



# NIEFA-ENERGO

## SUBSTATION CONTROL PANEL



The substation control panel is designed to form automated control systems (SCADA) of the traction substations, using digital protection and programmable logic controllers.

Substation control panel provides:

- **Telemechanical control of the substation** (sending/receiving signals of telecommands, telemetry and telesignaling);
- **Remote control of the substation** (using integrated controls and indicating devices);
- **Collection and transmission of the telemetry and diagnosing data** via digital channels of the **data transmission** network (DTN).

With the substation control panel any traction substation may be reconstructed with gradual connection of the new smart controllers and bay terminals, while the unmodified equipment is still controlled with the existing telecommunications panel.

Substation control panel includes:

- **An operator station** for remote equipment control;
- **A controller of the overall substation signaling;**
- **A substation controller** functioning as a concentrator of the substation information-control network;
- **A uninterruptible power system;**
- **Interface converters** with galvanic separation.

The substation control panel also includes auxiliary power sources, interface converter devices RS232/RS485 and a module to connect to the end devices of the data transmission network using Ethernet.

**Substation control panel provides communication with the power dispatch center via:**

- The data transmission network using Ethernet and TCP/IP protocol;
- External communication hub for the telemechanics of the automated system of telemechanical control through the dedicated lines of telecommand/telesignaling;
- End DTN devices are using RS485 interface.

**The remote control of the substation is performed from the monitor displaying the mnemonic diagram of the substation. The monitor also displays signals and telemetry data from the bay controllers, as well as diagnosing data.**

Substation control panel uses combined supply from circuits (220V or 110V DC) and a 220V AC source. Substation control panel remains operable with power supply from any of these sources. Besides, in case of failure of all the external supply voltages, the internal uninterruptible power source keeps substation control panel operable for at least 15 minutes.

The substation control panel design supports two-sided maintenance.

#### BASIC SPECIFICATIONS

Quantity of the ports for digital protection devices, smart terminals, telemetry and diagnosing devices	10
Exchange protocol for the bay connectors and the dispatch center computer	MODBUS RTU
Quantity of the input discrete signals of the overall substation signaling	32
Quantity of the input current loops of the alarm signaling	4
Quantity of the output discrete signals of the substation control panel (relay contacts)	16
Exchange interface with the bay controllers and modem	RS-485
Supply voltage, V (AC or DC)	220 or 110
Power consumption, V A, maximal	350
Dimensions (WxDxH), mm, maximum	610x690x2016
Weight, kg, maximum	260
Climatic version and location category	UHL4 (boreal climate, from +5 to +45 degrees Celsius)



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