

# E300 / E200 Sensing Module

(Cat 193-ESM-\_\_\_-100A-\_\_\_; 592-ESM-\_\_\_-100A-S3)

**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.

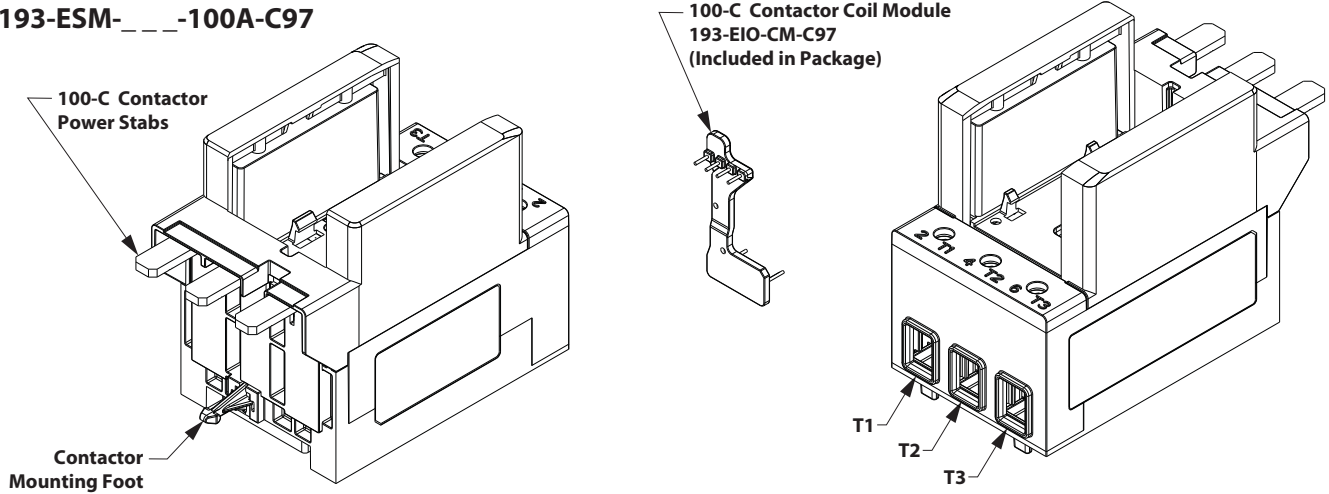
**Additional Resources:**

1) Go to <http://www.literature.rockwellautomation.com>;

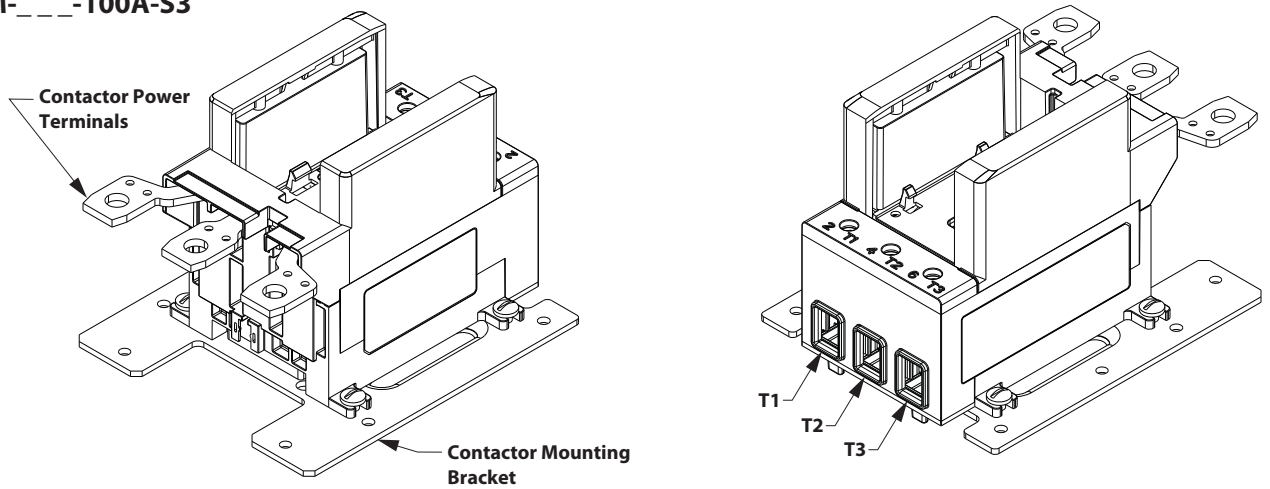
2) Go to **Search**. Type in publication number: **193-UM015**

**Features**

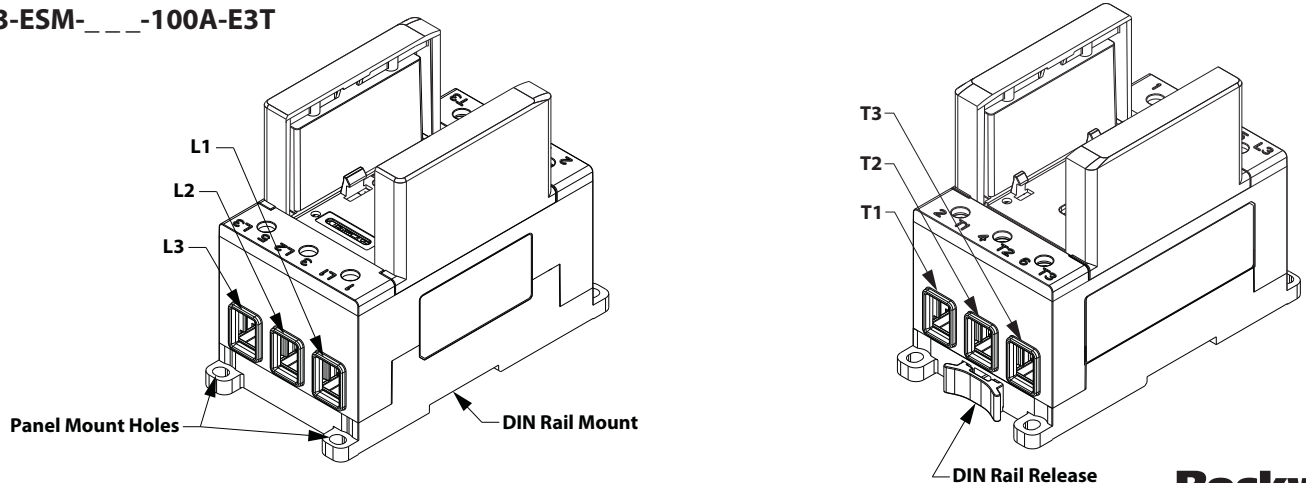
**193-ESM-\_\_\_-100A-C97**



**592-ESM-\_\_\_-100A-S3**

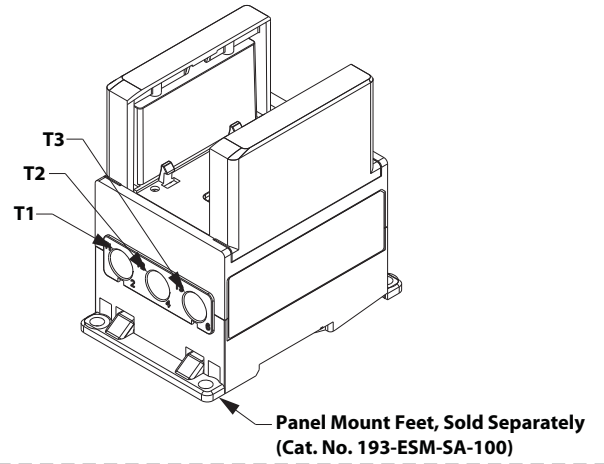
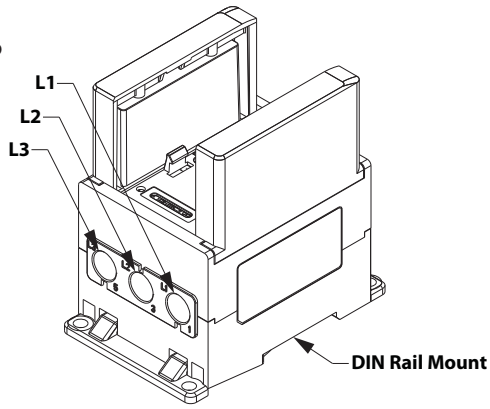


**193-ESM-\_\_\_-100A-E3T**

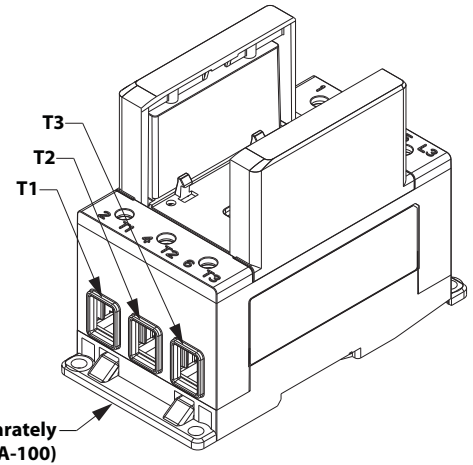
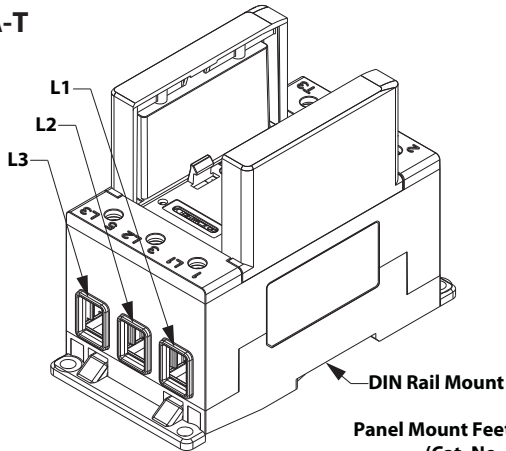


**Features**

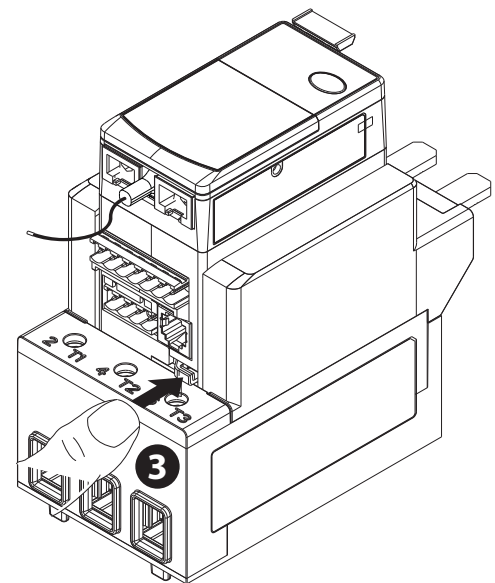
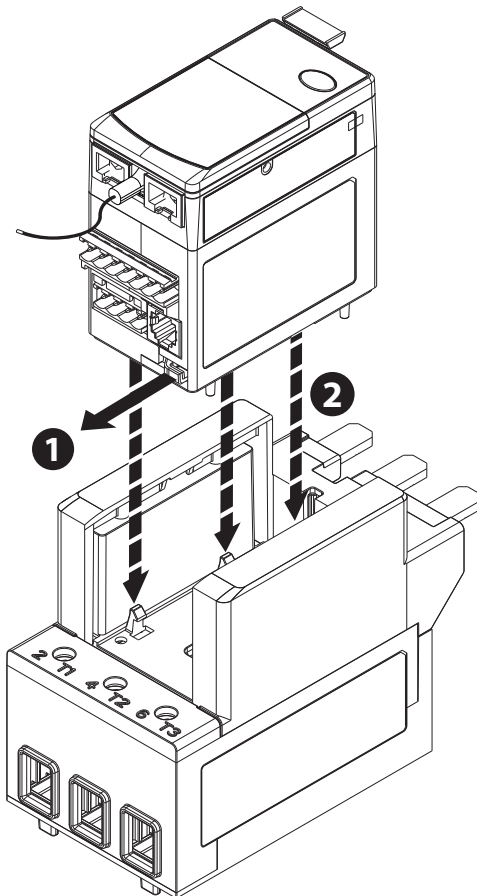
193-ESM-\_\_\_-100A-P



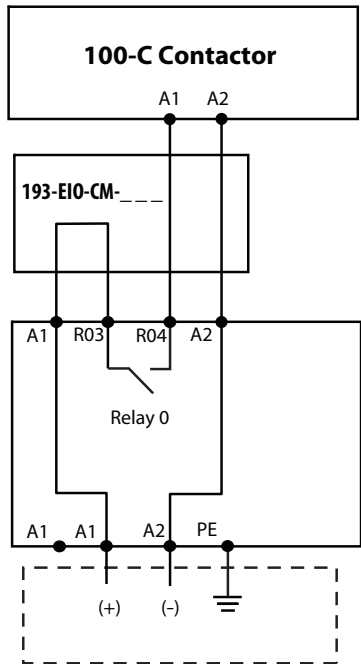
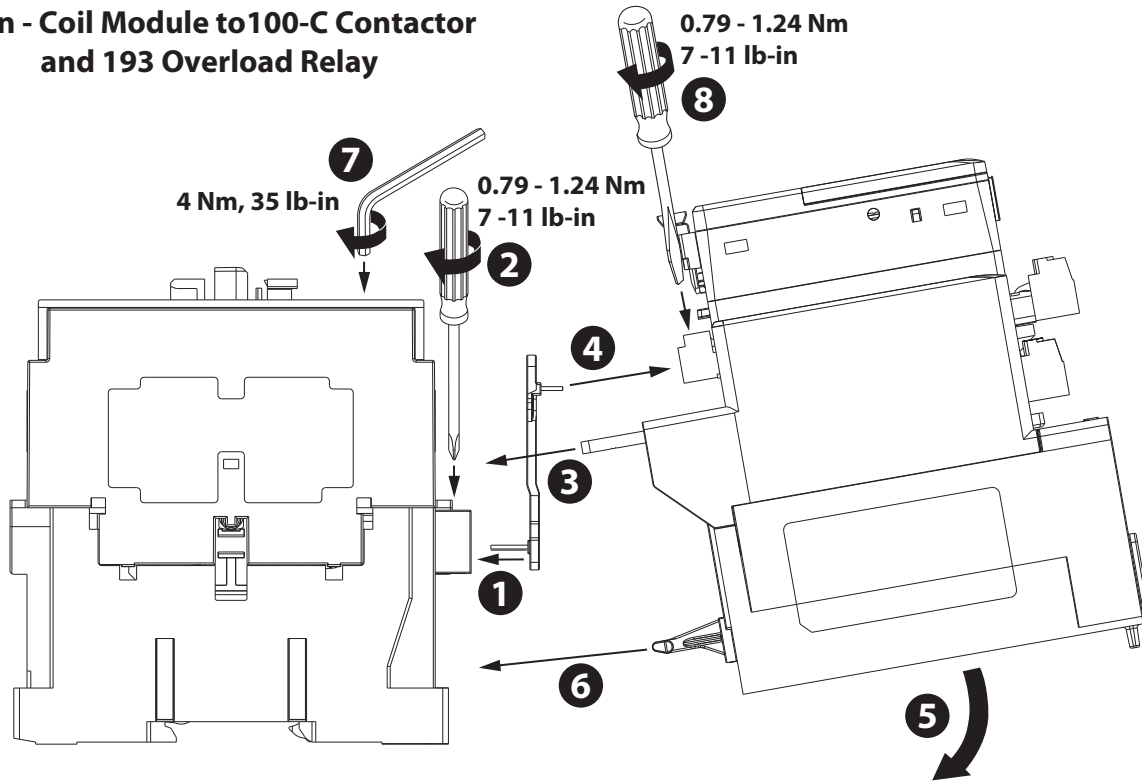
193-ESM-\_\_\_-100A-T



**Installation**



### Installation - Coil Module to 100-C Contactor and 193 Overload Relay



Replacement Contactor Coil Module	Contactors
193-EIO-CM-C97	100-C72 ... 100-C97

# 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 (V)	Maximum RK5 Non-time Delay Fuse Size	Maximum Listed Circuit Breaker Size
193-ESM-___-100A-P, 193-ESM-___-100A-T, 193-ESM-___-100A-E3T	-----	-----	10,000	600	400A	400A
193-ESM-___-100A-C97	100-C60	60			350A	350A
	100-C72	72				
	100-C85	85				
	100-C97	97				
592-ESM-___-100A-S3	500-D_	90	350A	350A		

**Table 2 Short Circuit Ratings per EN60947-4-1**

Overload Relay using Sensing Module Catalog Number	Prospective Short Circuit Current, $I_r$ (A)	Conditional Short Circuit Current, $I_q$ (A)	Maximum Voltage (V)
193-ESM-___-100A-C97, 193-ESM-___-100A-E3T, 193-ESM-___-100A-P, 193-ESM-___-100A-T, 592-ESM-___-100A-S3	5,000	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-___-100A-P, 193-ESM-___-100A-T, 193-ESM-___-100A-E3T	100	100,000	600	225A

**Table 4 High Fault Short Circuit Ratings per UL60947-4-1 and CSA 22.2 No. EN60947-4-1 with Bul. 100-C, 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-___-100A-C97	100-C60	60	100,000	600	80
	100-C72	72			100
	100-C85	85			150
	100-C97	97			200

**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**

Overload Relay using Sensing Module Catalog Number	Contactors size	Max. Starter FLC (A)	Max. Available Fault Current (A)	Maximum Voltage (V)	Max. UL Fuse (A)	
					R	J
592-ESM-___-100A-S3	3	90	100,000	240	200	350
				600	100	200

**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	Contactors Catalog Number	Maximum Starter FLC (A)	Maximum Available Fault Current (kA)		Circuit Protector Catalog Number	Maximum Circuit Protector Current (A)	Minimum Enclosure Size (in.)
			At 480Vac	At 600Vac			
193-ESM-___-100A-C97	100-C60	60	65	25	140MG-H8P-D12	125	24x20x8 with two hinges and two multi-turn screw type latches
	100-C72	72			140MG-H8P-D12	125	
	100-C85	85			140MG-H8P-D12	125	
	100-C97	97			140MG-H8P-D12	125	

**Table 7 High Fault Short Circuit Ratings using Bul. 140G circuit breakers 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 (kA)		Circuit Breaker Catalog Number	Maximum Circuit Breaker Current (A)
			At 480V	At 600V		
193-ESM-___-100A-C97	100-C60	60	65	25	140G-J6_3-D25	250
	100-C72	72				
	100-C85	85				
	100-C97	97				

## Fuse Coordination

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

**Table 8 Type I and Type II fuse coordination with Bul. 100-C contactors per EN60947-4-1**

Overload Relay using Sensing Module Catalog Number	Contactors 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-___-100A-C97	100-C60	60	5,000	100,000	600	80	80
	100-C72	72				100	100
	100-C85	85				150	150
	100-C97	97				200	200

**Table 9 Type I and Type II fuse coordination with Bul. 500 line, NEMA, contactors per EN60947-4-1**

Overload Relay using Sensing Module Catalog Number	Contactors 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-___-100A-S3	3	90	5,000	100,000	600	200	200

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