



ENERGY AUTOMATION PRODUCTS

7SR51

Overcurrent protection

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

The Reyrolle 7SR51 is an advanced overcurrent protection device designed to provide comprehensive protection and control solutions for electrical power systems. It 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.



Highlights



IEC 61850 with HSR, PRP and RSTP operation for increased availability



Compact design and low product life-cycle cost



Reliable operation due to powerful, proven protection algorithms

Benefits

- 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, Italian
- Conformal coating ordering option

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 supervision
- 50/50G/50N Instantaneous overcurrent/earth fault
- 50AFD Arc flash detection
- 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
- 47 Sequence overvoltage protection
- 51V Voltage dependent overcurrent – phase
- 55 Power factor
- 59/59Vx Overvoltage protection
- 59N Neutral voltage displacement
- 60VTS VT supervision
- 67/67G/67GI/67GS/67N Directional – phase/earth fault
- 78VS Voltage vector shift
- 81 Frequency protection – „f>“ or „f<“
- 81R Frequency protection – „df/dt“

Monitoring Functions

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


Inputs and Outputs	Current inputs – 4 or 5 Voltage inputs – 0 or 4 Binary inputs (max) – 39 Binary outputs (max) incl. Device healthy contact – 20 Arc flash detector inputs (AFD) – 0 or 3 High speed binary outputs (HSBO) – 0 or 3 Temperature sensor inputs (TSI) – 0 or 8
Communication	Standard front USB port (for configuration using Reydisp Manager 2, a PC based software tool), Rear RS485, 2 x RJ45 electrical ports or optional optical Ethernet connections
Housing	Size 6, 8 or 12 with withdrawable design
Display	Backlit 128 x 128 LCD with text and graphical display capabilities suitable for single line mimic diagrams


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
- 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


Communication


- IEC 60870-5-103, DNP3, Modbus RTU, Modbus Client (for use with external TSI interface) IEC 61850, DNP3 TCP, Modbus TCP

 [Configuration software - Reydisp Manager](#)

 [Virtual Relay Tool](#)

 [Webinar series - Reyrolle essentials](#)

 [Catalog Reyrolle 7SR5 Platform](#)

 [Online shop - Industry Mall](#)

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