

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. |
|------------|---|

Product properties

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|--------------|--|
| 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 _{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) |

Function

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|----------------------------------|--|
| Management | Plug and play, user-friendly software: Diagnostic functions, log book, 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) |
|-----------------------|--------------------------------|

Connection data

Supply

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

Interfaces

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|--------|----------|
| Signal | Ethernet |
|--------|----------|

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 ² |
| Conductor cross-section flexible min. | 0.2 mm ² |
| Conductor cross-section, rigid max. | 2.5 mm ² |
| Conductor cross-section, rigid min. | 0.2 mm ² |
| 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

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|--------|----------|
| Width | 35 mm |
| Height | 99 mm |
| Depth | 114.5 mm |

Material specifications

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

Mechanical tests

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|--|---|
| 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

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|-------------|--------------|
| Certificate | CE-compliant |
|-------------|--------------|

ATEX

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|----------------|---|
| Identification | Ex II 3 G Ex nA IIC T4 Gc X |
| Note | Please follow the special installation instructions in the documentation! |

UL, USA/Canada

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|----------------|------------|
| Identification | 508 Listed |
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Corrosive gas test

| | |
|----------------|----------------------------------|
| Identification | ISA-S71.04-1985 G3 Harsh Group A |
|----------------|----------------------------------|

EMC data

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|-------------------------------|---|
| Electromagnetic compatibility | Conformance with EMC Directive 2014/30/EU |
|-------------------------------|---|

Standards and regulations

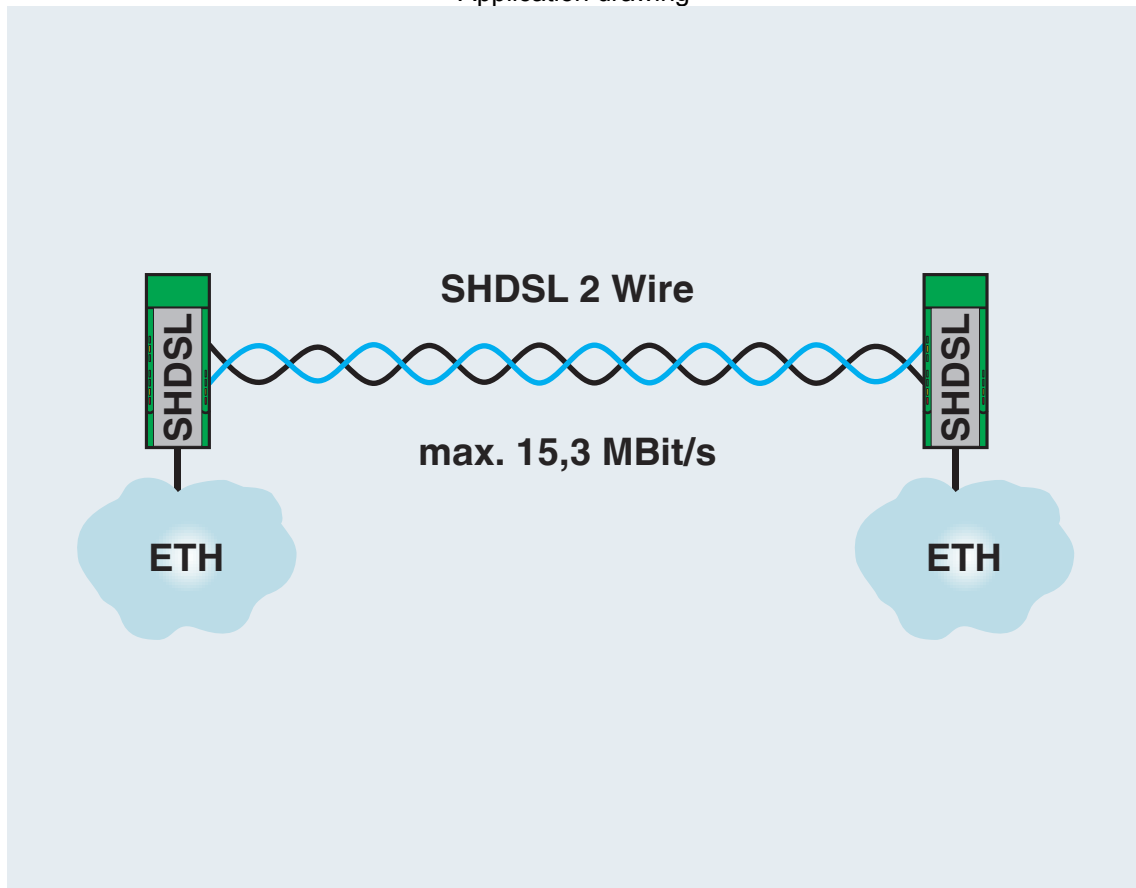
| | |
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| Standards/regulations | EN 50121-4 |
|-----------------------|------------|

Mounting

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|---------------|-----------------|
| Mounting type | DIN rail: 35 mm |
|---------------|-----------------|

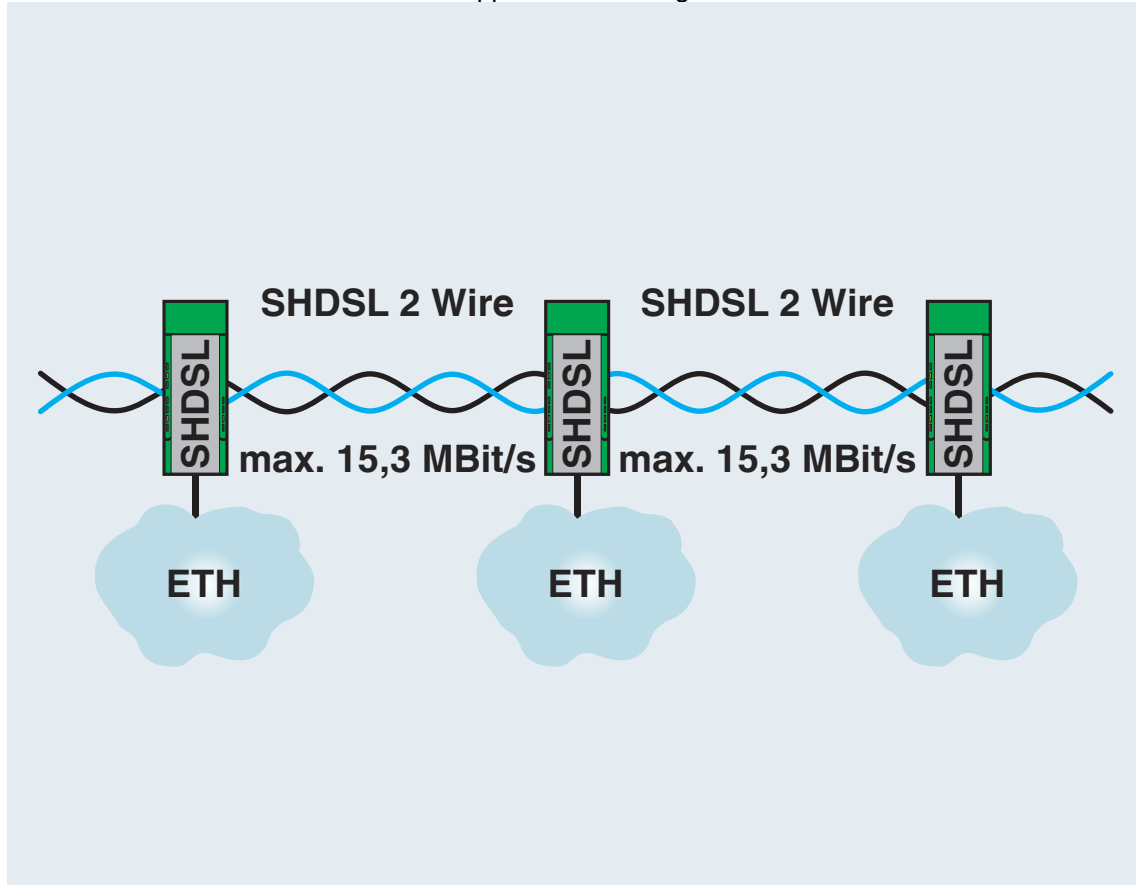
Drawings

Application drawing



Point-to-point connection (2-wire)

Application drawing

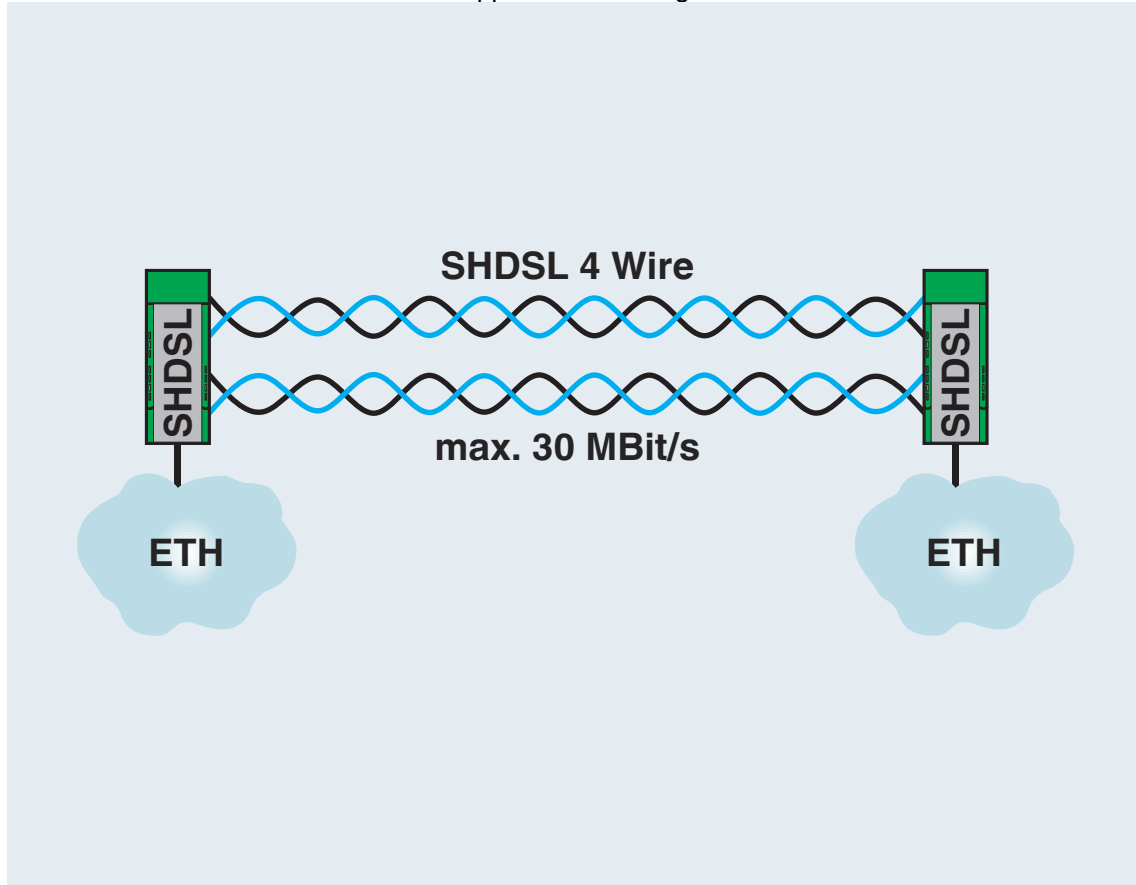


Linear structure (2-wire)

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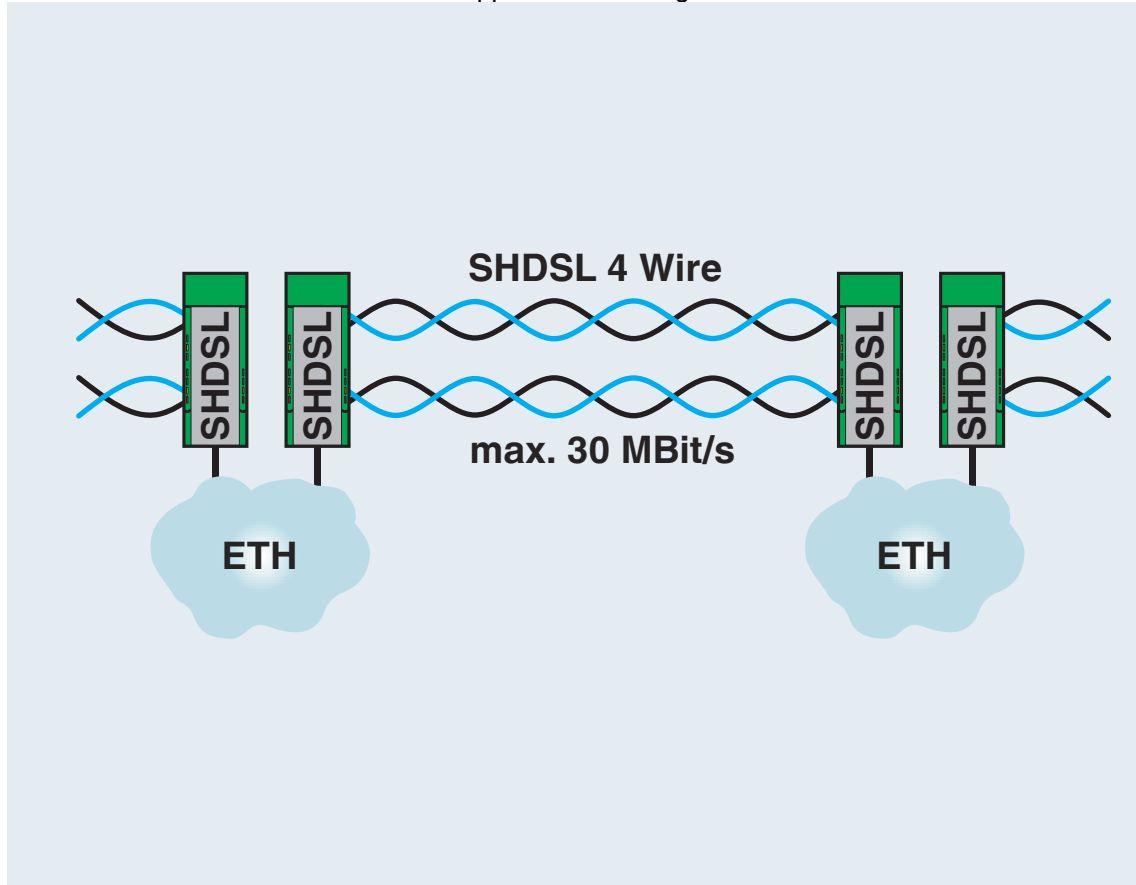
<https://www.phoenixcontact.com/us/products/2313643>

Application drawing



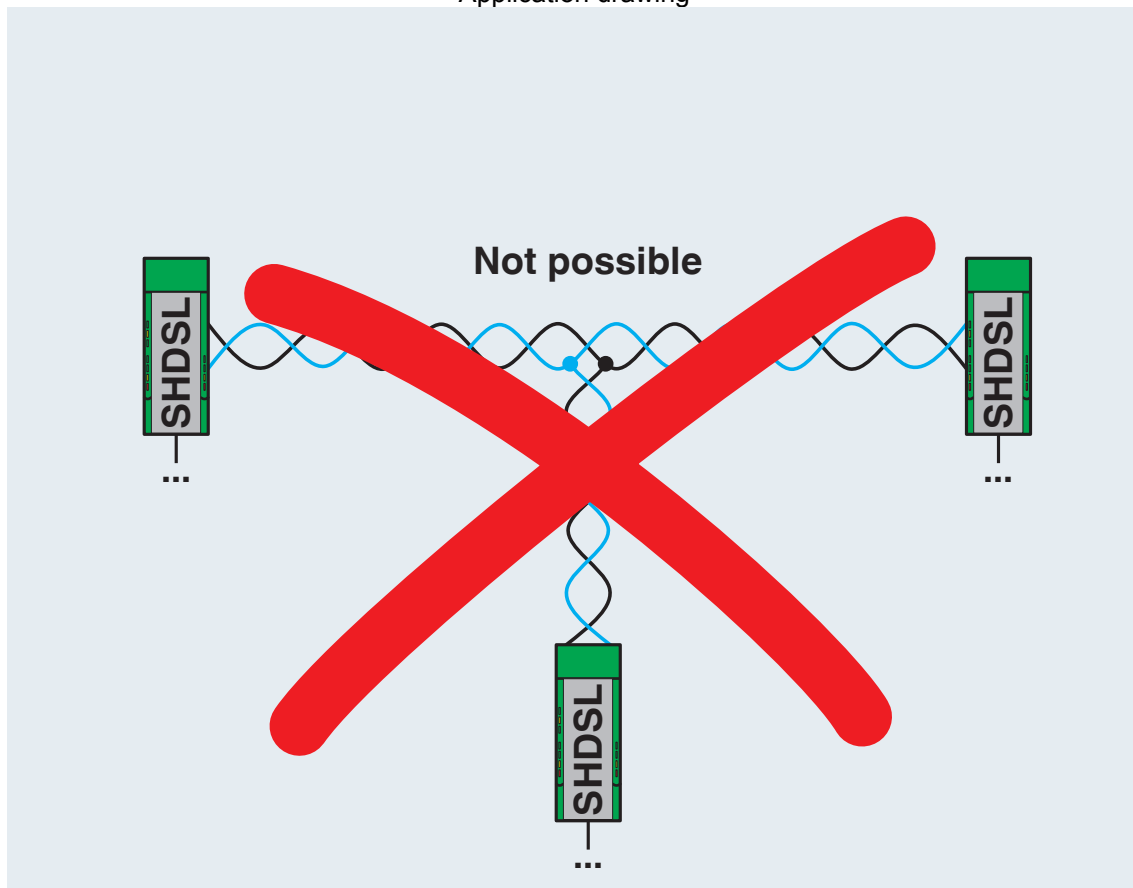
Point-to-point connection (4-wire)

Application drawing



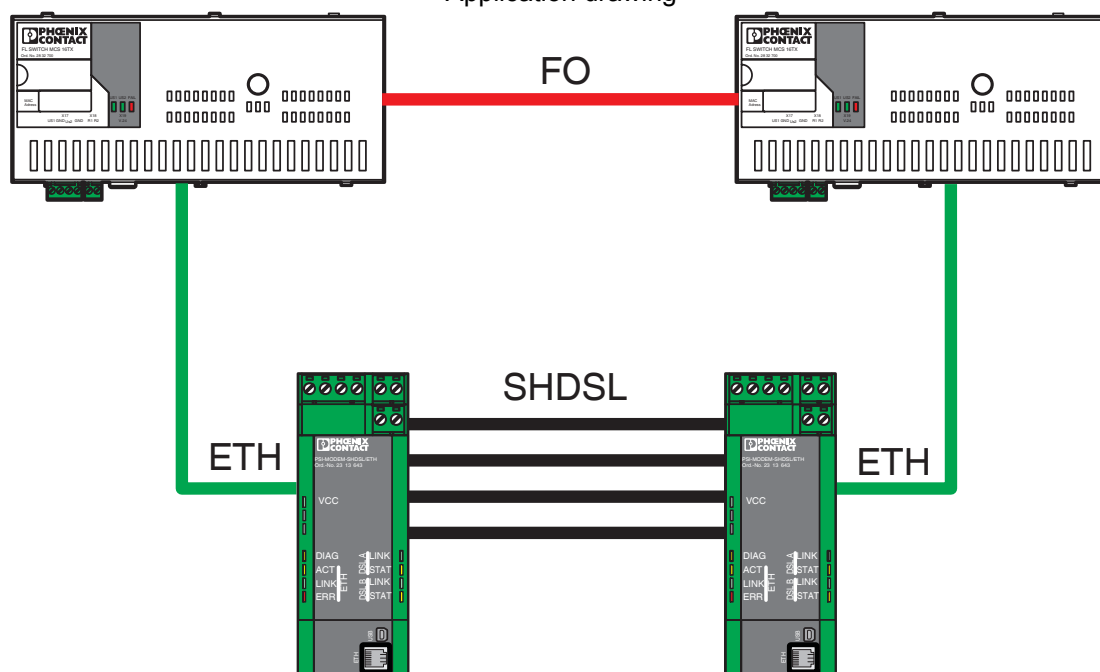
Linear structure (4-wire)

Application drawing



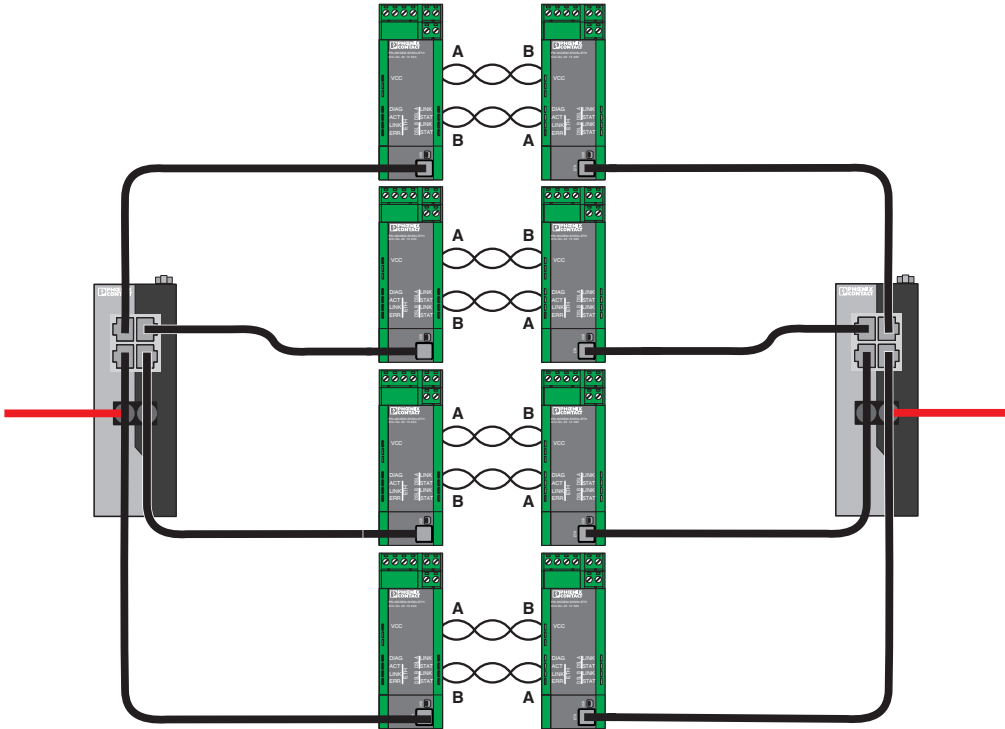
Multipoint communication via SHDSL not supported

Application drawing



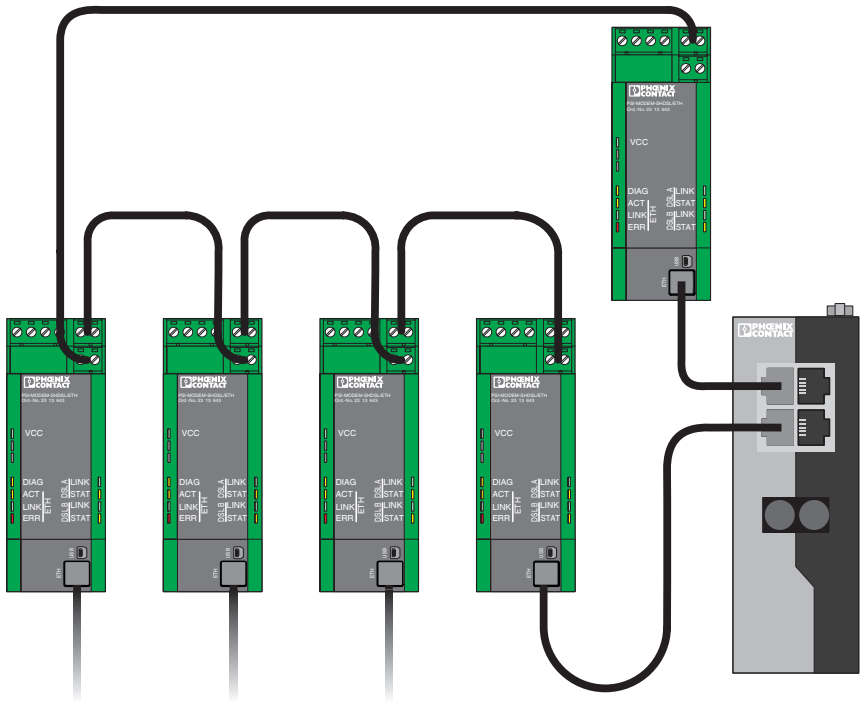
Example application: redundant system via SHDSL and manageable switch

Functional drawing



Link aggregation

Functional drawing

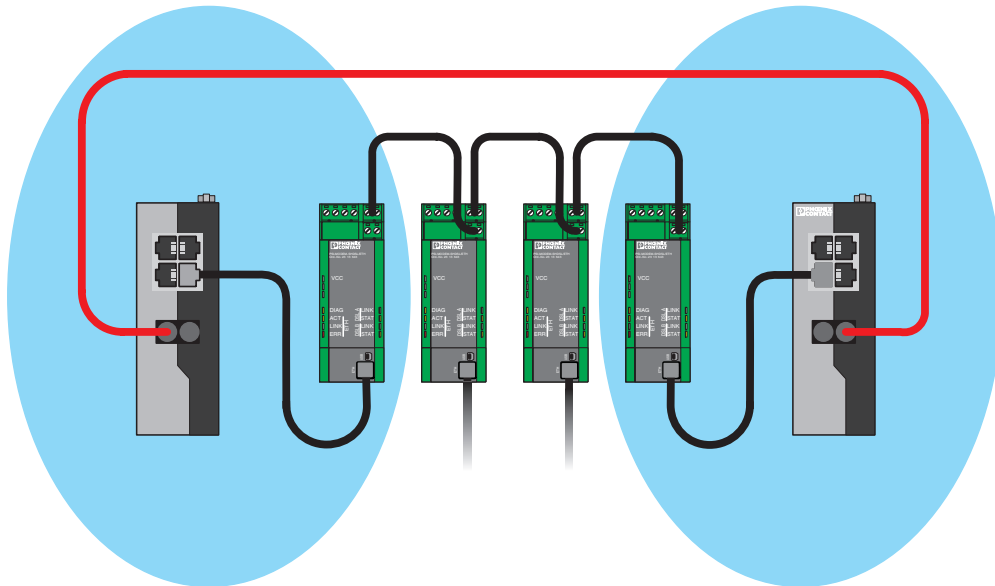


Redundancy, ring closure via an external switch

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Functional drawing



Redundancy via parallel fiber optic path

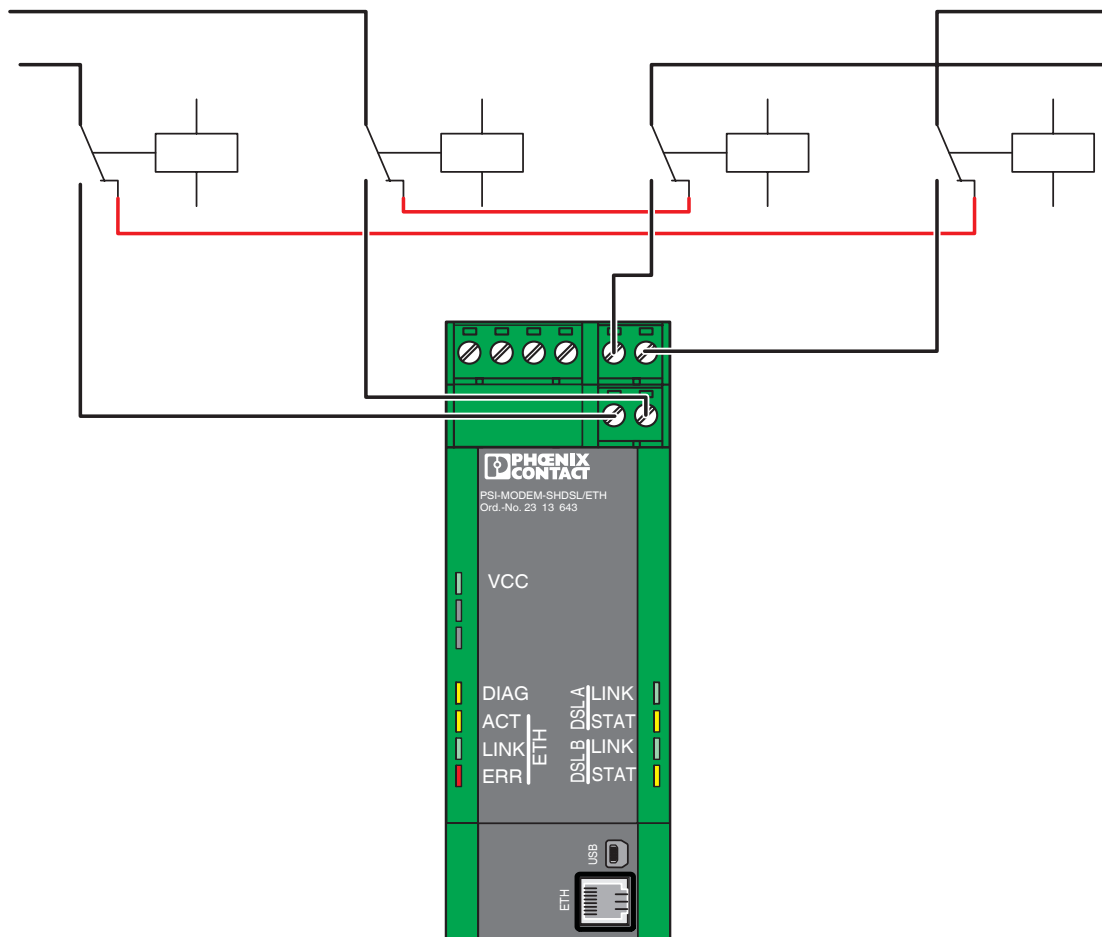
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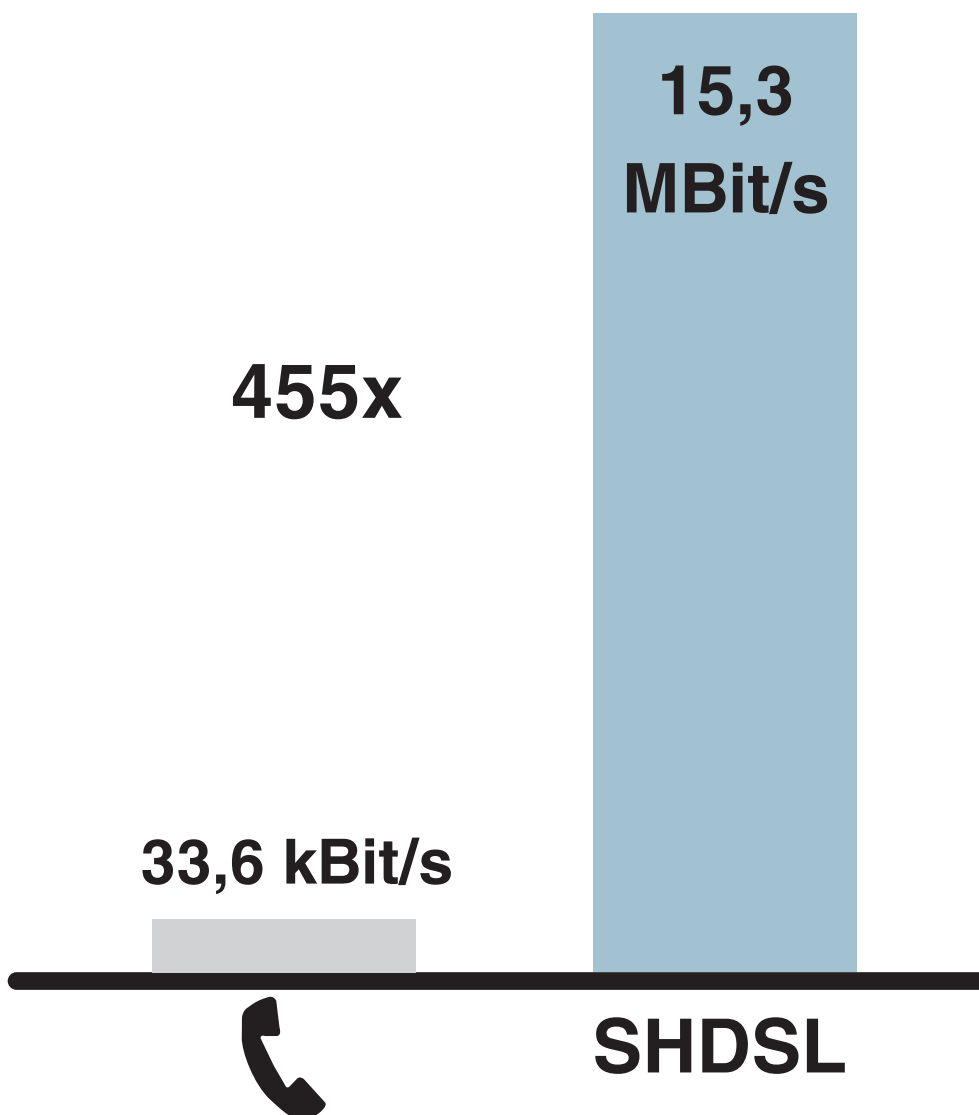
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Functional drawing



Jumpering with relay

Diagram



Speed comparison between the analog and SHDSL connection

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Classifications

ETIM

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| ETIM 8.0 | EC000309 |
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UNSPSC

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| UNSPSC 21.0 | 43223100 |
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Environmental product compliance

EU RoHS

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|---|--------------|
| Fulfills EU RoHS substance requirements | Yes |
| Exemption | 7(a), 7(c)-I |

China RoHS

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|--|---|
| 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

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|-------------------------------------|----------------------|
| REACH candidate substance (CAS No.) | Lead(CAS: 7439-92-1) |
|-------------------------------------|----------------------|