

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



TELEM-AGC is Remote Terminal Unit (RTU) and intelligent control device in which the data concentrator functionality is combined with 4G modem and digital inputs/outputs. The main usage is RTU central unit in electricity control solutions.

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 boards

- GPRS modem
- Ethernet RJ45 connector
- Serial communication ports
- 1-wire for light and other environmental sensors
- Micro SD memory card socket
- USB console port for maintenance

### Modifications

- B – Basic, modem & router
- C – Data concentrator (with enhanced processor)
- L – Lighting Control Box Controller (LCBC)

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

- Communication ports
  - 2 x 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 x SIM card socket

### L modification's base board includes:

- Communication ports
  - Ethernet port
  - RS-485, galvanically isolated
  - 1-wire for light and other environmental sensors
  - Optional radio network interface
- IO connectors
  - 12 + 7 optically isolated digital inputs
  - 4 relay outputs (max 0,5 A 250 VAC; 0,25 A 220 VDC)
- SIM card socket
- 12 V backup battery connection and charger

### Expansion

Telem-AGC has modifications according to order code and can be expanded with DIN rail mounted Telem I/O and communication modules.

### Data communication protocols

To upper level systems	IEC 60870-5-104, IEC 60870-5-101, OPC UA
To lower level devices	IEC 61850, IEC 60870-5-104, IEC 60870-5-101, IEC 60870-5-103, SPA-bus, Modbus-RTU, Modbus-TCP, IEC 62056-21 (IEC 1107), 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

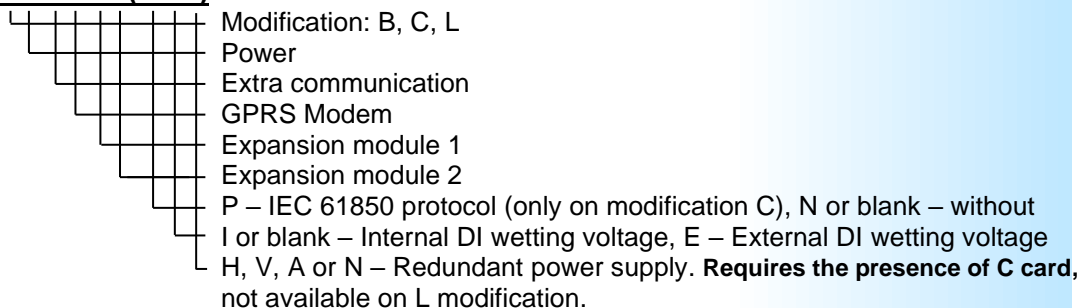
Power consumption (average)	< 7 W, < 18 W with optical Eth.
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### Configuration

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

Modification	B, C	L	Remark
<b>Power</b>			
L – 11...33 VDC	*		
H – 20...60 VDC	*		Also on redundant supply
V – 40...160 VDC	*		Also on redundant supply
A – 85...264 VAC, 120...370 VDC	Only on redundant supply	*	Also on redundant supply
<b>Extra communication</b>			
S – FO SC serial	*		
G – FO SC GPS inp.	*		
R – Radio		*	
N – None	*	*	
<b>GPRS Modem</b>			
4 – 4G	*	*	
N – None	*	*	
<b>Expansion module</b>			
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	*	*	