

Fuse Switch Disconnectors

SENTRON 3NP Fuse Switch Disconnectors up to 630 A

3NP5 for extended technical requirements
General data

More information

Standards		IEC 60947-1, IEC 60947-3, VDE 0660 Part 107			
Type		3NP50	3NP52	3NP53	3NP54
Rated uninterrupted current I_u	A	160	250	400	630
For fuse links acc. to IEC 60269-1	Size	00	1 and 0	2 and 1	3 and 2
Conventional free-air thermal current I_{th}	A	160	250	400	630
Rated operational voltage U_e		440 (3 conducting paths series-connected), 220 (2 conducting paths series-connected and with fuse monitoring through 3RV)			
AC 50 Hz/60 Hz	V				
DC	V				
Rated insulation voltage U_i	V	690 ¹⁾	690 ¹⁾	690 ¹⁾	690 ¹⁾
Rated impulse withstand voltage U_{imp}	kV	6	6	6	6
Rated conditional short-circuit current with fuses (for fast switch-on)					
With fuse links					
Rated current	Size/A	00/160	1/250	2/400	3/630
At 500 V AC (rms value)	kA	50	50	50	50
Permissible let-through current of the fuses (peak value)	kA	15	25	40	50
Short-circuit strength with fuses (with closed switch)					
With fuse links					
Rated current	Size/A	00/160	1/250	2/400	3/630
At 500 V AC (rms value)	kA	100	100	50	50
Maximum permissible let-through I^2t value	kA ² s	223	780	2150	5400
Permissible let-through current of the fuses (peak value)	kA	23	32	40	60
Rated short-circuit making capacity with isolating links²⁾	Size	00	1	2	3
At 500 V AC (peak value)	kA	6	17	17	17
Rated making and breaking capacity²⁾ (infeed from top or bottom) ³⁾					
Size		00	1 0	2 1	3 2
Breaking current I_C (p.f. = 0.35) at 400 V AC, with fuse links, rms value,	A	1600	2500 1600	4000 2500	5040 4000
Rated operational current I_e at AC-21B, AC-22B, AC-23B at 500 V AC, with fuse links	A	160	250 160	400 250	630 400
Breaking current I_C (p.f. = 0.35) (rms value)	A	1300	2500 1600	4000 2500	5040 4000
Rated operational current I_e at AC-21B, AC-22B, AC-23B at 690 V AC, with fuse links	A	160	250 160	400 250	630 400
Breaking current I_C (p.f. = 0.35) (rms value)	A	800	1280 1000	2520 1600	3200 2520
Rated operational current I_e at AC-21B, AC-22B	A	160	250 160	400 250	630 400
Rated operational current I_e at AC-23B	A	100	160 125	315 200	400 315
At 220 (440) V DC, with 2 (3) conducting paths series-connected and fuse links:					
• Breaking current I_C (L/R = 15 ms)	A	640	1000 640	1600 1600	2520 1600
• Rated operational current I_e at DC-23B	A	160	250 160	250 250	630 400
Capacitor switching capacity					
Capacitor rating at 400 V AC	kvar	80	90	150	250
Rated current I_n at 525 V AC	A	116	130	216	361
Capacitor rating	kvar	100	125	200	300
Rated current I_n	A	110	137	220	330
Permissible ambient temperature	°C	-25 ... +55 for operation ⁴⁾ , -50 ... +80 when stored			
Mechanical endurance , operating cycles		1600			
Degree of protection					
Without molded-plastic masking frame		IP00 ⁵⁾			
With molded-plastic masking frame with closed fuse carrier on the operator side		IP30			
With molded-plastic masking frame with open fuse carrier		IP10			
Power loss of the switch at I_{th} (without power loss of fuse links)					
Without busbar adapter	W	7.8 (16.3) ⁶⁾	7.5	15	39
Main conductor connections					
Cable lug, max. conductor cross-section (stranded)	mm ²	2.5 ... 120	6 ... 150	6 ... 240	6 ... 2 × 240
Busbar	mm	16 ... 22	22 ... 30	22 ... 30	22 ... 30
Clamp terminals	mm ²	2.5 ... 50	35 ... 120	--	--
Auxiliary switch 1 NO + 1 NC (accessories)					
(the same voltage potential must be applied to both NO and NC contact)					
At AC 50 Hz/60 Hz to 400 V, rated operational current I_e at AC-12/AC-15 A Flat connector (DIN 46244)	A	16/6 A 6.3 ... 0.8			
Permissible mounting positions		Vertical or horizontal (partially reduced switching capacity with horizontal mounting)			
Signaling contact for solid-state fuse monitoring		2 NO + 1 NC			
Rated operational current I_e					
At 250 V, DC-13	A	0.27			
At 240 V, AC-15	A	1.5			
Thermal free-air rated current I_{th}	A	5			

¹⁾ When observing degree of pollution 2 (instead of 3) operation is also possible up to U_i = 1000 V.

²⁾ Rated making and breaking current according to IEC 60947-3

Rated making current
 $I = 10 \times I_e$ (AC-23); $3 \times I_e$ (AC-22); $1.5 \times I_e$ (AC-21)

Rated breaking current
 $I_e = 8 \times I_e$ (AC-23); $3 \times I_e$ (AC-22); $1.5 \times I_e$ (AC-21).

³⁾ When using electronic fuse monitoring, infeed must be from the top.

⁴⁾ When using isolating links. If using fuse links, please observe specifications of fuse manufacturer.

⁵⁾ For 3NP52 with terminal clamp connection, degree of protection IP10.

⁶⁾ With busbar adapter