Protection and control REX640
Product introduction presentation
1MRS758996 C
Protection and control REX640
Complete coverage for advanced power distribution and generation applications

Complete application coverage with one device for optimal flexibility and cost-effectiveness
New application package concept for maximum convenience and flexibility
Designed to support the increasing digitalization of substations
  – Supports a variety of digital switchgear solutions
  – Suitable for both single and double-busbar applications

Innovative design – setting a new standard for what is possible with a single protection and control device
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Unmatched flexibility with fully modular hardware and software

- Fully modular and scalable hardware and software for maximum flexibility throughout the entire relay life cycle
  - Freedom of customization to meet specific protection requirements
  - Easy adaptation to changing protection requirements
  - Continuous access to the latest software and hardware developments

Smooth and easy ordering with ready-made application packages

Unmatched flexibility – helping customers stay ahead of the evolving power network requirements
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Long-awaited ease of use with intuitive human-machine interface

Increased situational awareness and optimal usability with application-driven local HMI (LHMI)

Novel 7-inch color touch screen for visualization of power distribution process information in an entirely new way

Ready-made application-based LHMI pages – saving both time and efforts

Long-awaited ease of use – supporting customers to make sense of complexities in evolving distribution networks
## Protection and control REX640

### Application coverage

### Supported applications

<table>
<thead>
<tr>
<th>Base functionality*</th>
<th>Power transformer protection</th>
<th>Machine protection</th>
<th>Interconnection protection</th>
<th>Shunt capacitor protection</th>
<th>Busbar protection</th>
</tr>
</thead>
</table>
| - Overcurrent protection  
- Earth-fault protection  
- Restricted earth-fault  
- Voltage protection  
- Frequency protection  
- Load-shedding | - Protection for two and three-winding power transformers | - Protection of synchronous and asynchronous machines | - Protection of interconnection points of distributed generation units | - Protection of single Y, double Y and H-bridge-connected capacitor banks  
- Protection of harmonic filter circuits | - High impedance-based busbar protection |

<table>
<thead>
<tr>
<th>Feeder / line protection</th>
<th>On-load tap changer control</th>
<th>Generator auto-synchronizer</th>
<th>Network auto-synchronizer</th>
<th>Petersen coil control</th>
<th>Arc protection</th>
</tr>
</thead>
</table>
| - Extensive earth-fault protection  
- Fault locator  
- Line distance protection  
- Line differential protection | - Control of parallel running power transformers  
- Flexible master unit selection via the LHMI | - Automatic, semi-automatic and manual generator synchronization  
- LHMI enables a fully visualized process | - Synchronized closing of non-generator CB by actively adjusting selected generators  
- LHMI enables a fully visualized process | - Automatic control of Petersen coil  
- Control of additional fixed parallel coil  
- Control of parallel resistor | - Four lens or loop-type sensors supported in any combination  
- Both sensor types supervised |

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* Always included
The functionality is divided into:
- Comprehensive base functionality – always included
- 13 application packages (optional) – 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 be customized, modified and also added at a later stage, even on site after installation.
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HMI options
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Switchgear HMI (SHMI)

**Switchgear level**
- Switchgear primary object position statuses
- Alarm status indications
- Internal status indications
- Backups of relay configurations and settings

**Single panel/bay level**
- Bay primary object control
- Bay primary object position status
- Measurements
- Alarm indication
- Alarm listing
- Relay status indication
- Event listing
- Fault records
- Disturbance records
- Settings
- Commissioning and testing support
- Backup of relay configuration and settings

The complete switchgear lineup status is visible via the SHMI – in addition to all LHMI functionality.
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Summary

REX640 – innovative, flexible and easy to use

The outcome of a long-standing evolution – building on ABB’s strong heritage of freely configurable multifunctional relays

Complete application coverage with one device for optimal flexibility and cost-effectiveness

Designed to support the increasing digitalization of substations

Fully modular and scalable hardware and software for maximum flexibility throughout the entire relay life cycle – from customizing your relay to adapting to changing protection requirements

Continuous access to the latest software and hardware developments

Increased situational awareness and optimal usability with application-driven LHMI

Newest member of ABB’s Relion® protection and control family of relays – reinforcing Relion’s position as the family of relays to rely on