



- Reliable and robust for even the most remote locations
- Offers every function you need
- Reduces the number of separate components
- Precise, real time measurement
- Reliable fault indication and protection
- Faster switching, reduced outage time
- Automatic notification of preventive maintenance needs



Every function you need

The REC 523 unit is specially designed to fulfill the unique requirements of secondary substation automation, such as ring main units, transformer kiosks, pole-mounted switches and disconnectors. It is an integrated solution, which provides most of the functionality needed for secondary substations in a single unit, thus reducing the number of separate components. Functions include remote and local control, protection and fault indication, and condition monitoring. The extensive internal supervision functions ensure a highly reliable solution suitable for the most remote locations.

Reduced outage time

Distribution network management requires frequent switching for, for instance, adjustments to load conditions, service outages or fault management situations. With the REC 523's remote control, switching is made considerably faster ensuring shorter outages due to decreased fieldwork. Other benefits for electricity consumers include improved power quality with increased availability, which gives you a clear edge in the market. Reliable fault indicators keep both the operator and the Distribution Management System (DMS) up-to-date on the fault current path in the event of a fault. In addition, REC 523 includes the most common protection functions, which can be utilized in different local automation functions, e.g. automatic sectionalizing.

Improved power quality

REC 523 offers functionalities that help you locate the problem areas in your network and thus improve power quality. A wide selection of measurement functions, power quality functions and a power factor controller allow for constant network monitoring and measurement. These functions can either inform the control center of possible problems, or take action through local automation when limit values are exceeded.

Optimized network management

REC 523 provides you with precise, real-time measurement information about the cable load situation, overhead lines, and transformers in your distribution network. Combined with a DMS system, i.e. ABB's MicroSCADA Pro DMS 600, these mea-

measurements ensure accurate modeling and power flow optimization. These functions are also able to monitor the network and will send alarms when limit values are exceeded. With accurate process measurements, you can ensure that your distribution network investment operates at its optimum capacity.

Continuous condition monitoring

Specialized condition monitoring functions continuously monitor the primary and secondary equipment, e.g. back-up batteries, in the secondary substation. REC 523 informs the control center when preventive maintenance is required. This ensures the correct functioning of your equipment even without regular check-ups.

Versatile communications options

REC 523 supports several open protocols and facilitates flexible connection to SCADA systems. An added advantage is that numerous communication media (e.g. GSM/GPRS, radio modem, conventional radio or telephone modem) can be used to create cost-effective solutions for transferring network information.




Features and benefits common to RE500-series units

Innovative technology

The REC 523 remote monitoring and control unit is a part of the ABB substation automation concept. The RE500-series includes units with basic remote control functions and also units with a wide range of monitoring, measurement, fault indication and application configurations. Their common configuration, setting and monitoring tools offer you yet another benefit: you only need to learn how to use one of our products, because all of our RE500-series protection relays and monitoring and control terminals use the same technology.

Technical Data

REC 523

Fault indication and protection functions	ANSI number
$\Delta I >$	51NC
Phase discontinuity indication function	
$I_0 > \rightarrow \text{SEF}, I_0 >> \rightarrow \text{SEF}$	67N/51N
Directional earth-fault protection and indication (or SEF =sensitive earth-fault), 2 stages	
$3I > \rightarrow, 3I >> \rightarrow$	67
Three-phase directional overcurrent protection and indication, 2 stages	
$I_0 > / \text{SEF}, I_0 >> / \text{SEF}$	51N
Non-directional earth-fault protection and indication (or SEF =sensitive earth-fault), 2 stages	
$3I >, 3I >>$	50/51/51B
Three-phase non-directional overcurrent protection and indication, 2 stages	
$3U <, 3U <<$	27
Three-phase undervoltage protection and indication, 2 stages	
$3I2f >$	68
Three-phase current inrush detector	
$0 \rightarrow 1$	79
Auto-reclosure	
Measurements	
I_b	Neutral current measurement, 2 instances
$3I$	Three-phase current measurement, 2 instances
	Transient disturbance recorder
F	System frequency measurement
E/P/Q/pf	Three-phase power and energy measurement
U_0	Residual voltage measurement, 2 instances
$3U$	Three-phase voltage measurement, 2 instances
Control	
<ul style="list-style-type: none"> • Disconnector (2 state inputs / 2 control outputs), 5 instances • Three state disconnector (3 state inputs / 4 control outputs), 2 instances • Object indication (2 state inputs), 8 instances • Logic control position selector • Circuit breaker (2 state inputs / 2 control outputs), 2 instances • Power factor controller 	
Power Quality	
<ul style="list-style-type: none"> • PQ3I nf Current waveform distortion measurement • PQ3U nf Voltage waveform distortion measurement 	
Condition Monitoring	
<ul style="list-style-type: none"> • CB electric wear, 2 instances • Supervision function of the energizing current input circuit • Gas density monitoring • Gas density monitoring for three poles • Scheduled maintenance • Supervision function of the energizing voltage input circuit • Operation time counter (e.g. motors), 2 instances • Spring charge control • Breaker travel time 	
Communication protocols	
<ul style="list-style-type: none"> - LON[®], SPA, Modbus[®], DNP 3.0, PROFIBUS[®](*), IEC 60870-5-101, IEC 61850 (*) 	
Inputs/Outputs	
<ul style="list-style-type: none"> • 9 Analog inputs (direct CT/VT or sensor) • 15 Binary inputs • 9 Binary outputs • One output for indicating internal relay faults (IRF) 	
Other features	
<ul style="list-style-type: none"> • Temperature compensated battery charger • Outlet + 12 V for communication device • 48-hour capacitor back-up for the internal clock • Power consumption 20...30 W 	

(* with interface adapter
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