

TELEM-AGC – RTU, 4G modem and data concentrator for remote control solutions



TELEM-AGC is an intelligent control device in which the data concentrator functionality is combined with 4G modem and digital inputs/outputs. The main usage is in electricity control solutions for implementing the remote data processing units. It has several communication ports and communication protocols for interfacing with measurement equipment and control center. For ensuring the secure data exchange the VPN channels and VLANs are used.

Communication

- 4G/3G/2G GPRS modem
- Ethernet port
- Firewall functionality
- Supports VPN connections: OpenVPN, IPsec, L2TP and SSH
- Serial ports, galvanically isolated from case and power circuit
- Possibility of transparent connections from TCP/IP to serial ports
- Automatic protocol conversion from IEC 60870-5-101 to IEC 60870-5-104 without description of data objects.
- NTP client and server for time synchronization
- 1-wire port for various sensors

Data handling

- Various data exchange protocols via Ethernet and serial ports
- Digital inputs and outputs
- Data processing and autonomous control
- Configurable graphical web pages for user interface
- Alarms via SMS and e-mail
- Historical data recording
- > 10 sec. operation after power outage for sending last signals

Configuration and maintenance

- User friendly configuration tool with remote configuration possibility
- Web browser interface for maintenance
- SNMP for device status monitoring
- Status logs

Interfaces on base board

- GPRS modem
- Ethernet RJ45 connector
- Serial communication ports
- Micro SD memory card socket
- USB console port for maintenance

Modifications

- B – Basic, modem & router
- C – Data concentrator, with enhanced processor
- E – Data concentrator with IEC 61850 protocol
- L – Lighting Control Box Controller - LCBC

B, C, E modification's base board includes:

- Communication ports
 - 2-nd Ethernet port
 - 2 x RS-232/ RS-485 ports with RJ12-6P6C connectors for RS-232 and screw terminals for RS-485, galvanically isolated
 - RS-232 port with RJ12-6P6C connector, galvanically isolated
 - FO SC interface for serial data connection or for GPS input (depending on order code)
- 2-nd SIM card socket

L modification's base board includes:

- Communication ports
 - 2 x RS-232 with RJ9-4P4C connector, galvanically isolated
 - RS-485, galvanically isolated
 - 1-wire for environmental sensors
 - Optional radio network interface
- Photo and temperature resistor inputs
- IO connectors
 - 8 optically isolated digital inputs (wet contacts with internal supply)
 - 4 relay outputs (max 0,5 A 250 VAC; 0,25 A 220 VDC)
- 12 V backup battery connection and charger

Expansion

Device can be expanded with additional inputs/outputs and communication interfaces according to order code.

Data communication protocols

| | |
|------------------------|--|
| To upper level systems | IEC 60870-5-104 IEC 60870-5-101 balanced and unbalanced |
| To lower level devices | IEC 61850 IEC 60870-5-101 unbalanced IEC 60870-5-103 IEC 60870-5-104 Modbus-RTU, Modbus-TCP IEC 62056-21 (IEC 1107) SPA-bus Telem |

Electrical characteristics of isolated inputs

| | |
|--|----------------------------|
| Withstand to static discharge | EN 61000-4-2 |
| Withstand to bursts, surges | EN 61000-4-4, EN 61000-4-5 |
| Immunity to power frequency magnetic field | EN 61000-4-8 |
| Immunity to voltage dips, variations | EN 61000-4-11 |

Radio frequency compatibility

| | |
|-----------------------|----------------------------|
| RF emission | EN 55032 |
| Immunity to RF fields | EN 61000-4-3, EN 61000-4-6 |

Mechanical and environmental parameters

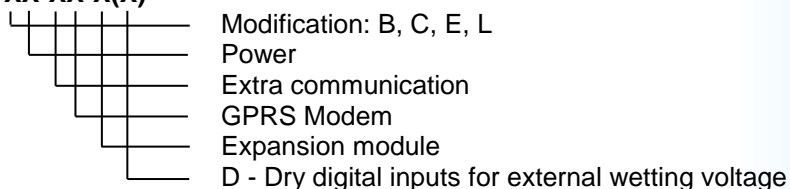
| | |
|----------------------------------|---|
| Degree of protection | IP 30 |
| Dimensions (W x H x D) | 65 x 145 x 190 mm |
| Mounting | DIN rail |
| Ambient temperature in operation | -40...+70°C (-40...+55°C with expansion module O) |
| Relative humidity | 5...90% non-condensing |
| Power consumption (average) | < 7 W |

Configuration

Telem-AGC is configured using the Telem-GWS software tool. Parts of configuration can be exported and imported to/from .csv files for using the Excel or similar spreadsheet software.

Order code

TELEM-AGC-XX-XX-X(X)



Example: TELEM-AGC-LA-R4-B

Possible order code choices

| Modification | B, C, E | L |
|---|---------|---|
| Power | | |
| L - 11...33 V DC | * | |
| H - 20...60 V DC | * | |
| A - 230 V AC | | * |
| Extra communication | | |
| S – FO SC serial | * | |
| G – FO SC GPS inp. | * | |
| R – Radio | | * |
| N – None | * | * |
| GPRS Modem | | |
| 4 – 4G | * | * |
| N – None | * | * |
| Expansion module | | |
| A – 8 x DI, 4 x Single DO | | * |
| B – 8 x DI, 3 x Single DO, DALI | | * |
| C – 4 x RS-232/485 Will be available in 2019 | * | |
| D – 8 x DI, 3 x Double DO | * | |
| E – 16 x DI, 6 x Double DO | * | |
| F – 16 x DI, 8 x Single DO | | * |
| G – 16 x DI, 7 x Single DO, DALI | | * |
| L – 3 x Eth. RJ-45 | * | |
| O – 2 x FO Eth. + Eth. RJ-45 | * | |
| N – None | * | * |