

# Overcurrent Protection

## SIPROTEC 7SJ63

Protection  
SIPROTEC 4

Product description	Variants	Order No.
<b>Multifunction protection relay with local control and RTD <sup>1)</sup> interface</b>	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 7 S J 6 3 □ □ - □ □ □ □ □ □ - □ □ □ □ □ □	
<u>Housing, binary inputs and outputs</u>		
Housing 1/2 19", 11 BI, 8 BO, 1 Life contact	1	
Housing 1/2 19", 24 BI, 11 BO, 1 Life contact	2	
2 High-duty relays (4 contacts)	3	
Housing 1/2 19", 20 BI, 11 BO, 2 measuring transducer inputs, 1 Life contact, 2 High-duty relays (4 contacts)	5	
Housing 1/1 19", 37 BI, 14 BO, 1 Life contact, 4 High-duty relays (8 contacts)	6	
Housing 1/1 19", 33 BI, 14 BO, 2 measuring transducer inputs, 1 Life contact, 4 High-duty relays (8 contacts)	6	
<u>Measuring inputs (3xV, 4xI)</u>		
$I_{ph} = 1 A^2$ , $I_e = 1 A^2$ (min. = 0,05 A) 15th position only with: A, C, E, G	1	
$I_{ph} = 1 A^2$ , $I_e =$ sensitive (min. = 0,001 A) 15th position only with: B, D, F, H	2	
$I_{ph} = 5 A^2$ , $I_e = 5 A^2$ (min. = 0,25 A) 15th position only with: A, C, E, G	5	
$I_{ph} = 5 A^2$ , $I_e =$ sensitive (min. = 0,001 A) 15th position only with: B, D, F, H	6	
$I_{ph} = 5 A^2$ , $I_e = 1 A^2$ (min. = 0,05 A) 15th position only with: A, C, E, G	7	
<u>Auxiliary voltage</u>		
DC 24 V to 48 V, binary input threshold DC 19 V	2	
DC 60 V to 125 V <sup>3)</sup> , binary input threshold DC 19 V <sup>4)</sup>	4	
DC 110 V to 250 V <sup>3)</sup> , AC 115 to 230 V, input threshold DC 88 V <sup>4)</sup>	5	
<u>Construction</u>		
Surface-mounting housing, plug-in terminals, detached HMI, panel mounting in l.v. housing	A	
Surface-mounting housing, 2-tier terminals on top/bottom	B	
Surface-mounting housing, screw-type terminals (direct-connection/ring-type cable lugs), detached HMI, panel mounting in l.v. housing	C	
Flush-mounting housing, plug-in terminals (2/3 pin connector)	D	
Flush-mounting housing, screw-type terminals (direct-connection/ring-type cable lugs)	E	
Surface-mounting housing, screw-type terminals (direct-connection/ring-type cable lugs), without HMI, panel mounting in l.v. housing	F	
Surface-mounting housing, plug-in terminals, without HMI, panel mounting in l.v. housing	G	

(continued on next page)

- 1) RTD (resistance temperature detector) Box, 7XV5662-\*AD10 (at accessories communication)
- 2) Rated current 1/5 A can be selected by means of jumpers.
- 3) Transition between the two auxiliary voltage ranges can be selected by means of jumpers.
- 4) The thresholds of each binary input can be set via bridges. Settings deviant from the standard can be ordered via Z-variants. Further information can be found in the MLFB sheet in the sharepoint (Intranet).

Product description

Variants

Order No.

**Multifunction protection relay with control and RTD <sup>1)</sup> interface**

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Short code  
7 S J 6 3 □ □ - □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □

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Region-specific default settings/function versions and language settings

Region DE, 50 Hz, IEC-characteristics,  
language German (language changeable)

A

Region World, 50/60 Hz, ANSI/IEC-characteristics,  
language English (language changeable)

B

Region US, 60 Hz, ANSI-characteristics,  
language US-English (language changeable)

C

Region FR, ANSI/IEC-characteristics,  
language French (language changeable)

D

Region World, ANSI/IEC-characteristics,  
language Spanish (language changeable)

E

System port (on rear of device)

No system port  
IEC 60870-5-103 Protocol, electric RS232  
IEC 60870-5-103 Protocol, electrical RS485  
IEC 60870-5-103 Protocol, optical 820 nm, ST-connector  
Further protocols see supplement L

0  
1  
2  
3  
9

PROFIBUS DP slave, RS485  
PROFIBUS DP slave, optical 820 nm, double ring, ST-connector<sup>2)</sup>  
Modbus, RS485  
Modbus, optical 820 nm, ST-connector<sup>3)</sup>  
DNP3.0, RS485  
DNP3.0, optical 820 nm, ST-connector<sup>3)</sup>  
IEC 61850, 100 Mbit Ethernet, electrical, double, RJ45-connector  
IEC 61850, 100 Mbit Ethernet, with integrated switch  
optical, double, LC-connector<sup>3)</sup>

L 0 □  
↑  
A  
B  
D  
E  
G  
H  
R  
S

Port C

No port  
DIGSI 4/Modem, electric RS232  
DIGSI 4/Modem/RTD-Box <sup>1)</sup>, electrical RS485  
DIGSI 4 Modem/RTD-Box <sup>1)</sup>, 820 nm fibre, ST-connector

0  
1  
2  
3

Measuring/fault recording

Slave pointer, mean values, min/max values, fault recording

3

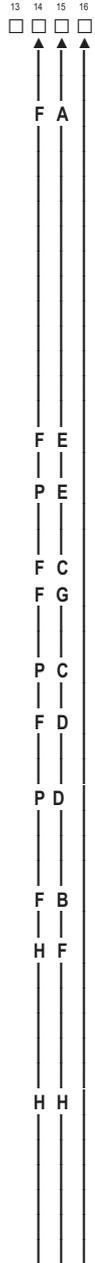
(continued on next page)

1) RTD (resistance temperature detector) Box, 7XV5662-\*AD10 (at accessories communication)  
2) 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  
3) Not available with position 9="B".

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<b>Multifunction protection relay with control and RTD <sup>1)</sup> interface</b>		1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 <b>7 S J 6 3</b> □ □ - □ □ □ □ □ □ - □ □ □ □
<b>Protection function packages</b> (continued from previous page)	ANSI-No.	
Basic version (contained in all options)	50/51	Control
	50N/51N	Time-overcurrent protection TOC phase $I >, I >>, I_p$
	50N/51N	Earth protection TOC earth $I_E >, I_E >>, I_{Ep}$
	49	Ground-fault protection via insensitive IEE-function: $I_{EE} >, I_{EE} >>, I_{EEp}^{2)}$
	46	Overload protection (with 2 time constants)
	47	Negative sequence protection
	37	Undercurrent monitoring
	47	Phase sequence
	59N/64	Displacement voltage
	50BF	Circuit-breaker failure protection
	74TC	Trip circuit supervision
		4 setting groups; cold load pick-up
		Inrush blocking
	86	Lock out
■	V,f	27/59 Under/overvoltage
		81O/U Under/overfrequency
■	IEF V,f	27/59 Intermittent earth-fault
		81O/U Under/overfrequency
■	Dir	67/67N Directional element for phase and earth currents
■	Dir V,f	67/67N Directional element for phase and earth currents
		27/59 Under/overvoltage
		81O/U Under/overfrequency
■	Dir IEF	67/67N Directional element for phase and earth currents
		Intermittent earth-fault
Dir. S.EF	Dir	67/67N Directional element for phase and earth currents
■		67Ns Directional sensitive earth-fault detection
		87N High-impedance restricted earth fault
Dir. S.EF	Dir IEF	67/67N Directional element for phase and earth currents
■		67Ns Directional sensitive earth-fault detection
		87N High-impedance restricted earth fault
		Intermittent earth-fault
Dir. S.EF		67Ns Directional sensitive earth-fault detection
■		87N High-impedance restricted earth fault
Dir. S.EF Motor	V,f	67Ns Directional sensitive earth-fault detection
■		87N High-impedance restricted earth fault
		48/14 Starting time supervision, locked rotor
		66/86 Restart inhibit
		27/59 Under/overvoltage
		81O/U Under/overfrequency
Dir. S.EF Motor Dir	V,f	67/67N Directional element for phase and earth currents
■		67Ns Directional sensitive earth-fault detection
		87N High-impedance restricted earth fault
		48/14 Starting time supervision, locked rotor
		66/86 Restart inhibit
		27/59 Under/overvoltage
		81O/U Under/overfrequency



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- Basic version included
- V,f = Voltage-, frequency protection
- Dir = Directional overcurrent protection
- IEF= Intermittent earth-fault
- Dir. S.EF=Directional sensitive earth-fault detection

1) RTD (resistance temperature detector) Box, 7XV5662-\*AD10 (at accessories communication)  
 2) Only with position 7 = 1, 5, 7 (insensitive earth current input)  
 3) For isolated/compensated networks, only with position 7 = 2, 6 (sensitive earth current input)



# Overcurrent Protection

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Multifunction protection relay with local control, synchronization and RTD <sup>1)</sup> interface	7 S J 6 4	□ □ - □ □ □ □ □ □ - □ □ □ □ □ □
		↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑ ↑
<u>Housing, binary inputs and outputs</u>		
Housing 1/3 19", 7 BI, 5 BO, 1 Life contact text display 4*20 character (only for 7SJ640) 9 <sup>th</sup> position only with: B, D, E	0	
Housing 1/2 19", 15 BI, 13 BO (1a/b contact), 1 Life contact, graphic display	1	
Housing 1/2 19", 20 BI, 8 BO, 2 High-duty relays (4 contacts) 1 Life contact, graphic display	2	
Housing 1/1 19", 33 BI, 11 BO, 4 High-duty relays (8 contacts) 1 Life contact, graphic display	5	
Housing 1/1 19", 48 BI, 21 BO, 4 High-duty relays (8 contacts) 1 Life contact, graphic display	7	
<u>Measuring inputs (4xV, 4xI)</u>		
$I_{ph} = 1 A^{2)}$ , $I_e = 1 A^{2)}$ (min. = 0,05 A) 15 <sup>th</sup> position only with: A, C, E, G	1	
$I_{ph} = 1 A^{2)}$ , $I_e =$ sensitive (min. = 0,001 A) 15 <sup>th</sup> position only with: B, D, F, H	2	
$I_{ph} = 5 A^{2)}$ , $I_e = 5 A^{2)}$ (min. = 0,25 A) 15 <sup>th</sup> position only with: A, C, E, G	5	
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<u>Auxiliary voltage</u>		
DC 24 V to 48 V, binary input threshold DC 19 V <sup>4)</sup>	2	
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<u>Construction</u>		
Surface-mounting housing, plug-in terminals, detached HMI, panel mounting in l.v. housing	A	
Surface-mounting housing, 2-tier terminals on top/bottom	B	
Surface-mounting housing, screw-type terminals (direct-connection/ ring-type cable lugs), detached HMI, panel mounting in l.v. housing	C	
Flush-mounting housing, plug-in terminals (2/3 pin connector)	D	
Flush-mounting housing, screw-type terminals (direct-connection/ring-type cable lugs)	E	
Surface-mounting housing, screw-type terminals (direct-connection/ ring-type cable lugs), without HMI, panel mounting in l.v. housing	F	
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(continued on next page)

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