



OVERCURRENT PROTECTION

Reyrolle 7SR51

[siemens.com/reyrolle](https://www.siemens.com/reyrolle)

Description

The Reyrolle 5 is designed for the electricity networks of the future with enhanced communications and cyber security while maintaining a user-friendly interface and easy product management.

The Reyrolle 7SR51 overcurrent device includes a wide range of protection functions and IEC 61850 Ethernet communications as standard. To further minimize the product variants the power supply and the binary inputs cover the full operating range with configurable binary input thresholds.

The large LCD, tactile pushbuttons and programmable LEDs provide a user-friendly product interface and the relay element is withdrawable for easy replacement.

Benefits

- Compact design and low product life-cycle cost
- Reliable operation due to powerful, proven protection algorithms

- IEC 61850 Edition 1 & 2 with HSR, PRP and RSTP operation for increased availability
- Simple product ordering
- Combined 1 A and 5 A current transformer inputs
- 28 programmable tri-color LEDs for clear indications
- User selectable languages: English, French, German, Portuguese, Spanish, Turkish
- Conformal coating ordering option

Applications

- Overcurrent and earth fault protection for medium voltage substations
- Backup protection for other main protection devices e.g. on lines, transformers, generators, motors, and busbars
- 5 CT model to provide measured standby earth fault for protection of transformer earthing resistors in addition to high-impedance earth fault protection
- Selectable directional overcurrent and earth fault elements for interconnected systems

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- Measured and calculated earth fault protection elements provide a flexible solution when both earth fault and sensitive earth fault current detection is required
- Detection of earth faults in all networks including isolated and compensated networks
- High speed overcurrent elements for use with arc fault detectors to provide high speed fault detection and tripping
- Blocked overcurrent schemes using hardwiring or configurable IEC 61850 elements
- Configurable automatic reclosing to restore power flow after transient network fault.
- 47 Sequence overvoltage protection
- 51V Voltage dependent overcurrent – phase
- 55 Power factor
- 59/59Vx Overvoltage protection
- 59N Neutral voltage displacement
- 60VTS VT supervision
- 67I/67G/67GI/67GS/67N Directional – phase/earth fault
- 78VS Voltage vector shift
- 81 Frequency protection – "f>" or "f<"
- 81R Frequency protection – "df/dt"

Functions

Standard Functionality

- 37/37G Undercurrent protection – phase/earth
- 46 Negative sequence overcurrent protection
- 46BC Broken conductor detection
- 49 Thermal overload protection
- 49TS Temperature sensor supervision¹
- 50/50G/50N Instantaneous overcurrent/earth fault
- 50AFD Arc flash detection²
- 50BF Circuit-breaker failure protection – 3-pole
- 50GHS High speed earth fault – measured
- 50GI Intermittent earth fault
- 50GS Instantaneous sensitive earth fault – measured
- 50HS High speed overcurrent – phase
- 50SOTF Switch onto fault
- 51/51G/51N Time delayed overcurrent/earth fault
- 51CL Cold load overcurrent – phase
- 51GS Time delayed sensitive earth fault – measured
- 52 Circuit-breaker control
- 60CTS CT supervision
- 74CC/74TC Close-circuit and trip-circuit supervision
- 79 Automatic reclosing
- 81HB2 Inrush current detection
- 86 Lockout
- 87GH Restricted earth fault protection – high-impedance
- 87NL Restricted earth fault protection – low-impedance

Additional Functionality – Devices with VT Inputs

- 21FL Fault locator
- 21LB Load blinder
- 25 Synchrocheck – synchronizing function
- 27/27Vx Undervoltage protection
- 32 Power protection

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7SR51_Profile_07.21

Monitoring Functions

- Primary, secondary, and phase sequence, current & voltage
- Frequency, power, energy and fault location
- Fault data, event and waveform records

Communication

- IEC 60870-5-103, Modbus TCP
Modbus RTU, DNP3, IEC 61850

Inputs and Outputs

4 I + 8 BI + 6 BO
 4 I + 13 BI + 8 BO
 4 I + 3 AFD + 13 BI + 11 BO (inc. 3 HSBO)
 4 I + 23 BI + 12 BO
 4 I + 38 BI + 18 BO
 4 I + 4 V + 9 BI + 8 BO
 4 I + 4 V + 3 AFD + 9 BI + 11 BO (inc. 3 HSBO)
 4 I + 4 V + 14 BI + 10 BO
 4 I + 4 V + 19 BI + 12 BO
 4 I + 4 V + 3 AFD + 19 BI + 15 BO (inc. 3 HSBO)
 4 I + 4 V + 24 BI + 14 BO
 4 I + 4 V + 3 AFD + 24 BI + 17 BO (inc. 3 HSBO)
 4 I + 4 V + 39 BI + 20 BO
 4 I + 4 V + 3 AFD + 39 BI + 23 BO (inc. 3 HSBO)
 5 I + 4 V + 17 BI + 10 BO
 5 I + 4 V + 22 BI + 12 BO
 5 I + 4 V + 3 AFD + 22 BI + 15 BO (inc. 3 HSBO)
 5 I + 4 V + 37 BI + 18 BO
 5 I + 4 V + 3 AFD + 37 BI + 21 BO (inc. 3 HSBO)

Communication

Standard front USB port (for configuration using Reydisp PC based software tool) rear RS485, 2 x RJ45 electrical ports or optional optical Ethernet connections

Housing

Size 6 or 12 with withdrawable design

Display

Backlit 128 x 128 LCD with text and graphical display capabilities suitable for single line mimic diagrams

¹ An external interface unit is required.

² Requires external components