

# PSI-MODEM-SHDSL/ETH - Ethernet extender



2313643

<https://www.phoenixcontact.com/us/products/2313643>

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First generation: Unmanaged Ethernet extender for point-to-point connections, line and ring structures, data rates up to 30 Mbps, distances of up to 20 km on in-house copper cables, diagnostics via USB and LEDs, 2 SHDSL ports, 1 LAN port

## Your advantages

- Distances up to 20 km
- Up to 15.3 Mbps in 2-wire operation
- Up to 30 Mbps in 4-wire operation
- Robust modulation method (SHDSL)
- PROFINET
- Automatic SHDSL data rate detection
- Network transparent (no IP configuration required)
- Protocol transparent
- Automatic detection of network cable type (auto MDI(X))
- Automatic network data rate detection (10/100 Mbps)
- Easy startup, plug and play
- Future proof (IPv4 and IPv6-compatible)
- 2 digital outputs for alerting external controllers

## Commercial data

Item number	2313643
Packing unit	1 pc
Note	Made to order (non-returnable)
Sales key	DN24
Product key	DNC442
GTIN	4046356509206
Weight per piece (including packing)	259.7 g
Weight per piece (excluding packing)	258.7 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	Ethernet extender
MTTF	711 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	308 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	125 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)
MTBF	1017 Years (Telcordia standard, 25°C temperature, 21% operating cycle (5 days a week, 8 hours a day))
	205 Years (Telcordia standard, 40°C temperature, 34.25% operating cycle (5 days a week, 12 hours a day))

### Electrical properties

Electrical isolation	VCC // Ethernet // 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 <sub>rms</sub> (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)

### Function

Management	Plug-and-play, user-friendly software: diagnostic functions, log, individual configuration
Status and diagnostic indicators	LEDs: VCC (supply voltage), ACT/LINK (Ethernet 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
Voltage output signal	18 V DC ... 30 V DC (depending on the operating voltage)

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Current output signal	≤ 150 mA (Short-circuit-proof)
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## Connection data

### Supply

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

## Interfaces

Signal	Ethernet
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Data: Ethernet interface, 10/100Base-T(X) in accordance with IEEE 802.3

Serial transmission speed	10/100 Mbps, auto negotiation
Connection method	RJ45 jack, shielded
No. of channels	1
Transmission length	< 100 m (shielded twisted pair)
Protocols supported	Transparent protocol for IPv4 and IPv6

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 <sup>2</sup>
Conductor cross-section flexible min.	0.2 mm <sup>2</sup>
Conductor cross-section, rigid max.	2.5 mm <sup>2</sup>
Conductor cross-section, rigid min.	0.2 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

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

Color (Housing)	green (RAL 6021)
Material (Housing)	PA 6.6-FR

## Mechanical tests

Vibration resistance in accordance with EN 60068-2-6/IEC 60068-2-6	Vibration (operation): 5g, 10...150 Hz, 2.5 h, in XYZ direction
Shock in accordance with EN 60068-2-27/IEC 60068-2-27	Shock (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 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

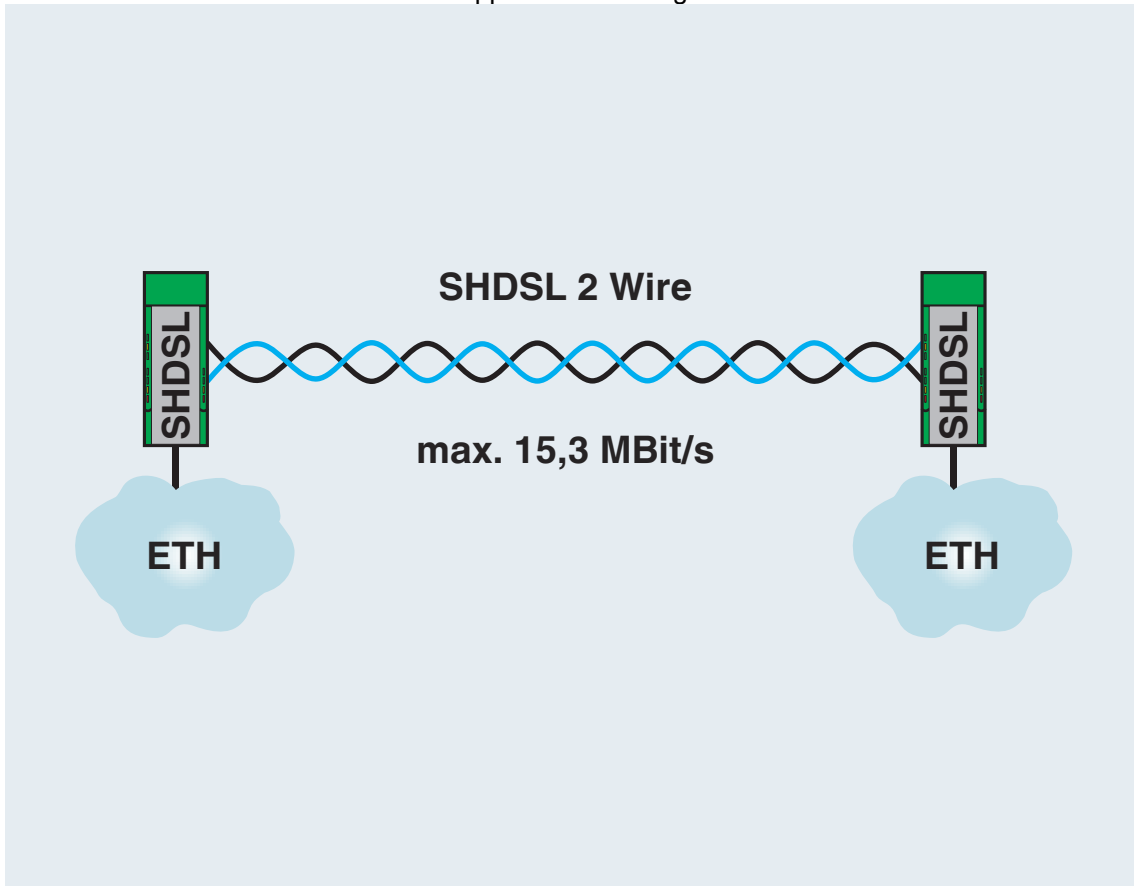
Standards/regulations	EN 50121-4
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## Mounting

Mounting type	DIN rail: 35 mm
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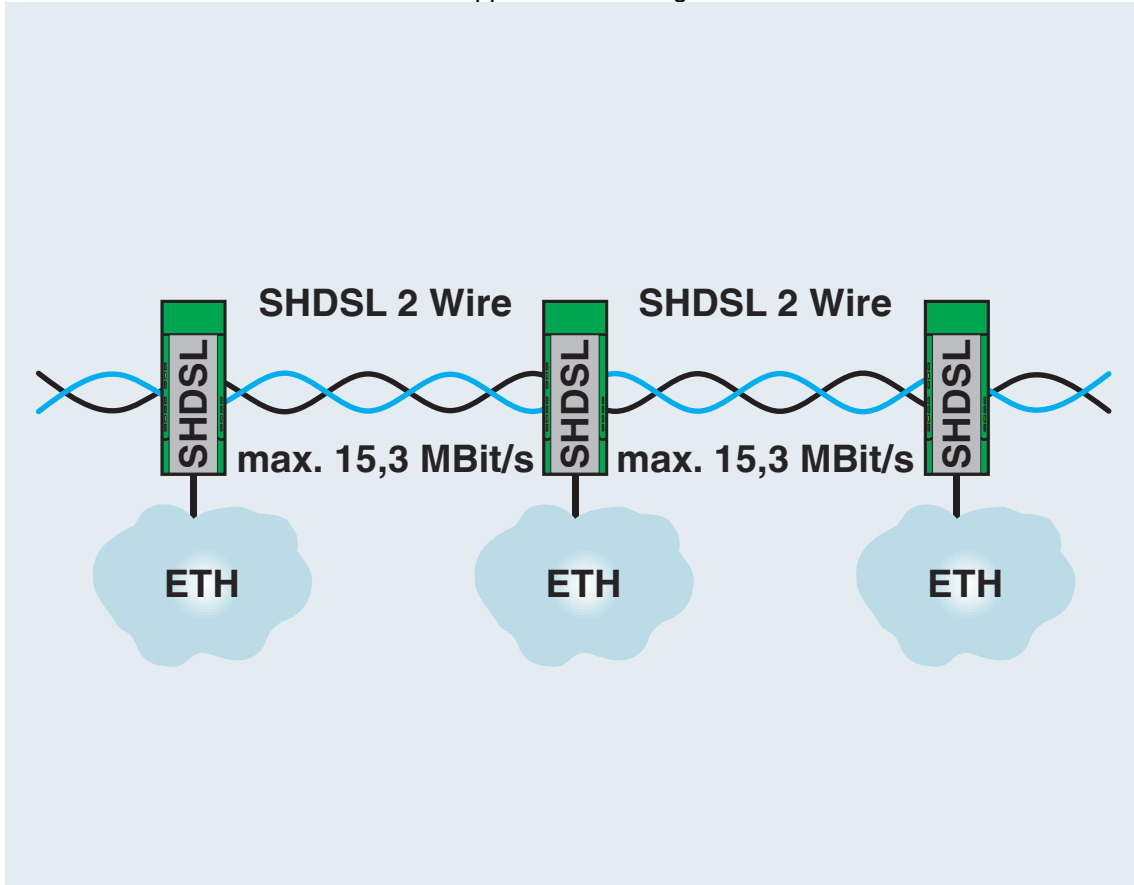
## Drawings

Application drawing



Point-to-point connection (2-wire)

Application drawing

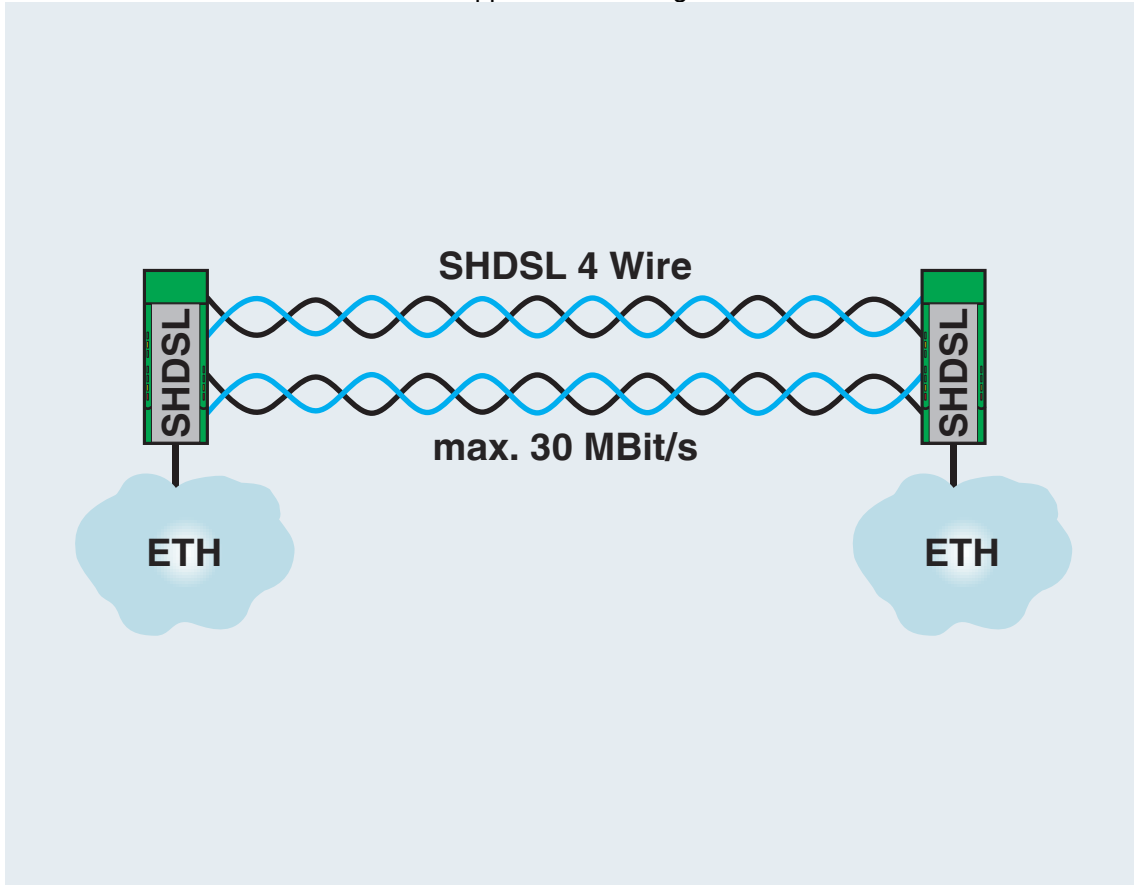


Linear structure (2-wire)

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Application drawing

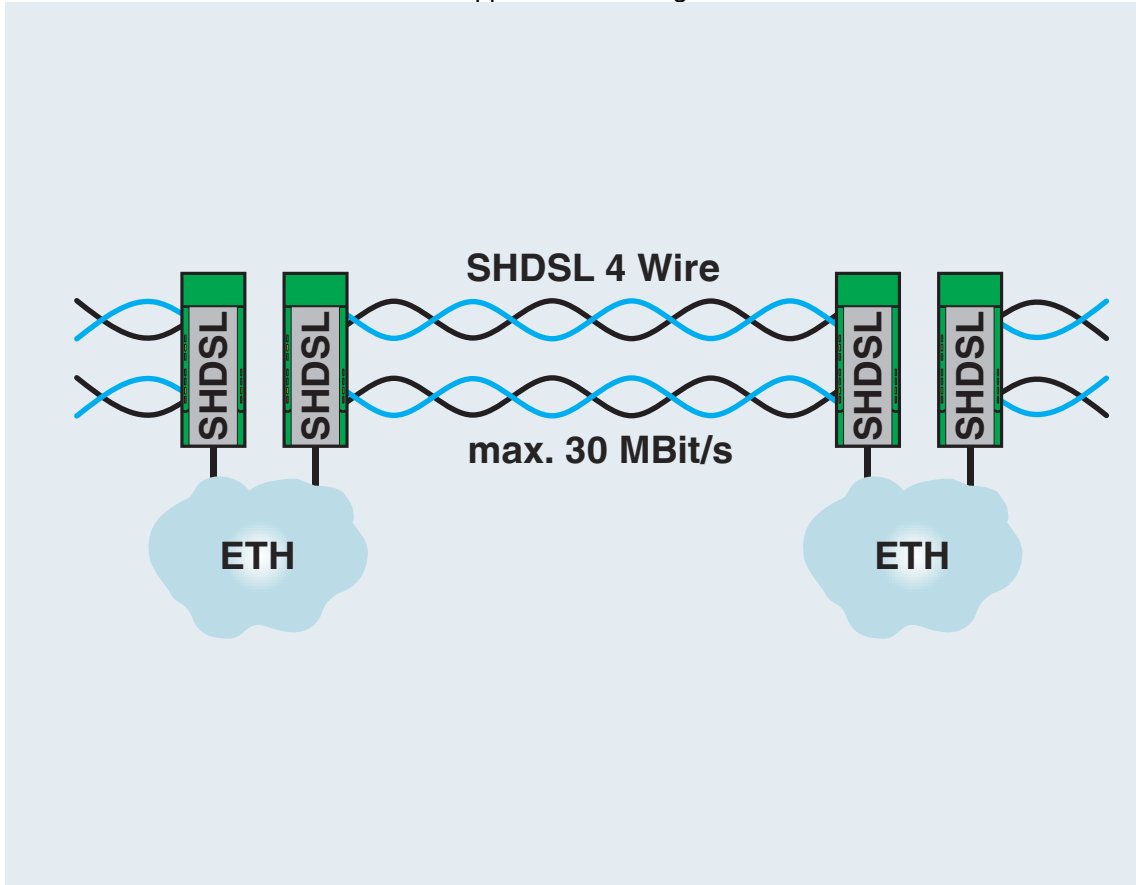


Point-to-point connection (4-wire)

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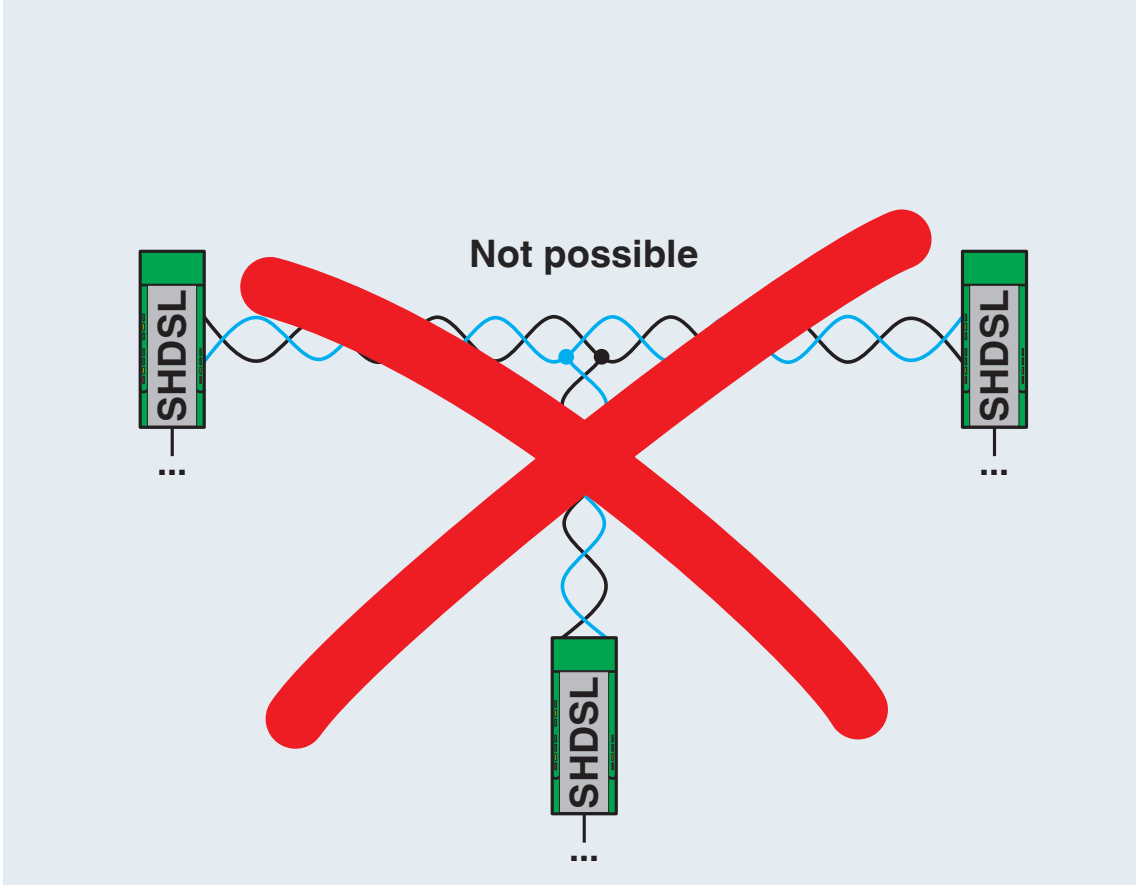
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Application drawing



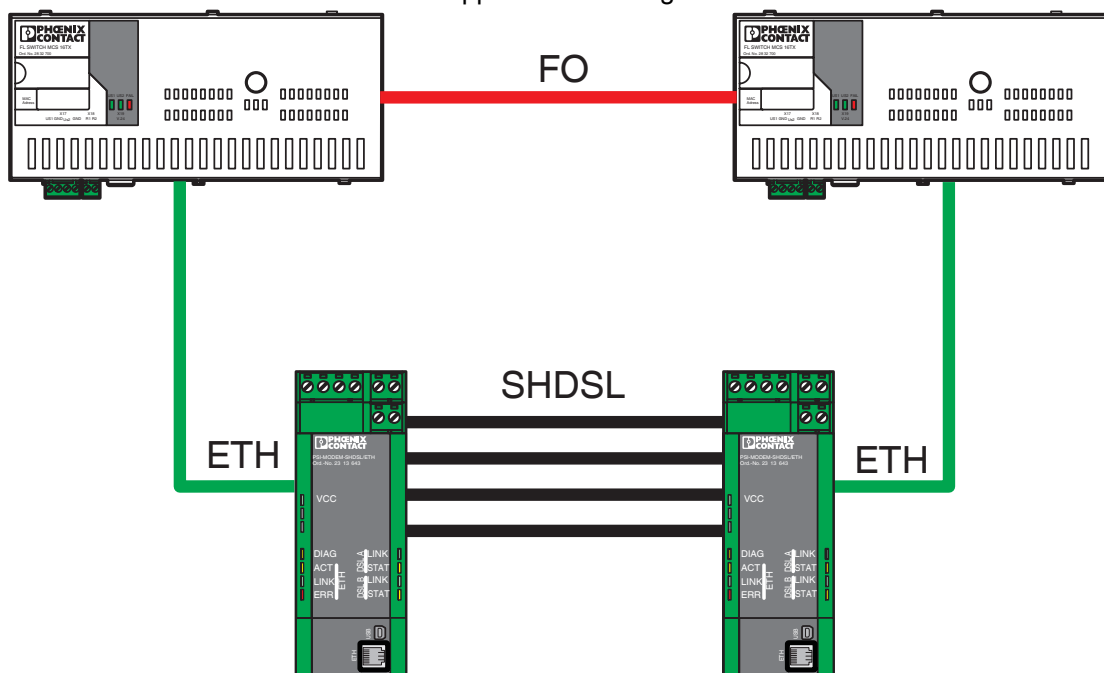
Linear structure (4-wire)

Application drawing



Multipoint communication via SHDSL not supported

Application drawing

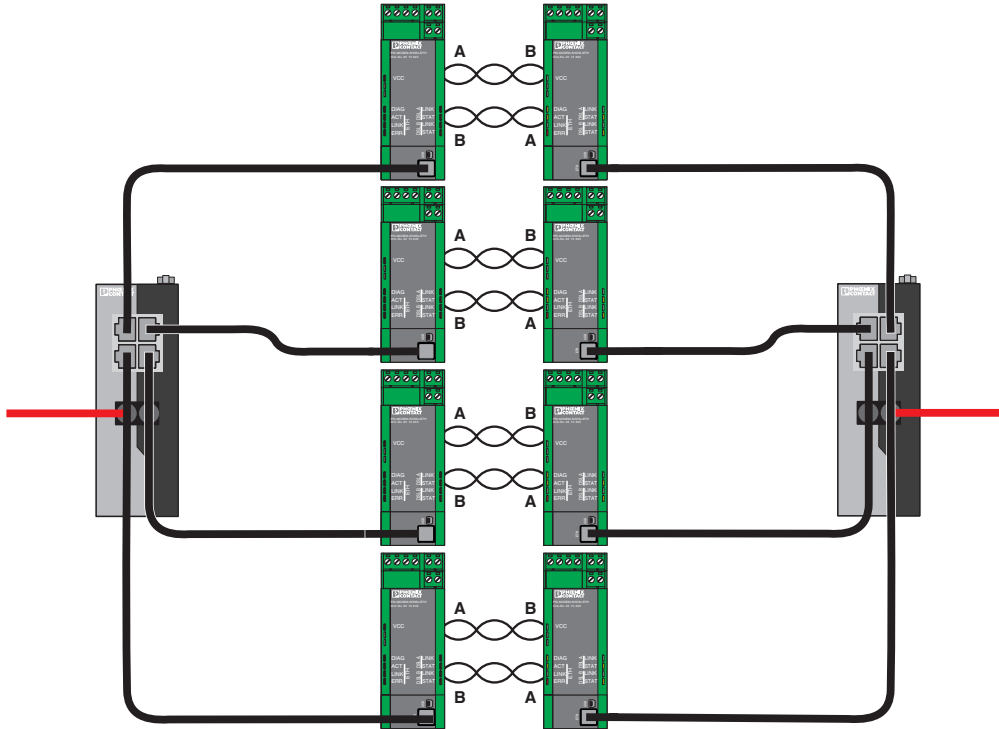


Example application: redundant system via SHDSL and manageable switch

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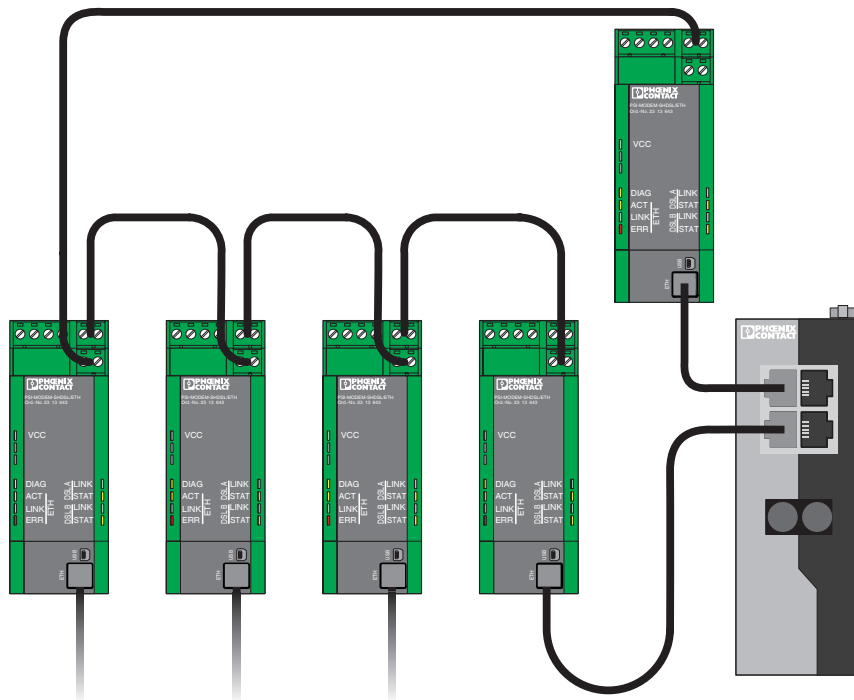
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Functional drawing



Link aggregation

Functional drawing

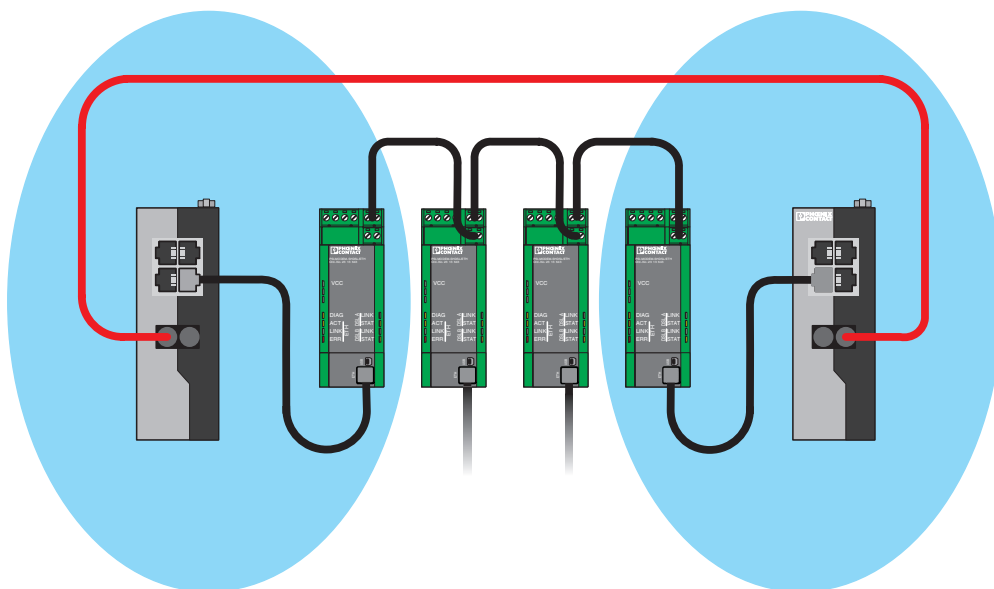


Redundancy, ring closure via an external switch

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Functional drawing



Redundancy via parallel fiber optic path

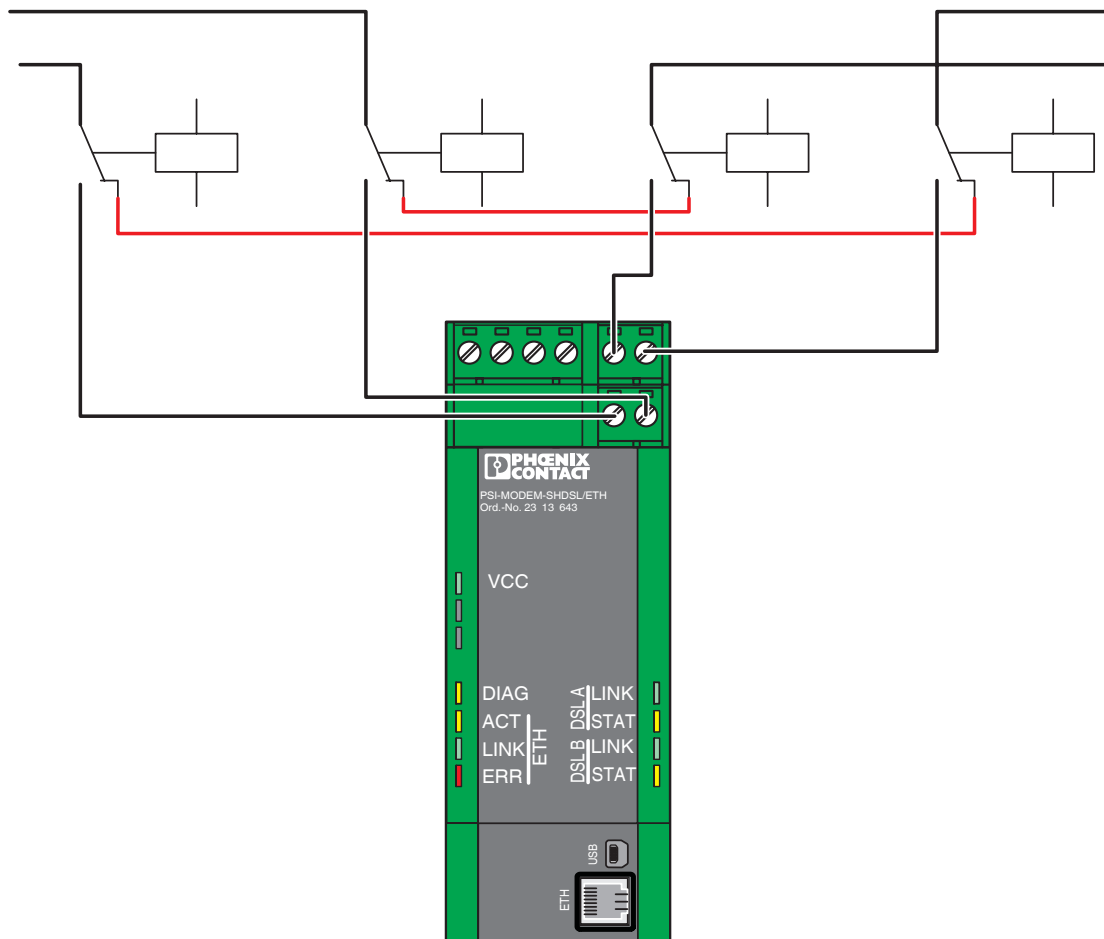
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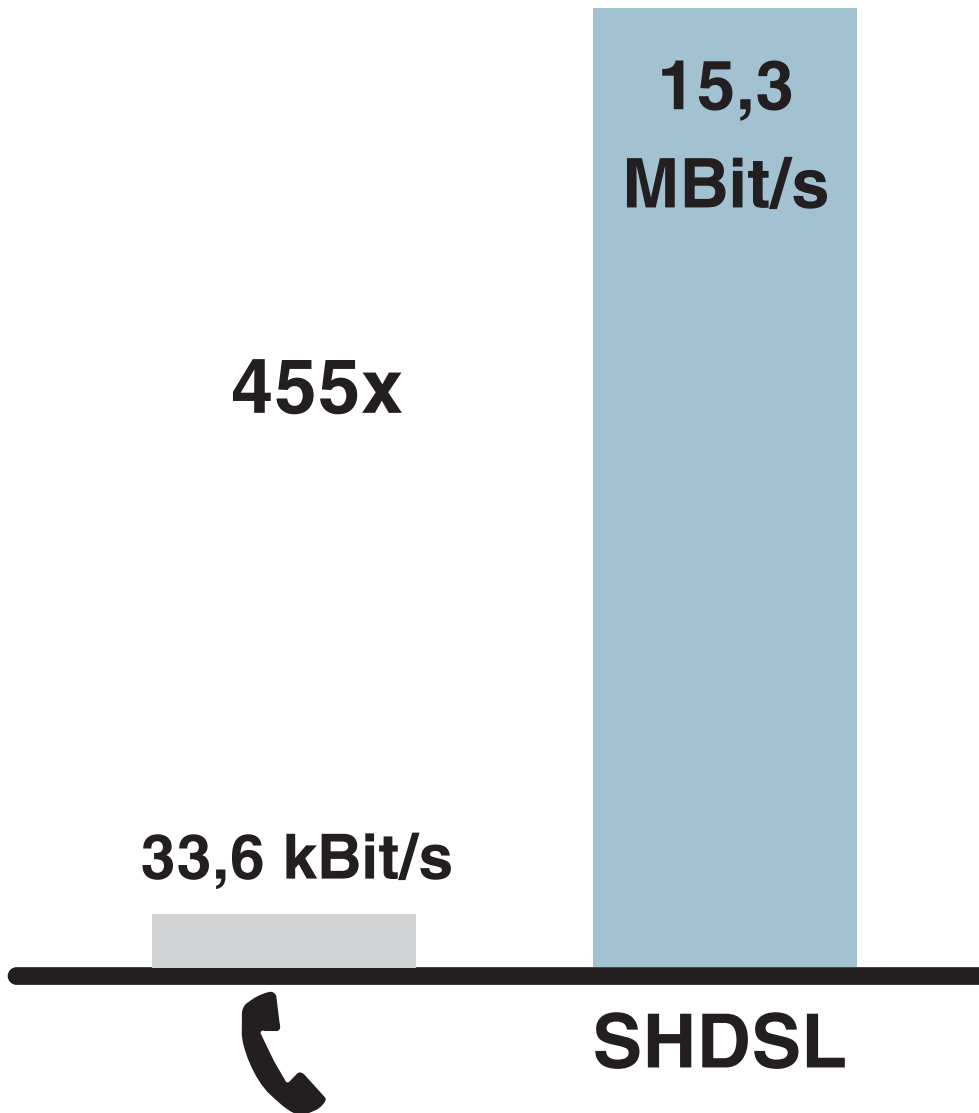
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Functional drawing



Jumpering with relay

Diagram



Speed comparison between the analog and SHDSL connection

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## Classifications

### UNSPSC

UNSPSC 21.0	43223100
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## Environmental product compliance

### EU RoHS

Fulfills EU RoHS substance requirements	Yes
Exemption	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)
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