Product features
• High impedance differential protection with current and voltage back-up protection
• Redundant (PRP) GOOSE tripping in < 3 ms
• Control for up to 3 circuit breakers
• Extensive self-supervision, including analog channels
• Six independent parameter setting groups

Communication features
• Fully IEC 61850 compliant, Edition 1 and Edition 2
• IEC 61850-5 Edition 2 GOOSE performance class P1 (3 ms)
• IEC 62439-3 parallel redundancy protocol (PRP)
• Ethernet interface for fast and easy communication with a PC and substation automation system (SAS)

A configured and type-tested solution
• A ready-made application for a complete busbar protection of 2 zones with the possibility for a check zone, with complete freedom to adjust the application.

Protection features
• Differential protection
  – 9 instances of single phase high impedance differential protection
  – Fast operation with a minimum trip time of 5 ms
  – Correct operation for all types of evolving faults
• Current protection
  – Four-step positive (phase), zero (residual) and negative sequence overcurrent protection with definite and inverse time characteristics
  – Thermal overload protection
  – Broken conductor protection
  – Breaker failure protection
• Voltage protection
  – Two step under-, over-, and residual overvoltage protection

Monitoring
• Disturbance recorder and disturbance report
  – 100 disturbances
  – 40 analog channels
  – 128 binary channels
• Event list with 1000 events
• Event and trip value recorders
• Event counters
• Circuit breaker monitoring
• Gas / liquid medium supervision
• Running hour meter
• Large HMI with virtual keyboard, function push buttons, and three color LED indications with alarm descriptions

Secondary system supervision
  – Fuse failure supervision
Logic
- Trip logic
- Trip matrix logic
- Extensive logic blocks library for application customization

Control functions
- Control for up to three circuit breakers, including IEC 61850 data model
- Control for up to 20 additional switching devices through software based multiple position selector switches
- Selectable operator place allocation

Measurements
- U, I, P, Q, S, f and cos ϕ
- 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

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 the utility IEC 61850 data model to that of the 650 series IED

Hardware
- 1/2 x 19", 6U height case
- Power supply module from 24-60 or 90-250 V DC ± 20%
- TRM input module with 12 analog inputs
- Up to three I/O modules
  - Binary input module with 16 inputs
  - Binary output module with 24 outputs
  - Binary input/output module with 8 inputs and 12 outputs
- Compression or ring-lug connector types for analog inputs
- Accurate time-synchronization through SNTP, DNP 3.0, IEC 60870-5-103, or IRIG-B
- Supports highest EMC requirements
- Independent laboratory certified

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

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

Technical details are available in the REB650 Product Guide.

For more information please contact:

ABB AB
Grid Automation Products
721 59 Västerås, Sweden
Phone: +46 (0) 21 32 50 00
www.abb.com/protection-control

Note:
We reserve the right to make technical changes or modify the contents of this document without prior notice. ABB AB does not accept any responsibility whatsoever for potential errors or possible lack of information in this document. We reserve all rights in this document and in the subject matter and illustrations contained herein. Any reproduction, disclosure to third parties or utilization of its contents – in whole or in part – is forbidden without prior written consent of ABB AB.

© Copyright 2016 ABB. All rights reserved.