TELEM-AGC – RTU, 4G/5G 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 or 5G 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.

TELEM-AGC is the modular RTU system. It is expanded by modules of main unit listed in order code specification and by DIN rail mounted Telem IO modules.

Two Telem-AGC devices can be connected and configured for hot standby redundant system.

Communication

- 5G/4G/3G/2G modem
- Ethernet port
- Firewall functionality
- Supports VPN connections: OpenVPN, IPsec, L2TP and SSH
- Serial ports are 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 / server and IEEE 1588 PTPv2 for time synchronization
- 1-wire port for various sensors

Data handling

- Various data exchange protocols via Ethernet and serial ports
- Logical operations by list of formulas (similar to ladder logic) combined with Python langue programmable functions
- Unlimited no. of datapoints, tested with 6000 datapoints
- Event buffering and logging
- Alarms via SMS

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

- Modem
- Ethernet RJ45 connector
- Serial communication ports
- Digital inputs and outputs
- 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 srew 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
  - 8 + 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 is the RTU central device, which is expanded by IO and communication modules according to order code and by DIN rail mounted Telem IO modules.

Data communication protocols

To upper level systems	IEC 60870-5-104, IEC 60870-5-101, Modbus-RTU, Modbus-TCP, 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)

EMC compatibility

Communication networks and systems for power utility automation	EN 61850-3
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 emission	EN 55032
Immunity to radio frequency fields	EN 61000-4-3, EN 61000-4-6

Mechanical and environmental parameters

Degree of protection	IP 30
Dimensions without connectors	46 x 142 x 175 mm on 1 IO card model 67 x 142 x 175 mm on 2 IO card model
Mounting	DIN rail

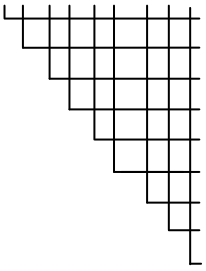
Ambient temperature in operation	–40…+70°C
Relative humidity	5…95% non-condensing
Power consumption (average)	< 7 W, < 18 W with optical Eth.

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)



Modification: B, C, L
Power
Extra communication
5G or 4G modem
Expansion module 1
Expansion module 2
P – IEC 61850 protocol (only on modification C), N or blank – without
I or blank – Internal DI wetting voltage, E – External DI wetting voltage
H, V, A or N – Redundant power supply. **Requires the presence of C card,** not available on L modification.

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

Order code choices

Modification	B, C	L	Remark
Power			
L – 11...33 VDC	*		**Only** for main supply
H – 20...60 VDC	*		For main and redundant supply
V – 40...160 VDC	*		**Only** for redundant supply
B – 85…264 VAC, 120…370 VDC		*	
Extra communication			
S – FO SC serial	*		
G – FO SC GPS inp.	*		
R – Radio		*	
N – None	*	*	
Modem			
4 – 4G	*	*	
5 – 5G	*	*	Available from Nov. 2026
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	*	*	