PSI-DATA/FAX-MODEM/RS232

Industrial analog modem



INTERFACE

Data sheet
100500_en_01

© PHOENIX CONTACT - 10/2008

1 Description

The DIN rail-mountable PSI-DATA/FAX-MODEM/RS232 is specifically designed to meet industrial requirements for remote maintenance. It provides global access to machines and systems via permanent and dial-up line connections according to the V.34 standard.

A wide range of security functions, such as adjustable selective call acceptance, connection establishment with password protection, and call-back function, protect the system against unauthorized access. One particularly useful feature for remote system monitoring is the configurable warning or alarm input. If this input is activated, the modem calls a user-defined number and sends a stored text message by fax or SMS. To ensure interference-free operation even in harsh EMC conditions, the device has high-quality 3-way isolation and integrated surge protection.

The modem also features an integrated automatic "Sleep" function to increase battery life and an extremely wide supply voltage range of 10 V to 60 V, making it suitable for universal use. Modem startup is very easy using plug and play and user-friendly configuration software.

The modem is approved for use in public telephone networks in Europe, the USA, and Canada. Additional approvals can be provided on request.

ATTENTION:
The PSI-DATA/FAX-MODEM/RS232 is designed exclusively for SELV operation according to IEC 60950/EN 60950/VDE 0805.
The modem must only be connected to devices, which meet the requirements of EN 60950 ("Safety of Information Technology Devices").

If you have any technical problems, which you cannot resolve with the aid of this documentation, please contact us during the usual office hours at:

Phone: +49 - 52 35 - 31 98 90
Fax: +49 - 52 35 - 33 09 99
E-mail: interface-service@phoenixcontact.com

Make sure you always use the latest documentation.
It can be downloaded at www.phoenixcontact.com.

This data sheet is valid for all products listed on the following page:

2 Ordering data

V.34 modem:

Description	Type	Order No.	Pcs./Pkt.
Industrial analog modem, DIN rail-mountable, dial-up and permanent line operation in Europe, USA, Canada, V.24 (RS-232) interface, 3-way isolation, alarm I/O, 24 V AC/DC supply voltage Scope of supply: Modem, CD with configuration software and user manual, and RJ12 cable	PSI-DATA/FAX-MODEM/RS232	2708203	1

General accessories

Description		Type	Order No.	Pcs./Pkt.
DIN rail bus connector (3 required)		ME 17,5 TBUS 1,5/ 5-ST-3,81 GN	2709561	1
System power supply unit Primary-switched Input voltage range Nominal output voltage Nominal output current	 45 Hz ... 65 Hz 85 V AC ... 264 V AC 24 V DC ±1% 1.5 A	MINI-SYS-PS-100-240AC/24DC/1.5	2866983	1
Surge protection for analog telecommunications interfaces, DIN rail-mountable		MT-2FM-RJ12	2838937	1
PSI-MODEM-SPLITTER, switching module to access two control systems via one modem		PSI-MODEM-SPLITTER	2708766	1

Cables/conductors

Description	Type	Order No.	Pcs./Pkt.
Connecting cable, 9-pos. D-SUB to USB, with 9-pos. D-SUB to 25-pos. D-SUB adapter	CM-KBL-RS232/USB	2881078	1
Short V.24 (RS-232) flat-ribbon connecting cable between modem and PSI-MODEM-SPLITTER	PSI-CA-MODEM-SPLITTER	2311425	1
V.24 (RS-232) cable, 0.5 m, 9-pos. D-SUB female connector to 9-pos. D-SUB female connector	PSM-KA9SUB9/BB/0,5METER	2708520	1
V.24 (RS-232) cable, 2 m, 9-pos. D-SUB female connector to 9-pos. D-SUB female connector	PSM-KA9SUB9/BB/2METER	2799474	1

Adapters

Description	Type	Order No.	Pcs./Pkt.
PSM-AD-D9-NULLMODEM, RS-232 (V.24) null modem connector, 9-pos. D-SUB female connector to 9-pos. D-SUB male connector	PSM-AD-D9-NULLMODEM	2708753	1
Adapter cable for connecting the IB IL RS232 and IB IL RS232-PRO Inline communication terminals	PSM-KAD-IL RS232/9SUB/B/0,8M	2319200	1
MPI adapter for coupling to the programming interface of a SIMATIC® S7-300/400 controller	PSI-MPI/RS232-PC	2313148	1

Documentation

Description	Type	Order No.	Pcs./Pkt.
User manual for the industrial analog modem	PSI-DATA/FAX-MODEM/RS232 UM E	2699354	1

3 Technical data

Power supply	
Supply voltage 1	10 V DC ... 60 V DC, 16 V AC ... 40 V AC Via COMBICON plug-in screw terminal block
Frequency	DC or 50 Hz ... 60 Hz
Supply voltage 2, alternative or redundant	24 V DC ±5% Via backplane bus contact and system power supply
Current consumption Nominal operation Sleep mode (can be configured via software)	 < 100 mA at 24 V < 40 mA at 24 V
LED indicator	VCC (green LED): – Steady light: Operation – Flashing: Sleep mode

V.24 (RS-232) interface	
Connection	9-pos. D-SUB pin strip
Device type	Data Communication Equipment (DCE)
Data format	Serial asynchronous UART/NRZ
Encoding	7/8 data, 1/2 stop, 1 parity, 10/11-bit character length
Serial transmission speed	Automatic data rate detection (default) or fixed setting at 300, 1200, 2400, 4800, 9600, 19200, 38400, 57600, 115200 bps (adjustable via software)
Data flow control	Software handshake: Xon/Xoff Hardware handshake: RTS/CTS No handshake or 3964R
LED indicator/data indicator	TD (green LED), data to modem (dynamic) RD (yellow LED), data from modem (dynamic)
LED indicator/control signal indicator	DTR (yellow LED), Data Terminal Ready DCD (yellow LED), Data Carrier Detect

PSTN port (a/b line)	
Connection	RJ12, 6-pos., or COMBICON plug-in screw terminal block
Shield	DC coupled to DIN rail
Operating modes	Dial-up modem, 2-wire half/full duplex Fax modem, 2-wire half duplex Permanent line, 2-wire full duplex
Dialing procedure	Multiple frequency/pulse dialing, configuration via software
Transmission speed DCE/DCE Fax	Automatic adjustment according to V.8 300 baud to 33.6 kbaud 2400 baud to 14.4 kbaud
Compatibility	ITU V.42bis, V.42, V.34 extended, ITU V.32bis, V.32, V.21, V.22bis, V.22, V.23, Bell 212A and 103, ITU V.17, Group 3 T.4, T.30, and EIA TR-29
Fax compatibility	EIA TR-29 Class 2, CCITT V.17, Group 3, V.29, V27ter
Command set compatibility	AT standard command set and extended, V.250 basic command set
Error correction	V.42 (LAP-M or MNP 2 to 4)
Data compression	V.42bis (throughput 4:1), MNP 5 (throughput 2:1)

PSTN port (a/b line) (continued)

LED indicator/data indicator	Green LED (OH), off the hook Yellow LED (AA), automatic answer, flashes during selective call acceptance Yellow LED (FAX), fax mode active Yellow LED (EC), error correction in V.42 mode, flashes when data compression is active
Acoustic signaling	Integrated piezo
Startup diagnostics	Power on selftest, visualization via LEDs (controller, SRAM, EEPROM, DSP)
Adaptive line test	Dial tone test, pulse dial ring test via additional function in configuration software
Telecommunications approvals	TBR21, TBR15, TIA/EIA/IS-968 for Europe, USA, and Canada
Hardware settings	4-pos. DIP switch for dial-up and permanent line operation (under removable cover)

Switching input and output

Switching input	U_N 24 V DC/5 mA, 9 V DC ... 48 V DC input voltage range, floating, activates one or more of the following: – Message to the local V.24 (RS-232) interface – SMS (only in dial-up operation) – Fax (only in dial-up operation) – Output control at the remote station (via SMS)
Switching output	60 V DC/1 A or 42 V AC/1 A miniature switching relay, N/O contact, activated by: – Input control at the remote station – SMS (only in dial-up operation) – Local AT command – AT command at the remote station
Signaling	ALR (red LED) – Flashing: SMS/FAX error message to be sent – Steady light: Alarm has been triggered ERR (red LED) – Steady light: Alarm cannot be triggered Reset (acknowledgment) by: – SMS (remote) – AT command (local + remote) – Button (local)

Text and telephone number memory

Text memory	
SMS	160 characters
Fax	480 characters, 30 KB
Telephone number memory	20 telephone numbers with a maximum of 36 digits

General data

CE conformance	EMC directive 89/336/EEC
Approvals	cULus Ex: cULus
Ambient operating temperature range	0°C … 55°C
Housing Material Dimensions (H x W x D)	ME 35 with 5-pos. bus contact and ground contact ABS-V0, green 99 x 35 x 114.5 mm
Weight of device	165 g
Functional earth ground	Housing contact with DIN rail
Vibration resistance	According to DIN EN 60068-2-6 5g, 1.5 h each in x, y, and z direction
Shock test Operation Storage	According to DIN EN 60068-2-27 15g, 11 ms, half-sine shock pulse 30g, 11 ms, half-sine shock pulse
Free fall	According to IEC 60068-2-32 from a height of 1 m (without packaging)
Degree of protection	IP20
3-way electrical isolation	Power supply // PSTN // V.24 (RS-232)
Test voltage	1.5 kV AC, 50 Hz, 1 min. between all ground levels according to EN 50178 and EN 61131-2

Electromagnetic compatibility

Noise immunity according to EN 61000-6-2[1]

Electrostatic discharge (ESD)	EN 61000-4-2	Criterion B[2] 8 kV air discharge 6 kV contact discharge
Electromagnetic HF field Amplitude modulation Pulse modulation	EN 61000-4-3	Criterion A[3] 10 V/m 10 V/m
Fast transients (burst) Signal Power supply	EN 61000-4-4	 Criterion A[3] 1 kV/5 kHz Criterion A[3] 2 kV/5 kHz
Surge current load (surge) Signal Power supply	EN 61000-4-5	Criterion B[2] 1 kV 2 kV
Conducted interference	EN 61000-4-6	Criterion A[3] 10 V
Noise emission	EN 55022	Limiting curve B

[1] EN 61000 corresponds to IEC 1000

[2] Criterion B: Temporary adverse effects on the operating characteristics which the device corrects automatically.

[3] Criterion A: Normal operating behavior within the specified limits.

4 Features

- For universal use
- Password-protected access/ call-back function/selective call acceptance
- Configurable input and output
- Alarm sent directly by SMS or fax via the integrated switching input (or via AT commands)
- Sends, receives, and evaluates SMS messages
- Wide supply voltage range of 10 V DC ... 60 V DC or 14 V AC ... 40 V AC
- Power-saving sleep mode
- High-quality three-way isolation (VCC // V.24 (RS-232) // PTSN)
- Integrated surge protection
- Easy startup using plug and play and user-friendly configuration software
- 3964R-compatible

5 Application

The PSI-DATA/FAX-MODEM/RS232 modem can be used universally and internationally for all popular modem applications in the following operating modes:

- Dial-up modem
- Fax modem
- Permanent line modem

- For remote monitoring of systems and machines
- For remote control
- For system diagnostics
- For production data acquisition
- For automatic alarm generation

This device is approved for operation in the following public telephone networks:

- Belgium
- Denmark
- Germany
- France
- Finland
- Greece
- Great Britain
- Italy
- Ireland
- Canada
- Luxembourg
- The Netherlands
- Norway
- Austria
- Portugal
- Sweden
- Switzerland
- Spain
- USA

Approvals for other countries are available on request.

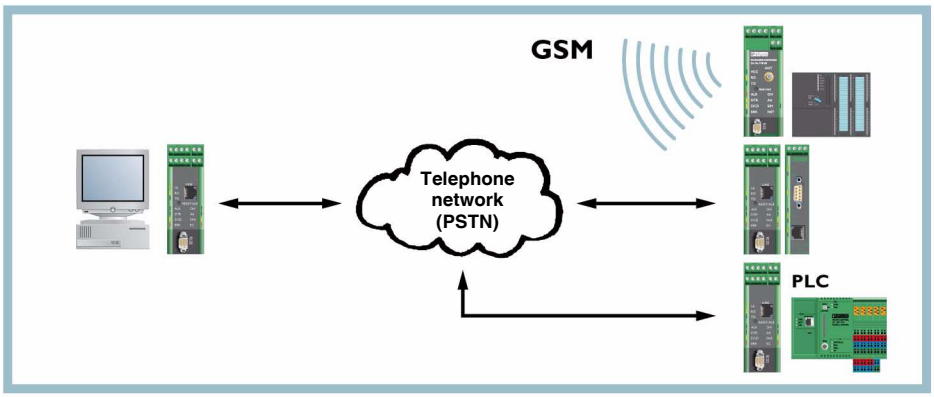


Figure 1 Dial-up operation

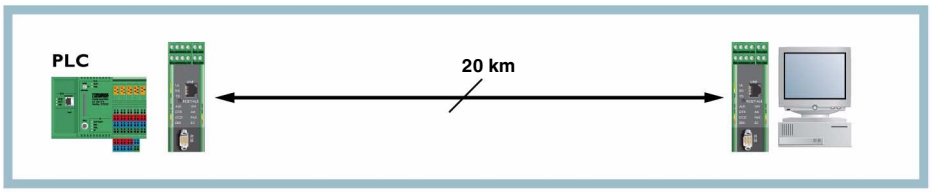


Figure 2 Permanent line operation

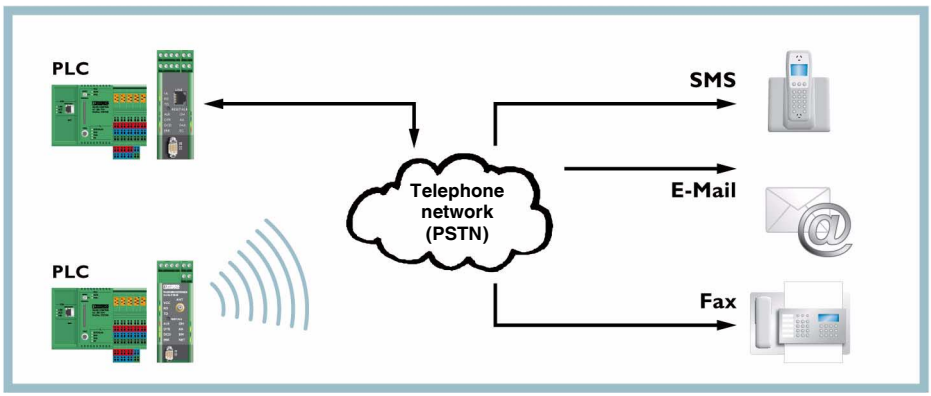


Figure 3 Alarm generation

PHOENIX CONTACT GmbH & Co. KG • 32823 Blomberg • Germany • Phone: +49 - 52 35 - 30 0
PHOENIX CONTACT • P.O.Box 4100 • Harrisburg • PA 17111-0100 • USA • Phone: +717-944-1300
www.phoenixcontact.com