



Distribution Substation **Storm**

MV/LV distribution substation monitoring, control and automation



- **scalable solution**
- **distributed configuration**
- **optimum price**

TECHSYS solution for monitoring, control and automation of MV/LV distribution substations. This modular solution based on Storm terminals allows flexible configuration and layout. Monitoring and control of elements and measurement in the substation on both the MV and LV side. Indication of fault states and fault currents. The ability to use both traditional and modern measuring methods, instrument transformers and measuring sensors. Easy and quick installation, low consumption and simple service.

→ **Basic Characteristics**

- signalling and control of switching element status, signalling of the status of other equipment, signalling of the status of MV and LV breakers
- power grid fault indication and recording
- measurement of base and derived electrical parameters, including measuring through transformers and sensors
- other measurements are possible (temperature, humidity)
- number of communications interfaces for serial and network communication and mobile and radio networks facilitates easy integration using standard communication protocols
- selected statuses and indications are displayed on a local signalling panel
- local and remote parameter setting and diagnostics via supplied SW

→ **Configuration Options**

- central, partly (MV and LV), or fully (by supply lines) distributed configuration
- common set of modules for both the MV and LV part, a separate set of modules for the MV and LV part, or a fully distributed solution by individual MV and LV supply lines
- the configuration can be gradually extended
- other functions can be fully integrated using third party modules, for example power quality measuring units

→ **Properties**

Fault Measurement and Indication

- voltage measurement: 3-phase, direct, measuring voltage transformer, voltage sensors – resistive and capacitive dividers
- current measurement: 3-phase, measurement current transformer, measurement current transformers with solid or split cores, current sensors – Rogowski coils
- measured values: phase to ground and phase to phase voltage, phase currents, phase and overall active and reactive power, power factor, frequency
- fault indication with a broad range of functions and parameters: short-circuit and overcurrent (time-dependent or independent, directional or non-directional), earth fault (directional or non-directional), and current asymmetry
- recording and readout of measured values, binary I/O status and internal function status triggered by a change in the value of the defined parameter

Communication

- integrated GPRS/LTE mobile communication, optional GPS receiver module
- serial and network communication, can be connected to a digital radio network
- IEC 60870-5-101, IEC 60870-5-104, Modbus (RTU), Modbus (RTU) TCP, DNP 3.0 TCP communication protocols
- time sync via communication protocol or GPS

Power Supply

- available with a backup 24 V DC battery
- battery monitoring and control, including deep discharge protection

→ **Build and Selected Parameters**

- supply in a separate cabinet or for installation in MV and LV distribution boards
- power supply: 24 V, 110 V DC or 230 V AC
- service temperature -30 to 70 °C
- maximum ambient humidity 95 %, without condensation

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