

# Motor Protectors

## Product Selection, Continued

### Motor Protectors For Use as Self-Protected (Type E) Manual Combination Motor Controllers



Cat. No. 140M-C



Cat. No. 140M-F

3

#### Motor Protectors For Use As Self-Protected (Type E) Manual Combination Motor Controller

Current Adjustment Range [A]	Typical 1-phase [HP] ❶		Typical 3-phase [HP] ❶				Max. Short-Circuit Current [kA]	Cat. No. ❷
	115V	230V	200V	230V	460V	575V		
<b>140M-C, High Break</b>								
0.10...0.16	—	—	—	—	—	—	65	140M-C2E-A16
0.16...0.25	—	—	—	—	—	—	65	140M-C2E-A25
0.25...0.40	—	—	—	—	—	—	65	140M-C2E-A40
0.40...0.63	—	—	—	—	—	—	65	140M-C2E-A63
0.63...1.0	—	—	—	—	1/2	3/4	65	140M-C2E-B10
1.0...1.6	—	1/10	—	—	3/4	1	65	140M-C2E-B16
1.6...2.5	1/10	1/6	1/2	1/2	1-1/2	2	65	140M-C2E-B25
2.5...4	1/8	1/3	1	1	3	3	65	140M-C2E-B40
4...6.3	1/4	3/4	1-1/2	2	3	5	65	140M-C2E-B63
6.3...10	1/2	1-1/2	3	3	7-1/2	10	65	140M-C2E-C10
10...16	1	3	3	5	10	10	10	140M-C2E-C16
14.5...20	1-1/2	3	5	7-1/2	15	20	10	140M-C2E-C20
18...25	2	3	7-1/2	10	20	25	10	140M-C2E-C25
<b>140M-D, High Break PLUS</b>								
1.6...2.5	1/10	1/6	1/2	1/2	1-1/2	2	65	140M-D8E-B25
2.5...4	1/8	1/3	1	1	3	3	65	140M-D8E-B40
4...6.3	1/4	3/4	1-1/2	2	3	5	65	140M-D8E-B63
6.3...10	1/2	1-1/2	3	3	7-1/2	10	65	140M-D8E-C10
10...16	1	3	3	5	10	10	65	140M-D8E-C16
14.5...20	1-1/2	3	5	7-1/2	15	20	65	140M-D8E-C20
18...25	2	3	7-1/2	10	20	25	25	140M-D8E-C25
<b>140M-F, High Break PLUS</b>								
6.3...10	1/2	1-1/2	3	3	7-1/2	10	❸	140M-F8E-C10
10...16	1	3	3	5	10	10	❸	140M-F8E-C16
14.5...20	1-1/2	3	5	7-1/2	15	20	❸	140M-F8E-C20
18...25	2	3	5	10	20	25	❸	140M-F8E-C25
23...32	3	5	10	10	25	30	❸	140M-F8E-C32
32...45	3	7-1/2	15	15	30	40	❸	140M-F8E-C45

❶ Horsepower ratings shown in the table above are for reference. The final selection of the manual starter depends on the actual motor full load current and service factor.

• For motor with service factor less than 1.15. Use motor nameplate full load current times 0.9 and choose the motor starter with the appropriate current range. Example: Motor F.L.C. = 4.2 A; S.F. = 1.0. (4.2 A x 0.9 = 3.78 A.) Select Cat. No. 140M-C2E-B40.

❷ Magnetic trip is fixed at 13x the maximum value of the current adjustment range.

❸ UL Pending. Contact your local Allen-Bradley Sales Office.

## Bulletin 140M

- Current Range 0.1...45 A
- With 140-CMN up to 90 A
- Type 2 Coordination with Bulletin 100-C Contactors
- UL Listed
  - “Self-protected” Type E Manual Combination Starters
- Manual Starter
  - Motor Disconnect
  - Group Motor Installation
- Visible Trip Indication
- Rotary Actuator
- High Current Limiting
- High Switching Capacity



Cat. No. 140M-C2E



Cat. No. 140M-FBE

### TABLE OF CONTENTS

Description	Page	Description	Page
Product Overview .....	3-156	Specifications	
Product Selection .....	3-160	Performance .....	3-169
Accessories .....	3-163	General .....	3-179
		Approximate Dimensions .....	3-183
		Type 2 Coordination .....	3-185

#### Description

The Bulletin 140M Motor Protector provides short circuit and overload protection for individual motor loads. A wide range of accessories makes installation and wiring easy. Motor protectors may be applied as Manual Starters, Group Motor Starters, Motor Disconnects, and Manual Combination Starters.

#### Conformity to Standards:

IEC 947-1/2/4  
IEC 204-1  
CSA, C22.2 No.14  
UL 508

#### Approvals:

CE  
CSA Certified  
UL Listed

Construction Type E Self-Protected Manual Combination Starter.  
Manual Motor Controller suitable for Group Installation.  
Meets IEC Circuit Breaker requirements per IEC 947-2.  
Does not meet UL489 requirements for molded case circuit breakers in North America.

#### Your order must include:

- Cat. No. of the motor protector selected.
- If required, Cat. No. of any accessories.

Motor Protectors For Use as Manual Starters in Group Installations



Cat. No. 140M-C



Cat. No. 140M-D



Cat. No. 140M-F

3

Motor Protectors for Group Installation

Current Adjustment Range [A]	Max. Short-Circuit Current [kA]		For Use With Cat. No. ②	Max Fuse or Circuit Breaker [A]	Cat. No. ①
	480V	600V			
<b>140M-C, High Break</b>					
0.10...0.16	65	47	100-C09, 100-M05	400	140M-C2E-A16 ③④
0.16...0.25	65	47	100-C09, 100-M05	400	140M-C2E-A25 ③④
0.25...0.40	65	47	100-C09, 100-M05	400	140M-C2E-A40 ③④
0.40...0.63	65	47	100-C09, 100-M05	400	140M-C2E-A63 ③④
0.63...1.0	65	47	100-C09, 100-M05	400	140M-C2E-B10 ③④
1.0...1.6	65	47	100-C09, 100-M05	400	140M-C2E-B16 ③④
1.6...2.5	65	5	100-C09, 100-M05	400	140M-C2E-B25 ③④
2.5...4	65	5	100-C09, 100-M05	400	140M-C2E-B40 ③
4...6.3	65	5	100-C09, 100-M05	400	140M-C2E-B63 ③
6.3...10	65	5	100-C09, 100-M05	400	140M-C2E-C10 ③
10...16	10	5	100-C12	400	140M-C2E-C16 ③
14.5...20	10	5	100-C16	400	140M-C2E-C20
18...25	10	5	100-C23	400	140M-C2E-C25
<b>140M-D, High Break PLUS</b>					
1.6...2.5	65	10	100-C09, 100-M05	400	140M-D8E-B25 ④
2.5...4	65	10	100-C09, 100-M05	400	140M-D8E-B40 ④
4...6.3	65	10	100-C09, 100-M05	400	140M-D8E-B63 ④
6.3...10	65	10	100-C09, 100-M05	400	140M-D8E-C10 ④
10...16	65	10	100-C12	400	140M-D8E-C16 ③④
14.5...20	65	5	100-C16	400	140M-D8E-C20 ③④
18...25	25	5	100-C23	400	140M-D8E-C25 ④
<b>140M-F, High Break PLUS</b>					
6.3...10	65	10	100-C09	500	140M-F8E-C10
10...16	65	10	100-C12	500	140M-F8E-C16
14.5...20	65	10	100-C16	500	140M-F8E-C20
18...25	65	10	100-C23	500	140M-F8E-C25 ③④
23...32	65	10	100-C30	500	140M-F8E-C32 ③④
32...45	50	10	100-C37	500	140M-F8E-C45 ④
<b>140-CMN</b>					
16...25	65	42	100-C16	1000	140-CMN-2500
25...40	65	42	100-C30	1000	140-CMN-4000
40...63	65	42	100-C43	1000	140-CMN-6300
63...90	65	30	100-C72	1000	140-CMN-9000

- ① Magnetic trip is fixed at 13x the maximum value of the current adjustment range.
- ② Ratings apply to specified or larger contactor.
- ③ Devices with a fixed magnetic trip set at 16-20x the maximum value of the current adjustment range are available if nuisance tripping occurs (as with some high-efficiency motors). To order these products, change the "E" in the cat. no. to a "T" (e.g., **Cat. No. 140M-C2E-A16** changes to **140M-C2T-A16**).
- ④ Devices without a thermal trip (i.e., current adjustment range) are also available if separate motor overload protection is required. To order these products, change the "E" in the cat. no. to an "N" (e.g., **Cat. No. 140M-C2E-A16** changes to **140M-C2N-A16**).
- ⑤ For Type 2 coordination see pages 3-185 and 3-186.

**UL/CSA Performance Data**

**Manual Motor Controller**  
 (UL 508, CSA C22.2 No.14 for Group Installation, in Connection with a Short Circuit Protection Device)

	Cat. No. 140M-C2E-												
	A16	A25	A40	A63	B10	B16	B25	B40	B63	C10	C16	C20	C25
<b>Rated Operational Current, <math>I_e</math> [A]</b>	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	16	20	25
<b>Magnetic Release Current [A]</b>	2.1	3.3	5.2	8.2	13	21	33	52	82	130	208	260	325
<b>Max. Short Circuit Current</b>													
480V [kA]	65	65	65	65	65	65	65	65	65	65	10	10	10
600V [kA]	47	47	47	47	47	47	5	5	5	5	5	5	5
<b>Motor Load, Single-Phase</b>													
115V [HP]	—	—	—	—	—	—	1/10	1/8	1/4	1/2	1	1-1/2	2
230V [HP]	—	—	—	—	—	—	1/10	1/6	2/3	3/4	1-1/2	3	3
<b>Motor Load, Three-Phase</b>													
230V [HP]	—	—	—	—	—	—	1/2	1	2	3	5	7-1/2	10
460V [HP]	—	—	—	—	1/2	3/4	1-1/2	3	3	7-1/2	10	15	20
575V [HP]	—	—	—	—	3/4	1	2	3	5	10	10	20	25
<b>Maximum Rated Current of Protection Device [A]</b>	400												

3

**Self-Protected (Type E) Manual Combination Motor Controller**  
 (UL 508)

	Cat. No. 140M-C2E-												
	A16	A25	A40	A63	B10	B16	B25	B40	B63	C10	C16	C20	C25
<b>Rated Operational Current, <math>I_e</math> [A]</b>	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	16	20	25
<b>Magnetic Release Current [A]</b>	2.1	3.3	5.2	8.2	13	21	33	52	82	130	208	260	325
<b>Max. Short Circuit Current</b>													
480Y/277V [kA]	65	65	65	65	65	65	65	65	65	65	10	10	10
600Y/347V [kA]	❶	❶	❶	❶	❶	❶	❶	❶	❶	❶	❶	❶	❶
<b>Motor Load, Single-Phase</b>													
115V [HP]	—	—	—	—	—	—	1/10	1/8	1/4	1/2	1	1-1/2	2
230V [HP]	—	—	—	—	—	—	1/10	1/6	2/3	3/4	1-1/2	3	3
<b>Motor Load, Three-Phase</b>													
230V [HP]	—	—	—	—	—	—	1/2	1	2	3	5	7-1/2	10
460V [HP]	—	—	—	—	1/2	3/4	1-1/2	3	3	7-1/2	10	15	20
575V [HP]	—	—	—	—	3/4	1	2	3	5	10	10	20	25

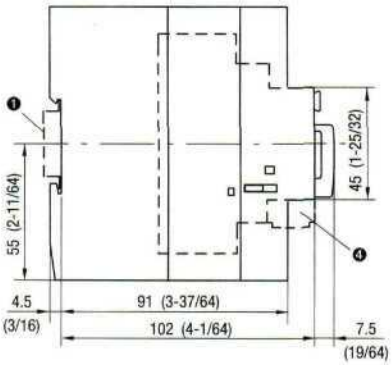
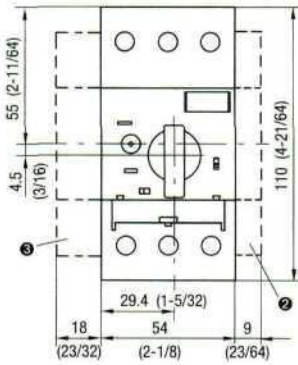
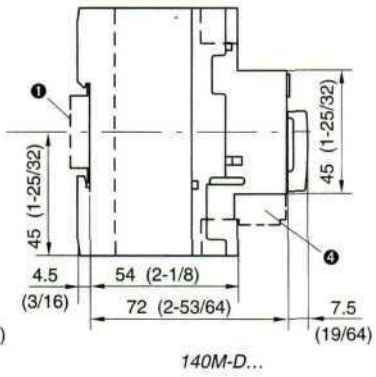
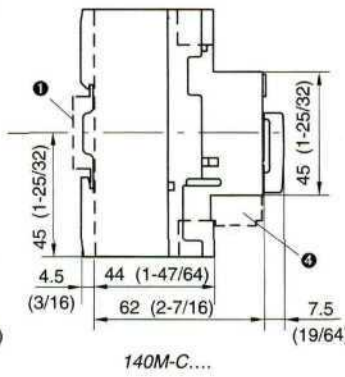
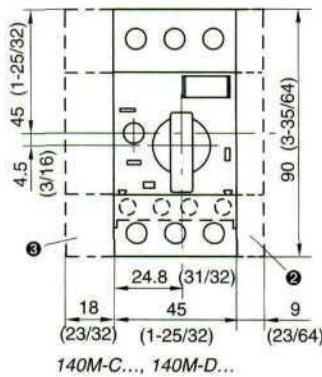
❶ Contact your local Allen-Bradley Sales Office.

**General Data**

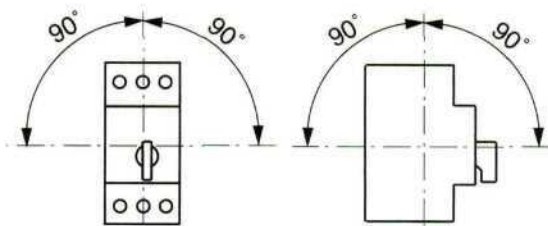
Cat. No.	140M-C...	140M-D...	140M-F...
<b>Rated Insulation Voltage</b> IEC, SEV, VDE 0660	690 V		
UL, CSA	600 V		
<b>Rated Impulse Withstand Voltage</b> $U_{imp}$ /pollution degree	6 kV/3		
<b>Rated Frequency</b>	50/60 Hz		
<b>Utilization Category:</b> • IEC 947-2 (Motor Protector) • IEC 947-4-1 (Motor Starter)	A AC-3		
<b>Life Span</b>			
Mechanical [operations]	100,000		30,000
Electrical ( $I_e$ max.) [operations]	100,000		30,000
<b>Switching Frequency</b> [operations]	max. 25/h. (motor starts)		
<b>Ambient Temperature</b>	-40...+80°C		
Storage	-40...+80°C		
Operation	-25...+60°C		
<b>Resistance to Climatic Change</b>	IEC 68-2		
<b>Site Altitude</b>	to 2,000 m N.N.		
<b>Protection Class</b>	IP20 all round, when wired		
<b>Resistance to Shock</b>	30 G, 11 ms		—
<b>Resistance to Vibration</b>	IEC 68-2		
<b>Rated Thermal Current <math>I_{th}</math></b> IEC, SEV, VDE 0660 Up to 60 °C ambient temperature [A]	0.1...25	1.6...25	6.3...45
<b>Overload Protection</b> Characteristics	IEC 947-4-1 Motor protection (except 140M-C2N, 140M-D8N, 140M-F8N)		
Ambient temperature compensation	-20...+60°C		
Phase-failure protection	yes differential release fixed setting		
<b>Magnetic Release</b> Response current	13 x $I_e$ max. (for 140M-C2E, 140M-D8E, 140M-F8E, 140M-C2N, 140M-D8N, 140M-F8N) 16...20 x $I_e$ max. (for 140M-C2T, 140M-D8T, 140M-F8T) $I_e$ max. = maximum values of setting ranges		
<b>Total Power Loss <math>P_v</math></b> <b>Motor protector at rated load</b> <b>operating temperature</b> [W]	6...8	6...8	9...16

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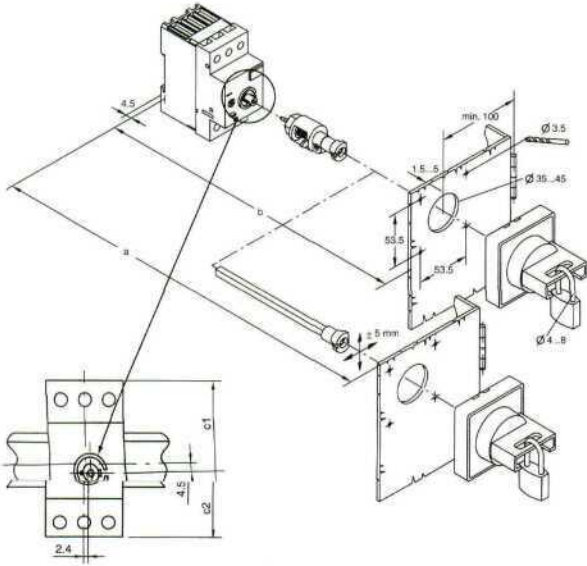
Dimensions are shown in millimeters (inches). Dimensions are not intended to be used for manufacturing purposes.



- ❶ Mounting on 35 mm DIN Rail EN 50 022-35
- ❷ Auxiliary contact (side-mounted)
- ❸ Undervoltage trip or Shunt trip
- ❹ Auxiliary contact (front-mounted)



Mounting position 140M-C..., 140M-D..., 140M-F...



	a	b	c1	c2
140M-C...	117...338	105.5 ±5	49.5	40.5
140M-D...	126...347	114.5 ±5	49.5	40.5
140M-F...	148.6...369.6	137.1 ±5	59.35	50.35