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SIPROTEC 7SS85

Low Impedance Centralized Busbar Protection

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Description

The SIPROTEC 7SS85 busbar protection is a selective, safe and fast protection against busbar short circuits in medium, high and extra-high voltage systems with a large variety of busbar configurations.

Selection of the device base functionalities (significant properties) and the modular hardware structure permit optimum adaptation of the SIPROTEC 7SS85 to a large variety of system configurations and functional requirements up to a comprehensive station protection.

Configurations

The SIPROTEC 7SS85 is suited for the following system configurations:

- Single busbars with/without transfer busbar
- Double busbars with/without transfer busbar
- Triple busbars
- Breaker-and-a-half layout method
- Dual circuit-breaker systems and one or two current transformer(s) per feeder
- Truck-Type Switchgear
- Systems with combined busbars (alternatively main/transfer busbar)
- T circuit arrangements
- H connection arrangement with busbar coupler or disconnection
- Ring busbars

Busbar Protection SIPROTEC 7SS85

Functions

- The table "Functions and Templates" shows all functions that are available in the SIPROTEC 7SS85. All functions can be configured as required with DIGSI 5
- Using some functions requires the appropriate number of free function points to be available in the device. The function point calculator in the online configurator provides support in determining the required number of function points for your device
- The necessary function points are also shown during project engineering with DIGSI 5

Characteristic Key Values of SIPROTEC 7SS85

- Phase-selective measurement and display
- Selective tripping of faulty bus zones

Selective and safe

- Disconnector-independent check zone as additional tripping criterion
- Shortest tripping times (<7 ms) to ensure network stability and minimize damage to the system
- Highest stability in case of external faults, even in case of transformer saturation, through stabilization with flowing currents
- Operate curve with freely adjustable characteristic curve sections
- Additional operate curve with increased sensitivity for low current faults, for example in resistance-grounded power systems
- Fast recognition of internal and external faults requires only 2 ms of saturation-free time of the current transformer
- Using closed iron core or linearized current transformers in a plant is possible
- Adaptation of different current transformer ratios per parameterization
- Three interacting methods of measurement allow minimum tripping times after busbar faults and ensure maximum stability in case of large short-circuit currents
- The integrated circuit-breaker failure protection recognizes circuit-breaker faults in the event of a busbar short circuit and provides a trip signal for the circuit breaker at the line end. The adjacent busbar trips if a coupling circuit breaker fails
- There is extensive monitoring of current transformer circuits, measured value acquisition and processing, and trip circuits. This prevents the protection from functioning too tightly or too loosely, which reduces the effort for routine checks
- Various control possibilities, such as bay out of order, acquisition blocking from disconnectors and circuit breakers, blocking of protection zones or circuit-breaker failure protection, make the adaptation to operationally caused special states of your system easier
- Optional 1/3-pole or 3-pole circuit-breaker failure protection using the integrated disconnector image to trip all circuit breakers of the busbar section affected
- Optional end-fault protection for the protection of the section between circuit breaker and current transformer for feeders and bus couplers
- Direct tripping of protection zones through external signals
- Release of the tripping of a protection zone through additional external signals
- Release of tripping through additional, external phase-selective signals
- Optional phase/ground overcurrent protection for each bay
- Optional cross stabilization as additional tripping release in 3-pole encapsulated gas-insulated switchgear
- Optional bus coupler differential protection for fault clearing in couplers with two current transformers

Benefits

- Safety by measuring methods proven and reliable for 25 years
- Simple creation and adaptation of the configuration by the user over the entire service life
- Clearly structured by fully graphical engineering and online plant visualization with DIGSI 5
- Protection of up to 20 feeders with a single device

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