

PSI-GPRS/GSM-MODEM/RS232-QB...

GPRS/GSM modems for the United States and Canada

INTERFACE

Data Sheet
2534_en_B



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1 Description

The PSI-GPRS/GSM-MODEM/RS232-QB... rail-mountable 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 is 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 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 to 30 V DC, 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 both the North American (850 and 1900 MHz) and European (900 and 1800 MHz) frequency bands. Each modem is shipped with a country-specific, pre-installed SIM card, and must be registered for use through the registration portal before operation. The registration portal can be accessed at <http://phoenix.diversenet.net>

2 Features

- GSM (Global System for Mobile communication) and GPRS (General Packet Radio Service)
- 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
- 2 digital inputs and 1 digital 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 from 10 to 30 V DC
- Temperature range of -25 to 60°C



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.



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

3 Ordering Data

Products

Description	Type	Order No.	Pcs./Pkt
GPRS modem , rail-mountable, GSM - GPRS, 850/900 MHz and 1800/1900 MHz, V.24 (RS-232) interface, alarm input and output, supply voltage 10-30 V DC, with unactivated SIM card for USA	PSI-GPRS/GSM-MODEM/RS232-QB-USA	2900059	1
GPRS modem , rail-mountable, GSM - GPRS, 850/900 MHz and 1800/1900 MHz, V.24 (RS-232) interface, alarm input and output, supply voltage 10 - 30 V DC, with unactivated SIM card for Canada	PSI-GPRS/GSM-MODEM/RS232-QB-CA	2900060	1

Scope of supply: Modem with SIM card, CD with configuration software, and user manual

Accessories

Description	Type	Order No.	Pcs./Pkt
T-Bus rail connector , for bridging the supply voltage	Use with modem ME 22,5 TBUS 1,5/5-ST-3,81 GN	2707437	10
Quad band antenna with omni-directional characteristics	PSI-GSM/UMTS-QB-ANT	2313371	1
Antenna cable with SMA circular connector	2 m		
Degree of protection	IP65		
Dimensions	76 x 20 mm		
System power supply	MINI-SYS-PS-100-240AC/24DC/1.5	2866983	1
Primary switched	45 - 65 Hz		
Input voltage range	85 - 264 V AC		
Nominal output voltage	24 V DC ±1%		
Nominal output current	1.5 A		
T-Bus rail connector for bridging the supply voltage	2 required for 2866983 power supply ME 17,5 TBUS 1,5/5-ST-3,81 GN	2709561	10
V.24 (RS-232) cable , 2 m, to connect modem to a 9-pos. device interface	9-pos. D-SUB/9-pos. D-SUB (male/female) PSM-KA9SUB9/BB/2METER	2799474	1

4 Technical Data

Power Supply

Supply voltage	10 - 30 V DC via COMBICON plug-in screw terminal block 10 - 30 V DC via T-Bus rail connector, ME 22,5...
Frequency	DC
Current consumption	
Nominal operation	< 100 mA @ 24 V
Sleep mode (can be configured via software)	< 60 mA @ 24 V
LED indicators	VCC (green LED) - Flashing: supply voltage present

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 (software adjustable)

V.24 (RS-232) Interface

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, 900, 1800, 1900 MHz (EGSM)
Transmission power	2 W @ 850 and 900 MHz 1 W @ 1800 and 1900 MHz
SIM interface	3 V SIM card
Transmission speed	Automatic adjustment
DCE/DCE	300 - 14.4 kbaud
Fax	2400 - 14.4 kbaud
GPRS	300 - 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	Self-test, 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 UN 24 V DC/5 mA, input voltage range 9 - 48 V DC, floating, activate one or more of the following: <ul style="list-style-type: none"> - Message to the local V-24 (RS-232) interface - SMS - Fax - Output control at the opposite station (via SMS)
Switching outputs	Transistor output to the backplane, activated by: <ul style="list-style-type: none"> - Input control at the opposite station - SMS - Local AT command
Signaling	ALR (red LED) <ul style="list-style-type: none"> - 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 to 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	209 g
Functional earth ground	Housing contact with mounting 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 Amplitude modulation Pulse modulation	EN 61000-4-3	Criterion A 10 V/m 10 V/m
Fast transients (burst) Signal Power supply	EN 61000-4-4	Criterion A 1 kV/5 kHz Criterion A 1 kV/5 kHz Criterion B 2 kV/5 kHz
Surge current load Signal Power supply	EN 61000-4-5	Criterion B 1 kV 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

Conformance/Approvals

CE Conformance According to R&TTE directive 1999/5/EC

PTCRB Certified

AT&T Network Approved