Public Transport Power Management

Comprehensive solution for supervision and control of electric power for public transport

→ **tested solution**
→ **can be customized for specific requirements**
→ **can be extended**

Energy management for public transport is a comprehensive modular solution that provides control, monitoring and diagnostics in the area of electric power. A typical use is remote control and monitoring of public transport converter stations (trolley buses and trams). It provides non-stop central supervision of electric power infrastructure. It facilitates monitoring, processing, evaluation and transmission of fault states. It allows convenient remote control of power grid switching elements, converter stations, or substations. It has SCADA functions. Its modularity allows one to choose only selected system components. It is easily extended to integrate additional functions (transformer monitoring, power quality monitoring, power consumption balancing, etc.).

→ **Basic characteristics**

- collects and processes data from control units in the field (automatic and remote-control units)
- can integrate parts of existing infrastructure or systems
- on-line supervision of monitored and controlled equipment
- on-line central control
- number of autonomous functions for control and monitoring
- system graphics can be customized

- monitors fault states and configurable limits, generates alarms
- can generate alarms to a log, via SMS, or email
- number of various communication protocols
- simple connection to public transport system database or information systems
- support for hierarchical user access
- external user access is possible
- integrated administration, diagnostics, and maintenance system
- can be supplied as a complete hardware and software package, just software or as a service
- broad range of related services and warranty/post-warranty care

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→ Typical use

- system for remote control and monitoring of public transport converter stations
- public transport power monitoring and control system
- diagnostic system for comprehensive supervision of electric power
- central system for supervision of large-scale infrastructure (converter stations, power supplies, substations, distribution grid)
- central monitoring system (enterprise solution)
- balancing system for supervision and control of electric energy consumption (or other forms of energy)

→ Properties

Communication

- broad range of serial and network communication types
- standard security, support for "cyber security" standards
- support for wireless and mobile communications, integrated GPS functions
- serial and network communication protocols as per power generation, industry and transport standards

Data processing and display

- all the benefits of a real-time on-line system
- basic processing of data from various protocol types
- on-line and batch processing of data, processing and providing data to/from external systems
- comprehensive short, medium and long-term data archive system
- extensive data display system in a fully graphical visualization client environment, on-line schematics, tables, graphs and combinations thereof
- display of specific schematics (traction grid scheme, company block diagram, single line diagram of converter station, etc.)
- simultaneous display of all types of data being processed, along with data from archives and external systems, all in one place
- multiplatform client applications a smart client (Linux or Windows), a thin client (web browser) and a mobile client (Android, iOS)
- ability to implement customer requests for data communication, processing and display
- optical and acoustical alarm outputs, support for wireless alarm delivery systems (SMS, pager)