PSI-REP-DNET CAN - Repeater

2313423

https://www.phoenixcontact.com/gb/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	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

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 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)
Conductor cross section flexible max.	2.5 mm²
Conductor cross section flexible min.	0.2 mm²
Conductor cross section, rigid max.	2.5 mm²
Conductor cross section, rigid min.	0.2 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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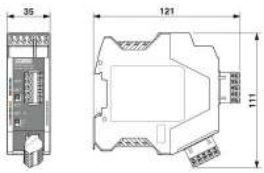
Dimensions

Dimensional drawing	
Width	35 mm
Height	111 mm
Depth	121 mm

Material specifications

Material	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

ATEX

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

UKEX

Identification	Ⓔx 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

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

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

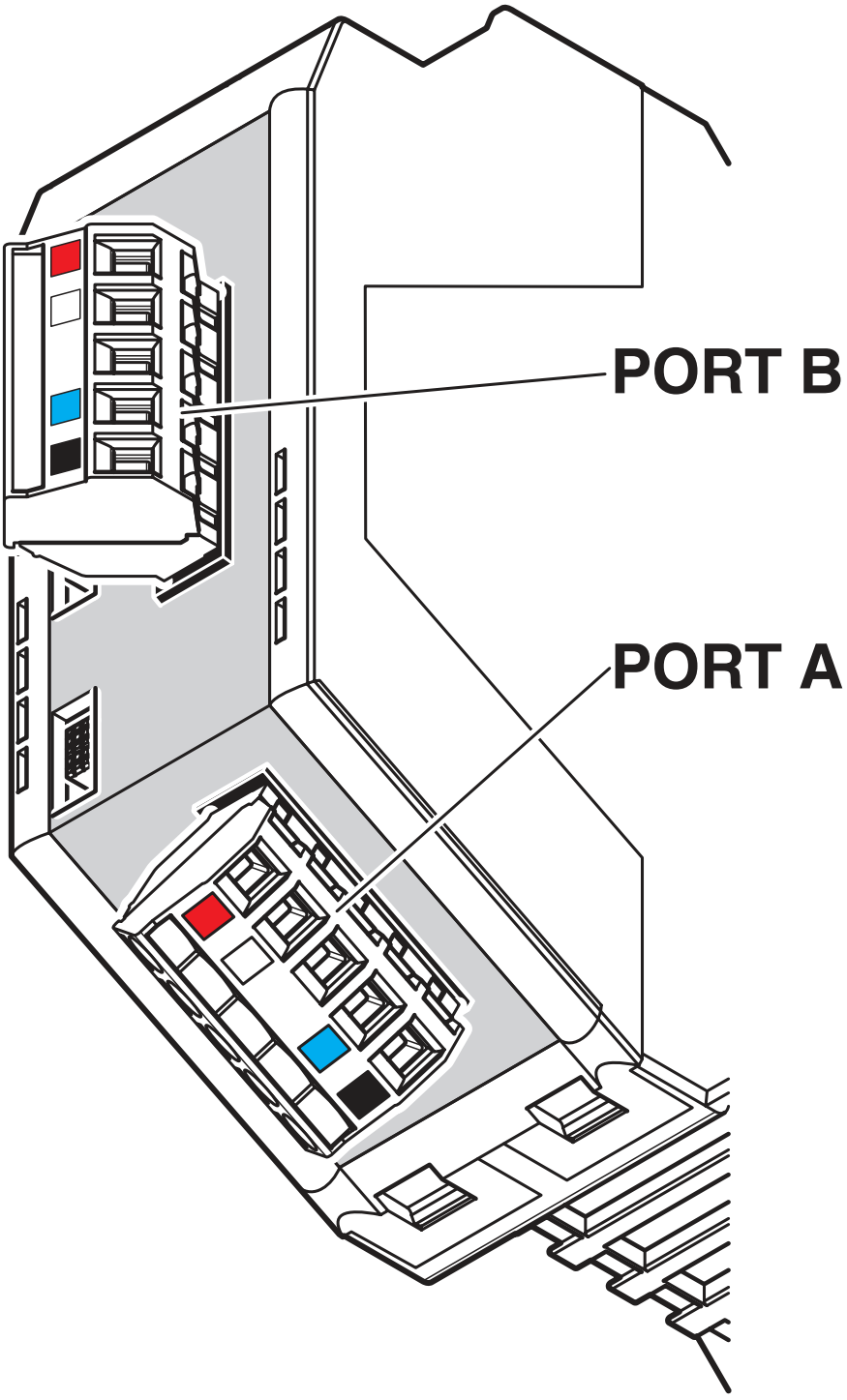
Free from substances that could impair the application of coating	in accordance with VW-AUDI-Seat central standard P-VW 3.10.7 57 65 0

Mounting

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

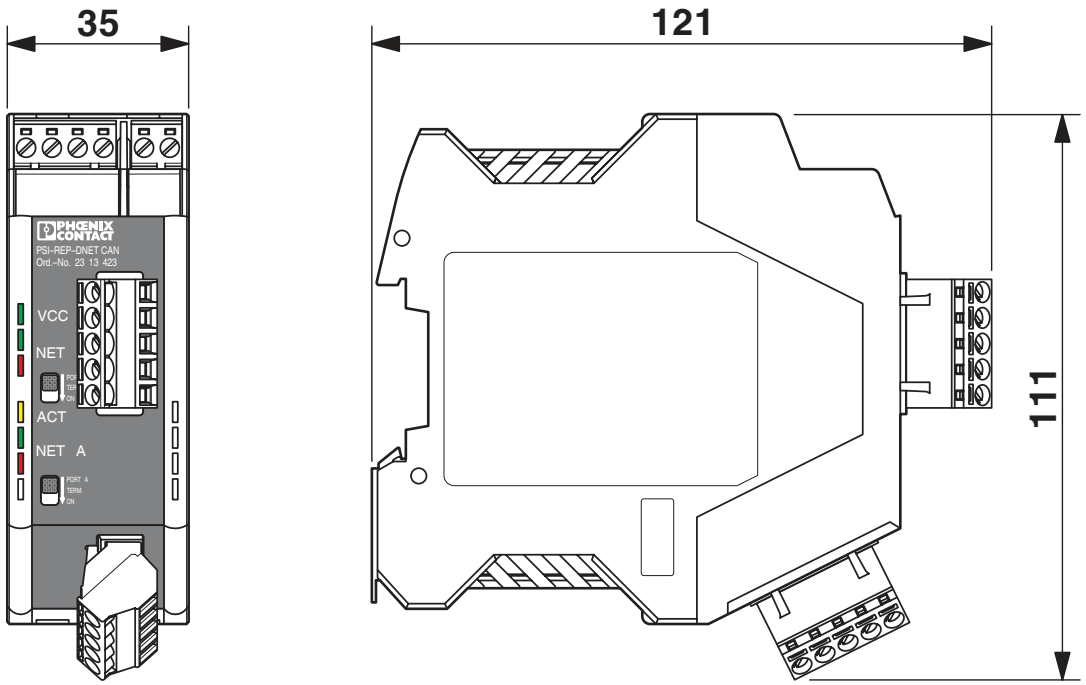
Drawings

Schematic diagram



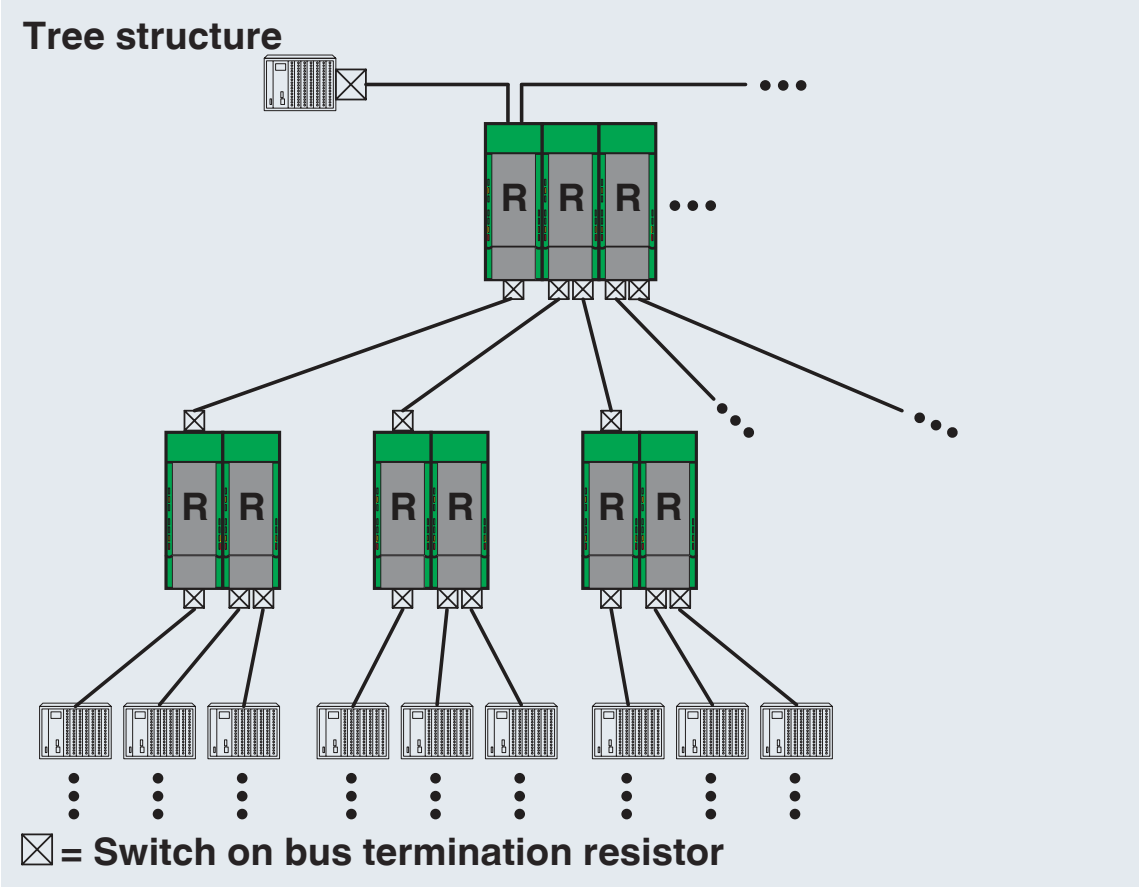
Device connections

Dimensional drawing



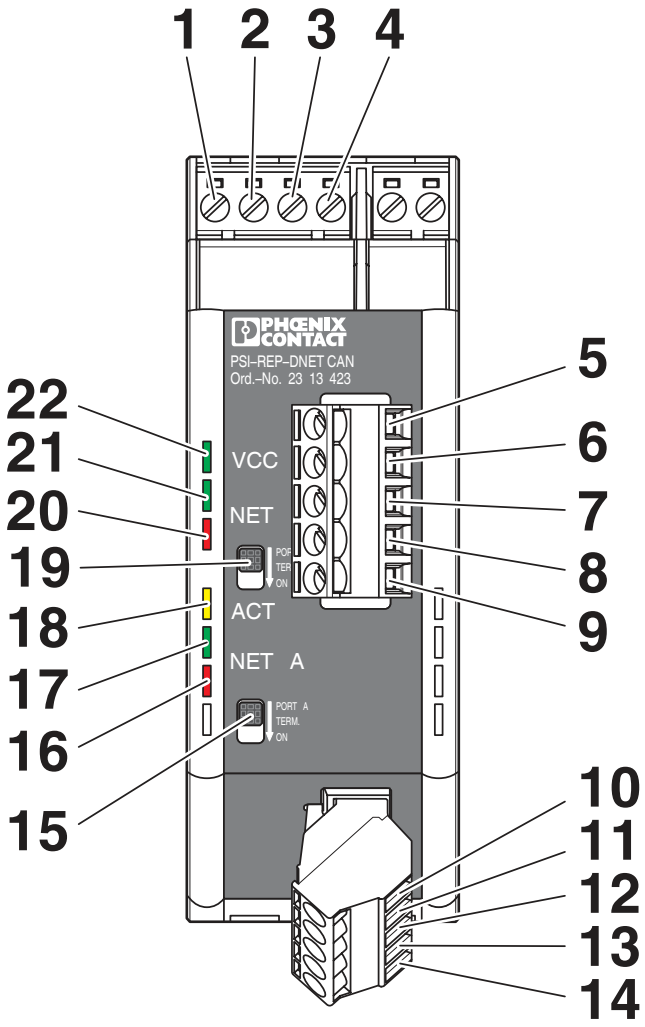
Housing dimensions

Application drawing



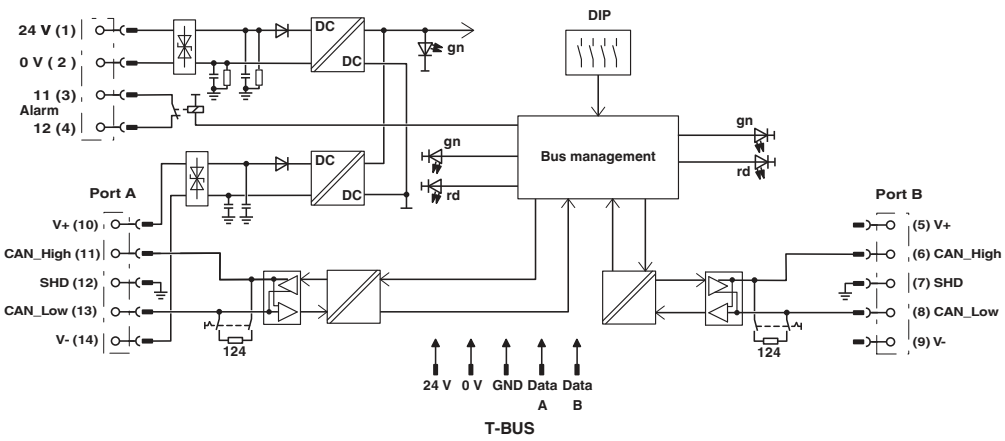
Tree structure

Schematic diagram

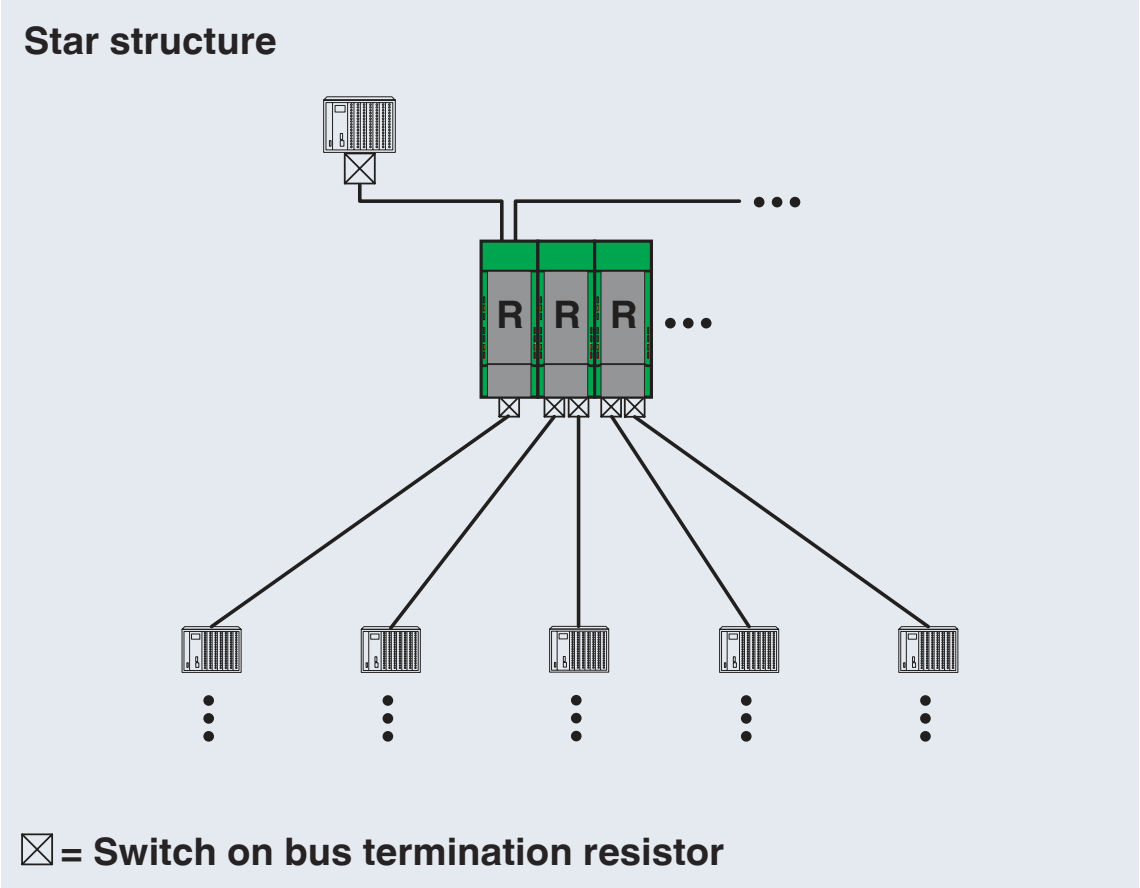


Front view

Circuit diagram

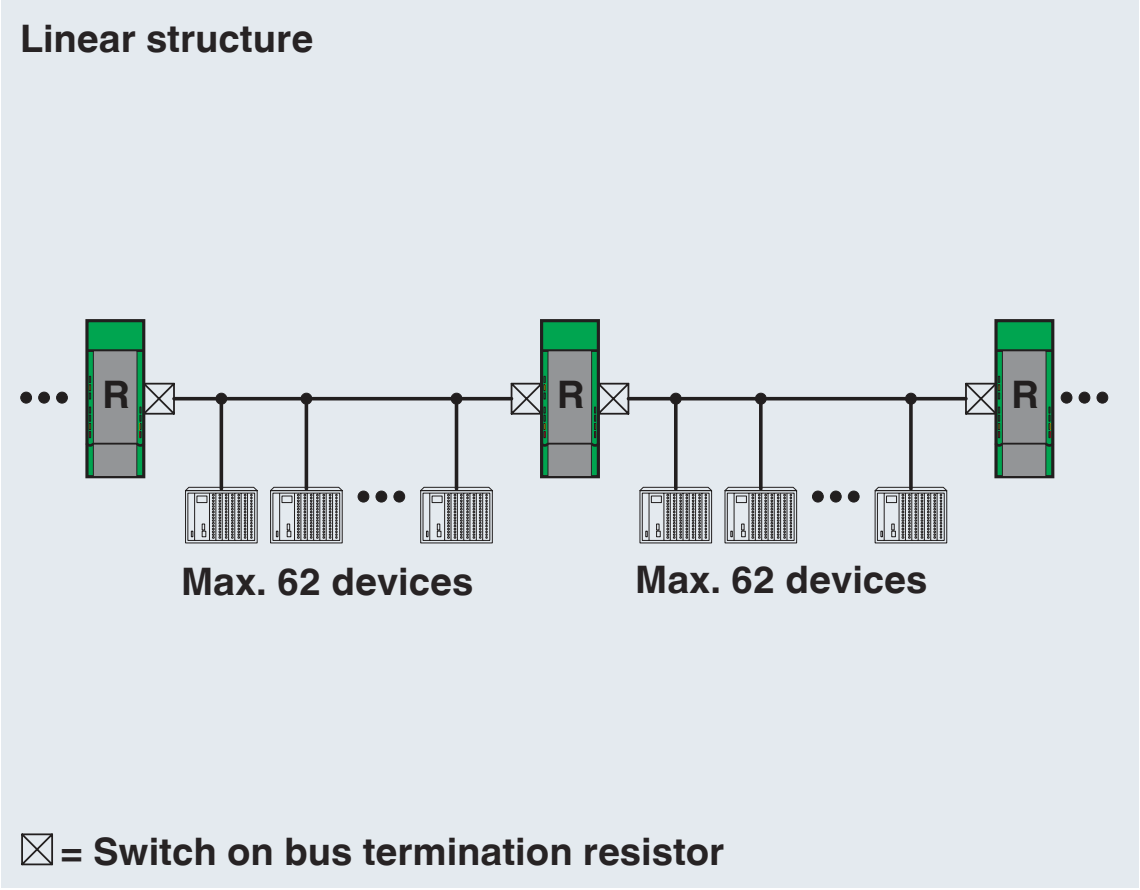


Application drawing



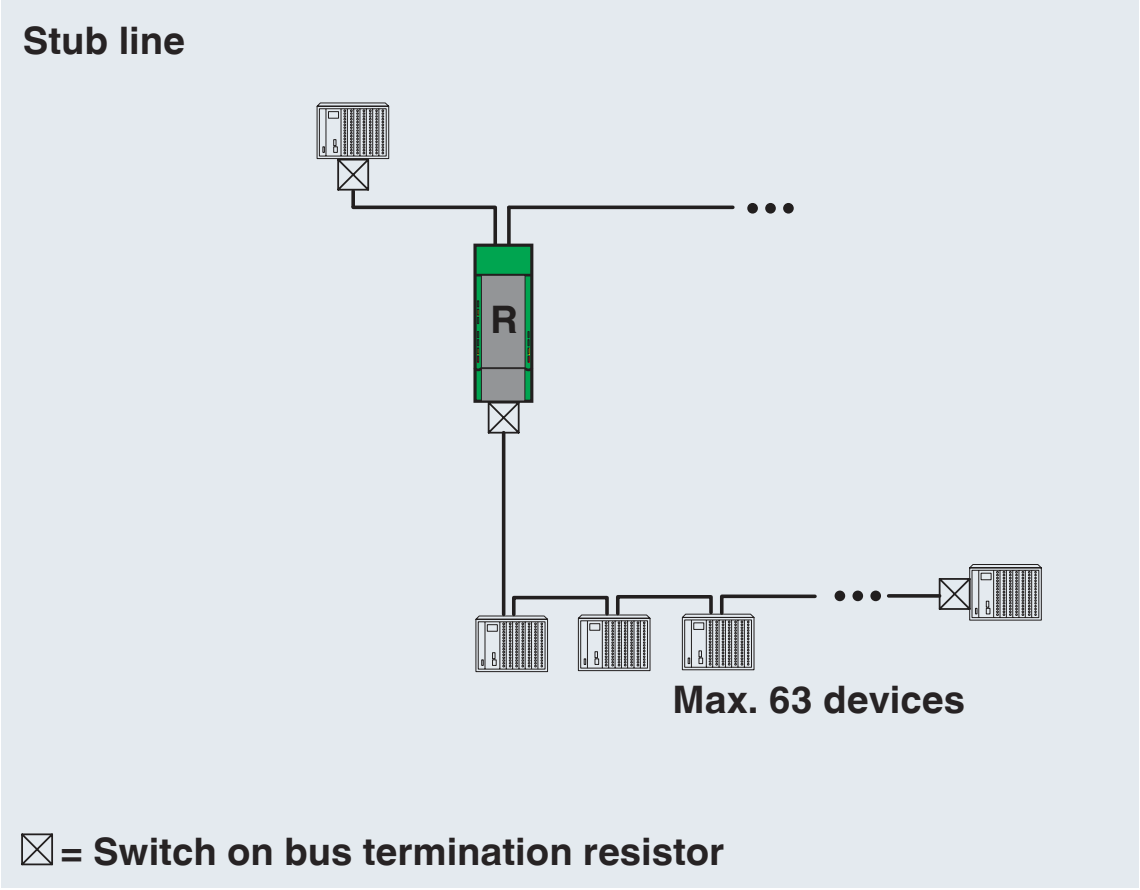
Star structure

Application drawing



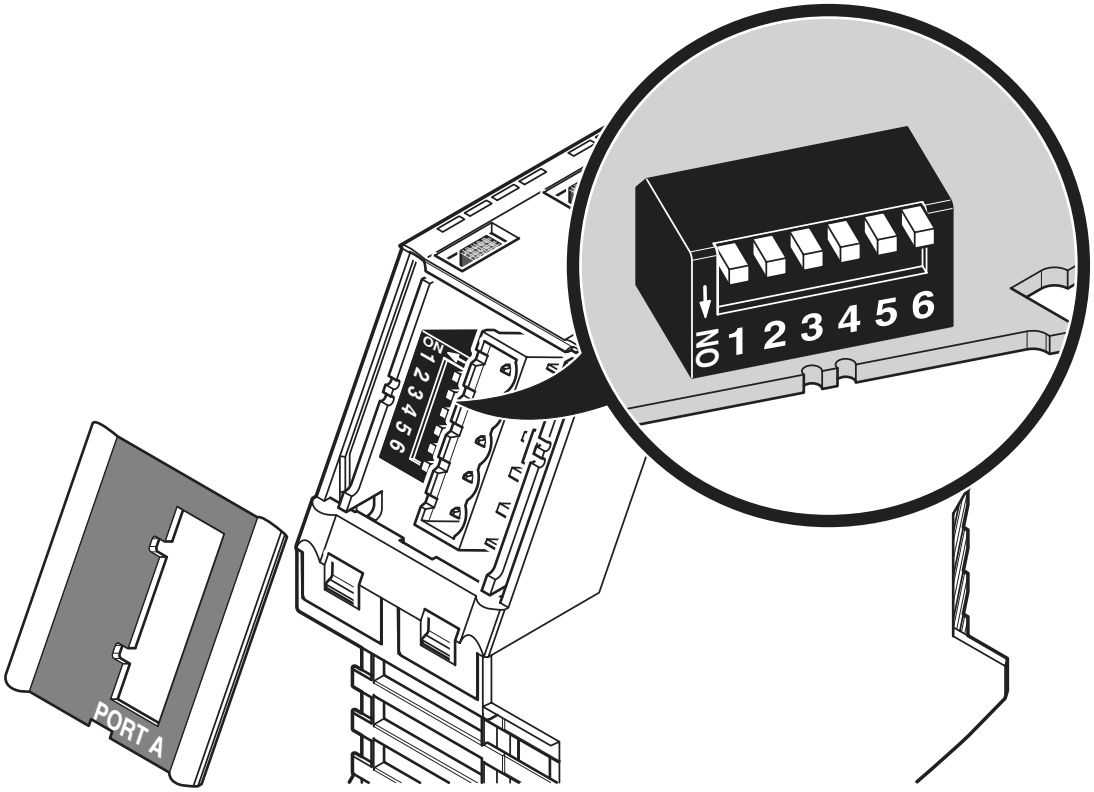
Line structure

Application drawing



Branch line

Schematic diagram



DIP switches

Approvals

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

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

Classifications

ECLASS

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

ETIM

ETIM 8.0	EC001423

UNSPSC

UNSPSC 21.0	32151700

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”

Accessories

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

2904614

https://www.phoenixcontact.com/gb/products/2904614

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/gb/products/2709561

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

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

2713645

https://www.phoenixcontact.com/gb/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

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

1511504

https://www.phoenixcontact.com/gb/products/1511504

Bus system cable, CANopen®, DeviceNet™, 4-position halogen-free, shielded, cable length: Free entry (0.5 ... 400 m)

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

2902322

https://www.phoenixcontact.com/gb/products/2902322

D-SUB plug, 9-pos., socket, with PG-D-SUB pin, assignment: 2, 3, 5, 6, 7, 9; two 90° cable entries M12 (A-coded). Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator.

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

2902323

https://www.phoenixcontact.com/gb/products/2902323

D-SUB plug, 9-pos., socket, assignment: 2, 3, 5, 6, 7, 9; two 90° cable entries M12 (A-coded). Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator. Long version; S7-compatible.

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

2902324

https://www.phoenixcontact.com/gb/products/2902324

D-SUB plug, 9-pos., socket, with PG-D-SUB pin, assignment: 2, 3, 5, 6, 7, 9; two 35° cable entries M12 (A-coded). Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator.

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

2902325

https://www.phoenixcontact.com/gb/products/2902325

D-SUB plug, 9-pos., socket, assignment: 2, 3, 5, 6, 7, 9; two 35° cable entries M12 (A-coded). Bus system: CAN, CANopen®. Termination resistor via separate M12 terminator.

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

2902326

https://www.phoenixcontact.com/gb/products/2902326

D-SUB plug, 9-pos., socket, assignment: 2, 3, 5, 6, 7, 9; two M12 cable glands (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/gb/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

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

2708119

https://www.phoenixcontact.com/gb/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/gb/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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