

Generator Protection

SIPROTEC 7UM611, 7UM612

Protection
SIPROTEC 4

Product description	Variants	Order No.
Multifunction generator protection relay		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Short code
		7 U M 6 1 □ □ - □ □ □ □ □ □ - □ □ □ □ 0 □ □ □ □
		↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
<u>Housing, binary inputs binary outputs</u>		
Housing 1/3 19"; 7 BI, 11 BO, 1 Life contact	1	
Housing 1/2 19"; 16 BI, 19 BO, 1 Life contact	2	
<u>Current transformers</u>		
1 A ¹⁾	1	
5 A ¹⁾	5	
<u>AC/DC supply voltage (threshold binary inputs)</u>		
DC 24 V to 48 V, threshold binary input 19 V	2	
DC 60 V to 125 V ²⁾ , threshold binary input 19 V ³⁾	4	
DC 110 V to 220 V ²⁾ , AC 115/230 V, trigger level binary input 88 V ³⁾	5	
<u>Construction</u>		
Surface-mounting housing, terminals on top and bottom	7UM611	B
Surface-mounting housing, terminals on top and bottom	7UM612	B
Flush-mounting housing, plug-in terminal (2/3pole connectors)		D
Flush-mounting housing, screw terminals (direct wiring/ring lugs)		E
<u>Regional Presettings/ Regional functions and languages</u>		
Region DE, 50 Hz, IEC, language German (language changeable)		A
Region World, 50/60 Hz, IEC/ANSI, language English (language changeable)		B
Region US, 60 Hz, ANSI, language US-English (language changeable)		C
<u>System interfaces</u>		
No system interface		0
IEC 60870-5-103 Protocol, electric RS232		1
IEC 60870-5-103 Protocol, electrical RS485		2
IEC 60870-5-103 Protocol, 820 nm fibre optic, ST-connector		3
Further protocols see supplement L		9
PROFIBUS DP Slave, RS485		
PROFIBUS DP Slave, 820 nm fibre optic, double loop, ST-connector ⁴⁾		
Modbus, RS485		
Modbus, 820 nm fibre optic, ST-connector ⁵⁾		
DNP3, electrical RS485		
DNP3, 820 nm fibre optic, ST-connector ⁵⁾		
<u>DIGSI 4/Modem port on rear</u>		
No DIGSI 4-port		0
DIGSI 4, RS232		1
DIGSI 4, RS485		2
DIGSI 4, 820 nm fibre optic, ST-connector		3
<u>Measuring functions</u>		
Without additional measuring functions		0
Min./max. values, energy meter		3
		L 0 □
		↑
		A
		B
		D
		E
		G
		H

(continued on next page)

Rated current 1/ 5 A can be selected by means of jumpers.
 Transition between the two auxiliary voltage ranges can be selected by means of jumpers.
 The thresholds of each binary input can be set via bridges.
 If position 9=B (surface-mounting housing, 2-tier terminals on top/bottom), please order the relay with RS485 interface and separate fibre-optic converter.
 Not available with position 9=B (surface-mounting).

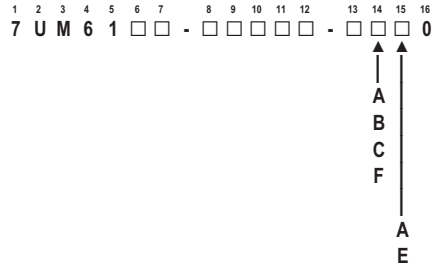
Generator Protection SIPROTEC 7UM611, 7UM612

Product description Variants Order No.

Multifunction generator protection relay

(continued from previous page)

- [Generator Basic](#)
- [Generator Standard](#)
- [Generator Full](#)
- [Asynchronous](#)
- [Functionality / Additional functions](#)
- Without
- Network decoupling (df / dt and vector jump)



Function Mix of the machine protection 7UM 61 V4.1

Protection functions	Abbreviation	ANSI-No.	Generator Basic	Generator Standard	Generator Full	Motor Asynchron
Stator earth-fault protection non-directional, directional	$V_0 >, 3I_0 >$ $\angle (V_0, 3I_0)$	59N, 64G, 67G	X	X	X	X
Sensitive earth-fault protection (also rotor earth-fault protection)	$I_{EE} >$	50/51GN (64R)	X	X	X	X
Overload protection	$I^2 t$	49	X	X	X	X
Definite Overcurrent protection with undervoltage seal-in	$I > + V <$	51	X	X	X	X
Definite Overcurrent protection, directional	$I >>, \text{Direc.}$	50/51/67	X	X	X	X
Inverse Overcurrent protection	$t = f(I) + V <$	51V	X	X	X	X
Overvoltage protection	$V >$	59	X	X	X	X
Undervoltage protection	$V <$	27	X	X	X	X
Frequency protection	$f <, f >$	81	X	X	X	X
Reverse-power protection	- P	32R	X	X	X	X
Overexcitation protection	V/f	24	X	X	X	
Fuse failure monitor	$V_2/V_1; I_1/I_2$	60FL	X	X	X	X
External trip coupling (7UM611/7UM612)	Incoup.		2/4	2/4	2/4	2/4
Trip circuit supervision (7UM612)	Akr. Üw	74TC	X	X	X	X
Forward-power protection	$P >, P <$	32F		X	X	X
Underexcitation protection	$1/x_d$	40		X	X	
Negative sequence protection	$I_2 >, t = f(I_2)$	46		X	X	X
Circuit-breaker failure protection	$I_{min} >$	50BF		X	X	X
Inadvertent energization protection	$I >, V <$	50/27			X	
100%-stator-earth-fault protection with 3 rd harmonics	$V_0 (3^{rd} \text{Harm.})$	59TN, 27TN(3 rd H)			X	
Impedance protection with (I > + U <)-pick-up	$Z <$	21			X	
Motor starting time supervision	$I_{an}^2 t$	48				X
Restart inhibit for motors	$I^2 t$	49 Rotor				X
Threshold Supervision			X	X	X	X
External temperature monitoring through serial interface	g (RTD)	38	X	X	X	X
Option (Position 15)						
Rate of frequency change protection	$df / dt >$	81R	X	X	X	X
Vector jump supervision (voltage)	$\Delta \varphi >$		X	X	X	X