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PSI-GPRS/GSM-MODEM/RS232-QB

GPRS Modem

INTERFACE

Data Sheet
103144_01_en

Description

The DIN rail-mountable **PSI-GPRS/GSM-MODEM/ RS232-QB** GPRS modem is specifically designed to meet industrial requirements for remote monitoring and alarm generation. It provides global access to machines and systems via GSM connections. 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.

The integrated TCP/IP stack even allows the implementation of simple control systems into the GPRS network.

One particularly useful feature for remote system monitoring are the configurable warning or alarm inputs. If these inputs are activated, the modem calls user-defined numbers and sends stored text messages by fax and/or SMS. Using the switching output additional functions can be controlled via SMS messages. To ensure error-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 a wide supply voltage range of 10 V to 30 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 operation in 850 MHz, 900 MHz, 1800 MHz, and 1900 MHz GSM networks.

The PSI-GPRS/GSM-MODEM/RS232-QB is designed exclusively for SELV operation according to IEC 60950/EN 60950/VDE 0805.

The modem may only be connected to devices, which meet the requirements of EN 60950 ("Safety of Information Technology Devices").

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

A conversion table is available on the Internet at
www.download.phoenixcontact.com/general/7000_en_00.pdf.

Ordering Data

Modem

Description	Type	Order No.	Pcs./Pkt
GPRS modem, DIN rail-mountable, GSM + GPRS, 850 MHz/900 MHz/ 1800 MHz/1900 MHz, V.24 (RS-232) interface, alarm input and output, supply voltage 10 V DC ... 30 V DC Scope of supply: Modem, CD with configuration software, and user manual	PSI-GPRS/GSM-MODEM/RS232-QB	2313106	1

Accessories

Description		Type	Order No.	Pcs./Pkt
GSM dual band antenna with omni-directional characteristics, Antenna cable with SMA circular connector Degree of protection Dimensions	 2 m IP65 76 mm x 20 mm	PSI-GSM-900/1800-ANT	2708902	1
System power supply, 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
DIN rail connector (3 required)		ME 17,5 TBUS 1,5/ 5-ST-3,81 GN	2709561	1
V.24 (RS-232) cable, 2 m, to connect the modem to a 9-pos. device interface	9-pos. D-SUB/ 9-pos. D-SUB (female/female)	PSM-KA9SUB9/BB/2METER	2799474	1

Technical Data

Power Supply	
Supply voltage	10 V DC ... 30 V DC via COMBICON plug-in screw terminal block
Frequency	DC
Current consumption	
Nominal operation	< 100 mA at 24 V
Sleep mode (can be configured via software)	< 60 mA at 24 V
LED indicators	VCC (green LED): Steady light: Operation

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 transmission speed 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 (yellow LED), data to modem (dynamic) RD (green LED), data from modem (dynamic)
LED indicator/control signal indicator	DTR (yellow LED), Data Terminal Ready DCD (yellow LED), Data Carrier Detect

GSM	
Frequencies	850 MHz, 900 MHz, 1800 MHz, 1900 MHz (EGSM)
Transmission power	2 W at 850 MHz and 900 MHz 1 W at 1800 MHz and 1900 MHz
SIM interface	3 V SIM card
Transmission speed	Automatic adjustment
DCE/DCE	300 baud ... 14.4 kbaud
Fax	2400 baud ... 14.4 kbaud
GPRS	300 kbps ... 85.6 kbps
Compatibility	V.34, V.32, V.22bis, V.110
GPRS compatibility	GPRS Class 10, Class B Encoding scheme: CS1 ... CS4 4 time slots for receiving data 2 time slots for transmitting data
Command set compatibility	AT standard command set and extended V.250 basic command set
Antenna connection	50 Ω impedance SMA antenna female connector
Data indicator	OH (green LED), logged into the GSM network – Flashing: Off the hook SIM (red LED) – Steady light: No SIM card present – Flashing: No PIN code entered – OFF: SIM card present and PIN code entered NET (yellow LED) – Steady light: Very good network reception – Flashing: Good network reception – Flashing quickly: Moderate network reception – OFF: No network reception
Startup diagnostics	Selftest, visualization via LEDs (controller, RAM, EPROM, GSM engine, antenna, EEPROM)
Network function	The PIN code is saved in the modem. After a voltage interrupt, the modem automatically relogs into the network and logs automatically into the GPRS network.
Network check	Network bar graph in the configuration software

Switching Inputs and Outputs	
Switching inputs	2 x U_N 24 V DC/5 mA, input voltage range 9 V DC ... 48 V DC, floating, activate one or more of the following: – Message to the local V-24 (RS-232) interface – SMS – Fax – Output control at the opposite station (via SMS)
Switching output	Transistor output to the backplane, activated by: – Input control at the opposite station – SMS – Local AT command
Signaling	ALR (red LED) – Flashing: SMS/FAX error message to be sent – Steady light: Alarm has been triggered

Text and Telephone Number Memory	
Text memory	
SMS	160 characters
Fax	160 characters
Telephone number memory	10 telephone numbers with a maximum of 36 digits

General Data

CE conformance	According to R&TTE directive 1999/5/EC
Ambient operating temperature range	-25°C ... +60°C
Housing	ME 35 with 5-pos. bus contact and ground contact
Material	ABS-V0, green
Dimensions (H x W x D)	99 x 35 x 114.5 mm
Weight of device	209 g
Functional earth ground	Housing contact with DIN rail
Vibration resistance	According to EN 60068-2-6 5g, 1.5 h in each x, y, and z direction
Shock test	According to EN 60068-2-27
Operation	15g, 11 ms, half-sine shock pulse
Storage	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
Separate ground levels	Power supply // V.24 (RS-232)
Test voltage	1.5 kV AC, 50 Hz, 1 min. between all ground levels according to DIN EN 61010-1/VDE 0411-1 and DIN EN 60950

Electromagnetic Compatibility

Noise Immunity According to EN 61000-6-2

Electrostatic discharge (ESD)	EN 61000-4-2	Criterion B 8 kV air discharge 6 kV contact discharge
Electromagnetic HF field	EN 61000-4-3	Criterion A
Amplitude modulation		10 V/m
Pulse modulation		10 V/m
Fast transients (burst)	EN 61000-4-4	
Signal		Criterion A 1 kV/5 kHz
Power supply		Criterion A 1 kV/5 kHz Criterion B 2 kV/ 5 kHz
Surge current load	EN 61000-4-5	Criterion B
Signal		1 kV
Power supply		2 kV
Conducted interference	EN 61000-4-6	Criterion A 10 V
Noise emission	EN 55022 + A1 + A2	Limiting curve B

Conformance According to R&TTE Directive 1999/5/EC

EMC Immunity to interference (electromagnetic compatibility)	EN 61000-6-2	Generic standard for the industrial sector
Safety Protection of personnel with regard to electrical safety	EN 60950	
Health Limitation of exposure of the population to electromagnetic fields	EC Gazette 1999/519/EC	EC Council recommendation of July 12, 1999
Radio Effective use of the frequency spectrum and prevention of radio interference	EN 301511	

Features

- GSM (**G**lobal **S**ystem for **M**obile Communication) and GPRS (**G**eneral **P**acket **R**adio **S**ervice)
- Quad band (850 MHz/900 MHz/1800 MHz/1900 MHz)
- Password-protected access/call-back function/selective call acceptance
- Integrated TCP/IP stack
- Virtual permanent line via GPRS
- Configurable input and output
- Alarm sent directly by SMS, e-mail 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 to 30 V DC
- Temperature range of -25°C to +60°C
- High-quality electrical isolation (VCC // RS-232)
- Integrated surge protection
- Easy startup using plug and play and user-friendly configuration software
- 3964R compatible