

SIPROTEC 7UM511 Generator Protection Relay



Fig. 11/70 SIPROTEC 7UM511 generator protection relay

Description

The SIPROTEC 7UM511 is a numerical generator protection relay. The provided protection functions meet the requirements of small, medium-sized and large generators. This numerical relay is the basic device in each unit connection scheme. The device can be supplemented by the 7UT51 differential protection units.

Function overview

Protection functions

- Overcurrent-time protection (with undervoltage seal-in) (51)
- Single-phase overcurrent protection (can be implemented as rotor earth-fault protection) (51N, 64R)
- Stator overload protection (49)
- Underexcitation protection (40)
- Overvoltage protection (59)
- Undervoltage protection (27)
- Overfrequency protection (81)
- Underfrequency protection (81)
- Reverse-power protection (32R)
- Forward-power monitoring (32F)
- Unbalanced-load protection (46) (negative-sequence protection)
- Stator earth-fault protection (64)

Features

- Direct trip coupling (for separate protection equipment)
- Assignable output relays, LEDs and binary inputs
- Trip matrix for trip relays

Monitoring functions

- Trip circuit supervision
- Operational measured values
- Self-supervision of relay
- 50 event logs
- 3 fault logs (with 80 events)
- 8 oscillographic fault records

Communication interfaces

- System interface – IEC 60870-5-103 protocol

Hardware

- 8 binary inputs
- Binary outputs: 5 trip relays; 12 alarm relays

Front design

- PC front port for convenient relay setting
- 16 LEDs for local indication

Selection and ordering data

| Description | Order No. |
|---|---------------------------|
| 7UM511 generator protection relay | 7UM511□-□□B01-0□B0 |
| <i>Rated current at 50 to 60 Hz, 100 to 125 VAC</i> | |
| 1 A | 1 |
| 5 A | 5 |
| <i>Rated auxiliary voltage</i> | |
| 24 V, 48 V DC | 2 |
| 60 V, 110 V, 125 V DC | 4 |
| 220 V, 250 V DC | 5 |
| <i>Unit design</i> | |
| For panel flush mounting or cubicle mounting | C |
| For panel surface mounting | D |
| For panel flush mounting or cubicle mounting, without glass cover | E |
| <i>Rear-side serial interface</i> (suitable for substation control and protection and DIGSI operating program) | |
| Electrical | B |
| Optical | C |

Accessories

| | |
|--|---------------------|
| DIGSI 4 | |
| Software for configuration and operation of Siemens protection units running under MS Windows (version Windows 95 and higher) device templates, Comtrade Viewer, electronic manual included as well as "Getting started" manual on paper, connecting cables (copper) | |
| Basis | |
| Full version with license for 10 computers, on CD-ROM (authorization by serial number) | 7XS5400-0AA00 |
| Demo | |
| Demo version on CD-ROM | 7XS5401-0AA00 |
| Professional | |
| Complete version: DIGSI 4 Basis and additionally SIGRA (fault record analysis), CFC Editor (logic editor), Display Editor (editor for default and control displays) and DIGSI 4 Remote (remote operation) | 7XS5402-0AA00 |
| SIGRA | |
| (generally contained in DIGSI Professional, but can be ordered additionally) Software for graphic visualization, analysis and evaluation of fault records. Can also be used for fault records of devices of other manufacturers (Comtrade format). Running under MS Windows 95/98/ME/NT/2000/XP Professional. Incl. templates, electronic manual with license for 10 PCs. Authorization by serial number. On CD-ROM. | 7XS5410-0AA00 |
| Connecting cable | |
| Cable between PC/notebook (9-pin connector) and protection unit (25-pin connector) | 7XV5100-2 |
| or | |
| Cable between PC/notebook (9-pin connector) and protection unit (9-pin connector) | 7XV5100-4 |
| Adaptor 9-/25-pin for 7XV5100-4 cable for protec. unit w. 25-pin connector (cable 7XV5100-4 and adaptor contained in DIGSI 4) | 7XV5100-8H |
| Rotor earth-fault protection | |
| Coupling device for rotor earth-fault protection (rated frequency voltage) | 7XR6100-0CA00 |
| Series resistor | 3PP1336-0DZ-013002 |
| Underexcitation protection (Excitation voltage in coupling) | |
| Voltage divider (20:1 or 10:1) | 3PP1326-0BZ-012009 |
| Manual for 7UM511 | |
| English | C53000-G1176-C109-3 |