Railway solutions
With Relion® 670 series
Power of one solution
For protection and control

ABB grid automation delivers essential substation automation, high-voltage protection, control and monitoring solutions for today’s power networks, ensuring they are ready for tomorrow’s challenges.

The Relion series of protection and control intelligent electronic devices (IEDs) have provided the power industry with protection, automation and control solutions for over 10 years. Now this successful portfolio is extended with comprehensive support for the railway application area.

Relion RER670 provides an easy to use and future proof solution for 16.7, 50 and 60 Hz railway applications to safeguard your valuable assets.

ABB’s portfolio of reliable, innovative products is based on more than a century of practical, real-world experience in the electricity sector.
Relion® the power of one solution
For railways

ABB delivers a comprehensive range of rail and urban transport infrastructure solutions for AC systems that ensure safe, reliable power delivery to all essential rail assets.

Rapid urbanization plus the urgent need to reduce carbon dioxide emissions are driving substantial new interest and investment in the transportation sector. Because of their specialized nature, traction power protection and control systems can be challenging.

With the Relion RER670, ABB offers a single solution encompassing the entire scope of railway power delivery; transmission, transformation and delivery. In a single device it supports single and two phase systems in isolated, compensated or solidly earthed networks at 16.7, 50 or 60 Hz.
Railway solution

Relion® RER670

RER670 is used for the protection, control and monitoring of transmission lines or transformers in two-phase 16.7, 50 and 60 Hz railway applications. It supports isolated, compensated and solidly earthed networks.

Line protection
Line protection is covered by the distance protection function with quadrilateral or circular starting characteristics. The six zones have fully independent measurements and settings from each other which gives high flexibility for all types of lines. Load encroachment and adaptive reach compensation are included.

Communication to remote ends can be used for even more selective protection, via traditional tele protection equipment or through direct IED to IED communication.

The device can be configured with backup functions (such as directional earth fault/overcurrent), breaker failure protection, autoreclose and synchrocheck functions.

A line fault locator for up to 10 line segment support efficient remedial actions after faults on the transmission line.

Transformer protection
The transformer differential protection function covers different traction power transformer configurations and a wide range of current and voltage backup functions, including restricted earth fault protection.

A very fast transformer tank protection helps to avoid damages in case of short circuits to the transformer tank.

Catenary protection
Catenary distance protection package is similar to the line protection package, but is used as a distance protection for catenary feeders, which supply the moving locomotive through a pantograph.

The function is applicable for single-phase booster transformer (BT) railway supply systems and can be used as a simplified distance protection for auto transformer (AT) catenary systems.

Control and Interlocking
This IED can also be provided with full bay control and interlocking functionality.

The autorecloser includes priority features for multi breaker arrangements. It co-operates with the synchrocheck function with high-speed or delayed reclosing.

Communication
RER670 provides extensive IEC 61850 Edition 2 support, and incorporates such functions as MMS, GOOSE, SV, PTP, HSR and PRP, as well as IEC 60870-5-103 communication.

Binary signals can be exchanged with the Line Data Communication Module (LDCM). Communication between IEDs in different substations is supported using the IEEE C37.94 standard.

Software options

<table>
<thead>
<tr>
<th>Applications</th>
<th>Transformer protection</th>
<th>Line protection</th>
<th>Catenary protection</th>
<th>Back-up protection</th>
<th>Apparatus control</th>
<th>Auto-reclose</th>
<th>Synchro-check</th>
<th>Transformer energization control</th>
<th>Tap changer control</th>
<th>Harmonic monitoring</th>
<th>LV/3vector shift supervision</th>
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</thead>
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<td>Line protection</td>
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Multiple options can be selected per physical device.