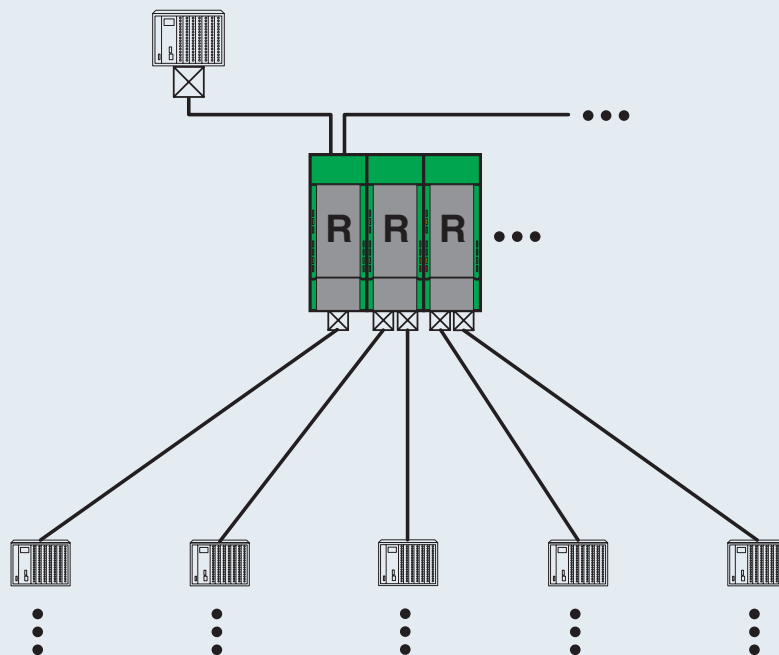
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Circuit diagram



Application drawing

Star structure



☒ = Switch on bus termination resistor

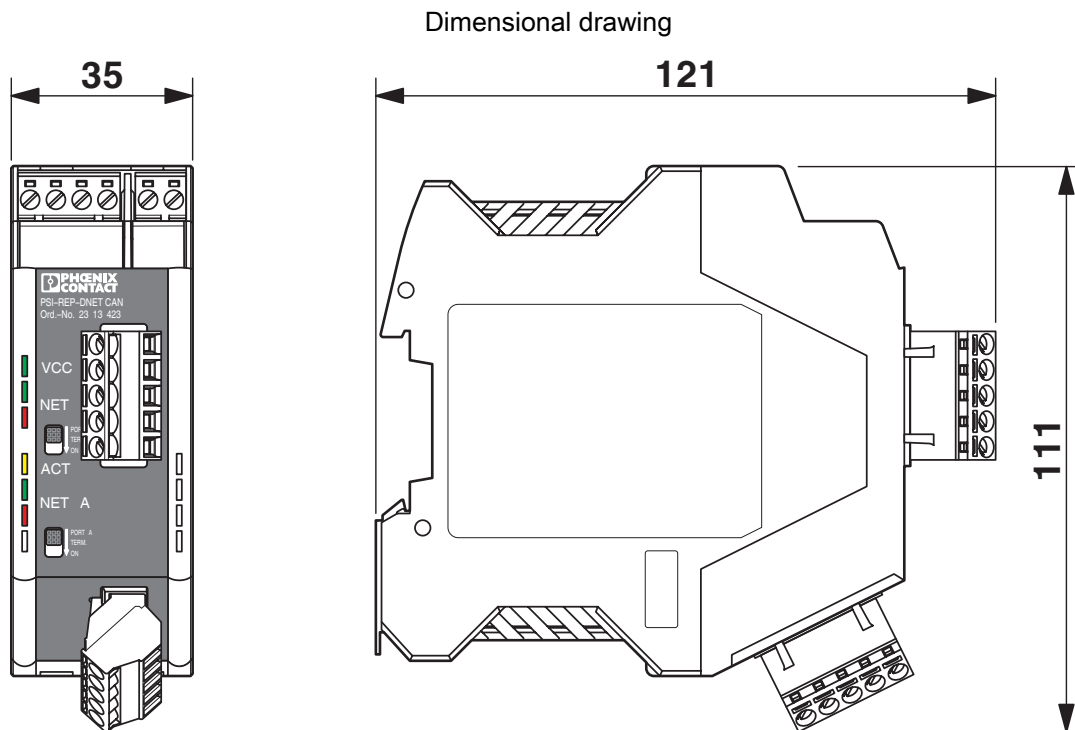
Star structure

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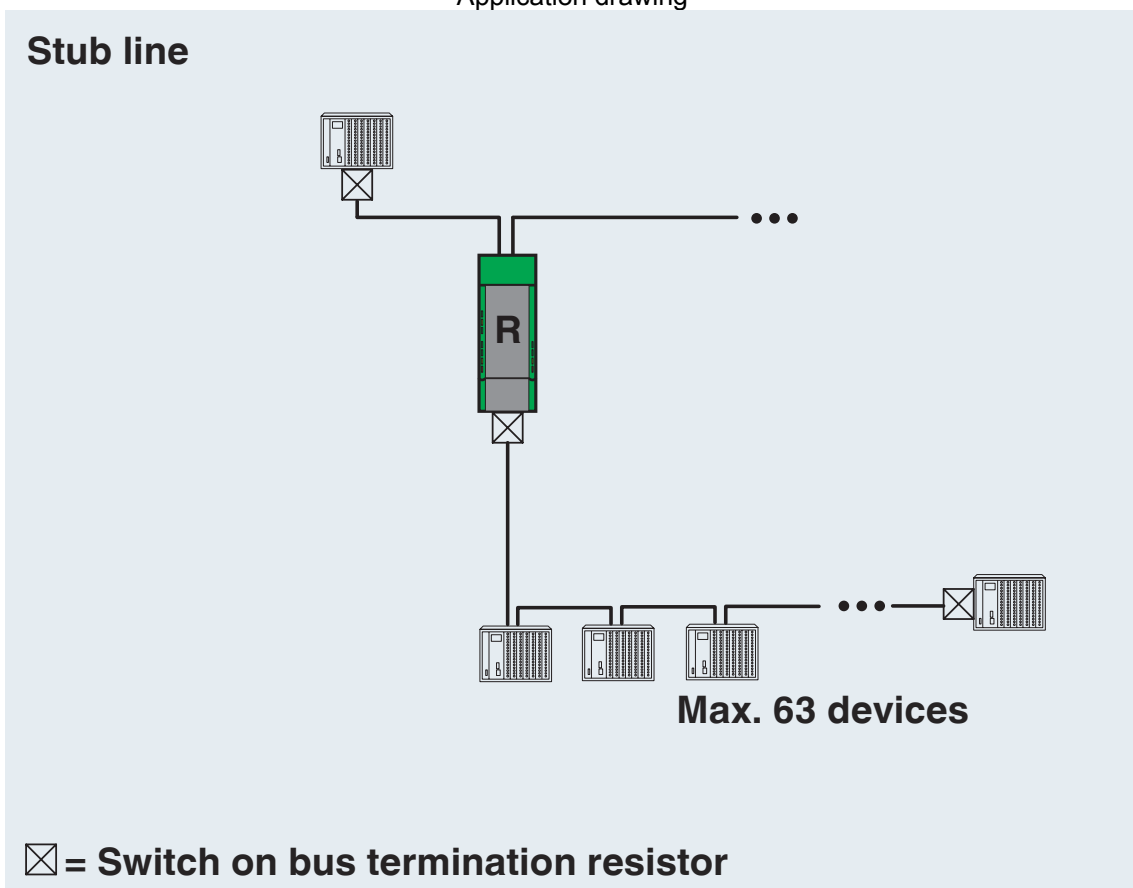
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Housing dimensions

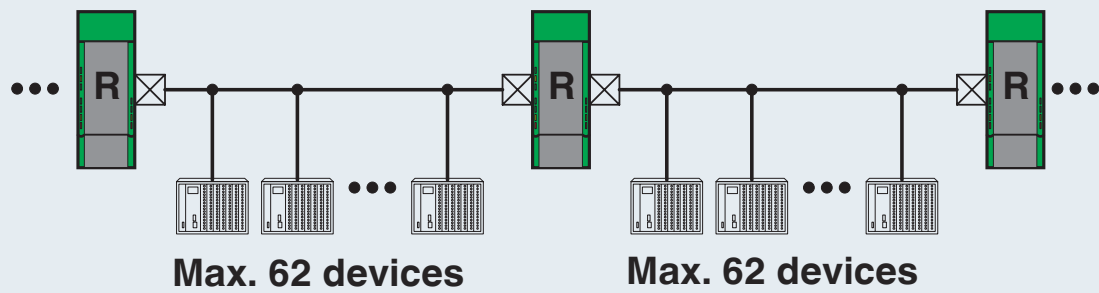
Application drawing



Branch line

Application drawing

Linear structure



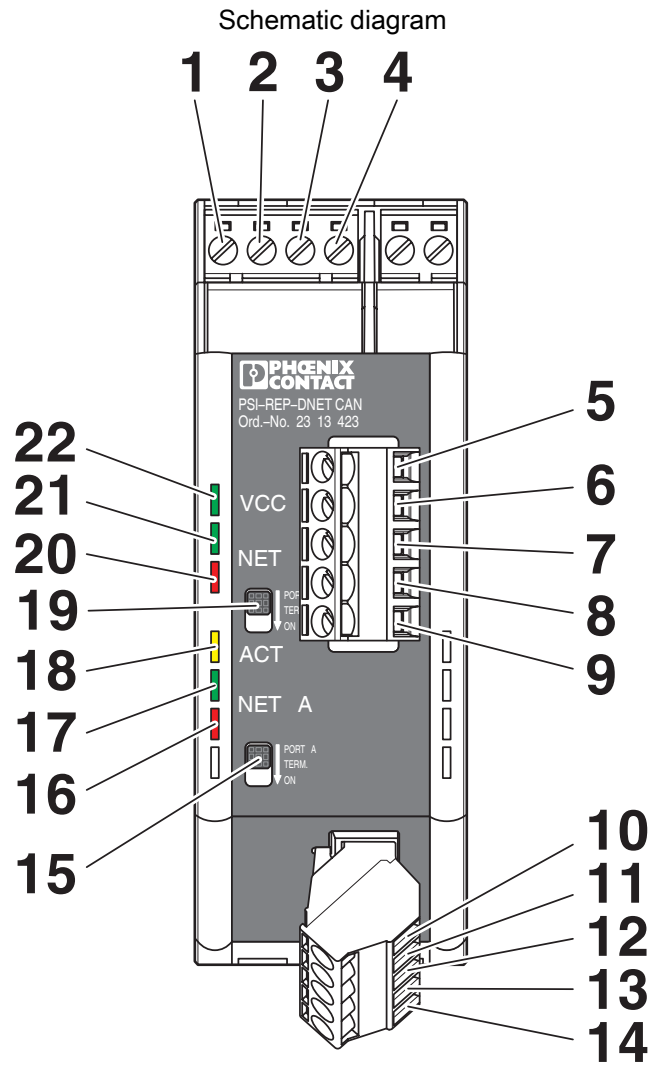
☒ = Switch on bus termination resistor

Line structure

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Front view

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Approvals

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EAC

Approval ID: TR TS_D_01871-19



DNV GL

Approval ID: TAA00001KR



UL Listed

Approval ID: FILE E 238705



cUL Listed

Approval ID: FILE E 238705

UAE-RoHS

Approval ID: 23-02-63194

cULus Listed

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Classifications

ECLASS

ECLASS-11.0	27242208
ECLASS-13.0	27242208
ECLASS-12.0	27242208

ETIM

ETIM 9.0	EC001423
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UNSPSC

UNSPSC 21.0	32151700
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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	8a76a96e-69ef-4528-8fc1-85c388799e92

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Accessories

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

2904614

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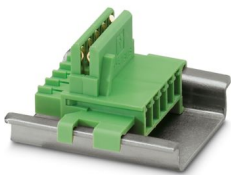


Primary-switched power supply, QUINT POWER, screw connection, DIN rail mounting, supply of devices possible via the TBUS DIN rail connector, protective coating, input: single-phase, output: 24 V DC/2.5 A

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

2709561

<https://www.phoenixcontact.com/us/products/2709561>



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

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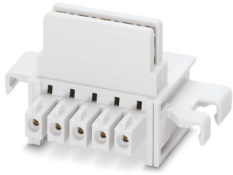
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ME 17,5 TBUS 1,5/ 5-ST-3,81 KMGY - DIN rail bus connectors

2713645

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DIN rail connector, color: light grey, nominal current: 8 A (parallel contacts), rated voltage (III/2): 125 V, number of positions: 5, product range: TBUS5-17,5..., 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

SAC-5P-920/... - Bus system cable

1511504

<https://www.phoenixcontact.com/us/products/1511504>



Bus system cable, CANopen[®], DeviceNet[™], 4-position, PUR halogen-free, red lilac RAL 4001, shielded, cable length: Free entry (0.5 ... 400 m)

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SUBCON-PLUS-CAN/90/PG/M12 - D-SUB bus connector

2902322

<https://www.phoenixcontact.com/us/products/2902322>



D-SUB connector, 9-pos., socket, with Pg-D-SUB pin, assignment: 2, 3, 5, 7; 9; two M12 cable entries (A-coded) under 90°. Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator.

SUBCON-PLUS-CAN/90/M12 - D-SUB bus connector

2902323

<https://www.phoenixcontact.com/us/products/2902323>



D-SUB connector, 9-pos., socket, assignment: 2, 3, 5, 7, 9; two M12 cable entries (A-coded) under 90°. Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator.

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SUBCON-PLUS-CAN/35/PG/M12 - D-SUB bus connector

2902324

<https://www.phoenixcontact.com/us/products/2902324>



D-SUB connector, 9-pos., socket, with Pg-D-SUB pin, assignment: 2, 3, 5, 7; 9; two M12 cable entries (A-coded) under 35°. Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator.

SUBCON-PLUS-CAN/35/M12 - D-SUB bus connector

2902325

<https://www.phoenixcontact.com/us/products/2902325>



D-SUB connector, 9-pos., socket, assignment: 2, 3, 5, 7, 9; two M12 cable entries (A-coded) under 35°. Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator.

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SUBCON-PLUS-CAN/AX/M12 - D-SUB bus connector

2902326

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D-SUB connector, 9-pos., socket, assignment: 2, 3, 5, 7, 9; two M12 cable entries (A-coded) under 180° (axial). Bus system: CAN, CANopen[®]. Termination resistor via separate M12 terminator.

SUBCON-PLUS-CAN - D-SUB bus connector

2744694

<https://www.phoenixcontact.com/us/products/2744694>



D-SUB connector, 9-pos. female connector, two 35° cable entries to one terminal block row, bus system: CAN, CANopen[®], SafetyBUS p up to 1 Mbps, termination resistor can be switched on via slide switch, pin assignment: 2, 3, 7; screw connection terminal blocks

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SUBCON-PLUS-CAN/PG - D-SUB bus connector

2708119

<https://www.phoenixcontact.com/us/products/2708119>



D-SUB connector, 9-pos. socket, 35° cable entry, bus system: CAN, CANopen®, SafetyBUS p up to 1 Mbps, with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 2, 3, 7, 9; screw terminal blocks

SUBCON-PLUS-CAN/AX - D-SUB bus connector

2306566

<https://www.phoenixcontact.com/us/products/2306566>



D-SUB connector, 9-pos. female connector, axial version with two cable entries, bus system: CAN, CANopen, SafetyBUS p; pin assignment: 2, 3, 7; screw connection terminal blocks

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