



SO-5

substation automation system

The **SO-5** supervision and control system is designed for substations of all voltage levels. The hardware section of the system comprises the distributed bay control units and communication units. These devices are integrated with the local HMI workstation through a redundant fiber optic network. The system is ready to work with the IEC-850 protocol.

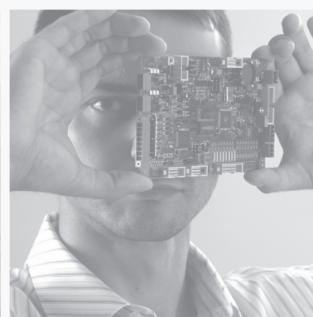
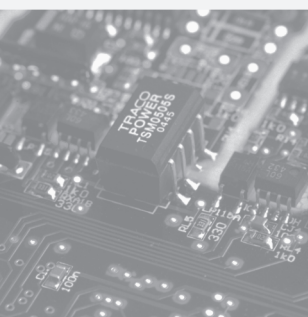
SO-5 System features include:

- communication with remote dispatch systems
- binary and analogue data acquisition and processing, directly from the switchyard secondary circuits and from various measuring equipment
- system integration of the electric protection devices
- complex control functions at the substation that can be performed from local and remote dispatch centers
- system connection between devices which is necessary to provide station automation functions

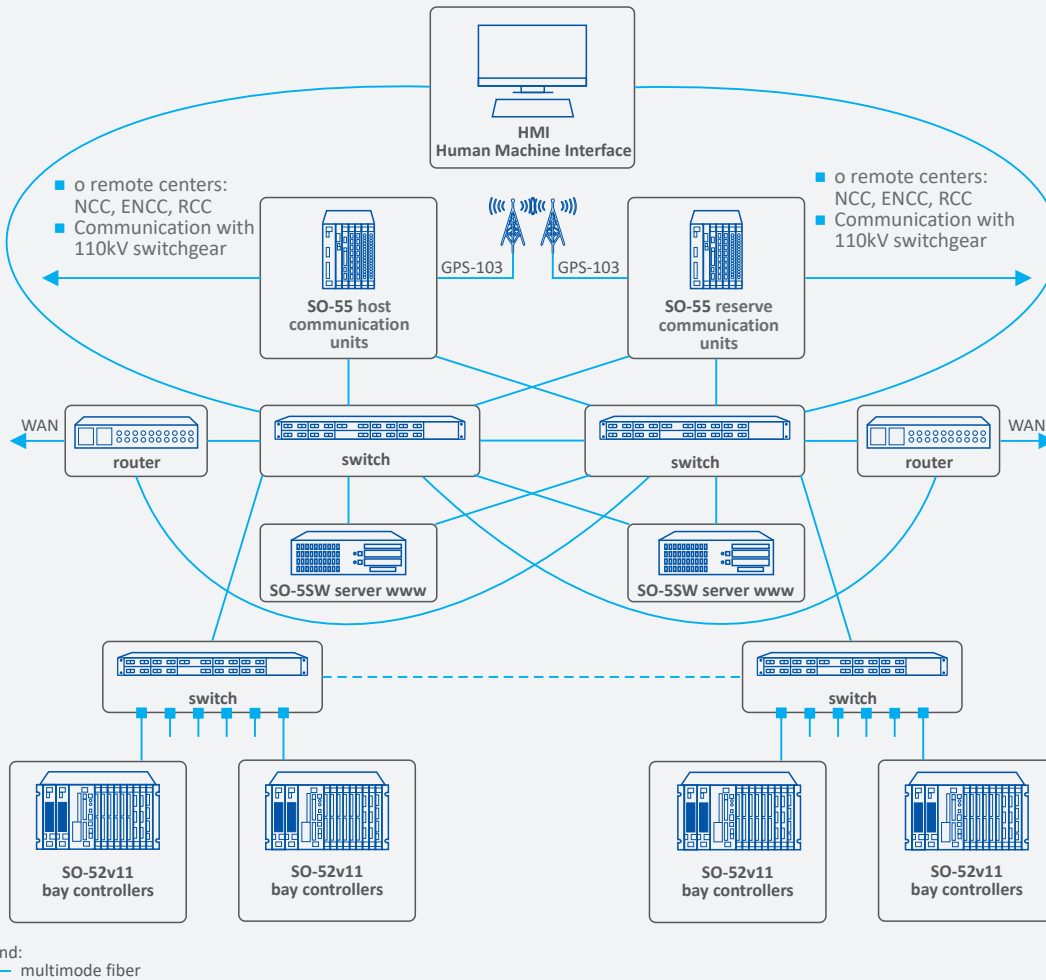
SO-5 system includes the following devices and modules in its basic configuration:

- local HMI workstation with SYNDIS RV software
- SO-55 communication control units
- SO-52v11 bay control units
- SO-5403 measurement converters
- redundant fiber optic communication network
- a dedicated module to operate SMS text-messages alerts
- a WWW server module

The SO-5 system is fully open, which means it can easily interact with station protection relays, disturbance recorders, connection equipment supplied by various manufacturers. Another feature of the system is the possibility of sending SMS text-messages and operation through a WWW page.



SO-5 system in a redundant configuration



SO-5 system features

- modular structure of the system bay control units and communication computers to be tailored exactly to the customer requirements
- ability to work with various devices under their manufacturer's or open protocols. These include bay control units, digital protection devices, regulators, disturbance recorders, energy meters, transformer monitoring systems as well as auxiliary supervision devices, technical and telecommunication devices, fire protection system devices and others
- using the system connections between devices in order to carry out telemetric and station automated functions
- application of IEC 61850 standard and others deployed in power substations for substation equipment and interfaces
- simultaneous cooperation with a number of dispatch centers using various communication protocols: SYNDIS, DNP3.0, Ex, IEC-870-5-101/1-2/103/104, IEC-850, Modbus
- ability to perform program interlocks, control sequences, regulators and automation functions
- creating an event log with high recording resolution and configurable size
- cyber security solutions based on the recommendations of ENISA, NIST, BDEW, BlueCrypt, implementation of security mechanisms in accordance IEC 62351, ISO/IEC27001, BDEW
- communication protection: hardening, encryption, authentication, tunneling, certificate validation
- access control: RBAC, RADIUS/TACACS+