Busbar protection REB670
Relion® 670 series Ver. 2.1

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 and Substation Automation System
- Settings via IEC 61850 for some protections
- Cyber security support for compliance to NERC CIP and IEC 62351-8 with Centralized Account Management
- Protection of several primary objects with a single IED

Pre-configured and type tested solutions for:
- 2 zones, 3 phase for 4 or 8 bays
- 2 zones, 1 phase for 12 or 24 bays

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 and disturbance report
  - 100 disturbances
  - 40 analog channels, 30 physical and 10 derived
  - 352 binary channels
- Event list with 1000 events
- Event and trip value recorders
- Event counters
- Running hour meter
- 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 ϕ
• Inputs for mA measuring
• Frequency measurement with accuracy of ± 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
• Protection and control IED manager PCM600 for configuration, parameterization, online debugging and disturbance handling
• Forcing of binary inputs and outputs for faster and easier test and commissioning
• Flexible product naming by mapping utility IEC 61850 model to that of 670 series model

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

Documentation
• Role based documentation for high efficiency in engineering, commissioning, operations and maintenance

Technical details are available in the REB670 Product Guide.

For more information please contact:

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