telemasteRTU battery powered RTU

Unit description

The unit is designed for remote data acquisition and remote control of objects without power supply in water industry and utilities. It is optimized for extremely low power consumption, which allows long life battery operation. Typical battery life cycle is more than one year at usual conditions.

The unit has 4 DI (active/passive, counter), 4 DO, 4 AI (2 x voltage measurement 0-10 V, 2 x current measurement 0-20 mA) and 2 AO (12 or 24V) for sensors power supply.

It has built-in LTE modem, local ports RS-485, M-BUS and USB.

The power supply is either by two internal batteries $LiSOCl_2$, external battery pack or external power supply 5-12 V DC. RTU has a robust aluminium wall-mounting housing with IP68. Front panel is equipped with a magnetic contact for waking-up without necessity of opening the housing.





Operation

At the battery-powered mode the unit is in the sleep mode for most of the time while checking changes at digital inputs / pulse counters. AI metering period is configurable. Communication with the superior system (e.g. SCADA) can be initiated by change of defined inputs, defined limits override or in defined periods.

The unit includes monitoring of battery status, temperature, GSM signal strength and system logs.

The unit is programmable so it allows local control of smaller technology objects.

Configuration and programming

The USB provides web-based interface for configuration and programming without need of any 3-rd party application. The config file can be saved at the PC as a back-up or for future use. The config file can be also remotely uploaded to the RTU over DNP3 protocol.

The programming of the RTU local logic is by the functional blocks diagram.

The interface provides as well estimation of the battery lifetime based on the actual configuration and operation mode.

Technical specification

Battery power supply	2 × 3,6 V Li-$SOCl_2$ internal batteries or external battery box
External power supply	8 - 16 V DC
Digital inputs	4 × active or passive inputs, pulse counters 20 ms, configurable
Digital outputs	4 × 30 V / 50 mA (open collector)
Voltage inputs	2 × 0–10 V (overloadability 12,5 V), configurable measuring period
Current inputs	2 × 0–20 mA (overloadability 25 mA), configurable measuring period
Communication interfaces	Internal LTE modem: DNP3
	RS-485: MODBUS RTU, master
	M-BUS: Master, max. 3 slaves
	USB: for local configuration only
Configuration and programming	Locally over built-in web interface, remotely by config file. Programming by the functional blocks diagram.
Other properties	Integrated temperature sensor (range -25 to 70 °C, accuracy ±2°C), RTC synchronised with SCADA, GSM signal strength monitoring
Battery lifetime	Min. 1 year at typical daily measurement and communication
Dimensions (without glands)	25 × 172 × 92 mm (W × H × D)
Operating temperature and humidity	-20 °C to 70 °C, 5 – 95 % non-condensing
Ingress protection	IP68

VAE CONTROLS, s.r.o., Namesti Jurije Gagarina 233/1, 710 00 Ostrava, Czech Republic
tel: +420 556 204 111, email: info@vaecontrols.cz, www.vaecontrols.cz