



Extension Module **Storm-81**

Extension by electrical quantity measuring converter inputs



- **precise measurement**
- **indication of fault states**
- **compact design**



This module extends Storm base units by adding inputs for direct measurement of electrical quantities in AC electrical networks. Along with the base unit, it thus functions as a measuring converter for electrical quantities with a highly precise measurement and a broad range of measuring and indication functions. Includes functions for special technical measurements and the ability to use modern measuring sensors.

→ Basic Characteristics

- extension modules for use with Storm base units and their software only
- measurement of basic and derived electrical quantities in 3-phase 50 and 60 Hz AC networks with accuracy from 0.5 %, highly precise frequency measurement
- direct and indirect measurement, the possibility to use measuring transformers and sensors (resistive and capacitive dividers, Rogowski coils)
- power grid fault indication and recording
- other measuring, automation and regulation functions (e.g. synchronized switching, power, voltage and frequency regulators and more)

→ Typical Use

- compact solution for a Storm terminal setup involving a Storm-00 or Storm-01 base unit extended by a multifunction measuring converter for electrical quantities
- measuring and indication in electrical networks, structures and equipment of all voltage levels (HV, MV and LV)
- fault measurement and indication in power and equipment distribution switchboards
- in standard TECHSYS solutions for monitoring, management and automation of a MV load-break switch and many more
- measuring unit with specific requirements for measuring functions for monitoring equipment (e.g. measuring voltage at transformer bushings)
- in terminal setups as a measuring, automation, and regulation unit with user-defined functions

→ Properties

- broad range of input circuit types and connections and configuration of nominal and maximum values
- voltage measurement inputs: (3+1)-phase, direct measurement of 230/400 V AC, 57/100 V AC measuring transformer, voltage sensors - resistive and capacitive dividers
- single-phase voltage measuring input can optionally be used for example to measure the zero voltage component or to measure voltage on the other side of a breaker or disconnector (e.g. for synchronized switching)
- current measurement inputs: (3+1)-phase, 1 or 5 A AC measuring current transformer, external measuring current transformers with solid or split cores, current sensors – Rogowski coils
- single-phase voltage measuring input can for example be used to measure the zero current component
- 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: ANSI codes of implemented functions: 50, 51, 67, typical configuration: short-circuit and overcurrent (time-dependent or independent, directional or non-directional), earth fault (directional or non-directional), and current asymmetry
- recording of measured values, binary I/O status and internal function status triggered by a change in the value of the defined parameter

→ Build and Selected Parameters

- the module permits cascade connection of another extension module from the Storm series
- installation on a 35 mm distribution board DIN rail, IP20 protection
- dimensions: 105 x 90 x 59 mm (6M width)
- service temperature -25 to 70 °C
- maximum ambient humidity 95 %, without condensation
- the module meets the same EMC standards for emission and resistance as the Storm-00 and Storm-01 base units

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