Protection and Control REX640

Product Presentation

1MRS758996 A
Product introduction
Protection and Control REX640
Relion® REX640
All-in-one protection for any power distribution application

Protection and control relay – REX640

- A powerful all-in-one protection and control relay for advanced power distribution and generation applications
- Offering unmatched flexibility available during the complete life cycle of the device
- Modular design of both hardware and software elements
- Easy modification and upgrading
- Pushing the limits of what can be achieved with a single device
- Newest member of the Relion® protection and control family
Relion® REX640
All-in-one protection for any power distribution application

Innovative, flexible and easy to use

- Complete application coverage
- Ready-made application packages
- Customization freedom
- Fully modular hardware and software
- Easy adaption to changing requirements
- Continuous access to support
- Ready-made application-based LHMI pages
- Increased situational awareness
- Support for digitalization of substations
Modularity
Protection and Control REX640
Relion® REX640
New application package concept for maximum convenience and flexibility

<table>
<thead>
<tr>
<th>Feeder protection</th>
<th>Power transformer protection</th>
<th>Machine protection</th>
<th>Shunt capacitor protection</th>
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</thead>
<tbody>
<tr>
<td>– Line differential protection</td>
<td>– Two and three-winding differential protection</td>
<td>– Asynchronous machines</td>
<td>– Protection of single Y, double Y and H-bridge connected capacitor banks</td>
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<tr>
<td>– Line distance protection</td>
<td>– On-load tap-changer control</td>
<td>– Synchronous machines</td>
<td>– Protection of harmonic filter circuits</td>
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<tr>
<td>– Interconnection protection</td>
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<td>– Fault locator</td>
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<tr>
<td>Automatic synchronization</td>
<td>Arc protection</td>
<td>Busbar protection</td>
<td>Petersen coil control</td>
</tr>
<tr>
<td>– Generator circuit breaker</td>
<td>– Four lens or loop sensors supported in any combination</td>
<td>– High impedance based busbar protection</td>
<td>– Automatic control of Petersen coil</td>
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<tr>
<td>– Non-generator circuit breaker</td>
<td>– Both sensor types are supervised</td>
<td>– Double busbar protection</td>
<td>– Control of additional fixed parallel coil</td>
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<td></td>
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<td>– Control of parallel resistor</td>
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</tbody>
</table>

REX640 introduces the new application package concept – offering ready-made application packages which can be combined to create protection solutions that meet your unique protection requirements.
Relion® REX640
All-in-one protection for any power distribution application

**Fully modular hardware and software for maximum flexibility for the entire relay lifetime**

- The modularity and scalability of both software and hardware allow you to create your own, unique relay for your specific protection requirements.
- The ready-made application packages makes ordering your relay smooth and easy.
- When the requirements change, so will REX640.
- Adapting to changing protection requirements is flexible and easy – the software and hardware can be modified anytime.
- In addition, new software and hardware developments will be continuously and easily accessible – throughout the relay’s entire life cycle.
Intuitive human-machine interface for enhanced user experience

- A novel, application-driven approach to the local human-machine interface (LHMI) allows support for entirely new applications.
- The unique, 7-inch color touch screen visualizes power distribution process information in an entirely new way. This results in increased situational awareness and maximum usability.
- Ready-made application-based pages minimize the need for graphical engineering, which saves both time and efforts. The LHMI pages can also be customized, if necessary, for optimum freedom.
Relion® REX640

Application packages

Overview

Functionality is divided into:

- Comprehensive base functionality – included as standard (always included)
- 13 application packages (optional) – can be freely selected as required by the intended application – none, some or all
- 2 additional protection add-ons (for selected application packages) – the add-on packages offer even more functionality on top of the selected application package

Note! The software options can also be added later on, even at site

Base functionality

- Feeder EF protection extension package
- Feeder fault locator package
- Line distance protection package
- Line differential protection package
- Shunt capacitor protection package
- Interconnection protection package
- Machine protection package
- Power transformer protection package
- Busbar protection package
- OLTC control package
- Generator auto synch. package
- Network auto synch. package
- Petersen coil control package

Synchronous machine add-on

3-winding transformer add-on
Suggested application examples
Protection and Control REX640
### Retrofit applications
- Modular design of hardware and software makes retrofitting of installed base easy
  - Flexibility in matching needed hardware
  - Flexibility in configuring modular software to match installed base functionality
  - Possibility to add upgrades and non-relay functionality to existing system

### Double busbar applications
- Hardware flexibility and scope makes more complex and demanding applications possible
- Support for busbar voltage selection
- Upgraded arc-protection module to support both loop and lens type sensors

### Digital switchgear
- Designed with digitalization of switchgear and substations in mind
- Supports
  - sensor technology
  - IEC 61850-9-2 and IEC 61850-8-1
  - PTP, IEEE 1588 and IRIG-B
  - PRP and HSR

### Non-relay applications
- Auto synchronization
  - Generator circuit breaker
  - Non-generator circuit breaker
- Petersen Coil controller
- Arc protection
  - Supervised loop and lens
Summary
Protection and Control REX640
Relion® REX640

All-in-one protection for any power distribution application

Complete application coverage with one device for optimal cost-effectiveness

- REX640 makes protecting all your assets in advanced power generation and distribution applications easy.
- The fully modular design allows unequaled customization and modification flexibility, and easy adaptation to changing protection requirements throughout the relay life cycle.
- This is asset management at its best.

The new face of protection and control
Relion® REX640

All-in-one protection for any power distribution application

Complete application coverage with one device for optimal cost-effectiveness

- REX640 is the outcome of a long-standing evolution, building on ABB’s strong heritage of freely configurable multifunctional relays.
- The ability to cover the full range of utility and industrial applications and manage multiple applications simultaneously—with the same device—guarantees flexible, versatile and cost-efficient protection solutions.

The new face of protection and control
Relion® REX640

All-in-one protection for any power distribution application

Complete application coverage with one device for optimal cost-effectiveness

– REX640 has been designed to support the increasing digitalization of substations. REX640 thereby supports a variety of digital switchgear solutions and is suitable for both single and double busbar applications.

– As the newest member of ABB’s Relion® protection and control family of relays, REX640 further reinforces Relion’s position as the family of relays to rely on.

The new face of protection and control