

Switch Disconnectors, Main and EMERGENCY-STOP Switches

SENTRON 3KA, 3KE Switch Disconnectors up to 1000 A

General data

More information

Standards		IEC 60947-1, IEC 60947-3, VDE 0660 Part 107						
Type		3KA50	3KA51	3KA52 ¹⁾	3KA53 ¹⁾	3KA55 ¹⁾	3KA57 ¹⁾	3KA58 ¹⁾
Rated uninterrupted current I_u	A	63	80	125	160	250	400	630 ³⁾
Conventional free-air thermal current I_{th}²⁾	A	63	80	125	160	250	400	630 ³⁾
Rated insulation voltage U_i	V	690	690	1000	1000	1000	1000	1000
Rated impulse voltage U_{imp}	kV	6	6	8	8	8	8	8
Rated operational voltage U_e								
AC 50 Hz/60 Hz	V	690						
DC	V	440 (3 conducting paths series-connected)						
	V	220 (2 conducting paths series-connected)						
	V	110 (1 conducting path)						
Rated short-circuit making capacity I_{cm} with upstream fuses⁴⁾	kA	220	220	220	220	176	176	105
At 50 Hz/60 Hz 690 V AC, peak value								
Rated conditional short-circuit current with upstream fuses⁴⁾	kA	100	100	100	100	80	80	50
At 50 Hz/60 Hz 690 V AC, rms value								
Max. rated current I_n of the fuses	A	63	80	160	160	400	400	630
Permissible let-through current of the fuses	kA	8	10	17	17	30 ⁵⁾	30 ⁵⁾	40 ⁵⁾
Maximum permissible let-through I^2t value	kA ² s	55	55	223	223	1000	1000	2600
Permissible let-through current of an upstream circuit breaker	kA	7	8	8	15	25	25	32
At 50 Hz/60 Hz 690 V AC, peak value								
Rated short-circuit making capacity without fuses	kA	7	7	7	9	20	25	35
At 50 Hz/60 Hz 690 V AC, peak value								
Switching capacity (infeed from the top or bottom)								
At 400 V AC								
• Breaking current I_c (at p.f. = 0.35, rms value)	A	500	650	1000	1280	2000	3200	5040
• Rated operational current I_e at								
- AC-21A, AC-22A, AC-23A	A	63	80	125	160	250	400	630 ⁶⁾
• Motor switching capacity AC-23A	kW	30	40	65	80	132	200	350
At 500 V AC								
• Breaking current I_c (at p.f. = 0.35, rms value)	A	500	640	1000	1280	2000	3200	3200
• Rated operational current I_e at								
- AC-21A, AC-22A	A	63	80	125	160	250	400	630
- AC-23A	A	63	80	125	160	250	400	400
• Motor switching capacity AC-23A	kW	40	50	90	110	185	280	280
At 690 V AC								
• Breaking current I_c (at p.f. = 0.35, rms value)	A	500	500	1000	1280	2000	3200	3200
• Rated operational current I_e at								
- AC-21A, AC-22A	A	63	80	125	160	250	400	630
- AC-23A	A	63	63	125	160	250	400	400
• Motor switching capacity AC-23A	kW	50	50	110	150	220	375	375
At 440 V DC (3 conducting paths series-connected) ⁷⁾								
• Breaking current I_c (L/R = 15 ms)	A	250	260	500	640	1000 ⁸⁾	1600	1600
• Rated operational current I_e at DC-23A	A	63	63	125	160	250 ⁹⁾	400	400
Rated short-time current I_{cw}	kA	2.5	2.5	3.2	3.2	8	11	15
(1 s current, rms value)								
Permissible ambient temperature	°C	-25 ... +55 for operation ³⁾						
	°C	-50 ... +80 when stored						
Mechanical endurance , operating cycles		15000	15000	15000	15000	12000	12000	12000
Degree of protection		IP00/IP20 (from the operator side, with busbar and terminal covers)						
Power loss of the switch disconnector at I_{th}	W	7	12	22	22	33	72	170
Main conductor connections								
Busbar systems, max. dimensions (w x t)	mm	25 x 9	25 x 9	45 x 10	45 x 10	40 x 12	40 x 12	40 x 15
Cable lug, max. conductor cross-section (stranded)	mm ²	35	35	70	120	150	2 x 150 or 1 x 240	2 x 240
Tightening torque	Nm	6 ... 7.5	6 ... 7.5	7 ... 10	18 ... 22	35 ... 45	35 ... 45	35 ... 45
Terminal screws	M	M6	M6	M6	M8	M10	M10	M10
Protective conductor connections								
Flat bars	mm	--	--	--	--	20 x 2.5	20 x 2.5	20 x 2.5
Cable lug, max. conductor cross-section (stranded)	mm ²	--	--	--	--	70	120	120

1) Technical specifications for approval on request.

2) Configuring note: Max. permissible operating temperature at connections 100 °C.

3) With 3KA58 for operation -25 °C ... +35 °C, 570 A at 55 °C.

4) Only with 3NA38, 3NA32 or 3ND18, 3ND12 fuses (otherwise only 105 kA/50 kA).

5) 3ND1 switchgear protection fuse.

6) AC-23B

7) 220 V DC (L1 and L3 series-connected) or 110 V DC (one conducting path) at DC-23A.

8) At 440 V L/R = 4 ms, at 220 V L/R = 15 ms.

9) At 440 V DC-22A, at 220 V DC-23A.