

FULL-SCALE PUBLIC LIGHTING MANAGEMENT SYSTEM

ERYX



ERYX (Full-scale public lighting management system) – complex assurance of your needs in the field of public lighting

Logic GSM / GPRS automat Mega SX is the system basic element, which communicates ports (messages) by means of GSM / GPRS modem and the system is equipped, as standard, with eight binary inputs, four relay outputs and RS 485 serial line (all can be backed up by accumulator). The Mega SX is mounted into single electric public lighting switchboards (PLS). This enables remote distribution of status, error and operational reports by means of GSM / GPRS network as well as, for example, by means of electronic mail. Single switchboards may be likewise controlled in the safe manner and their operating parameters and limits for failure reports may be set.

The system also enables permanent supervision of switchboard door statuses (open/close), status of main contactor/contactors, main circuit breaker and switchboard supply. Furthermore, the system measures analog values, within which exceeding of user-set limits indicating »normal« operational status (voltage and current value on single phases, U/I ratio value on single phases for the switchboard without regulation, etc.) is reported.



Data reading

The values are read by means of RS 485 interface from electric meter (the ZE 310 type three-phase meter with RSM 310 communication module is concerned, which is the most suitable accessory to the whole system). In addition, it is possible to request the report on total operational status and operating values of the switchboard and on its set limit operating parameters.

The combination of astronomic switching calendar and evaluation of values from sensor sky illumination measurement may be used for lighting switching-on and switching-off control.

User interface and data processing

There are several options of system administration for this system. The most simple and also available way is the mobile phone control, as well as the option of web interface control in cooperation with SCADA application, which is user-definable. This is solved on own PC or with the possibility of placement on dedicated server.

This application is designed with the stress laid on the following:

Expandability – object construction in the form of plug-in modules

Multi-user access with limitation of simultaneously processed identical objects

Access through the user account system

Minimum data intensity

Limitation of more costs on the user side – access by means of standard web browsers from all standard platforms

Security – unique password system

Relation to existing GIS systems

Properties and advantages

The system may be used not only for reliable and clear switching-on of PLS, but also for the control of reliability of service provided in the field of public lighting and justification of accounted repairs and interventions of service company (based on archiving of all status, operational and error reports). Archiving also provides better view of possibly repeating failures in entire branches or light points, as well as of more effective planning of maintenance and repairs.

This system may be built in several progressive steps and finished within certain limits according to customer needs. In consequence, introduction of the ERYX system results in reinforcement of reliability as well as efficiency of lighting.

The main functions of the system include the following:

Visualization of received status and failure reports

Control of single PLS on the basis of user rights

Parameter setting for single PLS on the basis of user rights

Editing of information related to single PLS, system editing

Distribution of alarm, failure and status reports depending on directories relevant to single PLS

Archiving of received and sent commands and reports

Structure of ERYX system

The system consists of three parts:

- 1) Control (control room) – this part includes the S <Mega SX> module, which in collaboration with the sky illumination monitoring sensor switches on and off the public lighting network.
- 2) Supervised public lighting switchboards (PLS) – this part contains single PLS, which are equipped with control and supervisory modules, which supervise operating and failure statuses and values.
- 3) Web – this part represents the web interface, which in cooperation with SCADA application administers and distributes operational and failure reports, and by which administration and setup of single PLS, their control and supervision is assured.

Components

- 1) Logic GSM / GPRS automat MegaSX with accessories
- 2) ZE 310 with modul or ED 310 with RS 485 type three-phase meter
- 3) ZE RSM 310 communication module
- 4) Optional equipment according to required supervised and controlled devices



System setting

It is executed by means of GSM network and according to selected user interface.

Outputs

- RVO switching-on and switching-off on the basis of received commands or astronomic calendar
- Regulation switching-on and switching-off (if equipped)
- Supervision of operational and failure statuses and values of PLS
- Sending and receiving of failure, status and command messages
- Acoustic alarm in the case of unauthorized access
- Condition of PLS door
- Status of main contactor/contactors
- Status of PLS supply
- Regulation status (if equipped)
- Value of voltage on single phases (measured altogether)
- Value of U/I ratio on single phases for PLS without regulation
- Value of current on single phases in non-regulated condition
- Values of current on single phases in non-regulated condition
- Reporting of total operational status and operating values of PLS
- Reporting of set limit operational parameters of PLS