

## TELEM-GWM



TELEM-GWM is a 4G GPRS modem with optional data concentrator functionality. It is used for control and monitoring operations of substations from control center via IEC 60870-5-101 and IEC 60870-5-104 data communication protocols and also for creating transparent TCP/IP channels for remote connections to various equipment.

### Main features

- Transparent TCP/IP connections via Ethernet and serial ports
- Various data exchange protocols via Ethernet and serial ports (on TELEM-GWM-CX-X)
- Automatic protocol conversion from IEC 60870-5-101 to IEC 60870-5-104 without description of data objects.
- 4G/3G/2G GPRS module (GSM/GPRS/EDGE 850/900/1800/1900 MHz, UMTS/HSPA 900/2100 MHz, LTE 800/1800/2100/2600 MHz)
- Firewall functionality
- OpenVPN, IPsec, L2TP and SSH connections
- Optional expansion cards for I/O and additional LAN ports
- 1 - wire sensors 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
- Graphic Web Server
- Syslog
- SNMP, SDN (Software Defined Networking), DPI (Deep Packet Inspection)

### Communication ports

- Base board
  - 1 Ethernet connection with RJ45 connector. 1,5 kV isolation
  - 2 RS-232 with RJ45 connector, galvanically isolated. 15 kV surge protection
  - 2 RS-485/232. RJ45 connector for RS-232 and screw terminals for RS-485, galvanically isolated. 15 kV surge protection
  - USB console port for maintenance
- Expansion card
  - Card D
    - 8 optically isolated digital inputs (wet contacts with internal supply)
    - 3 relay outputs (max 110 VDC, 0,3 A, 125 VAC, 0,5 A)
  - Card E
    - 16 optically isolated digital inputs (wet contacts with internal supply)
    - 6 relay outputs (max 110 VDC, 0,3 A, 125 VAC, 0,5 A)
  - Card L
    - 3 Ethernet with RJ45 connectors
  - Card O
    - 1 Ethernet with RJ45 connector + 2 optical Ethernet with LC connectors

### Data communication protocols

To upper level systems	IEC 60870-5-104 IEC 60870-5-101 balanced or unbalanced
To lower level devices (only on TELEM-GWM-CX-X)	IEC 60870-5-104 IEC 60870-5-103 IEC 60870-5-101 unbalanced Modbus-RTU Modbus-TCP IEC 62056-21 (IEC 1107) SPA-bus TELEM

### 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 (without connectors)	65 x 132 x 173 mm
Mounting	DIN rail
Ambient temperature in operation	−40...+70 °C (−40...+55 °C with communication card O)
Relative humidity	5...90% non-condensing

### Power supply

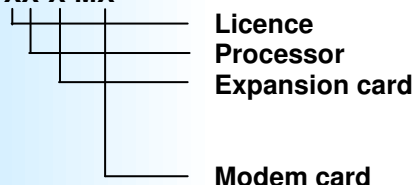
Supply voltage range	20 to 72 V DC (Optional 10 to 36 V DC)
Power consumption (average)	< 18 W

### 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 for using the Excel.

### Order code

**GWM-XX-X-MX**



**(e.g. GWM-C1-D-M2)**

<b>B</b> – Router	<b>C</b> – Data concentrator
<b>1</b> – Base model	<b>2</b> – Custom model
<b>N</b> – No card	<b>D</b> – 8 DI and 3 DO
<b>E</b> – 16 DI and 6 DO	<b>L</b> – 3 RJ45 Eth
<b>O</b> – 1 RJ45 Eth + 2 LC Eth	
<b>0</b> – No modem	<b>2</b> – 4G LTE modem

The content of this document is subject to change without prior notice.