

# PSI-MODEM-SHDSL/SERIAL - Modem



2313669

<https://www.phoenixcontact.com/us/products/2313669>

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Industrial SHDSL extender for serial RS-232/422/485 interfaces, point-to-point and line structures, serial data transmission up to 2000 kbps on in-house cables, diagnostics via USB and LEDs, two configurable alarm outputs

## Your advantages

- Distances up to 20 km
- RS-232, up to 230.4 kbps
- RS-422, up to 2000 kbps
- RS-485, up to 2000 kbps
- Robust modulation method (SHDSL)
- 2 digital outputs for alerting external controllers
- Easy configuration
- For in-house cables



**RS-232**



## Commercial data

Item number	2313669
Packing unit	1 pc
Minimum order quantity	1 pc
Sales key	DN24
Product key	DNC441
GTIN	4046356509220
Weight per piece (including packing)	353.7 g
Weight per piece (excluding packing)	339.4 g
Customs tariff number	85176200
Country of origin	DE

## Technical data

### Notes

#### Note on application

Note on application	Only for industrial use
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#### Utilization restriction

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

Product type	Modem
MTTF	693 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	301 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	121 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	1004 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	199 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

### Electrical properties

Electrical isolation	VCC, RS-232 // RS-422, RS-485 // DSL (A) // DSL (B) // FE
Maximum power dissipation for nominal condition	4.32 W
Mains type	Permanent line
Test voltage data interface/power supply	500 V AC (In accordance with EN/IEC 60079-7)
	1.5 kV <sub>rms</sub> (50 Hz, 1 min.)

### Supply

Supply voltage range	18 V DC ... 30 V DC (via pluggable COMBICON screw terminal block)
Nominal supply voltage	24 V DC ±5 % (as an alternative or redundant, via backplane bus contact and system current supply)
	5 V DC (configuration only, via mini-USB type B)
Typical current consumption	< 180 mA (24 V DC)
Max. current consumption	≤ 2 A (For operation in a joining station, via the DIN rail connector)

### Function

Management	User-friendly software: Guided configuration, plausibility checks, diagnostic functions, log book
Status and diagnostic indicators	LEDs: VCC (supply voltage), RD/TD (serial data traffic), ERR (errors), TERM (termination resistor active), RS-232 (RS-232 active) 2 x LINK / 2 x STAT (DSL data traffic port A and port B), DIAG (diagnostic messages)

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## Output data

### Signal

Output name	Digital output
Number of outputs	2
Voltage output signal	18 V DC ... 30 V DC (depending on the operating voltage)
Current output signal	≤ 150 mA (Short-circuit-proof)

## Connection data

### Supply

Connection method	COMBICON plug-in screw terminal block
Tightening torque	0.56 Nm ... 0.79 Nm

## Interfaces

Signal	RS-232
	RS-422
	RS-485
	Modbus

Data: V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1

Serial transmission speed	0.11/0.3/1.2/2.4/4.8/9.6/19.2/38.4/57.6/115.2/230.4 kbps, NRZ
Connection method	D-SUB 9 plug
Transmission length	max. 15 m
Termination resistor	390 Ω - 180 Ω - 390 Ω (can be connected)
Data flow control/protocols	Software handshake, Xon/Xoff, hardware handshake (RTS/CTS), 3964R-compatible, Modbus (RTU/ASCII), transparent protocol - additional protocols supported

Data: SHDSL interface according to ITU-T G.991.2.bis

Serial transmission speed	4-wire operation: 64 kbps ... 30 Mbps
	2-wire operation: 32 kbps ... 15.3 Mbps
Connection method	2 x 2-pos. COMBICON plug-in screw terminal blocks
Tightening torque	0.56 Nm ... 0.79 Nm
Transmission length	≤ 20 km (Depending on data rate and cable cross section)
Single conductor/terminal point, rigid	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
Single-wire/terminal point, flexible	0.2 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>
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

Data: USB 2.0

Connection method	Mini-USB type B, 5-pos.
Transmission length	< 5 m (only for configuration and diagnostics)

Data: RS-422 interface in acc. with ITU-T V.11, EIA/TIA-422, DIN 66348-1

Serial transmission speed	1.2/2.4/4.8/7.0/9.6/19.2/38.4/57.6/75/93.75/115.2/136/187.5/375/500/1500/2000 kbps, NRZ
Connection method	Plug-in/screw connection via COMBICON
Transmission length	≤ 1200 m
Termination resistor	390 Ω - 180 Ω - 390 Ω (can be connected)
File format/coding	Serial asynchronous UART/NRZ, 7/8 data bits, 1/2 stop bits, 1 parity bit (even, odd, mark, space, none), 9/10/11-bit character length
Data flow control/protocols	Automatic control // Modbus RTU/ASCII

Data: RS-485 interface, in acc. with EIA/TIA-485, DIN 66259-4/RS-485 2-wire

Serial transmission speed	1.2/2.4/4.8/7.0/9.6/19.2/38.4/57.6/75/93.75/115.2/136/187.5/375/500/1500/2000 kbps, NRZ
Connection method	Plug-in/screw connection via COMBICON
Transmission length	≤ 1200 m
Termination resistor	390 Ω - 180 Ω - 390 Ω (can be connected)
File format/coding	Serial asynchronous UART/NRZ, 7/8 data, 1/2 stop, 1 parity, 10/11-bit character length
Protocols supported	Transparent, including 3964R protocol
Data flow control/protocols	Automatic control // Modbus RTU/ASCII

## Dimensions

Width	35 mm
Height	99 mm
Depth	114.5 mm

## Material specifications

Color (Housing)	green (RAL 6021)
Material (Housing)	PA 6.6-FR
Flammability rating according to UL 94	V0

## Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Operation: 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Operation: 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 (Freestanding (40 mm spacing to the right and left), no supply of other modules via the device)
	-20 °C ... 55 °C (Mounted in rows with zero spacing and low power dissipation of aligned modules)
	-20 °C ... 50 °C (Mounted in rows with zero spacing)
	-20 °C ... 45 °C (aligned without spacing and supply of other modules via the device, 1.5 A)

Ambient temperature (storage/transport)	-40 °C ... 85 °C
Altitude	≤ 5000 m (For restrictions, see the manufacturer's declaration for altitude operation)
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)

## Approvals

### CE

Certificate	CE-compliant
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### ATEX

Identification	⊕ II 3 G Ex ec nC IIC T4 Gc
Certificate	PxCIF11ATEX2313643X
Note	Please follow the special installation instructions in the documentation!

### UKEX

Identification	⊕ II 3 G Ex ec nC IIC T4 Gc
Certificate	PxCIMA22UKEX2313643X

### 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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## EMC data

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

### Noise emission

Standards/regulations	EN 55011
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## Standards and regulations

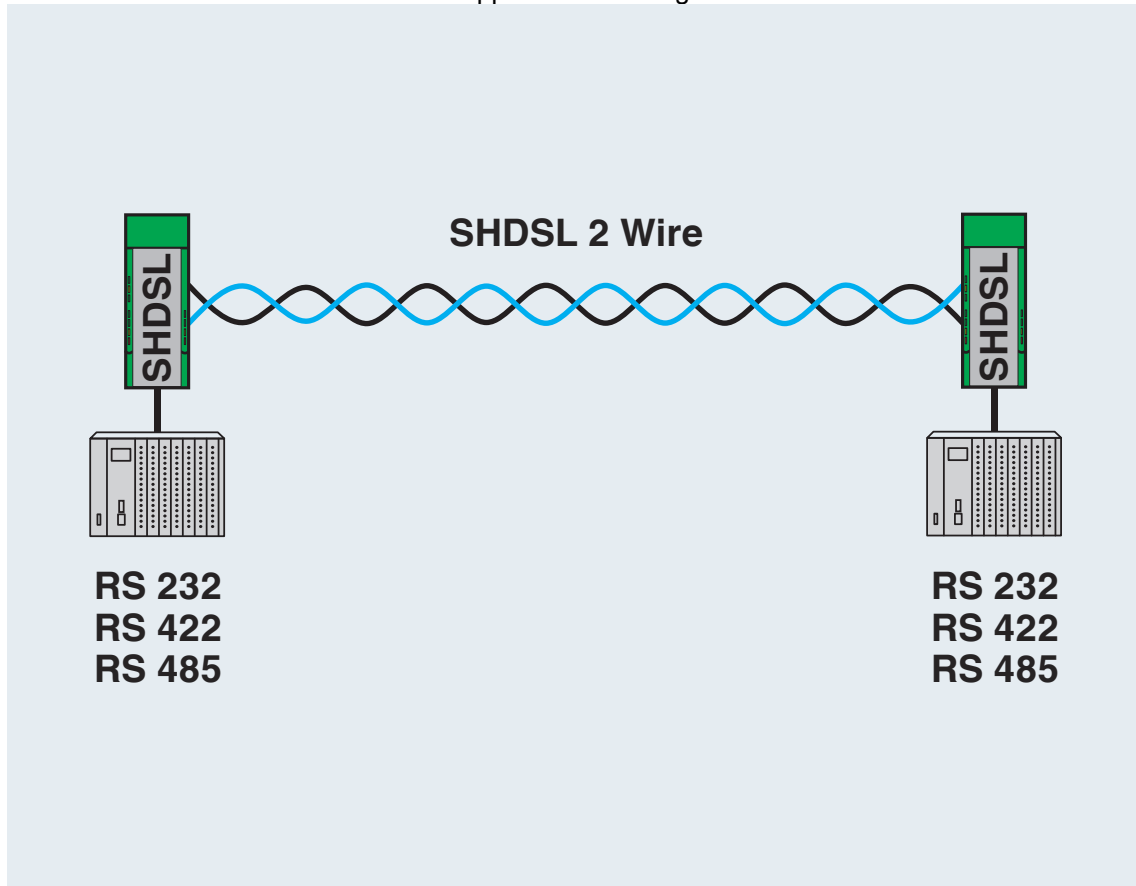
Standards/regulations	EN 50121-4
Standard designation	Railway applications

## Mounting

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

## Drawings

Application drawing

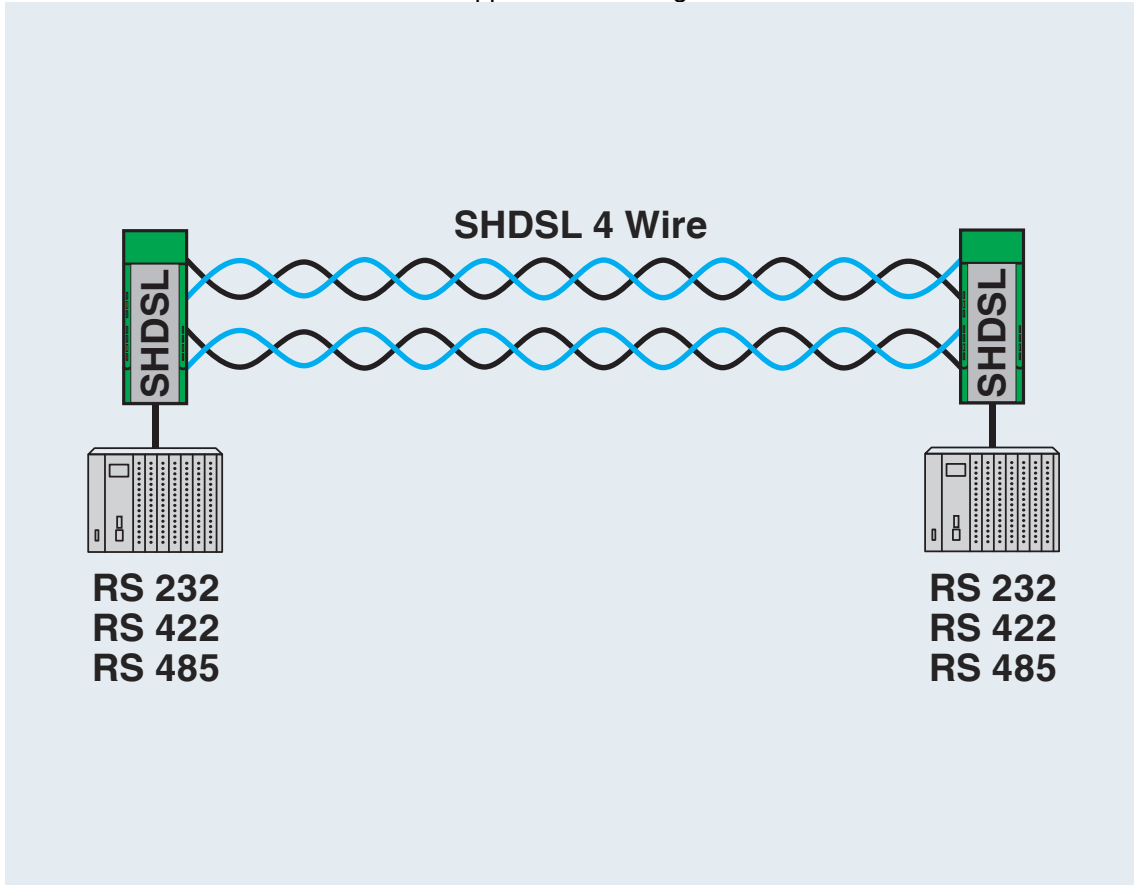


Point-to-point connection (2-wire)

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Application drawing

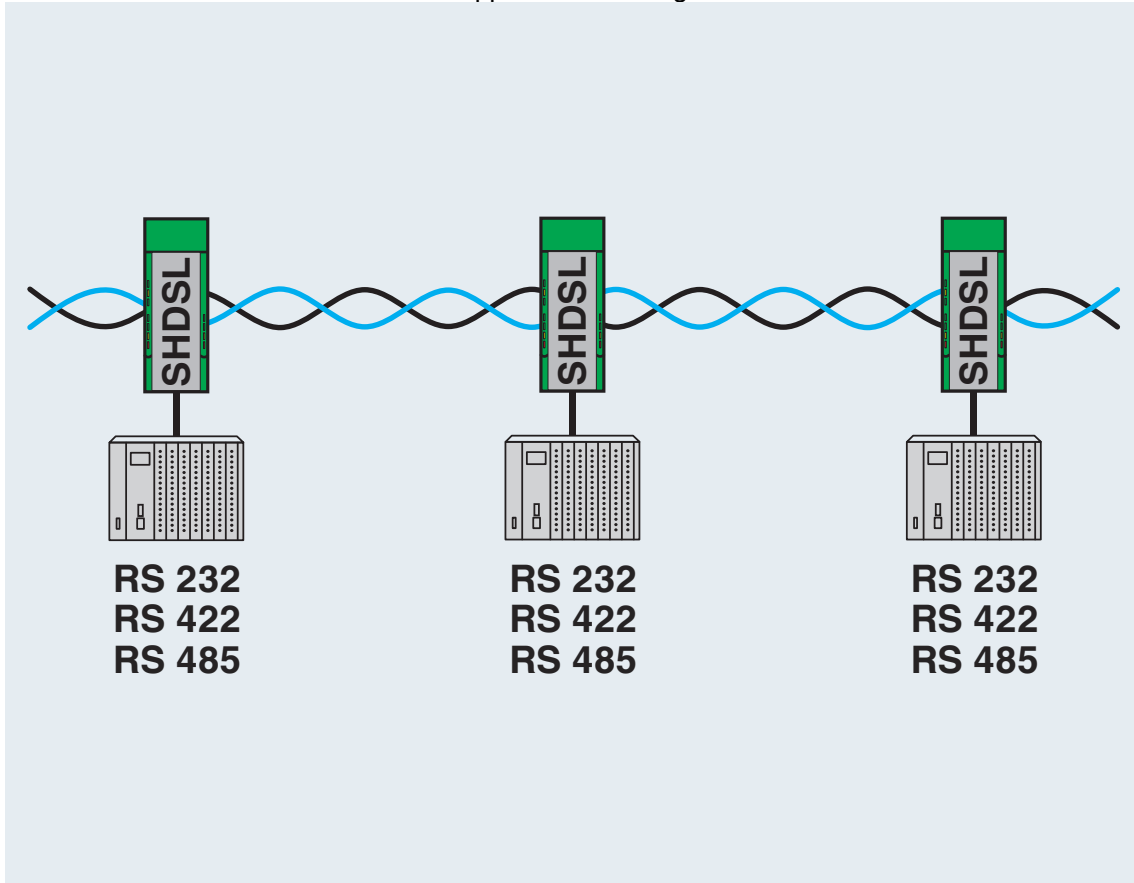


Point-to-point connection (4-wire)

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Application drawing

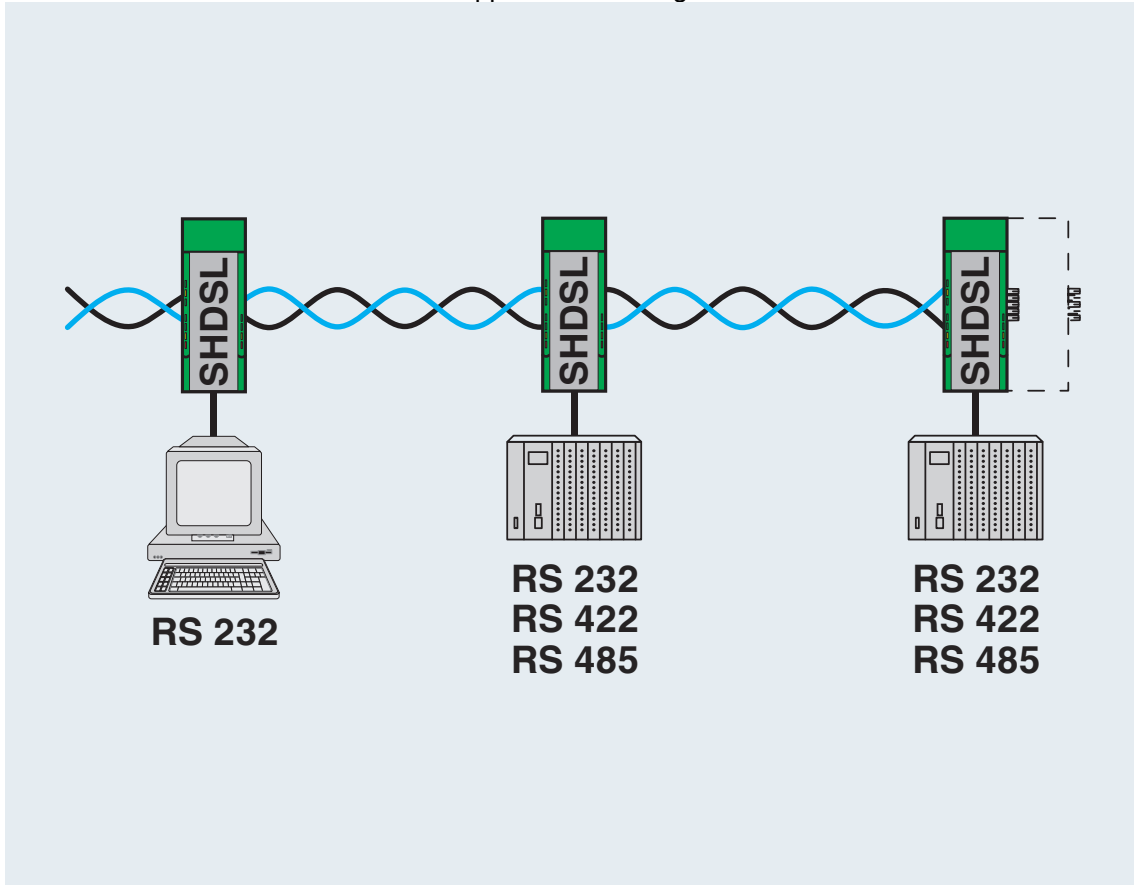


Linear structure (2-wire)

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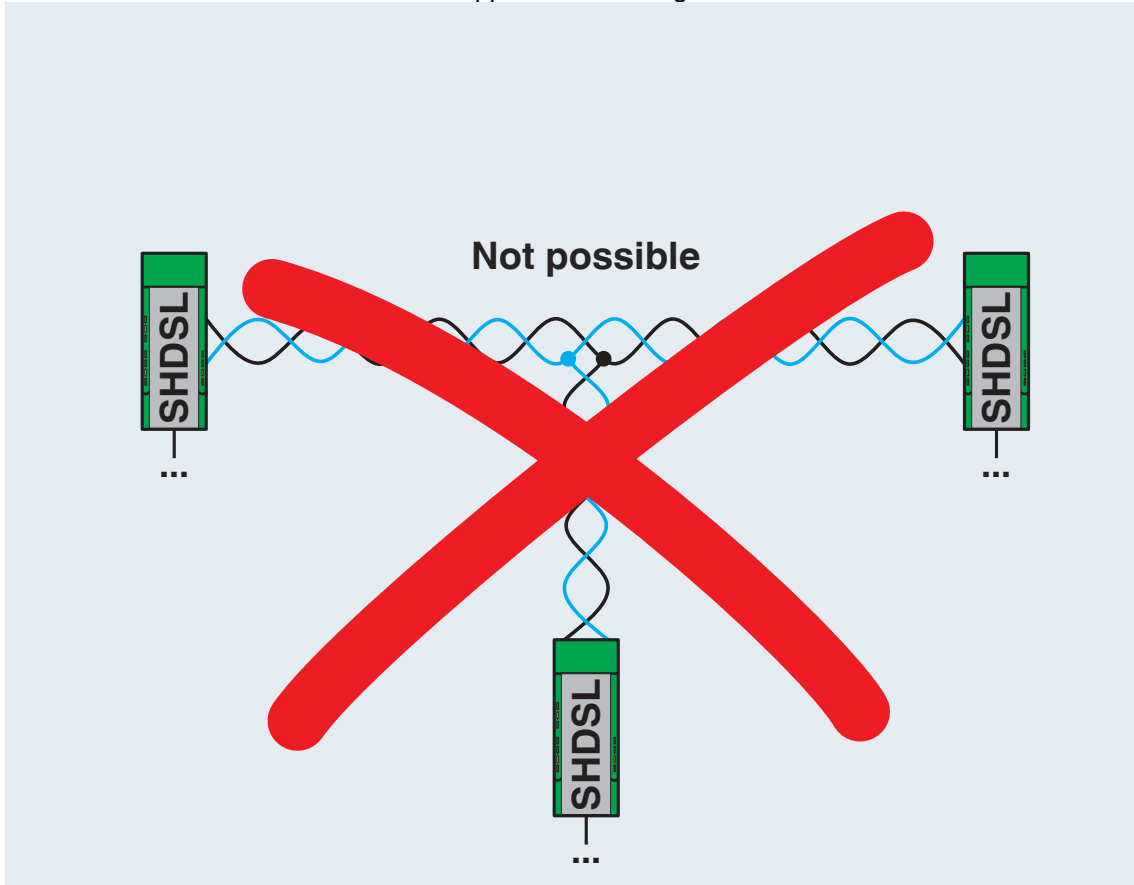
<https://www.phoenixcontact.com/us/products/2313669>

Application drawing



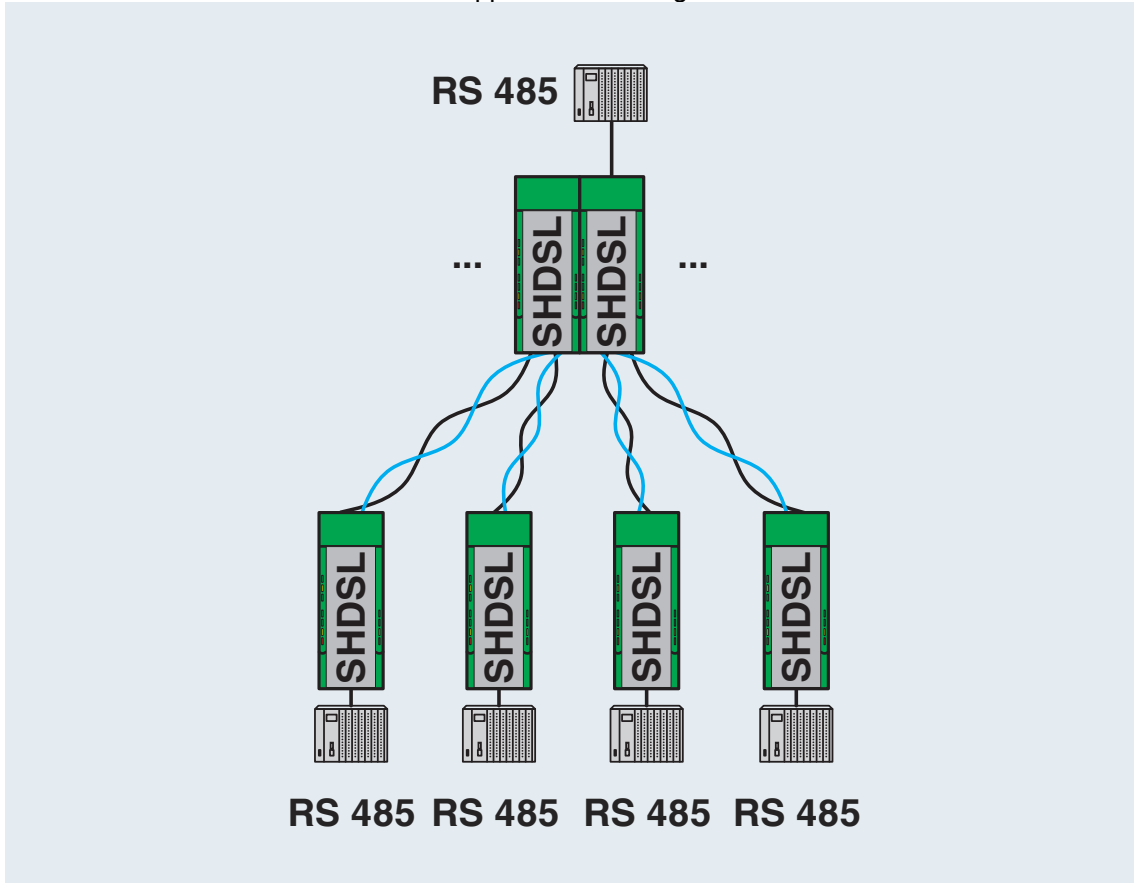
Linear structure (2-wire)

Application drawing



Multipoint communication via SHDSL not supported

Application drawing



Star structure via DIN rail connector

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## Approvals

To download certificates, visit the product detail page: <https://www.phoenixcontact.com/us/products/2313669>



**cULus Listed**

Approval ID: E238705

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## Classifications

### ECLASS

ECLASS-13.0	19170407
ECLASS-15.0	19170407

### ETIM

ETIM 10.0	EC000309
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### UNSPSC

UNSPSC 21.0	43223100
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	6(c), 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	289e5825-9e7b-46c3-ab9a-6b494bf7e3b7

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