

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.

Features

- Firewall functionality
- Supports VPN connections: OpenVPN, IPsec, L2TP and SSH
- Possibility of transparent connections from TCP/IP to serial ports
- Various data exchange protocols via Ethernet and serial ports
- Automatic protocol conversion from IEC 60870-5-101 to IEC 60870-5-104 without description of data objects.
- Data processing and autonomous control
- Configurable graphical web pages for user interface
- NTP client and server for time synchronization
- Alarms via SMS and e-mail
- Historical data recording
- > 10 sec. operation after power outage for sending last signals

Base board modifications

- B, R – Router & 2G/3G/4G modem
- C, G – Data concentrator (with enhanced processor)
- L – Lighting Control Box Controller (LCBC)

| | B | C | R | G | L |
|---------------------------------|----------|----------|----------|----------|---|
| Functionality | | | | | |
| Router & 4G modem | ✓ | ✓ | ✓ | ✓ | ✓ |
| Data Concentrator | - | ✓ | - | ✓ | ✓ |
| Communication interfaces | | | | | |
| Ethernet RJ-45 | 2 | 2 | 1 | 1 | 1 |
| Ethernet SFP sockets | - | - | 2 | 2 | - |
| RS-232 / RS-485 ports, isolated | 2 | 2 | - | - | - |
| RS-232 ports, isolated | 1 | 1 | - | - | - |
| RS-485 ports, isolated | - | - | 2 | 2 | 1 |
| Serial FO SC | Optional | Optional | Optional | Optional | - |
| 1-wire | 1 | 1 | 1 | 1 | 1 |
| USB console | 1 | 1 | 1 | 1 | 1 |

| | B | C | R | G | L |
|----------------------|------------|------------|------------|------------|-------------|
| Other interfaces | | | | | |
| SIM card sockets | 2 | 2 | 2 | 2 | 1 |
| SD card sockets | 1 | 1 | 1 | 1 | 1 |
| Base board I/O | - | - | - | - | 19 DI, 4 DO |
| 12 V battery charger | - | - | - | - | ✓ |
| Power voltage | DC options | DC options | DC options | DC options | 230 V AC |

L modification base board includes I/O:

- 12 + 7 optically isolated digital inputs
- 4 relay outputs (max 0,5 A 250 VAC; 0,25 A 220 VDC)

Configuration and maintenance

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

Expansion options

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, OPC UA, IEC 60870-5-101 balanced and unbalanced |
| To lower level devices | IEC 61850, IEC 60870-5-101 balanced and 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) | 67 x 148 x 190 mm |
| Mounting | DIN rail |

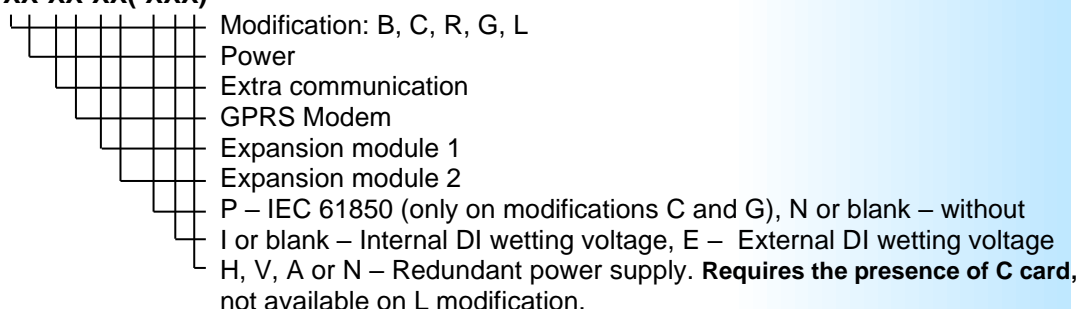
| | |
|----------------------------------|---------------------------------|
| Ambient temperature in operation | -40...+70 °C |
| Relative humidity | 5...95% non-condensing |
| Power consumption (average) | < 7 W, < 18 W with optical Eth. |

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-XX(-XXX)



Example: TELEM-AGC-CL-S4-DD-PIN

Order code choices by modifications:

| Modification | B, C, R, G | L | Remark |
|--|--------------------------|---|--|
| Power | | | |
| L - 11...33 V DC | * | | |
| H - 20...60 V DC | * | | Also on redundant supply |
| V - 40...160 VDC | * | | Also on redundant supply |
| A - 230 V AC | Only on redundant supply | * | Also on redundant supply |
| Extra communication | | | |
| S – FO SC serial | * | | |
| G – FO SC GPS inp. | * | | |
| R – Radio | | * | |
| N – None | * | * | |
| GPRS Modem | | | |
| 4 – 4G | * | * | |
| N – None | * | * | |
| Expansion module | | | |
| C – 4 x RS-232/485 | * | | Has to be if redundant power supply is ordered |
| D – 8 x DI, 3 x Double DO | * | | |
| H – 12 x 230 V DI, 2 x Single DO | | * | |
| I – 12 x 230 V DI, 1 x Single DO, DALI | | * | Only 1-st exp. card |
| J – 12 x dry cont. DI, 2 x Single DO | | * | |
| K – 12 x dry cont. DI, 1 x Single DO, DALI | | * | Only 1-st exp. card |
| L – 3 x Eth. RJ-45 | * | | Only 1-st exp. card |
| O – 2 x FO Eth. + Eth. RJ-45 | * | | Only 1-st exp. card |
| N – None | * | * | |