



SDR distribution recloser controller

The SDR controller constitutes the brains of the recloser. It comprises indicators and control elements, communication interfaces and a USB port for convenient connection of a laptop computer. Access to the user level menus and data is protected by multilevel password authentication.

Along with overcurrent time protection (49 preset curves and multiple user configurable curves), it is equipped for ground fault and sensitive ground fault detection. Inrush restraint and load shedding are further protection functions that help prevent nuisance outages.

Convenience

- Fully withdrawable 7SR controller
- Ease of maintenance
- Complete system monitoring
- Tri-color programmable LEDs
- USB port (front of controller)
- 48-hour battery UPS
- Loop automation
- Integrated current transformers (CTs) and voltage transformers (VTs) in recloser switch unit
- Triple-single available
- Fully programmable from front panel
- Customizable and intuitive Human Machine Interface (HMI) with programmable buttons, indicators and logic
- Optional docking station for remote programming

Operation

- Relay protection
- Local / remote control
- Monitoring / SCADA of various protocols
- Power metering
- Event log
- Multiple communication protocols
- Input and output logic bits



12 kV, 15.5 kV, 27 kV and 38 kV

Answers for energy.

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Controller functionality

Figure 1: Protection functions

27/59	Under / overvoltage
37	Undercurrent
46BC	Broken conductor / load unbalance
46NPS	Negative phase sequence overcurrent
47	Negative phase sequence (NPS) voltage
49	Thermal overload
50	Instantaneous overcurrent
50BF	Circuit breaker failure
50G/N	Instantaneous ground fault
51	Time-delayed overcurrent
51c	Cold load pickup
51G/N	Time-delayed measured ground fault / SEF
51V	Voltage controlled overcurrent
59N	Neutral voltage displacement
60CTS	CT supervision
60VTS	VT supervision
64H	High impedance REF (restricted earth fault)
67/50	Bi-directional instantaneous overcurrent
67/50/G/N	Bi-directional instantaneous ground fault
67/51	Bi-directional time-delayed overcurrent
67/51G/N	Bi-directional time-delayed ground fault
67/51SEF	Directional time-delayed sensitive ground fault
74TC	Trip circuit supervision
79	Auto reclose
81HBL2	2nd harmonic block / inrush restraint
81	Under / overfrequency
86	Lockout
User-programmable logic via HMI	
Eight settings groups with two levels of password access	
Self-monitoring	

Figure 2: Measuring functions

Primary current phase and ground
Secondary current phase and ground
Positive phase sequence (PPS) current
Negative phase sequence (NPS) current
Zero phase sequence (ZPS) current
Binary input / output status
Trip circuit healthy / failure
Time and date
Fault records
Event records
Frequency
Waveform records
Recloser trip counter
I ² t summation for contact wear
Direction
Primary line and phase voltage
Secondary voltage
Apparent power and power factor
Real and reactive power
W Hr forward and reverse
VAR Hr forward and reverse
Historical demand record
Positive phase sequence (PPS) voltage
Negative phase sequence (NPS) voltage
Zero phase sequence (ZPS) voltage

Figure 3: Optional functions

Loop automation by loss of voltage uses an additional set of VTs and has the added functions:	
27/59	Second under / overvoltage
60VTS	Second VT supervision
Triple-single	
Synchronism check	
Fault locator	

Figure 4: Supported protocols

IEC 60870-5-103
Modbus RTU
DNP 3.0

Figure 5: Communication interfaces

Front USB port
Rear RS485 port

Figure 6: Data communication options

Two rear ST fiber optic ports (2x Tx/Rx) + IRIG-B port
RS232 port

For more information, please contact your local Siemens representative.

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