

## 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.

### 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
Weight per Piece (excluding packing)	240.000 g
Custom tariff number	85176200
Country of origin	Germany

### Technical data

#### Note

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

# Repeater - PSI-REP-DNET CAN - 2313423

## Technical data

### Dimensions

Width	35 mm
Height	111 mm
Depth	121 mm

### 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 manufacturer's declaration)
Degree of protection	IP20
Noise immunity	EN 61000-6-2

### Serial interface

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
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 <sup>2</sup>
Conductor cross section solid max.	2.5 mm <sup>2</sup>
Conductor cross section flexible min.	0.2 mm <sup>2</sup>
Conductor cross section flexible max.	2.5 mm <sup>2</sup>
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

# Repeater - PSI-REP-DNET CAN - 2313423

## Technical data

### Serial interface

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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
Limiting continuous current	500 mA

### 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)

### 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 <sub>rms</sub> (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

# Repeater - PSI-REP-DNET CAN - 2313423

## Technical data

### General

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 % (5 days a week, 8 hours a day))
	514 Years (SN 29500 standard, temperature 40 °C, operating cycle 34.25 % (5 days a week, 12 hours a day))
	208 Years (SN 29500 standard, temperature 40 °C, operating cycle 100 % (7 days a week, 24 hours a day))
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X (Please follow the special installation instructions in the documentation!)
UL, USA/Canada	508 Listed

### 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
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
Conformance	CE-compliant

## Repeater - PSI-REP-DNET CAN - 2313423

### Technical data

#### Standards and Regulations

ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA/Canada	508 Listed
Shipbuilding approval	DNV GL
DNV GL-Temperature	B
DNV GL-Humidity	A
DNV GL-Vibration	A
DNV GL-EMC	B
DNV GL-Enclosure	Required protection according to the Rules shall be provided upon installation on board
Noxious gas test	ISA-S71.04-1985 G3 Harsh Group A

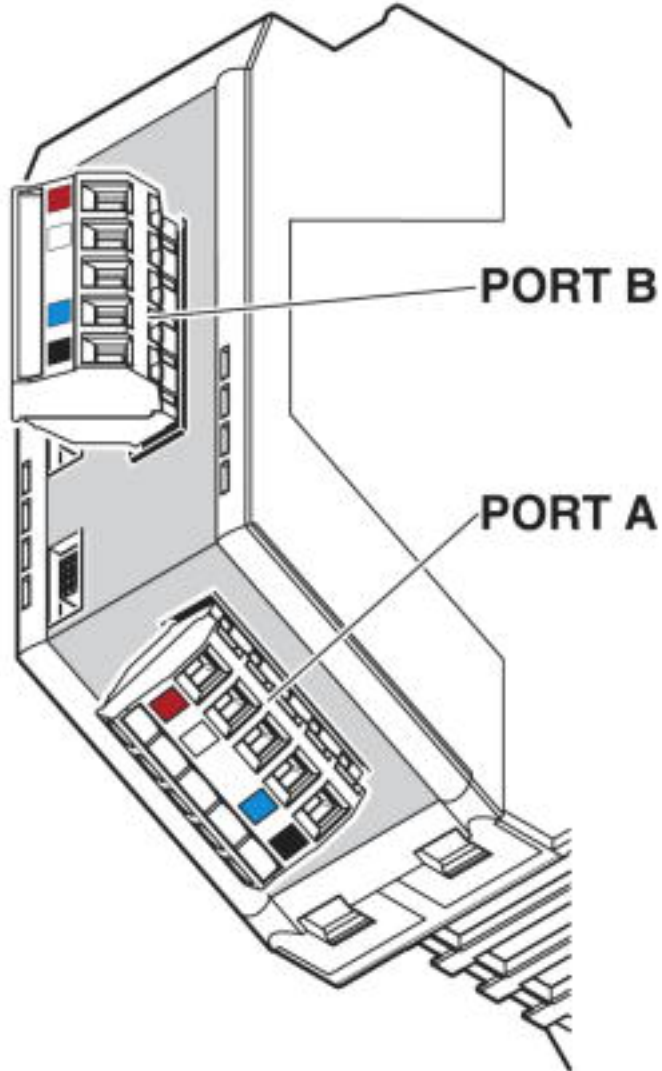
#### Environmental Product Compliance

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

### Drawings

## Repeater - PSI-REP-DNET CAN - 2313423

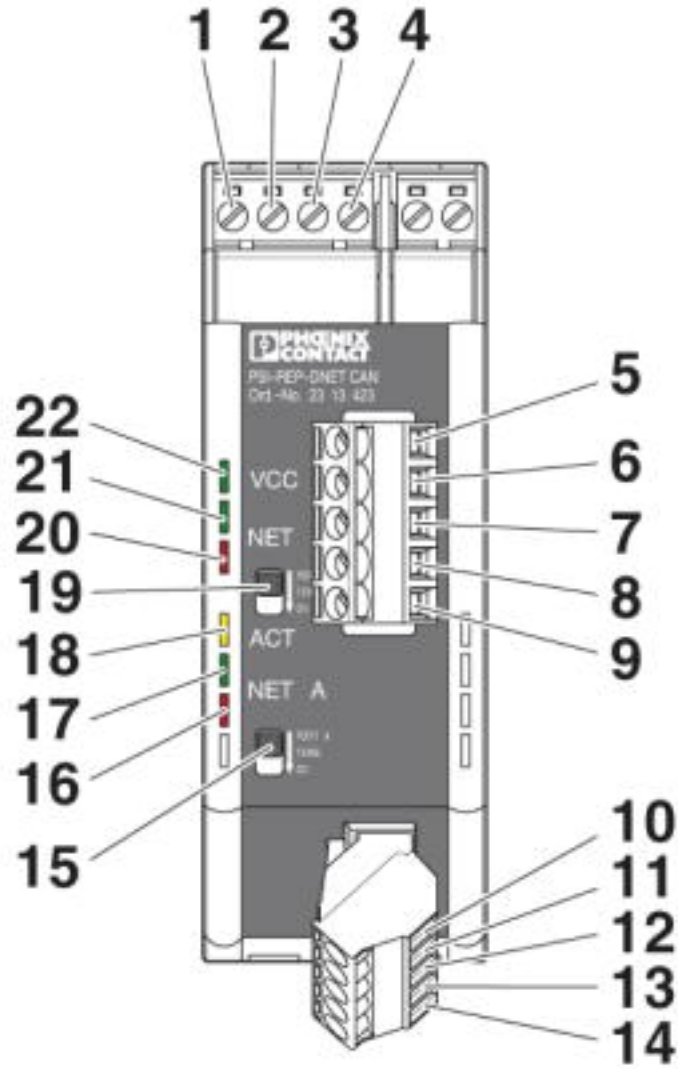
Schematic diagram



Device connections

# Repeater - PSI-REP-DNET CAN - 2313423

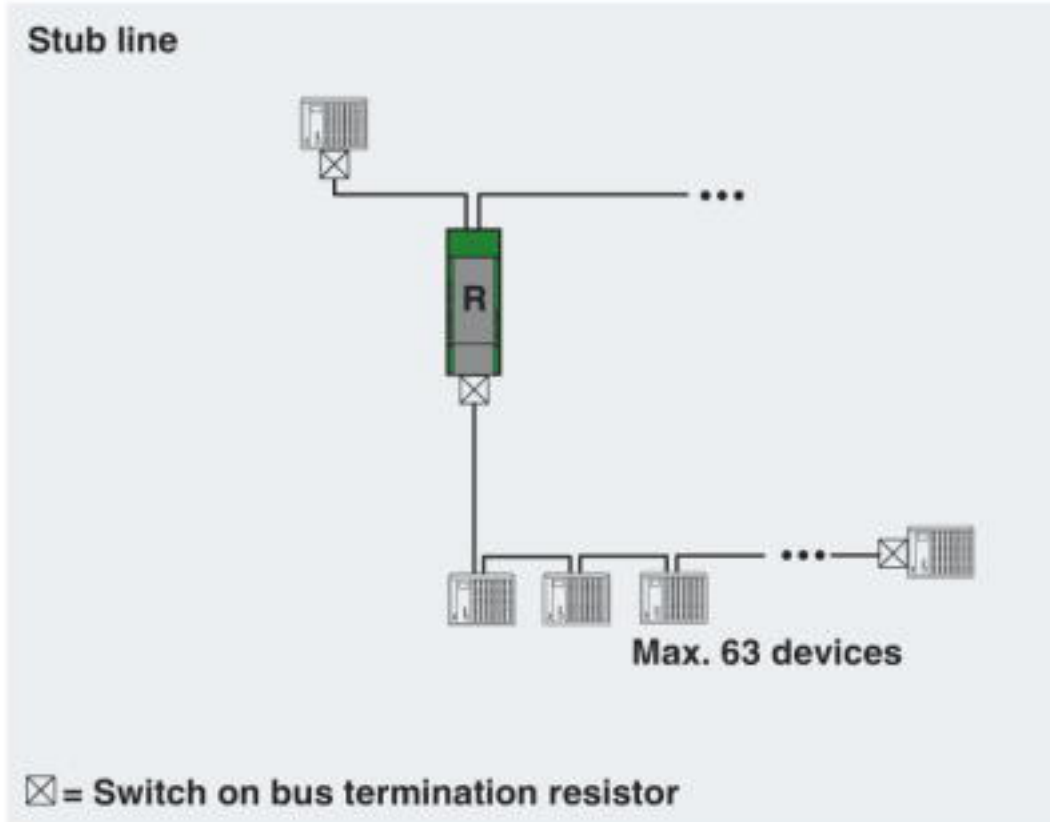
Schematic diagram



Front view

# Repeater - PSI-REP-DNET CAN - 2313423

Application drawing

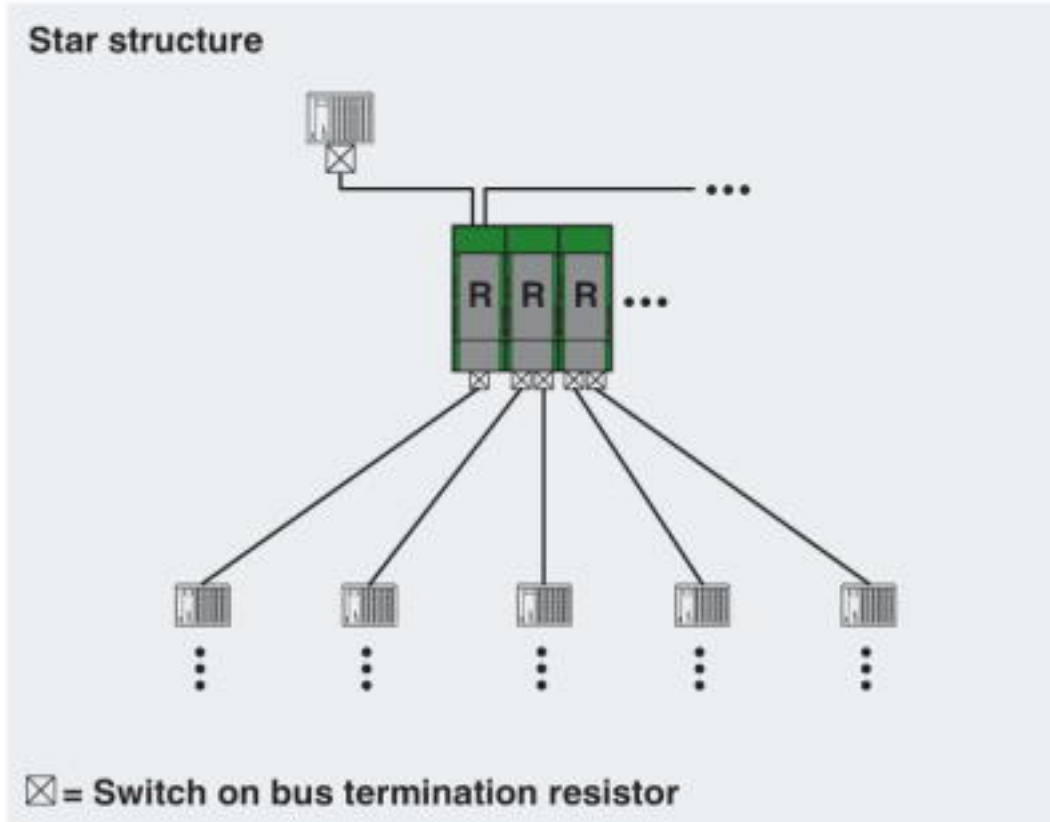


Branch line



# Repeater - PSI-REP-DNET CAN - 2313423

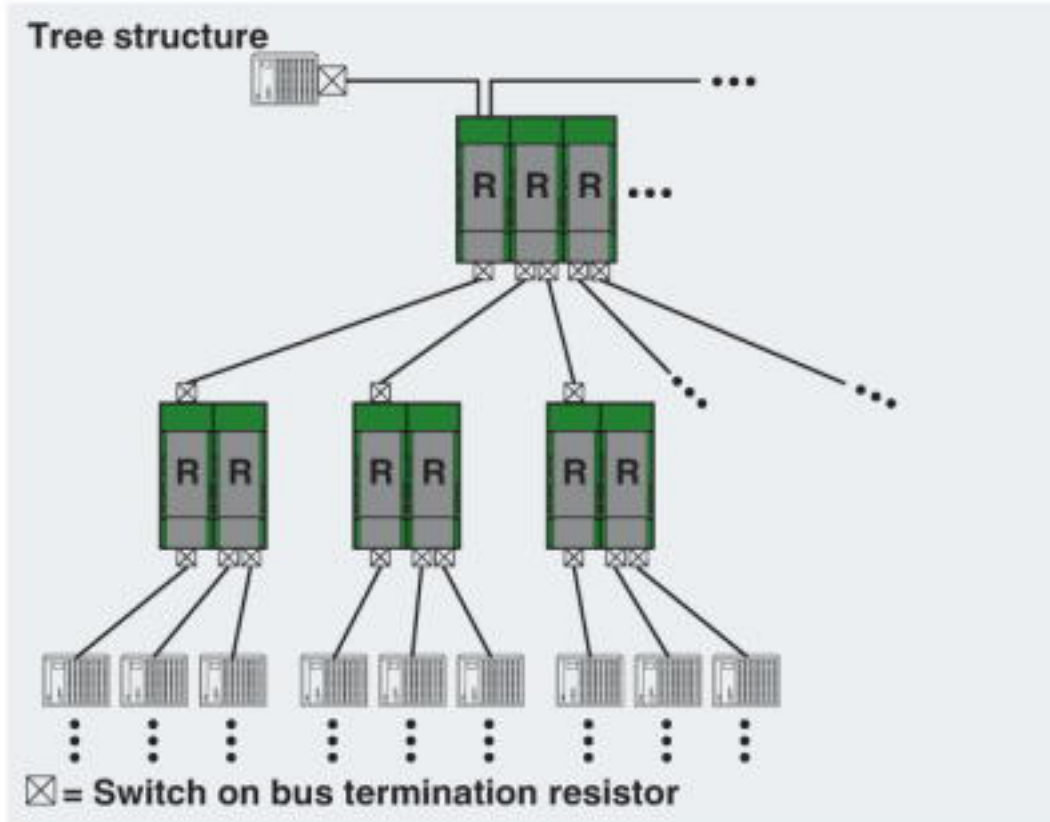
Application drawing



Star structure

# Repeater - PSI-REP-DNET CAN - 2313423

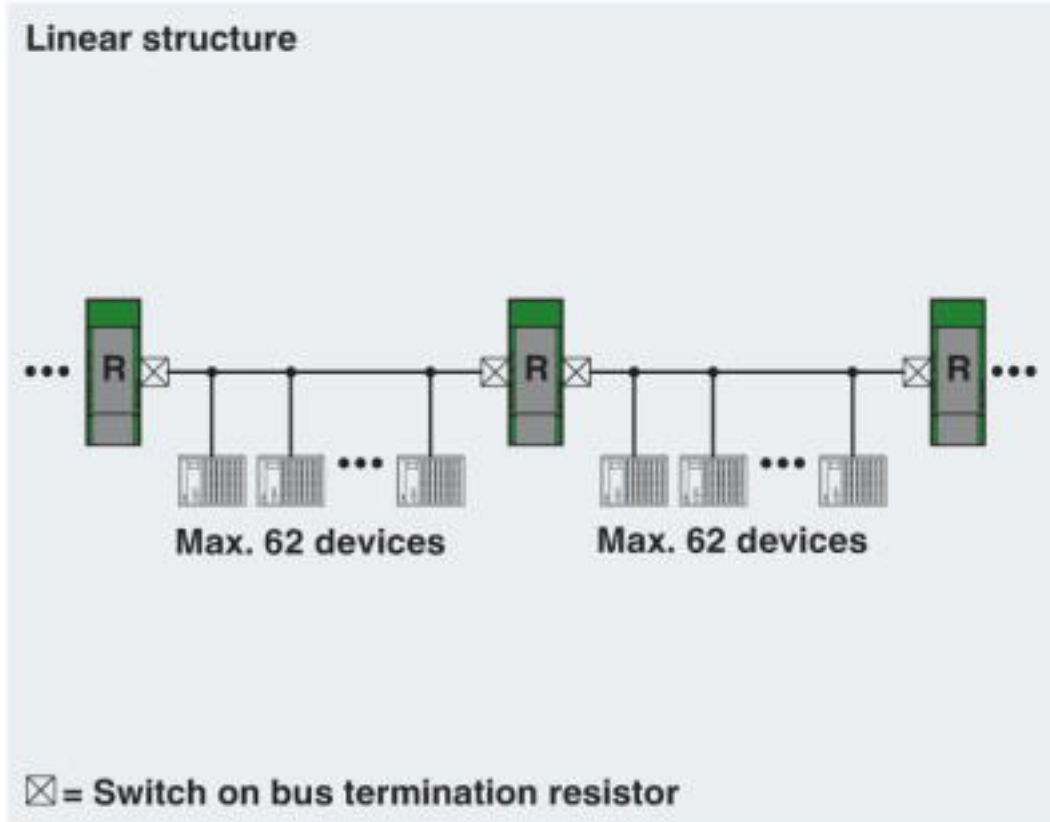
Application drawing



Tree structure

# Repeater - PSI-REP-DNET CAN - 2313423

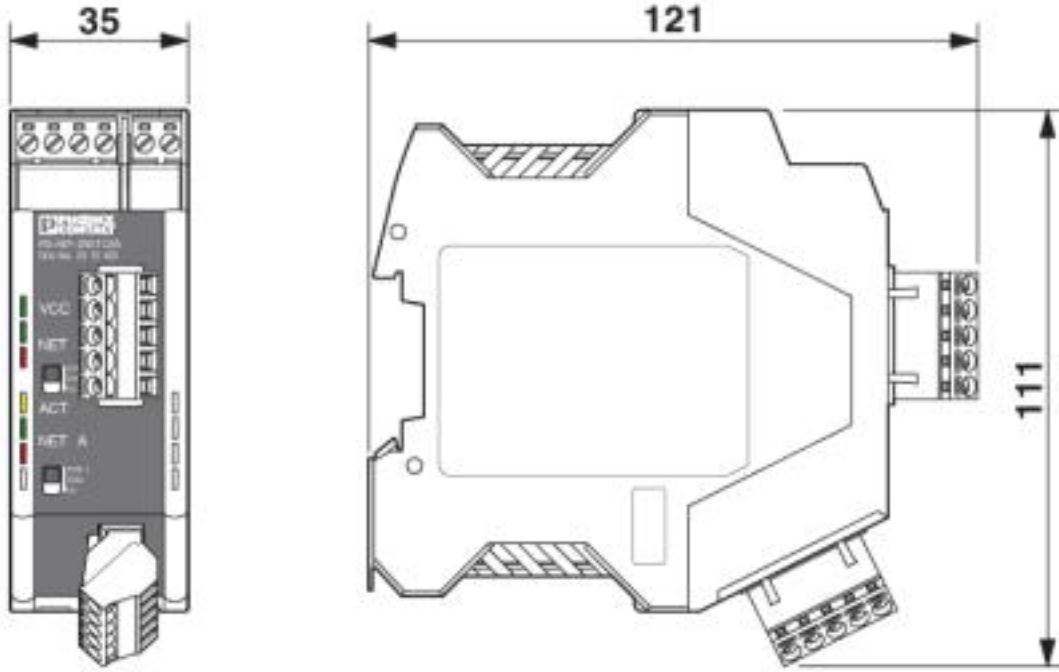
Application drawing



Line structure

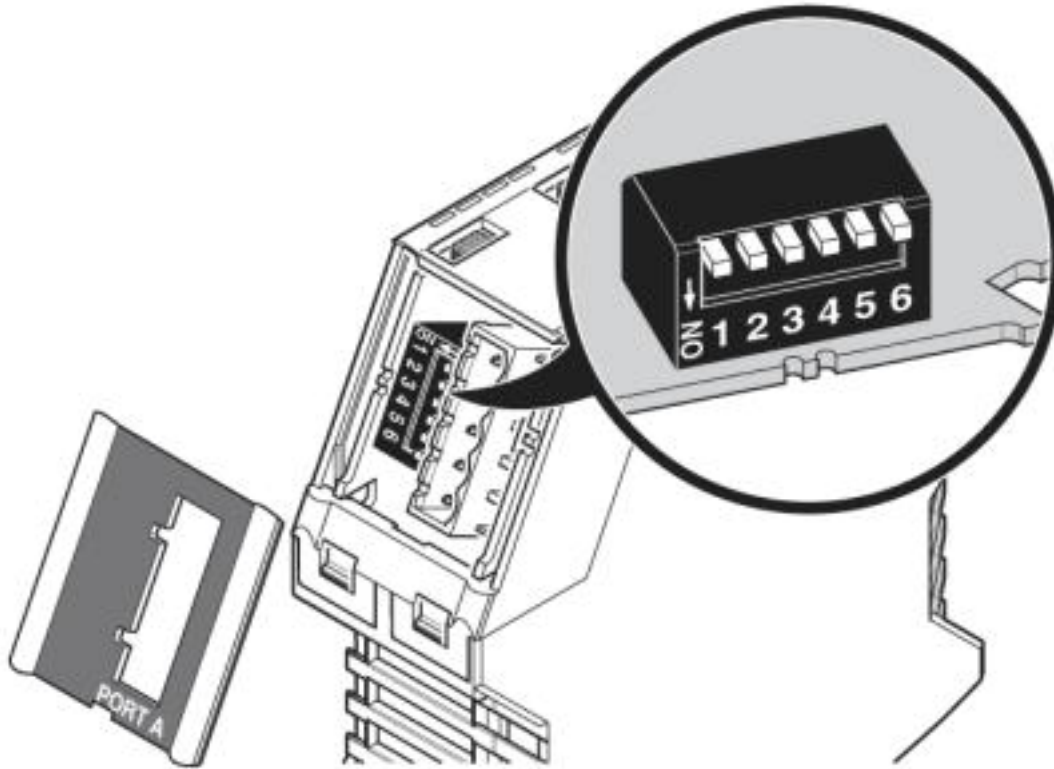
# Repeater - PSI-REP-DNET CAN - 2313423

Dimensional drawing



# Repeater - PSI-REP-DNET CAN - 2313423

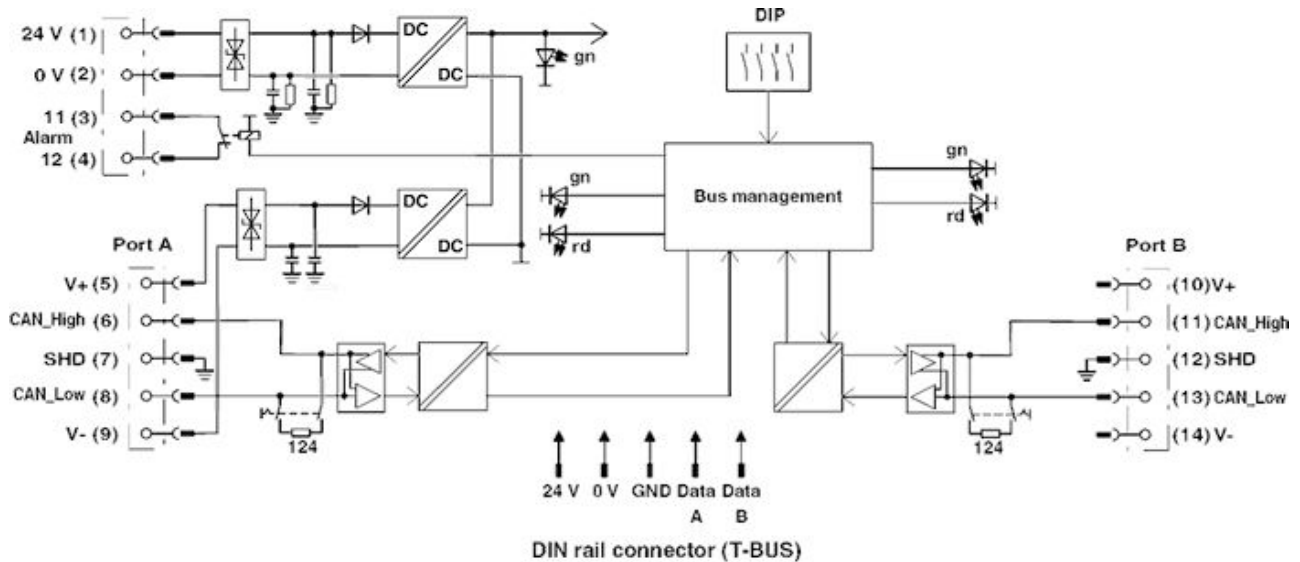
Schematic diagram



DIP switches

# Repeater - PSI-REP-DNET CAN - 2313423

Block diagram



## Classifications

eCl@ss

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

# Repeater - PSI-REP-DNET CAN - 2313423

## Classifications

### ETIM

ETIM 7.0	EC001423
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### UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	39122114

## Approvals

### Approvals

#### Approvals


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

#### Ex Approvals


#### ATEX

### Approval details

DNV GL		<a href="https://approvalfinder.dnvgl.com/">https://approvalfinder.dnvgl.com/</a>	TAA00001KR
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UL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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cUL Listed		<a href="http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm">http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm</a>	FILE E 238705
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EAC			EAC-Zulassung
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# Repeater - PSI-REP-DNET CAN - 2313423

## Approvals

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<sup>®</sup>, DeviceNet<sup>™</sup>, 4-position, PUR halogen-free, violet RAL 4001, shielded, cable length: Free entry (0.5 ... 400 m)

### Data plug

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<sup>®</sup>. 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<sup>®</sup>. Termination resistor via separate M12 terminator.



## Repeater - PSI-REP-DNET CAN - 2313423

### Accessories

#### 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.

#### 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

## Repeater - PSI-REP-DNET CAN - 2313423

### Accessories

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

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### 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.

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### 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