



ENERGY AUTOMATION PRODUCTS

SIPROTEC 7SJ81

Overcurrent and Feeder Protection

Description

The SIPROTEC 7SJ81 provides 4 low-power current transformer inputs and optionally 3 low-power voltage transformer inputs. With the same low-power current transformer (LPCT) a wide range of primary rated line currents can be covered. Objects with rated currents in the range of 20 A to 2500 A can be protected when using low-power current transformers. The following low-power current transformer ratios are suitable for the following primary current operating ranges:

- 300 A /225 mV for a primary operating current range of 60 A to 630 A
- 600 A /225 mV for a primary operating current range of 120 A to 1250 A
- 1250 A /225 mV for a primary operating current range of 250 A to 2500 A
- 100 A /225mV for a primary operating current range of 20 A to 200 A

The SIPROTEC 7SJ81 is a multi-functional motor protection relay. It is designed for protection of asynchronous motors of all sizes. The relays have all the required functions to be applied as a backup relay to a transformer differential relay. The relay provides numerous functions to respond flexibly to the system requirements and to deploy the invested capital economically. Examples for this are: exchangeable interfaces, flexible protection functions and the integrated automation level (CFC). Freely assignable LEDs and a six-line display ensure a unique and clear display of the process states. In combination with up to 9 function keys, the operating personnel can react quickly and safely in any situation. This guarantees a high operational reliability.

Applications

Line protection

The SIPROTEC 7SJ81 units can be used for line protection of high and medium-voltage networks with grounded, low-resistance grounded, isolated or a compensated neutral point.

Hardware

- 4 current inputs
- 0/3 voltage inputs
- 3/7 binary inputs (thresholds configurable using software)
- 5/8 binary outputs (2 changeover/Form C contacts)
- 1 life contact
- Pluggable voltage terminals

Highlights

- Inputs for Low power CTs and VTs according IEC 61869-6 (formerly IEC 60044-7 and IEC 60044-8)
- Removable terminal blocks
- Binary input thresholds settable using DIGSI (3 stages)
- 9 programmable function keys
- 6-line display
- Buffer battery exchangeable from the front
- USB front port
- 2 additional communication ports
- Integrated switch for low-cost and redundant optical Ethernet rings
- Ethernet redundancy protocols RSTP, PRP and HSR for highest availability
- Relay-to-relay communication through Ethernet with IEC 61850 GOOSE
- Millisecond-accurate time synchronization through Ethernet with SNTP.

Functions

- Instantaneous and definite time-overcurrent protection (phase/neutral) (50, 50N, 51, 51N)
- Directional time-overcurrent protection (phase/ground) (67, 67N)
- Directional sensitive ground fault detection (67Ns, 50Ns)
- Overvoltage protection, zero-sequence system (59N)
- Inrush restraint
- Trip-circuit supervision (74TC)
- Undercurrent monitoring (37)
- Overload protection (49)
- Undervoltage/overvoltage protection (27/59)
- Forward-power, reverse-power protection (32)
- Power factor (55)
- Overfrequency/underfrequency protection(81O/U)
- Circuit-breaker failure protection (50B/F)
- Intermittent ground fault protection
- Directional intermittent ground fault protection (67Ns)
- Automatic reclosing (79)
- Fault locator (FL)
- Lockout (86)

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