

# Relion® 650 series version 2.1 Release Note

**Dear Reader,**

The Relion® 650 series version 2.1, bring several new features and functional enhancements to the Relion® 650 series. The release contains REB/REC/REL/REQ/RET and the brand new RED650.



The 650 series covers a complete set of applications from transformer protection to busbar protection, line protection, breaker protection and bay control. With the introduction of version 2.1 of the 650 series, we further expand the application areas, enhancing the system functionality and flexibility. Key system features like support for central account management for integration with a centralized authentication infrastructure offers a secure and efficient solution for access control to the IEDs.

## **New features and benefits**

A number of new features are included in this release. The key features and their benefits are listed below:

- The new distance protection known from the Relion® 670 series, now combines the Quadrilateral and Mho characteristics and can easily be adapted per zone and fault loop. Tests according to IEC 60255-121 show typical trip time to be 24 ms.
- First release of the Relion® 650 series with IEC 61850 Ed. 2.
- 6U ½ 19" form factor
- Support for Centralized Account Management (CAM) to enable easy deployment of users, access rights and certificates in the substation automation system. Together with ABB's System Data Manager SDM600, it brings a powerful integration of the IEDs with access control and thereby increasing cyber security support for compliance to NERC CIP and IEC 62351-8.
- Flexible product naming enables the mapping of an IED-vendor independent IEC 61850 model to that of the 650 series. This helps easier deployment of the 650 series when utility defined IEC 61850 communication model is to be mapped to that of the 650 series model. This is effortlessly done in PCM600.
- Settings via IEC 61850 for line protection. This enables IEC 61850 clients to remote parameterize the IEDs in a standardized way.
- Forcing of binary inputs & outputs for efficient and fast testing and commissioning.

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### Configured solutions

The following product variants for ready-made application configurations are available

Main application area	Product	Configuration	Application description
Busbar protection	REB650	A03	2 zones / 1 check zone, 3 phase high impedance
Bay control	REC650	A02	Single breaker, double busbar
Line differential with back-up distance protection	RED650	A11	Single breaker, 2 / 3 line ends, 1 / 3 phase tripping
Line distance protection	REL650	A11	Single breaker, 1 / 3 phase tripping
Breaker protection	REQ650	B11	Single breaker, double busbar, 1 / 3 phase tripping
Transformer protection	RET650	A05	Single breaker, 2 / 3 winding transformer

### Protection and Control IED Manager PCM600 tool

The 650 series version 2.1 is supported by Protection and control IED manager PCM600 version 2.7. For more details please refer to 9AKK106713A1710 "Protection and Control IED Manager PCM600 Ver. 2.7 Release Note".

### IED Connectivity package for 650 series products version 2.1

The version 2.1 of the IED Connectivity package for Relion 650 series supports the 650 series version 2.1 products as well as earlier version of the 650 series. For further details about this version and its installation, please refer to the release note 1MRG022589.

### Documentation

The product guides for 650 series version 2.1 are available via [www.abb.com/protection-control](http://www.abb.com/protection-control). For 650 series version 2.1 the product guides are extended with an interactive ordering form which generates the order code based on selections made in a PDF document. The order code is generated for the variants of the IED. The interactive ordering form will be made available in due course.

The complete technical documentation for the 650 series version 2.1 are via [www.abb.com/protection-control](http://www.abb.com/protection-control).

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## **Marketing material**

The updated marketing brochures including new features of 650 series version 2.1 are available via [www.abb.com/protection-control](http://www.abb.com/protection-control). For ordering printed copies of the brochures, please visit the [ordering page](#) on Inside.

## **Ordering and delivery**

The 650 series version 2.1 products can be ordered as of today. For current delivery time, please get in touch with our sales contact at Substation Automation Products.

Kind regards,

Krister Hagman  
Global Product Manager  
Grid Automation Products