

Installation Instructions

Bulletin 193 E100 External Current Transformer Overload Relay

Application and Installation

(Cat 193-1EF_Z)

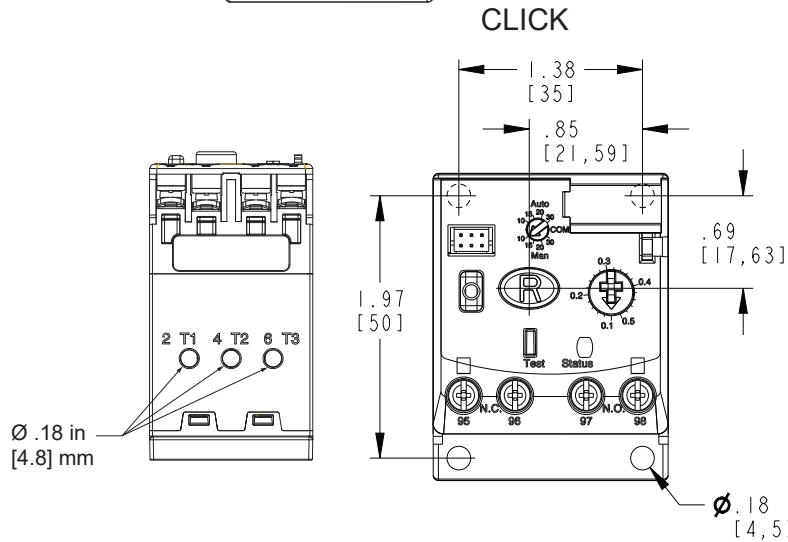
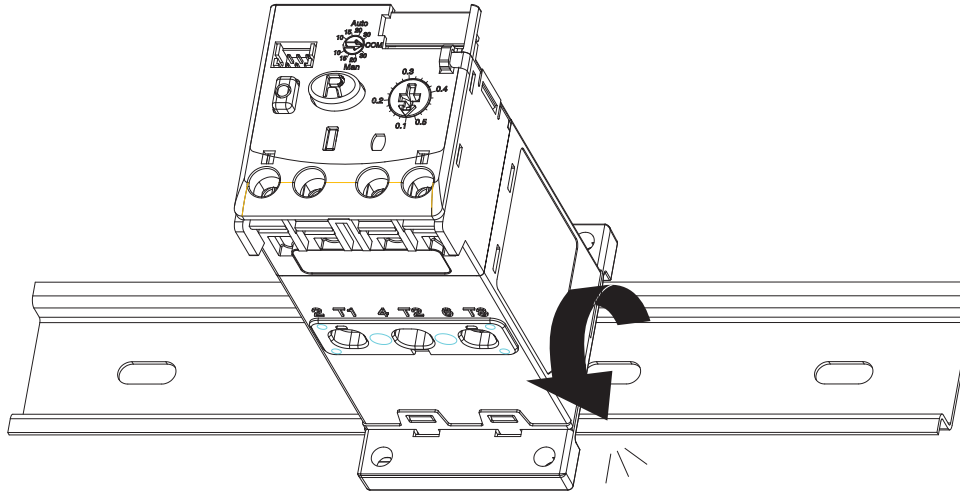


At the end of its life, this equipment should be collected separately from any unsorted municipal waste.

- WARNING:** To prevent electrical shock, disconnect from power source before installing or servicing. Install in suitable enclosure. Keep free from contaminants. Follow NFPA70E requirements.
- WARNING:** Do not use automatic reset mode in applications where unexpected automatic restart of the motor can cause injury to persons or damage to equipment.
- WARNING:** The improper selection of a current transformer can result in the overload relay not properly protecting the motor and possible motor damage. The selected current transformer must be rated for protective relaying applications.

Installation

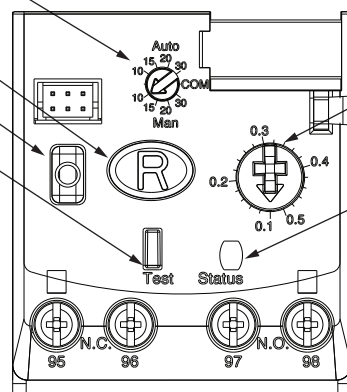
DIN Rail Mount



Settings

Selectable Trip Class
Automatic/Manual Reset Mode

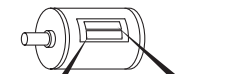
- Push to reset
- Push to stop
- Push to test



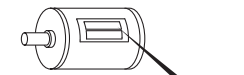
193-1EF*

To adjust trip current, turn dial until the desired current is aligned with the pointer. Trip rating is 120% of dial setting.

Trip Indicator Window
Red indicator not visible: Not Tripped
Red indicator visible: Tripped



S.F.	FLA
S.F. < 1.15	= .9 X FLA
S.F. ≥ 1.15	= 1 X FLA
YΔ	= FLA / 1.73



STAR DELTA (YΔ)	= FLA / 1.73
DOL	= 1 X FLA

Main Connections

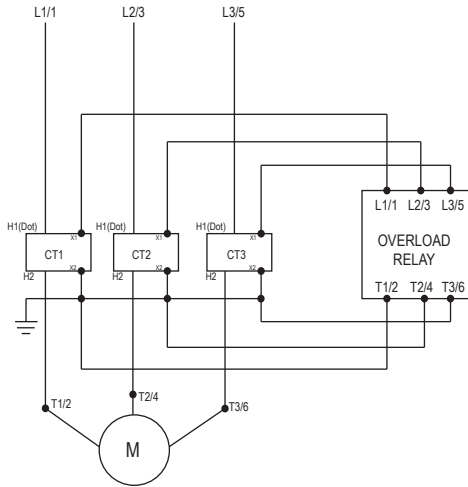
Rated Insulation Voltage (Ui): 690V AC
 Rated Operational Voltage (Ue) IEC/UL: 690V AC / 600V AC

Rated Operating Frequency: 50 / 60 Hz

Wire Type	# Wires	Range	Torque
Flexible Stranded w/ Ferrule	1 Wire	0.75...2.5 mm ²	1.4 N•m
	2 Wires*		
Stranded / Solid	1 Wire	0.75...4.0 mm ² (18...12 AWG)	1.4 N•m (12 lb-in)
	2 Wires*		

*FOR MULTIPLE CONDUCTOR APPLICATIONS THE SAME SIZE AND STYLE WIRE MUST BE USED.

Wiring Diagram



Contact Status

Contact Ratings: N.O. C600 / N.C. B600 (AC)
 N.O. / N.C. R300 (DC)

Normal		Stop Pressed	Test Tripped
95	96	Closed	Open
97	98	Open	Closed

Short Circuit Ratings, per UL60947-4-1 and CSA 22.2 No. 60947-4-1
 Branch circuit protection may be fuses or circuit breakers sized per NEC/CEC.

Table 1: E100 UL Standard Fault Ratings, Type I

E100 Overload		Max. Available Fault Current	Max. Voltage
Cat No	Amp Range		
193-	1EFHZ	30-150 A	10 kA
	1EFJZ	40-200 A	
	1EFKZ	60-300 A	
	1EFWZ	80-400 A	18 kA
	1EFLZ	100-500 A	30 kA
	1EFMZ	120-600 A	
	1EFNZ	160-800 A	

Table 2: Panel Mount, Standalone Overload, High Fault, Type I

E100 Overload		Max. Available Fault Current	Max. Voltage
Cat No	Amp Range		
193-	1EFHZ	30-150 A	100 kA
	1EFJZ	40-200 A	
	1EFKZ	60-300 A	
	1EFWZ	80-400 A	30 kA
	1EFLZ	100-500 A	
	1EFMZ	120-600 A	
	1EFNZ	160-800 A	

Table 3: Type I per EN/IEC 60947-4-1

E100 Overload		Standard Fault, Prospective S. C. current, Ir (kA)	High Fault, Conditional S. C. current, Iq (kA)	Max Voltage (V)
Cat No	Amp Range			
193-	1EFHZ	30-150 A	10 kA	100 kA
	1EFJZ	40-200 A		
	1EFKZ	60-300 A		
	1EFWZ	80-400 A	18 kA	
	1EFLZ	100-500 A		
	1EFMZ	120-600 A		
	1EFNZ	160-800 A		
		30 kA		

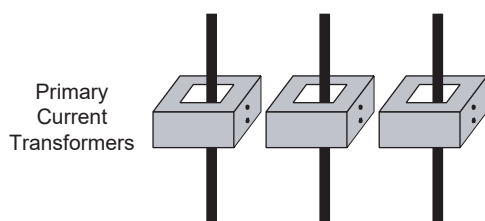
Current Transformer Selection and Application

E100 overload relays (Cat. No. 193-1EF_Z) are designed for use with separately mounted, customer-supplied current transformers (CTs) as required in higher-current applications. CTs must be kept at least six times the wire gauge from the overload relay.

E100 Cat. No.	193-1EFHZ	193-1EFJZ	193-1EFKZ	193-1EFWZ	193-1EFLZ	193-1EFMZ	193-1EFNZ
FLA (A)	30-150	40-200	60-300	80-400	100-500	120-600	160-800
C.T. Ratio	150:5	200:5	300:5	400:5	500:5	600:5	800:5
CT	1411-*-151	1411-*-201	1411-*-301	1411-*-401	1411-*-501	1411-*-601	1411-*-801

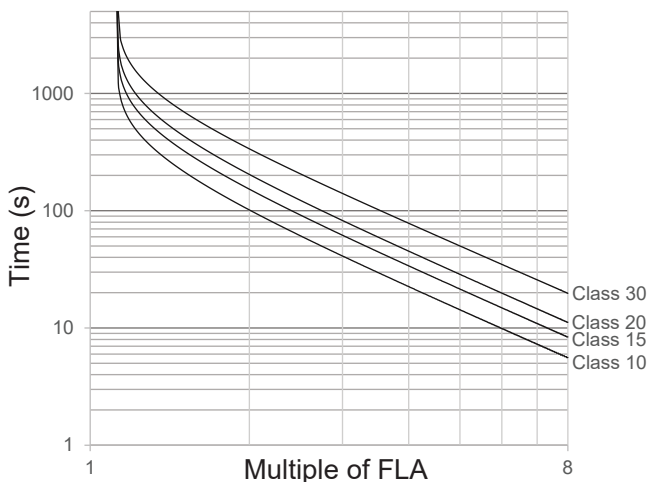
Current Transformer Specification (One Per Motor Phase)

- Rating: Protective Relaying
- Secondary Current: 5 A
- Secondary Load: 0.1VA (Overload Relay Only)
- Accuracy: 2% Over Operating Range
- ANSI (USA): Class C57.13,BO.1
- CSA (Canada): Class 10L5
- IEC (Europe): 5VA Class, 5P10

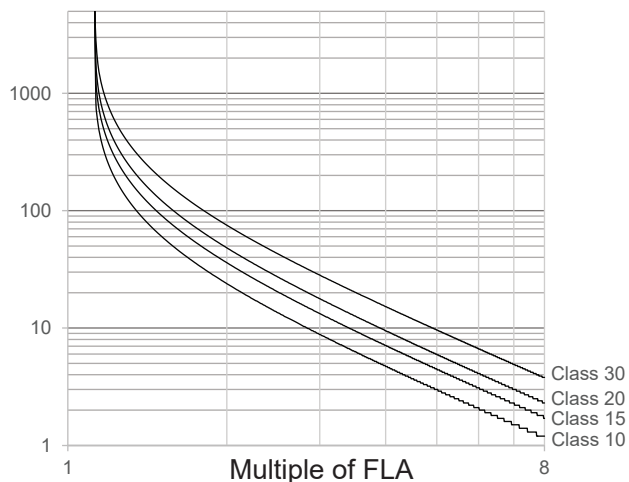


Trip Curves

Cold Trip Curves



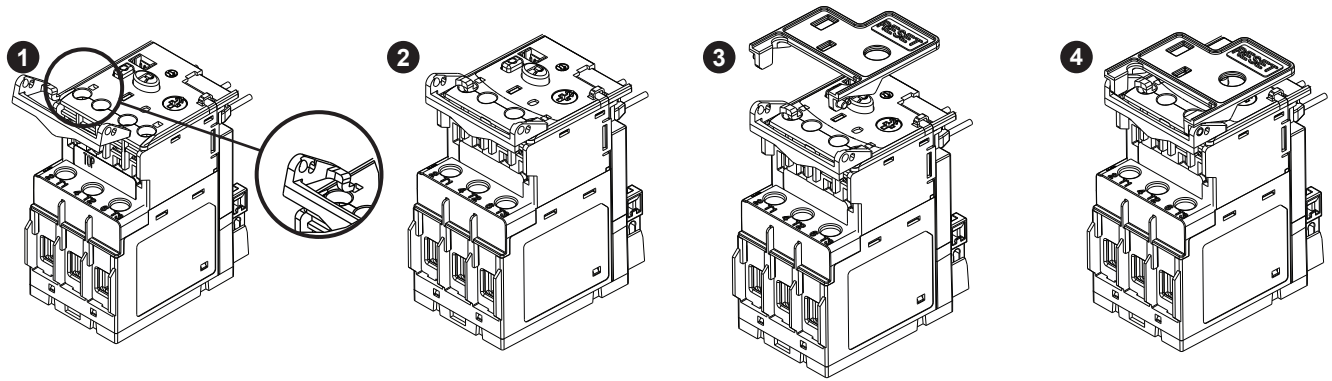
Hot Trip Curves



Accessories

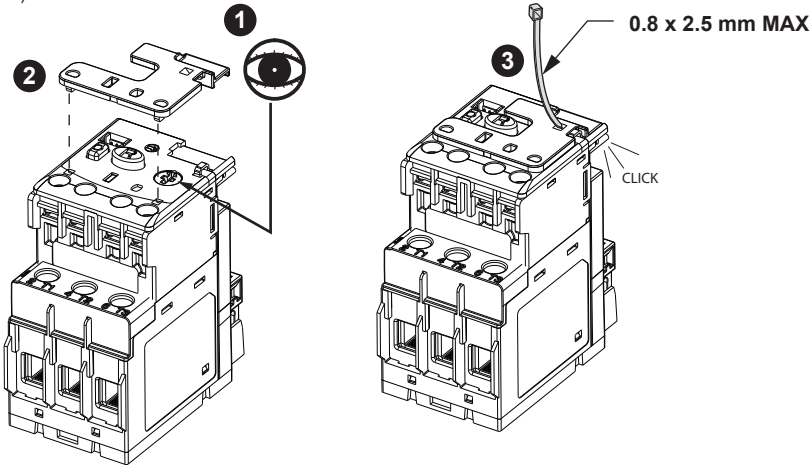
Overload Relay Reset Adapter

(Cat 193-1ERA)



Overload Relay Anti-Tamper Shield





(Cat 193-1BC8)



For Technical Support, visit ROK.AUTO/SUPPORT.

Rockwell Automation maintains current product environmental compliance information on its website at rok.auto/pec.

Rockwell Otomasyon Ticaret A.Ş. Kar Plaza İş Merkezi E Blok Kat:6 34752 İçerenköy, İstanbul, Tel: +90 (216) 5698400
EEE Yönetmeliğine Uygundur

Connect with us.    

rockwellautomation.com expanding human possibility™

AMERICAS: Rockwell Automation, 1201 South Second Street, Milwaukee, WI 53204-2496 USA, Tel: (1) 414.382.2000, Fax: (1) 414.382.4444

EUROPE/MIDDLE EAST/AFRICA: Rockwell Automation NV, Pegasus Park, De Kleetlaan 12a, 1831 Diegem, Belgium, Tel: (32) 2 663 0600, Fax: (32) 2 663 0640

ASIA PACIFIC: Rockwell Automation, Level 14, Core F, Cyberport 3, 100 Cyberport Road, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Allen-Bradley, Rockwell Automation, and Rockwell Software are trademarks of Rockwell Automation. Trademarks not belonging to Rockwell Automation are property of their respective companies.

Publication 193-IN084F-EN-E - March 2022 | Supersedes 193-IN084C-EN-E - October 2021

Copyright ©2022 Rockwell Automation, Inc. All Rights Reserved. Printed in USA.



PN-562589
DIR 10004184713 (Version 05)