



OVERCURRENT PROTECTION

Reyrolle 7SR54

[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 7SR54 provides protection, control and monitoring for 2- and 3-winding transformers. All transformer vector groups and earthing connections are supported.

The Reyrolle 7SR54 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
- Conformal coating ordering option

Applications

- Comprehensive protection for 2- or 3-winding transformers
- Differential protection for auto-transformers, reactors and motors

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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
- 51/51G/51N Time delayed overcurrent/earth fault
- 51CL Cold load overcurrent – phase
- 52 Circuit-breaker control
- 60CTS CT supervision
- 74CC/74TC Close-circuit and trip-circuit supervision
- 81HB2 Inrush current detection
- 81HB5 Overfluxing detection – 5th harmonic
- 86 Lockout
- 87GH Restricted earth fault protection – high-impedance
- 87NL Restricted earth fault protection – low-impedance
- 87T-BD Transformer differential protection – biased
- 87T-HS Transformer differential protection – highset

Additional Functionality – Devices with VT Inputs

- 21LB Load blinder (7SR5421)
- 24 Overexcitation protection
- 25 Synchrocheck – synchronizing function
- 27/27Vx Undervoltage protection
- 47 Sequence overvoltage protection
- 51V Voltage dependent overcurrent – phase (7SR5421)
- 59/59Vx Overvoltage protection
- 59N Neutral voltage displacement
- 60VTS VT supervision
- 67/67G/67N Directional – phase/earth fault (7SR5421)
- 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
- Event records (selectable events viewable on fascia)

Communication

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

Inputs and Outputs

8 I + 16 BI + 8 BO
8 I + 3 AFD + 21 BI + 13 BO (inc. 3 HSBO)
8 I + 4 V + 12 BI + 8 BO
8 I + 4 V + 3 AFD + 17 BI + 13 BO (inc. 3 HSBO)
8 I + 4 V + 22 BI + 12 BO
8 I + 4 V + 3 AFD + 22 BI + 15 BO (inc. 3 HSBO)
8 I + 4 V + 37 BI + 18 BO
8 I + 4 V + 3 AFD + 37 BI + 21 BO (inc. 3 HSBO)
12 I + 24 BI + 10 BO
12 I + 3 AFD + 24 BI + 13 BO (inc. 3 HSBO)
12 I, 4 V, 25 BI, 12 BO
12 I + 4 V + 3 AFD + 25 BI + 15 BO (inc. 3 HSBO)
12 I + 4 V + 35 BI + 16 BO
12 I + 4 V + 3 AFD + 35 BI + 19 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 12 with withdrawable design

Display

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

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¹ An external interface unit is required.

² Requires external components