

Modem - PSI-MODEM-SHDSL/ETH - 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

Product Features

- 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)
- 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)
- Two digital outputs for alerting external controllers



Key Commercial Data

Packing unit	1 pc
Weight per Piece (excluding packing)	340.0 g
Custom tariff number	85176200
Country of origin	Germany

Technical data

Note

Modem - PSI-MODEM-SHDSL/ETH - 2313643

Technical data

Note

Utilization restriction	EMC: class A product, see manufacturer's declaration in the download area
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Dimensions

Width	35 mm
Height	99 mm
Depth	114.5 mm

Ambient conditions

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 (Mounted in rows with zero spacing and supply of other modules via the device)
Ambient temperature (storage/transport)	-40 °C ... 85 °C
Permissible humidity (operation)	10 % ... 95 % (non-condensing)
Permissible humidity (storage/transport)	10 % ... 95 % (non-condensing)
Altitude	5000 m (For restrictions see manufacturer's declaration)
Degree of protection	IP20

General

Electrical isolation	DIN EN 50178 (VCC // Ethernet // DSL (A) // DSL (B) // FE)
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)
Standards/regulations	EN 50121-4
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC (valid until 19.04.2016) / 2014/30/EU (valid from 20.04.2016)
Net weight	258.7 g
Housing material	PA 6.6-FR
Color	green
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))
MTTF	711 Years (SN 29500 standard, temperature 25°C, operating cycle 21 % (5 days a week, 8 hours a day))
	308 Years (SN 29500 standard, temperature 40 °C, operating cycle 34.25 % (5 days a week, 12 hours a day))
	125 Years (SN 29500 standard, temperature 40°C, operating cycle 100 % (7 days a week, 24 hours a day))
Conformance	CE-compliant

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General

ATEX	# II 3 G Ex nA IIC T4 Gc X (Please follow the special installation instructions in the documentation!)
UL, USA / Canada	cULus listed UL 508

Power supply

Nominal supply voltage	24 V DC $\pm 5\%$ (as an alternative or redundant, via backplane bus contact and system current supply)
	5 V DC (configuration only, via mini-USB type B)
Supply voltage range	18 V DC ... 30 V DC
Typical current consumption	< 180 mA (24 V DC)
Connection method	COMBICON plug-in screw terminal block

Serial interface

Interface 1	Ethernet interface, 10/100BASE-T(X) in acc. with IEEE 802.3u
Interface	Ethernet
Connection method	RJ45 socket, shielded
Transmission length	< 100 m (shielded twisted pair)
Conductor cross section solid min.	0.2 mm ²
Conductor cross section solid max.	2.5 mm ²
Conductor cross section flexible min.	0.2 mm ²
Conductor cross section flexible max.	2.5 mm ²
Conductor cross section AWG min.	24
Conductor cross section AWG max.	13
Protocols supported	Transparent protocol for IPv4 and IPv6
Serial transmission speed	10/100 Mbps, auto negotiation
Interface 2	SHDSL interface according to ITU-T G.991.2.bis
Connection method	2 x 2-pos. COMBICON plug-in screw terminal blocks
Transmission length	< 20 km (Depending on data rate and cable cross section)
Serial transmission speed	4-wire operation: 64 kbps ... 30 Mbps
	2-wire operation: 32 kbps ... 15.3 Mbps
Interface 3	USB 2.0
Connection method	Mini-USB type B, 5-pos.
Transmission length	< 5 m (only for configuration and diagnostics)

Function

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)

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Digital outputs

Output name	Digital output
Number of outputs	2
Voltage output signal	depending on the operating voltage
Current output signal	≤ 150 mA (Short-circuit-proof)
Behavior of the outputs	Deactivated for device supply via T-BUS

Standards and Regulations

Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC (valid until 19.04.2016) / 2014/30/EU (valid from 20.04.2016)
Shock	15g in all directions in acc. with IEC 60068-2-27
Standards/regulations	EN 50121-4
Vibration (operation)	In acc. with IEC 60068-2-6: 5g, 150 Hz
Conformance	CE-compliant
ATEX	# II 3 G Ex nA IIC T4 Gc X
UL, USA / Canada	cULus listed UL 508

Classifications

eCl@ss

eCl@ss 4.0	27240490
eCl@ss 4.1	27240490
eCl@ss 5.0	27242208
eCl@ss 5.1	27242208
eCl@ss 6.0	27242208
eCl@ss 7.0	27242208
eCl@ss 8.0	19060590
eCl@ss 9.0	19060590

ETIM

ETIM 2.0	EC000310
ETIM 3.0	EC000740
ETIM 4.0	EC000740
ETIM 5.0	EC000740

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008

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Classifications

UNSPSC

UNSPSC 12.01	39121008
UNSPSC 13.2	43201553

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC / EAC / cULus Listed

Ex Approvals

ATEX / ATEX

Approvals submitted


Approval details

UL Listed 

cUL Listed 

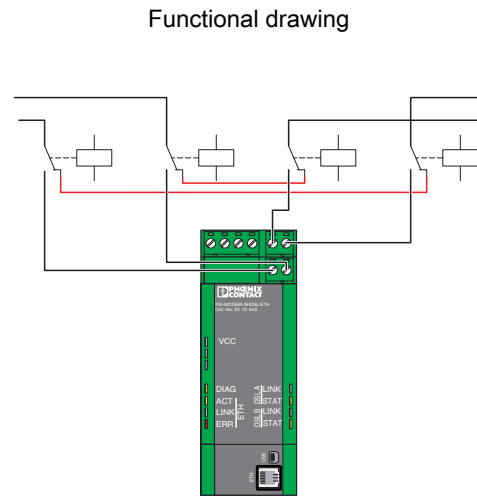
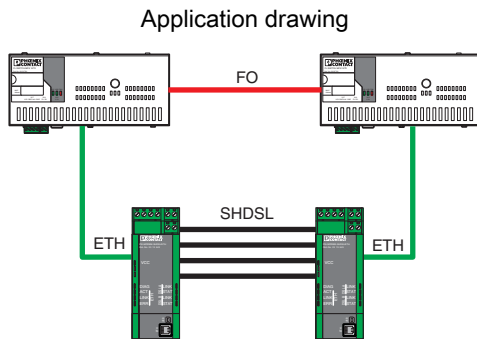
EAC

EAC

cULus Listed 

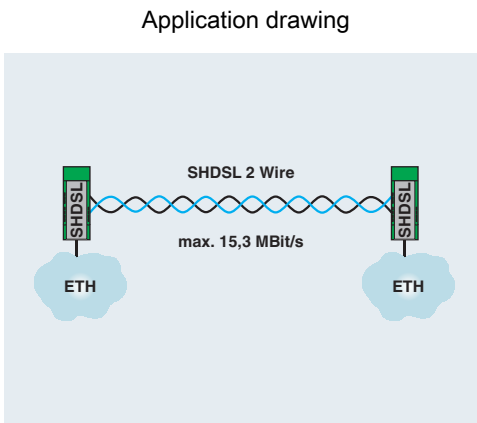
Drawings

Modem - PSI-MODEM-SHDSL/ETH - 2313643

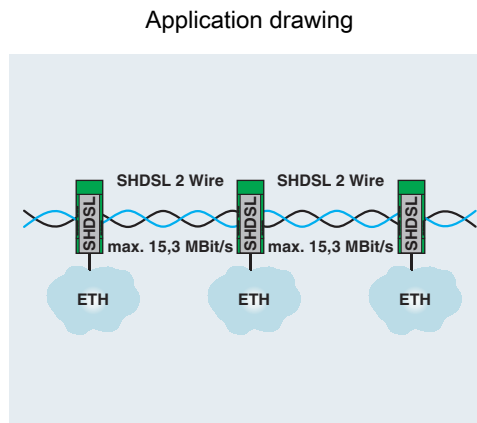


Example application: redundant system via SHDSL and manageable switch

Jumping with relay



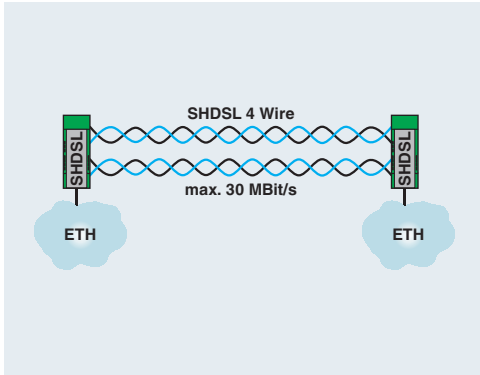
Point-to-point connection (2-wire)



Linear structure (2-wire)

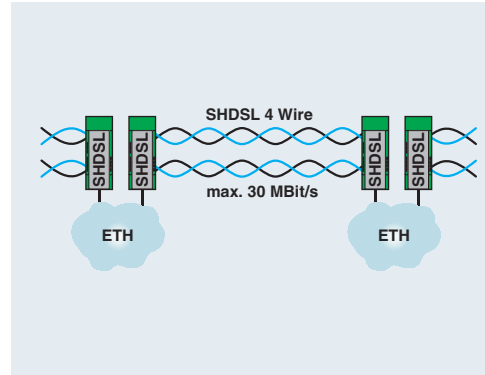
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Application drawing



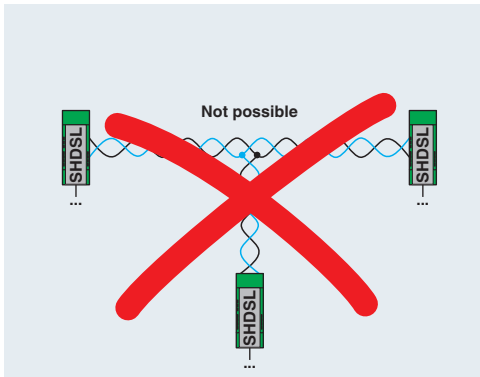
Point-to-point connection (4-wire)

Application drawing



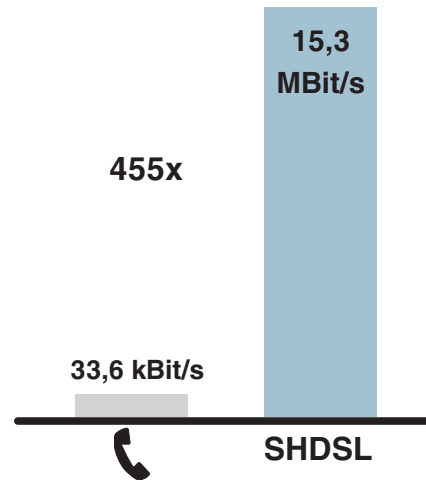
Linear structure (4-wire)

Application drawing



Multipoint communication via SHDSL not supported

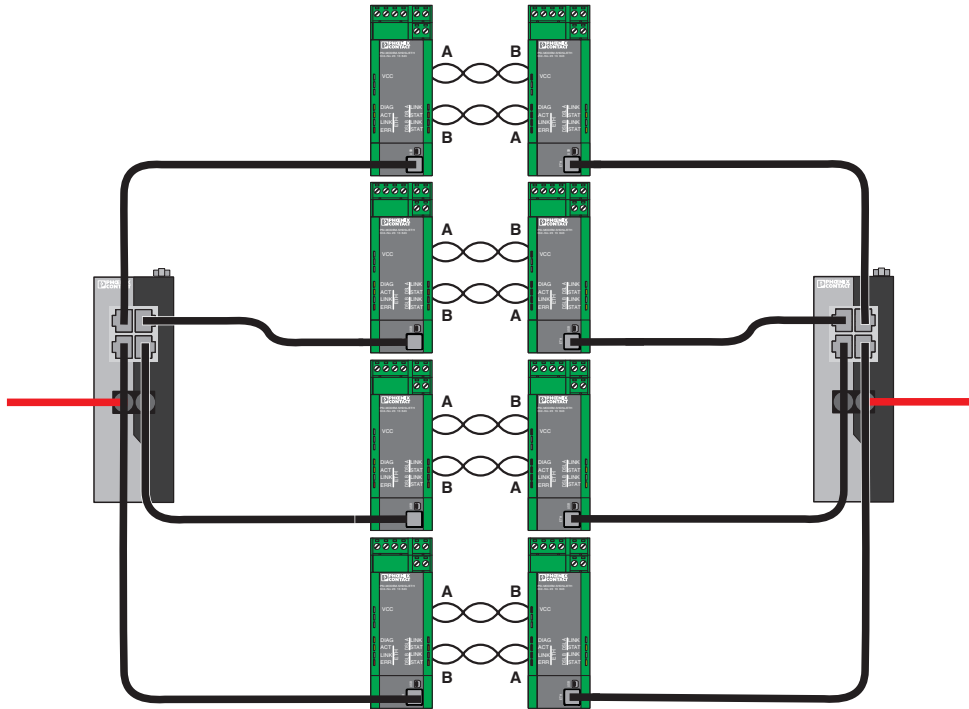
Diagram



Speed comparison between the analog and SHDSL connection

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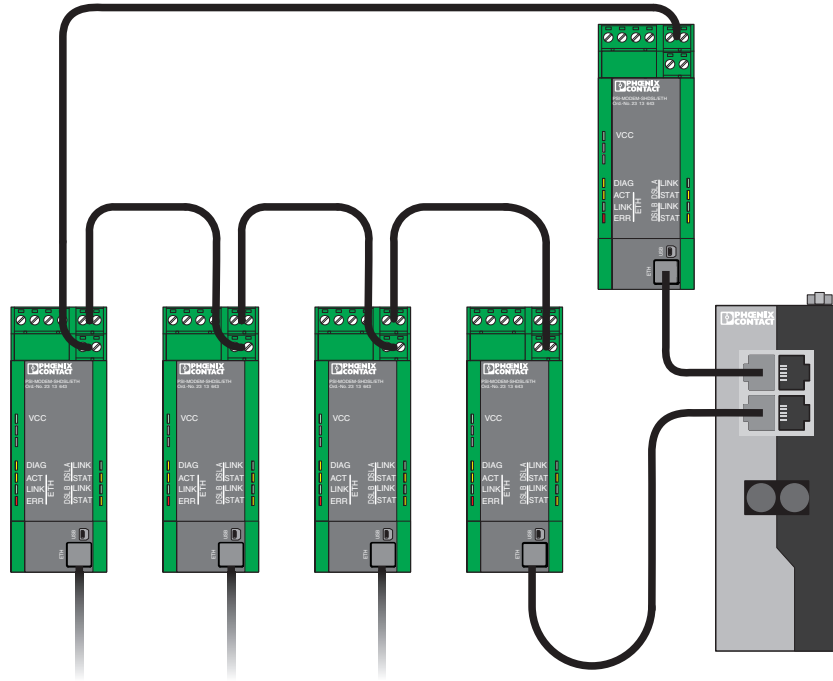
Functional drawing



Link aggregation

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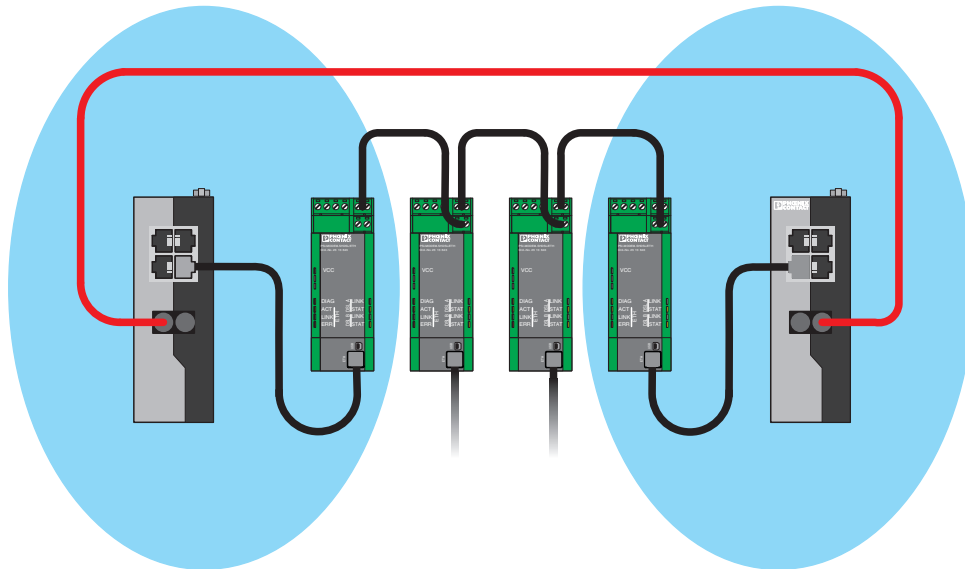
Functional drawing



Redundancy, ring closure via an external switch

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Functional drawing



Redundancy via parallel fiber optic path