AB Proper Automation Products

Relion® 670 series
Ver. 2.0, IEC & ANSI
What’s new?
Relion 670 series Ver. 2.0
Relion Product Family
Relion 670 series Ver. 2.0
Relion Product Family

Funcionalidad / Desempeño / Escalabilidad ->
What’s new in Relion 670 series Ver. 2.0?
Relion 670 series Products

- REC670 Bay control
- REL670 Line distance protection
- RED670 Line differential protection
- RET670 Transformer protection
- REB670 Busbar protection
- REG670 Generator protection
- RES670 Phasor measurement unit
Relion 670 series Ver. 2.0

What’s new?

- IEC 61850, Edition 2
- IEC60870-5-103 protocol
- Cyber security
- Improved HMI
- Improved mechanical design
- **Fast distance protection**
  - Frequency accumulative protection
  - Fuse supervision, VDSPVC
- **Rotor overload protection (49R)**
  - Stator overload protection (49S)
  - Binary signal integrator, TIGAPC
  - Gas medium supervision, SIMG
  - Liquid medium supervision, SIML
  - Limit counter function, TEIGAPC
  - Multi-purpose filter, SMAIHPAC
  - Underimpedance monitoring, ZGVPDIS
- Pole slip
- **Improved fault locator**
  - Breaker monitoring
  - Global base values
- **Forcing BO**
  - Role based documentation
What’s new in Relion 670 series Ver. 2.0?

Communication

- IEC 61850, Edition 2
  - Increased interoperability in processes
- IEC60870-5-103 protocol
  - Compliance with standard in German market
  - Improved time synchronization
What’s new in Relion 670 series Ver. 2.0? Communication

IEC 61850-8-1

IEC 61850-9-2

MicroSCADA Pro

SYS600C

REC670

REC650

MERGING UNIT

FOCS
What’s new in Relion 670 series Ver. 2.0?

Communication

- **Cyber security**
  - Prevents unauthorized access to IEDs
  - Cyber security support for compliance to NERC CIP and IEC 62351-8
  - Monitoring of user activities (together with SDM600)
  - Role based activity control
  - Syslog reporting of security events
What’s new in Relion 670 series Ver. 2.0?
Hardware
What’s new in Relion 670 series Ver. 2.0?

Hardware

- **Improved HMI**
  - Similar HMI as in the 650 series
    - Easier handling of both product series
  - Unicode
    - More language character sets can be used.
  - Virtual keyboard, function push buttons and three color LED indications with alarm descriptions
  - Improved performance of display

- **Improved mechanical design**
  - Improved EMC
    - Increased resistance against disturbance
  - Independent laboratory certified
What’s new in Relion 670 series Ver. 2.0?

Protection functions

- Fast distance protection (quad)
  ZMFPDIS
  - Available both for series compensated and for non-compensated lines
  - Higher transfer capacity in the power network due to shorter trip times
  - Simplified settings

- Frequency accumulative protection
  FTAQFVR
  - Risk detection
    - Detects deviations in frequency over time that could be harmful for machines in the long run
What’s new in Relion 670 series Ver. 2.0?
Protection functions

- Fuse supervision, VDSPVC
  - Detects failures on both main and pilot fuse groups
  - Ability to detect three phase open circuit failure
    - Unique ABB functionality
What's new in Relion 670 series Ver. 2.0? Protection functions

- **Rotor overload protection (49R)**
  - Improved protection of machines due to continuous monitoring of actual current compared with the design standard (IEEE-curve)
  - Unique possibility for measurement and disturbance recording of the rotor DC current

- **Stator overload protection (49S)**
  - Improved protection of machines due to continuous monitoring of actual current compared with the design standard (IEEE-curve)
What’s new in Relion 670 series Ver. 2.0?

Protection functions

- **Binary signal integrator, TIGAPC**
  - Ensures secure operation of the IED for repetitive operating conditions in the power system for example loss of excitation or pole slip

- **Gas medium supervision, SSIMG**
  - Propagates gas pressure warnings and alarms from GIS switchgear and prevents operation if pressure is too low

- **Liquid medium supervision, SSIML**
  - Propagates liquid level warnings and alarms from breakers and prevents operation if liquid level is too low

- **Limit counter function, TEIGAPC**
  - Counts number of pulses on binary inputs and allows for limits to be set
What’s new in Relion 670 series Ver. 2.0?
Protection functions

- **Multi-purpose filter, SMAIHPAC**
  - Multi-purpose filter with possibility to detect, alarm, and trip for special operating conditions.
  - Together with MicroSCADA Historian
    - Long term data collection and storing
      - Unique ABB offering
What’s new in Relion 670 series Ver. 2.0?

Protection functions

- **Underimpedance monitoring, ZGVPDIS**
  - User friendly back up function for hydro and pump storage power stations

- **Pole slip OOSPPAM**
  - Detects and trips for pole slip condition in the power system
  - Breaker opening at current minimum
What’s new in Relion 670 series Ver. 2.0?
Monitoring

- **Improved fault locator LMBRFLO**
  - Increased accuracy in fault location in power networks to less than 1%
    - Faster detection of fault location

- **Breaker monitoring SSCBR**
  - Adjustable breaker monitoring with capability to handle multiple breaker types
    - Unique ABB functionality
  - Improved monitoring closer to real operating conditions
What’s new in Relion 670 series Ver. 2.0?
Engineering, testing, commissioning, and maintenance

- **Global base values**
  - Simplified engineering of product through global base values, user defined names and conforming of signal and object names

- **Forcing**
  - Binary outputs can be set in the IED for test and commissioning purposes
    - Easier and faster test and commissioning of IED due to simplified testing procedure
Relion 670 series Ver. 2.0 Documentation

- Role based documentation
  - Improved efficiency in engineering, commissioning, operations and maintenance due to specific manuals for each role