Product descrip	tion Var	iants	Order No.
Multifunction p	otection relay with loca	al control, synchronization and RTD ¹⁾ interface	7 S J 6 4
	Hou text 9 th p Hou 1 Lif Hou 1 Lif Hou	sing, binary inputs and outputs sing 1/3 19", 7 BI, 5 BO, 1 Life contact display 4*20 character (only for 7SJ640) osition only with: B, D, E sing 1/2 19", 15 BI, 13 BO (1a/b contact), fe contact, graphic display sing 1/2 19", 20 BI, 8 BO, 2 High-duty relays (4 co fe contact, graphic display sing 1/1 19", 33 BI, 11 BO, 4 High-duty relays (8 o fe contact, graphic display sing 1/1 19", 48 BI, 21 BO, 4 High-duty relays (8 o fe contact, graphic display	ontacts) 5
	Mea I _{ph} =	suring inputs $(4xV, 4xI)$ = 1 A ²), I_e = 1 A ² (min. = 0,05 A) position only with: A, C, E, G	1
		= 1 A ²), I_e = sensitive (min. = 0,001 A) position only with: B, D, F, H	
		= 5 A ²), I_e = 5 A ²) (min. = 0,25 A) position only with: A, C, E, G	
		= 5 A ²⁾ , I_e = sensitive (min. = 0,001 A) position only with: B, D, F, H	6
		= 5 A ²), I_e = 1 A ²) (min. = 0,05 A) position only with: A, C, E, G	7
	DC :	iliary voltage 24 V to 48 V, binary input threshold DC 19 V ⁴⁾ 60 V to 125 V ³⁾ , binary input threshold DC 19 V ⁴⁾ 110 to 250 V ³), AC 115 V to 230 V, input threshold	DC 88 V ⁴)
	Surf	struction face-mounting housing, plug-in terminals, detache el mounting in l.v. housing	і НМІ, А
	Surf	ace-mounting housing, 2-tier terminals on top/bot	om
		ace-mounting housing, screw-type terminals (dire- type cable lugs), detached HMI, panel mounting i	
	Flus	ch-mounting housing, plug-in terminals (2/3 pin con	nector) D
		sh-mounting housing, screw-type terminals ect-connection/ring-type cable lugs)	É
		ace-mounting housing, screw-type terminals (dire- type cable lugs), without HMI, panel mounting in	
		ace-mounting housing, plug-in terminals, without el mounting in l.v. housing	IMI, G

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).

Overcurrent Protection SIPROTEC 7SJ64

Variants Order No Product description Multifunction protection relay with local control, synchronization and RTD¹) interface Region-specific default settings/function versions and language settings (continued from previous page) Region DE, 50 Hz, IEC, language German, (language changeable) Region World, 50/60 Hz, IEC/ANSI, В language English (language changeable) Region US, 60 Hz, ANSI, language US-English (language changeable) Region FR, ANSI/IEC, language French Ď | (language changeable) Region World, ANSI/IEC, language Spanish Ė Ī (language changeable) Region IT, ANSI/IEC-characteristics, language Italian (language changeable) Region RU, ANSI/IEC-characteristics, Ġ language Russian (language changeable) System port (on rear of device) No system port IEC 60870-5-103 Protocol, electric RS232 1 IEC 60870-5-103 Protocol, electrical RS485 2 IEC 60870-5-103 Protocol, 820 nm fibre, ST-connector 3 Further protocols see supplement L **†** † PROFIBUS DP slave, RS485 0 A PROFIBUS DP slave, 820 nm fibre, double ring, ST-connector 2) 0 B Modbus, RS485 0 D 0 E Modbus, 820 nm fibre, ST-connector 3) DNP3.0, RS485 0 G DNP3.0, 820 nm fibre, ST-connector 3) 0 H IEC 60870-5-103 Protocol, redundant, electrical RS485 3) 0 P IEC 61850, 100 Mbit Ethernet, electrical, double, RJ45-connector 0 R IEC 61850, 100 Mbit Ethernet, with integrated switch 0 Ş optical, double, LC-connector 3) DNP3 TCP + IEC 61850, 100 Mbit Ethernet, elec., double, RJ45-connector 4) 2 R DNP3 TCP + IEC 61850, 100 Mbit Ethernet, optical, double, LC-connector 4) 2 S PROFINET + IEC 61850, 100 Mbit Ethernet, elec., double, RJ45-connector 4) 3 R PROFINET + IEC 61850, 100 Mbit Ethernet, optical, double, LC-connector 4) S 3 Only Port C DIGSI 4/Modem, electric RS232 DIGSI 4/Modem/RTD-Box 1), electrical RS485 Port C and D (service- and additional interface) Port C (service interface) DIGSI 4/Modem, electric RS232 M 1 🗆 DIGSI 4/Modem/RTD-Box 1), electrical RS485 M 2 □ 9 Port D (additional interface) RTD-Box 1), 820 nm fibre, ST-connector Α RTD-Box 1), electrical RS485 Measuring/fault recording 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)

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"

⁴⁾ starting from FW 4.90

Overcurrent Protection SIPROTEC 7SJ64

	Product description		Variants	Order No.				
	Multifunction protection relay	tifunction protection relay with local control, synchronization and RTD ⁽⁾ interface 7 S J 6 4						
	Protection function packag	es	ANSI-No.		Ī	Ī		
	(continued from previous page)			Control	- 1			
	Basic version		50/51	Overcurrent protection I>, I>>, I>>, Ip,	Ė	À		
	(contained in all options)		50N/51N	Earth-fault protection TOC earth I_E >, I_E >>, I_E >>>, I_{Ep}	Ì	Ϊ		
	(50N/51N	Ground-fault protection via insensitive IEE-function: I_{EE} >, I_{EE} >>, I_{EE} 0	1			
			50/50N	Flexible protection functions (index quantities derived from current):				
			00/0011	Additional time-overcurrent protection stages />>>	1			
			51V	Voltage dependent inverse-time overcurrent protection				
			49	Overload protection (with 2 time constants)				
			46	Negative sequence protection	-			
			37	Undercurrent monitoring	İ			
			47	Phase sequence	İ			
			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,P,f	27/59	Under/overvoltage	F	Ė		
			81O/U	Under/overfrequency				
			24/Q	Undervoltage controlled reactive power protection 4)				
			٠,	Flexible protection funtions (index quantities derived from current & voltage):				
_			32/55/81R	voltage, power, p.f., rate-of-frequency-change-protection	Ī	Ī		
	■ IEF	V,P,f	07/50	Intermittent earth-fault	P	Ę		
			27/59	Under/overvoltage				
			810/U	Under/overfrequency	-			
			24/Q	Undervoltage controlled reactive power protection 4)				
			, ,	Flexible protection funtions (index quantities derived from current & voltage):	-			
_	- Die		32/55/81R	Voltage, power, p.f., rate-of-frequency-change-protection	I	C		
_	■ Dir ■ Dir	V/Df	67/67N 67/67N	Direction determination for overcurrent, phase and ground		G		
	• DII	۷,۲,۱	27/59	Direction determination for overcurrent, phase and ground	ī	ï		
			810/U	Under/overvoltage Under/overfrequency	-			
			24/Q	Undervoltage controlled reactive power protection 4)				
				Flexible protection funtions (index quantities derived from current & voltage):	-			
			32/55/81R	voltage, power, p.f., rate-of-frequency-change-protection				
	■ DIr IEF	VPf	67/67N	Direction determination for overcurrent, phases and ground	P	Ġ		
	_ 511 121	*,. ,.	0170111	Intermittent earth-fault	i	Ĭ		
			27/59	Under-/overvoltage				
			81O/U	Under-/overfrequency	-			
			24/Q	Undervoltage controlled reactive power protection 4)				
			27/47/59(N)	Flexible protection functions (quantities derived from current & voltages):	-			
				Voltage-/power-/p.f/rate of freq. change-protection				
	■ Dir IEF		67/67N	Direction determination for overcurrent, phase and ground	P	Ċ		
				Intermittent earth-fault				
	Dir. S.EF Dir		67/67N	Direction determination for overcurrent, phase and ground	F	Þ		
	•		67Ns	Directional sensitive earth-fault detection				
			67Ns	Directional intermittent ground-fault protection 4)				
			87N	High-impedance restricted earth fault		1		

■ Basic version included

V,P,f = Voltage-, Power-, 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)
- 4) Starting from FW 4.90

Overcurrent Protection SIPROTEC 7SJ64

7 S J 6 4 ... - Multifunction protection relay with local control, synchronization and RTD⁽⁾ interface Protection function packages ANSI-No. (continued from previous page) 50/51 Overcurrent protection I>, I>>, I>>, ID, Basic version (contained in all options) 50N/51N Earth-fault protection TOC earth I_E >, I_E >>, I_E >>, I_E >>, I_E 50N/51N Ground-fault protection via insensitive IEE-function: I_{EE} >, I_{EE} >>, I_{EEp} ²⁾ 50/50N Flexible protection functions (index quantities derived from current): Additional time-overcurrent protection stages I>>>> 51V Voltage dependent inverse-time overcurrent protection Overload protection (with 2 time constants) 49 46 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 Dir. S.EF V,P,f 67Ns Directional sensitive earth-fault detection Directional intermittent ground-fault protection 4) 67Ns 87N High-impedance restricted earth fault 27/59 Under/overvoltage 810/U Under/overfrequency Undervoltage controlled reactive power protection 4) 24/Q 27/47/59(N) Flexible protection funtions (index quantities derived from current & 32/55/81R voltage): voltage, power, p.f., rate-of-frequency-change-protection Dir. S.EF Dir IEF 67/67N Direction determination for overcurrent, phase and ground 67Ns Directional sensitive earth-fault detection Directional intermittent ground-fault protection 4) 67Ns 87N High-impedance restricted earth fault Intermittent earth-fault Dir. S.EF Directional sensitive earth-fault detection 67Ns В 67Ns Directional intermittent ground-fault protection⁶⁾ 87N High-impedance restricted earth fault Dir. S.EF V.P.f 67Ns Directional sensitive earth-fault detection Motor н 67Ns Directional intermittent ground-fault protection 4) 87N High-impedance restricted earth fault 48/14 Starting time supervision, locked rotor 66/86 Restart inhibit 51M Motor load-jam protection, motor statistics 27/59 Under/overvoltage 810/U Under/overfrequency 24/Q Undervoltage controlled reactive power protection 4) 27/47/59(N) Flexible protection funtions (index quantities derived from current & voltage): 32/55/81R Voltage, power, p.f., rate-of-frequency-change-protection Dir. S.EF Motor Dir V P f Directional element for phase and earth currents 67/67N н Н 67Ns Directional sensitive earth-fault detection 67Ns Directional intermittent ground-fault protection4) 87N High-impedance restricted earth fault 48/14 Starting time supervision, locked rotor 66/86 Restart inhibit 51M Motor load-jam protection, motor statistics 27/59 Under/overvoltage 81O/U Under/overfrequency

Variants

Product description

■ Basic version included

V,P,f = Voltage-, Power-, frequency protection Dir = Directional overcurrent protection

IEF= Intermittent earth-fault

Dir. S.EF=Directional sensitive earth-fault detection

24/Q

RTD (resistance temperature detector) Box, 7XV5662-*AD10 (at accessories communication)

(continued on next page)

- Only with position 7 = 1, 5, 7 (insensitive earth current input)
- For isolated/compensated networks, only with position 7 = 2, 6 (sensitive earth current input)
- Starting from FW 4.90

Undervoltage controlled reactive power protection 4) 27/47/59(N) Flexible protection funtions (index quantities derived from current & voltage):

32/55/81R Voltage, power, p.f., rate-of-frequency-change-protection

Overcurrent Protection SIPROTEC 7SJ64

Product des	cription			Variants	Order No.					
Multifunction protection relay with local control, synchronization and RTD ⁰⁾ interface 7 S J 6 4										
Protection 1	function	package	s	ANSI-No.		Î	Î Î	Ì	Î	ÎÎ
(continued fro					Control	İ	İ			
Basic versio		,		50/51	Overcurrent protection I>, I>>, I>>>, I _p ,	İ	İ			
(contained in	n all option	ons)		50N/51N	Earth-fault protection TOC earth I_E >, I_E >>>, I_E >>>, I_{Ep}	İ	İ			
	•			50N/51N	Ground-fault protection via insensitive IEE-function: I_{EE} >, I_{EE} >>, I_{EEp} ²⁾	İ	İ			
				50/50N	Flexible protection functions (index quantities derived from current):	I				
					Additional time-overcurrent protection stages />>>>					
				51V	Voltage dependent inverse-time overcurrent protection					
				49	Overload protection (with 2 time constants)					
				46	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					
				0.6	Inrush blocking					
D:- C FF		D: IEE	1/0/	86	Lock out	Ī	. !.	3)		
Dir. S.EF	Motor	Dir IEF	V,P,f		Direction determination for overcurrent, phase and ground	K	H	3)		$\parallel \parallel$
				67Ns	Directional sensitive earth-fault detection	-				$\parallel \parallel$
				67Ns 87N	Directional intermittent ground-fault protection ⁵⁾	- 1				$\parallel \parallel$
				8/IN	High-impedance restricted earth fault	- 1				$\parallel \parallel$
				48/14	Intermittent earth-fault	-	-			$\parallel \parallel$
				66/86	Starting time supervision, locked rotor Restart inhibit	-	-			
				51M	Motor load-jam protectio , motor statistics	-	-			
				24/Q	Undervoltage controlled reactive power protection 4)	ł	-			11
				27/59	Under/overvoltage	ł	-			11
				810/U	Under/overfrequency	1	1			
	Motor	Dir	VPf	67/67N	Directional element for phase and earth currents	H	ιĠ			
	Motor	D	٠,٠,٠	48/14	Starting time supervision, locked rotor	Ϊ	Ĭ			11
				66/86	Restart inhibit					
				51M	Motor load-jam protection , motor statistics					
				27/59	Under/overvoltage	1				
				81O/U	Under/overfrequency	1				
				24/Q	Undervoltage controlled reactive power protection 5)	1				
				27/47/59(N)	Flexible protection functions (index quantities derived from current &					
				32/55/81R	voltage): Voltage, power, p.f., rate-of-frequency-change-protection					
	Motor	-		48/14	Starting time supervision, locked rotor	Ĥ	ΙÀ			
				66/86	Restart inhibit					
				51M	Motor load-jam protection, motor statistics					
ARC, fault lo		_			without			0		
synchroniza	tion			79	with autoreclose			1		
				21FL	Fault locator			2		
				79/21FL	Autoreclose, with fault locator			3		
				25	Synchronization			4		
				25/79/21FL	Synchronization, auto reclose, fault recorder			7		11
					With ATEX 100 - certification ⁴⁾ for protection of explosion-proved			2	ΖX	9 9
					machines of increased-safety type "e"					

■ Basic version included

V,P,f = Voltage-, Power-, 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)
- 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)
- 4) If no ATEX 100 certification is required, please order without the order No. extension ZX99
- 5) Starting from FW 4.90