

SIPROTEC 7UM512 Generator Protection Relay



Fig. 11/71 SIPROTEC 7UM512 generator protection relay

Description

The SIPROTEC 7UM512 is a numerical generator protection relay. The relay provides a practical combination of protection functions for generators. The unit contains all the protection functions required for small generators, such as emergency generators or private power plants. As the relay features directional earth-fault protection, it is frequently applied in direct connection of the generator to a busbar. Combined with the devices 7UM511 and 7UT511, it meets the protection requirements of medium-sized generators. The unit is also a module in comprehensive protection systems for large generators based on the 7UM51 range.

Function overview

Protection functions

- Overcurrent-time protection (with undervoltage seal-in) (51)
- Overcurrent/undercurrent protection (51/37)
- DC voltage time protection (64-DC)
- Overvoltage protection (59)
- Undervoltage protection (27)
- Over/underfrequency protection (81)
- Active/reactive power protection (32R, 40)
- Unbalanced-load protection (46) (negative-sequence protection)
- Stator earth-fault protection (directional, non-directional) (64)
- Rotor earth-fault protection (64R)

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.
7UM512 generator protection relay	7UM512□-□□ 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
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
Stator earth-fault protection	
Voltage divider 500/100 V	3PP1336-1CZ-013001
DC voltage protection	
Voltage divider 1:20 and 1:10	3PP1326-0BZ-012009
Manual for 7UM512	
English	C53000-G1176-C110-3