

Distance Protection SIPROTEC 7SA610, 7SA611, 7SA612, 7SA613

Product description Variants Order No.

Distance protection

Operator panel with
– backlit display
– function keys
– numerical keys
– PC-interface

Housing, number of LEDs
Housing width 1/3 19", 7 LEDs
Housing width 1/2 19", 14 LEDs
Housing width 1/1 19", 14 LEDs
Housing width 2/3 19", 14 LEDs

Measuring inputs (4xV, 4xI)
 $I_{ph} = 1 A^{6)}$, $I_e = 1 A^{6)}$ (min. = 0,05 A) 1
 $I_{ph} = 1 A^{6)}$, $I_e = sensitive$ (min. = 0,003 A) 2
 $I_{ph} = 5 A^{6)}$, $I_e = 5 A^{6)}$ (min. = 0,25 A) 5
 $I_{ph} = 5 A^{6)}$, $I_e = sensitive$ (min. = 0,003 A) 6

Auxiliary voltage (power supply, binary inputs)
DC 24 V to 48 V, binary input threshold 19 V 2
DC 60 V to 125 V¹⁾, binary input threshold 19 V²⁾ 4
DC 110 V to 250 V¹⁾, AC 115 V to 230 V, binary input threshold 88 V²⁾ 5

Binary / indication inputs	Signal / command outputs incl Life contact	Fast relays ³⁾	High Speed ⁴⁾ trip outputs	Power relays ⁵⁾	Flush-mounting housing / screw terminals	Flush-mounting housing / plug-in terminals	Surface-mounting housing / screw terminals	
for 7SA610								
5	4	5			■			A
5	4	5					■	E
5	4	5				■		J
7	6				■			B
7	6						■	F
7	6					■		K
for 7SA611								
13	5	12			■			A
13	5	12					■	E
13	5	12				■		J
13	4	8	5		■			M
13	4	8	5				■	N
13	4	8	5			■		P
20	9			4	■			B
20	9			4			■	F
20	9			4		■		K
for 7SA612								
21	13	12			■			A
21	13	12					■	E
21	13	12				■		J
21	12	8	5		■			M
21	12	8	5				■	P
21	12	8	5			■		R
29	21	12			■			B
29	21	12					■	F
29	21	12				■		K
29	20	8	5		■			N
29	20	8	5				■	Q
29	20	8	5			■		S
33	12			8	■			C
33	12			8			■	G
33	12			8		■		L
for 7SA613								
21	13	12			■			A
21	12	8	5		■			M

1) Transition between the three auxiliary voltage ranges can be selected by means of jumpers.
 2) The binary input thresholds are selectable in three steps by means of jumpers.
 3) Fast relays are identified in the terminal connection diagram. The time advantage compared with signal/command outputs is approx. 3 ms mainly for protection commands.
 4) High-speed trip outputs are identified in the terminal connection diagram. The time advantage compared with Fast relays is approx. 5 ms.
 5) Power relay for direct control of isolating switch actuator motors; each pair of contacts is mechanically interlocked to prevent simultaneous closure.
 6) Rated current 1/5 A can be selected by means of jumpers.

Distance Protection SIPROTEC 7SA61, 7SA63, 7SA64

Product description Variants Order No.

(continued from previous page)

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

Functions 1

Trip mode	Overload protection (ANSI 49)	BCD-coded fault locator output
3-pole		
3-pole		■
3-pole	■	
3-pole	■	■
1/3 pole		
1/3 pole		■
1/3 pole	■	
1/3 pole	■	■

Functions 2

Distance protection pickup (ANSI 21, 21N)	Power Swing detection (ANSI 68, 68T)	Parallel line compensation
I>		
V< / I>		
Z< (Polygon)		
Z< (Polygon), V< / I> / φ		
Z< (Polygon)	■	
Z< (Polygon), V< / I> / φ	■	
V< / I>		■ ²⁾
Z< (Polygon)		■ ²⁾
Z< (Polygon), V< / I> / φ		■ ²⁾
Z< (Polygon)	■	■ ²⁾
Z< (Polygon), V< / I> / φ	■	■ ²⁾

Functions 3

Auto-reclosure (ANSI 79)	Synchrocheck (ANSI 25)	Breaker failure protection (ANSI 50BF)	Over-/Undervoltage Over-/Underfrequency Protection (ANSI 27,59)
			■
		■	
		■	■
	■		
	■		■
	■		■
	■	■	■
■			
■			■
■		■	
■		■	■
■	■		
■	■		■
■	■	■	
■	■	■	■

Functions 4

Direction Earth-fault protection Earthed networks (ANSI 50N, 51N, 67N)	Earth-fault detection comp./isolated networks	Measured values, ext. Min. max. mean
		■
	■ ¹⁾	
	■ ¹⁾	■
■		
■		■
■	■ ¹⁾	
■	■ ¹⁾	■

↑ ↑ ↑
0
1
2
3
4
5
6
7

A
B
C
D
F
G
J
K
L
N
P

A
B
C
D
E
F
G
H
J
K
L
M
N
P
Q
R

0
1
2
3
4
5
6
7

Protection
SIPROTEC 4

----- Preferential types with special prices see next page -----

1) Only with Order No. Position 7 = 2 or 6.
2) Only with Order No. Position 7 = 1 or 5.

Distance Protection

SIPROTEC 7SA61, 7SA63, 7SA64

Protection
SIPROTEC 4

Product description

Variants

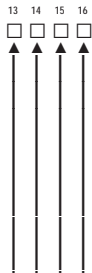
Order No.

Preferential types with special prices

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

Functions 1

trip, 3-pole	trip 1-or 3-pole	pick-up I>	pick-up V< / I>	Z< (quadrilateral) V< / I> > I φ	power swing detection	parallel line compensation	auto-reclosure	synchro-check	breaker failure detection	voltage / frequency protection	directional earth fault protection for earthed	earth fault detection for compensated /	overload protection measured values, extended, min, max, mean					
Basic version														1	A	B	0	3
■		■								■				1	A	B	1	3
Medium voltage, cables														3	B	D	6	4
■		■	■						■	■	■	■ ¹⁾	■	3	B	D	7	4
Medium voltage, cables, with Z<-pickup														3	D	D	6	4
■		■	■	■					■	■	■	■ ¹⁾	■	3	D	D	7	4
Medium voltage, overhead lines														3	B	M	6	4
■		■	■				■		■	■	■	■ ¹⁾	■	3	B	M	7	4
Medium voltage, overhead lines, with Z<-pickup														3	D	M	6	4
■		■	■	■			■		■	■	■	■ ¹⁾	■	3	D	M	7	4
High voltage, cables														3	G	H	4	4
■		■	■	■	■			■	■	■	■		■	3	G	H	5	4
High voltage, overhead lines														7	P	R	4	5
■	■	■	■	■	■	■ ²⁾	■	■	■	■	■		■	7	P	R	5	5
■	■	■	■	■	■	■ ²⁾	■	■	■	■	■		■	7	P	R	5	5



- 1) Only with Order No. position 7 of Order No. = 2 or 6.
- 2) Only with Order No. position 7 of Order No. = 1 or 5.
- 3) Prices are also valid for option 13; position = 0 without BCD-output fault locator.
- 4) Prices are also valid for option 13; position = 2 without BCD-output fault locator.
- 5) Prices are also valid for option 13; position = 6 without BCD-output fault locator.