

Modem - PSI-MODEM-SHDSL/PB



2313656

<https://www.phoenixcontact.com/pc/products/2313656>

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Industrial PROFIBUS extender, for point-to-point connections, linear structures, and mixed operation with repeaters and fiber optic converters. Distances of up to 20 km, PROFIBUS data rates of up to 1.5 Mbps via simple copper wires, such as in-house phone lines.

Your advantages

- Distances up to 20 km
- Robust modulation method (SHDSL)
- Mixed operation of copper cables and fiber optics
- The free software calculates the PROFIBUS data rate and the slot time
- Line structure up to 500 Kbps
- Point-to-point connection up to 1.5 Mbps
- For in-house cables

Commercial Data

Item number	2313656
Packing unit	1 pc
Minimum order quantity	1 pc
Product Key	DNC443
Catalog Page	Page 429 (C-6-2019)
GTIN	4046356509213
Weight per Piece (including packing)	335.6 g
Weight per Piece (excluding packing)	282.3 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	800 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	346 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	140 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 // PROFIBUS // 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 (PROFIBUS data traffic), ERR (errors) 2 x LINK / 2 x STAT (DSL data traffic port A and port B), DIAG (diagnostic messages)

Output data

Signal

Output name	Digital output
Number of outputs	2

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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	PROFIBUS
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Data: PROFIBUS acc. to IEC 61158, RS-485 2-wire, half duplex, automatic control

Serial transmission speed	9.6/19.2/45.45/93.75/187.5/500/1500 kbps, set via configuration software
Connection method	D-SUB-9 female connector
Transmission length	max. 1200 m (depending on the data rate, with shielded, twisted pair data cable)
File format/coding	UART (11 Bit, NRZ)
Data direction switching	Automatic control

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)

Dimensions

Width	35 mm
Height	99 mm
Depth	114.5 mm

Material specifications

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Material	PA 6.6-FR (Housing)
Flammability rating according to UL 94	V0

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

Certificate	CE-compliant
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EAC

Identification	EAC
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ATEX

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

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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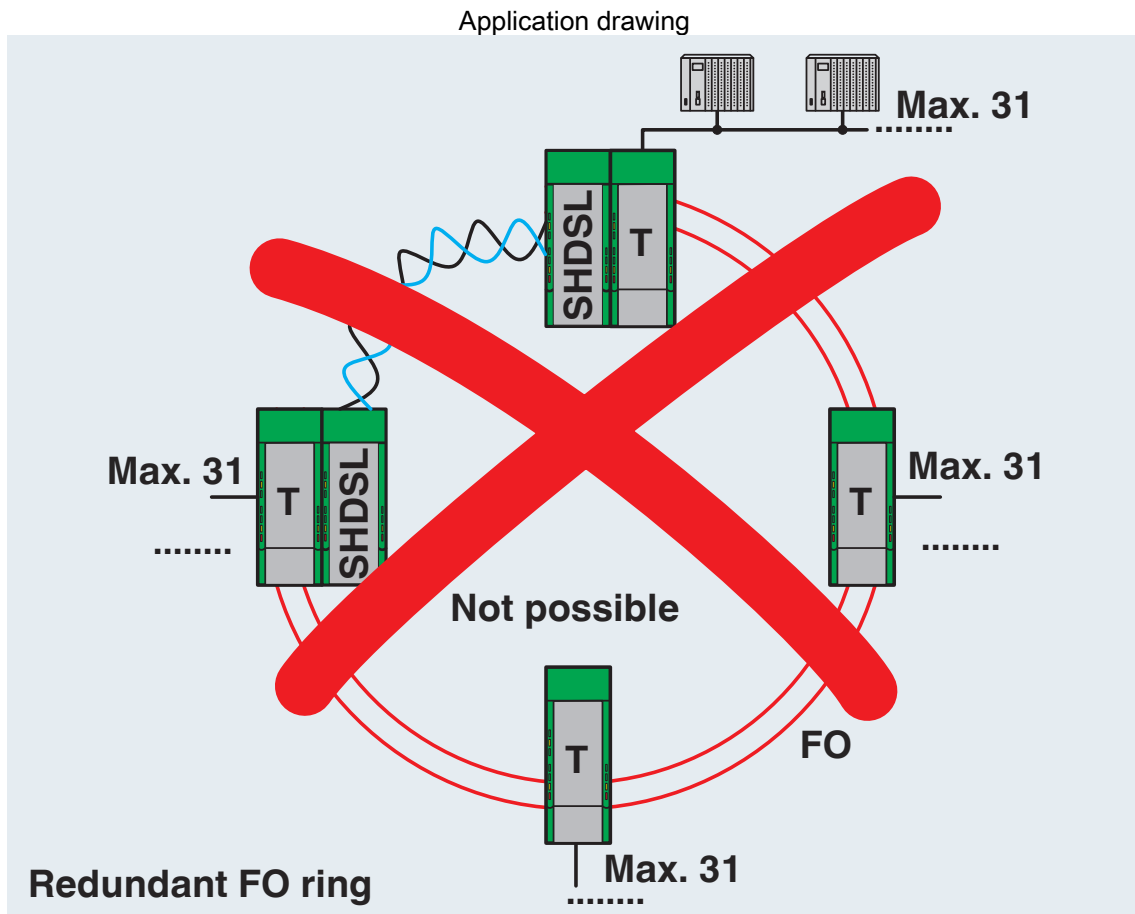
EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
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Standards and regulations

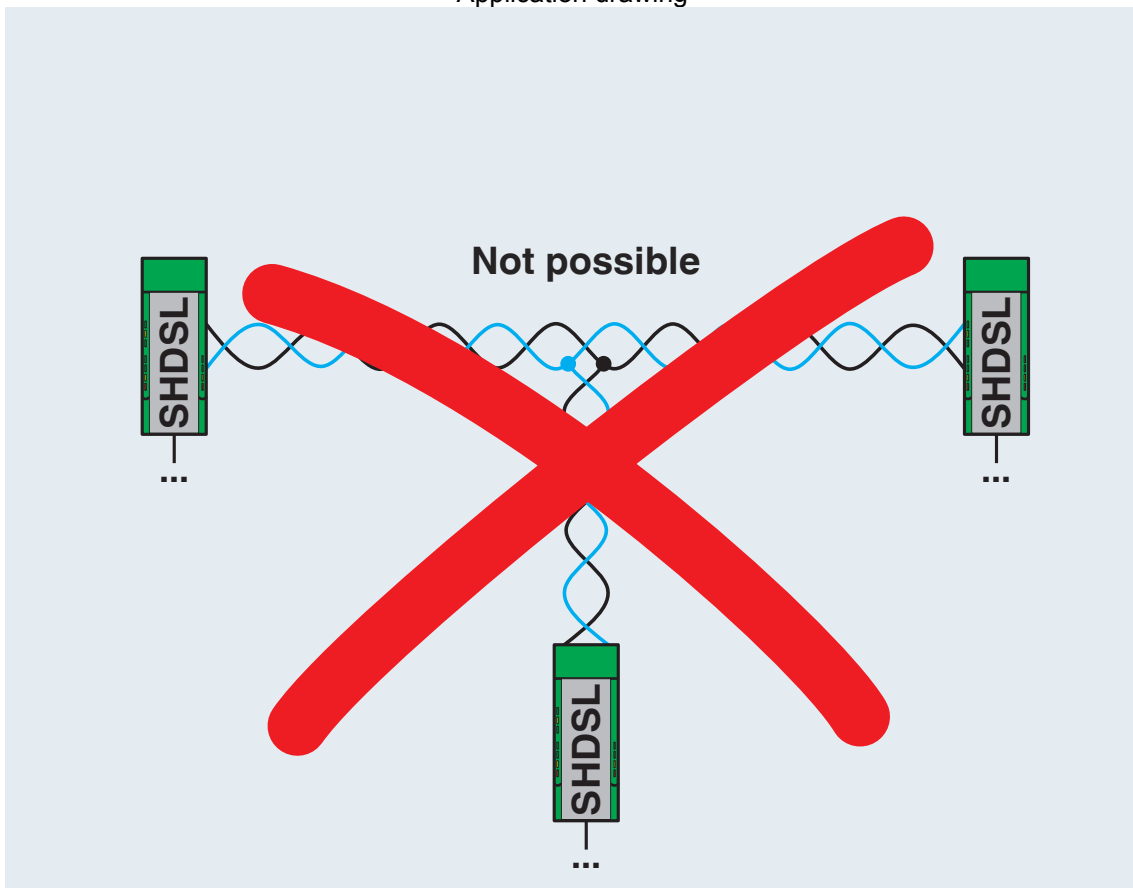
Standards/regulations	EN 50121-4
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Drawings



SHDSL subsection in fiber optic ring not supported

Application drawing



Multipoint communication via SHDSL not supported

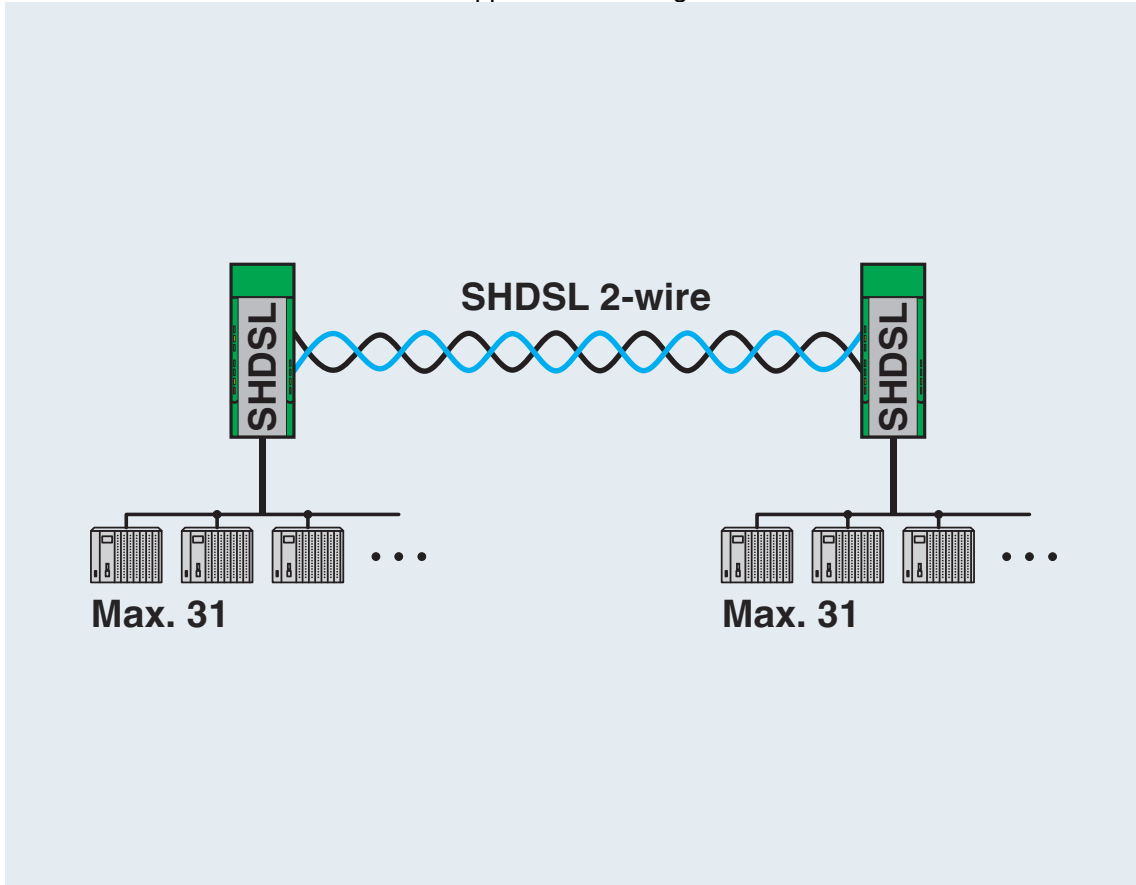
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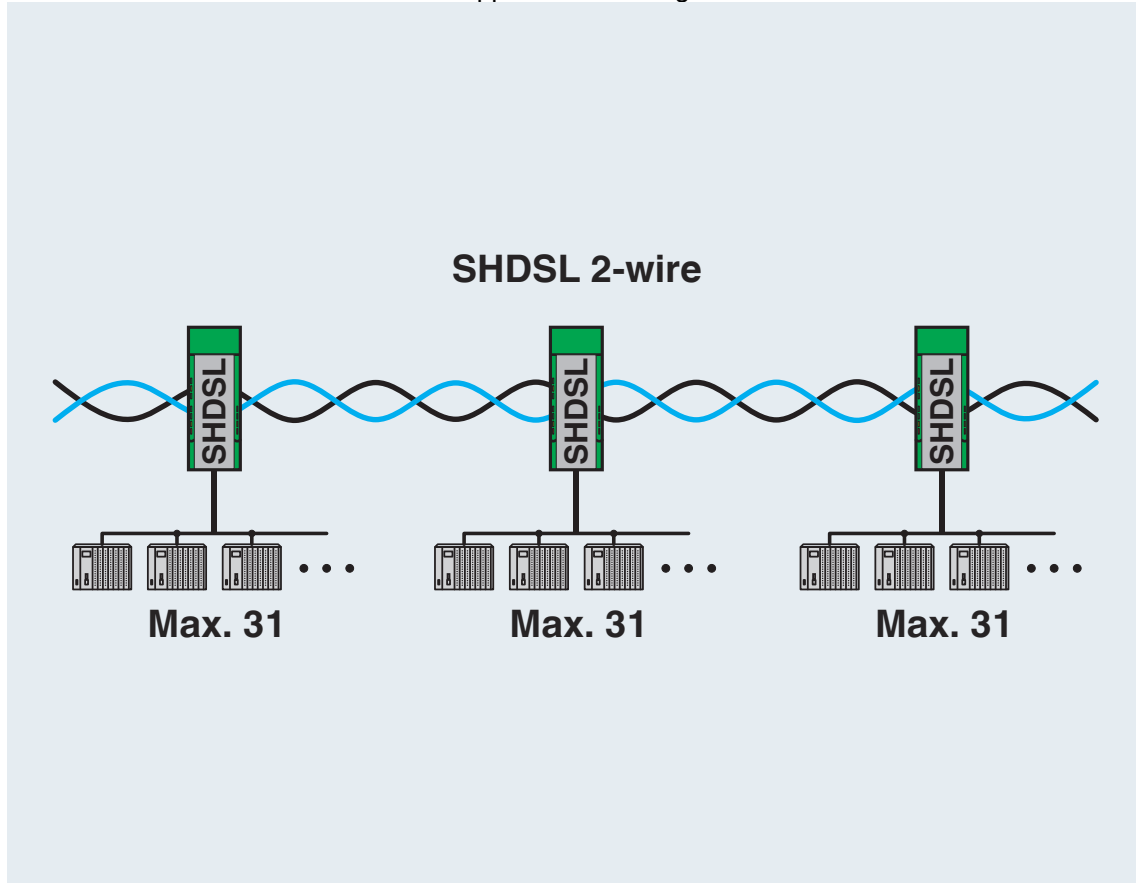


Application drawing



Point-to-point connection (2-wire)

Application drawing



Linear structure (2-wire)

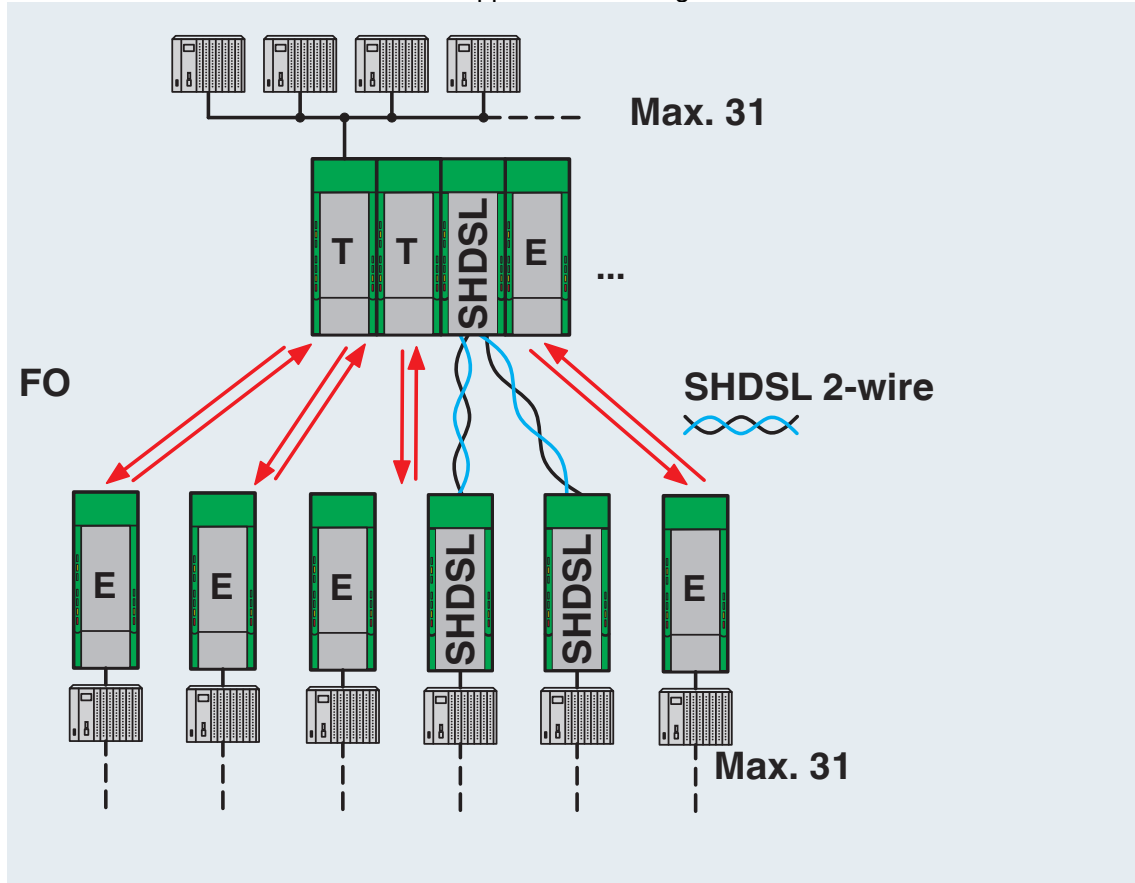
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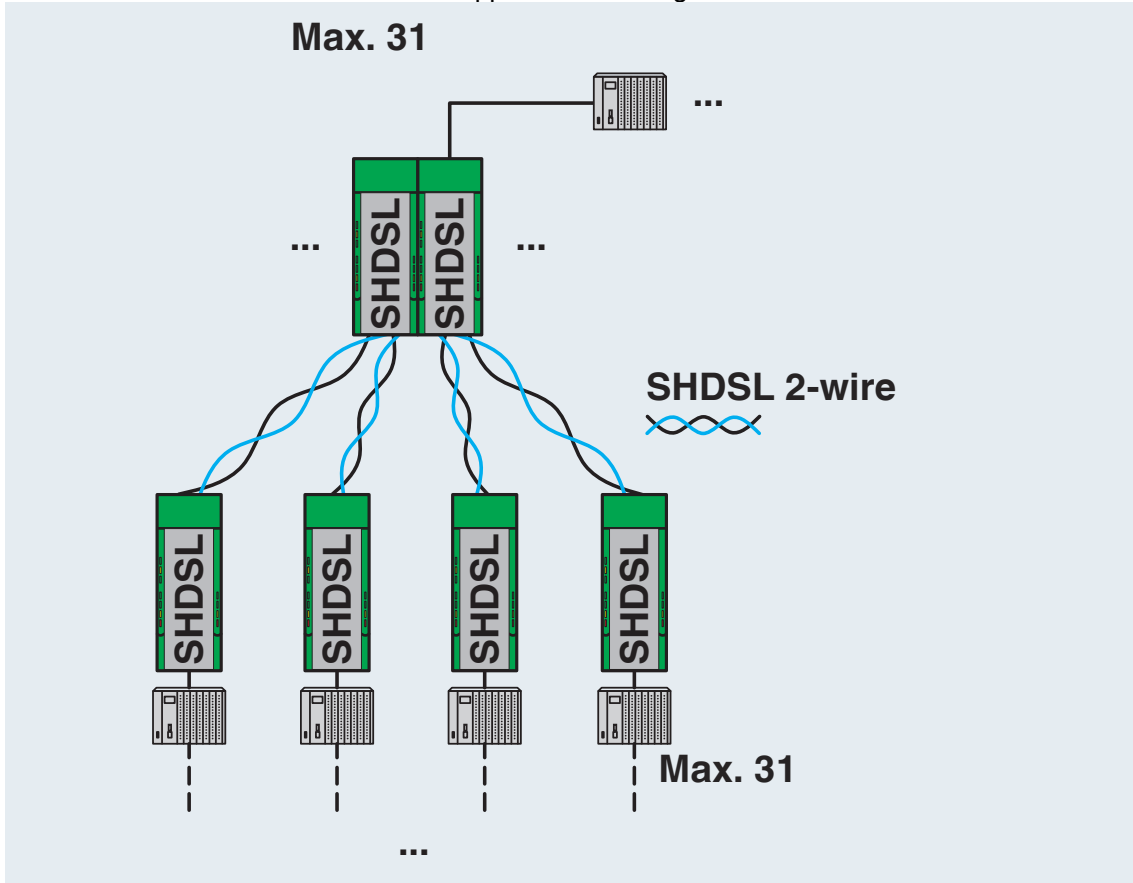


Application drawing



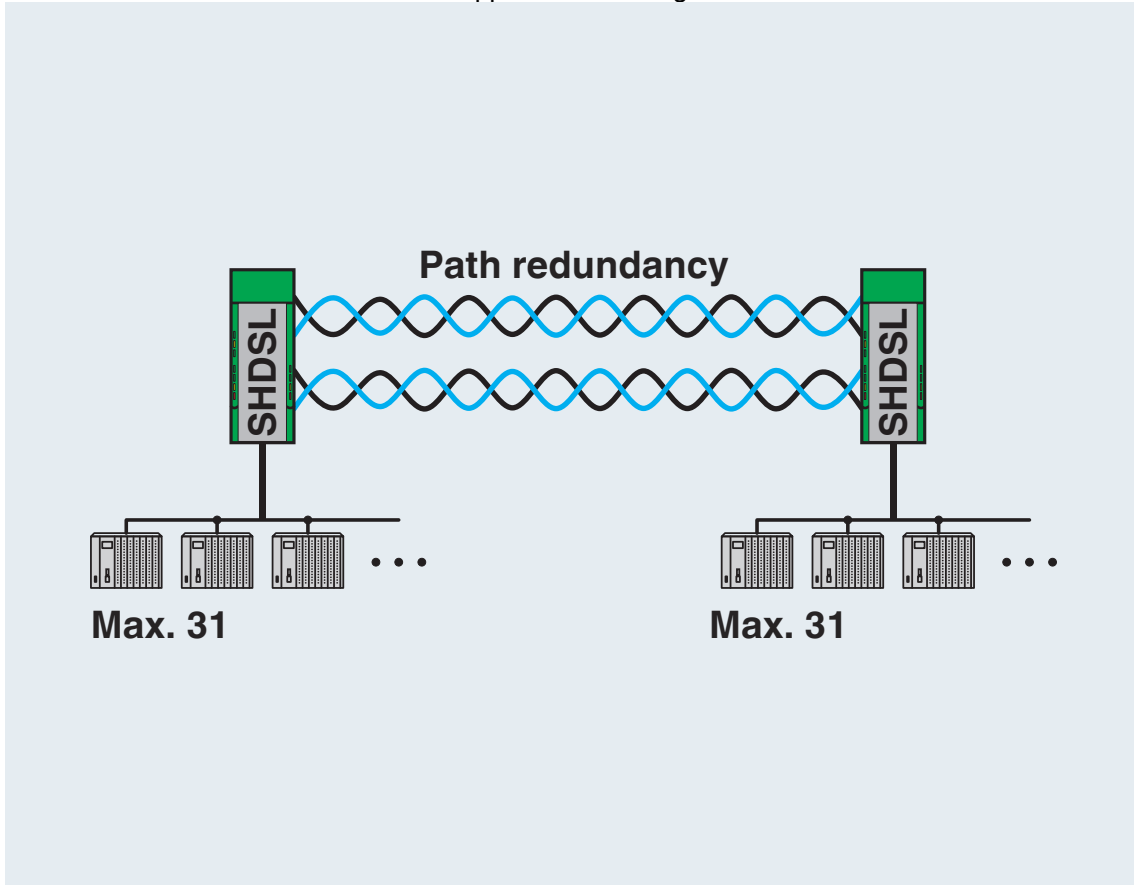
Star structure: mixed operation with repeaters and FO converters

Application drawing



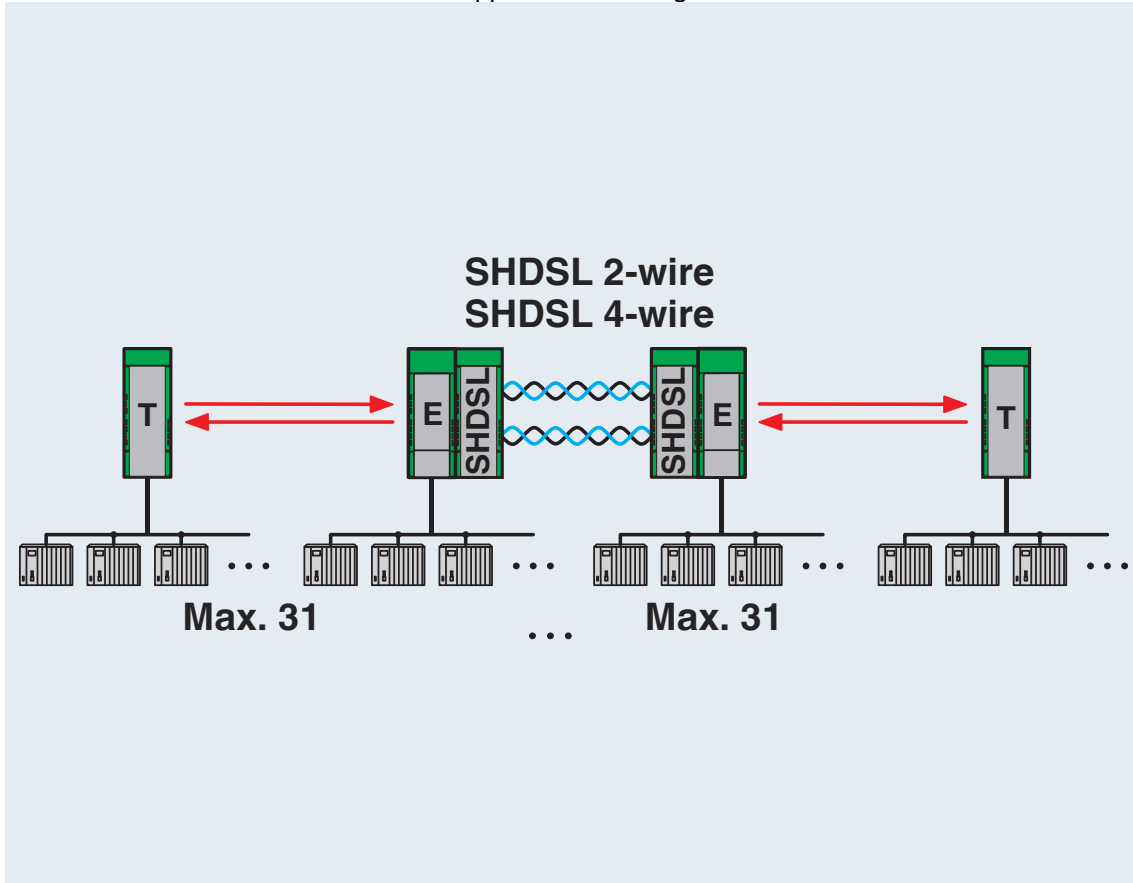
Star structure via DIN rail connector

Application drawing



Point-to-point connection (4-wire)

Application drawing



Linear structure: mixed operation with repeaters and FO converters

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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>

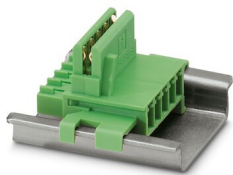


Primary-switched power supply unit, QUINT POWER, Screw connection, DIN rail mounting, input: 1-phase, output: 24 V DC / 2.5 A

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-SHDSSL - 2801593

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

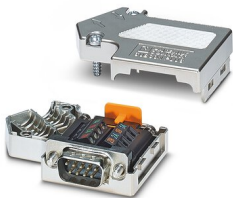


Attachment plug with surge protection for two SHDSL telecommunications interfaces (ports). Connection: RJ45 (RJ12/RJ11) and plug-in screw terminal block (COMBICON). Alternatively, can be snapped onto a DIN rail.

D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/SC2 - 2708232

<https://www.phoenixcontact.com/pc/products/2708232>



D-SUB connector, 9-pos., male connector, 35° cable entry, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/PB/SC2 - 2708245

<https://www.phoenixcontact.com/pc/products/2708245>



D-SUB connector, 9-pos., male connector, 35° cable entry, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/IDC - 2313672

<https://www.phoenixcontact.com/pc/products/2313672>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection

Modem - PSI-MODEM-SHDSSL/PB

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D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/PG/IDC - 2313685

<https://www.phoenixcontact.com/pc/products/2313685>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; IDC terminal block connection

D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/SC - 2313698

<https://www.phoenixcontact.com/pc/products/2313698>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/90/P/SC - 2313708

<https://www.phoenixcontact.com/pc/products/2313708>



D-SUB connector, 9-pos., male connector, 90° cable entry, bus system: PROFIBUS DP up to 12 Mbps with PG D-SUB socket for connecting a programming device, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

D-SUB bus connector

D-SUB bus connector - SUBCON-PLUS-PROFIB/AX/SC - 2744380

<https://www.phoenixcontact.com/pc/products/2744380>



D-SUB connector, 9-pos., male connector, axial version with two cable entries, bus system: PROFIBUS DP up to 12 Mbps, termination resistor can be switched on via slide switch, pin assignment: 3, 5, 6, 8; screw connection terminal blocks

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Bus system cable

Bus system cable - PSM-CABLE-PROFIB/FC - 2744652

<https://www.phoenixcontact.com/pc/products/2744652>



By the meter, Bus system cable, PROFIBUS (12 Mbps), shielded, PVC FR VI/PVC, violet, 2-wire (1X2XAWG22/1), color single wire: Red, green, cable length: Free entry (1.0 ... 1000.0 m)

Termination resistor

Termination resistor - PSI-TERMINATOR-PB-TBUS - 2702636

<https://www.phoenixcontact.com/pc/products/2702636>



Active termination resistor for PROFIBUS and RS-485 bus systems, redundant power supply, routing of the supply voltage via DIN rail connector, electrical isolation, switchable termination, integrated programming interface

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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



FO converters

FO converters - PSI-MOS-PROFIB/FO 850 T - 2708261

<https://www.phoenixcontact.com/pc/products/2708261>



FO converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, T-coupler with two FO interfaces (BFOC), 850 nm, for PCF/fiberglass cable (multimode)

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<https://www.phoenixcontact.com/pc/products/2313656>



FO converters

FO converters - PSI-MOS-PROFIB/FO 660 T - 2708287

<https://www.phoenixcontact.com/pc/products/2708287>



FO converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, T-coupler with two FO interfaces (FSMA), 660 nm, for polymer/PCF fiber cable

FO converters

FO converters - PSI-MOS-PROFIB/FO1300 E - 2708559

<https://www.phoenixcontact.com/pc/products/2708559>



Fiber optic converter with integrated optical diagnostics, alarm contact, for PROFIBUS up to 12 Mbps, termination device with one fiber optic interface (SC-Duplex), 1300 nm, for fiberglass cable

Modem - PSI-MODEM-SHDSSL/PB

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Repeater

Repeater - PSI-REP-PROFIBUS/12MB - 2708863

<https://www.phoenixcontact.com/pc/products/2708863>



Modular repeater for electrical isolation and range increase for PROFIBUS up to 12 Mbps, 4-way isolation, rail-mountable, supply 24 V DC

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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PHOENIX CONTACT GmbH & Co. KG

Flachsmarktstraße 8

D-32825 Blomberg

+49 (0) 5235-3 00

info@phoenixcontact.com