



RTU7KL (PC2) – control and communication unit, measurement 3V + strengthened 3I

Compact RTU

Unit description

The RTU7KL is derived from a well-established series of compact RTUs from ELVAC a.s., designed for remote monitoring of energy networks, and further areas with high requirements for system reliability and robustness. The unit integrates three-phase measurement of voltages and currents (current inputs for 1A or 5A), digital inputs and outputs, a communication module and a charger of backup batteries. The unit can record the waveforms of signals from analog inputs triggered from fault events. Remote downloading of records, parameterization and FW upgrades are a matter of course. The RTU7KL PC2 version is fitted with a more powerful communication card to support more demanding communication tasks.

Typical applications

- ❑ measurement of P, Q, U, I,
- ❑ monitoring and control of renewable sources,
- ❑ monitoring and control of MV/LV substations,
- ❑ protection.



Technical specification

Voltage inputs	3 × 10 or 100 or 230 V AC (DC), optionally fourth input 100 V or inputs for capacitive sensors
Current inputs	3 × 1 A AC or 3 × 5 A AC
Digital inputs	20 × optocoupler, active or passive inputs, signaling voltage 24 V (optionally 12 V)
Digital outputs	4 × relay (NO contact 3 A / 240 V AC / 30 V DC), 1 × relay (changeover contact 5 A / 240 V AC / 30 V DC)
Communication cards	Standard COMIO4, optionally card COMIO-PC2 with embedded PC
Communication interfaces	Depending on the type of communication card - Ethernet LAN, GPRS/EDGE/UMTS, RS-232/422/485
Antenna connector	FME with card COMIO4 or SMA with card COMIO PC2
Power supply voltage	10 V DC to 40 V DC
Voltage of backup battery	12 V, optionally 24 V
Max. charging current of battery	1 A
Max. maintenance battery voltage	13.7 V, optionally 27.4 V
Switch off voltage (battery protection)	11 V, optionally 22 V
Temperature sensor	Measured range -55 °C to 125 °C, accuracy ±0,5 °C in range -10 °C to 85 °C
Operating temperature	-25 °C to 50 °C (possible increase up to 65 °C – on demand)
Storage temperature	-30 °C to 75 °C
Ambient relative humidity	5 % – 95 % non-condensing
Dimensions	210 × 90 × 60 mm (W × H × D) without connectors
Ingress protection	IP20 (IP21 with protection cover – for free on demand)

Basic features of unit

- ❑ 20 × digital input, periodical evaluation and filtering of input changes,
- ❑ three-phase measurement of voltages and currents, periodical evaluation of values,
- ❑ 5 × relay output, automation functions,
- ❑ auxiliary contact ON REL, useful for example for disconnection of a devices connected to battery,
- ❑ internal temperature of RTU is measured directly, another input for external sensor for environment measurement of RTU,
- ❑ external power supply 10 V DC to 40 V DC, the voltage must be 5 V higher than voltage of a backup battery,
- ❑ controlled charging of backup battery 12 V or 24 V, periodical testing of battery status (capacity),
- ❑ protections – short circuit, overcurrent (time depending or not, directional or not), earth fault (directional or not) voltage, frequency, current and voltage asymmetry,
- ❑ automation functions – reclosing, switch off in zero voltage pause,
- ❑ time information is provided by master system (SCADA) or via GPS receiver,
- ❑ optional extension via RS-485 – external I/O modules, another RTUs,
- ❑ optional control via HMI terminals,
- ❑ communication card COMIO4 - RS-232/485, Ethernet, GPRS/EDGE/UMTS, version PC2 additionally RS-422, CSD,
- ❑ supported communication protocols – MODBUS, HiCom2, IEC 60870-5-101, IEC 60870-5-103, IEC 60870-5-104, FTP, HTTP,
- ❑ version RTU7KL PC2 supports also IEC 61850, DNP3, L2TP, DLMS, secured communication according to IEC TS 62351-3 and another option according to user demands,
- ❑ user programming by logical and relational expressions,
- ❑ DIN rail or panel mounting.