

CT and battery powered data concentrator and GPRS modem TELEM-GWM-C1-B



Telem-GWM-C1-B is a modification of Telem-GWM to be used in places with no low voltage electricity. It is powered from accumulator which is charged by high voltage measurement transformers.

Usually it is in hibernated state. It works up:

- On input signal activation
- Periodically after configured interval.

The communication can be encrypted with several VPN protocols.

Main features

- Transparent TCP/IP connections via Ethernet
- Various data exchange protocols via Ethernet
- Automatic protocol conversion from IEC 60870-5-101 to IEC 60870-5-104 without description of data objects.
- 2G/3G GPRS module (GSM/GPRS/EDGE 850/900/1800/1900 MHz, UMTS/HSDPA 900/2100 MHz)
- Firewall functionality
- OpenVPN, IPsec, L2TP and SSH connections
- 1-wire sensor port (up to 10 sensors) e.g. for temperature
- All ports are galvanically isolated from case and power circuit
- Real-time clock with back-up capacitor
- NTP client and server for time synchronization
- User friendly configuration tool
- Configurable remotely over communication line
- 8 Digital inputs (wetting voltage equals to battery voltage) and current transformer input
- Graphic Web Server
- Syslog
- SNMP, SDN (Software Defined Networking), DPI (Deep Packet Inspection)

Communication ports

- 1 x Ethernet connection with RJ45 connector. 1,5 kV isolation

Data communication protocols

To upper level systems	IEC 60870-5-104 IEC 60870-5-101 balanced or unbalanced
To lower level devices	IEC 60870-5-101 unbalanced, IEC 60870-5-103, IEC 60870-5-104, Spa-bus, Modbus-RTU, Modbus-TCP, IEC 62056-21 (IEC 1107)

Electrical characteristics of isolated inputs

Withstand to static discharge	IEC 61000-4-2
Withstand to bursts, surges	IEC 61000-4-4, 61000-4-5
Power frequency magnetic field	IEC 61000-4-8
Voltage dips, variations	IEC 61000-4-11

Radio frequency compatibility

RF emission	IEC 55022 Class A
Immunity to RF fields	IEC 61000-4-3, 61000-4-6

Mechanical and environmental parameters

Degree of protection	IP 31
Dimensions (W x H x D)	50 x 135 x 173 mm
Mounting	DIN rail
Ambient temperature in operation	-40...+ 70°C
Relative humidity	90% non-condensing

Power supply

Supply voltage	6V Lead Acid Battery with Current Transformer
Power consumption (average)	< 5 W

Current Transformer		Time for restoring comm. Session energy		Full charging of empty battery in days	
Primary current [A]	Secondary current [mA]	Hours	Days	3,5 Ah	7 Ah
6,5	1	110,23	4,59	163,4	396,83
7,4	2	41,34	1,72	75,08	163,4
9,3	4	18,37	0,77	36,08	75,08
13,3	8	8,7	0,36	17,69	36,08
22,2	16	4,24	0,18	8,76	17,69

Average duration of communication session is estimated to be less than 5 min

Number of communication sessions from fully loaded battery

3,5 Ah	7 Ah
31	63

Configuration

The Telem-GWM is adapted to specific application by using the configuration software tool Telem-GWS. This tool is used for configuration of the communication ports, devices, measurement objects, and other parameters. The logical formulas can be created using both digital and analog measurement objects as operators. Configuration parameters are saved in tar.xz compressed format file. Configuration export and import to .CSV files (comma separated values file for using the Excel).