ADD:SECURE
SMART GRIDS

GIO100
RTU with 2G/3G/4G

Reliable monitoring and control via cellular network

The demand of more control and knowledge regarding the distribution network requires increased number of measurement and control devices in the network.

Conventional implementations with separate units for communication and RTU-functionality can be both expensive and complex. GIO100 contains both RTU-functionality and 2G/3G/4G communication integrated in one single unit and thanks to its small form factor and robust metal enclosure is GIO100 useful in tough environments with limited space. Multifunctional and flexible GIO100 is easy to configure via its user-friendly Web interface.
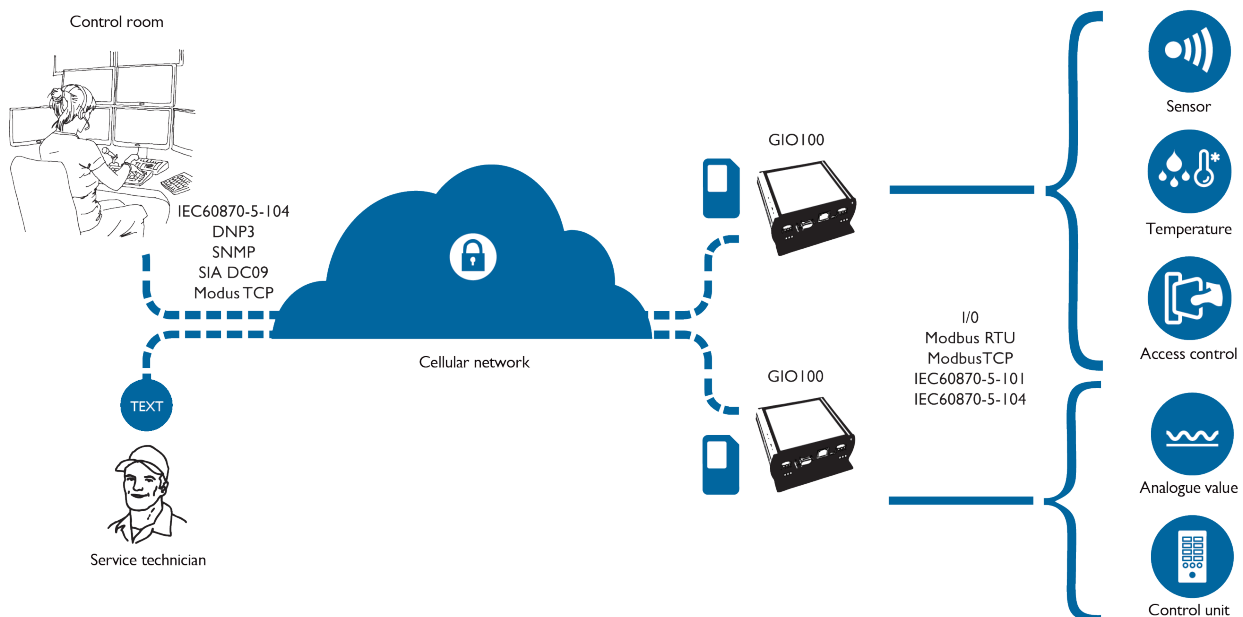
Digital inputs and outputs, analogue inputs in combination with standard data protocols makes it possible to control equipment, also remotely, in a reliable and cost effective way. GIO100 supports the common protocols IEC60870-5-104, DNP3, SIA DC09, SNMP and Modbus TCP for control from the central. IEC60870-5-101, IEC60870-5-104, Modbus RTU and Modbus TCP can be used to communicate with connected intelligent electronic devices.

GIO100 supports text message in addition to the ordinary communication between the remote device and control room. GIO100 sends a text message to the listed numbers when an alarm occurs in the distribution network. It is also possible to perform limited remote control via command sent in text message format. Port server conversion between TCP/IP and RS232/RS485 can also be realized by using GIO100.

To get a complete safe and robust communication system, combine GIO100 with the AddSecure IoT solution, AddSecure Link and its secure SIM-cards. Link utilises roaming between different operators and the network will be totally separated from regular mobile traffic and internet. The system will be self-administered and controlled. Additional monitoring and alarm handling services are available via AddView, also from AddSecure.

Power supply	
Voltage	9-32 VDC
Current consumption	Average 60 mA @ 12 V, 35 mA @ 24 V
Power consumption	Average 0.75 W, max 8 W <1 s

Inputs and outputs	
5 digital inputs	Max voltage 60 VDC, impedance 10 kΩ, isolation 1500 Vrms
3 digital outputs	Max voltage 60 VDC, max current 0.5 A, isolation 1500 Vrms
2 analogue inputs	Input current 0-20 mA, impedance 200 Ω (can be used as digital inputs)

Cellular communication frequency [MHz]	800	900	1800	2100	2600
2G, 3G & 4G	4G	2G, 3G & 4G	2G & 4G	3G & 4G	4G

Protocol	Text message, IEC60870-5-104 (slave and master), DNP3 (slave), IEC60870-5-101 (master), Modus TCP (slave and master), Modus RTU (master), SIA DC09, IPSec, L2TP, SNMP v1/v2c, PlexMan 2

Connectors	
Power Supply	2 way plugable screw terminal 1.5 mm^2
USB	USB 2.0 slave micro
ETH	RJ45 (TCP/IP, UDP/IP), 10/100 Mbps
RS232	DB9F, DCE (modem)
RS485	A, B, GND 3 way plugable screw terminal 1.5 mm^2
Antenna	Female SMA, 50 Ω
SIM card	Push-push mini SIM card, form factor 2FF
Inputs and outputs	Plugable push in terminal 0.5 mm^2

Temperature range	-40 °C to +85 °C

Enclosure	Aluminium, dimensions 122 x 123 x 43 mm, weight 365 g, IP51

AddSecure Smart Grids has long experience regarding distribution networks business with specialist competence in communication, control, automation, fault detection and measurement technologies. We offer modular, transparent and customer adapted solutions to achieve cost-effective modernisation of the distribution network.