ENERGY AUTOMATION PRODUCTS

SIPROTEC 7SJ80

Overcurrent and Feeder Protection

Description

The SIPROTEC 7SJ80 relays can be used for line/feeder protection of high and medium-voltage networks with grounded, low-resistance grounded, isolated or a compensated neutral point. The relays have all the required functions to be applied as a backup relay to a transformer differential relay.

The SIPROTEC 7SJ80 features "flexible protection functions". Up to 20 additional protection functions can be created by the user.

Therefore, protection of change for frequency or reverse power protection can be realized, for example.

The relay provides circuit-breaker control, further switching devices and automation functions. The integrated programmable logic (CFC) allows the user to add own functions, e.g. for the automation of switchgear (interlocking). The user is also allowed to generate user-defined messages.

Applications

Line protection
The SIPROTEC 7SJ80 units can be used for line protection of high and medium-voltage networks with grounded, low-resistance grounded, isolated or a compensated neutral point.

Transformer protection
The relay provides all the functions for backup protection for transformer differential protection. The inrush suppression effectively prevents unwanted trips that can be caused by inrush currents. The high-impedance restricted ground-fault protection detects short-circuits and insulation faults on the transformer.

Hardware

- 4 current transformers
- 0/3 voltage transformers
- 3/7/11 binary inputs (thresholds configurable using software)
- 5/8 binary outputs (2 changeover / form C contacts)
- 1 life contact
- Pluggable current and voltage terminals.

SIEMENS

Highlights

- Pluggable current and voltage terminals

- Binary input thresholds settable using DIGSI (3 stages)

- Secondary current transformer values (1 A / 5 A) settable using DIGSI

- 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 (over Port A or Port B)

- Number of binary inputs and binary outputs by connection from up to two SICAM I/O-Units extendable.

Functions

- Definite and inverse time-overcurrent protection (phase/ground) (50, 50N, 51, 51N)

- Directional time-overcurrent protection (phase/ground) (67, 67N)

- Directional sensitive ground fault protection (67Ns, 50Ns)

- Overvoltage protection, zero-sequence system (59N)

- High-impedance restricted ground-fault protection (87N)

- 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)

- Unbalanced-load protection (46)

- Phase-sequence-voltage supervision (47)

- Voltage dependent inverse-time overcurrent protection (51V)

- Synchrocheck (25)

- Automatic reclosing (79)

- Fault locator (FL)

- Lockout (86)

- Rate-of-frequency-change protection (81R)

- Rate-of-voltage-change protection (27R/59R)