

Modem - PSI-MODEM-SHDSL/SERIAL



2313669

<https://www.phoenixcontact.com/pc/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

Commercial Data

Item number	2313669
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DNC441
Catalog Page	Page 429 (C-6-2019)
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

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	1.5 kV _{rms} (50 Hz, 1 min.)

Supply

Supply voltage range	18 V DC ... 30 V DC
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)
Connection method	COMBICON plug-in screw terminal block

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)

Output data

Signal

Output name	Digital output
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Number of outputs	2
Voltage output signal	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)
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section solid min.	0.2 mm ²
Max. AWG conductor cross section, flexible	14
Min. AWG conductor cross section, flexible	24
Single-wire/terminal point, solid AWG max.	14
Single-wire/terminal point, solid 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.
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	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

Material	PA 6.6-FR (Housing)
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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 (Other modules supplied via the device, max. 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)

Approval data

CE

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Certificate	CE-compliant
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EAC

Identification	EAC
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ATEX

Identification	<input type="checkbox"/> II 3 G Ex nA nC IIC T4 Gc X
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Note	Please follow the special installation instructions in the documentation!
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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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EMC data

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

Standards/regulations	EN 50121-4
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Mounting

Mounting type	DIN rail mounting
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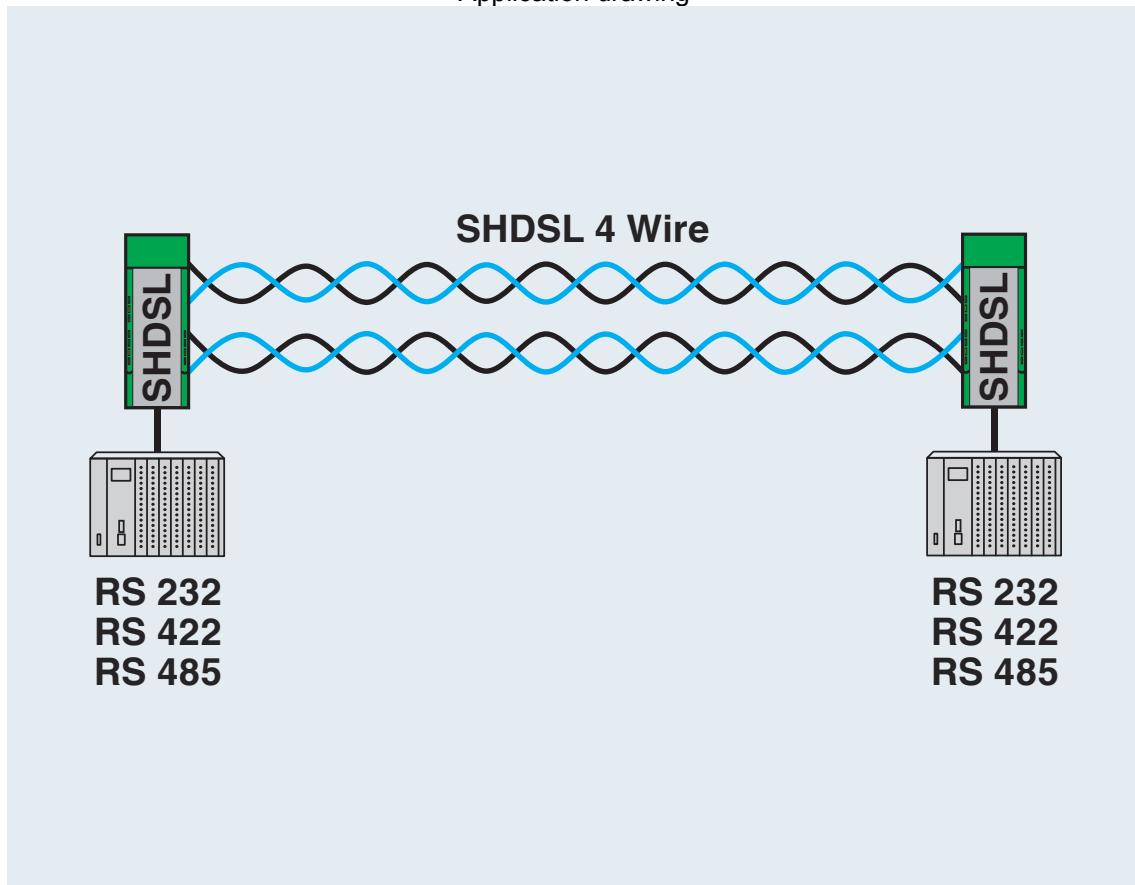
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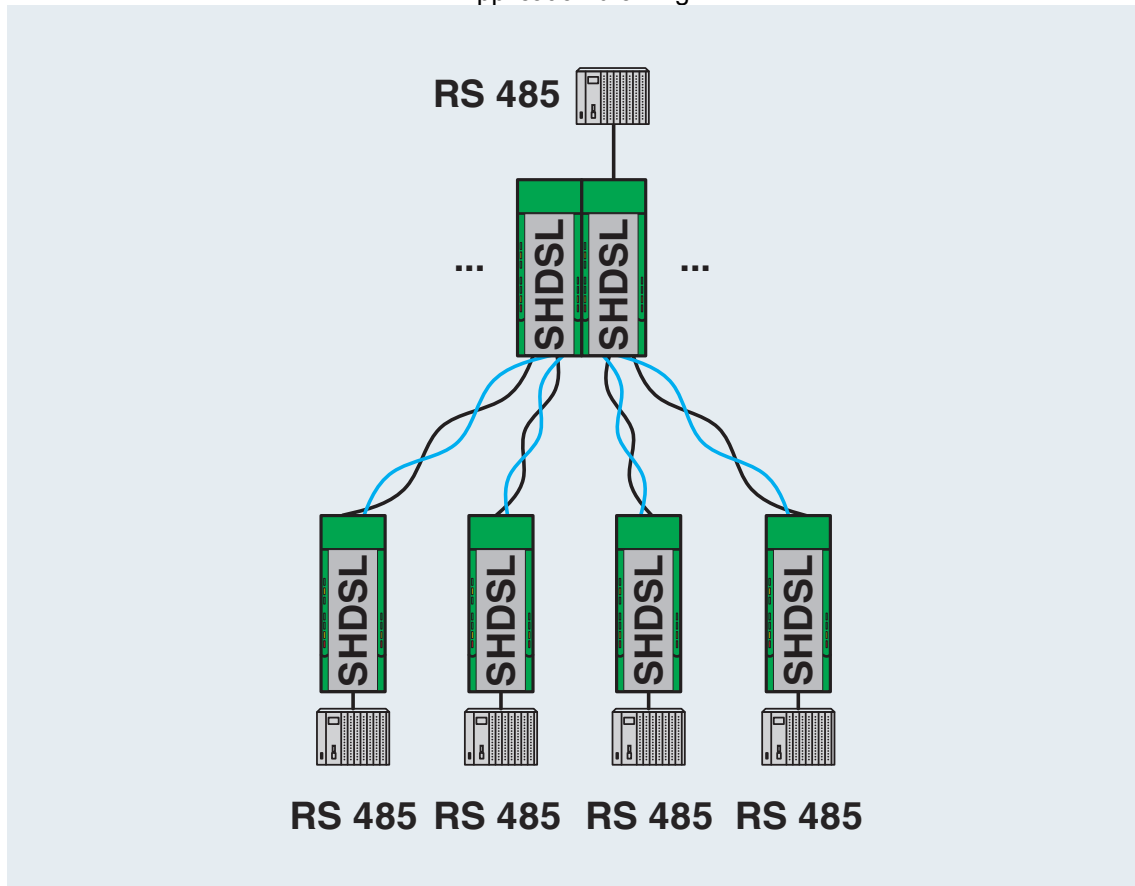
Drawings

Application drawing



Point-to-point connection (4-wire)

Application drawing



Star structure via DIN rail connector

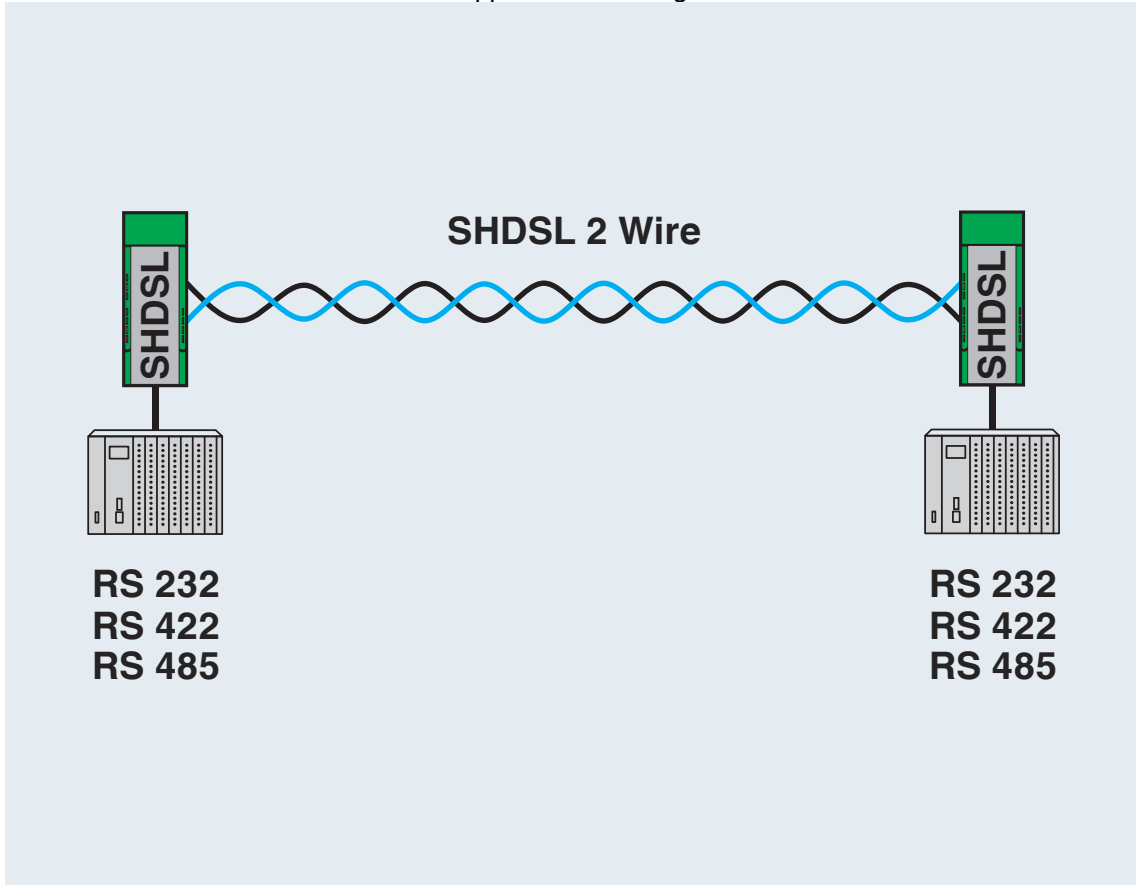
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Application drawing



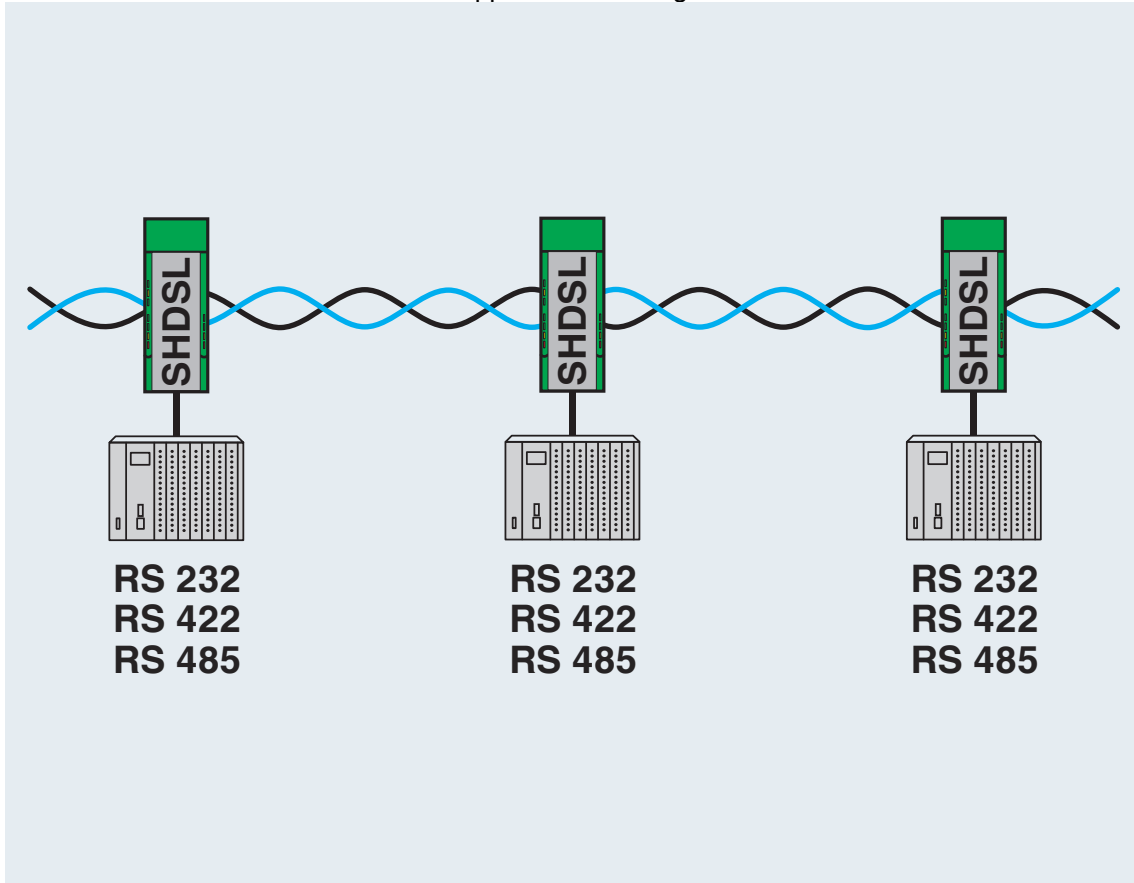
Point-to-point connection (2-wire)

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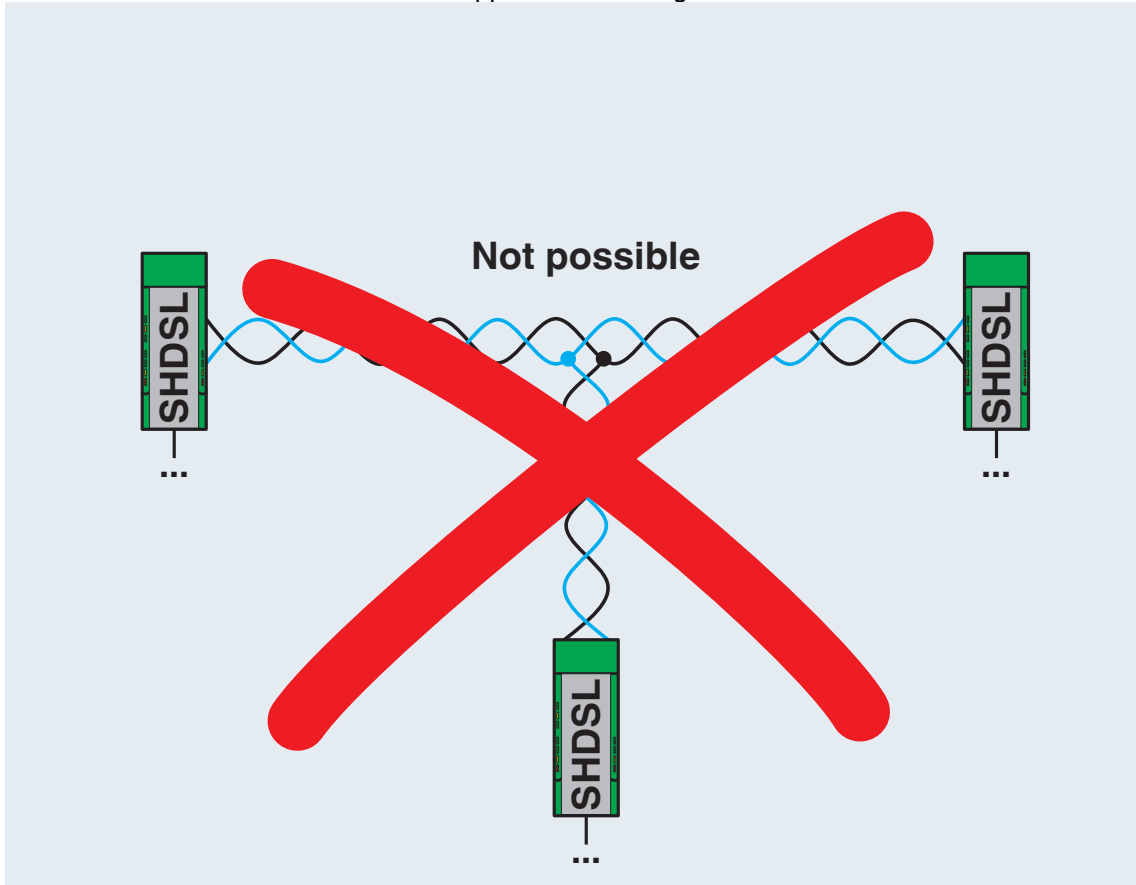
<https://www.phoenixcontact.com/pc/products/2313669>

Application drawing



Linear structure (2-wire)

Application drawing



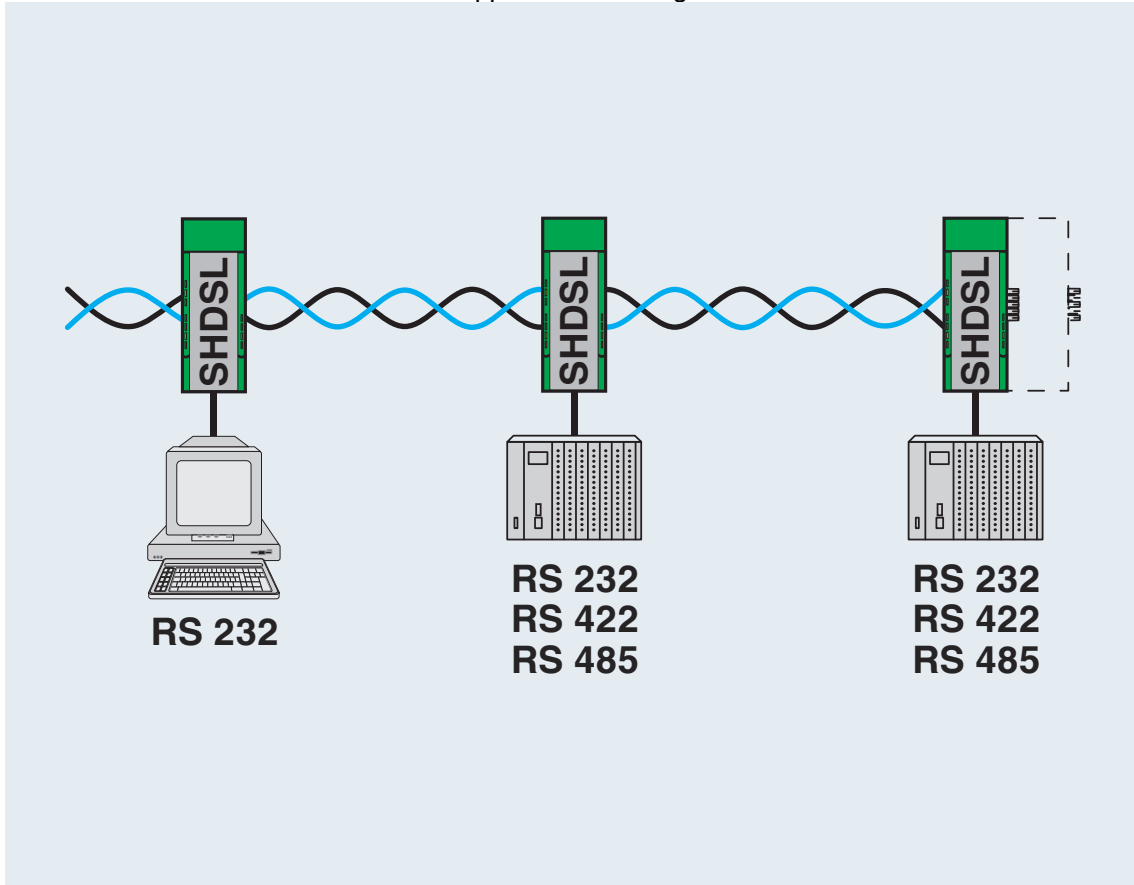
Multipoint communication via SHDSL not supported

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Application drawing



Linear structure (2-wire)

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Approvals



EAC

Approval ID: RU *-DE.A*30.B.01735



UL Listed

Approval ID: FILE E 238705



cUL Listed

Approval ID: FILE E 238705



EAC

Approval ID: RU D-DE.HB35.B.00388



ATEX

Approval ID: PxCIF11ATEX2313643X

cULus Listed

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Classifications

ECLASS

ECLASS-9.0	19060590
ECLASS-10.0.1	19060590
ECLASS-11.0	19170407

ETIM

ETIM 8.0	EC000309
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UNSPSC

UNSPSC 21.0	43223100
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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"

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Accessories

Power supply unit

Power supply unit - QUINT4-SYS-PS/1AC/24DC/2.5/SC - 2904614

<https://www.phoenixcontact.com/pc/products/2904614>

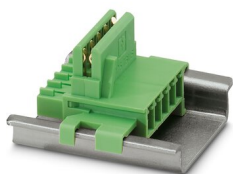


Primary-switched power supply unit, QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 2.5 A

DIN rail bus connectors

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

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



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

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Surge protection device

Surge protection device - DT-TELE-SHDSL - 2801593

<https://www.phoenixcontact.com/pc/products/2801593>



Attachment plug with surge protection for two SHDSL telecommunications interfaces (ports). Connection: RJ45 (RJ12/RJ11) and plug-in screw terminal block (COMBICON). Alternatively, can be snapped onto a DIN rail.

USB cable

USB cable - CABLE-USB/MINI-USB-3,0M - 2986135

<https://www.phoenixcontact.com/pc/products/2986135>



USB connecting cable: USB plug type A to USB plug type Mini-B; length: 3 m

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D-SUB bus connector

D-SUB bus connector - SUBCON 9/M-SH - 2761509

<https://www.phoenixcontact.com/pc/products/2761509>



D-SUB connector, 9-pos., male connector, one 35° cable entry, universal type for all systems, pin assignment: 1, 2, 3, 4, 5, 6, 7, 8, 9 to screw connection terminal block

Shield connection clamp

Shield connection clamp - SKS 8-SNS35 - 3062786

<https://www.phoenixcontact.com/pc/products/3062786>



Shield connection terminal block, for applying the shield to busbars

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