# REO 517

## Protection and Control Terminal for Railway Power Systems

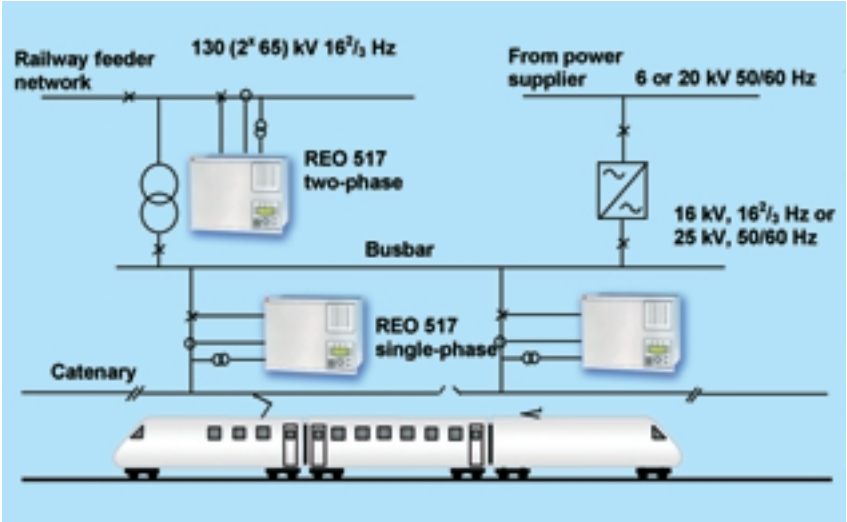
**Multifunctional...**
The numerical REO 517 terminal can now also be used with 50 and 60 Hz applications. It is based on proven ABB knowledge of 16 2/3 Hz systems, and meets the stringent dependability and security requirements for efficient management of railway power systems. This terminal offers cost-efficient solutions for the protection, control and monitoring of catenary and overhead lines as well as cables feeding the railway power system. It is applicable to single-phase catenaries, Auto-Transformer systems and two-phase feeders.

**One product – many possibilities...**
REO 517 facilitates a full-scheme distance protection function specially designed for railway power systems. Using both sudden current and voltage change functions, it is capable of reliably distinguishing between faults and loads caused by accelerating trains, high speed trains and powerful traction units. Additionally, it features breaker failure and thermal overload protection, as well as synchro- and energizing check and auto-reclosing.
This product has control functions for breakers, disconnectors and earthing switches, including interlocking and command control of the switchgear. Its local and remote monitoring capabilities provide information about fault location, events and disturbance recordings. This information is stored in a built-in non-volatile memory. With its self-supervision functions, the REO 517 terminal increases availability and security. Through its primary equipment supervision, it enables on-demand maintenance that leads to savings in maintenance costs. In sum, you can perform all required protection, control and monitoring tasks with this single device.

**A response to your needs...**
The freely configurable REO 517 terminal contains application function blocks, logical elements, timers etc. Using the advanced CAP 540 configuration and setting tool, you can easily create an application-specific solution by combining these elements. This tool supports all the process stages, from engineering and setting to maintenance, plus communication and disturbance handling. All in all, the REO 517 terminal adapts to your railway power system applications.

# It runs in the family

REO 517 terminal for railway power systems is based on the same proven technology as ABB's other 500 series protection and control terminals. Together with these terminals REO 517 provides a complete range of products for protecting, controlling and monitoring the entire railway power system.




## REO 517
## Technology summary:

### Main features & Functions
- Capabilities for combined protection, control and monitoring functions
- Available for 16 2/3, 50 and 60 Hz systems
- Library of application function blocks
- Logical elements
- Extensive self-supervision
- Four parameter setting groups

### Protection functions
- 3 zone full-scheme line distance protection including scheme communication logic
- Automatic switch onto fault logic
- Overcurrent functions
- Sudden current change
- Thermal phase overload protection
- Breaker failure protection
- Unbalance protection for capacitor banks
- Residual overcurrent functions including scheme communication logic
- Over- and undervoltage functions
- Sudden voltage change function
- Fuse failure supervision
- Line test function

### Control functions
- Apparatus control for up to 14 apparatuses
- Synchro-check and energizing-check
- Auto-recloser logic
- Interlocking for different switchgear arrangements

### Logic
- Trip logic
- Binary signal transfer to remote end
- 44 event function blocks
- Six event counters

### Monitoring
- Disturbance recorder, 40 seconds
- Fault locator
- LED indication module with 18 configurable multicolour and 3-state LEDs
- Disturbance report
- Indications
- Event and Trip value recorders
- Monitoring of AC and DC analog measurements

### Measurements
- Voltage
- Current
- Active, Reactive and Apparent Power
- Frequency

### Serial data communication
- IEC 60870-5-103, SPA and LON

### Setting, configuration and disturbance handling
- CAP 540 software tool utilizing IEC 61131-3 Programming languages

### Hardware
- 8 inputs and 12 outputs in each binary **I**nput/**O**utput **M**odule
- 24 outputs in each **B**inary **O**utput **M**odule
- 16 inputs in each **B**inary **I**nput **M**odule
- 6 transducer channels in each **m**A **I**nput **M**odule
- In a 1/1 x 19" case it is possible to have up to:
  - 6 IOM and BOM
  - 13 BIM
  - 6 mIM
  - 13 of the above modules in any combination
- Available also in 1/2 and 3/4 x 19" cases
- Pre-wired test switch module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