

One Modular Platform for Wide Range of Solutions in Power Distribution Monitoring and Control - www.rtu.cz

Applications

- Intelligent Electronic Device (IED) / Remote Terminal Unit (RTU) for remote monitoring and control of:
 - primary substations,
 - secondary substations,
 - switching stations,
 - ring main units,
 - load break switches,
 - sectionalizers,
 - reclosers,
 - renewable energy sources (wind, solar, water, combined etc.),
 - objects for electromobility (chargers, small vehicles municipal infrastructure, etc.),
 - intelligent buildings.
- Central or backup communication unit, communication protocol converter, router and data concentrator in power distribution objects.
- Aerial or cable lines – feeder or node monitoring, control, measurement, fault passage indication, protection relay.



SW Support for RTU7M

- RTU7M system setup and parameterization is possible via:
- RTU User Center – free SW for MS Windows.
 - Integrated web configuration interface and HMI support.

RTU Chassis with Backplanes

- Optional size:
 - DIN rail mounting (vertical or horizontal) – 2, 3 slots,
 - panel mounting – 2, 3, 5, 8, 10, 16 slots,
 - 19" rack mounting – 16 slots.
- Integrated power supply 10 – 60 V DC in 2 and 3-slot version.
- 8, 10 and 16-slot chassis are available in version for power supply redundancy.



General Information

- Each card in RTU7M has its own processor. Therefore, the system performance is not limited by single CPU power.
- Except the power supply card, all other cards can be used in any slot position in numbers limited only by chassis size.
- Large systems with many I/Os are built from multiple units, one main unit and other slaves, the whole system then looks like one RTU from the perspective of the SCADA system.
- Systems are certified for electronic safety, EMC, EMI and environmental standards usual for power industry systems.
- Available variants of individual cards, datasheets and catalog are at www.rtu.cz, where you can find in Download section the application guides with information about typical use of ELVAC RTU systems.

Communication Cards

- Optional HW interfaces according to card version:
 - GSM/LTE modem,
 - Ethernet LAN,
 - RS-232/422/485,
 - Optical (via SFP modules).
- Supported communication protocols: IEC 61850, IEC 60870-5-101, IEC 60870-5-103, IEC 60870-5-104, DNP3, HIOCom2, MODBUS TCP/RTU, DLMS, OPC UA, SNMP.
- Multi-channel communication is supported (ex. for communication backup).
- Secure communication according to IEC 62351-3 (TLS).
- OpenVPN and IPSEC tunneling.
- Built-in RTC.
- Integrated web configuration interface and HMI support.
- Programmability via standards IEC 61131-3 or proprietary graphical interface.
- NAT, Firewall functionality, user access control, RADIUS, Syslog, NTP, SSH, SCEP, SQL data storage support.

Digital Input Cards

- Variants:
 - 20 x optically isolated digital inputs on standard cards,
 - 10 x optically isolated digital inputs on combined card with 5 x DO.
- Available for dry or wet contacts (different voltage levels).
- Signal filtering (contact bounce, AC signal).

Digital Output Cards

- Variants:
 - 10 x relay outputs (load up to 8A),
 - 5 x relay outputs (load up to 8A) on combined card with 10 x DI,
 - 20 x optical relay outputs (load up to 800 mA).
- Dual HW and SW control of output – protection against an accidental switching.

Power Supply Cards

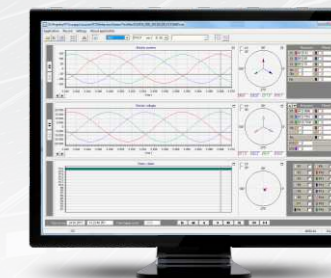
- Optional input voltage:
 - 10 – 60 V DC,
 - 80 – 275 V DC,
 - 80 – 260 V AC.
- Power supply redundancy is possible on "R" version of 8, 10 and 16-slot backplanes.
- Power supply cards are not used in 2 and 3-slot chassis, where PS 10 – 60 V DC is integrated on backplane.

Optional Battery Backup Cards

- Battery can be charged and monitored directly via RTU system for easy and on time maintenance.
- Integrated in AC cards (for 12 V or 24 V batteries).
- Additional card for DC powering (for 24 or 48 V DC).
- Connectors for lead acid battery, thermal sensor, ON REL - Life contact.

Analog Input and Output Cards

- Variants for:
 - 3-phase voltage and currents measurement,
 - power quality and energy measurement,
 - special fast measurement (up to 40 MS / s),
 - industrial standard I/Os – 20 mA or 10 V,
 - temperature sensors – PT100, PT1000, Ni120, thermocouple K.
- Features of 3-phase measurement cards:
 - measurement and calculation of V (phase, L-L), I, P, Q, S, f, cos φ, THD,
 - calculated V₀ and I₀ (optionally measured directly via 4th input),
 - fault locator,
 - input variants for standard VTs, CTs, low power sensors, Rogowski coils or direct measurement,
 - inputs can be overloaded and still measured, which is useful in protection relay application – see inputs specification in catalog,
 - integration and difference filtering,
 - waveform recording – proprietary or COMTRADE format,
 - fault passage indication and protection relay (ANSI 27/59, 46BC, 47, 50, 50N, 51, 51N, 59, 59N, 67, 67N, 81).



Unpluggable Keyed Connectors for Easy Maintenance