MINITERMINAL mTE – efficient monitoring method and remote control of power generating units

MINITERMINAL mTe as a compact unmanned device informs users about power unit process status and enables its real-time remote control.

Where could be mTE applied?

It concerns mainly about smaller, often unmanned, power generating units its process status and possibility of remote control is required by owner or another partner. Exemplary involves with renewable energy resources – small hydro power plants, photovoltaic energy devices or wind power plants.

MINITERMINAL mTE would be employed everyplace where application of more extensive and powerful system, as power plant terminal TELE, might not be efficient in respect of acquisition and operating costs.

What are the main advantages of mTE?

Low price

MINITERMINAL mTe is built on single board PC platform (SBC), without peripheries for local users. With the same emphasis on expended cost efficiency is software for Linux solved as well.

Modularity

Software modularity concept along with hardware modularity concept on base of PC/104 industrial standard ensures accurate adaptation for particular costumer requirements.

Unmanned operation

MINITERMINAL mTE do not involves any local operation staff. Service and administration is carried out by remote access using internet technologies (PC, PDA or mobile phones).

Reliability

MINITERMINAL mTE doesn't contain any rotary parts as fans or hard-disks (cooling due to small power demand is thoroughly passive, data are stored in flash memory). It is the climatic endurance in range from -20° to +70°C that ensures the reliability as well.

What are functions of mTE?

Communication with superior systems

It concerns real-time process data transfer from power generation unit. Process data values could have both digital and short text message character (alarms). The communication is usually provided with data channel (VPN) carried out via Internet or wireless data transfer (GPRS, WiFi, etc.).

From superior system could be into the MINITERMINAL sent control commands.

Digital values transferred into the superior system could have following meaning:

- Process data concerning monitored technology (power output, streams and medium operation parameters…)
- Environment data (temperature, wind, water level, flow…)
- Operation-mode balance – production, actual time of source operation

Communication with technology

It's employed for actual process status data acquiring and for control commands execution. Realized is

by data communication with local PLC, intelligent sensors or with signal inputs and outputs. Sampling period varies from 1 to 60 seconds but might be adapted to application requirements.

Data archiving

Entire data including measured and evaluated are locally stored in SQL database.

Operations log book

Systems events are archived in form of operations log book.

Diagnostic and administration

MINITERMINAL mTE is unmanned device thus diagnostic and administration is realized via internet TCP/IP interface (MINITERMINAL has own build-in secured www server) and is carried out by standard internet browser either from computer locally connected to mTE or via PC or PDA using internet/intranet.
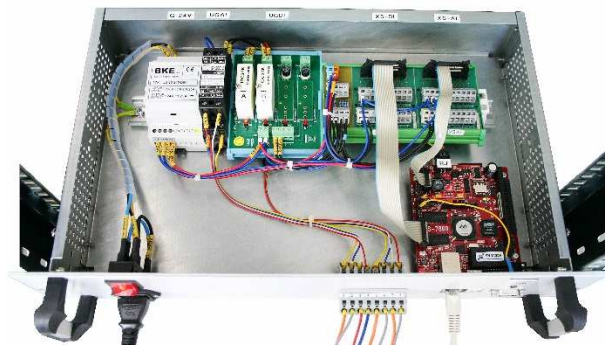
Real-time control

MINITERMINAL is equipped with devices for basic real-time power sources control as commands for source start-up/shut-down, and generator switch on/off.

Support for other OSC systems

MINITERMINAL could be connected to *OSC***ALC** alternatively to *OSC*VANTAGE. So, customer earns full-featured device for real-time power generating unit control or more precisely comprehensive solution for data acquisition, evaluating, archiving and presentation of technology and technical-economic data.

What is MINITERMINAL mTE consists of?

Standard configuration consists of:

- single board computer (SBC) with low energy demanding RISC processor
- Linux operation system , core version 2.6
- Embedded SQL database SQLite
- Communication modules
- Users modules with stored user algorithm
- Web server for basic process data visualization, remote diagnostic and administration

OSC, a.s., company covers with its activities the area of production and distribution of electricity and heat. The Company provides a wide spectrum of engineering services, repair and consultancy services, and supplies complex, key ready sets of technical means for up to date control systems, systems for data and information processing and transfer, and simulation systems; the Company also develops special electronic elements and devices.

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