Smart Modem Communication for the Industry and Energy market

DinBox GPRS SL

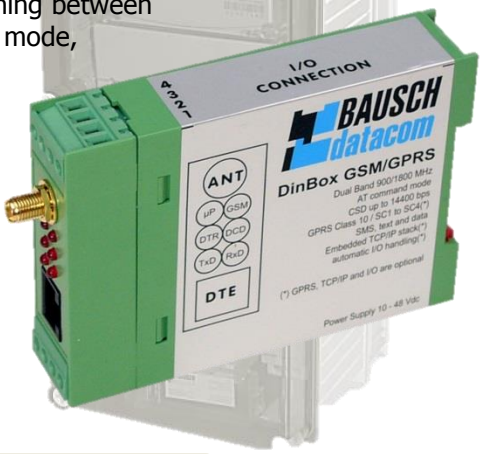
Dinrail GSM / GPRS smart modem

Designed by Bausch Datacom!

The DinBox GPRS SL modem is a serial V.24 RS-232/RS485 modem in a DINrail housing. The modem is DC powered and can be equipped with several metering and/or SCADA protocols. CSD GSM data, GPRS IP socket server & client modes are possible. The modem is an ideal solution for RS-232/485 interfacing to PLC, metering devices, power quality measurement equipment and others.

Bausch Datacom specializes in integrating applications, protocols and TCP/IP protocol stack in its modems. At the heart of the DinBox GPRS SL modem, the SL6087 Sierra GPRS Wireless module supports a powerful software development environment - OpenAT -, which allows embedded ANSI C applications to be executed directly on the Wireless CPU. This means that Bausch Datacom can integrate tailor made applications or communication protocols on the customer's demand, a very powerful tool! Protocols such as IEC 60870-5-104, Modbus or others can thus be implemented in the modem.

The standard DinBox GPRS SL modem firmware in OpenAT supports modem grouping and mass deployment services, offered by the 'Praxis' MMS (Bausch Modem Management System). Praxis provides for scheduled and grouped updating of modem firmware over the air, switching of modems in group from GSM data to GPRS or vice versa, based on information from the modems in the field about signal strength (rssi, bit error rate…), cost based and scheduled switching between different AMR metering scenario's (Socket Client or Server Mode, CSD mode, GPRS mode…), setting of a different baudrate (between modem and meter) or modem configuration (APN name,...). Even secure communication with the back-office can be set up by adding RSA encryption code to the embedded software of the modem.



Basically the modem firmware allows the modem to be connected by RS-232 and/or RS-485 (2/4 wire) to 2 or more non-IP enabled (electricity) meters and to communicate however by IP number and port number using GPRS. In this way a transparent communication with the host system can be maintained!

Typical Applications

- Power quality communication
- Remote AMR communication
- Upgrade of non IP-enabled meters and loggers
- Vending machine monitoring
- Surveillance systems
- Point of Sales

Product Highlights

- Configurable watchdog reset (1-168 hour).
- Standard firmware allows Praxis modem grouping and mass deployment services and communication with meters without IP stack
- Optional firmware: IEC 60870-5-104, Modbus…
- FOTA modem firmware upgrade over the Air
- AirVantage™ mass deployment services

BAUSCH DATACOM

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MANAGEMENTSYSTEEM CERTIFICATIE ISO 9001 DNV

DinBox GPRS SL hardware specifications

The DinBox GPRS SL is a smart modem, built inside a Phoenix Dinrail housing with a Sierra Wireless GSM / GPRS CPU, DC power supply and configurable watchdog. The modem comes with logically separated RS-232 & 2/4 wire RS-485 interfaces.

Housing

° Standard Phoenix DINrail housing
° Dimensions: 22.5/75.0/107.5 mm

Connectors

° Mains and RS-485 interface :
4-pin header (pitch : 5.08 mm / Inom : 12 A / Unom : 250 V)
and 4-pin connector terminal block with screw contacts (pitch 5.08 mm / Inom : 12 A / Unom : 250 V / maximum wiring section: 2.5 mm^2
° RS-232 : female RJ-45 connector
° 50 Ohm AMP SMA antenna connector

Environmental

° - 20°C / + 50°C
° 10% - 75% (non condensing)

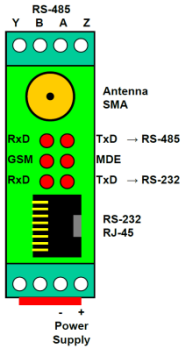
Engine

° Built-in SL6087 800/900/1800/1900 MHz GSM/GPRS module / CPU: 32 bit, 104 MHZ, ARM9, running Open AT®, TCP/IP stack – 'Class B'
° Magnetical dual band SMA antenna included
° Integrated 3V SIM card reader
° Communication protocol: 2G GPRS Class 10 / CSD / SMS / TCP IP
° GSM data: asynchronous transparent mode
° Flow control (RTS/CTS – XON/XOFF) and speed buffering
° Automatic format and speed sensing (300 to 115.200 bps)
° AT command set support
° Circuit-switched 14.4 Kbps data and Group 3 FAX (Class 1 and 2)

DTE interfaces

° Complete RS-232 interface, galvanically separated, connected to UART1 of the GPRS module.
RJ-45 (8x8) connector (DCD, RxD, TxD, DTR, GND, RI, RTS and CTS)
° RS-485 interface, configurable in 2- or 4wire by jumper settings, galvanically separated, connected to UART2 of the GPRS module.

PIN	
Z	- Output
A	+ Input
B	- Input
Y	+ Output



Approvals

° CE

Reset

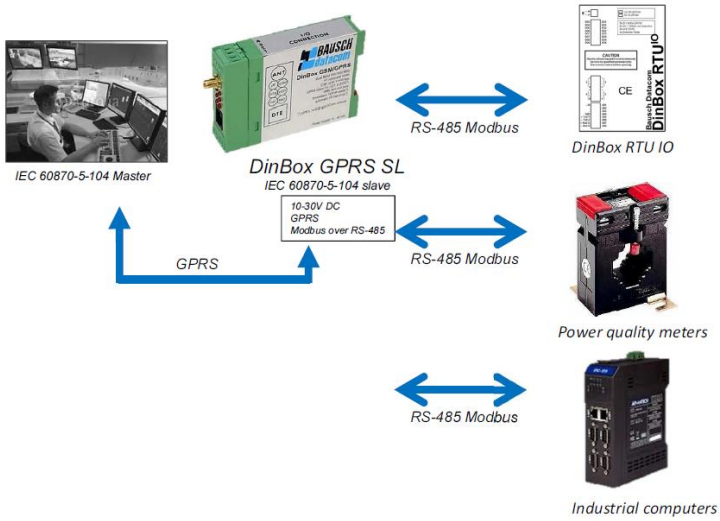
° Long term configurable watchdog (1-168 h)

Power Supply

° 10-30 Vdc regulated,
° 75 mA @ 12Vdc – idle; 400 mA @ 12Vdc – max.

DinBox GPRS SL Firmware

°Supports the Praxis Modem Management System grouping and mass deployment services.
° Communication with meters without IP-stack
° IP Socket Server & Client Mode
° GSM-GPRS switching
° FOTA (Firmware over the Air)
° IEC 60870-5-104 protocol (optional)
° Modbus protocol (optional)



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