

Repeater - PSI-REP-DNET CAN - 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



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 428392
GTIN	4046356428392

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	35 mm
Height	111 mm
Depth	121 mm

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Technical data

Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	30 % ... 95 % (non-condensing)
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Degree of protection	IP20
Noise immunity	EN 61000-6-2

General

Bit delay	One telegram length (EXTENDED)
Bit distortion, input	± 35 %
Bit distortion, output	< 6.25 %
Electrical isolation	according to EN 60950
	VCC // TBUS // CAN A // CAN B
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011
Net weight	233.466 g
Housing material	PA 6.6-FR
Color	green
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))
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%)

Power supply

Nominal supply voltage	24 V DC
Supply voltage range	10 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Max. current consumption	80 mA
Typical current consumption	55 mA (24 V DC)

Interfaces

Interface 1	CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen
Operating mode	Semi-duplex
No. of ports	2 (CAN_High / CAN_Low)
Connection method	COMBICON plug-in screw terminal block
File format/coding	Bit stuffing, NRZ
Transmission medium	2-wire twisted pair, shielded

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Interfaces

Transmission method	CSMA/CA
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 solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14
Interface 2	CAN interface, in accordance with ISO/IS 11898 for DeviceNet, CAN, CANopen
Operating mode	Semi-duplex
No. of ports	2 (CAN_High / CAN_Low)
Connection method	COMBICON plug-in screw terminal block
File format/coding	Bit stuffing, NRZ
Transmission medium	2-wire twisted pair, shielded
Transmission method	CSMA/CA
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 solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	14

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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Digital outputs

Output name	Relay output
Number of outputs	1
Contact type	N/O contact
Minimum switching voltage	10 V DC
Maximum switching voltage	30 V DC

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Technical data

Digital outputs

Limiting continuous current	500 mA
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Conformance/approvals

Designation	CE
Identification	CE-compliant
Designation	EAC
Identification	EAC
Designation	ATEX
Identification	# II 3 G Ex nA IIC T4 Gc X
Additional text	Please follow the special installation instructions in the documentation!
Designation	UL, USA/Canada
Identification	508 Listed
Designation	Corrosive gas test
Identification	ISA-S71.04-1985 G3 Harsh Group A
Designation	Shipbuilding
Identification	DNV GL
Temperature	B
Humidity	A
Vibration	A
EMC	B
Enclosure	Required protection according to the Rules shall be provided upon installation on board

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Type of test	Free fall in acc. with IEC 60068-2-32
Test result	1 m
Type of test	Vibration resistance in acc. with EN 60068-2-6/IEC 60068-2-6
Test result	5g, 10...150 Hz, 2.5 h, in XYZ direction
Type of test	Shock in acc. with EN 60068-2-27/IEC 60068-2-27
Test result	15g, 11 ms period, half-sine shock pulse
Noise emission	EN 55011
Noise immunity	EN 61000-6-2
Free from substances that could impair the application of coating	according to P-VW 3.10.7 57 65 0 VW-AUDI-Seat central standard
Standards/regulations	EN 61000-4-2
Contact discharge	± 6 kV
Standards/regulations	EN 61000-4-3
Frequency range	80 MHz ... 3 GHz
Standards/regulations	EN 61000-4-4
Comments	Criterion B
Standards/regulations	EN 61000-4-5
Signal	± 1 kV

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Standards and Regulations

Standards/regulations	EN 55011
	EN 61000-4-6
Designation	Air clearances and creepage distances
Standards/regulations	DIN EN 50178, DIN EN 60950
Electrical isolation	according to EN 60950

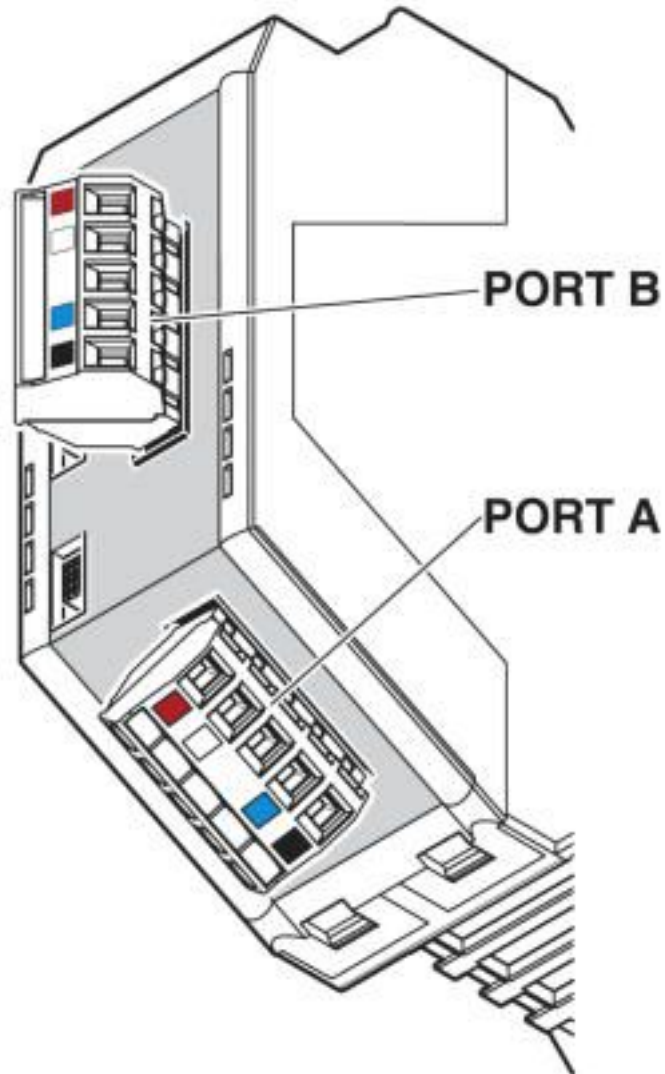
Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

Drawings

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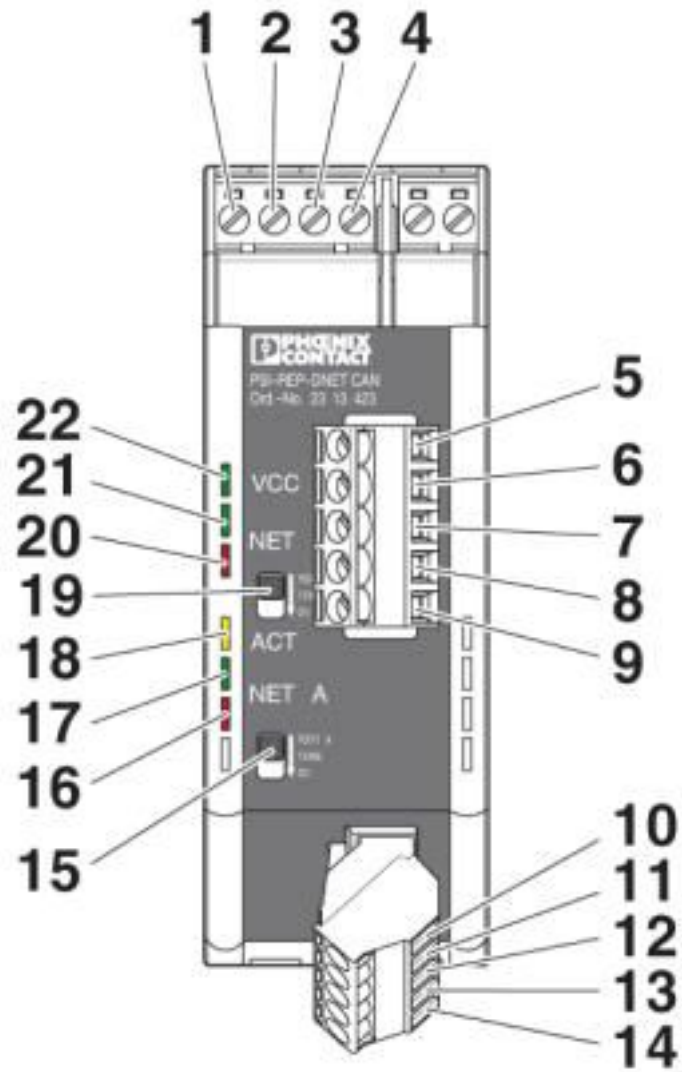
Schematic diagram



Device connections

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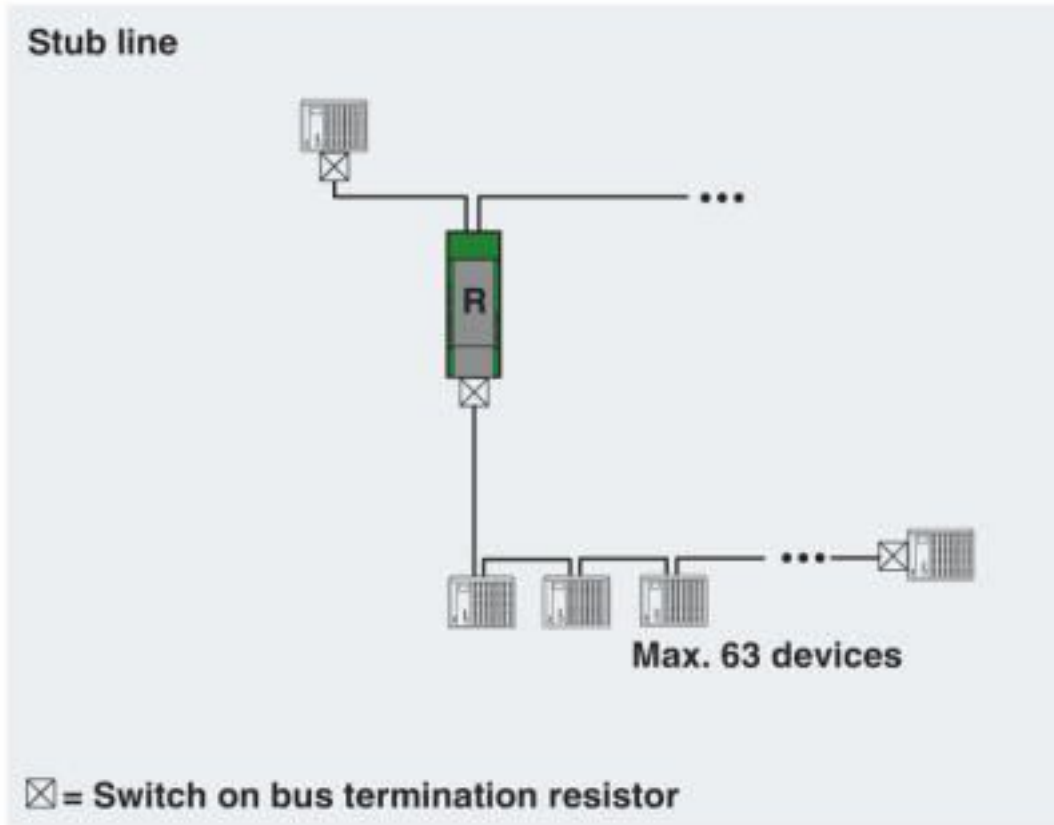
Schematic diagram



Front view

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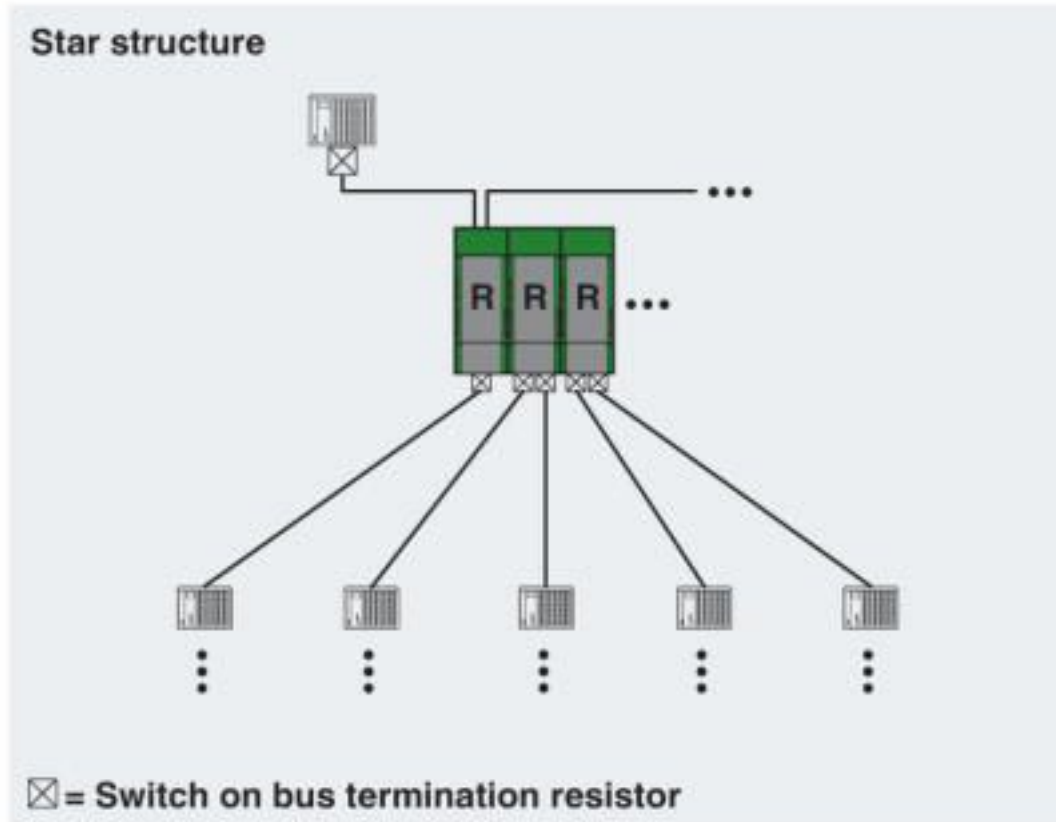
Application drawing



Branch line

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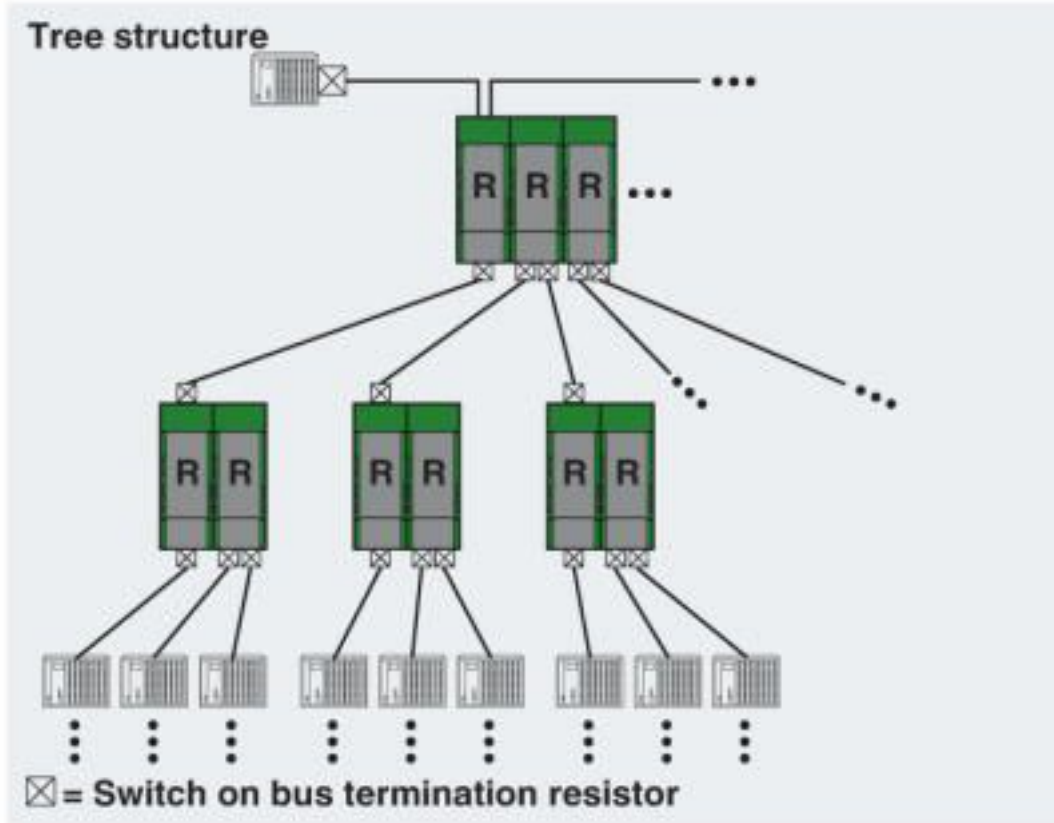
Application drawing



Star structure

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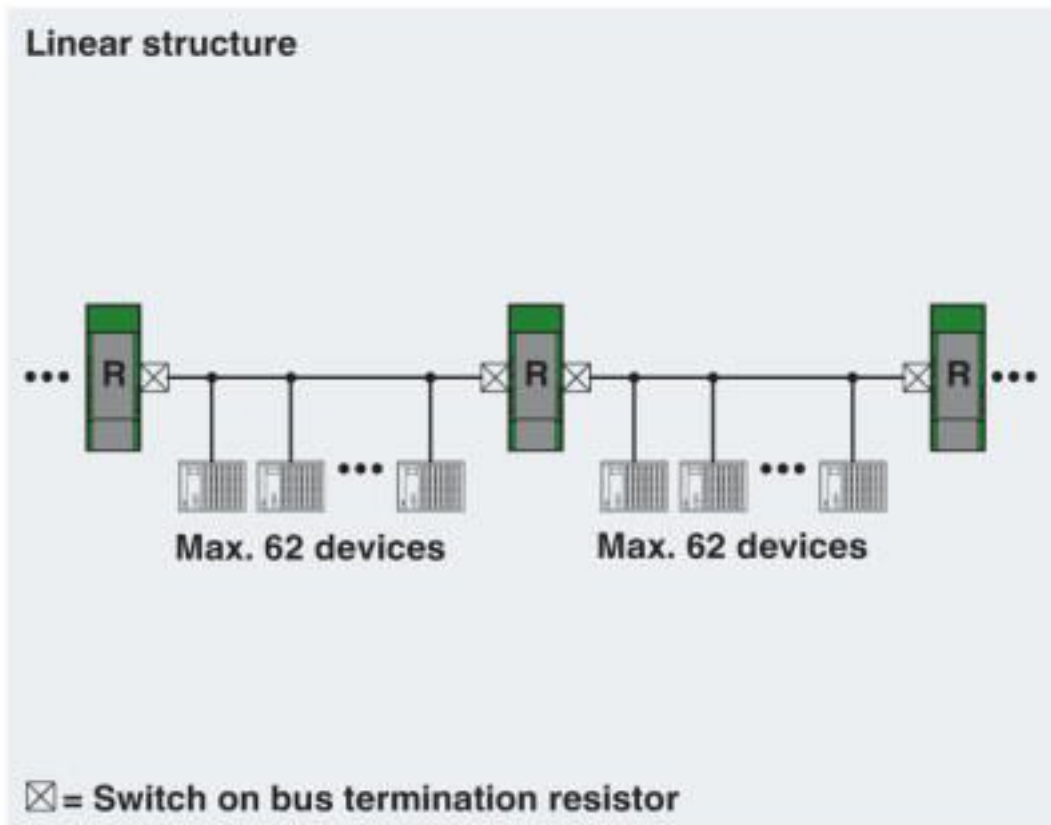
Application drawing



Tree structure

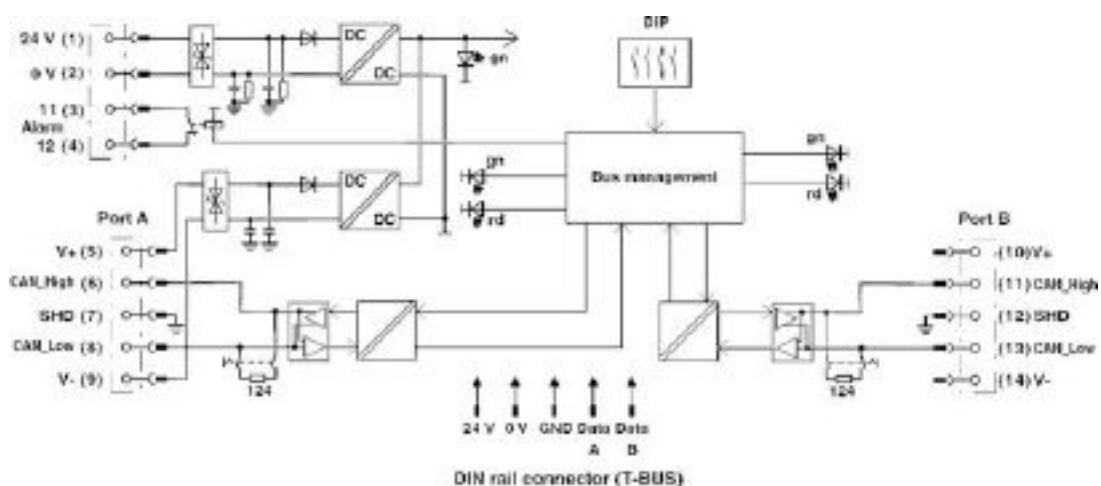
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Application drawing



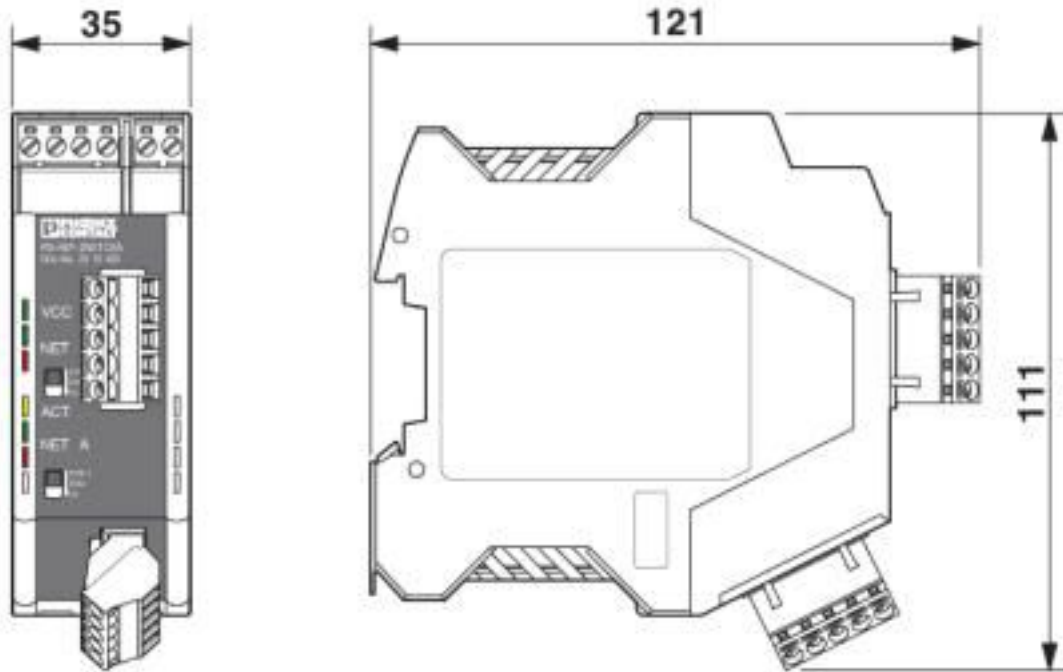
Line structure

Block diagram

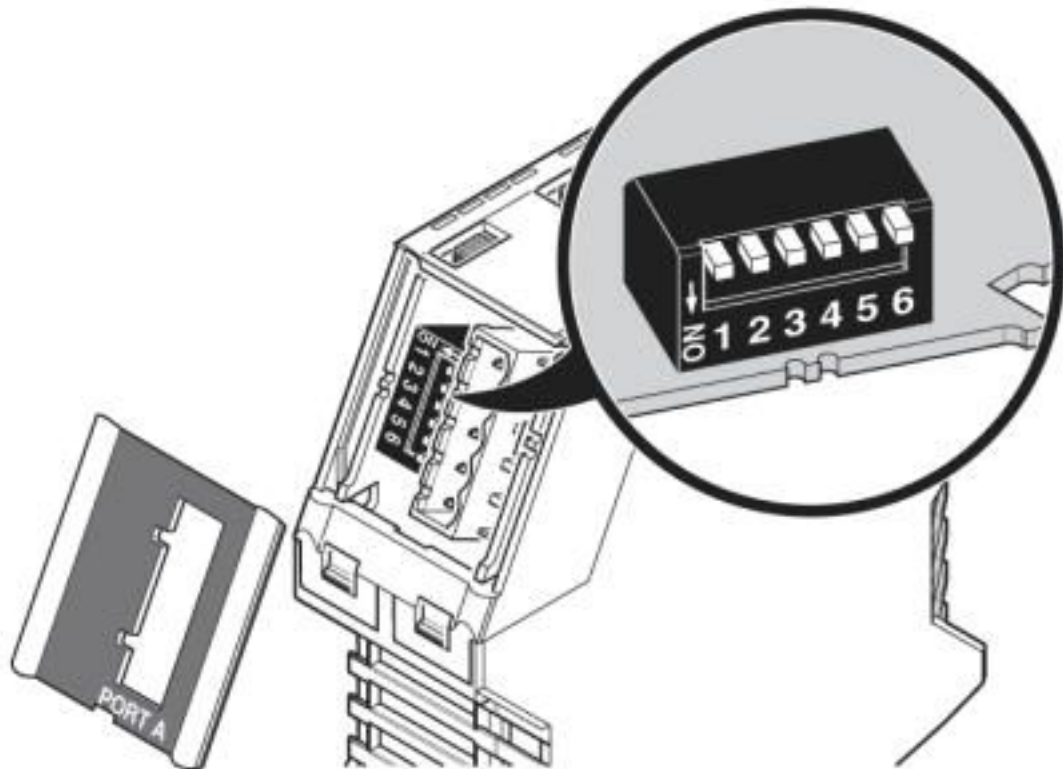


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Dimensional drawing



Schematic diagram



DIP switches

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Classifications

eCl@ss

eCl@ss 10.0.1	27242208
eCl@ss 4.0	27240400
eCl@ss 4.1	27240400
eCl@ss 5.0	27242700
eCl@ss 5.1	27242700
eCl@ss 6.0	27242200
eCl@ss 7.0	27242208
eCl@ss 8.0	27242208
eCl@ss 9.0	27242208

ETIM

ETIM 3.0	EC000698
ETIM 4.0	EC001423
ETIM 5.0	EC001423
ETIM 6.0	EC001423
ETIM 7.0	EC001423

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39122114
UNSPSC 18.0	39122114
UNSPSC 19.0	39122114
UNSPSC 20.0	39122114
UNSPSC 21.0	39122114

Approvals

Approvals

Approvals

DNV GL / UL Listed / cUL Listed / EAC / EAC / cULus Listed

Ex Approvals

ATEX

Approval details

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Approvals

DNV GL		https://approvalfinder.dnvgl.com/	TAA00001KR
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UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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EAC			EAC-Zulassung
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EAC			RU *- DE.A*30.B.01735
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cULus Listed			
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Accessories

Accessories

Data cable by the meter

Bus system cable - SAC-5P-920/... - 1511504



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

Data plug

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Accessories

D-SUB bus connector - SUBCON-PLUS-CAN/90/PG/M12 - 2902322



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

D-SUB bus connector - SUBCON-PLUS-CAN/90/M12 - 2902323



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

D-SUB bus connector - SUBCON-PLUS-CAN/35/PG/M12 - 2902324



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

D-SUB bus connector - SUBCON-PLUS-CAN/35/M12 - 2902325



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

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

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Accessories

D-SUB bus connector - SUBCON-PLUS-CAN - 2744694



D-SUB connector, 9-pos. female connector, two cable entries < 35° 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

D-SUB bus connector - SUBCON-PLUS-CAN/PG - 2708119



D-SUB connector, 9-pos. socket, cable entry < 35°, 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

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

DIN rail connector

DIN rail bus connectors - ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



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

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

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