Busbar protection REB670
Relion® 670 series Ver. 2.0

Features
- Fully IEC 61850 compliant, Edition 1 and Edition 2
- Extensive I/O capability
- Protection, monitoring and control integrated in one IED
- Extensive self-supervision including analog channels
- Six independent parameter setting groups
- Ethernet interface for fast and easy communication with PC
- Cyber security support for compliance to NERC CIP and IEC 62351-8
- Protection of several primary objects with a single IED
- Customized version with VT inputs

Pre-configured and type tested solutions for:
- Single busbar, one-and-a-half breaker and double breaker arrangements
- Double busbar-single breaker arrangements

Most important protection features
- Fast operation with minimum tripping times of 8 ms
- Correct operation for all types of evolving faults
- Differential protection
  - Two zones, single phase 24 bays,
  - Two zones, three phase 8 bays
  - Sensitive differential protection level
  - Automatic detection and selective busbar protection blocking for troubles in CT secondary circuits
  - Full stability for all external faults regardless of CT saturation
  - Station matrix for easy overview of the zones/bays
  - Apparatus status for every connected disconnector or breaker
- Overall check zone
- Integrated, software driven zone selection (i.e. disconnector replica)
- Selective tripping for busbar and breaker failure protection
- Summation principle with additional auxiliary CTs
- Current protection
  - Breaker failure protection
  - Four-step, non-directional, phase overcurrent protection with definite and inverse time characteristics
  - Thermal overload protection
  - Capacitor bank protection
- Voltage protection
  - Two step under-, over-, and residual overvoltage protection
- Voltage differential protection
- Loss of voltage check
- Frequency protection
  - Under-, and overfrequency protection
  - Rate-of-change frequency protection
- Secondary system supervision
  - Fuse failure supervision
  - Fuse failure supervision based on voltage differential principle
- Multi-purpose function
  - General current and voltage protection

Monitoring
- Adjustable breaker monitoring with capability to handle multiple breaker types
- Disturbance recorder
  - 100 disturbances
  - 40 analog channels, 30 physical and 10 derived
  - 96 binary channels
- Event list with 1000 events
- Disturbance report
- Event and trip value recorders
- Event counters
- Supervision of AC and mA input quantities
- Large HMI with virtual keyboard, function push buttons, and three color LED indications with alarm descriptions
Logic

- Tripping logic
- Trip matrix logic
- Extensive logic blocks library for application customization

Control functions

- Autoreclosing function for busbar restoration after IED operation
- Synchronizing, synchrocheck and energizing check
- Control and interlocking for up to 30 switching devices
- Selectable operator place allocation
- Several alternatives for reservation functionality
- Software based multiple position selector switches

Measurements

- Currents in all bays, differential currents, busbar through-going currents
- U, I, P, Q, S, f and cos $\varphi$
- Inputs for mA measuring
- Frequency measurement with accuracy of $\pm 2$ mHz

Metering

- Energy metering function for energy statistics
- Pulse counting support for energy metering

Communication

- IEC 61850-8-1 including GOOSE messaging
- IEC 62439-3 parallel redundancy protocol (PRP)
- IEC 60870-5-103 serial communication
- DNP 3.0, SPA, LON protocols
- Remote end communication for transfer of up to 192 binary signals in each direction

Engineering, testing, commissioning, and maintenance

- Forcing of binary outputs
- Protection and control IED manager PCM600 for setting, configuration, and disturbance handling

Hardware

- 1/1 x 19", 3/4 x 19" or 1/2 x 19", 6U height case selected according to the number of required I/O modules
- Power supply modules from 24 to 250 V DC ± 20%
- TRM input module with 12 analog inputs and optional measurement transformers
- Up to 14 I/O modules in 1/1 x 19" case
- Binary input module with 16 inputs
- Binary output module with 24 outputs
- Static binary output module with 6 static and 6 change-over outputs
- Binary input/output module with 8 inputs and 12 outputs
- mA input module with 6 transducer channels
- Connector types: compression type or ring-lug type
- Accurate time-synchronization through GPS time module, SNTP, DNP 3.0, IEC 60870-5-103, or IRIG-B-module
- Remote end data communication modules for C37.94, direct fiber up to 130 km or via multiplexer
- Supports highest EMC requirements
- Independent laboratory certified

Accessories

- COMBITEST test system
- COMBIFLEX auxiliary relays
- Auxiliary summation CTs
- Mounting kits

For more information please contact:

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