Circuit Protection

Series L8 Supplementary Protectors

Supplemental short circuit protection for a variety of applications

Sprecher+Schuh Series L8 Supplementary Protectors provide supplemental overcurrent protection for control circuits, solenoids, actuators, appliances, business equipment and a range of other applications where a high performance current limiting device is required. Advanced features and global approvals make them ideal for use in equipment installed throughout the world.

Broad product range

Series L8 Supplementary Protectors are available in up to 20 different current ratings from 0.5A to 63A, in one, two and three pole configurations. Over 180 base models are available with a full compliment of accessories.

Devices can be used in applications up to 480V AC and 48V DC with interrupting capacities up to 10kA.

Safety features provide enhanced protection

The terminals of Series L8 Supplementary Protectors provide IP20 protection to guard against accidental contact with live parts.

To aid troubleshooting, a color-coded indicator provides positive visual indication of the device status (green for OFF, red for ON) and isolation function.

Sprecher+Schuh Supplementary Protectors also incorporate a trip-free mechanism - ensuring that the device operation cannot be defeated by holding the operator in the ON position.

Easy installation

Sprecher+Schuh Supplementary Protectors mount on a standard 35mm DIN-rail. Wire terminals accept multiple conductors, and bus bars can be used to quickly distribute power to many Supplementary Protectors simultaneously. In addition, power to the circuit breakers can be fed from the line or load side.

Global approvals for worldwide acceptance

Series L8 Supplementary Protectors are UL Recognized for use in the United States in accordance with NFPA 79 (NEC, National Electrical Code). The devices comply with UL 1077 and CSA 22.2 No.235, meeting the requirements for supplementary protectors intended for use as overcurrent protection where branch circuit protection is not required, or is provided by another device such as a fuse or molded case circuit breaker. These Supplementary Protectors also comply with IEC 60898 for use in commercial and residential applications and are CE marked.

17.5mm (≈11/16") One Pole

35mm (≈1-3/8") Two Pole

52.5mm (≈2-1/8") Three Pole

SSNA9000

Three trip characteristics

All Sprecher+Schuh L8 Supplementary Protectors are available with three different tripping characteristics, Type "B", "C", and "D". The tripping characteristic defines the device's speed of response (trip-time) to various levels of overcurrent. Figure 1 shows trip-time versus overcurrent for Type B, C, and D devices. The time-current characteristics enable the device to be optimally matched to the application. For example, PLC outputs that can only tolerate minimal overcurrents are best protected by Supplementary Protectors with Type B trip characteristics.

Sprecher+Schuh L8 Supplementary Protectors are also current limiting - interrupting fault currents within one half cycle. Current limiting devices protect circuit components from damage by reducing the peak let-through current which causes damaging magnetic forces and let-through energy which generates heat.

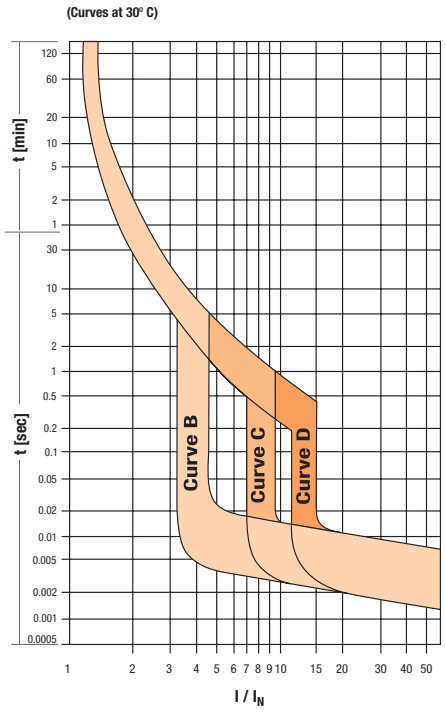


Figure 1
Sprecher+Schuh Series L8
Supplementary Protector
Trip Characteristics

Type "B" Characteristic

Developed primarily to protect conductors and low level signal devices such as PLCs. Instantaneous trip is three to five times the rated current of the Supplementary Protector (3~5 x I_n). The fast trip time of these devices minimizes damage to control circuit conductors from low-level faults.

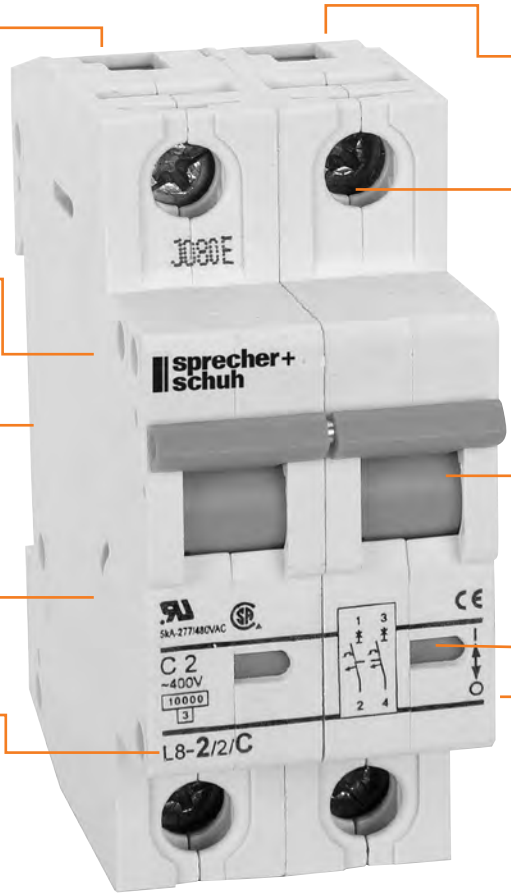
Type "C" Characteristic

Developed primarily for applications with moderate inrush currents such as lighting, control circuits and coils, computers and appliances. Instantaneous trip is five to ten times the rated current of the Supplementary Protector (5~10 x I_n). The higher instantaneous trip level prevents nuisance tripping, and components being protected can typically withstand higher fault currents without being damaged.

Type "D" Characteristic

Developed primarily for applications with high inrush currents, i.e., transformers, power supplies and heaters. Instantaneous trip is ten to twenty times the rated current of the Supplementary Protector (10~20 x I_n). The high instantaneous trip level prevents nuisance tripping, and components being protected can typically withstand higher fault currents without being damaged.

Compare these advanced features



Box lug terminals accept #18…#4 (1.0…25mm²) wire as standard

Ratings to 480Y/277V AC @ 240/415V AC - 10kA Interrupt Rating

Devices install on standard 35mm DIN-rail (EN 50022)

Magnetic trip elements provide Type B, C and D trip characteristics (IEC and EN 60898), while bimetallic elements protect against slight overloads.

Amp rating and trip curve characteristic clearly marked on the device for easy identification

Line and load side terminals accept bus bar connections for reduced costs and more efficient installation of multiple devices.

Guarded pozidrive terminal screws with finger-safe protection to IEC 947-1

Trip-free mechanism; device operation cannot be defeated by holding the operator in the ON position

Color coded indicator provides visual indication of the device status and isolation function

Available in one, two and three pole; one pole + neutral and three pole + neutral

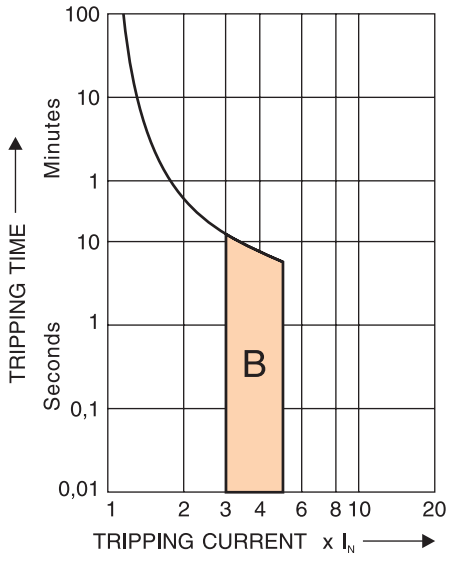
SSNA9000

Trip Characteristic B (3~5 x I_N) – *Resistive or slightly inductive loads* ❸

Rated Current (A)	1 Pole ❶			2 Pole ❷			3 Pole ❷		
									
	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.
1	L8-1/1/B	38	12	L8-1/2/B	82	6	L8-1/3/B	124	4
2	L8-2/1/B	38	12	L8-2/2/B	82	6	L8-2/3/B	124	4
3	L8-3/1/B	38	12	L8-3/2/B	82	6	L8-3/3/B	124	4
4	L8-4/1/B	38	12	L8-4/2/B	82	6	L8-4/3/B	124	4
5	L8-5/1/B	38	12	L8-5/2/B	82	6	L8-5/3/B	124	4
6	L8-6/1/B	38	12	L8-6/2/B	82	6	L8-6/3/B	124	4
7	L8-7/1/B	38	12	L8-7/2/B	82	6	L8-7/3/B	124	4
8	L8-8/1/B	38	12	L8-8/2/B	82	6	L8-8/3/B	124	4
10	L8-10/1/B	38	12	L8-10/2/B	82	6	L8-10/3/B	124	4
13	L8-13/1/B	38	12	L8-13/2/B	82	6	L8-13/3/B	124	4
15	L8-15/1/B	38	12	L8-15/2/B	82	6	L8-15/3/B	124	4
16	L8-16/1/B	38	12	L8-16/2/B	82	6	L8-16/3/B	124	4
20	L8-20/1/B	40	12	L8-20/2/B	90	6	L8-20/3/B	137	4
25	L8-25/1/B	40	12	L8-25/2/B	90	6	L8-25/3/B	137	4
30	L8-30/1/B	40	12	L8-30/2/B	90	6	L8-30/3/B	137	4
32	L8-32/1/B	42	12	L8-32/2/B	99	6	L8-32/3/B	149	4
40	L8-40/1/B	44	12	L8-40/2/B	103	6	L8-40/3/B	155	4
50	L8-50/1/B	50	12	L8-50/2/B	118	6	L8-50/3/B	179	4
63	L8-63/1/B	59	12	L8-63/2/B	134	6	L8-63/3/B	204	4

L8 Supplementary Protector Features:

- UL-1077 Approved, CSA 22.2 No. 235 and IEC/EN 60898
- Thermal Magnetic Overcurrent Protection
- Trip characteristics based on 40ºC ambient for UL/CSA
- Up to 10kA interruption ratings
- Finger safe design
- DIN-rail mounting



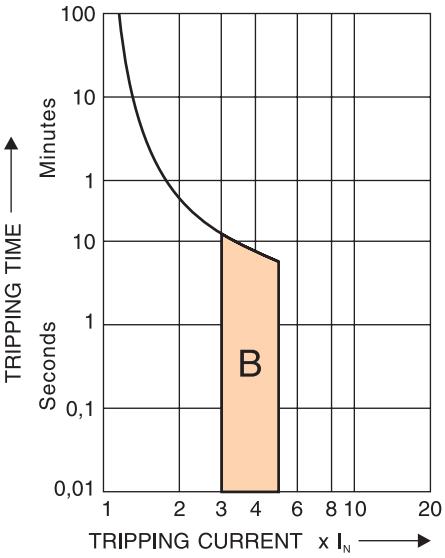
❶ 1-Pole ratings: UL/CSA 277VAC 48VDC, IEC 240/415VAC
❷ Multi-pole ratings: UL/CSA 480Y/277VAC 125VDC, IEC 415VAC
❸ See UL Short Circuit ratings U1/U2 in the technical data sections.

SSNA9000

Trip Characteristic B (3~5 x I_N) – *Resistive or slightly inductive loads*

Rated Current (A)	1 Pole + Neutral			3 Pole + Neutral		
						
	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.
1	L8-1/1N-2/B	65	6	L8-1/3N/B	149	3
2	L8-2/1N-2/B	65	6	L8-2/3N/B	149	3
4	L8-4/1N-2/B	65	6	L8-4/3N/B	149	3
6	L8-6/1N-2/B	65	6	L8-6/3N/B	149	3
8	L8-8/1N-2/B	65	6	L8-8/3N/B	149	3
10	L8-10/1N-2/B	65	6	L8-10/3N/B	149	3
13	L8-13/1N-2/B	65	6	L8-13/3N/B	149	3
16	L8-16/1N-2/B	65	6	L8-16/3N/B	149	3
20	L8-20/1N-2/B	78	6	L8-20/3N/B	174	3
25	L8-25/1N-2/B	78	6	L8-25/3N/B	174	3
32	L8-32/1N-2/B	78	6	L8-32/3N/B	174	3
40	L8-40/1N-2/B	78	6	L8-40/3N/B	174	3
50	L8-50/1N-2/B	99	8	L8-50/3N/B	227	3
63	L8-63/1N-2/B	107	8	L8-63/3N/B	252	3

All Supplementary Protectors + neutral are special order.



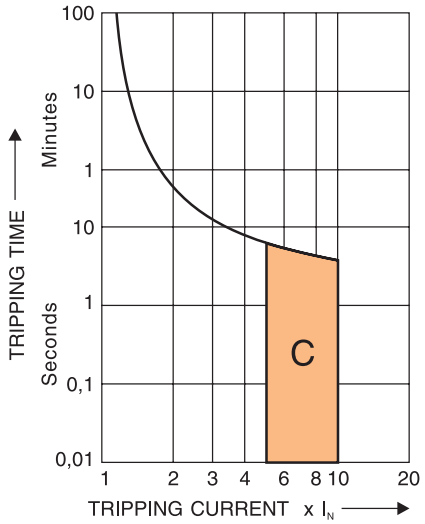
SSNA9000

Trip Characteristic C (5~10 x I_N) – *Inductive loads* ❸

Rated Current (A)	1 Pole ❶			2 Pole ❷			3 Pole ❷		
									
	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.
0.5	L8-.5/1/C	44	12	L8-.5/2/C	101	6	L8-.5/3/C	145	4
1	L8-1/1/C	44	12	L8-1/2/C	101	6	L8-1/3/C	145	4
2	L8-2/1/C	44	12	L8-2/2/C	101	6	L8-2/3/C	145	4
3	L8-3/1/C	44	12	L8-3/2/C	101	6	L8-3/3/C	145	4
4	L8-4/1/C	44	12	L8-4/2/C	101	6	L8-4/3/C	145	4
5	L8-5/1/C	44	12	L8-5/2/C	101	6	L8-5/3/C	145	4
6	L8-6/1/C	44	12	L8-6/2/C	101	6	L8-6/3/C	145	4
7	L8-7/1/C	44	12	L8-7/2/C	101	6	L8-7/3/C	145	4
8	L8-8/1/C	44	12	L8-8/2/C	101	6	L8-8/3/C	145	4
10	L8-10/1/C	44	12	L8-10/2/C	101	6	L8-10/3/C	145	4
13	L8-13/1/C	44	12	L8-13/2/C	101	6	L8-13/3/C	145	4
15	L8-15/1/C	44	12	L8-15/2/C	101	6	L8-15/3/C	145	4
16	L8-16/1/C	44	12	L8-16/2/C	101	6	L8-16/3/C	145	4
20	L8-20/1/C	44	12	L8-20/2/C	101	6	L8-20/3/C	145	4
25	L8-25/1/C	48	12	L8-25/2/C	111	6	L8-25/3/C	164	4
30	L8-30/1/C	48	12	L8-30/2/C	111	6	L8-30/3/C	164	4
32	L8-32/1/C	50	12	L8-32/2/C	111	6	L8-32/3/C	166	4
40	L8-40/1/C	55	12	L8-40/2/C	122	6	L8-40/3/C	183	4
50	L8-50/1/C	63	12	L8-50/2/C	143	6	L8-50/3/C	210	4
63	L8-63/1/C	71	12	L8-63/2/C	160	6	L8-63/3/C	239	4

L8 Supplementary Protector Features:

- UL-1077 Approved, CSA 22.2 No. 235 and IEC/EN 60898
- Thermal Magnetic Overcurrent Protection
- Trip characteristics based on 40ºC ambient for UL/CSA
- Up to 10kA interruption ratings
- Finger safe design
- DIN-rail mounting



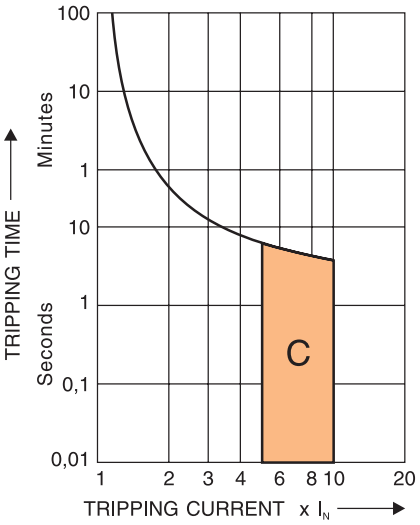
❶ 1-Pole ratings: UL/CSA 277VAC 48VDC, IEC 240/415VAC
❷ Multi-pole ratings: UL/CSA 480Y/277VAC 125VDC, IEC 415VAC
❸ See UL Short Circuit ratings U1/U2 in the technical data sections.

SSNA9000

Trip Characteristic C (5~10 x I_N) – *Inductive loads*

Rated Current (A)	1 Pole + Neutral			3 Pole + Neutral		
						
	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.
1	L8-1/1N-2/C	88	6	L8-1/3N/C	210	3
2	L8-2/1N-2/C	88	6	L8-2/3N/C	210	3
4	L8-4/1N-2/C	88	6	L8-4/3N/C	210	3
5	L8-5/1N-2/C	88	6	Not Available	~	~
6	L8-6/1N-2/C	88	6	L8-6/3N/C	210	3
8	L8-8/1N-2/C	88	6	L8-8/3N/C	210	3
10	L8-10/1N-2/C	88	6	L8-10/3N/C	210	3
13	L8-13/1N-2/C	88	6	L8-13/3N/C	210	3
16	L8-16/1N-2/C	88	6	L8-16/3N/C	210	3
20	L8-20/1N-2/C	88	6	L8-20/3N/C	210	3
25	L8-25/1N-2/C	95	6	L8-25/3N/C	221	3
32	L8-32/1N-2/C	97	6	L8-32/3N/C	223	3
40	L8-40/1N-2/C	101	6	L8-40/3N/C	239	3
50	L8-50/1N-2/C	128	8	L8-50/3N/C	290	3
63	L8-63/1N-2/C	137	8	L8-63/3N/C	319	3

All Supplementary Protectors + neutral are special order.



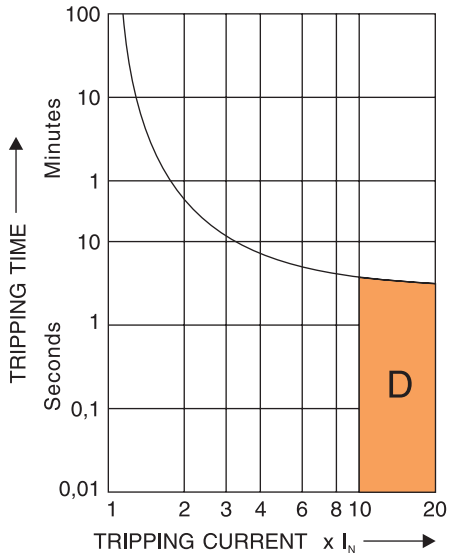
SSNA9000

Trip Characteristic D (10~20 x I_N) – *Highly inductive loads* ❸

Rated Current (A)	1 Pole ❶			2 Pole ❷			3 Pole ❷		
									
	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.
0.5	L8-.5/1/D	44	12	L8-.5/2/D	101	6	Not Available	~	~
1	L8-1/1/D	44	12	L8-1/2/D	101	6	L8-1/3/D	145	4
2	L8-2/1/D	44	12	L8-2/2/D	101	6	L8-2/3/D	145	4
3	L8-3/1/D	44	12	L8-3/2/D	101	6	L8-3/3/D	145	4
4	L8-4/1/D	44	12	L8-4/2/D	101	6	L8-4/3/D	145	4
5	L8-5/1/D	44	12	L8-5/2/D	101	6	L8-5/3/D	145	4
6	L8-6/1/D	44	12	L8-6/2/D	101	6	L8-6/3/D	145	4
7	L8-7/1/D	44	12	L8-7/2/D	101	6	L8-7/3/D	145	4
8	L8-8/1/D	44	12	L8-8/2/D	101	6	L8-8/3/D	145	4
10	L8-10/1/D	44	12	L8-10/2/D	101	6	L8-10/3/D	145	4
13	L8-13/1/D	44	12	L8-13/2/D	101	6	L8-13/3/D	145	4
15	L8-15/1/D	44	12	L8-15/2/D	101	6	L8-15/3/D	145	4
16	L8-16/1/D	44	12	L8-16/2/D	101	6	L8-16/3/D	145	4
20	L8-20/1/D	44	12	L8-20/2/D	101	6	L8-20/3/D	145	4
25	L8-25/1/D	48	12	L8-25/2/D	111	6	L8-25/3/D	164	4
30	L8-30/1/D	48	12	L8-30/2/D	111	6	L8-30/3/D	164	4
32	L8-32/1/D	50	12	L8-32/2/D	111	6	L8-32/3/D	166	4
40	L8-40/1/D	55	12	L8-40/2/D	122	6	L8-40/3/D	183	4

L8 Supplementary Protector Features:

- UL-1077 Approved, CSA 22.2 No. 235 and IEC/EN 60898
- Thermal Magnetic Overcurrent Protection
- Trip characteristics based on 40ºC ambient for UL/CSA
- Up to 10kA interruption ratings
- Finger safe design
- DIN-rail mounting



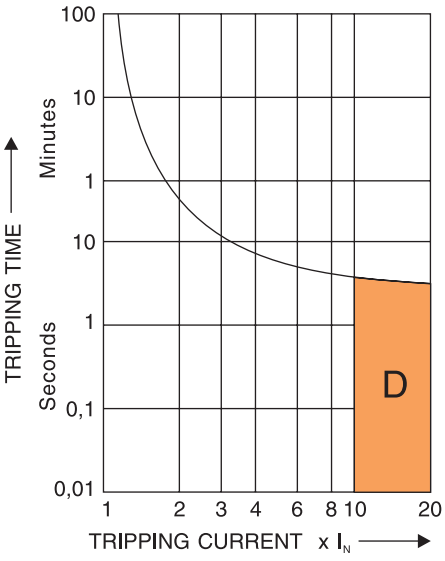
❶ 1-Pole ratings: UL/CSA 277VAC 48VDC, IEC 240/415VAC
❷ Multi-pole ratings: UL/CSA 480Y/277VAC 125VDC, IEC 415VAC
❸ See UL Short Circuit ratings U1/U2 in the technical data sections.

SSNA9000

Trip Characteristic D (10~20 x I_N) – *Highly inductive loads*

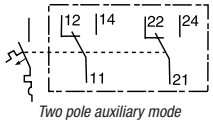
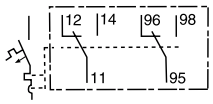
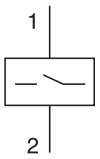
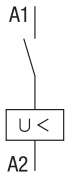
Rated Current (A)	1 Pole + Neutral			3 Pole + Neutral		
						
	Catalog Number	Price	Std. Pkg.	Catalog Number	Price	Std. Pkg.
1	L8-1/1N-2/D	88	6	L8-1/3N/D	210	3
2	L8-2/1N-2/D	88	6	L8-2/3N/D	210	3
4	L8-4/1N-2/D	88	6	L8-4/3N/D	210	3
6	L8-6/1N-2/D	88	6	L8-6/3N/D	210	3
8	L8-8/1N-2/D	88	6	L8-8/3N/D	210	3
10	L8-10/1N-2/D	88	6	L8-10/3N/D	210	3
13	L8-13/1N-2/D	88	6	L8-13/3N/D	210	3
16	L8-16/1N-2/D	88	6	L8-16/3N/D	210	3
20	L8-20/1N-2/D	88	6	L8-20/3N/D	210	3
25	L8-25/1N-2/D	95	6	L8-25/3N/D	221	3
32	L8-32/1N-2/D	97	6	L8-32/3N/D	223	3
40	L8-40/1N-2/D	101	6	L8-40/3N/D	239	3

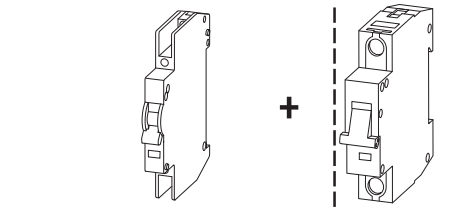
All Supplementary Protectors + neutral are special order.



SSNA9000

Accessories

Module	Description	For use with…	Connection Diagrams	Catalog Number	Price
	**Selectable Two Pole Auxiliary Contact or Auxiliary / Signal Alarm Module –** • Small set-screw alternates between operational modes • Two Form C (two changeover contacts) • Installs on left side of L8 • Auxiliary contact switches when L8 is operated manually or tripped electrically • Signal Alarm contact switches only when L8 is tripped electrically	All L8s & Shunt Trip	 *Two pole auxiliary mode*  *Auxiliary / Signal alarm mode*	**LX-AHS3**	**71**
	**Shunt Trip –** • Remotely trips the device • Installs on left side of L8	All L8s 12…110VAC (12…60VDC) 110…415VAC (110…230VDC)		**Z8-ASA24** **Z8-ASA230**	**145** **145**
	**Undervoltage Release –** • Prevents device from operating unless voltage is present • Installs on left side of L8 • Test button	All L8s 50…115 VAC 110…230 VAC		**Z8-USA115** **Z8-USA230**	**307**



Selectable Aux. / Signal LX-AHS3	Shunt Z8-ASA...	Undervol. Z8-USA...	L8…B,C,D
X			X
	X		X
		X	X
X	X		X

Allowable Combinations of Accessories per MCB →
(read left to right)

Allowable Combinations of Field Installed Modules

(1) Auxiliary Contact Module

(1) Selectable Two Pole Auxiliary Contact Module / Auxiliary & Signal Alarm Contact Module

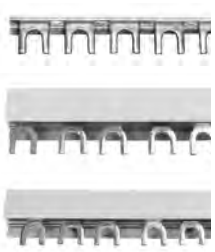
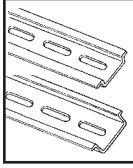
(1) Shunt Trip Module

(1) Undervoltage Release Module

(1) Auxiliary Contact Module + (1) Shunt Trip Module

All modules install on the left side of the L8.

Accessories

Accessory	Description	For use with…	Catalog Number	Price
	**Bus Bar – ❶** • Connects one, two and three pole L8s • Connects one pole + neutral and three pole + neutral MCBs • Rated to 80A • Available in 1 meter lengths • IEC rated only	All L8 one pole devices All L8 two pole devices & one pole + neutral All L8 three pole devices All L8 three pole + neutral devices	**ZV7-16-1P-1TE** **ZV7-16-1P+N-2TE** **ZV7-16-3P-3TE** **ZV7-16-3P+N-4TE**	**54** **147** **185** **250**
	**End Caps – ❷** • Covers end of Bus Bar to provide touch safe protection (minimum order quantity 10)	Fits ZV7-16-1P+N-2TE & ZV7-16-3P-3TE Fits ZV7-16-3P+N-4TE	**ZV7-16-AK/2+3P** **ZV7-16-AK/4P**	**3** **3**
	**Padlock Hasp –** • Fits securely over switch handle. Prevents unauthorized activation of L8 during maintenance • Provision for one padlock	All L8 MCBs	**L8-ASPLOA**	**12**
	**DIN-rail -** 2 meter lengths (6' 6") Top Hat, low profile (price per rail) Top Hat, high profile (price per rail)		**3F** **3AF**	**See page A58**

❶ Each bus bar accommodates:
1 pole bus connects 57 devices
2 pole bus connects 28 devices
3 pole bus connects 19 devices
Total current must not exceed 80A per bus.

❷ Sold in packages of 10. Price indicated is price per piece.
Minimum order quantity 10.

SSNA9000

Technical Information

General Data		B Curve	C Curve	D Curve
		Resistive or slightly resistive	Inductive Loads	Highly Inductive Loads
Tripping Characteristic I_n		3…5 x I_n	5…10 x I_n	10…20 x I_n
Approvals		UR, CSA, CE	UR, CSA, CE	UR, CSA, CE
			(All models) IEC-EN 60 898 / DIN 43 880	

Supplementary Protector			
Approvals		UL 1077 - Recognized Component QVNU2 - E304759 CSA 22.2 No. 235 Certified Component	
Use Group (UG)		UG A - General Industrial	
Terminals (FW)		FW 3 Line and Load evaluated for field wiring	
Overload Rating (OL)		OL 0 (general use)	
1-Pole, 1-Pole + N			
Maximum Volts		277V AC	48V DC
Tripping Current (TC)		TC 1, 40 °C	TC 1, 40 °C
Short-Circuit Current Rating (SC)		SC U2	SC U1
	< 35 A	10 kA @ 277V AC; B and C Curve 5 kA @ 277V AC; D Curve	10 kA @ 48V DC; B, C, and D Curve
	40, 50, 63 A	5 kA @ 277V AC; B, C, and D Curve	10 kA @ 48V DC; B, C, and D Curve
2-Pole, 3-Pole, 3-Pole + N			
Maximum Volts		480Y/277V AC	125V DC (2-pole - series)
Tripping Current		TC 2, 40 °C	TC 2, 40 °C
Short-Circuit Current Rating (SC)		SC U2	SC U1
	< 35 A	10 kA @ 480Y/277V AC; B and C Curve 5 kA @ 480Y/277V AC; D Curve	10 kA @ 125V DC; B, C, and D Curve
	40, 50, 63 A	5 kA @ 480Y/277V AC; B, C, and D Curve	10 kA @ 125V DC; B, C, and D Curve

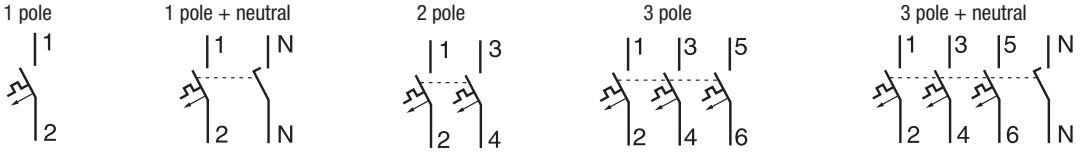
Miniature Circuit Breaker				
Approvals		IEC / EN 60 898 IEC / EN 60 947-2		
Current Range	[A]	1…63	0.5…63	0.5…40
Thermal Tripping Characteristic			>1 hr. at 1.13 x I_n	
			<1 hr. at 1.45 x I_n	
Interrupt Rating; 1 pole	[kA]		10 @ 240VAC	
Interrupt Rating; multi-pole	[kA]		10 @ 415VAC	
Rated Impulse Withstand Voltage U	[V]		4000V	
Rated Insulation Voltage U	[VAC]		440VAC	
Overload Category / Pollution Degree			III / 2	
Rated Operation Voltage U	[VAC]		240 / 415	
Approval			IEC / EN 60 947-2	
Rated Ultimate Short Circuit Breaking Capacity			15 – 0.5 cos @240 / 415VAC	

Technical Information *(continued)*

Environmental and General Specifications

Dielectric Strength	[VAC]	1960
Shock	[G]	25 (half sine wave for 11ms - 3 axis)
Vibration		Frequency range: 10…2000Hz Maximum amplitude (p - p) = 0.030 in. Maximum acceleration = 5G 2 hours each of 3 axis
Operating Temperature Range	[°F]	23…+104 (–5…+40°C)
Shipment and Short Term Temperature Limits	[°F]	–40…+185 (–40…+85°C)
Housing Material		Nylon
Switched Neutral Rating	[VAC]	277
Electromechanical Life		6000 operations (1 operation = 2 switching events) ON/OFF

Circuit Diagrams



Back up Protection

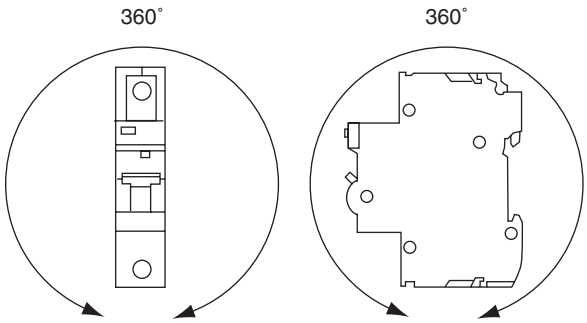
Supplementary Protectors / Fuses: The following table shows the maximum short circuit current when fuses meeting the requirements of IEC 60269-1 are used as backup protection to MCBs.

Miniature Circuit Breaker	Rated Current (I_n)	Upstream Fuse		
		100A	160A	200A
Characteristic B Characteristic C	1…10A	40kA	25kA	25kA
	10…50A	50kA	40kA	25kA
	63A	50kA	40kA	10kA

Mechanical Data

Degree of Protection		IP20
Mechanical endurance	[ops.]	6,000 (1 operation = 2 switching movements – ON/OFF
Method of mounting		35mm mounting rail (EN50022)
Supply connection		Line or load side
Terminations		
Wire size		#18…4 AWG (1.0…10 mm2) Tightening Torque — 2.4 N•m (21 lb-in.)
solid / stranded		#6…4 AWG (1.6…25 mm2) Tightening Torque — 3.1 N•m (27 lb-in.)
Recommended Wire Strip Length	in (mm)	0.51 (13)
Weight / pole	[g] / [lb]	120 / 0.32

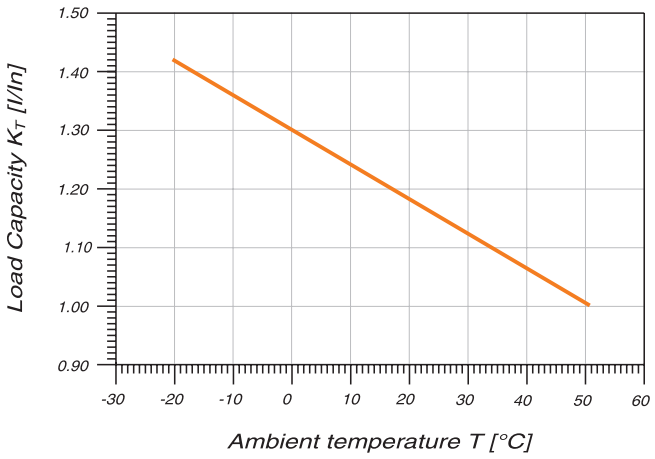
Mounting Position



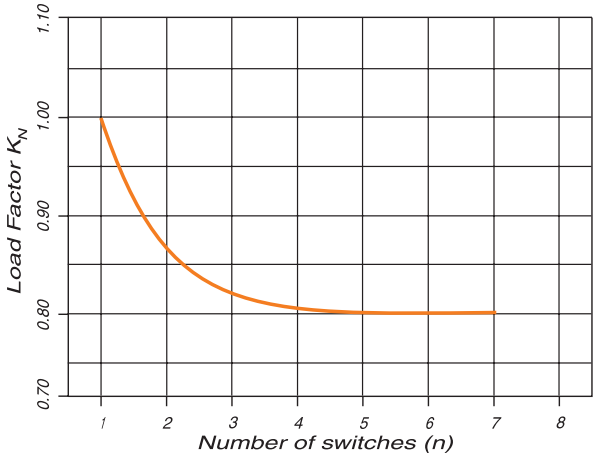
SSNA9000

Technical Information *(continued)*

Continuous Current Rating Factor



Rated Diversity Factor



When multiple supplementary protectors are mounted side by side, they must be derated to determine the load carrying capacity.

Accessories

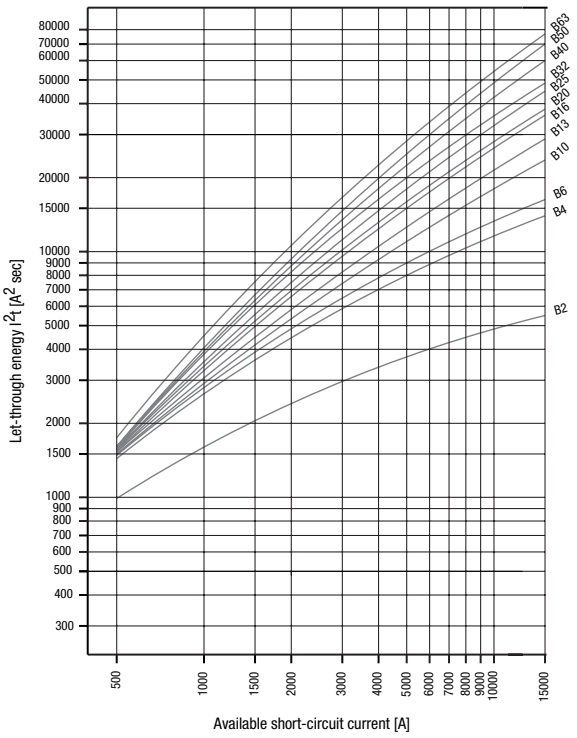
			Auxiliaries Z8-AHK, NHK	Undervoltage Release Z8-USA…	Shunt Trip Z8-ASA…
Degree of protection (Field Wiring Terminals)			IP20 (IP 00)	IP20 (IP 00)	IP20 (IP 00)
Minimum Impulse Duration		[ms]	~	~	>15
Minimum Command Time		[ms]	~	~	≤200
Operating Voltage		[V]	~	U_n - 115V (Z7-USA115) U_{min} - 50V	12…110VAC (Z7-ASA24) 12…60VDC
			~	U_n - 230/240 (Z7-USA230) U_{min} - 110V	110…415VAC (Z7-ASA230) 110…230VDC
Inrush Current		[mA]	~	3.6 / 44 (AC/DC)	25 / 12 (AC 15 / 2 (DC)
Dropout			~	0.7…0.35 x U_s	~
Voltage Range		[V]	~	~	0.7…1.1 x U_s
Max. operational current I_e				~	~
	AC13	250V [A]	3	~	~
IEC	AC15	250V [A]	0.5	~	~
	DC12	110V [A]	0.5 U_{min} - 5V CDC	~	~
UL1077 /	AC	230V [A]	2	~	~
CSA22.2	DC	110V [A]	0.5 U_{min} - 5V CDC	~	~

			Auxiliaries Z8-AHK, NHK	Undervoltage Release Z8-USA…	Shunt Trip Z8-ASA…
Mechanical Life-span		[ops]	6000	10000	4000
Terminations ❶					
Terminal type					
Wire size					
	solid / stranded	1 conductor	0.5…2.5 (18…14)	0.5…4 (18…14)	1.0…25 (18…8)
		2 conductors	0.5…2.5 (18…14)	0.5…2.5 (18…14)	1.0…4 (18…12)
Tightening torque		[Nm] / [lb-in]	0.8 / 7	1.1 / 10	2.4 / 21
Weight		[g] / [lbs]	45 / 0.1	155 / 0.4	155 / 0.4

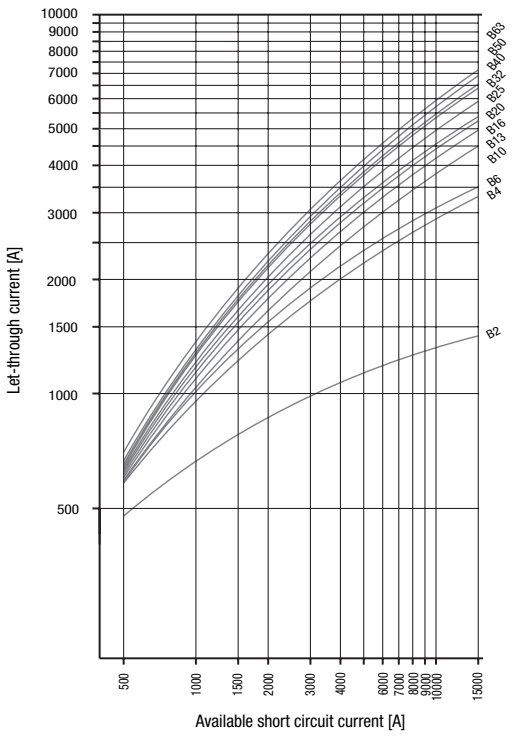
❶ When using two wires, use same cross section.

Technical Information *(continued)*

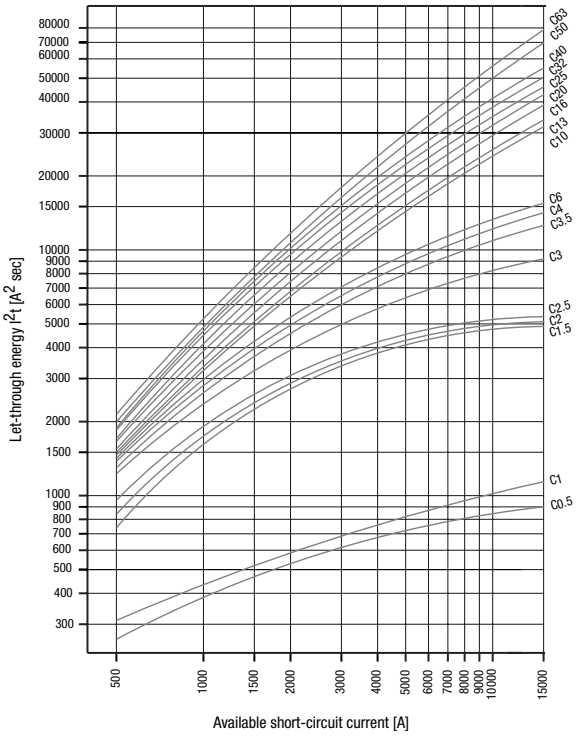
Maximum let-through energy L8
Type B



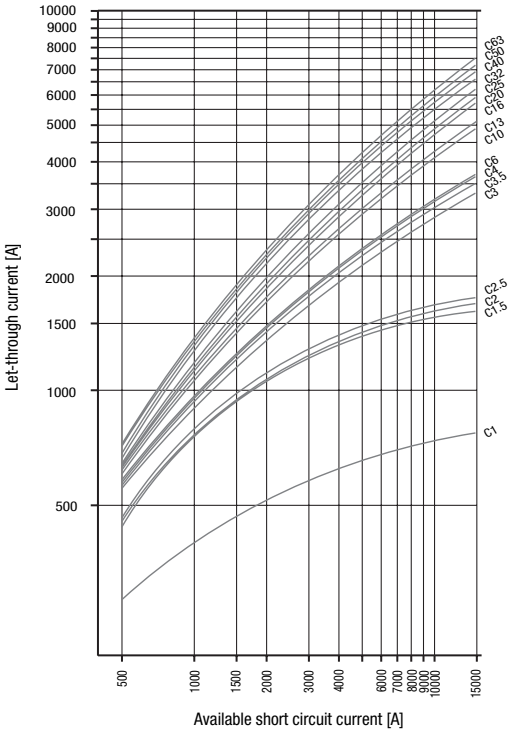
Maximum let-through current L8
Type B



Maximum let-through energy L8
Type C



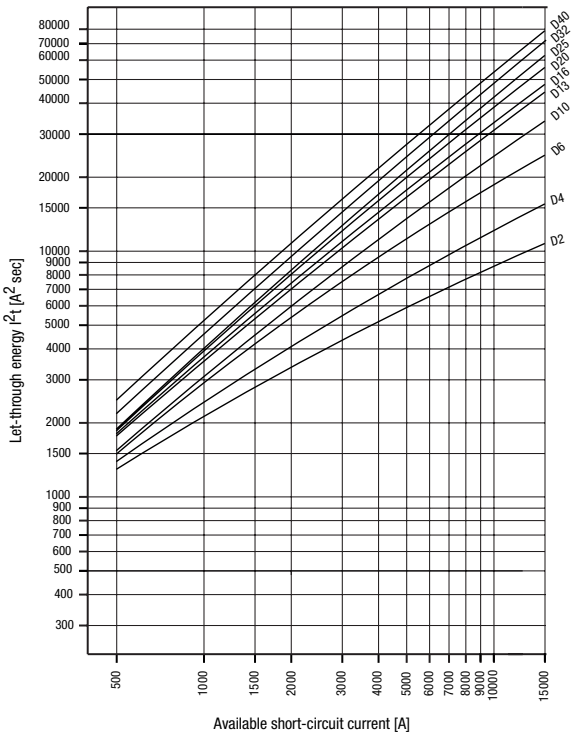
Maximum let-through current L8
Type C



Technical Information *(continued)*

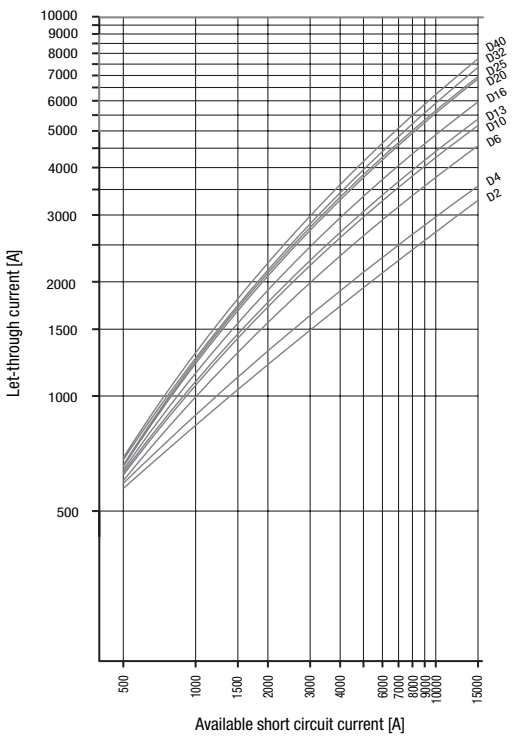
Maximum let-through energy L8

Type D



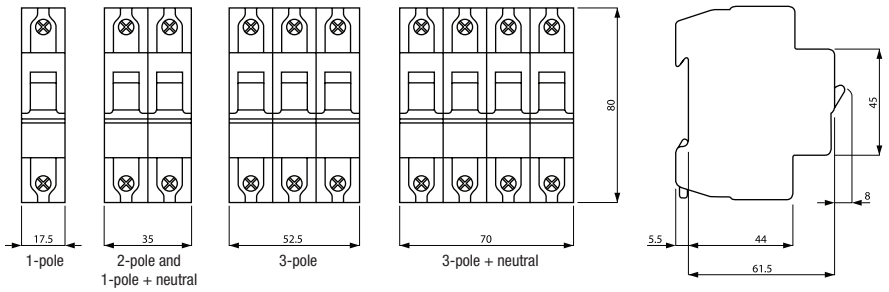
Maximum let-through current L8

Type D

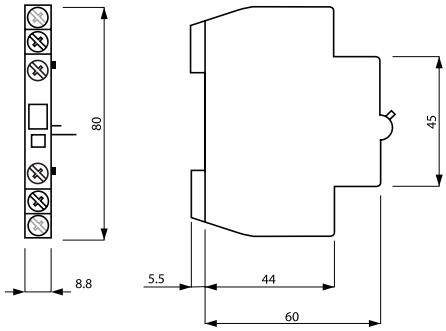


L8 Supplementary Protectors *(Series L8…B, C & D)*

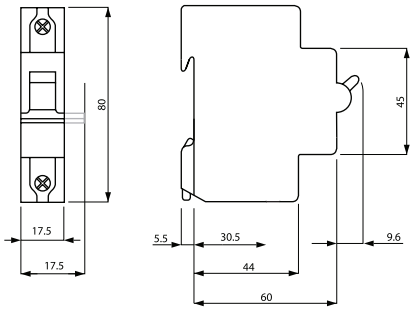
Dimensions are in millimeters (inches). Dimensions not intended for manufacturing purposes.



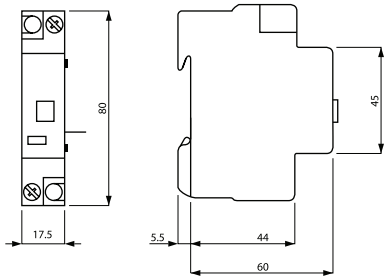
One & Two Pole Auxiliary Contact, Signal Alarm Contact *(LX-AHS3)*



Shunt Trip & Undervoltage Release Modules *(Z8-ASA…& Z8-USA…)*



Shunt Trip



Undervoltage Release Module