

Modem - PSI-MODEM-SHDSL/SERIAL - 2313669

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Industrial SHDSL extender for serial RS-232/422/485 interfaces, point-to-point and line structures, serial data transmission up to 2000 kbps on in-house cables, diagnostics via USB and LEDs, two configurable alarm outputs

Your advantages

- ✓ Distances up to 20 km
- ✓ RS-232, up to 230.4 kbps
- ✓ RS-422, up to 2000 kbps
- ✓ RS-485, up to 2000 kbps
- ✓ Robust modulation method (SHDSL)
- ✓ Two digital outputs for alerting external controllers
- ✓ Easy configuration
- ✓ For in-house cables



Key Commercial Data

Packing unit	1 pc
GTIN	 4 046356 509220
GTIN	4046356509220
Weight per Piece (excluding packing)	360.000 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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Technical data

Note

	Use in potentially explosive areas is not permitted in China.
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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 (Other modules supplied via the device, max. 1.5 A)
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 the manufacturer's declaration for altitude operation)
Degree of protection	IP20
Noise immunity	EN 61000-6-2

General

Electrical isolation	DIN EN 50178 (VCC, RS-232 // RS-422, RS-485 // 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 2014/30/EU
Noise emission	EN 55011
Mounting type	DIN rail mounting
Net weight	339.4 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	693 Years (SN 29500 standard, temperature 25°C, operating cycle 21%)
	301 Years (SN 29500 standard, temperature 40°C, operating cycle 34.25%)
	121 Years (SN 29500 standard, temperature 40°C, operating cycle 100%)

Power supply

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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
Max. current consumption	≤ 2 A (For operation in a connection station, via the DIN rail connector)
Typical current consumption	< 180 mA (24 V DC)
Connection method	COMBICON plug-in screw terminal block

Interfaces

Interface 1	V.24 (RS-232) interface in acc. with ITU-T V.28, EIA/TIA-232, DIN 66259-1
Interface	RS-232
Connection method	D-SUB 9 plug
Transmission length	max. 15 m
Termination resistor	390 Ω - 180 Ω - 390 Ω (can be connected)
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.	14
Data flow control/protocols	Software handshake, Xon/Xoff, hardware handshake (RTS/CTS), 3964R-compatible, Modbus (RTU/ASCII), transparent protocol - additional protocols supported
Serial transmission speed	0.11/0.3/1.2/2.4/4.8/9.6/19.2/38.4/57.6/115.2/230.4 kbps, NRZ
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)
Interface 4	RS-422 interface in acc. with ITU-T V.11, EIA/TIA-422, DIN 66348-1
Interface	RS-422
Connection method	Plug-in/screw connection via COMBICON
File format/coding	Serial asynchronous UART/NRZ, 7/8 data bits, 1/2 stop bits, 1 parity bit (even, odd, mark, space, none), 9/10/11-bit character length
Transmission length	≤ 1200 m
Termination resistor	390 Ω - 180 Ω - 390 Ω (can be connected)

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Interfaces

Data flow control/protocols	Automatic control // Modbus RTU/ASCII
Serial transmission speed	1.2/2.4/4.8/7.0/9.6/19.2/38.4/57.6/75/93.75/115.2/136/187.5/375/500/1500/2000 kbps, NRZ
Interface 5	RS-485 interface, in acc. with EIA/TIA-485, DIN 66259-4/RS-485 2-wire
Interface	RS-485
Connection method	Plug-in/screw connection via COMBICON
File format/coding	Serial asynchronous UART/NRZ, 7/8 data, 1/2 stop, 1 parity, 10/11-bit character length
Transmission length	≤ 1200 m
Termination resistor	390 Ω - 180 Ω - 390 Ω (can be connected)
Protocols supported	Transparent, including 3964R protocol
Data flow control/protocols	Automatic control // Modbus RTU/ASCII
Serial transmission speed	1.2/2.4/4.8/7.0/9.6/19.2/38.4/57.6/75/93.75/115.2/136/187.5/375/500/1500/2000 kbps, NRZ

Function

Management	User-friendly software: Guided configuration, plausibility checks, diagnostic functions, log book
Status and diagnostic indicators	LEDs: VCC (supply voltage), RD/TD (serial data traffic), ERR (errors), TERM (termination resistor active), RS-232 (RS-232 active) 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)

Conformance/approvals

Designation	CE
Certificate	CE-compliant
Designation	EAC
Identification	EAC
Designation	ATEX
Identification	# II 3 G Ex nA nC IIC T4 Gc X
Additional text	Please follow the special installation instructions in the documentation!
Designation	UL, USA/Canada
Identification	508 Listed
Designation	Corrosive gas test
Identification	ISA-S71.04-1985 G3 Harsh Group A

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Technical data

Standards and Regulations

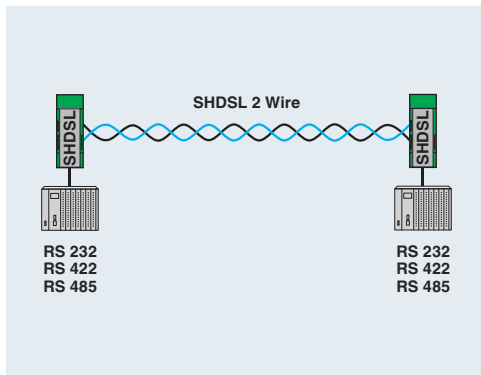
Electromagnetic compatibility	Conformance with EMC Directive 2014/30/EU
Noise emission	EN 55011
Noise immunity	EN 61000-6-2
Standards/regulations	EN 50121-4
Shock	15g in all directions in acc. with IEC 60068-2-27
Vibration (operation)	in acc. with IEC 60068-2-6: 5g, 150 Hz

Environmental Product Compliance

REACH SVHC	Lead 7439-92-1
China RoHS	Environmentally Friendly Use Period = 50 years
	For details about hazardous substances go to tab "Downloads", Category "Manufacturer's declaration"

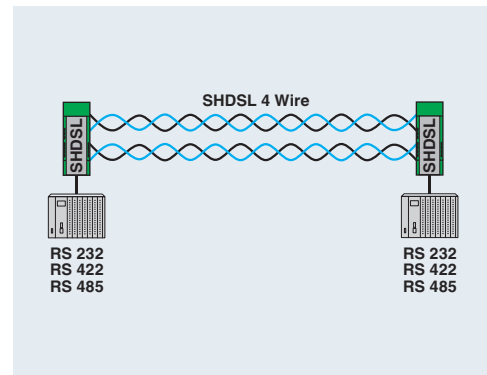
Drawings

Application drawing



Point-to-point connection (2-wire)

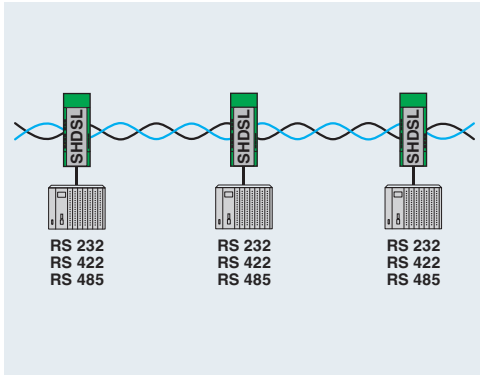
Application drawing



Point-to-point connection (4-wire)

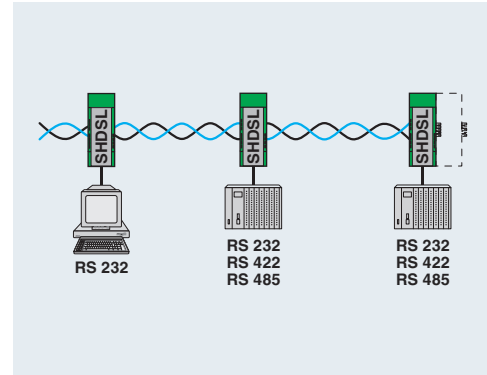
Modem - PSI-MODEM-SHDSL/SERIAL - 2313669

Application drawing



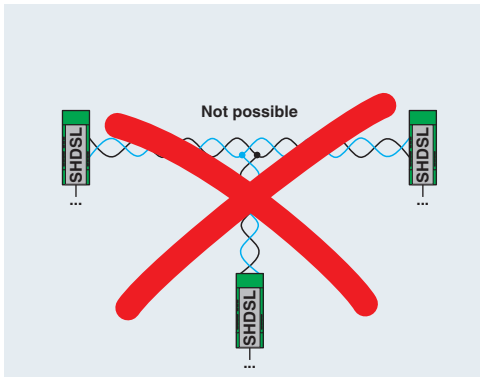
Linear structure (2-wire)

Application drawing



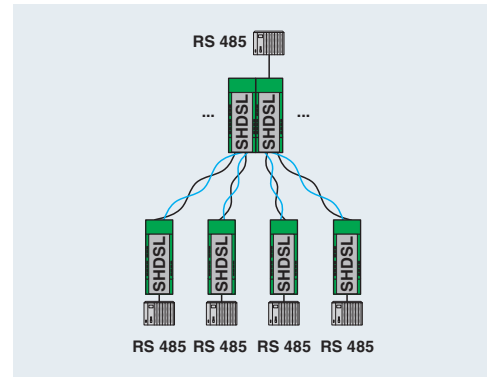
Linear structure (2-wire)

Application drawing



Multipoint communication via SHDSL not supported

Application drawing



Star structure via DIN rail connector

Classifications

eCl@ss

eCl@ss 10.0.1	19060590
eCl@ss 11.0	19060590
eCl@ss 4.0	27240400
eCl@ss 4.1	27240400
eCl@ss 5.0	19030100
eCl@ss 5.1	19030100
eCl@ss 6.0	19060500
eCl@ss 7.0	19060590
eCl@ss 9.0	19060590

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Classifications

ETIM

ETIM 2.0	EC000310
ETIM 3.0	EC000740
ETIM 4.0	EC000740
ETIM 6.0	EC000740
ETIM 7.0	EC000740

UNSPSC

UNSPSC 6.01	30211506
UNSPSC 7.0901	39121008
UNSPSC 11	39121008
UNSPSC 12.01	39121008
UNSPSC 13.2	43222628
UNSPSC 18.0	43222628
UNSPSC 19.0	43222628
UNSPSC 20.0	43222628
UNSPSC 21.0	43222628

Approvals

Approvals

Approvals

UL Listed / cUL Listed / EAC-RoHS / EAC / cULus Listed

Ex Approvals

ATEX

Approval details

UL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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cUL Listed		http://database.ul.com/cgi-bin/XYV/template/LISEXT/1FRAME/index.htm	FILE E 238705
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Approvals

EAC-RoHS		RU D- DE.HB35.B.00388
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EAC		RU *- DE.A*30.B.01735
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cULus Listed		
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Accessories

Accessories

Data plug

D-SUB bus connector - SUBCON 9/M-SH - 2761509



D-SUB connector, 9-pos., male connector, one cable entry < 35°, universal type for all systems, pin assignment: 1, 2, 3, 4, 5, 6, 7, 8, 9 to screw connection terminal block

DIN rail connector

DIN rail bus connectors - 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.

Power supply

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Accessories

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

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

Shield connection clamp

Shield connection clamp - SKS 8-SNS35 - 3062786



Shield connection terminal block, for applying the shield to busbars

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.