

Modem - PSI-MODEM-SHDSL/PB - 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.

Product Features

- 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
- For in-house cables
- Linear structure up to 500 kbps
- Point-to-point connection up to 1.5 Mbps



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

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

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Ambient conditions

Ambient temperature (operation)	-20 °C ... 60 °C (for derating, see technical documentation)
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 // PROFIBUS // DSL (A) // DSL (B) // FE)
Test voltage data interface/power supply	1.5 kV _{rms} (50 Hz, 1 min.)
Electromagnetic compatibility	Conformance with EMC Directive 2004/108/EC (valid until 19.04.2016) / 2014/30/EU (valid from 20.04.2016)
Net weight	282.3 g
Housing material	PA 6.6-FR
Color	green
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))
MTTF	800 Years (SN 29500 standard, temperature 25°C, operating cycle 21 % (5 days a week, 8 hours a day))
	346 Years (SN 29500 standard, temperature 40 °C, operating cycle 34.25 % (5 days a week, 12 hours a day))
	140 Years (SN 29500 standard, temperature 40°C, operating cycle 100 % (7 days a week, 24 hours a day))
Conformance	CE-compliant
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 ±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	PROFIBUS acc. to IEC 61158, RS-485 2-wire, half duplex, automatic control
Operating mode	Semi-duplex

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Serial interface

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

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
Vibration (operation)	In acc. with IEC 60068-2-6: 5g, 150 Hz

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Standards and Regulations

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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
UNSPSC 12.01	39121008
UNSPSC 13.2	43201553

Approvals

Approvals

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UL Listed / cUL Listed / EAC / cULus Listed

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Approvals

Ex Approvals

ATEX / ATEX

Approvals submitted

Approval details

UL Listed 

cUL Listed 

EAC

cULus Listed 

Accessories

Accessories

Adapter cable

USB cable - CABLE-USB/MINI-USB-3,0M - 2986135



USB connecting cable: USB plug type A to USB plug type Mini-B; length: 3 m

Data cable by the meter

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Accessories

Cable - PSM-CABLE-PROFIB/FC - 2744652



PROFIBUS cable, Fast Connect type, up to 12 Mbps (02YSY (ST)CY 1x2x22 AWG)

Data plug

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



D-SUB connector, 9-pos., male connector, cable entry < 35°, 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

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



D-SUB connector, 9-pos., male connector, cable entry < 35°, 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 - SUBCON-PLUS-PROFIB/90/IDC - 2313672



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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

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



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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

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Accessories

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



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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

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



D-SUB connector, 9-pos., male connector, cable entry < 90°, 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 - SUBCON-PLUS-PROFIB/AX/SC - 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

DIN rail connector

Electronic housing - ME 17,5 TBUS 1,5/ 5-ST-3,81 GN - 2709561



DIN rail connector for DIN rail mounting. Universal for TBUS housing. Gold-plated contacts, 5-pos.

Interface converter

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



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

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Accessories

Media converter

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

FO converters - PSI-MOS-PROFIB/FO 660 T - 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 - PSI-MOS-PROFIB/FO1300 E - 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

Power supply

Power supply unit - MINI-SYS-PS-100-240AC/24DC/1.5 - 2866983



Primary-switched MINI POWER supply for DIN rail mounting, input: 1-phase, output: 24 V DC/1.5 A

Programming cable

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Cable for programming - PSI-CA-USB A/MINI B/1METER - 2313575



USB 2.0 cable, USB A male plug to mini-USB B male plug, length: 1 m

Surge protection for information technology

Surge protection device - DT-TELE-SHDSL - 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.

Terminal resistor

Termination resistor - PSI-TERMINATOR-PB - 2313944



Active termination resistor for PROFIBUS and RS-485 bus systems. Compact design, electrical isolation between supply and data interface, bus termination can be activated, integrated programming interface.

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

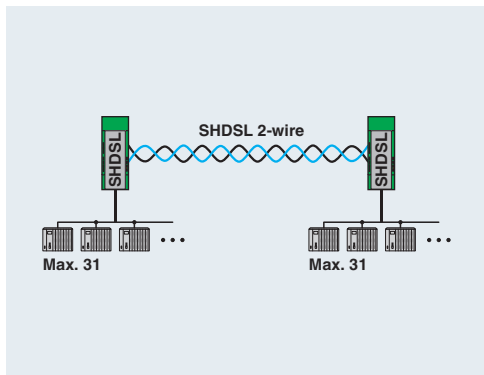


Active termination resistor for PROFIBUS and RS-485 bus systems, redundant power supply, routing of the supply voltage via DIN rail connector, electrical isolation, switchable termination, integrated programming interface

Drawings

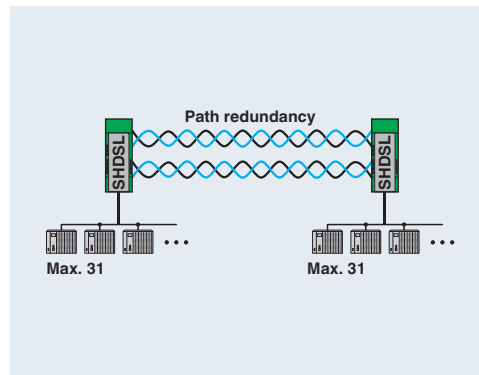
Modem - PSI-MODEM-SHDSL/PB - 2313656

Application drawing



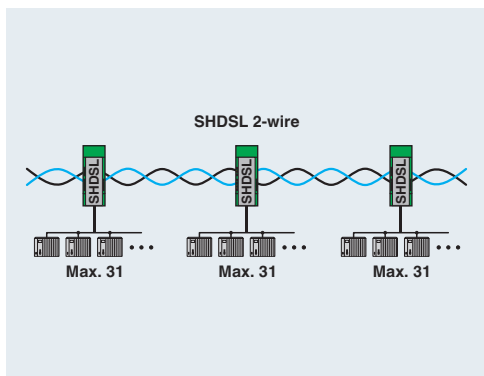
Point-to-point connection (2-wire)

Application drawing



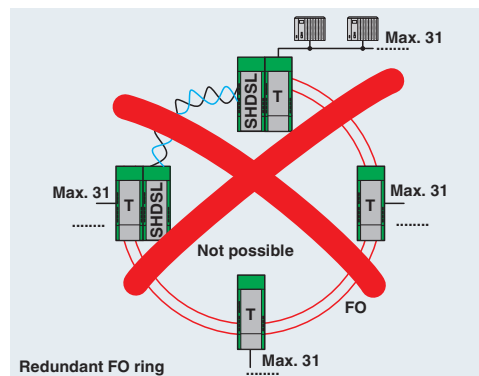
Point-to-point connection (4-wire)

Application drawing



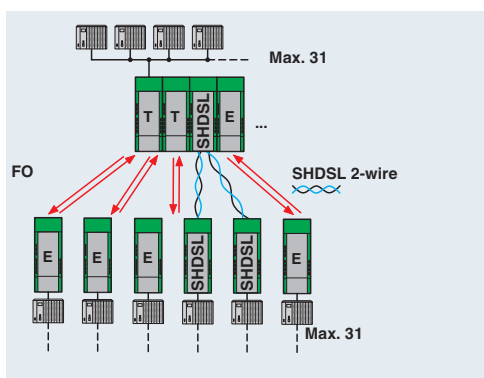
Linear structure (2-wire)

Application drawing



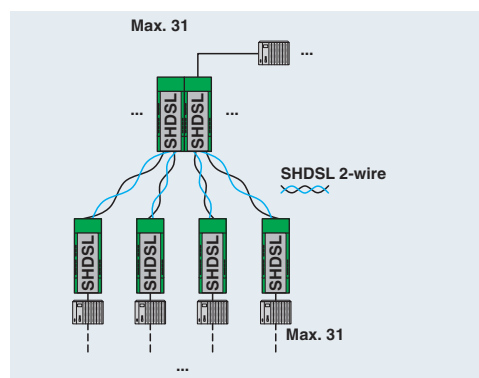
SHDSL subsection in fiber optic ring not supported

Application drawing



Star structure: mixed operation with repeaters and FO converters

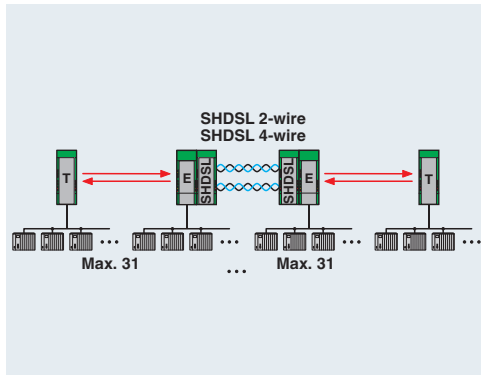
Application drawing



Star structure via DIN rail connector

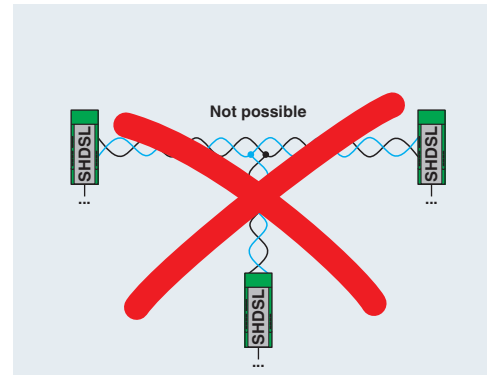
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Application drawing



Linear structure: mixed operation with repeaters and FO converters

Application drawing



Multipoint communication via SHDSL not supported

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