Bay control REC670
Relion® 670 series Ver. 1.2

Features
- Fully IEC 61850 compliant
- Protection, monitoring and control integrated in one IED
- Extensive self-supervision including analog channels
- Six independent parameter setting groups
- Large HMI with up to six LCD pages for local control and visualization of single line diagrams
- Ethernet interface for fast and easy communication with PC
- Signal matrix for easy configuration of binary and analog signals
- User management and authority handling

Pre-configured solutions
- Pre-configured and type-tested solutions including default settings for:
  - Single breaker with selective single- or three-phase tripping
  - Double breaker with selective single- or three-phase tripping
  - 1 1/2 circuit breaker arrangements with selective single- or three-phase tripping

Control functions
- Apparatus control for up to six bays and 30 apparatus
- Function instances included to cover a complete diameter with one REC670
- Ready to use interlocking modules for different switchgear arrangements
- Several alternatives for reservation functionality
- Synchronizing, synchrocheck and energizing check
- Autorecloser
- Automatic voltage control for a single transformer
- Automatic voltage control for up to four/eight parallel transformers based on the minimum circulating current principle or the master-follower principle
- Versatile switch with two positions
- Selector switch with up to 32 positions
- Sensitive directional earth-fault protection
- Broken conductor check
- Thermal overload protection
- Breaker failure protection
- Stub protection
- Pole discordance protection
- Capacitor bank protection
- Power functions
  - Directional under- and overpower protection
- Voltage
  - Two step phase- and residual overvoltage protection with definite and inverse time characteristics
  - Two step undervoltage protection with definite and inverse time characteristics
  - Voltage three-phase differential for capacitor banks
  - Loss of voltage check
- Secondary system supervision
  - Fuse failure supervision
  - Current circuit supervision
- Frequency functions
  - Under- and overfrequency protection
  - Rate-of-change frequency protection
- Multi-purpose function
  - General current and voltage protection

Protection functions
- Current
  - Instantaneous phase- and residual overcurrent protection
  - Four step phase- and residual overcurrent protection
  - Four step directional negative sequence overcurrent protection

Power and productivity for a better world™ ABB
Logic
- Tripping logic
- Trip matrix logic
- Configurable logic blocks
- Logic gates with quality and time

Monitoring
- Disturbance recorder
  - 100 disturbances
  - 40 analog channels (30 physical and 10 derived)
  - 96 binary channels
- Event list for 1000 events
- Disturbance report
- Event and trip value recorders
- Fault locator
- Event counters
- Supervision of AC and mA input quantities
- Small and large HMI in local language
- LED indications with 6 red and 9 yellow LEDs

Metering
- U, I, P, Q, S, f and cos ϕ
- Differential voltage per zone
- AC input quantities with accuracy better than 0.5%
- Inputs for mA measuring
- Energy metering function for energy statistics
- Pulse counting support for energy metering

Communication
- IEC 61850-8-1 including GOOSE messaging
- IEC 61850-9-2 LE Process bus
- Individually supervised redundant station bus with zero seconds’ recovery time
- IEC 60870-5-103 serial communication
- DNP 3.0 slave protocol
- LON
- SPA
- Remote end communication for transfer of 192 binary signals

Setting, configuration and disturbance handling
- Protection and control IED manager PCM600

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 module with measurement transformers
- ADM module
- Up to 14 I/O modules in 1/1 x 19” case
- Binary input module, 30 mA and 50 mA, with 16 inputs
- Binary output module with 24 outputs
- Static binary output module with 12 outputs (6 static)
- Binary input/output module, 30 mA and 50 mA, with 8 inputs and 12 outputs
- mA input module with 6 transducer channels
- Accurate time-synchronization through GTM, GPS time module or IRIG-B, SNTP and DNP 3.0
- Remote end data communication modules for C37.94, X.21 and G.703/G.703E1
- Connector types: compression type or ring-lug type
- COMBITEST test switch module

Technical details are available in the REC670 Product Guide.

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