2

Cat. No. Explanation

Examples given in this section are for reference purposes. This basic explanation should not be used for product selection; not all combinations will produce a valid catalog number.

140M – C – 2 – E – A63 – KN – CC – GJ

a b c d e f g h

a

Bulletin Number	
Code	Description
140M	Motor Protection Circuit Breakers (MPCBs)

b

Frame Size and Rating	
Code	Description
C	32 A
D	32 A
F	45 A
I	205 A
J	250 A
L	400 A and 600 A

c

Interrupting Rating / Breaking Capacity	
Code	Description
2	Normal Break
8	High Break

d

Protection Type	
Code	Description
E	Adj Thermal/ Fixed Mag (13…14 x I_n)
T	Adj Thermal / Fixed Mag (16...20 x I_n)

e

Current Range		
Code	Description	Example
A	A = .10	A16 = 0.16
B	B = 1.0	B16 = 1.6
C	C = 10	C16 = 16
D	D = 100	D16 = 160
E	E = 1000	E16 = 1600

f, g, h

Factory-Installed Options

f

Miscellaneous See page 2-36

g

Aux/Trip Contacts See page 2-36

h

UV and Shunt Trips See page 2-36

Bulletin 140M Motor Protection Circuit Breakers

- Current Range 0.1…630 A
- UL Listed for Motor Loads
  - Short Circuit Protection
  - Overload Protection
- Visible Trip Indication
- High Current Limiting
- High Switching Capacity

The Bulletin 140M Motor Protection Circuit Breakers provide short circuit and overload protection for individual motor loads. Factory-installed internal accessories make installation and wiring easy.

Table of Contents

Standards Compliance

IEC/EN 60947-1, -2, -4-1, -5-1
IEC/EN 60204-1
CSA, C22.2 No.14
UL 508
UL 489 (I-, J-, L-Frame)

Certifications

CE Marked
cULus Listed (File No. E54612, NLRV(7); E205542, NKJH(7); E197878, DIVQ(7);)
CCC
CSA Certified
ATEX

General Information

Motor Protection Circuit Breakers may provide the following protective and control functions.

- Disconnect for Motor Branch Circuit
- Branch-Circuit, Short-Circuit Protection (Magnetic Protection)
- Overload Protection (Thermal Protection)
- Switching (Manual)

In North America, electrical codes require that an individual Motor Branch Circuit be protected by a UL/CSA Listed Fuse, Circuit Breaker or Self-Protected Combination Motor Controller.

140M-C, D and F Frames:

The 140M-C, D and F frame Motor Protection Circuit Breakers may have 2 cULus Listings – as Manual, Self-Protected Combination Motor Controllers and as Manual Motor Controllers (with optional approvals for Motor Disconnect and Group Installation).

When UL/CSA listed as Manual, Self-Protected Combination Motor Controllers, the 140M Motor Protection Circuit Breakers provide all of the necessary NEC/CEC requirements for the protection and control of individual Motor Branch Circuits without additional protective devices.

At some higher voltages and currents (particularly at 600V), a few of the 140M-C, D and F frame devices are only UL/CSA Listed as Manual Motor Controllers (with optional approvals for Motor Disconnect and Group Installation). In NEC/CEC Group Installations, these devices must be applied per the appropriate rules which require the use of an upstream Branch-Circuit, Short-Circuit Protective Device (BCPD). See the table on page 2-18 for the specific ratings of each Motor Protection Circuit Breaker.

140-CMN Frame:

The 140-CMN frame Motor Protection Circuit Breakers are UL Listed/CSA Certified as Manual Motor Controllers (with optional approvals for Motor Disconnect and Group Installation). In NEC/CEC Group Installations, these devices must be applied per the appropriate rules which require the use of an upstream Branch-Circuit, Short-Circuit Protective Device (BCPD). See the table on page 2-18 for the specific ratings of each Motor Protection Circuit Breaker.

140M-I, J and L Frames:

The 140M-I, J and L frame Motor Protection Circuit Breakers are cULus Listed as Circuit Breakers as shown in the table on page 2-9. In these cases, the 140M Motor Protection Circuit Breakers provide all of the necessary NEC/CEC requirements for the protection and control of individual Motor Branch Circuits without additional protective devices.

For further details on the proper application of Motor Protection Circuit Breakers, please see the diagrams on the following pages.

							
	C-Frame	**D-Frame**	**F-Frame**	**CMN-Frame**	**I-Frame**	**J-Frame**	**L-Frame**
Max. Current I_e	32 A	32 A	45 A	90 A	205 A	250 A	630 A
Current Rating	0.1…32 A	1.6…32 A	6.3…45 A	16…90 A	40…205 A	20…250 A	100…630 A
Short Circuit Protection	✓	✓	✓	✓	✓	✓	✓
Standard Magnetic Trip	✓	✓	✓	✓	✓	✓	✓
High Magnetic Trip	✓	✓	✓	✓	—	—	—
Magnetic Only Trip (MCP)	✓	✓	✓	—	—	✓	✓
Overload Protection	✓	✓	✓	✓	✓	✓	✓
Trip Class	10	10	10	10	5…20	10…30	10…30
Standards Compliance:							
CSA 22.2, No. 14	✓	✓	✓	✓	✓	✓	✓
CSA 22.2, No. 5	—	—	—	—	✓	✓	✓
UL 508 (Group Install.)	✓ (see ratings)	✓ (see ratings)	✓ (see ratings)	✓ (see ratings)	—	—	—
UL 508 Manual, Self Protected (Type E)	✓ (see ratings)	✓ (see ratings)	✓ (see ratings)	—	—	—	—
UL 508 (Overload Protection)	✓	✓	✓	✓	✓	✓	✓
UL 489	—	—	—	—	✓	✓	✓
IEC 60947-1, -2	✓	✓	✓	✓	✓	✓	✓
IEC 60947-4-1	✓	✓	✓	—	✓	✓	✓
CE	✓	✓	✓	✓	✓	✓	✓
ATEX (IEC 60079-14)	✓ (up to 25 A)	✓ (up to 25 A)	—	—	—	—	—
CCC	✓ (up to 25 A)	✓ (up to 25 A)	✓	—	—	—	—
Accessories							
Ext. Rotary Operator	✓	✓	✓	✓	✓	✓	✓
Flex Cable Operator	—	—	—	—	✓	✓	✓
Auxiliary Contacts	✓	✓	✓	✓	✓	✓	✓
Trip Indication Contacts	✓	✓	✓	✓	✓	✓	✓

IEC Performance Data

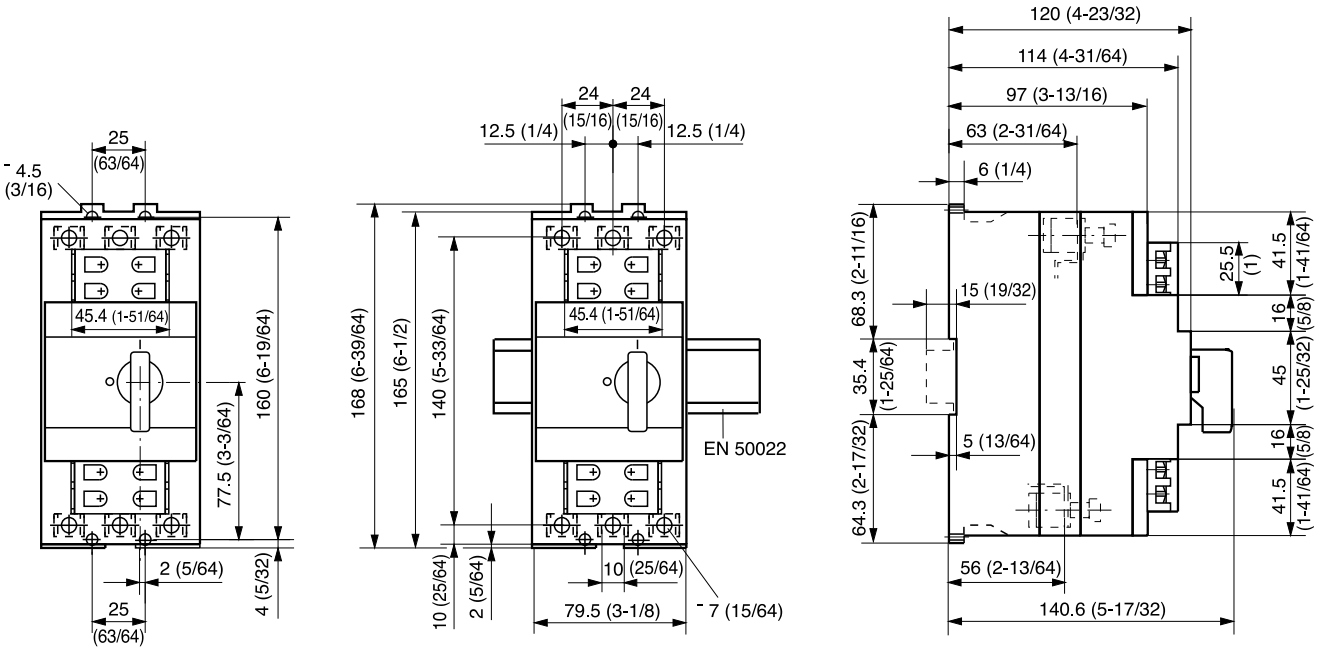
		Cat. No. 140M-C2E-														
		A16	A25	A40	A63	B10	B16	B25	B40	B63	C10	C16	C20	C25	C29	C32
Rated Operational Current, I_e	[A]	0.16	0.25	0.4	0.63	1	1.6	2.5	4	6.3	10	16	20	25	29	32
Magnetic Release Current	[A]	2.1	3.3	5.2	8.2	13	21	33	52	82	130	208	260	325	406	448
Switching of Standard Three-Phase Motors																
AC-3																
230/240V	[kW]	—	—	0.06	0.09	0.18	0.25	0.37	0.75	1.5	2.2	4.0	5.5	5.5	7.5	7.5
400/415V	[kW]	0.02	0.04	0.09	0.18	0.25	0.55	0.75	1.5	2.2	4.0	7.5	10	11	13	15
500V	[kW]	0.06	0.09	0.12	0.18	0.37	0.75	1.1	2.2	3.0	6.3	10	11	15	18.5	20
690V	[kW]	0.06	0.09	0.18	0.25	0.55	1.1	1.8	3.0	4.0	7.5	13	17	22	25	25
Back-Up Fuses																
gG, gL, only if $I_{cc} \geq I_{cu}$																
230/240V	[A]	✶	✶	✶	✶	✶	✶	✶	✶	✶	✶	✶	100	100	125	125
400/415V	[A]	✶	✶	✶	✶	✶	✶	✶	✶	✶	✶	80	100	100	125	125
440/460V	[A]	✶	✶	✶	✶	✶	✶	✶	✶	✶	63	80	80	80	100	100
500V	[A]	✶	✶	✶	✶	✶	✶	✶	✶	✶	80	80	80	80	100	100
690V	[A]	✶	✶	✶	✶	✶	16	20	35	50	50	63	63	63	80	80
Ultimate Short Circuit Breaking Capacity																
I_{cu}																
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	65	65	50	50
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	65	50	15	15	15
440/460V	[kA]	100	100	100	100	100	100	100	100	100	50	10	6	6	6	6
500V	[kA]	100	100	100	100	100	100	100	100	100	50	10	6	6	6	6
690V	[kA]	100	100	100	100	100	8	8	8	4	4	3	3	3	3	3
Rated Service Short Circuit Breaking Capacity																
I_{cs}																
230/240V	[kA]	100	100	100	100	100	100	100	100	100	100	100	50	50	25	25
400/415V	[kA]	100	100	100	100	100	100	100	100	100	100	50	15	15	15	15
440/460V	[kA]	100	100	100	100	100	100	100	100	100	50	6	6	6	6	6
500V	[kA]	100	100	100	100	100	100	100	100	100	50	6	6	6	6	6
690V	[kA]	100	100	100	100	100	8	8	8	4	4	3	3	3	3	3

✶ No back-up fuse required.

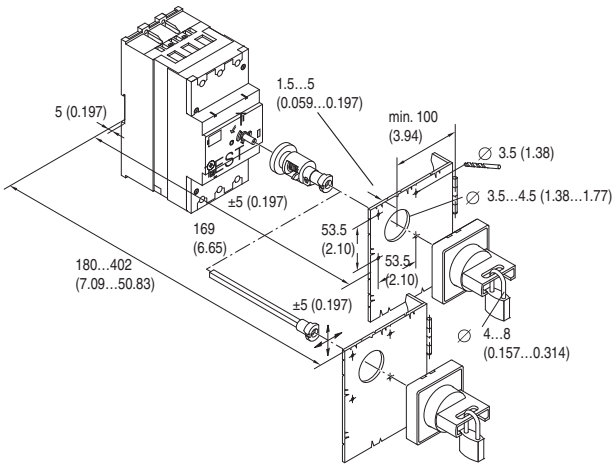
2

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

Cat. No. 140-CMN...



140-CMN



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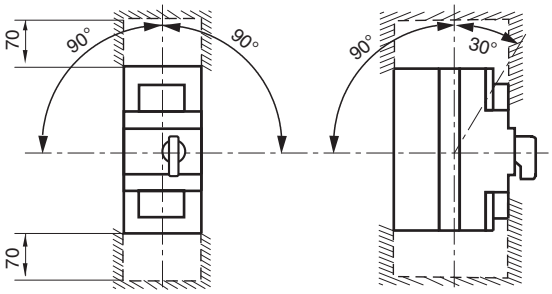

Mounting position/safety clearance of Cat. No. 140-CMN

Note: See Bulletin 140U-H, J, L and N for dimensions of 140M-H, J, L and N frames.