PSI-MODEM-SHDSL/PB - Modem

2313656

https://www.phoenixcontact.com/us/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
Sales key	DN24
Product key	DNC443
GTIN	4046356509213
Weight per piece (including packing)	328 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.

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	500 V AC (In accordance with EN/IEC 60079-7)
	1.5 kV_{rms} (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 (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
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	PROFIBUS

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)
Single conductor/terminal point, rigid	0.2 mm² ... 2.5 mm²
Single-wire/terminal point, flexible	0.2 mm² ... 2.5 mm²
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)

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	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

ATEX

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

UKEX

Identification	⟨Ex⟩ II 3 G Ex ec IIC T4 Gc
Certificate	PxCIMA22UKEX2313643X

UL, USA/Canada

Identification	508 Listed

Corrosive gas test

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

EMC data

Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU

Standards and regulations

Standards/regulations	EN 50121-4
Standard designation	Railway applications - Electromagnetic compatibility, Part 4: Emission and immunity of the signaling and telecommunications apparatus

Mounting

Assembly note	The product can be snapped onto all 35 mm DIN rails in accordance with EN 60715.

Drawings

Application drawing
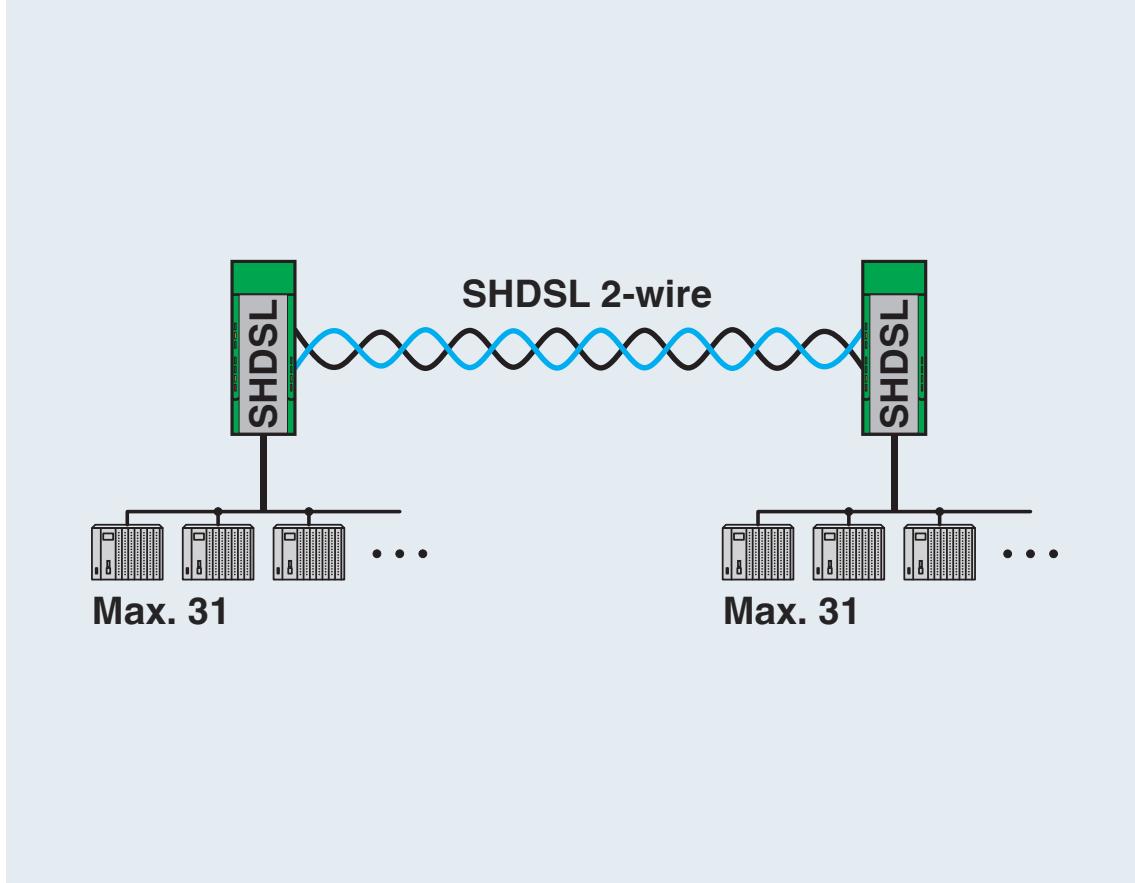
SHDSL 2-wire

SHDSL

SHDSL

Max. 31

Max. 31

Point-to-point connection (2-wire)

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Application drawing

Path redundancy

Max. 31   **Max. 31**
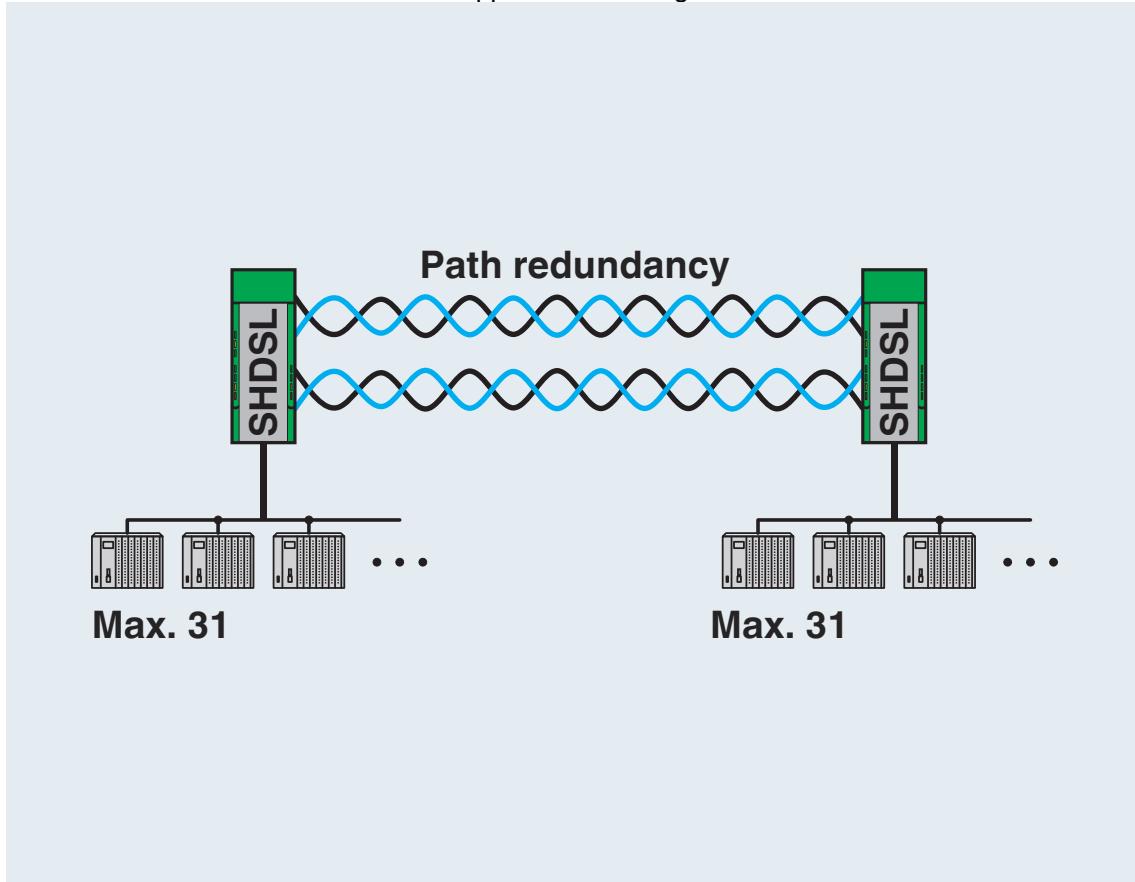
Point-to-point connection (4-wire)

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Application drawing

Linear structure (2-wire)

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Application drawing

Not possible

Redundant FO ring

Max. 31

Max. 31

Max. 31

Max. 31

FO
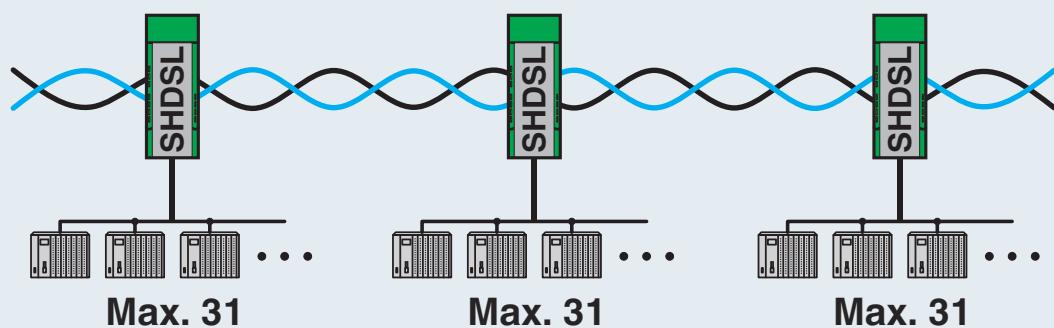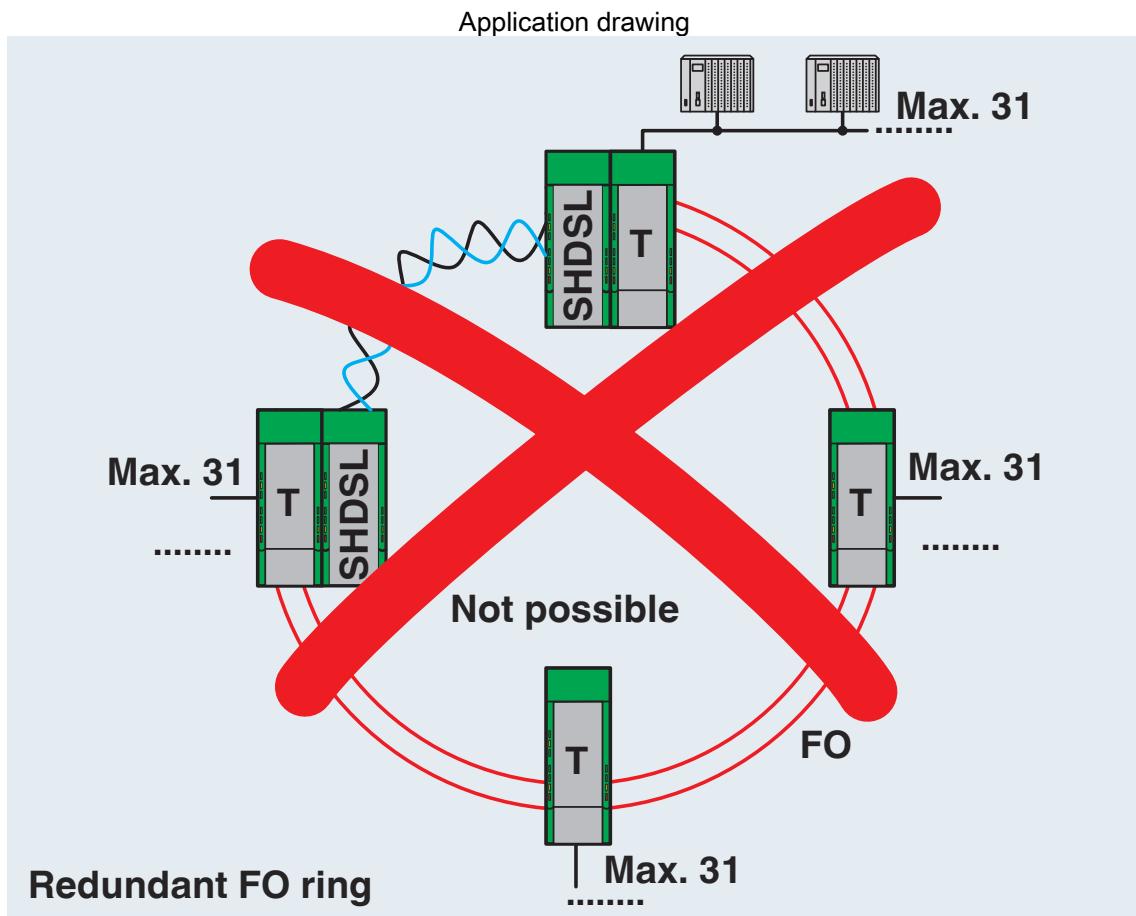
SHDSL subsection in fiber optic ring not supported

Application drawing

Max. 31

FO

SHDSL 2-wire

Max. 31

Star structure: mixed operation with repeaters and FO converters

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Application drawing

Max. 31

SHDSL 2-wire

Max. 31
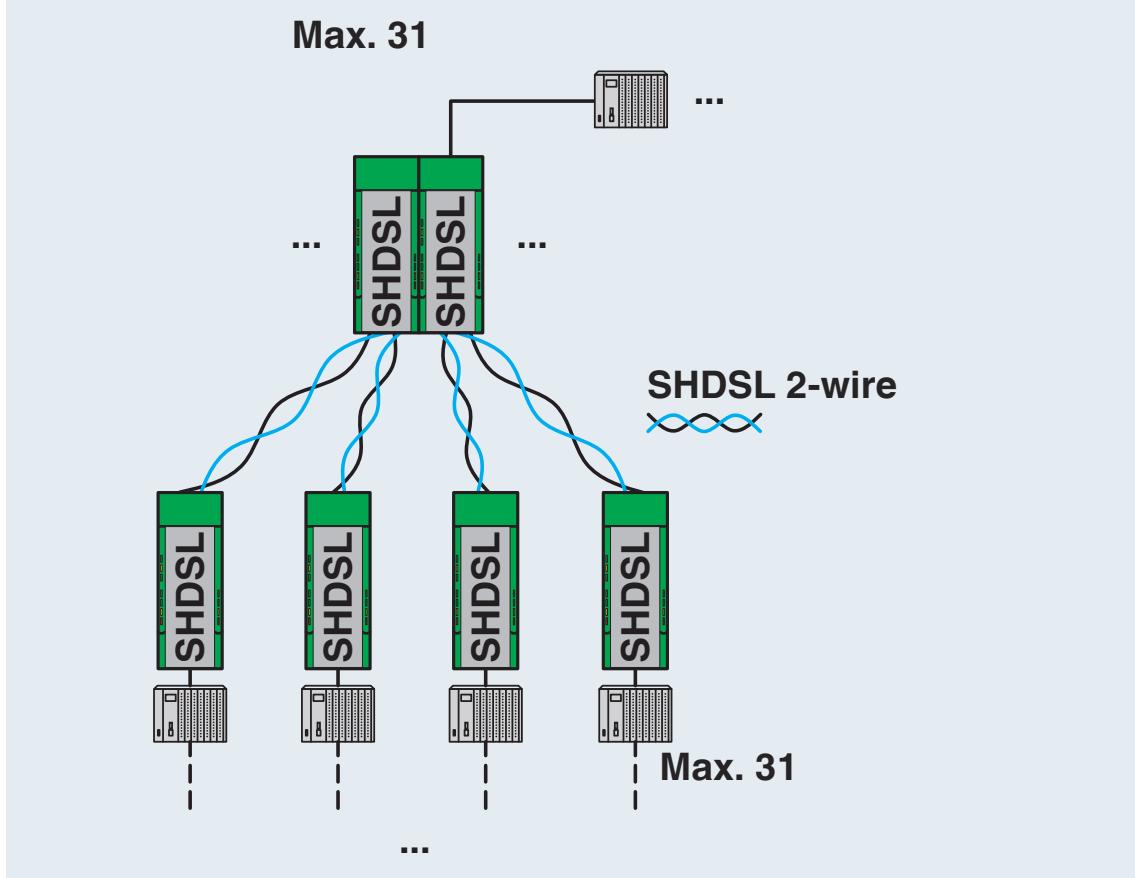
Star structure via DIN rail connector

Application drawing
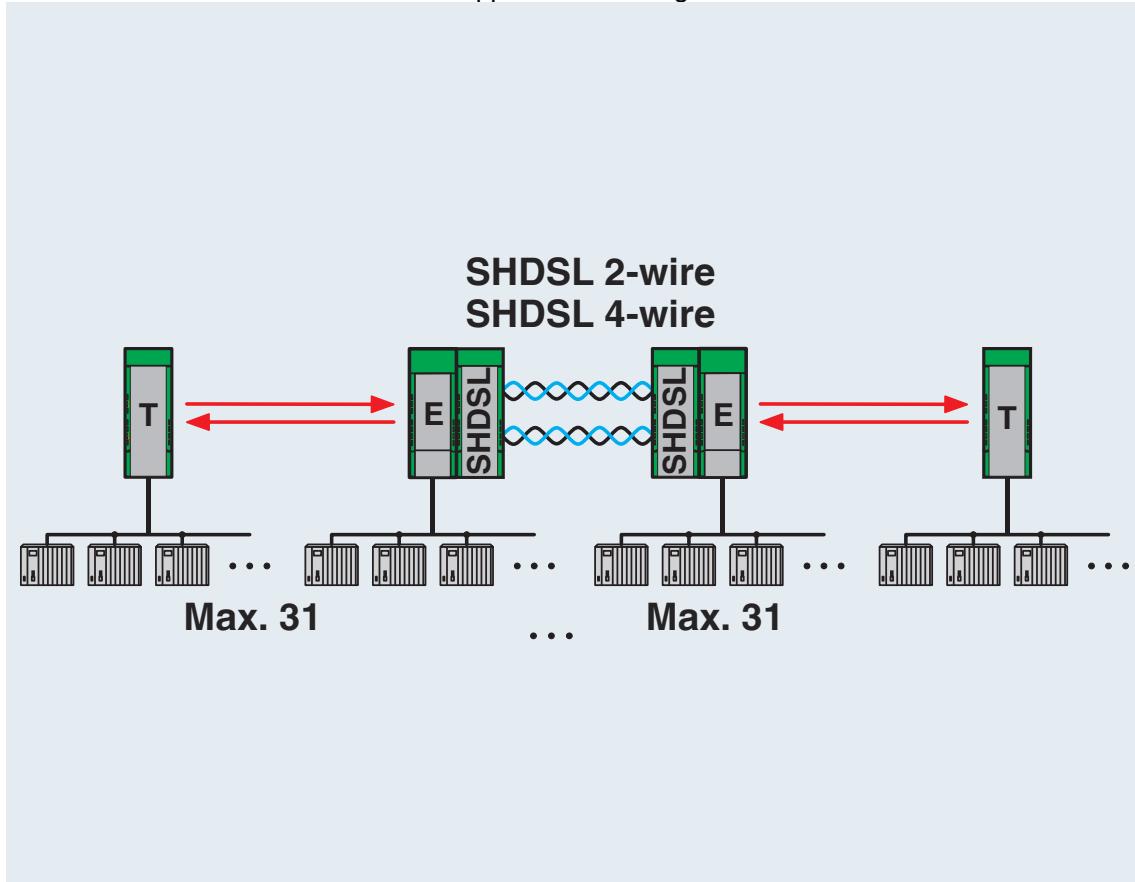
Linear structure: mixed operation with repeaters and FO converters

Application drawing
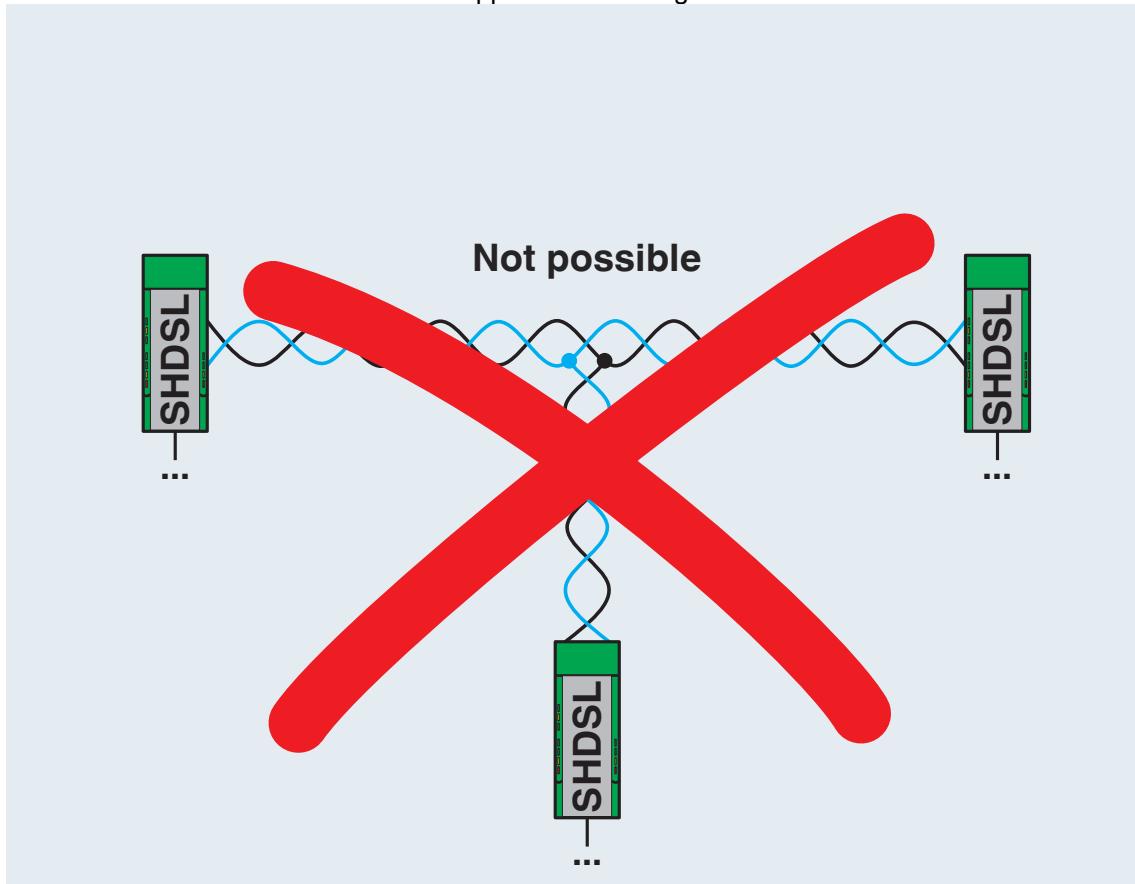
Multipoint communication via SHDSL not supported

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Approvals

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cULus Listed
Approval ID: E238705

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Classifications

ECLASS

ECLASS-13.0	19170407

ETIM

ETIM 9.0	EC000309

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	b8de402e-f56a-4ea7-8bc6-c6da0b24c92e

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