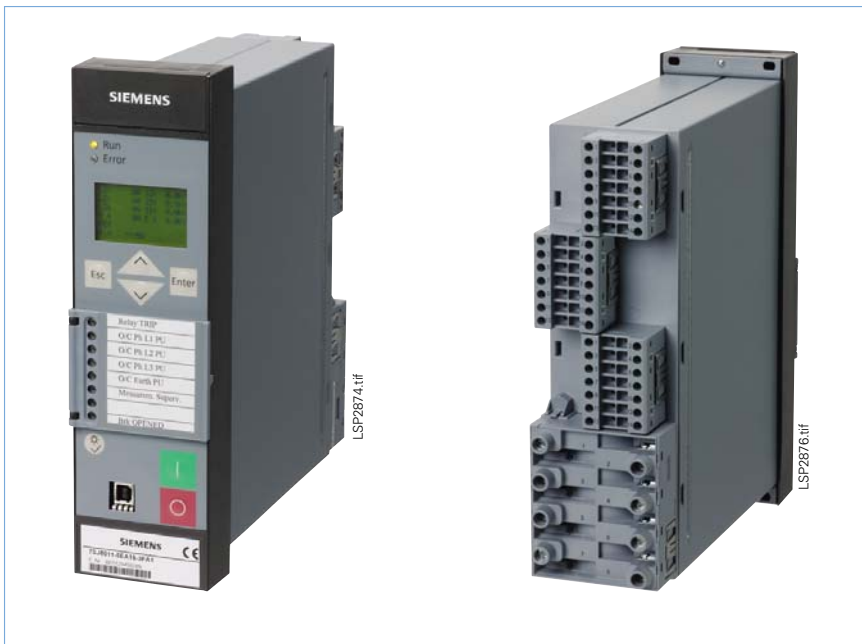


SIPROTEC Compact 7SJ80 Multifunction Protection Relay with Local Control



Description

The SIPROTEC Compact 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 functionality to be applied as a backup relay to a transformer differential relay.

The SIPROTEC Compact 7SJ80 offers highest **reliability** at major **functionality** by the synergy of reliable algorithms with newly developed hardware. The reliability is proven by the experience in the field of almost 1,000,000 SIPROTEC devices.

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**.

Highlights

- Removable current and voltage terminal blocks
- Binary input thresholds settable using DIGSI (3 stages)
- Current taps (1A/5A) settable using DIGSI
- 9 programmable function keys
- 6-line display
- Buffer battery exchangeable from the front
- USB front port
- 2 additional communication ports
- IEC 61850 with integrated redundancy (electrical or optical)
- Relay-to-relay communication through Ethernet with IEC 61850 GOOSE
- Millisecond-accurate time synchronization through Ethernet with SNTP

Function overview

Protection functions

- Time-overcurrent protection (50, 50N, 51, 51N)
- Directional time-overcurrent protection (67, 67N)
- Sensitive dir./non-dir. ground-fault detection (67Ns, 50Ns)
- Displacement voltage (64)
- High-impedance restricted ground fault (87N)
- Inrush restraint
- Undercurrent monitoring (37)
- Overload protection (49)
- Under/lowvoltage protection (27/59)
- Under/lofrequency protection (81O/U)
- Breaker failure protection (50BF)
- Phase unbalance or negative-sequence protection (46)
- Phase-sequence monitoring (47)
- Synch-check (25)
- Auto-reclosure (79)
- Fault locator (21FL)
- Lockout (86)
- Further functions

Control functions/programmable logic

- Commands for the ctrl. of CB, disconnect switches (isolators/isolating switches)
- Control through keyboard, binary inputs, DIGSI 4 or SCADA system
- User-defined PLC logic with CFC (e.g. interlocking)

Monitoring functions

- Operational measured values V, I, f
- Energy metering values W_p, W_q
- Circuit-breaker wear monitoring
- Minimum and maximum values
- Trip circuit supervision (74TC)
- Fuse failure monitor
- 8 oscillographic fault records

Communication interfaces

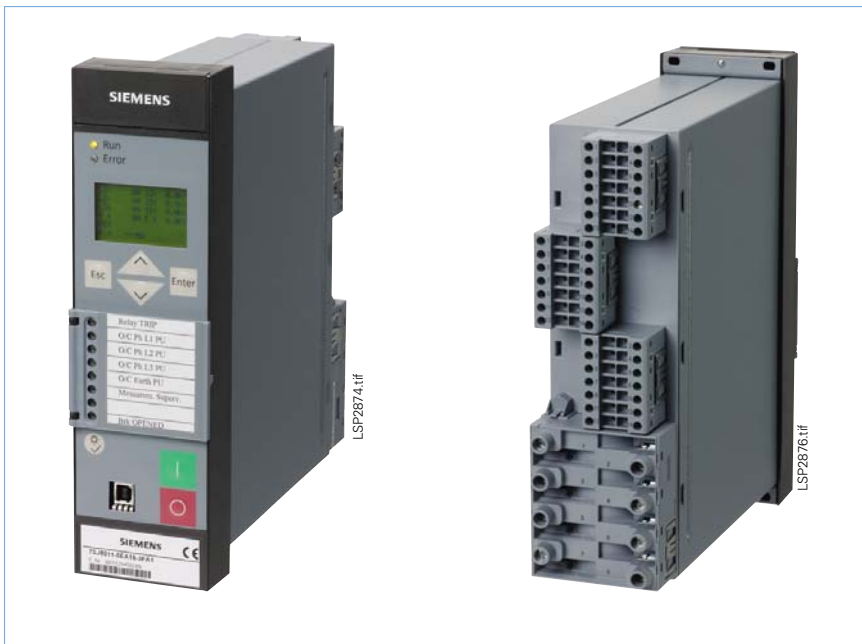
- System/service interface
 - IEC 61850/DNP3 TCP/Modbus TCP
 - IEC 60870-5-103/104
 - PROFIBUS-DP / PROFINET
 - DNP 3.0/MODBUS RTU
- Ethernet interface for DIGSI 4
- USB front interface for DIGSI 4

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 live-status contact
- Pluggable current and voltage terminals

SIPROTEC Compact 7SK80

Motor Protection Relay with Local Control



Description

The SIPROTEC Compact 7SK80 is a multi-functional motor protection relay. It is designed for asynchronous induction type motors of all sizes. The relays have all the functionality to be applied as a backup relay to a transformer differential relay.

The SIPROTEC Compact 7SK80 offers highest **reliability** at major **functionality** by the synergy of reliable algorithms with newly developed hardware. The reliability is proven by the experience in the field of almost 1,000,000 SIPROTEC devices.

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**.

Highlights

- Removable current and voltage terminal blocks
- Binary input thresholds settable using DIGSI (3 stages)
- Current taps (1A/5A) settable using DIGSI
- 9 programmable function keys
- 6-line display
- Buffer battery exchangeable from the front
- USB front port
- 2 additional communication ports
- IEC 61850 with integrated redundancy (electrical or optical)
- Relay-to-relay communication through Ethernet with IEC 61850 GOOSE
- Millisecond-accurate time synchronization through Ethernet with SNTP

Function overview

Protection functions

- Time-overcurrent protection (50, 50N, 51, 51N)
- Directional overcurrent protection, ground (67N)
- Sensitive dir./non-dir. ground-fault detection (50Ns, 67Ns)
- Displacement voltage (64)
- Inrush restraint
- Motor protection
 - Undercurrent monitoring (37)
 - Starting time supervision (48)
 - Restart inhibit (66/86)
 - Locked rotor (14)
 - Load jam protection (51M)
- Overload protection (49)
- Temperature monitoring
- Under-/overvoltage protection (27/59)
- Under-/overfrequency protection (81O/U)
- Breaker failure protection (50BF)
- Phase unbalance or negative-sequence protection (46)
- Phase-sequence monitoring (47)
- Lockout (86)
- Further functions

Control functions/programmable logic

- Commands for the ctrl. of CB, disconnect switches (isolators/isolating switches)
- Control through keyboard, binary inputs, DIGSI 4 or SCADA system
- User-defined logic with CFC (e.g. interl.)

Monitoring functions

- Operational measured values V, I, f
- Energy metering values W_p, W_q
- Circuit-breaker wear monitoring
- Minimum and maximum values
- Trip circuit supervision
- Fuse failure monitor
- 8 oscillographic fault records
- Motor statistics

Communication interfaces

- System/service interface
 - IEC 61850/DNP3 TCP/Modbus TCP
 - IEC 60870-5-103/104
 - PROFIBUS-DP / PROFINET
 - DNP 3.0/MODBUS RTU
- Ethernet interface for DIGSI 4
- USB front interface for DIGSI 4

Hardware

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