Multifunction Protection and Switchbay Control Unit REF542plus
REF542plus success story

- Market launch 2000
- Delivered units approx. 50,000
- Applications ranging from low voltage to high voltage
- In service worldwide
- Many different protection and control functions
REF542plus.
Multifunction Protection and Switchbay Control Unit

Human machine interface (HMI)
REF542plus.
Multifunction Protection and Switchbay Control Unit

Control and protection functions
- Control, interlocking
- Supervision, alarm handling
- Local control and indication
- Metering
- Protection
- Virtual push button for control and commands
- Changeable parameter sets
- Programmable e-key

Supervision functions
- Grid disturbances
- Measurement circuit supervision
- REF542plus faults
- Switchgear faults
- Faults of the data transmission

Indication functions
- Single line diagram of the bay
- Metering values
- Plain text presentation
- Parameters and settings
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Multifunction Protection and Switchbay Control Unit

Protection functions
- Overcurrent protection
- Overvoltage / undervoltage time protection
- Earthfault protection
- Distance protection
- Differential protection for Transformer and motor
- Restricted Earthfault

Aditional functions
- Synchro-check function
- Trip circuit supervision
- Auto-reclosing (5 cycles)
- Logic functions
- Frequency supervision
- Fault recording
- Power quality functions

Motor protection
- Thermal overload protection
- Directional power protection
- Unbalanced load protection
- Low load protection
- Inrush blocking
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Multifunction Protection and Switchbay Control Unit

ATEX is a must for REF542plus motor protection
Communication concept for station automation systems:

- **IEC 61850-8-1**
- SPA BUS 2.5 interface
- LON per LAG1.4 with profile according to **IEC 60 870-5-101/103** including interbay communication
- **IEC 60 870-5-103** including control function according to VDEW recommendation
- Modbus RTU interface
- Ethernet interface with WEB-Server functionality
REF542plus.
Multifunction Protection and Switchbay Control Unit

- Analogue input board
- Mainboard
- Communication board
- Analogue input or output board
- 1... 3 x I/O Board
- Power supply board
- HMI