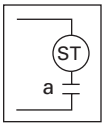
Shunt Trip



The Shunt Trip provides remote controlled tripping of the circuit breaker. The shunt trip consists of an intermittent rated solenoid with a tripping plunger and a cutoff switch assembled to a plug-in module. When required for ground fault protection applications, certain ac rated shunt trips, as noted in the Electrical Rating Table, are suitable for operation at 55 percent of rated voltage.

Select shunt trip catalog number for the voltage within the indicated voltage range. Shunt trip coils are designed to be applied at specific ac or dc voltages within the voltage range shown. Electrical ratings are also shown on applicable circuit breaker accessory nameplates.

Table 12-416. F-Frame Electrical Rating Data ①②③

50/60 Hz			dc		
Supply Voltage	**Minimum Operating Voltage**	**VA**	**Supply Voltage**	**Minimum Operating Voltage**	**VA**
12 24	6.75	75 300	12 24	9	100 400
48 60	36	92 140	48 60	36	100 160
110 120 127 208 220 240	156	480 570 640 180 200 240	110 120 125	77	55 66 71
380 415 440	300	610 130 330	127 220 250	— —	72 110 140
480 525 550 600	300	380 450 530 590	— — — —	— — — —	— — — —

① Average unlatching time: 6 milliseconds.
② Average circuit breaker contact total opening time: 18 milliseconds.
③ Endurance: 6,000 electrical operations plus 4,000 mechanical operations.

Table 12-417. J-Frame Electrical Rating Data ④⑤⑥

50/60 Hz			dc		
Supply Voltage	**Minimum Operating Voltage**	**VA**	**Supply Voltage**	**Minimum Operating Voltage**	**VA**
12 24	9	31 173	12 24	8.4	50 247
48 60	36	686 1014	48 60	33.6	1094 1698
110 ⑦ 120 ⑦ 127 ⑦ 208 ⑦ 220 ⑦ 240 ⑦	60.5	66 84 102 354 396 432	110 120 125 — — —	77 — —	112 138 150 — — —
380 400 415 440	285	180 200 240 610	110 120 125 127	154	40 58 — —
480 525 550 600	360	34 42 50 60	— — — —	— — — —	— — — —

④ Average unlatching time: 6 milliseconds.
⑤ Average circuit breaker contact total opening time: 18 milliseconds.
⑥ Endurance: 6,000 electrical operations plus 2,000 mechanical operations.
⑦ Supply voltages suitable for use with Class 1 GFP devices. Marking label included with accessory kits.

Table 12-418. K-Frame Electrical Rating Data ⑧⑨⑩

50/60 Hz			dc		
Supply Voltage	**Minimum Operating Voltage**	**VA**	**Supply Voltage**	**Minimum Operating Voltage**	**VA**
12 24	9	45 200	12 24	8.4	35 170
48 60		830 1280	48 60		710 1105
110 ⑪ 120 ⑪ 127 ⑪ 208 ⑪ 220 ⑪ 240 ⑪	60	100 120 140 420 470 550	110 120 125 — — —	77 — — —	110 130 140 — — —
380 400 415 440	285	95 108 120 136	220 250 — —	154	41 54 — —
480 525 550 600	360	40 50 50 70	— — — —	— — — —	— — — —

⑧ Approximate unlatching time: 6 milliseconds.
⑨ Approximate total circuit breaker contact opening time: 8 milliseconds.
⑩ Endurance: 5,000 electrical operations plus 1,000 mechanical operations.
⑪ Supply voltages suitable for use with Class 1 GFP devices. Marking label included with accessory kits.

Table 12-419. L- and M-Frame Electrical Rating Data ⑫⑬⑭

50/60 Hz			dc		
Supply Voltage	**Minimum Operating Voltage**	**VA**	**Supply Voltage**	**Minimum Operating Voltage**	**VA**
12 24	9	45 200	12 24	9	35 170
48 60	34	830 1280	48 60	34	710 1105
110 ⑮ 120 ⑮ 127 ⑮ 208 ⑮ 220 ⑮ 240 ⑮	60	100 120 140 420 470 550	110 120 125 — — —	77 — —	110 130 140 — — —
380 400 415 440	266	95 108 120 136	220 250 — —	154 — — —	41 54 — —
480 525 550 600	336	40 50 50 70	— — — —	— — — —	— — — —

⑫ Approximate unlatching time: 6 milliseconds.
⑬ Approximate total circuit breaker contact opening time: 18 milliseconds.
⑭ Endurance: 5,000 electrical operations plus 1,000 mechanical operations.
⑮ Supply voltages suitable for use with Class 1 GFP devices. Marking label included with accessory kits.

Table 12-420. N-Frame Electrical Rating Data ①②③

50/60 Hz			dc		
Supply Voltage	**Minimum Operating Voltage**	**VA**	**Supply Voltage**	**Minimum Operating Voltage**	**VA**
24	16.8	200	24	16.8	170
48 60	33.6	830 1280	48 60	33.6	710 1150
110 ④ 120 ④ 127 ④ 208 ④ 220 ④ 240 ④	60	100 120 140 420 470 550	110 120 125 — — —	77 — — —	110 130 140 — — —
380 400 415 440	266	95 108 120 136	220 250 — —	154 — — —	41 54 — —
480 525 550 600	336	40 50 50 70	— — — —	— — — —	— — — —

① Approximate unlatching time: 6 milliseconds.
② Approximate total circuit breaker contact opening time: 18 milliseconds.
③ Endurance: 3,000 electrical operations plus 1,000 mechanical operations.
④ Supply voltages suitable for use with Class 1 GFP devices. Marking label included with accessory kits.

Table 12-421. R-Frame Electrical Rating Data ⑤⑥⑦⑧⑨⑩

Suffix Number	Application Ratings		Electrical Operating Ratings						
	Voltage (V)	**Frequency (Hz)**	**Supply Voltage (V)**	**Minimum Operating Voltage (V)**	**I_p (A)**	**I_{rms} at 0.250s (A)**	**I_{rms} at 0.033s (A)**	**VA**	**One Minute Dielectric Withstand Voltage (V)**
03/03K	24	50/60	24	16.8	36.1	—	25.5	612	1050
	24	dc	24	16.8	36.1	16.5	—	396	1050
05/05K	48 – 60	50/60	48 60	34.0	13.1 17.2	—	9.2 12.2	450 740	1120
11/11K ⑦	110 – 240	50/60	110 120 127 208 220 240	60.5	4.2 4.5 4.6 7.9 8.5 8.7	—	3.0 3.2 3.3 5.6 6.0 6.1	330 390 430 1170 1370 1470	1480
14/14K	380 – 440	50/60	380 415 440	266.0	4.5 5.0 5.3	—	3.2 3.6 3.7	1220 1500 1640	1880
	220 – 250	dc	220 250	154.0	—	2.4 2.7	—	530 680	1500
18/18K	480 – 600	50/60	480 525 550 600	336.0	0.6 0.7 0.7 0.8	—	0.4 0.5 0.5 0.6	200 270 280 360	2200
23/23K	48 – 60	dc	48 60	34.0	—	9.8 11.6	—	470 700	1120
26/26K	110 – 125	dc	110 120 125	77.0	—	3.3 3.6 3.8	—	370 440 480	1250

⑤ Approximate unlatching time of 6 milliseconds.
⑥ Average circuit breaker contact total opening time approximately 62 milliseconds, at rated voltage.
⑦ Endurance: 500 electrical operations and 2,500 mechanical operations.
⑧ Shunt trip can be operated up to a maximum of six times per minute.
⑨ Maximum operating voltage — 110% of maximum voltage range rating.
⑩ Pigtail wire size: 18 AWG (0.82 mm^2). Leads are yellow and white.

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Table 12-426. L-, HMCP (L) and (M) Frames and Shunt Trip

Voltage Rating (ac Frequency = 50/60 Hz)	Factory Mounted								Field Mounted			
	Connection Type and Location								Field Installation Kits ①			
	18-Inch (457.2 mm) Pigtail Leads						Terminal Block		Pigtail Leads		Terminal Block	
	Same Side		Rear ②		Opposite Side		Same Side					
	Suffix Number	Adder U.S. $	Suffix Number	Adder U.S. $	Suffix Number	Adder U.S. $	Suffix Number	Adder U.S. $	Catalog Number	Price U.S. $	Catalog Number	Price U.S. $
Left-Pole Mounting ac/dc Ratings ②												
12 – 24 Vac or dc	S01		S02		S03		S04		SNT4LP03K		SNT4LT03K	
48 – 60 Vdc	S05		S06		S07		S08		SNT4LP05K		SNT4LT05K	
48 – 60 Vac	S85		S86		S87		—		SNT4LP23K		SNT4LT23K	
110 – 240 Vac	S09		S10		S11		S12		SNT4LP11K		SNT4LT11K	
110 – 125 Vdc	S41		S42		S43		S44		SNT4LP26K		SNT4LT26K	
380 – 440 Vac or 220 – 250 Vdc	S13		S14		S15		S16		SNT4LP14K		SNT4LT14K	
480 – 600 Vac	S17		S18		S19		S20		SNT4LP18K		SNT4LT18K	
Right-Pole Mounting ac/dc Ratings ③												
12 – 24 Vac or dc	S21		S22		S23		S24		SNT4RP03K		SNT4RT03K	
48 – 60 Vdc	S25		S26		S27		S28		SNT4RP05K		SNT4RT05K	
48 – 60 Vac	S88		S89		S90		—		SNT4RP23K		SNT4RT23K	
110 – 240 Vac	S29		S30		S31		S32		SNT4RP11K		SNT4RT11K	
110 – 125 Vdc	S45		S46		S47		S48		SNT4RP26K		SNT4RT26K	
380 – 440 Vac or 220 – 250 Vdc	S33		S34		S35		S36		SNT4RP14K		SNT4RT14K	
480 – 600 Vac	S37		S38		S39		S40		SNT4RP18K		SNT4RT18K	

① Listed with Underwriters Laboratories, for field installation under E64983.
② Standard mounting location — leads exit rear of breaker.
③ For use with LT (thermal-magnetic) 3-pole trip units only.

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Table 12-427. N-Frame and HMCP (N) Shunt Trip

Voltage Rating (ac Frequency = 50/60 Hz)	Factory Mounted								Field Mounted			
	Connection Type and Location								Field Installation Kits ④			
	18-Inch (457.2 mm) Pigtail Leads						Terminal Block		Pigtail Leads		Terminal Block	
	Same Side		Rear ⑤		Opposite Side		Same Side					
	Suffix Number	Adder U.S. $	Suffix Number	Adder U.S. $	Suffix Number	Adder U.S. $	Suffix Number	Adder U.S. $	Catalog Number	Price U.S. $	Catalog Number	Price U.S. $
Left-Pole Mounting ac/dc Ratings ⑤												
9 – 24 Vac or dc	S01		S02		S03		S04		SNT5LP03K		SNT5LT03K	
48 – 60 Vac	S05		S06		S07		S08		SNT5LP05K		SNT5LT05K	
110 – 240 Vac ⑥	S09		S10		S11		S12		SNT5LP11K		SNT5LT11K	
110 – 125 Vdc	S41		S42		S43		S44		SNT5LP26K		SNT5LT26K	
380 – 440 Vac or 220 – 250 Vdc	S13		S14		S15		S16		SNT5LP14K		SNT5LT14K	
480 – 600 Vac	S17		S18		S19		S20		SNT5LP18K		SNT5LT18K	
48 – 60 Vdc	S21		S22		S23		S24		SNT5LP23K		SNT5LT23K	

④ Listed with Underwriters Laboratories for field installation under E64983.
⑤ Standard mounting location — leads exit rear of breaker.
⑥ Supply voltages suitable for use with Class 1 GFP devices. Marking label included with accessory kits.

Table 12-428. R-Frame Shunt Trip (RH Only)

Voltage Rating (ac Frequency = 50/60 Hz)	Factory Mounted		Field Mounted	
	Connection Type and Location		Field Installation Kits ⑦	
	18-Inch (457.2 mm) Pigtail Leads		Pigtail Leads	
	Suffix Number ⑧	Adder U.S. $	Catalog Number ⑧	Price U.S. $
24 Vac or dc	S21		SNT6P03K	
48 – 60 Vac	S25		SNT6P05K	
110 – 240 Vac	S29		SNT6P11K	
380 – 440 Vac or 220 – 250 Vdc	S33		SNT6P14K	
480 – 600 Vac	S37		SNT6P18K	
48 – 60 Vdc	S88		SNT6P23K	
110 – 125 Vdc	S45		SNT6P26K	

⑦ Listed with Underwriters Laboratories for field installation under E64983.
⑧ A maximum of two shunt trip plug-in modules may be installed in a circuit breaker.