



E300 / E200 Sensing Module

(Cat 193-ESM-_____-_____; 592-ESM-_____-_____)



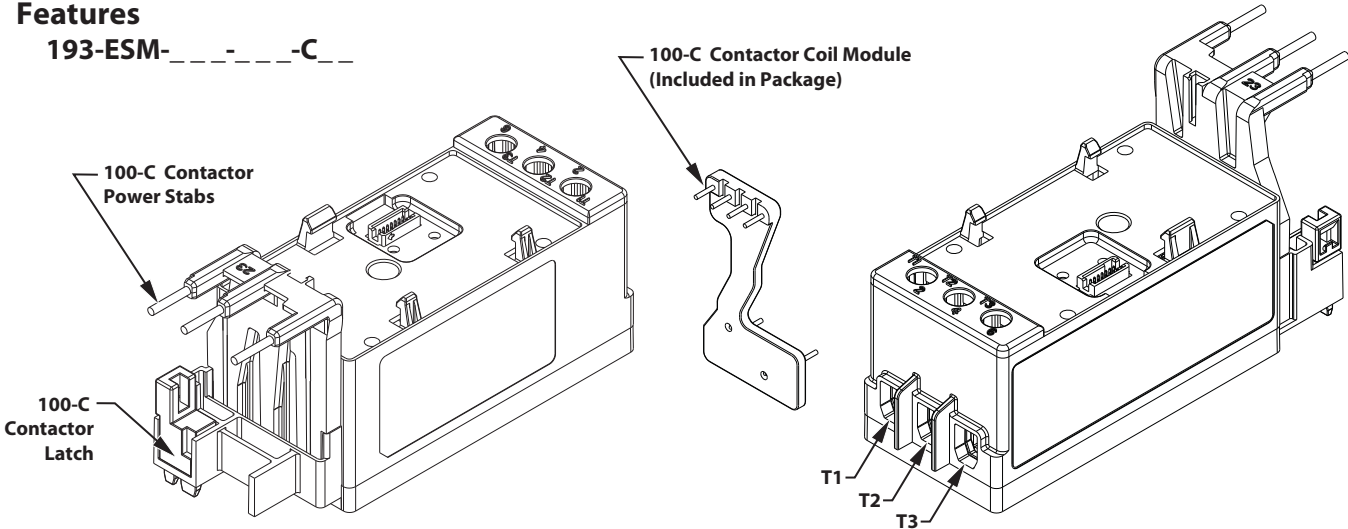
WARNING: To prevent electrical shock, disconnect from power source before installing or servicing. Follow NFPA 70E requirements. Install in suitable enclosure. Keep free from contaminants. Installation, adjustments, putting into service, use, assembly, disassembly, and maintenance shall be carried out by suitably trained personnel in accordance with applicable code of practice. In case of malfunction or damage, no attempts at repair should be made. The product should be returned to the manufacturer for repair. Do not dismantle the product.

Additional Resources:

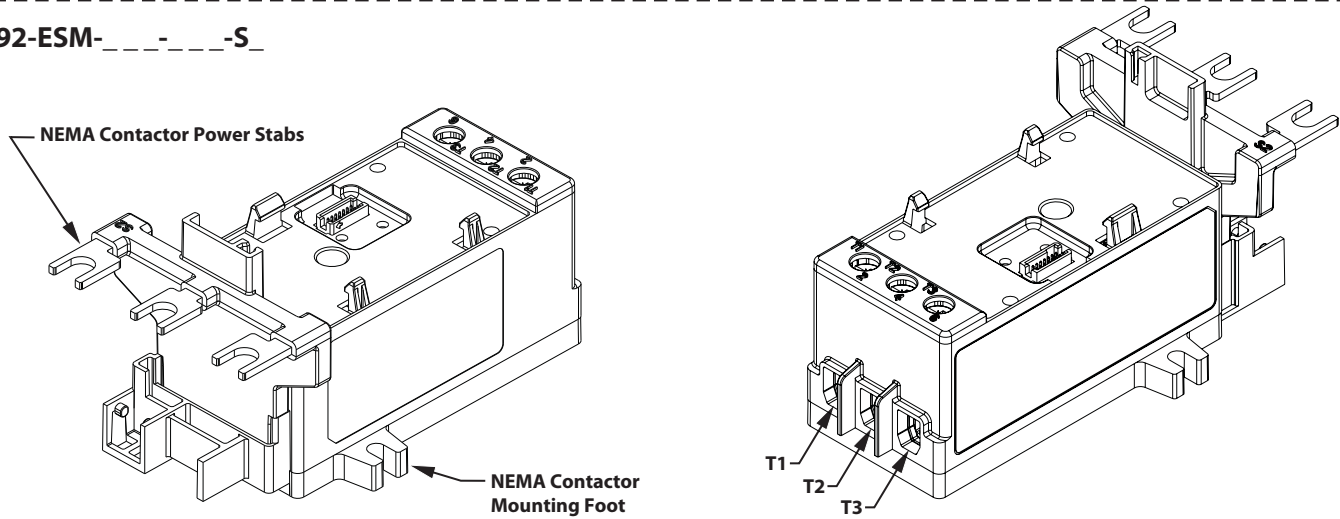
- 1) Go to <http://www.literature.rockwellautomation.com>;
- 2) Go to **Search**. Type in publication number: **193-UM015**

Features

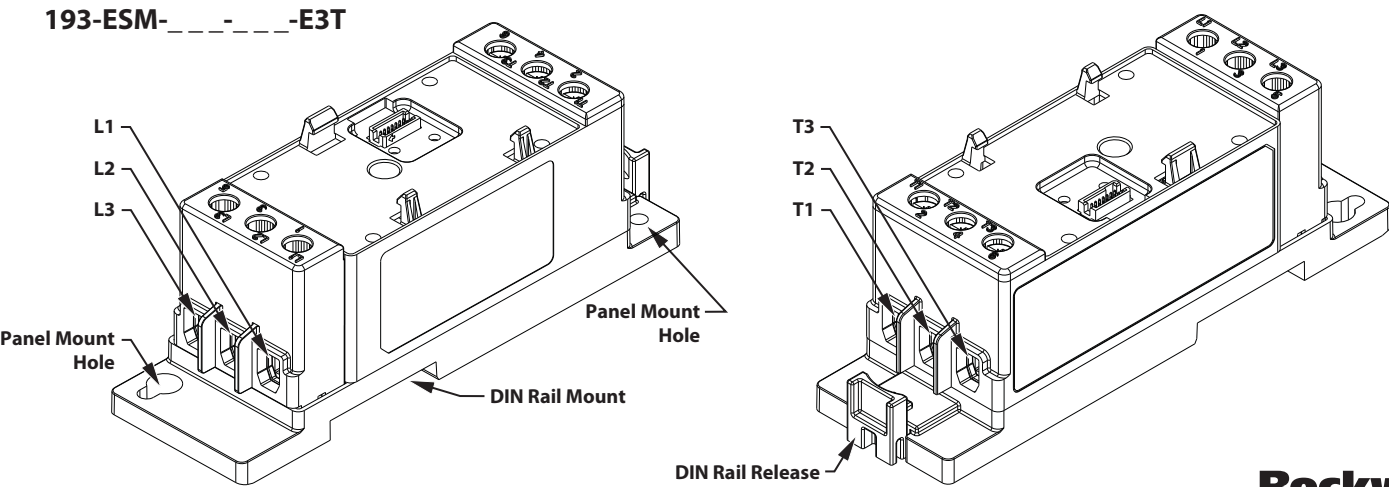
193-ESM-_____-_____-C_____



592-ESM-_____-_____-S_____



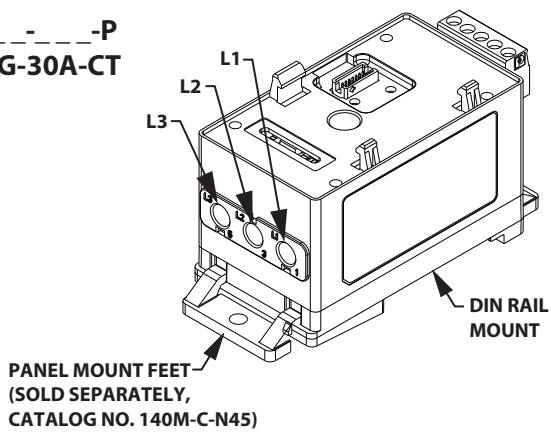
193-ESM-_____-_____-E3T_____



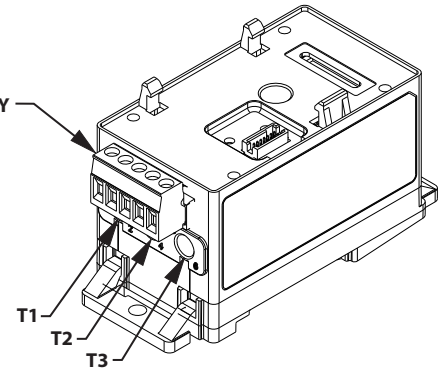
Features

193-ESM-____-P

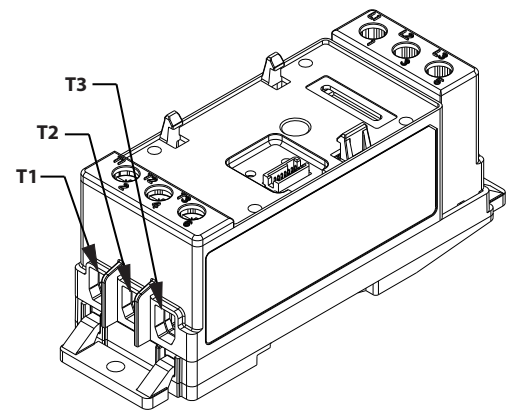
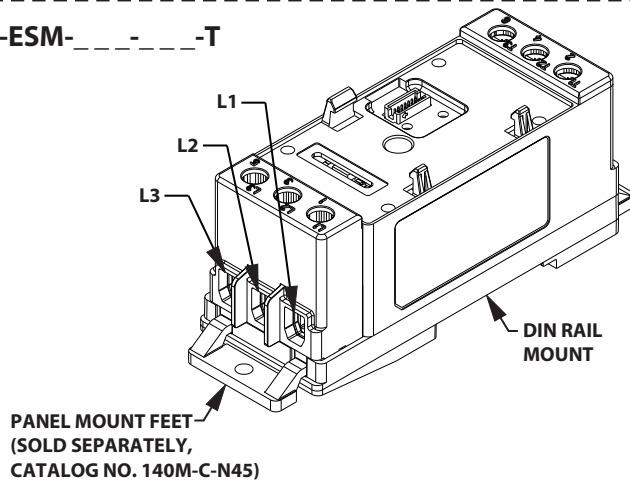
193-ESM-VIG-30A-CT



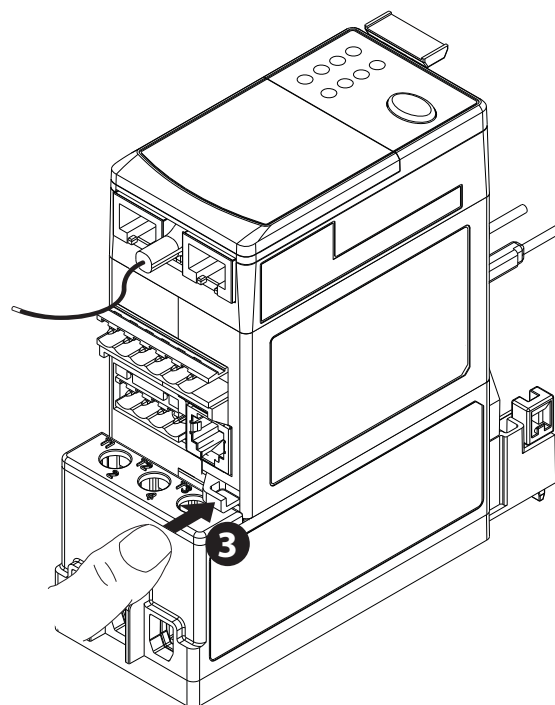
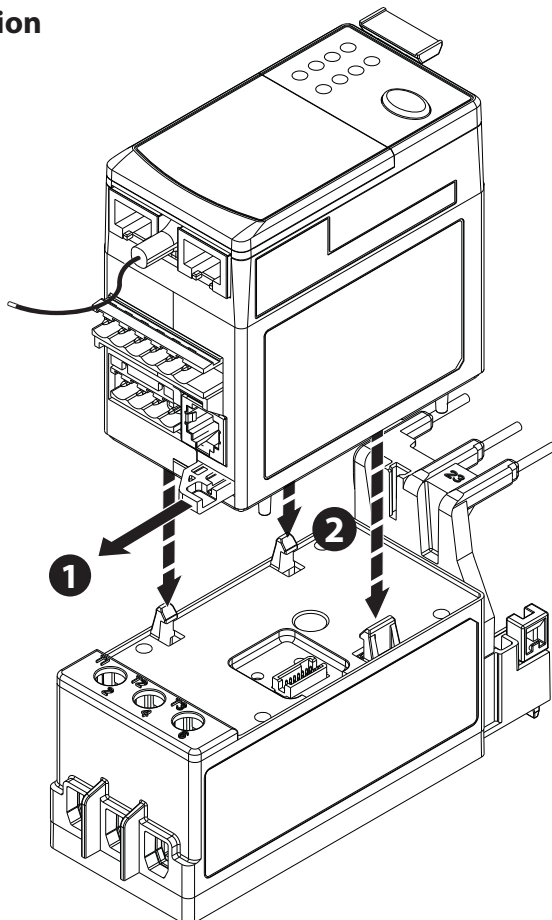
TERMINAL BLOCK ONLY
ON CATALOG NUMBER
193-ESM-VIG-30A-CT



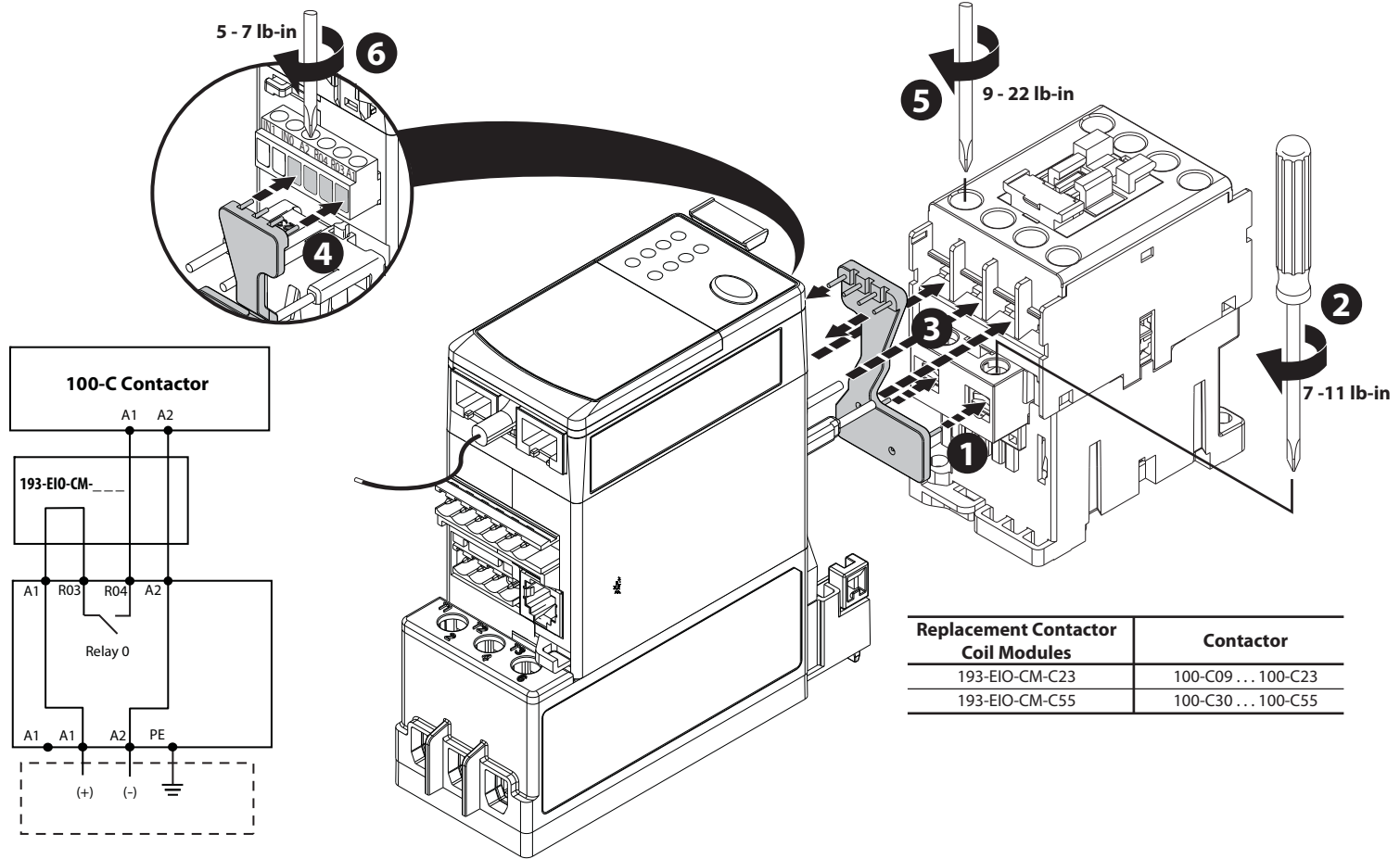
193-ESM-____-T



Installation



Installation - 100-C Contactor to Coil Module



Short Circuit Ratings

The E300 / E200 overload relay is suitable for use on circuits capable of delivering not more than the RMS symmetrical amperes listed in the following tables:

Table 1 Standard Fault Short Circuit Ratings per UL60947-4-1 and CSA 22.2 No. EN60947-4-1

Sensing Module Catalog Number	Contactors Catalog Number	Maximum Starter FLC (A)	Maximum Available Fault Current (A)	Maximum Voltage (Vac)	Maximum RK5 Non-time Delay Fuse Size	Maximum Listed Circuit Breaker Size
193-ESM-____-30A-P, 193-ESM-VIG-30A-CT, 193-ESM-____-30A-T, 193-ESM-____-30A-E3T	-----	-----	5,000	600	110A	110A
193-ESM-____-60A-P, 193-ESM-____-60A-T, 193-ESM-____-60A-E3T	-----	-----			225A	225A
193-ESM-____-30A-C23	100-C09	9			90A	90A
	100-C12	12				
	100-C16	16				
193-ESM-____-30A-C55	100-C23	23			200A	200A
	100-C30	30				
	100-C37	37				
193-ESM-____-60A-C55	100-C43	43			100A	100A
	100-C55	55				
	500-A	18			175A	175A
592-ESM-____-30A-S2	500-B	27				
	500-C	45				

Table 2 Short Circuit Ratings per EN60947-4-1

Overload Relay using Sensing Module Catalog Number	Prospective Short Circuit Current, I_p (A)	Conditional Short Circuit Current, I_q (A)	Maximum Voltage (V)
193-ESM-____-30A-C23, 193-ESM-____-30A-C55, 193-ESM-____-30A-E3T, 592-ESM-____-30A-S2, 193-ESM-____-60A-C55, 193-ESM-____-60A-E3T, 592-ESM-____-60A-S2, 193-ESM-____-30A-T, 193-ESM-____-60A-T, 193-ESM-____-30A-P, 193-ESM-____-60A-P, 193-ESM-VIG-30A-CT	3,000	100,000	690

Table 3 High Fault Short Circuit Ratings using stand alone overload relays when protected by fuses per UL60947-4-1 and CSA 22.2 No. EN60947-4-1

Sensing Module Catalog Number	Maximum FLC (A)	Maximum Available Fault Current (A)	Maximum Voltage (Vac)	Class J or CC Fuse
193-ESM-____-30A-P, 193-ESM-VIG-30A-CT, 193-ESM-____-30A-T, 193-ESM-____-30A-E3T	30	100,000	600	60A
193-ESM-____-60A-P, 193-ESM-____-60A-T, 193-ESM-____-60A-E3T	60			100A

Table 4 High Fault Short Circuit Ratings per UL60947-4-1 and CSA 22.2 No. EN60947-4-1 with Bul. 100-C and 100-D, IEC, contactors protected by fuses

Sensing Module Catalog Number	Contactors Catalog Number	Max. Starter FLC (A)	Max. Available Fault Current (A)	Maximum Voltage (V)	Class J or CC Fuse (A)
193-ESM-____-30A-C23	100-C09	9	100,000	600	20
	100-C12	12			20
	100-C16	16			30
	100-C23	23			30
	100-C30	30			50
193-ESM-____-30A-C55, 193-ESM-____-60A-C55	100-C37	37			50
	100-C43	43			70
	100-C55	55			80

Short Circuit Ratings (Continued)

Table 5 High Fault Short Circuit Ratings per UL60947-4-1 and CSA 22.2 No. EN60947-4-1 with Bul. 500 line, NEMA, Contactors protected by Fuses

Table 3: High Fault Short Circuit Ratings per UL947-4.1 and CSA22.2 No. 180054-4.1 with 240,000 rms Rating. Contactors protected by fuses							
Overload Relay using Sensing Module Catalog Number	Contactor size	Max. Starter FLC (A)	Max. Available Fault Current (A)	Maximum Voltage (V)	Max. UL Fuse (A)		
					R	J	
592-ESM-____-30A-S2	00	9	100,000	600	-----	20	
592-ESM-____-30A-S2	0	18		240	30	30	
				600	30	30	
592-ESM-____-30A-S2	1	27		240	60	100	
				600	30	50	
592-ESM-____-60A-S2	2	45		240	100	200	
				600	60	100	

Table 6 High Fault Short Circuit Ratings using Bul. 140MG Circuit Protectors per UL60947-4-1 and CSA 22.2 No. EN60947-4-1

Sensing Module Catalog Number	Contactor Catalog Number	Maximum Starter FLC (A)	Maximum Available Fault Current (kA)		Circuit Protector Catalog Number	Maximum Circuit Protector Current (A)	Minimum Enclosure Size (in.)
193-ESM-___-30A-C55	100-C30	30	65	25	140MG-H8P-C50	50	24x20x8 with two hinges and two multi-turn screw type latches
	100-C37	37			140MG-H8P-C50	50	
	100-C43	43			140MG-H8P-C50	50	
193-ESM-___-60A-C55	100-C55	55			140MG-H8P-C80	80	

Table 7 High Fault Short Circuit Ratings using listed Circuit Breakers per UL60947-4-1 and CSA 22.2 No. EN60947-4-1

Sensing Module Catalog Number	Contactor Catalog Number	Maximum Starter FLC (A)	Maximum Available Fault Current (A)	Maximum Voltage (Vac)	Maximum Listed Circuit Breaker Size	Minimum Enclosure Volume (cu. in.)
193-ESM-___-30A-P, 193-ESM-VIG-30A-CT, 193-ESM-___-30A-T, 193-ESM-___-30A-E3T	-----	-----	100,000	600	100A	1547
193-ESM-___-60A-P, 193-ESM-___-60A-T, 193-ESM-___-60A-E3T	-----	-----				1547
193-ESM-___-30A-C23	100-C09	9				1547
	100-C12	12				
	100-C16	16				
	100-C23	23				
193-ESM-___-30A-C55	100-C30	30				1547
	100-C37	37				
193-ESM-___-60A-C55	100-C43	43				
	100-C55	55				
592-ESM-___-30A-S2	500_-A_	18				2142
	500_-B_	27				2142
592-ESM-___-60A-S2	500_-C_	45				

Table 8 Short Circuit Ratings per UL60947-4-1 and CSA 22.2 No. EN60947-4-1 with 100-C, IEC, contactors protected by Bul. 140U-D frame circuit breakers

Overload Relay using Sensing Module Catalog Number	Contactor Catalog Number	Max. Starter FLC (A)	Max. Available Fault Current (A)	Maximum Voltage (V)	Max. Circuit Breaker 140U-D6D3-
193-ESM-___-30A-C23	100-C09	9	65,000	480Y/277V	C30 (30 Amps)
	100-C12	12			
	100-C16	16			
	100-C23	23			
193-ESM-___-30A-C23	100-C09	9	35,000	600Y/347V	C30 (30 Amps)
	100-C12	12			
	100-C16	16			
	100-C23	23			
193-ESM-___-30A-C23	100-C09	9	5,000	600Y/347V	C30 (30 Amps)
	100-C12	12			
	100-C16	16			
	100-C23	23			

Fuse Coordination

The following tables illustrate the fuse coordination tested when used with contactors stated:

Table 9 Type I and Type II fuse coordination with Bul. 100-C and 100-D contactors per EN60947-4-1

Overload Relay using Sensing Module Catalog Number	Contactor Catalog Number	Max. Starter FLC (A)	Prospective Fault Current, I_r (A)	Conditional Fault Current, I_q (A)	Maximum Voltage (V)	Type I Class J or CC Fuse (A)	Type II Class J or CC Fuse (A)		
193-ESM-____-30A-C23	100-C09	9	1,000	100,000	600	20	15		
	100-C12	12				20	20		
	100-C16	16				30	30		
	100-C23	23				40	40		
	100-C30	30				50	50		
193-ESM-____-30A-C55, 193-ESM-____-60A-C55	100-C37	37	3,000					50	50
	100-C43	43						70	70
	100-C55	55						80	80

Table 10 Type I and Type II fuse coordination with Bul. 500 line, NEMA, contactors per EN60947-4-1

Overload Relay using Sensing Module Catalog Number	Contactor size	Max. Starter FLC (A)	Prospective Short Circuit Current, I_r (A)	Conditional Short Circuit Current, I_q (A)	Maximum Voltage (V)	Type I Class J Fuse (A)	Type II Class J Fuse (A)
592-ESM-___-30A-S2	0	18	3,000	100,000	600	30	30
592-ESM-___-30A-S2	1	27				30	30
592-ESM-___-60A-S2	2	45				60	60

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