



Motor Protection Circuit Breaker and Motor Circuit Protector Specifications





Bulletin 140MP, 140MT, 140M

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Summary of Changes

This publication contains the following new or updated information. This list includes substantive updates only and is not intended to reflect all changes.

| Topic | Page |
|--|---|
| Added plastic enclosures to 140MT accessories | throughout |
| Added Type F combination ratings for Bulletin 100-C and 100-E contactors | Table 48 , Table 51 |

| |  |  |  |  |
|--|---|---|---|---|
| Bulletin No. | 140MP-A | 140MT-C | 140MT-D | 140M-F |
| Frame Size | – | C-Frame | D-Frame | F-Frame |
| Max. Current I_e | 32 A | 32 A | 40 A | 45 A |
| Current Rating | 0.1...32 A | 0.1...32 A | 0.4...40 A | 6.3...45 A |
| Short-circuit protection | ✓ | ✓ | ✓ | ✓ |
| Standard magnetic trip | ✓ | ✓ | 140MT-D9E... | 140M-F8E... |
| High magnetic trip | – | – | 140MT-D9T... | 140M-F8T... |
| Magnetic-only trip (Motor Circuit Protector [MCP]) | – | – | 140MT-D9N... | 140M-F8N... |
| Overload protection | ✓ | ✓ | ✓ | ✓ |
| Trip Class | 10A | 10 | 10 | 10 |
| Phase loss sensitivity | ✓ | ✓ | ✓ | ✓ |
| Short-circuit Indication | – | ✓ | ✓ | ✓ |
| Variable-frequency Drive (VFD) downstream compatible | – | – | 140MT-D9V... | ✓ |
| UL 60947-4-1 Application Ratings: | | | | |
| Motor Disconnect | ✓ (see ratings) | ✓ (see ratings) | ✓ (see ratings) | ✓ (see ratings) |
| Group Installation | ✓ (see ratings) | ✓ (see ratings) | ✓ (see ratings) | ✓ (see ratings) |
| Tap Conductor Protection | – | ✓ (see ratings) | ✓ (see ratings) | ✓ (see ratings) |
| Manual, Self Protected (Type E) | – | ✓ (see ratings) | ✓ (see ratings) | ✓ (see ratings) |
| Type F ratings with 100-C and 100-E Contactors | – | ✓ (see ratings) | ✓ (see ratings) | ✓ (see ratings) |
| Standards Compliance and Certifications: | | | | |
| UL 60947-4-1, CSA C22.2, No. 60947-4-1 | ✓ | ✓ | ✓ | ✓ |
| IEC/EN 60947-2, IEC/EN 60947-4-1 | ✓ | ✓ | ✓ | ✓ |
| CE | ✓ | ✓ | ✓ | ✓ |
| ATEX | – | ✓ | ✓(1) | – |
| IECEX | – | ✓ | ✓(1) | – |
| EAC | ✓ | ✓ | ✓ | ✓ |
| CCC | ✓ | ✓ | ✓ | ✓ |
| KC | ✓ | – | – | – |
| CB Scheme | ✓ | ✓ | ✓ | ✓ |
| Accessories (Optional) | | | | |
| External rotary operator | ✓ | ✓ | ✓ | ✓ |
| Auxiliary contacts | ✓ | ✓ | ✓ | ✓ |
| Trip Indication contacts | ✓ | ✓ | ✓ | ✓ |
| Undervoltage release | ✓ | ✓ | ✓ | ✓ |
| Shunt release | ✓ | ✓ | ✓ | ✓ |
| Insulated three-phase busbar | ✓ | ✓ | ✓ | ✓ |
| Connecting modules for 100-C contactors | ✓ | ✓ | ✓ | ✓ |
| Connecting modules for 100-E contactors | ✓ | ✓ | ✓ | – |
| Connecting modules for 100-K contactors | ✓ | ✓ | – | – |
| Lockable knob | ✓ | ✓ | Standard | ✓ |
| Anti-tamper cover | ✓ | ✓ | Standard | ✓ |
| Product Selection | page 6 | | page 25 | |

(1) Does not apply to Cat. No. 140MT-D9N... devices.

Product Overview

Bulletin 140MP Motor Protection Circuit Breakers (MPCBs) or Motor Protective Switching Devices (MPSDs) are UL Listed as Manual Motor Controllers (with approvals for Suitable as Motor Disconnect and Suitable for use in Group Installation).

Group motor installations eliminate the need for individual branch short circuit protective devices for each motor circuit, reducing panel space, installation & wiring time, and costs. There is only one Branch Circuit Protective Device (BCPD) for the "Group".



According to UL 60947-4-1, CSA C22.2 No.60947-4-1, these devices may provide the following control and protection functions.

- Disconnect for Motor Branch Circuit
- Manual Switching (Motor control means)
- Overload Protection (Thermal Protection)

These devices meet requirement of Motor Protective Switching Devices (MPSD) according to IEC 60947-4-1 and Circuit Breaker according to IEC 60947-2 standard for application outside of North America. These devices provide the following functions.

- Disconnect for Motor Branch Circuit
- Short-circuit Protection (Magnetic Protection)
- Overload Protection (Thermal Protection)
- Manual Switching (Motor control means)

140MP devices provide Trip Class 10A overload protection and phase loss sensitivity protection. These are suitable for single- and three-phase application.

Group Installation with MPCBs

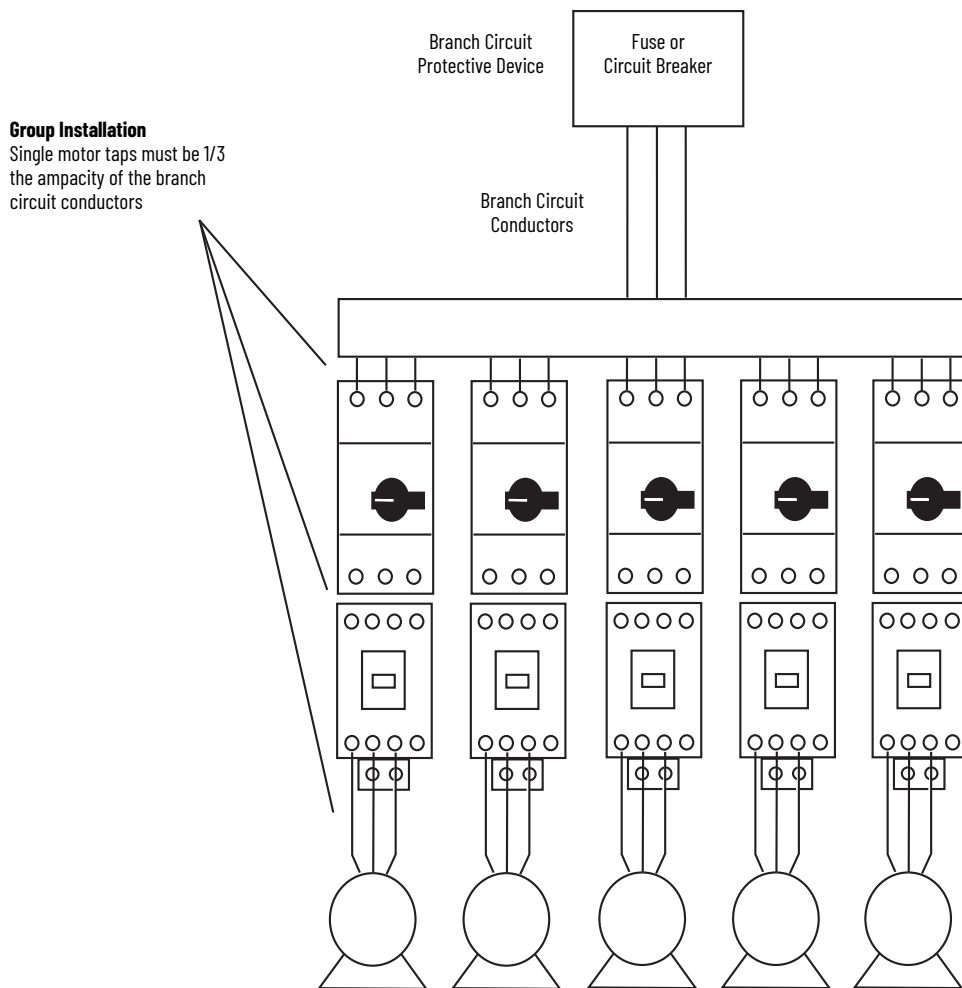
There is only one Branch Circuit Protective Device (BCPD) for the "Group".

Group installation has been successfully used for many years in the U.S. and Canada. It allows "two or motors or one or more motors and other loads to be connected to the same branch-circuit..." The most restrictive part of the conditions specified for Group Installation is the requirement for the protection of the conductors for each motor circuit.

[Figure 1](#) shows an example that illustrates installations involving multiple motors with a single BCPD protecting the entire "Group".

Bulletin 140MP Motor Protection Circuit Breakers are UL/CSA Listed for Group Installation: conductors from the BCPD to each motor must be a minimum of 1/3 the ampacity of the Branch Circuit conductors.

Figure 1 - Group Installation with MPCBs



Catalog Number Explanation

140MP
-
A
3
-
E
-
B10

a
b
c
d
e

| a | |
|-----------------|--|
| Bulletin Number | |
| Code | Description |
| 140MP | 140MP Motor Protection Circuit Breaker |

| b | |
|------------|-------------|
| Frame Size | |
| Code | Description |
| A | Frame A |

| c | |
|---|--------------|
| Interrupting Rating/ Breaking Capacity | |
| Code | Description |
| 3 | Normal break |

| d | |
|----------|--|
| Function | |
| Code | Description |
| E | Adjustable Thermal/ Fixed Magnetic MPCB |

| e | |
|---------------|------------------------------|
| Current Range | |
| Code | Description |
| A | 0.10 (example: A16 = 0.16 A) |
| B | 1.0 (example: B16 = 1.6 A) |
| C | 10 (example: C16 = 16 A) |

Product Selection

Table 1 - Bulletin 140MP MPCB Selection Using Current and Hp/kW Ratings

| Rated Operational Current (I_e) [A] | Motor Current Adjustment Range [A] | Nominal Magnetic Trip Current [A] | Max. Short Circuit Current [kA] | | Max. 3-phase Hp Ratings ⁽¹⁾ | | | | Max. kW, 3-Phase – AC-3 ⁽¹⁾ | | | | Cat. No. |
|---|------------------------------------|-----------------------------------|---------------------------------|---------------|--|------|------|------|--|----------|------|------|---------------|
| | | | 400V | 480V | 200V | 230V | 460V | 575V | 230V | 400/415V | 500V | 690V | |
| | | | (I_{cu}) | (group motor) | | | | | | | | | |
| 0.16 | 0.10...0.16 | 2 | 100 | 30 | – | – | – | – | – | 0.02 | 0.06 | 0.06 | 140MP-A3E-A16 |
| 0.25 | 0.16...0.25 | 3.1 | 100 | 30 | – | – | – | – | – | 0.04 | 0.09 | 0.09 | 140MP-A3E-A25 |
| 0.4 | 0.25...0.40 | 5 | 100 | 30 | – | – | – | 0.25 | 0.06 | 0.09 | 0.12 | 0.18 | 140MP-A3E-A40 |
| 0.63 | 0.40...0.63 | 7.9 | 100 | 30 | – | – | 0.25 | 0.33 | 0.09 | 0.18 | 0.18 | 0.25 | 140MP-A3E-A63 |
| 1 | 0.63...1.0 | 12.5 | 100 | 30 | – | – | 0.5 | 0.75 | 0.18 | 0.25 | 0.37 | 0.55 | 140MP-A3E-B10 |
| 1.6 | 1.0...1.6 | 20 | 100 | 30 | 0.25 | 0.33 | 1 | 1 | 0.25 | 0.55 | 0.75 | 1.1 | 140MP-A3E-B16 |
| 2.5 | 1.6...2.5 | 31.3 | 75 | 30 | 0.5 | 0.75 | 1.5 | 2 | 0.37 | 0.75 | 1.1 | 1.8 | 140MP-A3E-B25 |
| 4 | 2.5...4.0 | 50 | 75 | 18 | 1 | 0.75 | 3 | 3 | 0.75 | 1.5 | 2.2 | 3 | 140MP-A3E-B40 |
| 6.3 | 4.0...6.3 | 78.8 | 75 | 18 | 1.5 | 2 | 5 | 5 | 1.5 | 2.2 | 3 | 4 | 140MP-A3E-B63 |
| 10 | 6.3...10 | 150 | 75 | 18 | 3 | 3 | 7.5 | 10 | 2.2 | 4 | 6.3 | 7.5 | 140MP-A3E-C10 |
| 12 | 8.0...12 | 180 | 50 | 18 | 3 | 3 | 7.5 | 10 | 3 | 5.5 | 6.3 | 7.5 | 140MP-A3E-C12 |
| 16 | 10...16 | 240 | 15 | 18 | 5 | 5 | 10 | 15 | 4 | 7.5 | 10 | 13 | 140MP-A3E-C16 |
| 20 | 16...20 | 300 | 15 | 18 | 5 | 7.5 | 15 | 20 | 5.5 | 10 | 11 | 17 | 140MP-A3E-C20 |
| 25 | 20...25 | 375 | 15 | 18 | 7.5 | 7.5 | 20 | 20 | 5.5 | 11 | 15 | 22 | 140MP-A3E-C25 |
| 32 | 25...32 | 480 | 15 | 18 | 7.5 | 10 | 25 | 30 | 7.5 | 15 | 20 | 25 | 140MP-A3E-C32 |

(1) Horsepower/kW ratings shown are for reference. The final selection of the MPCB/MPSD depends on the actual motor full load current.

Table 2 - Bulletin 140MP MPCB Selection Using Interrupting Rating/Breaking Capacity

| Breaking Capacity, IEC 60947-2 | | | | | | | | | | | | | | | Cat. No. | | | |
|--------------------------------|---------------|--|---------------|---------------|--|---------------|---------------|--|-------------------|---------------|--|---------------|-------------------|--|---------------|-----|-------------------|---------------|
| 230V AC | | | 400V AC | | | 440V AC | | | 500V AC | | | 690V AC | | | | | | |
| I_{cs} [kA] | I_{cu} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cs} [kA] | I_{cu} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cs} [kA] | I_{cu} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cs} [kA] | I_{cu} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cs} [kA] | I_{cu} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | | | | |
| 50 | 100 | _(2) | 50 | 100 | _(2) | 30 | 100 | _(2) | 30 | 100 | _(2) | 30 | 100 | _(2) | 140MP-A3E-A16 | | | |
| 50 | 100 | | 50 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | 140MP-A3E-A25 | |
| 50 | 100 | | 50 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | 140MP-A3E-A40 | |
| 50 | 100 | | 50 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | 140MP-A3E-A63 | |
| 50 | 100 | | 50 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | 140MP-A3E-B10 | |
| 50 | 100 | | 50 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | | 30 | 100 | 140MP-A3E-B16 | |
| 50 | 75 | | 50 | 75 | | 10 | 30 | | 25 ⁽³⁾ | 10 | | 20 | 25 ⁽³⁾ | | 5 | 10 | 25 ⁽³⁾ | 140MP-A3E-B25 |
| 50 | 75 | | 50 | 75 | | 6 | 18 | | 25 ⁽³⁾ | 6 | | 15 | 25 ⁽³⁾ | | 2 | 3 | 25 ⁽³⁾ | 140MP-A3E-B40 |
| 50 | 50 | | 50 | 50 | | 6 | 18 | | 63 ⁽³⁾ | 6 | | 10 | 63 ⁽³⁾ | | 2 | 3 | 40 ⁽³⁾ | 140MP-A3E-B63 |
| 50 | 50 | | 50 | 50 | | 6 | 18 | | 63 ⁽³⁾ | 6 | | 10 | 63 ⁽³⁾ | | 2 | 3 | 50 ⁽³⁾ | 140MP-A3E-C10 |
| 25 | 50 | 80 ⁽³⁾ | 25 | 50 | 80 ⁽³⁾ | 6 | 15 | 63 ⁽³⁾ | 6 | 10 | 63 ⁽³⁾ | 2 | 3 | 50 ⁽³⁾ | 140MP-A3E-C12 | | | |
| 15 | 15 | 80 ⁽³⁾ | 15 | 15 | 80 ⁽³⁾ | 4 | 6 | 63 ⁽³⁾ | 4 | 6 | 63 ⁽³⁾ | 2 | 3 | 63 ⁽³⁾ | 140MP-A3E-C16 | | | |
| 10 | 15 | 125 ⁽³⁾ | 10 | 15 | 125 ⁽³⁾ | 3 | 6 | 125 ⁽³⁾ | 3 | 6 | 125 ⁽³⁾ | 2 | 3 | 80 ⁽³⁾ | 140MP-A3E-C20 | | | |
| 10 | 15 | 125 ⁽³⁾ | 10 | 15 | 125 ⁽³⁾ | 3 | 6 | 125 ⁽³⁾ | 3 | 6 | 125 ⁽³⁾ | 2 | 3 | 100 ⁽³⁾ | 140MP-A3E-C25 | | | |
| 10 | 15 | 125 ⁽³⁾ | 10 | 15 | 125 ⁽³⁾ | 3 | 6 | 125 ⁽³⁾ | 3 | 6 | 125 ⁽³⁾ | 2 | 3 | 100 ⁽³⁾ | 140MP-A3E-C32 | | | |

(1) Back-up fuses are type gG, aM.

(2) No Back-up fuse required if $I_{cc} < I_{cs}$.

(3) Rated back-up fuse for short-circuit up to 50 kA.

Accessories

Table 3 - Auxiliary Contacts


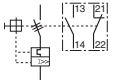
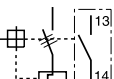
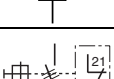
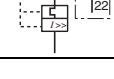

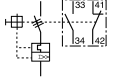
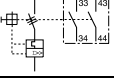
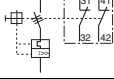
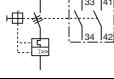
| Description | Auxiliary Contacts | | Connection Diagram | Pkg. Qty. | Cat. No. |
|--|--------------------|-----|---|-----------|----------------|
| | N.O | N.C | | | |
|  <p>Front-mounted Auxiliary Contact</p> <ul style="list-style-type: none"> No additional space required 1 and 2-pole | 1 | 1 |  | 10 | 140MP-A-AFA11 |
| | 1 | 0 |  | | 140MP-A-AFA10 |
| | 0 | 1 |  | | 140MP-A-AFA01 |
| | 2 | 0 |  | | 140MP-A-AFA20 |
|  <p>Right-side-mounted Auxiliary Contact</p> <ul style="list-style-type: none"> 2-pole Adds 9 mm (0.35 in.) to the width of the Manual Motor Starter Use compact bus bars with 54 mm (2.13 in.) spacing | 1 | 1 |  | 2 | 140MP-A-ASA11 |
| | 2 | 0 |  | | 140MP-A-ASA20 |
| | 0 | 2 |  | | 140MP-A-ASA02 |
| | Lead Contacts | |  | | 140MP-A-ASA20L |

Table 4 - Trip Contacts


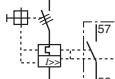


| Description | Auxiliary Contacts | | Connection Diagram | Pkg. Qty. | Cat. No. |
|--|--------------------|-----|--|-----------|----------------|
| | N.O | N.C | | | |
|  <p>Right-side-mounted Trip Signaling Contact</p> <ul style="list-style-type: none"> 2-pole Adds 9 mm (0.35 in.) to the width of the Manual Motor Starter Use compact bus bars with 54 mm (2.13 in.) spacing | 1 | 1 |  | 2 | 140MP-A-ASAR11 |
| | 2 | 0 |  | | 140MP-A-ASAR20 |
| | 0 | 2 |  | | 140MP-A-ASAR02 |

Table 5 - Undervoltage and Shunt Trip Units


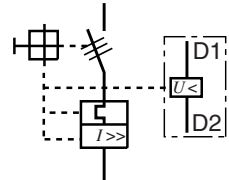

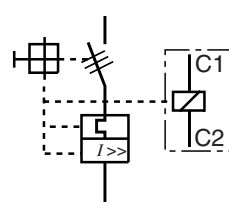
| Description | | Trip Rating | Connection Diagram | Pkg. Qty. | Cat. No. |
|--|--|---------------------------|--|-----------|--------------|
|  <p>Undervoltage Trip Release</p> <ul style="list-style-type: none"> • Left-side mounted • Adds 18 mm (0.71 in.) to the width of the Manual Motor Starter | | 20V, 50 Hz/ 24V, 60 Hz |  | 1 | 140MP-A-UXJ |
| | | 24V, 50 Hz | | | 140MP-A-UXK |
| | | 48V, 50 Hz | | | 140MP-A-UXY |
| | | 60V, 50 Hz | | | 140MP-A-UXYA |
| | | 110V, 50 Hz/ 120V, 60 Hz | | | 140MP-A-UXC |
| | | 208V, 60 Hz | | | 140MP-A-UXH |
| | | 230V, 50 Hz/ 240V, 60 Hz | | | 140MP-A-UXF |
| | | 400V, 50 Hz | | | 140MP-A-UXN |
| | | 415V, 50 Hz/ 480V, 60 Hz | | | 140MP-A-UXB |
| | | 575V, 60 Hz | | | 140MP-A-UXM |
|  <p>Shunt Trip Release</p> <ul style="list-style-type: none"> • Left-side mounted • Adds 18 mm (0.71 in.) to the width of the Manual Motor Starter | | 20...24V, 50/60 Hz |  | 1 | 140MP-A-SNKJ |
| | | 110V, 50/60 Hz | | | 140MP-A-SND |
| | | 200...240V, 50/60 Hz | | | 140MP-A-SNAF |
| | | 350...415V, 50/60 Hz | | | 140MP-A-SNN |

Table 6 - Bus Bars


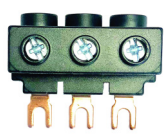
| Description | | Terminal Links | For Use With | Pkg. Qty. | Cat. No. |
|---|---|-------------------|--------------|-----------|--------------|
|  <p>Compact Bus Bars</p> <ul style="list-style-type: none"> - UL: 600V, 60 A - IEC: 690V, 65 A | <ul style="list-style-type: none"> • 45 mm (1.77 in.) spacing • For use with front-mounted auxiliary contact | 2 x 3 connections | 140MP | 10 | 140MP-A-W452 |
| | | 3 x 3 connections | | | 140MP-A-W453 |
| | | 4 x 3 connections | | | 140MP-A-W454 |
| | | 5 x 3 connections | | | 140MP-A-W455 |
| | <ul style="list-style-type: none"> • 54 mm (2.13 in.) spacing • For use with side-mounted auxiliary contact | 2 x 3 connections | 140MP | 10 | 140MP-A-W542 |
| | | 3 x 3 connections | | | 140MP-A-W543 |
| | | 4 x 3 connections | | | 140MP-A-W544 |
| | | 5 x 3 connections | | | 140MP-A-W545 |
| | <ul style="list-style-type: none"> • 63 mm (2.5 in.) spacing • For use with side-mounted auxiliary contact | 2 x 3 connections | 140MP | 10 | 140MP-A-W632 |
| | | 3 x 3 connections | | | 140MP-A-W633 |
| | | 4 x 3 connections | | | 140MP-A-W634 |
| | | 5 x 3 connections | | | 140MP-A-W635 |
|  <p>Bus Bar Feeder Terminal (Flat)</p> <ul style="list-style-type: none"> • Supply of compact bus bars • Increases terminal capacity | | | 140MP-A-W | 10 | 140MP-A-WTN |
| | <p>Bus Bar Feeder Terminal (High)</p> <ul style="list-style-type: none"> • Supply of compact bus bars • Increases terminal capacity | | | 140MP-A-W | 10 |

Table 7 - Connecting Modules

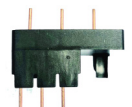


| Description | For Use With | Cat. No. |
|---|--------------------------|---------------|
|  <p>ECO Connecting Module—12 A (IEC), 11 A (UL)</p> <ul style="list-style-type: none"> • For DOL Starters • ECO Starters mount on single DIN Rail (140MP on DIN rail) • Electrical and mechanical interconnection of 140MP and 100-K Contactors | 140MP-A to 100-K | 140MP-A-PEK12 |
|  <p>ECO Connecting Module—25 A (IEC), 24 A (UL)</p> <ul style="list-style-type: none"> • For DOL Starters • ECO Starters mount on single DIN Rail (140MP on DIN rail) • Electrical and mechanical interconnection of 140MP and 100-C Contactors | 140MP-A to 100-C09...C23 | 140MP-A-PEC23 |

Table 7 - Connecting Modules (Continued)




| Description | | For Use With | Cat. No. |
|---|--|--------------|--------------|
|  | ECO Connecting module ⁽¹⁾ • For DOL starters • ECO Starters mount on single DIN Rail (140MP on DIN Rail) • Electrical and mechanical interconnection of 140MP and 100-E contactors • Package quantity: 10 | 16 A | 140MP-A-PE16 |
| | | | 140MP-A-PE26 |
| | | 38 A | 140MP-A-PE38 |

(1) Not suitable for 100(S)-E09...380J or 300(S)-T0...B00J contactors.

Table 8 - Additional Accessories

| Description | | For Use With | Pkg. Qty. | Cat. No. |
|---|---|-----------------------------------|-----------|---------------|
|  | Blank Space Cover • For covering unused terminal links • Must be ordered in multiples of 10 (10pieces/package) | 140MP-A-W | 50 | 140MP-A-WSN |
|  | Screw Adapter • For screw arrangement of a motor protection circuit breaker • Hat (DIN) Rail 35 x 7.5 mm (1.4 x 0.3 in.) • 44 mm (1.7 in.) length | 140MP | 10 | 140MP-A-N45 |
|  | Enclosure • Up to three padlocks in OFF position • Protection Class: IP65; UL/CSA Type 12 | Red/yellow handle | 1 | 140MP-A-ENY65 |
| | | Black handle | | 140MP-A-ENN65 |
|  | Door Mounting Kit • Up to three padlocks in OFF position • Protection Class: IP65; UL/CSA Type 12 | Red/yellow handle | 1 | 140MP-A-DMY65 |
| | | Black handle | | 140MP-A-DMN65 |
|  | Door Coupling Handle • Up to three padlocks in OFF position • Defeatable • Type 1/3R/12 • IP64 | Red/Yellow | 1 | 140MP-A-DCY65 |
| | | Black | | 140MP-A-DC65 |
|  | Coupler • Coded—Positioning of ON indication dependent from mounting orientation of the 140MP • Uncoded—Positioning of ON indication independent from mounting orientation of the 140MP | Driver with screw | 1 | 140MP-A-DNC |
| | | Driver without coding, with screw | | 140MP-A-DNUC |
|  | Shaft Alignment Ring • Supports the long shafts for alignment to the handle inlet. It makes closing panel doors more easy • Use for shafts | 140MP | 1 | 140MP-A-SAR |

Table 8 - Additional Accessories

| Description | | For Use With | Pkg. Qty. | Cat. No. | |
|---|---|-------------------|-----------|-------------|-------------|
|  | Extension Shaft | 105 mm (4.13 in.) | 140MP | 10 | 140MP-A-DS |
| | | 180 mm (7.1 in.) | | | 140MP-A-DSM |
|  | Extension Shaft Support <ul style="list-style-type: none"> • Supports the shaft in the extension of handle (140MP-A-DC) • Required for shaft lengths >130 mm (5.1 in.) • Snaps on the right side of the MPCB • Width: 9 mm (0.35 in.) • For use with screw-mounted or hat rail mounted devices. | 140MP | 1 | 140MP-A-SHS | |
|  | Lockable Handle Accessory <ul style="list-style-type: none"> • For locking 140MP devices in the OFF position | 140MP | 10 | 140MP-A-KN1 | |

Specifications

MPCB Specifications

Table 9 - General Ratings

| Attribute | | Value |
|---|---|--|
| Standards compliance | IEC | IEC/EN 60947-2, IEC/EN 60947-4-1, IEC/EN 60947-1 |
| | cULus | UL 60947-1, UL 60947-4-1, CSA C22.2, No. 60947-4-1 |
| Certifications | Global | RINA (Marine) |
| | Regional | CCC, KC, EAC, CE, IEC, cULus, CB Scheme |
| Rated operating voltage U_e | | 690V AC |
| Maximum operating voltage (UL) | | 600V |
| Rated Frequency | | 50/60 Hz |
| Trip Class | | 10A |
| Number of operations | Mechanical | 100,000 Cycles |
| | Electrical | 100,000 Cycles (0.1...16 A); 50,000 Cycles (20...32 A) |
| Rated impulse withstand voltage U_{imp} | | 6 kV |
| Rated insulation voltage U_i | | 690V |
| Pollution Degree | | 3 |
| Phase loss sensitivity | | Yes |
| Disconnect function per IEC/EN 60947-2 | | Yes |
| Resistance to shock per IEC 60068-2-27 | | 25 G/11 ms |
| Resistance to vibrations per IEC 60068-2-6 | | 5 G /3 ... 150 Hz |
| Mounting | | DIN Rail (EN 60715) |
| Group mounting (side by side) | | up to 40 °C (104 °F) |
| Minimum distance to other units same type | Horizontal | 0 mm (0 in.) |
| | Vertical | 150 mm (5.9 in.) |
| Minimum distance to electrical conductive board | Horizontal, up to 400V | 0 mm (0 in.) |
| | Horizontal, up to 690V | > 1.5 mm (0.06 in.) |
| | Vertical | 75 mm (2.96 in.) |
| Degree of Protection | Housing | IP20 |
| | Main Terminals | IP10 |
| Short-circuit ratings | @230V, 400V, 440V, 500V, and 690V | See Table 2 |
| | @480V and 600V—for motor disconnect | See Table 14 |
| | @480V and 600V—for group motor installation | |
| Utilization Category | IEC 60947-2 (Circuit breaker) | A |
| | IEC 60947-4-1 (Motor Starter) | AC-3 |

Table 10 - Power Loss

| Power Loss | Rated Operating Current [A] | Rated Operating Current [A] | | | | |
|--------------------------------------|-----------------------------|-----------------------------|-----------|---------|---------|-----|
| | | 0.16...1.6 | 2.5...6.3 | 10...12 | 16...25 | 32 |
| Power Loss in all 3 Poles up to: [W] | | 5.1 | 5.4 | 7.2 | 8.4 | 9.3 |

Table 11 - Environmental Ratings






| Attribute | | Value |
|--|------------------|---|
| Operating Ambient air temperature | Open—compensated | -25 ... +55 °C (-13...+131 °F) ⁽¹⁾ |
| | Open | -25 ... +70 °C (-13...+158 °F) ⁽¹⁾ |
| | Enclosed | 0 ... +40 °C (32...104 °F) |
| Storage Ambient air temperature | | -50 ... +80 °C (-58...+176 °F) |
| Maximum operating altitude permissible | | 2000 m (6561 ft) |

(1) With derating. See [Table 12](#).

Table 12 - Ambient Temperature Derating

| Cat. No. | Ambient Temperature Derating [A] | | |
|---------------|----------------------------------|----------------|----------------|
| | 40 °C (104 °F) | 55 °C (131 °F) | 70 °C (158 °F) |
| 140MP-A3E-C10 | 10 | 10 | 8 |
| 140MP-A3E-C12 | 12 | 12 | 10 |
| 140MP-A3E-C16 | 16 | 16 | 12 |
| 140MP-A3E-C20 | 20 | 20 | 18 |
| 140MP-A3E-C25 | 25 | 25 | 23 |
| 140MP-A3E-C32 | 32 | 32 | 29 |

Table 13 - MPCB Connecting Characteristics

| Connection | | No. of Conductors | Devices Rated ≤ 16 A | Devices Rated 20...32 A |
|--------------------|--|-------------------|---|--|
| Type of terminals | | |  | |
| Connection Screw | | | M3.5/Pozidriv No.2 | M4/Pozidriv No.2 |
| Wiring | Solid  | 1 or 2 | 1...4 mm ² | 1...2.5 mm ² 2.5...6 mm ² |
| | Flexible with ferrule  | 1 or 2 | 0.75...2.5 mm ² | 0.75...6 mm ² |
| | Flexible/finely stranded  | 1 or 2 | 0.75...2.5 mm ² /No. 16...12 AWG | 1.5...2.5 mm ² /No.16...8 AWG 2.5...6 mm ² /No.16...8 AWG |
| | Stranded per UL/CSA  | 1 or 2 | 1...4 mm ² /No. 16...12 AWG | 1...2.5 mm ² /No.16...8 AWG 2.5...6 mm ² /No.16...8 AWG |
| | Stripping length | | 9 mm (0.35 in.) | 10 mm (0.39 in.) |
| Tightening torques | | | 0.8...1.2 N•m/7...10 lb•in | 2 N•m /18 lb•in |

Application Ratings

Table 14 lists specific application ratings for MPCBs.

Table 14 - UL/CSA Listed Application Ratings, Motor Protection Circuit Breaker Only

| Cat. No. | UL 60947-4-1 – Manual Motor Controller | | | | |
|---------------|--|---------------------------------|------|--------------------|------|
| | Branch Circuit Protection Max. Size per NEC/CEC [A] | Max. Short Circuit Current [kA] | | | |
| | | Motor Disconnect | | Group Installation | |
| | | 480V | 600V | 480V | 600V |
| 140MP-A3E-A16 | 175 | 30 | 5 | 30 | 5 |
| 140MP-A3E-A25 | 175 | 30 | 5 | 30 | 5 |
| 140MP-A3E-A40 | 175 | 30 | 5 | 30 | 5 |
| 140MP-A3E-A63 | 175 | 30 | 5 | 30 | 5 |
| 140MP-A3E-B10 | 175 | 30 | 5 | 30 | 5 |
| 140MP-A3E-B16 | 175 | 30 | 5 | 30 | 5 |
| 140MP-A3E-B25 | 175 | 30 | 5 | 30 | 5 |
| 140MP-A3E-B40 | 175 | 18 | 5 | 18 | 5 |
| 140MP-A3E-B63 | 175 | 18 | 5 | 18 | 5 |
| 140MP-A3E-C10 | 175 | 18 | 5 | 18 | 5 |
| 140MP-A3E-C12 | 175 | 18 | 5 | 18 | 5 |
| 140MP-A3E-C16 | 175 | 18 | 5 | 18 | 5 |
| 140MP-A3E-C20 | 400 | 18 | 5 | 18 | 5 |
| 140MP-A3E-C25 | 400 | 18 | 5 | 18 | 5 |
| 140MP-A3E-C32 | 400 | 18 | 5 | 18 | 5 |

Table 15 through Table 20 lists specific application ratings for MPCBs in combination with Bulletin 100-K, 100-C, and 100-E contactors.

Type 1 Coordination—Specified 100-K contactors are suitable for motor group applications when they are used on the load side of the 140MP-A3E Manual Motor Controllers that are specified in Table 15.

Table 15 - Type 1 Application Ratings, 140MP to 100-K Miniature IEC Contactors

| Manual Motor Controller | Contactor ⁽¹⁾ | SCCR | | |
|-------------------------|-------------------------------|--------------------|--------------|---|
| | | 480V AC [kA] | 600V AC [kA] | Maximum Fuse or Circuit Breaker sized per NEC [A] |
| 140MP-A3E-A16 | 100-K05 100-K09 100-K12 | 30 | 5 | 175 |
| 140MP-A3E-A25 | | 30 | 5 | 175 |
| 140MP-A3E-A40 | | 30 | 5 | 175 |
| 140MP-A3E-A63 | | 30 | 5 | 175 |
| 140MP-A3E-B10 | | 30 | 5 | 175 |
| 140MP-A3E-B16 | | 30 | 5 | 175 |
| 140MP-A3E-B25 | | 30 | 5 | 175 |
| 140MP-A3E-B40 | | 18 | — | 175 |
| 140MP-A3E-B63 | | 18 | — | 175 |
| 140MP-A3E-C10 | | 100-K09 100-K12 | 18 | — |
| 140MP-A3E-C12 | 100-K12 | 18 | — | 175 |
| 140MP-A3E-C16 | | 18 | — | 175 |

(1) May be used with 140MP-A-PEK12 connecting module between 140MP-A3E manual motor controller and 100-K contactor.

Type 1 Coordination—Specified 100-C contactors (without R suffix) are suitable for motor group applications when they are used on the load side of the specified Manual Motor Controllers.

Table 16 - Type 1 Application Ratings, 140MP to 100-C IEC Contactors

| Manual Motor Controller | Contactor ⁽¹⁾ | SCCR | | |
|------------------------------|--|--------------|--------------|---|
| | | 480V AC [kA] | 600V AC [kA] | Maximum Fuse or Circuit Breaker sized per NEC [A] |
| 140MP-A3E-A16 | 100-C09 100-C12 100-C16 100-C23 | 30 | 5 | 175 |
| 140MP-A3E-A25 | | 30 | 5 | 175 |
| 140MP-A3E-A40 | | 30 | 5 | 175 |
| 140MP-A3E-A63 | | 30 | 5 | 175 |
| 140MP-A3E-B10 | | 30 | 5 | 175 |
| 140MP-A3E-B16 | | 30 | 5 | 175 |
| 140MP-A3E-B25 | | 30 | 5 | 175 |
| 140MP-A3E-B40 | | 18 | 5 | 175 |
| 140MP-A3E-B63 | | 18 | 5 | 175 |
| 140MP-A3E-C10 | | 18 | 5 | 175 |
| 140MP-A3E-C12 | 100-C12 100-C16 100-C23 | 18 | 5 | 175 |
| 140MP-A3E-C16 ⁽²⁾ | 100-C16, 100-C23 | 18 | 5 | 175 |
| 140MP-A3E-C20 | 100-C23 100-C30 100-C37 | 18 | 5 | 400 |
| 140MP-A3E-C25 ⁽³⁾ | 100-C23 | 18 | — | 400 |
| 140MP-A3E-C25 ⁽³⁾ | 100-C30, 100-C37 | 18 | 5 | 400 |
| 140MP-A3E-C32 ⁽⁴⁾ | 100-C30, 100-C37 | 18 | 5 | 400 |

(1) 140MP-A-PEC23 connection modules may be used with 100-C09...-C23 up to 24 A.

(2) Limited to 15.5 FLA maximum when used in a 365 x 235 x 140 mm (14.4 x 9.3 x 5.5 in.) (200%) or larger enclosure. Limited to 14.5 FLA maximum when used in 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum sized enclosure.

(3) Minimum enclosure size is 170 x 670 x 235 mm (6.7 x 26.4 x 9.3 in.) (250%) at full load current. If end use current is 22.5 FLA or less, may be used in an enclosure as small as 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%).

(4) May be used at 30.8 FLA maximum when used ambient temperature of 40 °C (104 °F) maximum. May be used up to 29 FLA when used in a 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum size enclosure.

Table 17 - Type 2 Coordination Ratings per IEC 60947-4-1, 140MP to 100-C IEC Contactors, Standard Motor Protection

| Cat. No. | Type 2 Coordination Ratings, IEC 60947-4-1 | |
|---------------|--|---------------------------------|
| | 400/415V | |
| | Max. Short Circuit Current [kA] | For Use With Contactor Cat. No. |
| 140MP-A3E-A16 | 50 | 100-C09 |
| 140MP-A3E-A25 | 50 | 100-C09 |
| 140MP-A3E-A40 | 50 | 100-C09 |
| 140MP-A3E-A63 | 50 | 100-C09 |
| 140MP-A3E-B10 | 50 | 100-C09 |
| 140MP-A3E-B16 | 50 | 100-C09 |
| 140MP-A3E-B25 | 50 | 100-C09 |
| 140MP-A3E-B40 | 50 | 100-C09 |
| 140MP-A3E-B63 | 50 | 100-C09 |
| 140MP-A3E-C10 | 50 | 100-C09 |
| 140MP-A3E-C12 | 25 | 100-C12 |
| 140MP-A3E-C16 | 10 | 100-C23 |
| 140MP-A3E-C20 | 10 | 100-C30 |
| 140MP-A3E-C25 | 10 | 100-C30 |
| 140MP-A3E-C32 | 10 | 100-C30 |

Table 18 - Type 2 Coordination Ratings per IEC 60947-4-1, 140MP to 100-E IEC Contactors, Standard Motor Protection

| Cat. No. | Type 2 Coordination Ratings, IEC 60947-4-1 | |
|---------------|--|------------------------|
| | 400V | |
| | Max. Short Circuit Current [kA] | Minimum Contactor Size |
| 140MP-A3E-A16 | 50 | 100-E09 |
| 140MP-A3E-A25 | 50 | 100-E09 |
| 140MP-A3E-A40 | 50 | 100-E09 |
| 140MP-A3E-A63 | 50 | 100-E09 |
| 140MP-A3E-B10 | 50 | 100-E09 |
| 140MP-A3E-B16 | 50 | 100-E09 |
| 140MP-A3E-B25 | 50 | 100-E09 |
| 140MP-A3E-B40 | 50 | 100-E26 |
| 140MP-A3E-B63 | 50 | 100-E26 |
| 140MP-A3E-C10 | 50 | 100-E26 |
| 140MP-A3E-C12 | 25 | 100-E26 |
| 140MP-A3E-C16 | 16 | 100-E26 |
| 140MP-A3E-C20 | 10 | 100-E30 |
| 140MP-A3E-C25 | 10 | 100-E30 |
| 140MP-A3E-C32 | 10 | 100-E38 |

Table 19 - Type 2 Coordination Ratings per UL 60947-4-1, 140MP to 100-C IEC Contactors, Standard Motor Protection

| Cat. No. | Contactor ⁽¹⁾ | Type 2 Coordination Ratings, UL 60947-4-1 | | Max. Fuse or Circuit Breaker Size per NEC [A] |
|------------------------------|--|---|---------------------------------|---|
| | | 480V | 600V | |
| | | Max. Short Circuit Current [kA] | Max. Short Circuit Current [kA] | |
| 140MP-A3E-A16 | 100-C09 100-C12 100-C16 100-C23 | 30 | 5 | 175 |
| 140MP-A3E-A25 | | 30 | 5 | 175 |
| 140MP-A3E-A40 | | 30 | 5 | 175 |
| 140MP-A3E-A63 | | 30 | 5 | 175 |
| 140MP-A3E-B10 | | 30 | 5 | 175 |
| 140MP-A3E-B16 | | 30 | 5 | 175 |
| 140MP-A3E-B25 | | 100-C12 100-C16 100-C23 | 30 | 5 |
| 140MP-A3E-B40 | 100-C16 100-C23 | 18 | 5 | 175 |
| 140MP-A3E-B63 | 100-C23 | 18 | 5 | 175 |
| 140MP-A3E-C10 | 100-C30 100-C37 | 18 | 5 | 175 |
| 140MP-A3E-C12 | | 18 | 5 | 175 |
| 140MP-A3E-C16 ⁽²⁾ | | 18 | 5 | 175 |
| 140MP-A3E-C20 | | 18 | 5 | 400 |
| 140MP-A3E-C25 ⁽³⁾ | | 18 | 5 | 400 |
| 140MP-A3E-C32 ⁽⁴⁾ | | 18 | 5 | 400 |

- (1) 140MP-A-PEC23 connection modules may be used with 100-C09...-C23 up to 24 A.
- (2) Limited to 15.5 FLA maximum when used in a 365 x 235 x 140 mm (14.4 x 9.3 x 5.5 in.) (200%) or larger enclosure.
Limited to 14.5 FLA maximum when used in 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum sized enclosure.
- (3) Minimum enclosure size is 170 x 670 x 235 mm (6.7 x 26.4 x 9.3 in.) (250%) at full load current.
If end use current is 22.5 FLA or less, may be used in an enclosure as small as 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%).
- (4) May be used at 30.8 FLA maximum when used ambient temperature of 40 °C (104 °F) maximum.
May be used up to 29 FLA when used in a 115 x 290 x 180 mm (4.5 x 11.4 x 7.1 in.) (150%) minimum size enclosure.

Table 20 - Type 2 Coordination Ratings per UL 60947-4-1, 140MP to 100-E IEC Contactors, Standard Motor Protection

| Cat. No. | Max. Fuse or Circuit Breaker per NEC | Type 2 Coordination Ratings, UL 60947-4-1 | | | |
|---------------|--------------------------------------|---|------------------------|---------------------------------|------------------------|
| | | 480V | | 600V | |
| | | Max. Short-circuit Current [kA] | Minimum Contactor Size | Max. Short-circuit Current [kA] | Minimum Contactor Size |
| 140MP-A3E-A16 | 175 | 30 | 100-E09 | 5 | 100-E09 |
| 140MP-A3E-A25 | 175 | 30 | 100-E09 | 5 | 100-E09 |
| 140MP-A3E-A40 | 175 | 30 | 100-E09 | 5 | 100-E09 |
| 140MP-A3E-A63 | 175 | 30 | 100-E09 | 5 | 100-E09 |
| 140MP-A3E-B10 | 175 | 30 | 100-E09 | 5 | 100-E09 |
| 140MP-A3E-B16 | 175 | 30 | 100-E09 | 5 | 100-E09 |
| 140MP-A3E-B25 | 175 | 30 | 100-E16 | 5 | 100-E16 |
| 140MP-A3E-B40 | 175 | 18 | 100-E26 | 5 | 100-E16 |
| 140MP-A3E-B63 | 175 | 18 | 100-E26 | 5 | 100-E26 |
| 140MP-A3E-C10 | 175 | 18 | 100-E26 | 5 | 100-E30 |
| 140MP-A3E-C12 | 175 | 18 | 100-E26 | 5 | 100-E30 |
| 140MP-A3E-C16 | 175 | 18 | 100-E26 | 5 | 100-E40 |
| 140MP-A3E-C20 | 400 | 18 | 100-E26 | 5 | 100-E40 |
| 140MP-A3E-C25 | 400 | 18 | 100-E30 | 5 | 100-E40 |
| 140MP-A3E-C32 | 400 | 18 | 100-E38 | 5 | 100-E40 |

Accessory Specifications

Table 21 - Auxiliary Contact, Signaling Contact, and Short-circuit Signaling Contact Specifications

| Attribute | | Side-mounted Auxiliary, Signaling, and Short-circuit Signaling Contacts | Front-mounted Auxiliary Contacts |
|--|------------|---|---|
| Standards compliance | IEC | IEC/EN 60947-1, IEC/EN 60947-5-1 | IEC/EN 60947-1, IEC/EN 60947-5-1 |
| | UL/cULus | UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1 | UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1 |
| Rated operating voltage U_e | | 690V AC/600V DC | 250V AC/250V DC |
| Conventional free-air thermal current I_{th} | | 6 A | 5 A |
| Rated Frequency | | 50/60 Hz | 50/60 Hz |
| Rated impulse withstand voltage U_{imp} | | 6 kV | 6 kV |
| Rated insulation voltage U_i | | 690V AC | 250V AC |
| Pollution Degree | | 3 | 3 |
| Ambient air temperature | Operation | -25 ... +60 °C (-13...+140 °F) | -25 ... +60 °C (-13...+140 °F) |
| | Storage | -50 ... +80 °C (-58...+176 °F) | -50 ... +80 °C (-58...+176 °F) |
| Resistance to shock per IEC 60068-2-27 | | 25 G/11 ms | 25 G/11 ms |
| Resistance to vibrations per IEC 60068-2-6 | | 5 G/3 ... 150 Hz | 5 G/3 ... 150 Hz |
| Rated operational current I_e AC-15 per IEC/EN 60947-5-1 for utilization category | 24V, 120V | 6 A | 3 A |
| | 240V | 4 A | 1.5 A |
| | 400V | 3 A | — |
| | 440V, 690V | 1 A | — |
| Rated operational current I_e DC-13 per IEC/EN 60947-5-1 for utilization category | 24V | 2 A | 1 A |
| | 125V | 0.55 A | 0.27 A |
| | 250V | 0.27 A | 0.11 A |
| | 440V, 600V | 0.15 A (0.1 A for Cat. No. 140MP-A-ASA20L) | — |
| Minimum switching capacity | | 17V DC/5 mA | 17V DC/5 mA |
| Short-circuit protective device (N.O, N.C) | | 10 A Type gG | 10 A Type gG |
| Duty time | | 100% | 100% |
| Mounting | | Right side | Front |
| Number of operations | Mechanical | 50,000 cycles | 50,000 cycles |
| | Electrical | | |
| Contact utilization characteristics according to UL/CSA | | | |
| Rated operating voltage U_e per UL/CSA | | 600V AC/600V DC | 250V AC/250V DC |
| Pilot duty | | B600, Q600 | B300, R300 |
| AC thermal rated current | | 5 A | 5 A |
| AC maximum volt-ampere | making | 3600 | 3600 VA |
| | breaking | 360 | 360 VA |
| DC thermal rated current | | 2.5 A | 2.5 A |
| DC maximum volt-ampere | making | 69 VA | 28 VA |
| | breaking | | |
| Connecting characteristics | | Table 24 | Table 24 |

Table 22 - Undervoltage Release Specifications

| Attribute | | Value |
|--|-----------|---|
| Standards compliance | IEC | IEC/EN 60947-1, IEC/EN 60947-5-1 |
| | UL/cULus | UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1 |
| Rated control supply voltage | | See Table 5 |
| Rated frequency | | |
| Operating voltage | Tripping | 0.35 ... 0.7 x U _s |
| | Coil | 0.85 ... 1.1 x U _s |
| Rated impulse withstand voltage U _{imp} | | 6 kV |
| Rated insulation voltage U _i | | 690V |
| Pollution degree | | 3 |
| Ambient air temperature | Operation | -25 ... +60 °C (-13...+140 °F) |
| | Storage | -50 ... +80 °C (-58...+176 °F) |
| Resistance to shock per IEC 60068-2-27 | | 25 G/11 ms |
| Resistance to vibrations per IEC 60068-2-6 | | 5 G/3 ... 150 Hz |
| Mounting | | left side of MPCB |

Table 23 - Shunt Trip Specifications

| Attribute | | Value |
|--|-----------|---|
| Standards compliance | IEC | IEC/EN 60947-1, IEC/EN 60947-5-1 |
| | UL/cULus | UL 60947-4-1, CAN/CSA22.2 No. 60947-4-1 |
| Rated control supply voltage | | See Table 5 |
| Rated frequency | | |
| Operating voltage | Tripping | 0.7 ... 1.1 x U _s |
| Rated impulse withstand voltage U _{imp} | | 6 kV |
| Rated insulation voltage U _i | | 690V |
| Pollution degree | | 3 |
| Ambient air temperature | Operation | -25 ... +60 °C (-13...+140 °F) |
| | Storage | -50 ... +80 °C (-58...+176 °F) |
| Resistance to shock per IEC 60068-2-27 | | 15 G/11ms |
| Resistance to vibrations per IEC 60068-2-6 | | 5 G/3 ... 150 Hz |
| Mounting | | left side of MPCB |

Table 24 - Auxiliary Contact Connecting Characteristics







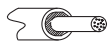


| Connection | | No. of Conductors | Side Mounted | Front Mounted |
|-------------------------|---|-------------------|----------------------------|-------------------------|
| Wiring | Solid  | 1 or 2 | 1...1.5 mm ² | 1...2.5 mm ² |
| | Flexible with ferrule  | 1 or 2 | 0.75...1.5 mm ² | |
| | Flexible  | 1 or 2 | 0.75...1.5 mm ² | |
| | Stranded per UL/CSA  | 1 or 2 | No. 16...14 AWG | |
| | Stripping length | | 8 mm (0.31 in.) | |
| Tightening torques | | | 0.8...1.2 N•m/7 lb•in | |
| Recommended screwdriver | | | Pozidriv No.2 | |

Table 25 - Feeder Terminal and Bus Bar Current Ratings

| Attribute | 140MP-A-W45..., -W54..., -W63... | 140MP-A-WT... |
|--|---------------------------------------|---------------|
| Rated operational voltage U_e | 690V | |
| Rated operational voltage U_e per UL/CSA | 600V AC | |
| Rated operational current I_e | 65 A | |
| Rated operational current I_e per UL/CSA | 60 A | 65 A |
| Suitable for enclosure size (UL) | 200% of Size of 140MP-A with bus bars | |
| Rated frequency | 50/60 Hz | |
| Rated impulse withstand voltage U_{imp} | 6 kV | |
| Rated insulation voltage U_i | 690V AC | |

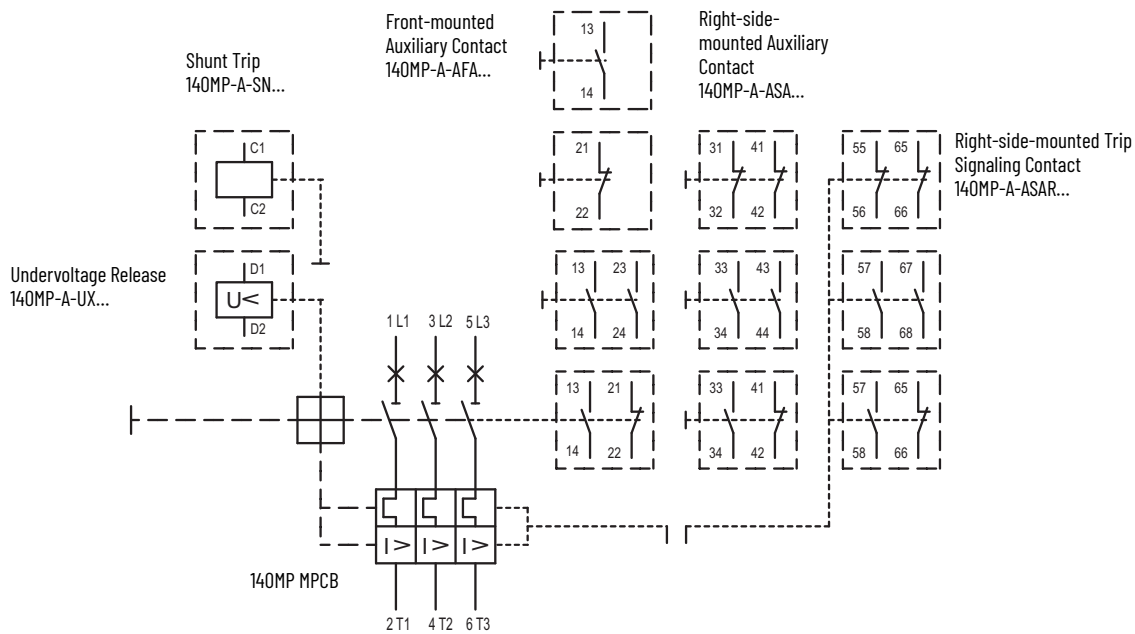
Table 26 - Main Circuit Connecting Characteristics

| Connection | | No. of Conductors | Value |
|-------------------------|---|-------------------|------------------------|
| Wiring | Solid  | 1 | 6...25 mm ² |
| | Flexible with ferrule  | 1 | 6...16 mm ² |
| | Flexible with insulated ferrule  | 1 | 6...16 mm ² |
| | Flexible  | 1 | 6...16 mm ² |
| | Stranded per UL/CSA  | 1 | No. 10...4 AWG |
| | Stripping length | | 10 mm (0.39 in.) |
| Tightening torques | | | 2.5 N•m/22 lb•in |
| Recommended screwdriver | | | Pozidriv No.2 |

Wiring Diagrams

Figure 2 illustrates basic wiring for the 140MP MPCB and accessories.

Figure 2 - 140MP Wiring Example



Approximate Dimensions

Dimensions are in millimeters (inches) and are not intended for manufacturing purposes.

Figure 3 - Mounting Position

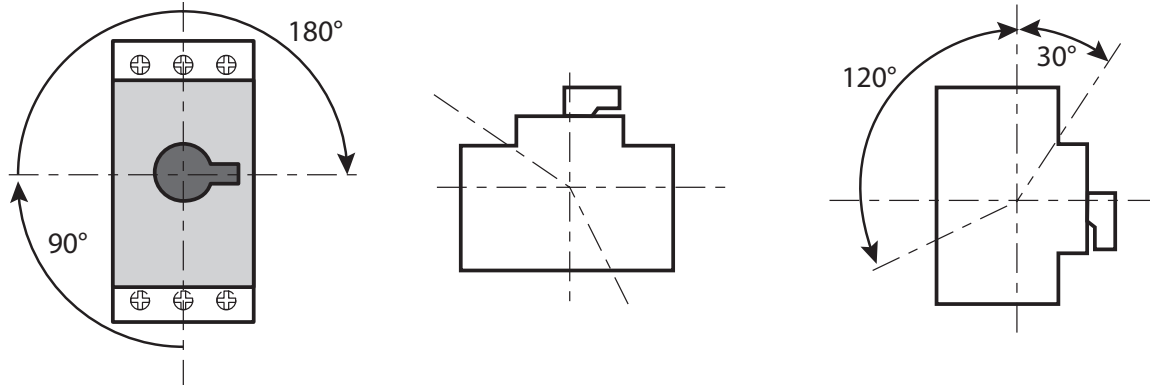


Figure 4 - Cat. No. 140MP-A3E..., 140MP-A-N45 ≤16 A

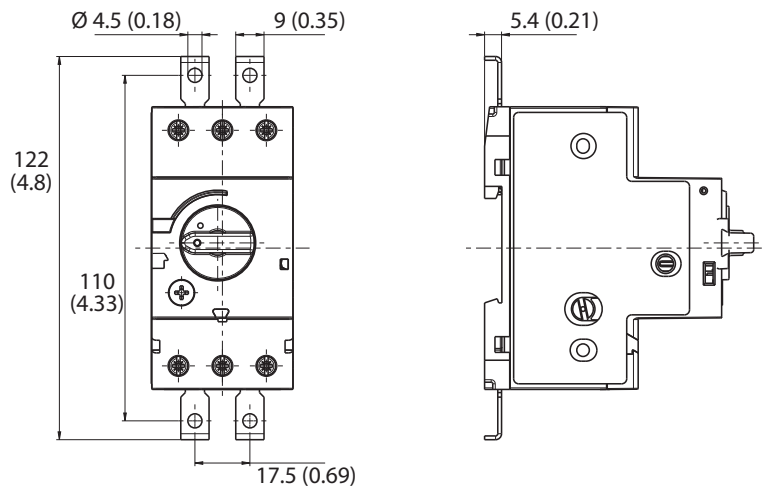


Figure 5 - Cat. No. 140MP-A3E..., 140MP-A-N45 ≥20 A

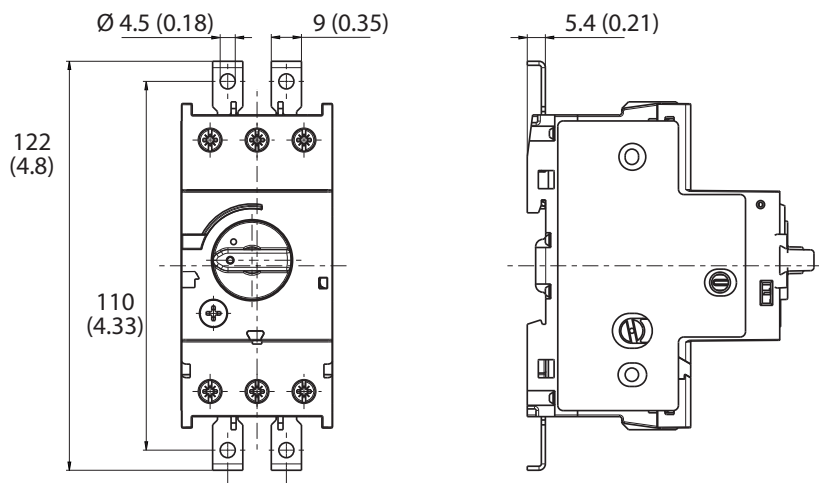


Figure 6 - Cat. No. 140MP-A3E-C16 with Accessories

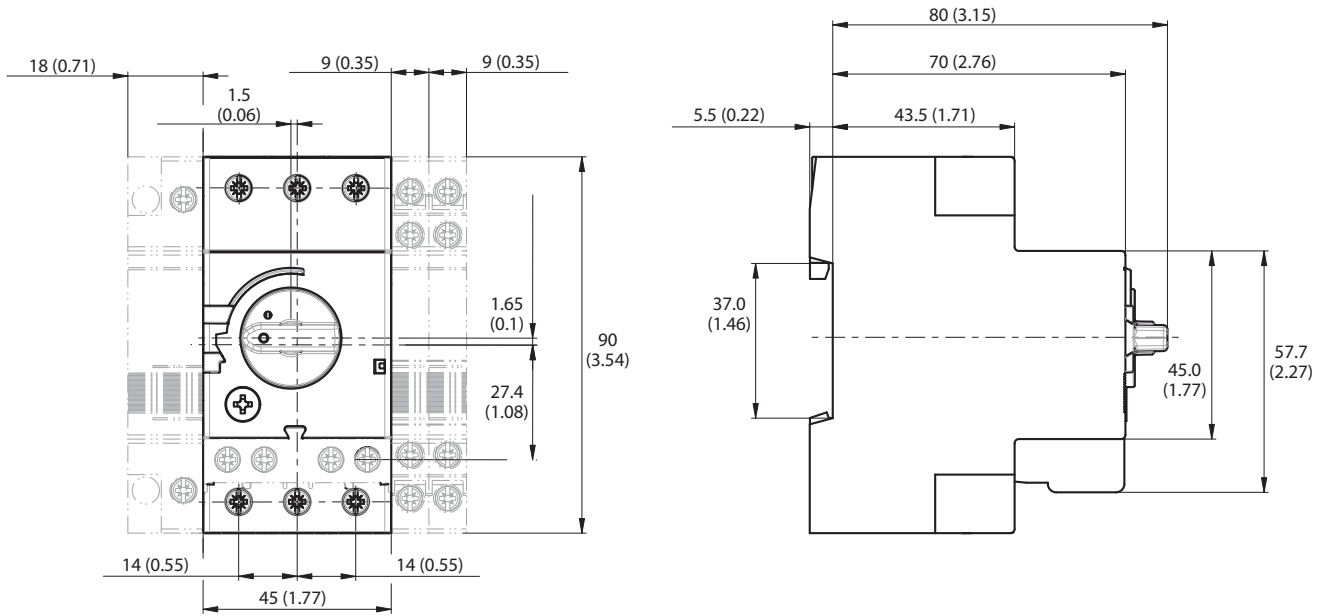
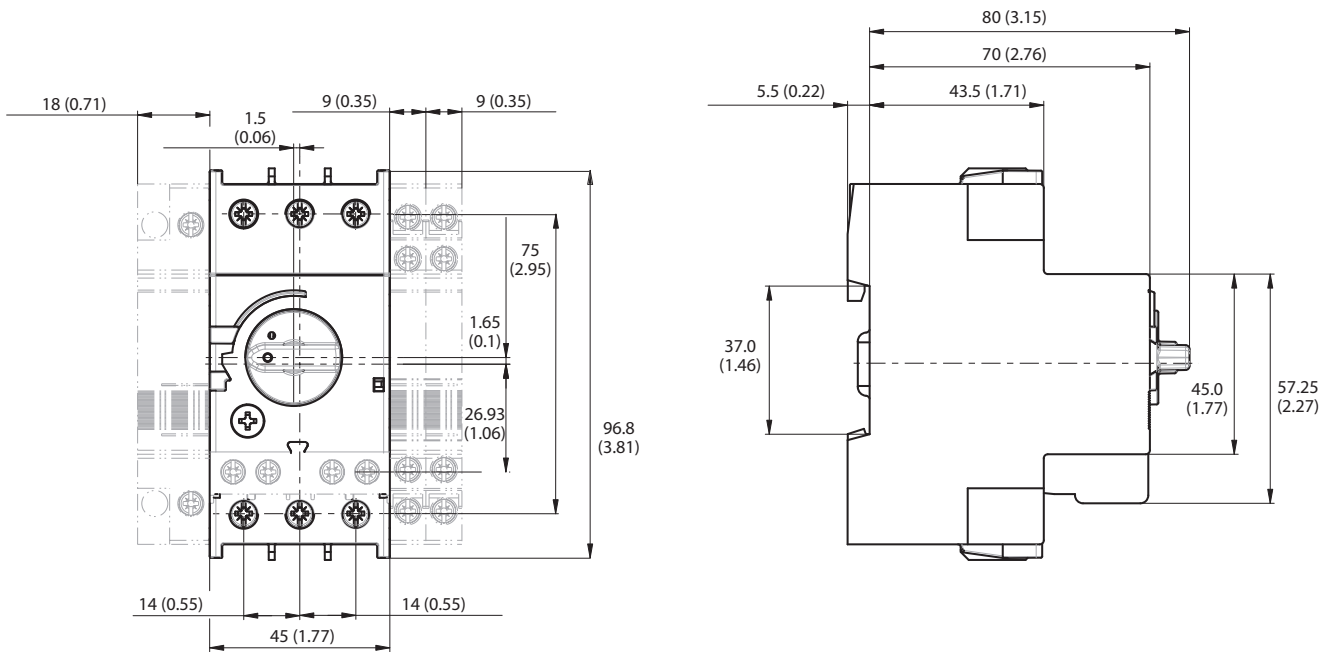


Figure 7 - Cat. No. 140MP-A3E-C32 with Accessories



Bulletin 140MT Motor Protective Switching Devices and Motor Circuit Protectors

Product Overview

Bulletin 140MT Motor Protection Circuit Breakers (MPCBs) or Motor Protective Switching Devices (MPSDs) are UL Listed as Manual, Self-Protected Combination Motor Controllers (Type E) and Manual Motor Controllers (with approvals for Suitable as Motor Disconnect and Suitable for use in Group Installation).

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

According to UL 60947-4-1, CSA C22.2 No.60947-4-1, these devices may provide the following control and protection functions.

- Disconnect for motor branch circuit
- Short-circuit Protection (magnetic protection)
- Overload protection (thermal protection)
- Manual switching (motor control means)

Group motor installations eliminate the need for individual branch short-circuit protective devices for each motor circuit, reducing panel space, installation and wiring time, and costs. There is only one Branch Circuit Protective Device (BCPD) for the "Group". Bulletin 140MT devices are also UL Listed for Tap Conductor protection in group installations, which helps reduce conductor sizing.

According to UL 60947-4-1, CSA C22.2 No.60947-4-1, these devices these devices certified for group motor installation may provide the following control and protection functions.

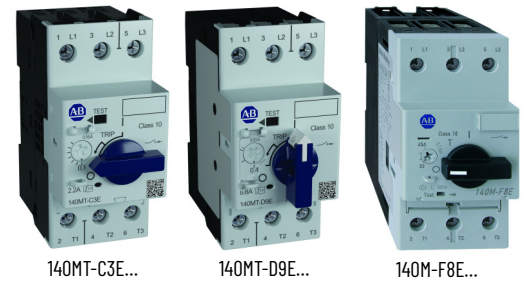
- Disconnect for motor branch circuit
- Overload protection (thermal protection)
- Manual switching (motor control means)

Bulletin 140MT devices meet requirement of Motor Protective Switching Devices (MPSD) according to IEC 60947-4-1 and Circuit Breaker according to IEC 60947-2 standard for application outside of North America. These devices provide the following functions.

- Disconnect for motor branch circuit
- Short-circuit Protection (magnetic protection)
- Overload protection (thermal protection)
- Manual switching (motor control means)

Bulletin 140MT devices provide Trip Class 10 overload protection and phase loss sensitivity protection. These are suitable for single- and three- phase applications.

Cat. No. 140MT-D9V devices can also be applied at the output of a variable frequency drive (VFD) in multi-motor applications.



Application Diagrams

Group Installation with MPCBs

There is only one Branch Circuit Protective Device (BCPD) for the "Group".

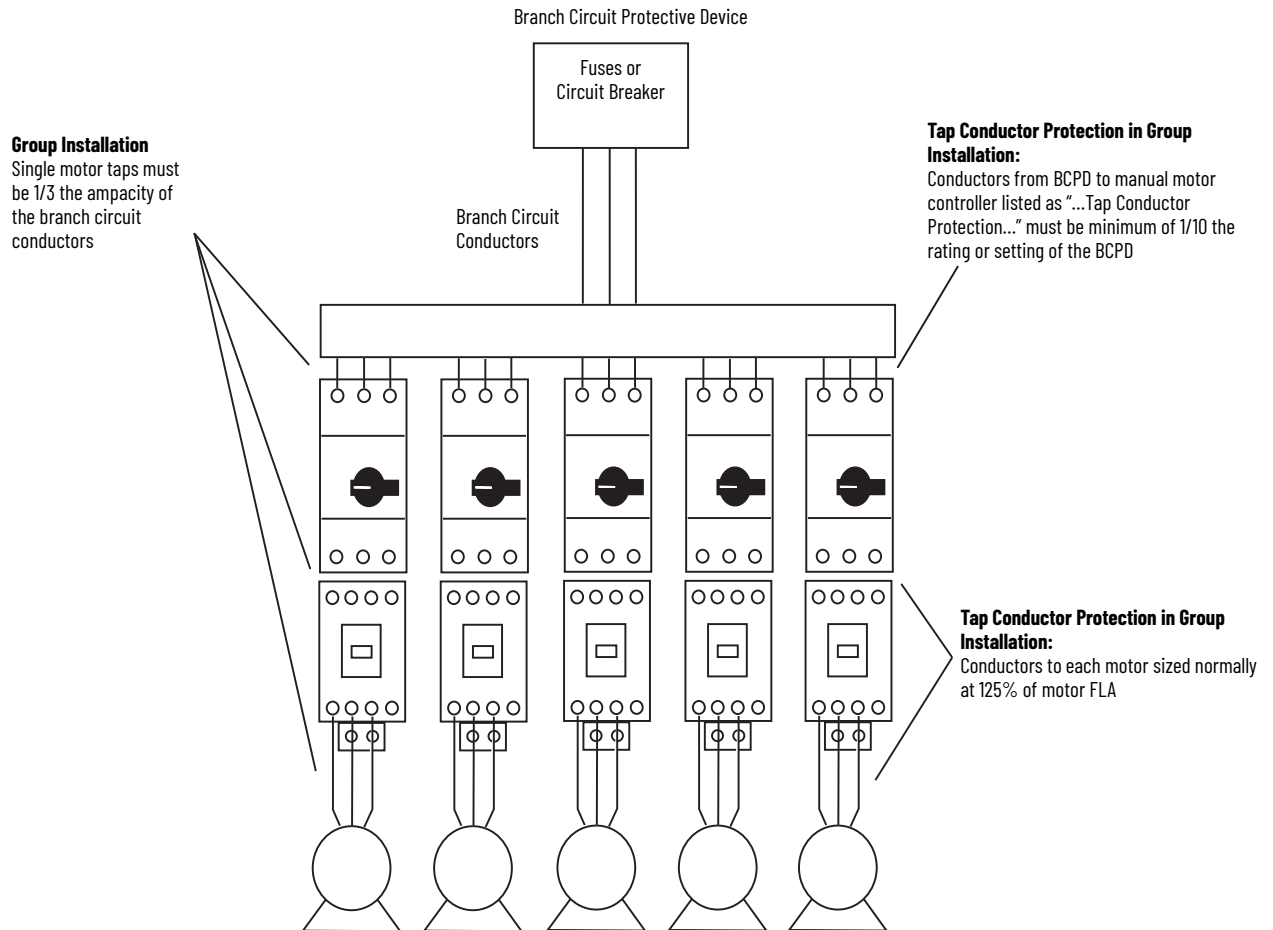
Group installation has been successfully used for many years in the U.S. and Canada. It allows "two or motors or one or more motors and other loads to be connected to the same branch-circuit...". The most restrictive part of the conditions specified for Group Installation is the requirement for the protection of the conductors for each motor circuit. In the U.S. NEC for 2002, a new rule for the conductor sizing was added for devices that are listed and marked "Suitable for use as Tap Conductor Protection".

Figure 8 shows an example that illustrates installations involving multiple motors with a single BCPD protecting the entire "Group".

Bulletin 140MT Motor Protection Circuit Breakers UL/CSA Listed for Group Installation: conductors from the BCPD to each motor must be a minimum of 1/3 the ampacity of the Branch Circuit conductors.

Bulletin 140MT Motor Protection Circuit Breakers UL/CSA Listed for Tap conductor Protection in Group Installations: conductors from the BCPD to manual motor controller listed as "...Tap Conductor Protection..." must be minimum of 1/10 the rating or setting of the BCPD. Conductors from the controller to the motor must be 125% of the motor FLA.

Figure 8 - Group Installation with MPCBs

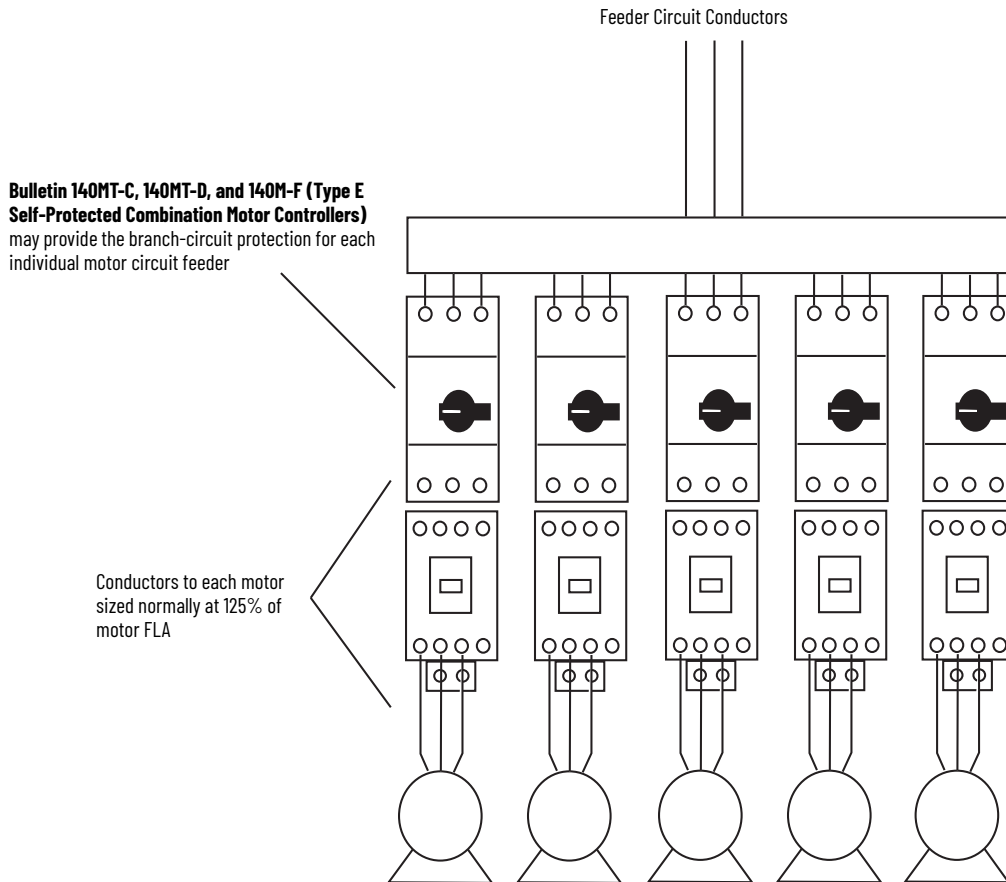


Multiple Motor Installation with MPCBs

Each Motor has an Individual Branch Circuit Protective Device.

Bulletin 140MT Motor Protection Circuit Breakers (MPCBs) are UL/CSA Listed as Type E Manual Self-Protected Combination Motor Controllers or UL/CSA Listed as Circuit Breakers. These UL/CSA Listings allow the Bulletin 140MT MPCBs to provide the branch-circuit, short-circuit protection (as well as overload protection) for each individual motor circuit. Additional short-circuit protection is not required for the protection of the individual motor circuits, leaving only the requirement for protection of the feeder circuit conductors by an upstream protective device. [Figure 9](#) shows an example that illustrates installations involving multiple motors, each with its own branch-circuit protection (BCPD).

Figure 9 - Multiple Motor Installation with MPCBs



Catalog Number Explanation

C- and D-Frame Devices

140MT
- C
3
E
- B63
- KN
- MT
- XC
- GK

a
b
c
d
e
f
g
h
i

| a | |
|-----------------|---|
| Bulletin Number | |
| Code | Description |
| 140MT | 140MT Motor Protective Switching Device (Thermal) |

| b | |
|-------------------------------|---------------|
| Current Rating/ Frame Size | |
| Code | Description |
| C | 32 A, Frame C |
| D | 40 A, Frame D |

| c | |
|---|--------------|
| Interrupting Rating/ Breaking Capacity | |
| Code | Description |
| 3 | Normal break |
| 9 | High break |

| d | |
|----------|--|
| Function | |
| Code | Description |
| E | Adjustable Thermal/Fixed Magnetic (14 x I _n) MPCB |
| N | Fixed Magnetic (14 x I _n) MCP |
| T | Adjustable Thermal/Fixed Magnetic (18...22 x I _n) MPCB |
| V | Fixed Magnetic (application at output of VFD multi-motor) |

| e | |
|---------------|------------------------------|
| Current Range | |
| Code | Description |
| A | 0.10 (example: A16 = 0.16 A) |
| B | 1.0 (example: B16 = 1.6 A) |
| C | 10 (example: C16 = 16 A) |

| f | |
|-------------------|-----------------------------------|
| Knob and Adapters | |
| Code | Description |
| KN | Black lockable knob |
| KY | Red/yellow lockable knob |
| KB | Blue lockable knob (C-Frame only) |
| TE | Normal break |

| g | |
|---------------|----------------------------|
| Mounting Type | |
| Code | Description |
| MT | Standard busbar mount, top |

| h | |
|-----------------------------------|------------------------------|
| Auxiliary Contacts ⁽¹⁾ | |
| Bottom Front | |
| 1st Code | Description |
| X | No contact |
| B | 1 N.O. |
| C | 1 N.O. + 1 N.C. |
| D | 2 N.O. |
| R | 1 N.C. + 1 N.O. (SC+OL) |
| S | 1 N.O. + 1 N.O. (SC+OL) |
| M | 1 N.O. + 1 N.C. (SC+OL) |
| N | 1 N.O. (SC+OL) + 1 N.O. (SC) |
| Right Side | |
| 2nd Code | Description |
| X | No contact |
| C | 1 N.O. + 1 N.C. |
| D | 2 N.C. |
| E | 2 N.C. |

| i | |
|------------------------------|--------------------------|
| Undervoltage and Shunt Trips | |
| Code | Description |
| Undervoltage Trip Units | |
| GK | 24V, 50 Hz |
| GD | 110V, 50 Hz/120V, 60 Hz |
| GF | 220...230V, 50 Hz |
| GA | 240...260V, 60 Hz |
| GN | 380...400V, 50 Hz |
| GB | 480V, 60 Hz/415V, 50 Hz |
| Shunt Trip Units | |
| PK | 24V, 50 Hz |
| PD | 110V, 50 Hz / 120V 60 Hz |
| PF | 220...230V, 50 Hz |
| PA | 240...260V, 60 Hz |
| PT | 240V, 50 Hz/277V, 60 Hz |
| PN | 380...400V, 50 Hz |
| PB | 480V, 60 Hz/415V, 50 Hz |
| PZJ | 24V DC |

(1) Choose up to two auxiliary contacts. Use the first character in the code to specify the front mounted auxiliary contact; use the second character to specify the right side-mounted auxiliary contact. Example: code -XC is for no front-mounted contact, and a side-mounted auxiliary contact with 1 N.O. and 1 N.C. contact.

F-Frame Devices

140M
- F
8
E
- C10

a
b
c
d
e

| a | |
|-----------------|---------------------------------------|
| Bulletin Number | |
| Code | Description |
| 140M | 140M Motor Protection Circuit Breaker |

| b | |
|-------------------------------|---------------|
| Current Rating/ Frame Size | |
| Code | Description |
| F | 45 A, Frame F |

| c | |
|---|-------------|
| Interrupting Rating/ Breaking Capacity | |
| Code | Description |
| 8 | High break |

| d | |
|----------|--|
| Function | |
| Code | Description |
| E | Adjustable Thermal/Fixed Magnetic (14 x I _n) MPCB |
| N | Fixed Magnetic (14 x I _n) MCP |
| T | Adjustable Thermal/Fixed Magnetic (18...22 x I _n) MPCB |

| e | |
|---------------|--------------------------|
| Current Range | |
| Code | Description |
| C | 10 (example: C16 = 16 A) |

Product Selection

Selection Using Current and Hp/kW Ratings

Table 27 - Motor Protective Switching Devices

| Rated Operational Current (I_e) [A] | Motor Current Adjustment Range [A] | Nominal Magnetic Trip Current [A] | Max Short-circuit Current [kA] | | Max. 3-phase Hp Ratings ⁽¹⁾ | | | | Max. kW, 3-Phase – AC-3 ⁽¹⁾ | | | | Cat. No. |
|---|------------------------------------|-----------------------------------|--------------------------------|--------------------|--|------|------|------|--|----------|------|------|------------------------------|
| | | | 400V (I_{cu}) | 480V (group motor) | 200V | 230V | 460V | 575V | 230V | 400/415V | 500V | 690V | |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | | | | | |
| 0.16 | 0.10...0.16 | 2.2 | 100 | 65 | – | – | – | – | – | 0.02 | 0.06 | 0.06 | 140MT-C3E-A16 |
| 0.25 | 0.16...0.25 | 3.5 | 100 | 65 | – | – | – | – | – | 0.04 | 0.09 | 0.09 | 140MT-C3E-A25 |
| 0.4 | 0.25...0.40 | 5.6 | 100 | 65 | – | – | – | – | 0.06 | 0.09 | 0.12 | 0.18 | 140MT-C3E-A40 |
| 0.63 | 0.40...0.63 | 8.8 | 100 | 65 | – | – | – | – | 0.09 | 0.18 | 0.18 | 0.25 | 140MT-C3E-A63 |
| 1 | 0.63...1.0 | 14 | 100 | 65 | – | – | 0.5 | 0.5 | 0.18 | 0.25 | 0.37 | 0.55 | 140MT-C3E-B10 |
| 1.6 | 1.0...1.6 | 22 | 100 | 65 | – | – | 0.75 | – | 0.25 | 0.55 | 0.75 | 1.1 | 140MT-C3E-B16 |
| 2.5 | 1.6...2.5 | 35 | 100 | 65 | 0.5 | 0.5 | 1 | 1.5 | 0.37 | 0.75 | 1.1 | 1.8 | 140MT-C3E-B25 |
| 4 | 2.5...4.0 | 56 | 100 | 65 | 0.75 | 0.75 | 2 | 3 | 0.75 | 1.5 | 2.2 | 3 | 140MT-C3E-B40 |
| 6.3 | 4.0...6.3 | 88 | 100 | 65 | 1 | 1.5 | 3 | 5 | 1.5 | 2.2 | 3 | 4 | 140MT-C3E-B63 |
| 10 | 6.3...10 | 140 | 100 | 65 | 2 | 2 | 5 | 7.5 | 2.2 | 4 | 6.3 | 7.5 | 140MT-C3E-C10 |
| 16 | 10...16 | 224 | 65 | 30 | 3 | 5 | 10 | 10 | 4 | 7.5 | 10 | 13 | 140MT-C3E-C16 |
| 20 | 14.5...20 | 280 | 50 | 30 | 5 | 5 | 10 | 15 | 5.5 | 10 | 11 | 17 | 140MT-C3E-C20 |
| 25 | 18...25 | 350 | 15 | 30 | 5 | 7.5 | 15 | 20 | 5.5 | 11 | 15 | 22 | 140MT-C3E-C25 |
| 29 | 23...29 | 406 | 15 | 30 | 7.5 | 10 | 20 | 25 | 7.5 | 13 | 18.5 | 25 | 140MT-C3E-C29 |
| 32 | 26.5...32 | 448 | 15 | 30 | 7.5 | 10 | 20 | 30 | 7.5 | 15 | 20 | 25 | 140MT-C3E-C32 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | | | | | |
| 0.63 | 0.40...0.63 | 8.8 | 100 | 65 | – | – | – | – | 0.09 | 0.18 | 0.18 | 0.25 | 140MT-D9E-A63 |
| 1 | 0.63...1.0 | 14 | 100 | 65 | – | – | 0.5 | 0.5 | 0.18 | 0.25 | 0.37 | 0.55 | 140MT-D9E-B10 |
| 1.6 | 1.0...1.6 | 22 | 100 | 65 | – | – | 0.75 | – | 0.25 | 0.55 | 0.75 | 1.1 | 140MT-D9E-B16 |
| 2.5 | 1.6...2.5 | 35 | 100 | 65 | 0.5 | 0.5 | 1 | 1.5 | 0.37 | 0.75 | 1.1 | 1.8 | 140MT-D9E-B25 |
| 4 | 2.5...4.0 | 56 | 100 | 65 | 0.75 | 0.75 | 2 | 3 | 0.75 | 1.5 | 2.2 | 3 | 140MT-D9E-B40 |
| 6.3 | 4.0...6.3 | 88 | 100 | 65 | 1 | 1.5 | 3 | 5 | 1.5 | 2.2 | 3 | 4 | 140MT-D9E-B63 |
| 10 | 6.3...10 | 140 | 100 | 65 | 2 | 2 | 5 | 7.5 | 2.2 | 4 | 6.3 | 7.5 | 140MT-D9E-C10 |
| 16 | 10...16 | 224 | 100 | 65 | 3 | 5 | 10 | 10 | 4 | 7.5 | 10 | 13 | 140MT-D9E-C16 |
| 20 | 14.5...20 | 280 | 100 | 65 | 5 | 5 | 10 | 15 | 5.5 | 10 | 11 | 17 | 140MT-D9E-C20 |
| 25 | 18...25 | 350 | 65 | 50 | 5 | 7.5 | 15 | 20 | 5.5 | 11 | 15 | 22 | 140MT-D9E-C25 |
| 29 | 23...29 | 406 | 50 | 50 | 7.5 | 10 | 20 | 25 | 7.5 | 13 | 18.5 | 25 | 140MT-D9E-C29 |
| 32 | 26.5...32 | 448 | 50 | 50 | 7.5 | 10 | 20 | 30 | 7.5 | 15 | 20 | 25 | 140MT-D9E-C32 |
| 36 | 30...36 | 432 | 50 | 30 | 10 | 10 | 25 | 30 | – | 18.5 | 20 | 25 | 140MT-D9E-C36 ⁽²⁾ |
| 40 | 34...40 | 480 | 50 | 30 | 10 | 10 | 30 | 30 | 11 | 20 | 24 | 30 | 140MT-D9E-C40 ⁽²⁾ |
| D-Frame, Fixed Magnetic (application at output of VFD multi-motor) | | | | | | | | | | | | | |
| 1.6 | 1.0...1.6 | 88 | 100 | 65 | – | – | 0.75 | – | 0.25 | 0.55 | 0.75 | – | 140MT-D9V-B16 |
| 2.5 | 1.6...2.5 | 88 | 100 | 65 | 0.5 | 0.5 | 1 | – | 0.37 | 0.75 | 1.1 | – | 140MT-D9V-B25 |
| 4 | 2.5...4.0 | 88 | 100 | 65 | 0.75 | 0.75 | 2 | – | 0.75 | 1.5 | 2.2 | – | 140MT-D9V-B40 |
| 6.3 | 4.0...6.3 | 88 | 100 | 65 | 1 | 1.5 | 3 | – | 1.5 | 2.2 | 3 | – | 140MT-D9V-B63 |
| 10 | 6.3...10 | 140 | 100 | 65 | 2 | 2 | 5 | – | 2.2 | 4 | 6.3 | – | 140MT-D9V-C10 |
| 16 | 10...16 | 224 | 100 | 65 | 3 | 5 | 10 | – | 4 | 7.5 | 10 | – | 140MT-D9V-C16 |
| 20 | 14.5...20 | 280 | 100 | 65 | 5 | 5 | 10 | – | 5.5 | 10 | 11 | – | 140MT-D9V-C20 |
| 25 | 18...25 | 350 | 65 | 50 | 5 | 7.5 | 15 | – | 5.5 | 11 | 15 | – | 140MT-D9V-C25 |
| 29 | 23...29 | 406 | 50 | 50 | 7.5 | 10 | 20 | – | 7.5 | 13 | 18.5 | – | 140MT-D9V-C29 |
| 32 | 26.5...32 | 448 | 50 | 50 | 7.5 | 10 | 20 | – | 7.5 | 15 | 20 | – | 140MT-D9V-C32 |
| 36 | 30...36 | 432 | 50 | 30 | 10 | 10 | 25 | – | – | 18.5 | 20 | – | 140MT-D9V-C36 ⁽²⁾ |
| 40 | 34...40 | 480 | 50 | 30 | 10 | 10 | 30 | – | 11 | 20 | 24 | – | 140MT-D9V-C40 ⁽²⁾ |

Table 27 - Motor Protective Switching Devices (Continued)

| Rated Operational Current (I_e) [A] | Motor Current Adjustment Range [A] | Nominal Magnetic Trip Current [A] | Max Short-circuit Current [kA] | | Max. 3-phase Hp Ratings ⁽¹⁾ | | | | Max. kW, 3-Phase – AC-3 ⁽¹⁾ | | | | Cat. No. |
|---|------------------------------------|-----------------------------------|--------------------------------|--------------------|--|------|------|------|--|----------|------|------|--------------|
| | | | 400V (I_{cu}) | 480V (group motor) | 200V | 230V | 460V | 575V | 230V | 400/415V | 500V | 690V | |
| F-Frame, Adjustable Thermal/Fixed Magnetic (13 x I_n) | | | | | | | | | | | | | |
| 10 | 6.3...10 | 130 | 100 | 65 | 2 | 3 | 5 | 7.5 | 2.2 | 4 | 6.3 | 7.5 | 140M-F8E-C10 |
| 16 | 10...16 | 208 | 100 | 65 | 3 | 5 | 10 | 10 | 4 | 7.5 | 10 | 13 | 140M-F8E-C16 |
| 20 | 14.5...20 | 260 | 100 | 65 | 5 | 5 | 10 | 15 | 5.5 | 10 | 11 | 17 | 140M-F8E-C20 |
| 25 | 18...25 | 325 | 100 | 65 | 7.5 | 7.5 | 15 | 20 | 5.5 | 11 | 15 | 22 | 140M-F8E-C25 |
| 32 | 23...32 | 416 | 65 | 65 | 7.5 | 10 | 20 | 30 | 7.5 | 15 | 20 | 25 | 140M-F8E-C32 |
| 45 | 32...45 | 585 | 65 | 65 | 10 | 15 | 30 | 40 | 13 | 22 | 30 | 40 | 140M-F8E-C45 |
| 25 | 18...25 | 416 | 65 | 65 | 7.5 | 7.5 | 15 | 20 | 5.5 | 11 | 15 | 22 | 140M-F8T-C25 |
| 32 | 23...32 | 585 | 65 | 65 | 7.5 | 10 | 20 | 30 | 7.5 | 15 | 20 | 25 | 140M-F8T-C32 |

(1) Horsepower/kW ratings shown are for reference. The final selection of the MPCB/MPSD depends on the actual motor full load current.

(2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).

Table 28 - High Inrush Motor Protection Switching Devices

| Rated Operational Current (I_e) [A] | Motor Current Adjustment Range [A] | Nominal Magnetic Trip Current [A] | Max Short-circuit Current [kA] | | Max. 3-phase Hp Ratings ⁽¹⁾ | | | | Max. kW, 3-Phase – AC-3 ⁽¹⁾ | | | | Cat. No. |
|--|------------------------------------|-----------------------------------|--------------------------------|---------------|--|------|------|------|--|----------|------|------|---------------|
| | | | 400V | 480V | 200V | 230V | 460V | 575V | 230V | 400/415V | 500V | 690V | |
| | | | (I_{cu}) | (group motor) | | | | | | | | | |
| D-Frame, Adjustable Thermal/Fixed Magnetic (18...22 x I_n) | | | | | | | | | | | | | |
| 0.16 | 0.10...0.16 | 3.5 | 100 | 65 | – | – | – | – | – | 0.02 | 0.06 | 0.06 | 140MT-D9T-A16 |
| 0.25 | 0.16...0.25 | 5.5 | 100 | 65 | – | – | – | – | – | 0.04 | 0.09 | 0.09 | 140MT-D9T-A25 |
| 0.4 | 0.25...0.40 | 8.8 | 100 | 65 | – | – | – | – | 0.06 | 0.09 | 0.12 | 0.18 | 140MT-D9T-A40 |
| 0.63 | 0.40...0.63 | 14 | 100 | 65 | – | – | – | – | 0.09 | 0.18 | 0.18 | 0.25 | 140MT-D9T-A63 |
| 1 | 0.63...1.0 | 22 | 100 | 65 | – | – | 0.5 | 0.5 | 0.18 | 0.25 | 0.37 | 0.55 | 140MT-D9T-B10 |
| 1.6 | 1.0...1.6 | 35 | 100 | 65 | – | – | 0.75 | – | 0.25 | 0.55 | 0.75 | 1.1 | 140MT-D9T-B16 |
| 2.5 | 1.6...2.5 | 55 | 100 | 65 | 0.5 | 0.5 | 1 | 1.5 | 0.37 | 0.75 | 1.1 | 1.8 | 140MT-D9T-B25 |
| 4 | 2.5...4.0 | 88 | 100 | 65 | 0.75 | 0.75 | 2 | 3 | 0.75 | 1.5 | 2.2 | 3 | 140MT-D9T-B40 |
| 6.3 | 4.0...6.3 | 139 | 100 | 65 | 1 | 1.5 | 3 | 5 | 1.5 | 2.2 | 3 | 4 | 140MT-D9T-B63 |
| 10 | 6.3...10 | 220 | 100 | 65 | 2 | 2 | 5 | 7.5 | 2.2 | 4 | 6.3 | 7.5 | 140MT-D9T-C10 |
| 16 | 10...16 | 320 | 100 | 65 | 3 | 5 | 10 | 10 | 4 | 7.5 | 10 | 13 | 140MT-D9T-C16 |
| 20 | 14.5...20 | 400 | 100 | 65 | 5 | 5 | 10 | 15 | 5.5 | 10 | 11 | 17 | 140MT-D9T-C20 |
| 25 | 18...25 | 450 | 65 | 50 | 5 | 7.5 | 15 | 20 | 5.5 | 11 | 15 | 22 | 140MT-D9T-C25 |
| F-Frame, Adjustable Thermal/Fixed Magnetic (16...22 x I_n) | | | | | | | | | | | | | |
| 25 | 18...25 | 416 | 65 | 65 | 7.5 | 7.5 | 15 | 20 | 5.5 | 11 | 15 | 22 | 140M-F8T-C25 |
| 32 | 23...32 | 585 | 65 | 65 | 7.5 | 10 | 20 | 30 | 7.5 | 15 | 20 | 25 | 140M-F8T-C32 |

(1) Horsepower/kW ratings shown are for reference. The final selection of the MPCB/MPSD depends on the actual motor full load current.

Table 29 - Motor Circuit Protectors

| Rated Operational Current (I_e) [A] | Motor Current Adjustment Range [A] | Nominal Magnetic Trip Current [A] | Max. Short Circuit Current [kA] | | Max. 3-phase Hp Ratings ⁽¹⁾ | | | | Max. kW, 3-Phase – AC-3 ⁽¹⁾ | | | | Cat. No. |
|--|------------------------------------|-----------------------------------|---------------------------------|---------------|--|------|------|------|--|----------|------|------|------------------------------|
| | | | 400V | 480V | 200V | 230V | 460V | 575V | 230V | 400/415V | 500V | 690V | |
| | | | (I_{cu}) | (group motor) | | | | | | | | | |
| D-Frame, Fixed Magnetic (14 x I_n) | | | | | | | | | | | | | |
| 0.16 | – | 2.2 | 100 | 65 | – | – | – | – | – | 0.02 | 0.06 | 0.06 | 140MT-D9N-A16 |
| 0.25 | – | 3.5 | 100 | 65 | – | – | – | – | – | 0.04 | 0.09 | 0.09 | 140MT-D9N-A25 |
| 0.4 | – | 5.6 | 100 | 65 | – | – | – | – | 0.06 | 0.09 | 0.12 | 0.18 | 140MT-D9N-A40 |
| 0.63 | – | 8.8 | 100 | 65 | – | – | – | – | 0.09 | 0.18 | 0.18 | 0.25 | 140MT-D9N-A63 |
| 1 | – | 14 | 100 | 65 | – | – | 0.5 | 0.5 | 0.18 | 0.25 | 0.37 | 0.55 | 140MT-D9N-B10 |
| 1.6 | – | 22 | 100 | 65 | – | – | 0.75 | – | 0.25 | 0.55 | 0.75 | 1.1 | 140MT-D9N-B16 |
| 2.5 | – | 35 | 100 | 65 | 0.5 | 0.5 | 1 | 1.5 | 0.37 | 0.75 | 1.1 | 1.8 | 140MT-D9N-B25 |
| 4 | – | 56 | 100 | 65 | 0.75 | 0.75 | 2 | 3 | 0.75 | 1.5 | 2.2 | 3 | 140MT-D9N-B40 |
| 6.3 | – | 88 | 100 | 65 | 1 | 1.5 | 3 | 5 | 1.5 | 2.2 | 3 | 4 | 140MT-D9N-B63 |
| 10 | – | 140 | 100 | 65 | 2 | 2 | 5 | 7.5 | 2.2 | 4 | 6.3 | 7.5 | 140MT-D9N-C10 |
| 16 | – | 224 | 100 | 65 | 3 | 5 | 10 | 10 | 4 | 7.5 | 10 | 13 | 140MT-D9N-C16 |
| 20 | – | 280 | 100 | 65 | 5 | 5 | 10 | 15 | 5.5 | 10 | 11 | 17 | 140MT-D9N-C20 |
| 25 | – | 350 | 65 | 50 | 5 | 7.5 | 15 | 20 | 5.5 | 11 | 15 | 22 | 140MT-D9N-C25 |
| 29 | – | 406 | 50 | 50 | 7.5 | 10 | 20 | 25 | 7.5 | 13 | 18.5 | 25 | 140MT-D9N-C29 |
| 32 | – | 448 | 50 | 50 | 7.5 | 10 | 20 | 30 | 7.5 | 15 | 20 | 25 | 140MT-D9N-C32 |
| 36 | – | 432 | 50 | 30 | 10 | 10 | 25 | 30 | – | 18.5 | 20 | 25 | 140MT-D9N-C36 ⁽²⁾ |
| 40 | – | 480 | 50 | 30 | 10 | 10 | 30 | 30 | 11 | 20 | 24 | 30 | 140MT-D9N-C40 ⁽²⁾ |
| F-Frame, Fixed Magnetic (13 x I_n) | | | | | | | | | | | | | |
| 25 | – | 325 | 100 | 65 | 7.5 | 10 | 20 | 25 | 6.3 | 11 | 15 | 22 | 140M-F8N-C25 |
| 32 | – | 416 | 65 | 65 | 7.5 | 10 | 25 | 30 | 7.5 | 15 | 20 | 30 | 140M-F8N-C32 |
| 45 | – | 585 | 65 | 65 | 10 | 15 | 30 | 40 | 13 | 22 | 30 | 40 | 140M-F8N-C45 |

(1) Horsepower/kW ratings shown are for reference. The final selection of the MCP depends on the actual motor full load current.
 (2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).



Motor Circuit Protectors (Cat. No. 140MT-D9N, 140M-F8N) do not provide thermal protection for themselves nor for downstream components. You must install a separate protective device against thermal overload, such as an overload relay as part of a starter combination. In applications that use these devices as the short-circuit protection device of heavy-duty starting motors, the rated operational current I_e of the devices must be over-sized using the factors in [Table 30](#).

Table 30 - Oversizing for Heavy-duty Starting

| Current Range [A] | Device Type | Class 10 | Class 20 | Class 30 |
|-------------------|-------------|----------|----------|----------|
| 0.16...10 | 140MT-D9N | – | – | – |
| 16...29 | | – | – | 1.41 |
| 32...40 | | – | 1.41 | 1.73 |
| 25...45 | 140M-F8N | – | 1.41 | 1.73 |

Selection Using Application Ratings

See [page 42](#) for combination ratings.

Table 31 - UL/CSA Listed Application Ratings, Motor Protective Switching Devices

| Max. Fuse or Circuit Breaker per NEC [A] | UL 60947-4-1 – Manual Motor Controller | | | | | | UL 60947-4-1 Self-Protected (Type E) Combination Motor Controller | | Cat. No. |
|--|--|------|------------------|--------------------------|--------------------------|----|---|--------------------------|------------------------------|
| | Max Short-circuit Current [kA] | | | | | | Max Short-circuit Current [kA] | | |
| | Group Motor Installation | | Motor Disconnect | | Tap Conductor Protection | | 480Y/277V ⁽¹⁾ | 600Y/347V ⁽¹⁾ | |
| 480V | 600V | 480V | 600V | 480Y/277V ⁽¹⁾ | 600Y/347V ⁽¹⁾ | | | | |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-C3E-A16 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-C3E-A25 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-C3E-A40 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-C3E-A63 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-C3E-B10 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-C3E-B16 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-C3E-B25 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-C3E-B40 |
| 450 | 65 | 30 | 65 | 30 | 65 | – | 65 | – | 140MT-C3E-B63 |
| 450 | 65 | 30 | 65 | 30 | 65 | – | 65 | – | 140MT-C3E-C10 |
| 450 | 30 | 30 | 30 | 30 | 30 | – | 30 | – | 140MT-C3E-C16 |
| 450 | 30 | 30 | 30 | 10 | – | – | – | – | 140MT-C3E-C20 |
| 450 | 30 | 18 | 30 | 5 | – | – | – | – | 140MT-C3E-C25 |
| 450 | 30 | 10 | 10 | – | – | – | – | – | 140MT-C3E-C29 |
| 450 | 30 | 10 | 10 | – | – | – | – | – | 140MT-C3E-C32 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9E-A63 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9E-B10 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9E-B16 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9E-B25 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9E-B40 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9E-B63 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9E-C10 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9E-C16 |
| 450 | 65 | 30 | 65 | 30 | 65 | – | 65 | – | 140MT-D9E-C20 |
| 450 | 50 | 30 | 50 | 30 | 50 | – | 50 | – | 140MT-D9E-C25 |
| 450 | 50 | 30 | 50 | 30 | 50 | – | 50 | – | 140MT-D9E-C29 |
| 450 | 50 | 30 | 30 | 18 | 30 | – | 30 | – | 140MT-D9E-C32 |
| 450 | 30 | 30 | 30 | 18 | 30 | – | 30 | – | 140MT-D9E-C36 ⁽²⁾ |
| 450 | 30 | 30 | 30 | 18 | 30 | – | 30 | – | 140MT-D9E-C40 ⁽²⁾ |
| D-Frame, Adjustable Thermal/Fixed Magnetic (application at output of VFD multi-motor) | | | | | | | | | |
| 450 | 65 | – | 65 | – | 65 | – | 65 | – | 140MT-D9V-B16 |
| 450 | 65 | – | 65 | – | 65 | – | 65 | – | 140MT-D9V-B25 |
| 450 | 65 | – | 65 | – | 65 | – | 65 | – | 140MT-D9V-B40 |
| 450 | 65 | – | 65 | – | 65 | – | 65 | – | 140MT-D9V-B63 |
| 450 | 65 | – | 65 | – | 65 | – | 65 | – | 140MT-D9V-C10 |
| 450 | 65 | – | 65 | – | 65 | – | 65 | – | 140MT-D9V-C16 |
| 450 | 65 | – | 65 | – | 65 | – | 65 | – | 140MT-D9V-C20 |
| 450 | 50 | – | 50 | – | 50 | – | 50 | – | 140MT-D9V-C25 |
| 450 | 50 | – | 50 | – | 50 | – | 50 | – | 140MT-D9V-C29 |
| 450 | 50 | – | 30 | – | 30 | – | 30 | – | 140MT-D9V-C32 |
| 450 | 30 | – | 30 | – | 30 | – | 30 | – | 140MT-D9V-C36 ⁽²⁾ |

Table 31 - UL/CSA Listed Application Ratings, Motor Protective Switching Devices (Continued)

| Max. Fuse or Circuit Breaker per NEC [A] | UL 60947-4-1 – Manual Motor Controller | | | | | | UL 60947-4-1 Self-Protected (Type E) Combination Motor Controller | | Cat. No. |
|---|--|------|------------------|--------------------------|--------------------------|--------------------------|---|----|------------------------------|
| | Max Short-circuit Current [kA] | | | | | | Max Short-circuit Current [kA] | | |
| | Group Motor Installation | | Motor Disconnect | | Tap Conductor Protection | | | | |
| 480V | 600V | 480V | 600V | 480Y/277V ⁽¹⁾ | 600Y/347V ⁽¹⁾ | 480Y/277V ⁽¹⁾ | 600Y/347V ⁽¹⁾ | | |
| 450 | 30 | – | 30 | – | 30 | – | 30 | – | 140MT-D9V-C40 ⁽²⁾ |
| D-Frame, Adjustable Thermal/Fixed Magnetic (18...22 x I_n) | | | | | | | | | |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9T-A16 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9T-A25 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9T-A40 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9T-A63 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9T-B10 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9T-B16 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9T-B25 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9T-B40 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9T-B63 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9T-C10 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | – | 140MT-D9T-C16 |
| 450 | 65 | 30 | 65 | 30 | 65 | – | 65 | – | 140MT-D9T-C20 |
| 450 | 50 | 30 | 50 | 18 | 50 | – | 50 | – | 140MT-D9T-C25 |
| F-Frame, Adjustable Thermal/Fixed Magnetic (13 x I_n) | | | | | | | | | |
| 600 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140M-F8E-C10 |
| 600 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140M-F8E-C16 |
| 600 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140M-F8E-C20 |
| 600 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140M-F8E-C25 |
| 600 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140M-F8E-C32 |
| 600 | 65 | 18 | 65 | 18 | 65 | – | 65 | – | 140M-F8E-C45 |
| F-Frame, Adjustable Thermal/Fixed Magnetic (16...22 x I_n) | | | | | | | | | |
| 600 | 65 | 30 | 65 | 30 | 65 | 30 | 65 | 30 | 140M-F8T-C25 |
| 600 | 65 | 18 | 65 | 18 | 65 | 18 | 65 | 18 | 140M-F8T-C32 |

(1) For full voltage (delta) ratings above 277V or 347V, follow the NEC or CEC rules for group motor applications.

(2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).

Table 32 - UL/CSA Listed Application Ratings, Motor Circuit Protectors

| UL 60947-4-1 – Manual Motor Controller | | | | | | | Cat. No. |
|---|---------------------------------|------|------------------|------|--------------------------|--------------------------|------------------------------|
| Max. Fuse or Circuit Breaker per NEC [A] | Max. Short Circuit Current [kA] | | | | | | |
| | Group Motor Installation | | Motor Disconnect | | Tap Conductor Protection | | |
| | 480V | 600V | 480V | 600V | 480Y/277V ⁽¹⁾ | 600Y/347V ⁽¹⁾ | |
| D-Frame, Fixed Magnetic (14 x I_n) | | | | | | | |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9N-A16 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9N-A25 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9N-A40 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9N-A63 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9N-B10 |
| 450 | 65 | 50 | 65 | 50 | 65 | 50 | 140MT-D9N-B16 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9N-B25 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9N-B40 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9N-B63 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9N-C10 |
| 450 | 65 | 30 | 65 | 30 | 65 | 30 | 140MT-D9N-C16 |
| 450 | 65 | 30 | 65 | 30 | 65 | – | 140MT-D9N-C20 |
| 450 | 50 | 30 | 50 | 30 | 50 | – | 140MT-D9N-C25 |
| 450 | 50 | 30 | 50 | 30 | 50 | – | 140MT-D9N-C29 |
| 450 | 50 | 30 | 30 | 18 | 30 | – | 140MT-D9N-C32 |
| 450 | 30 | 30 | 30 | 18 | 30 | – | 140MT-D9N-C36 ⁽²⁾ |
| 450 | 30 | 30 | 30 | 18 | 30 | – | 140MT-D9N-C40 ⁽²⁾ |
| F-Frame, Fixed Magnetic (13 x I_n) | | | | | | | |
| 600 | 65 | 30 | 65 | 30 | – | – | 140M-F8N-C25 |
| 600 | 65 | 30 | 65 | 30 | – | – | 140M-F8N-C32 |
| 600 | 65 | 18 | 65 | 18 | – | – | 140M-F8N-C45 |

(1) For full voltage (delta) ratings above 277V or 347V, follow the NEC or CEC rules for group motor applications.
 (2) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).

Table 33 - IEC Application Ratings, Interrupting Rating/Breaking Capacity

| Breaking Capacity, IEC 60947-2 | | | | | | | | | | | | | | | Cat. No. | | | | | |
|--|----------------------|--|----------------------|----------------------|--|----------------------|----------------------|--|----------------------|----------------------|--|----------------------|----------------------|--|---------------|-----|-----|-----|---------------|---------------|
| 230/240V AC | | | 400/415V AC | | | 440/460V AC | | | 500/525V AC | | | 690V AC | | | | | | | | |
| I _{cu} [kA] | I _{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I _{cu} [kA] | I _{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I _{cu} [kA] | I _{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I _{cu} [kA] | I _{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I _{cu} [kA] | I _{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | | | | | | |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 140MT-C3E-A16 | | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 100 | 140MT-C3E-A25 | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 100 | 140MT-C3E-A40 | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 100 | 140MT-C3E-A63 | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 100 | 140MT-C3E-B10 | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 4 | 4 | 16 | | 140MT-C3E-B16 | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 4 | 4 | 20 | | 140MT-C3E-B25 | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 4 | 4 | 35 | | 140MT-C3E-B40 | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 3 | 3 | 50 | | 140MT-C3E-B63 | |
| 100 | 100 | | 100 | 50 | | 80 | 50 | | 50 | 80 | | 50 | 50 | | 63 | 3 | 3 | 50 | 140MT-C3E-C10 | |
| 100 | 100 | | 100 | 65 | | 50 | 80 | | 10 | 6 | | 80 | 10 | | 6 | 80 | 3 | 3 | 63 | 140MT-C3E-C16 |
| 65 | 50 | | 100 | 50 | | 15 | 100 | | 6 | 6 | | 80 | 6 | | 6 | 80 | 3 | 2 | 63 | 140MT-C3E-C20 |
| 65 | 50 | | 100 | 15 | | 15 | 100 | | 6 | 4 | | 80 | 6 | | 4 | 80 | 3 | 2 | 63 | 140MT-C3E-C25 |
| 50 | 25 | | 125 | 15 | | 10 | 125 | | 6 | 4 | | 100 | 6 | | 4 | 100 | 3 | 2 | 80 | 140MT-C3E-C29 |
| 50 | 25 | 125 | 15 | 10 | 125 | 6 | 4 | 100 | 6 | 4 | 100 | 3 | 2 | 80 | 140MT-C3E-C32 | | | | | |

Table 33 - IEC Application Ratings, Interrupting Rating/Breaking Capacity (Continued)

| Breaking Capacity, IEC 60947-2 | | | | | | | | | | | | | | | Cat. No. | | | | |
|---|---------------|--|---------------|---------------|--|---------------|---------------|--|---------------|---------------|--|---------------|---------------|--|------------------------------|---------------|---|---------------|---------------|
| 230/240V AC | | | 400/415V AC | | | 440/460V AC | | | 500/525V AC | | | 690V AC | | | | | | | |
| I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | | | | | |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 140MT-D9E-A63 | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 140MT-D9E-B10 | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 140MT-D9E-B16 | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 6 | 4 | | 20 | 140MT-D9E-B25 | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 6 | 4 | | 35 | 140MT-D9E-B40 | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 6 | 4 | | 50 | 140MT-D9E-B63 | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 6 | 3 | | 50 | 140MT-D9E-C10 | | | |
| 100 | 100 | | 100 | 50 | | 80 | 50 | | 25 | 80 | | 50 | 25 | | 80 | 4 | 3 | 63 | 140MT-D9E-C16 |
| 100 | 100 | | 100 | 25 | | 100 | 50 | | 25 | 100 | | 50 | 25 | | 80 | 4 | 3 | 63 | 140MT-D9E-C20 |
| 100 | 100 | | 65 | 25 | | 100 | 35 | | 20 | 100 | | 35 | 20 | | 80 | 4 | 3 | 63 | 140MT-D9E-C25 |
| 65 | 50 | 125 | 50 | 25 | 125 | 25 | 15 | 125 | 25 | 15 | 100 | 4 | 3 | 80 | 140MT-D9E-C29 | | | | |
| 65 | 50 | 125 | 50 | 25 | 125 | 25 | 15 | 125 | 25 | 15 | 100 | 4 | 3 | 80 | 140MT-D9E-C32 | | | | |
| 50 | 35 | 125 | 50 | 25 | 125 | 12 | 6 | 125 | 12 | 6 | 100 | 3 | 2 | 100 | 140MT-D9E-C36 ⁽³⁾ | | | | |
| 50 | 35 | 125 | 50 | 25 | 125 | 12 | 6 | 125 | 12 | 6 | 100 | 3 | 2 | 100 | 140MT-D9E-C40 ⁽³⁾ | | | | |
| D-Frame, Fixed Magnetic (application at output of VFD multi-motor) | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | - | - | _(2) | 140MT-D9V-B16 | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | - | - | | 140MT-D9V-B25 | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | - | - | | 140MT-D9V-B40 | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | - | - | | 140MT-D9V-B63 | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | - | - | | 140MT-D9V-C10 | | | | |
| 100 | 100 | | 100 | 50 | | 80 | 50 | | 25 | 80 | | 50 | 25 | | 80 | - | - | 140MT-D9V-C16 | |
| 100 | 100 | | 100 | 25 | | 100 | 50 | | 25 | 100 | | 50 | 25 | | 80 | - | - | 140MT-D9V-C20 | |
| 100 | 100 | | 65 | 25 | | 100 | 35 | | 20 | 100 | | 35 | 20 | | 80 | - | - | 140MT-D9V-C25 | |
| 65 | 50 | | 125 | 50 | | 25 | 125 | | 25 | 15 | | 125 | 25 | | 15 | 100 | - | - | 140MT-D9V-C29 |
| 65 | 50 | | 125 | 50 | | 25 | 125 | | 25 | 15 | | 125 | 25 | | 15 | 100 | - | - | 140MT-D9V-C32 |
| 50 | 35 | 125 | 50 | 25 | 125 | 12 | 6 | 125 | 12 | 6 | 100 | - | - | 140MT-D9V-C36 ⁽³⁾ | | | | | |
| 50 | 35 | 125 | 50 | 25 | 125 | 12 | 6 | 125 | 12 | 6 | 100 | - | - | 140MT-D9V-C40 ⁽³⁾ | | | | | |
| F-Frame, Adjustable Thermal/Fixed Magnetic (13 x I_n) | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | _(2) | 100 | 50 | 80 | 65 | 50 | 80 | 50 | 50 | 80 | 10 | 10 | 63 | 140M-F8E-C10 | | | | |
| 100 | 100 | | 100 | 50 | 100 | 65 | 50 | 100 | 50 | 50 | 100 | 10 | 10 | 80 | 140M-F8E-C16 | | | | |
| 100 | 100 | | 100 | 50 | 100 | 65 | 50 | 100 | 50 | 50 | 100 | 10 | 10 | 80 | 140M-F8E-C20 | | | | |
| 100 | 100 | | 100 | 50 | 100 | 65 | 50 | 100 | 50 | 50 | 100 | 10 | 10 | 80 | 140M-F8E-C25 | | | | |
| 100 | 100 | | 65 | 50 | 125 | 65 | 50 | 125 | 50 | 50 | 125 | 10 | 6 | 100 | 140M-F8E-C32 | | | | |
| 100 | 100 | | 65 | 50 | 125 | 50 | 50 | 125 | 50 | 50 | 125 | 10 | 6 | 100 | 140M-F8E-C45 | | | | |

Table 33 - IEC Application Ratings, Interrupting Rating/Breaking Capacity (Continued)

| Breaking Capacity, IEC 60947-2 | | | | | | | | | | | | | | | Cat. No. | | | | | |
|---|---------------|--|---------------|---------------|--|---------------|---------------|--|---------------|---------------|--|---------------|---------------|--|------------------------------|-----|-----|---------------|----|---------------|
| 230/240V AC | | | 400/415V AC | | | 440/460V AC | | | 500/525V AC | | | 690V AC | | | | | | | | |
| I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | I_{cu} [kA] | I_{cs} [kA] | Back-up Fuse Rating ⁽¹⁾ [A] | | | | | | |
| D-Frame, High Inrush, Adjustable Thermal/Fixed Magnetic (18...22 x I_n) | | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 140MT-D9T-A16 | | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9T-A25 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9T-A40 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9T-A63 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9T-B10 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9T-B16 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 4 | 20 | 140MT-D9T-B25 |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 4 | 35 | 140MT-D9T-B40 |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 4 | 50 | 140MT-D9T-B63 |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 3 | 50 | 140MT-D9T-C10 |
| 100 | 100 | | 100 | 100 | | 50 | 80 | | 50 | 25 | | 80 | 50 | | 25 | 80 | 4 | 3 | 63 | 140MT-D9T-C16 |
| 100 | 100 | | 100 | 100 | | 25 | 100 | | 50 | 25 | | 100 | 50 | | 25 | 80 | 4 | 2 | 63 | 140MT-D9T-C20 |
| 100 | 100 | | 100 | 65 | | 25 | 100 | | 50 | 12 | | 100 | 50 | | 12 | 80 | 4 | 2 | 63 | 140MT-D9T-C25 |
| F-Frame, High Inrush, Adjustable Thermal/Fixed Magnetic (16...22 x I_n) | | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | _(2) | 65 | 50 | 100 | 65 | 50 | 100 | 50 | 50 | 100 | 10 | 6 | 80 | 140M-F8T-C25 | | | | | |
| 100 | 100 | | 65 | 50 | 125 | 65 | 50 | 125 | 50 | 50 | 125 | 10 | 6 | 100 | 140M-F8T-C32 | | | | | |
| D-Frame, Motor Circuit Protectors, Fixed Magnetic (14 x I_n) | | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 100 | 100 | _(2) | 140MT-D9N-A16 | | | | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9N-A25 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9N-A40 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9N-A63 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9N-B10 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 100 | 140MT-D9N-B16 | | |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 4 | 20 | 140MT-D9N-B25 |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 4 | 35 | 140MT-D9N-B40 |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 4 | 50 | 140MT-D9N-B63 |
| 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | | 100 | 100 | 6 | 3 | 50 | 140MT-D9N-C10 |
| 100 | 100 | | 100 | 100 | | 50 | 80 | | 50 | 25 | | 80 | 50 | | 25 | 80 | 4 | 3 | 63 | 140MT-D9N-C16 |
| 100 | 100 | | 100 | 100 | | 25 | 100 | | 50 | 25 | | 100 | 50 | | 25 | 80 | 4 | 3 | 63 | 140MT-D9N-C20 |
| 100 | 100 | | 100 | 65 | | 25 | 100 | | 35 | 20 | | 100 | 35 | | 20 | 80 | 4 | 3 | 63 | 140MT-D9N-C25 |
| 65 | 50 | | 125 | 50 | | 25 | 125 | | 25 | 15 | | 125 | 25 | | 15 | 100 | 4 | 3 | 80 | 140MT-D9N-C29 |
| 65 | 50 | 125 | 50 | 25 | 125 | 25 | 15 | 125 | 25 | 15 | 100 | 4 | 3 | 80 | 140MT-D9N-C32 | | | | | |
| 50 | 35 | 125 | 50 | 25 | 125 | 12 | 6 | 125 | 12 | 6 | 100 | 3 | 2 | 100 | 140MT-D9N-C36 ⁽³⁾ | | | | | |
| 50 | 35 | 125 | 50 | 25 | 125 | 12 | 6 | 125 | 12 | 6 | 100 | 3 | 2 | 100 | 140MT-D9N-C40 ⁽³⁾ | | | | | |
| F-Frame, Motor Circuit Protectors, Fixed Magnetic (13 x I_n) | | | | | | | | | | | | | | | | | | | | |
| 100 | 100 | 100 | 100 | 50 | 100 | 65 | 50 | 100 | 50 | 50 | 100 | 10 | 10 | 80 | 140M-F8N-C25 | | | | | |
| 100 | 100 | 125 | 65 | 50 | 125 | 65 | 50 | 125 | 50 | 50 | 125 | 10 | 6 | 100 | 140M-F8N-C32 | | | | | |
| 100 | 100 | 125 | 65 | 50 | 125 | 50 | 50 | 125 | 50 | 50 | 125 | 10 | 6 | 100 | 140M-F8N-C45 | | | | | |




(1) Back-up fuses are type gG, aM.

(2) No Back-up fuse required if $I_{cc} < I_{cs}$.

(3) Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in).

Accessories

Table 34 - Auxiliary Contacts

| Description | Operator Position ⁽¹⁾ | | | Term. No. | Contact Description | Connection Diagram ⁽²⁾ | For Use With | Cat. No. |
|---|--|----|---------|-----------|---------------------|-----------------------------------|-----------------------|-----------------------|
| | OFF | ON | Tripped | | | | | |
| | | | | | | | | |
|   Front-Mounted Auxiliary Contact <ul style="list-style-type: none"> • 1-pole or 2-pole • No additional space required • Only one per device | 0 | X | 0 | 13-14 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFA10 |
| | | | | | | | 140M-F | 140M-C-AFA10 |
| | X | 0 | X | 11-12 | N.C. Aux | | 140M-F | 140M-C-AFA01 |
| | 0 | X | 0 | 13-14 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFA11 |
| | X | 0 | X | 21-22 | N.C. Aux | | 140M-F | 140M-C-AFA11 |
| | 0 | X | 0 | 13-14 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFA20 |
| | X | 0 | X | 21-22 | N.C. Aux | | 140M-F | 140M-C-AFA20 |
| | 0 | X | 0 | 23-24 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFA20 |
| | 0 | X | 0 | 13-14 | N.O. Aux | | 140M-F | 140M-C-AFA20 |
| | X | 0 | X | 11-12 | N.C. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFA02 |
| | X | 0 | X | 21-22 | N.C. Aux | | 140M-F | 140M-C-AFA02 |
| |  Right Side-Mounted Auxiliary Contact <ul style="list-style-type: none"> • 2-pole • Adds 9 mm to the width of the device • One per device • Not suitable for UL 489 applications | 0 | X | 0 | 33-34 | N.O. Aux | | 140MT-C, D 140UT-D |
| 0 | | X | 0 | 43-44 | N.O. Aux | 140M-F | | 140M-C-ASA20 |
| 0 | | X | 0 | 33-34 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-ASA02 |
| X | | 0 | X | 41-42 | N.C. Aux | | 140M-F | 140M-C-ASA02 |
| X | | 0 | X | 31-32 | N.C. Aux | | 140MT-C, D 140UT-D | 140MT-C-ASA11 |
| X | | 0 | X | 41-42 | N.C. Aux | | 140M-F | 140M-C-ASA11 |
| 0 | | X | 0 | 33-34 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-ASA11 |
| X | | 0 | X | 41-42 | N.C. Aux | | 140M-F | 140M-C-ASA11 |
| 0 | | X | 0 | 33-34 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-ASA11 |
| X | | 0 | X | 41-42 | N.C. Aux | | 140M-F | 140M-C-ASA11 |

(1) X = Contact Closed; 0 = Contact Open

(2) Connection Diagram Reference:

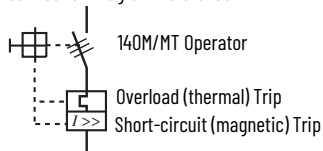




Table 35 - Trip Contacts

| Description | Operator Position ⁽¹⁾ | | | Term. No. | Contact Description | Connection Diagram ⁽²⁾ | For Use With | Cat. No. |
|--|----------------------------------|----|---------|-----------|--|-----------------------------------|-----------------------|-------------------|
| | OFF | ON | Tripped | | | | | |
| | | | | | | | | |
|  <p>Front-Mounted Trip Contact</p> <ul style="list-style-type: none"> • 2-pole • Indicates tripping of device • No additional space required | 0 | X | 0 | 13-14 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFAR10A10 |
| | 0 | 0 | X | 27-28 | N.O. Trip (short-circuit and overload) | | | |
| | 0 | X | 0 | 13-14 | N.O. Aux | | 140M-F | 140M-C-AFAR10A10 |
| | 0 | 0 | X | 27-28 | N.O. Trip (short-circuit and overload) | | | |
| | X | 0 | X | 11-12 | N.C. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFAR10A01 |
| | 0 | 0 | X | 27-28 | N.O. Trip (short-circuit and overload) | | | |
| | X | 0 | X | 11-12 | N.C. Aux | | 140M-F | 140M-C-AFAR10A01 |
| | 0 | 0 | X | 27-28 | N.O. Trip (short-circuit and overload) | | | |
| | 0 | X | 0 | 13-14 | N.O. Aux | | 140MT-C, D 140UT-D | 140MT-C-AFAR01A10 |
| | X | X | 0 | 25-26 | N.C. Trip (short-circuit and overload) | | | |
| | 0 | 0 | X | 27-28 | N.O. Trip (short-circuit and overload) | | | 140MT-C-AFAR10M10 |
| | 0 | 0 | X | 17-18 | N.O. Trip (short-circuit) | | | |
|  <p>Right-Side Mounted Trip Contact</p> <ul style="list-style-type: none"> • 2-pole • Indicates tripping of the device • Adds 9 mm to the width of the device • One only per device • A right-side mounted auxiliary contact may be tandem mounted on top of this trip contact | 0 | 0 | X | 57-58 | N.O. Trip (short-circuit and overload) | | 140M-C-ASAR10M10 | |
| | 0 | 0 | X | 67-68 | N.O. Trip (short-circuit) | | | |
| | 0 | 0 | X | 57-58 | N.O. Trip (short-circuit and overload) | | 140M-C-ASAR10M01 | |
| | X | X | 0 | 65-66 | N.C. Trip (short-circuit) | | | |
| | X | X | 0 | 55-56 | N.C. Trip (short-circuit and overload) | | 140M-F | 140M-C-ASAR01M10 |
| | 0 | 0 | X | 67-68 | N.O. Trip (short-circuit) | | | |
| | X | X | 0 | 55-56 | N.C. Trip (short-circuit and overload) | | 140M-C-ASAR01M01 | |
| | X | X | 0 | 65-66 | N.C. Trip (short-circuit) | | | |
| | 0 | 0 | X | 77-78 | N.O. Trip (short-circuit) | | 140M-C-ASAM11 | |
| | X | X | 0 | 65-66 | N.C. Trip (short-circuit) | | | |

(1) X = Contact Closed; 0 = Contact Open

(2) Connection Diagram Reference:

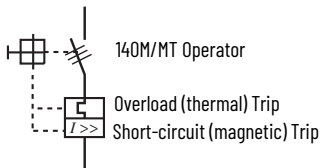

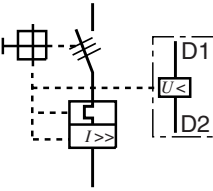


Table 36 - Undervoltage Trip Units

| Description | Connection Diagram ⁽¹⁾ | Trip Rating | For Use With | Cat. No. |
|---|---|----------------------------|-----------------------|-------------|
|  <p>Undervoltage Trip</p> <ul style="list-style-type: none"> • Left-side mounted • Adds 18 mm to the width of the device • Automatically trips MPCB/MCP when voltage falls below 35...70% |  | 24V, 50 Hz/24...28V, 60 Hz | 140MT-C, D 140UT-D | 140MT-C-UXK |
| | | 120V, 60 Hz | | 140MT-C-UXD |
| | | 220...230V, 50 Hz | | 140MT-C-UXF |
| | | 240...260V, 60 Hz | | 140MT-C-UXA |
| | | 380...400V, 50 Hz | | 140MT-C-UXN |
| | | 480V, 60 Hz/415V, 50 Hz | 140MT-C-UXB | |

(1) Connection Diagram Reference:

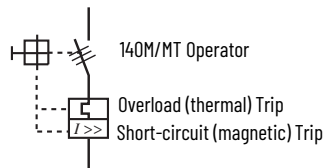

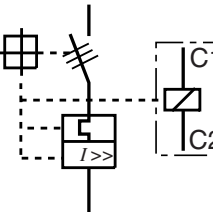


Table 37 - Shunt Trip Units

| Description | Connection Diagram ⁽¹⁾ | Trip Rating | For Use With | Cat. No. |
|--|--|----------------------------|-----------------------|-------------|
|  <p>Shunt Trip</p> <ul style="list-style-type: none"> • Left-side mounted • Adds 18 mm to the width of the device • Provides remote tripping of the MPCB/MCP • Maximum on time for DC operated devices: 5 sec. |  | 24V, 50 Hz/24...28V, 60 Hz | 140MT-C, D 140UT-D | 140MT-C-SNK |
| | | 110V, 50 Hz/120V, 60 Hz | | 140MT-C-SND |
| | | 220...230V, 50 Hz | | 140MT-C-SNF |
| | | 240...260V, 60 Hz | | 140MT-C-SNA |
| | | 277V, 60 Hz | | 140MT-C-SNT |
| | | 380...400V, 50 Hz | | 140MT-C-SNN |
| | | 480V, 60 Hz/415V, 50 Hz | | 140MT-C-SNB |
| | | 24V DC | 140MT-C-SNZJ | |

(1) Connection Diagram Reference:

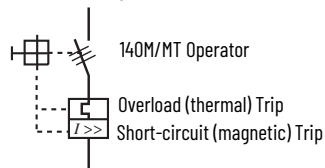


Table 38 - Additional Accessories


| Description | For Use With | Cat. No. |
|---|--------------|------------|
|  <p>Anti-Tamper Shield</p> <ul style="list-style-type: none"> • Provides protection against inadvertent adjustment of the current setting • Must be ordered in multiples of 10 (10 pieces/package) | 140MT-C, D | 140MT-C-CA |
| | 140M-F | 140M-C-CA |

Table 38 - Additional Accessories (Continued)











| | Description | | For Use With | Cat. No. |
|---|---|------------|---|-----------------------|
|  | Lockable Twist Knob • For one padlock 4...6 mm (3/16 in.) diameter shackle • Can be locked in OFF position | Blue | 140MT-C, D 140UT- D | 140MT-C-KB |
| | | Black | | 140MT-C-KN |
| | | Red/Yellow | | 140MT-C-KRY |
|  | Lockable Twist Knob • For one padlock 5 mm (3/16 in.) diameter shackle • Can be locked in OFF position | Black | 140M-F | 140M-C-KN1 |
| | | Red/Yellow | | 140M-C-KRY1 |
|  | Locking Tag • Padlock attachment to the lockable handles • Up to three padlocks 4...8 mm (5/16 in.) diameter shackle | | 140MT-C-KB 140MT-C-KN 140MT-C-KRY | 140MT-C-M3 |
| | | | 140M-C-KN1 140M-C-KRY1 | 140M-C-M3 |
|  | Door Coupling Handle • For 3 padlocks 4...8 mm (5/16 in.) in diameter • IPX4 Protection/Type 1, 3R Interlock override capability • Can be modified for locking in ON position • Ships with coupling – order extension shaft and legend plate separately | Black | 140MT-C, D 140UT- D | 140MT-C-DN66 |
| | | | 140M-F | 140M-C-DN66 |
|  | | Red/Yellow | 140MT-C, D 140UT- D | 140MT-C-DRY66 |
| | | | 140M-F | 140M-C-DRY66 |
|  | Extension Shaft (Short length) • Cut to required length for mounting depth (front of DIN Rail to front of enclosure door) 140MT-C: 136 mm (5.35 in) 140MT-D: 143 mm (5.63 in) 140UT-D: 143 mm (5.63 in) • For Cat. Nos. 140MT-C-DN66 and 140MT-C-DRY66 handles | | | 140MT-C-DSS |
| | Extension Shaft (Standard length) • Cut to required length for mounting depth (front of DIN Rail to front of enclosure door) 140MT-C: 136...358 mm (5.35...14.1 in) 140MT-D: 143...364 mm (5.63...14.33 in) 140UT-D: 143...364 mm (5.63...14.33 in) • For Cat. Nos. 140MT-C-DN66 and 140MT-C-DRY66 handles | | 140MT-C, D 140M-F 140UT- D | 140MT-C-DS |
| | Extension Shaft (Extended length) • Cut to required length for mounting depth (front of DIN Rail to front of enclosure door) 140MT-C: 136...507 mm (5.35...19.96 in) 140MT-D: 143...513 mm (5.63...20.2 in) 140UT-D: 143...513 mm (5.63...20.2 in) • For Cat. Nos. 140MT-C-DN66 and 140MT-C-DRY66 handles | | | 140MT-C-DSL |
|  | Door Coupling Handle • Type 3, 3R, 4, 4X, 12 (IP66) • For up to 2 padlocks • Fits in 30.5 mm cutout | Black | 140MT-C, D 140UT- D | 140MT-SB |
| | | | 140M-F | 140M-SB |
|  | • Requires 140MT-C-DNC (140MT-C, 140MT-D, 140UT-D) or 140M-C-DNC (140M-F) coupler | Red/Yellow | 140MT-C, D 140UT- D | 140MT-SY |
| | | | 140M-F | 140M-SY |
|  | Extension Shaft • Cut to required length for mounting depth (front of DIN Rail to front of enclosure door) | | 12 in. (30.48 cm) | 140MT-SB, 140MT-SY |
| | | | | 140M-SB, 140M-SY |
| | | | 21 in. (53.34 cm) | 140MT-SB, 140MT-SY |
| | | | | 140M-SB, 140M-SY |
|  | Coupler • Included with Cat. Nos. 140MT-C-DN66 and 140MT-C-DRY66 | | 140MT-C, D 140UT- D | 140MT-C-DNC |

Table 38 - Additional Accessories (Continued)


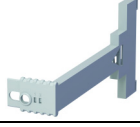
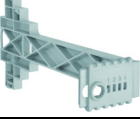




| | Description | For Use With | Cat. No. | |
|---|---|--|-------------------------------|-------------------------------|
|  | Coupler • Included with Cat. Nos. 140M-C-DN66 and 140M-C-DRY66 | 140M-F | 140M-C-DNC | |
|  | Extension Shaft Support • Provides consistent alignment of the 140M/MT-C-DS and 140M/MT-C-DSL shafts with the 140M/MT-C-DN66 or 140M/MT-C-DRY66 door coupling handles • Recommended for shaft lengths >200 mm | 140MT-C, D 140UT- D | 140MT-C-SHS | |
|  | • Snaps on the right side of the 140MT-C, -D, 140M-F, or 140UT-D device and allows the addition of one side-mounted auxiliary contact. • Width: 9 mm. • For use with screw-mounted or hat rail mounted devices. | 140M-F | 140M-C-SHS | |
|  | Legend Plate | Marking: "Hauptschalter" and "Main Switch" | 140MT-C-DN66 140M-C-DN66 | 140MT-C-DFCN 140M-C-DFCN |
|  | | Marking: "Not-Aus" and "Emergency Off" | 140MT-C-DRY66 140M-C-DRY66 | 140MT-C-DFCRY 140M-C-DFCRY |
|  | | Screw Adapter • For screw arrangement of a motor protection circuit breaker • Must be ordered in multiples of 10 (10 pieces/pkg) | 140MT-C, D 140UT- D | 140MT-C-N45 |
|  | | | 140M-F | 140M-C-N45 |

Table 39 - Modules and Adapters

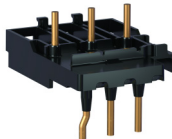
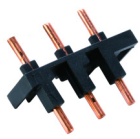
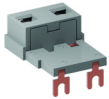

| | Description | For Use With | Cat. No. | |
|---|---|---|---|---------------|
|  | ECO Connecting Module – 12 A (IEC), 11 A (UL) • For DOL and reversing starters • Eco-starters mount on single DIN Rail (140MT on DIN Rail) • Electrical and mechanical interconnection of 140MT and 100-K contactors | 140MT-C to 100-K | 140MT-C-PEK12 | |
| | ECO Connecting Modules – 18 A (IEC), 17 A (UL) • Eco-starters mount on single DIN Rail (140MT on DIN Rail) • Electrical and mechanical interconnection of 140MT MPCB and 100-E contactors | 140MT-C to 100(S)-E09...16 ⁽¹⁾ | 140MT-C-PE16 | |
| | | 140MT-C to 100(S)-E09QJ...16QJ | 140MT-C-PSE16 | |
| | | 140MT-D to 100(S)-E09...16 ⁽¹⁾ | 140MT-D-PE16 | |
| | | 140MT-D to 100(S)-E09QJ...16QJ | 140MT-D-PSE16 | |
| | ECO Connecting Modules – 23 A (IEC), 22 A (UL) • Eco-starters mount on single DIN Rail (140MT on DIN Rail) • Electrical and mechanical interconnection of 140MT MPCB and 100-C contactors | 140MT-C to 100-C09...C23 | 140MT-C-PEC23 | |
| | | 140MT-D to 100-C09...C23 | 140MT-D-PEC23 | |
| | ECO Connecting Modules – 30 A (IEC), 30 A (UL) • Eco-starters mount on single DIN Rail (140MT on DIN Rail) • Electrical and mechanical interconnection of 140MT MPCB and 100-C contactors | 140MT-D to 100-C30...C37 | 140MT-D-PEC37 | |
| | | ECO Connecting Modules – 40 A (IEC), 34 A (UL) • Eco-starters mount on single DIN Rail (140MT on DIN Rail) • Electrical and mechanical interconnection of 140MT MPCB and 100-E contactors | 140MT-C to 100(S)-E26...38 ⁽¹⁾ | 140MT-C-PE38 |
| | | | 140MT-C to 100(S)-E26QJ...38QJ | 140MT-C-PSE38 |
| 140MT-D to 100(S)-E26...38 ⁽¹⁾ | | | 140MT-D-PE38 | |
| 140MT-D to 100(S)-E26QJ...38QJ | 140MT-D-PSE38 | | | |
|  | Connecting Modules – 23 A (IEC), 30 A (UL) and 30 A (IEC), 30 A (UL) • Contactor and MPCB MUST BE mounted separately on (2) DIN Rails Electrical interconnection of 140MT and 100-C (with AC coils) | 140MT-C to 100-C09...C23 | 140MT-C-PNC23 | |
| | | 140MT-D to 100-C09...C23 | 140MT-D-PNC23 | |
| | | 140MT-D to 100-C30...C37 | 140MT-D-PNC37 | |
| | Connecting Modules – 25 and 45 A • Contactor and MPCB MUST BE mounted separately on (2) DIN Rails Electrical interconnection of 140M-F and 100-C (with AC coils) | 140M-F to 100-C30...C37 | 140M-F-PNC37 | |
| | | 140M-F to 100-C43 | 140M-F-PNC43 | |
| | | 140M-F to 100-C30...C43 | 140M-F-PSC43 | |

Table 39 - Modules and Adapters (Continued)






| | Description | For Use With | Cat. No. |
|---|---|--------------------------|---------------|
|  | Coil Extension Modules • Provides access to coil terminals on 3-component starters | 100-C09...C23 contactors | 140MT-C-PSC23 |
| | | 100-C30...C55 contactors | 140MT-F-PSC43 |
|  | Spacing Adapter • Required for self-protected combination motor controller (Type E) applications of Bul. 140MT-C, -D, and 140M-F MPCBs. Not for use with bus bars. | 140MT-C, -D | 140MT-C-TE |
| | | 140M-F | 140M-F-TE |

(1) Not suitable for 100(S)-E09...380J or 300(S)-T0...800J contactors.

Table 40 - Other Accessories

| | Description | For Use With | Cat. No. |
|---|---|-----------------------------------|--------------|
|  | Feeder Block for Compact Busbar • Supply of compact busbars • Increases terminal capacity | 140MT-C | 140MT-C-WBE |
| | | 140M-F | 140M-F-WBE |
|  | Feeder Terminal for Compact Busbar • For supply of compact busbars • Top feed – overlaps compact busbar • Meets UL Type E spacing requirements | 140MT-C, -D | 140MT-C-WTEN |
| | | 140M-F | 140M-F-WTE |
|  | Three-phase Compact Busbar for MPCBs – 64 A Max Continuous Current • 45 mm (1.77 in.) spacing • For use with front-mounted auxiliary contact | 2 connections | 140MT-C, -D |
| | | 3 connections | |
| | | 4 connections | |
| | | 5 connections | |
|  | Three-phase Compact Busbar for MPCBs – 64 A Max Continuous Current • 54 mm (2.13 in.) spacing • For use with side-mounted auxiliary contact | 2 connections | 140MT-C, -D |
| | | 3 connections | |
| | | 4 connections | |
| | | 5 connections | |
|  | Three-phase Compact Busbar for 45 A Motor Protection Circuit Breakers – 115 A Max. Continuous Current • 54 mm (2.13 in.) spacing • For use with front-mounted auxiliary contact | 2 connections | 140M-F |
| | | 3 connections | |
| | | 4 connections | |
| | Three-phase Compact Busbar for 45 A Motor Protection Circuit Breakers – 115 A Max. Continuous Current • 63 mm spacing • For use with side-mounted auxiliary contact | 2 connections | 140M-F |
| | | 3 connections | |
| | | 4 connections | |
|  | Terminal Cover • For covering of unused compact bus bar terminals IP2X finger protection • Must be ordered in multiples of 10 • 10 pieces/pkg | 140MT-C, -D | 140MT-C-WSN |
| | | 140M-F | 140M-F-WS |
|  | Top Hat Rail Adapter – 10 mm • Adjusts the depth of the 140MT-C to the 140MT-D • Allows the use of compact busbars across both frame sizes • Must be ordered in multiples of 10 • 10 pieces/pkg | 140MT-C | 140MT-KBH |
|  | DIN (#3) symmetrical hat rail • 35 mm x 7.5 mm x 1 m (1.4 x 0.3 x 39 in.) long • 10 pieces/package | 140MT-C, -D 140OUT-D 140M-F | 199-DR1 |
|  | DIN (#3) Symmetrical Rail • 35 mm x 15 mm x 1 m (1.4 x 0.6 x 39 in.) long • Top Hat Rail (DIN #3 Symmetrical Rail) • 5 pieces/package | 140MT-C, -D 140OUT-D 140M-F | 1492-DR9 |

Table 40 - Other Accessories (Continued)

| | Description | | For Use With | Cat. No. |
|--|--|--|---|----------------|
|  | Plastic Enclosure <ul style="list-style-type: none"> • IP66, Type 4X • Chemical-resistant plastic construction | Red/yellow handle | 140MT-C up to: 13 A (IEC) 16 A (UL) | 140MT-C-ENRY |
| | | Black/grey handle | 140MT-C up to: 13 A (IEC) 16 A (UL) | 140MT-C-ENN |
|  | Label Sheet <ul style="list-style-type: none"> • 105 self-adhesive paper labels each, 6 x 17 mm (0.236 x 0.67 in) | Pkg. qty. 10 | 140MT-C, -D 140M-F | 100-FMS |
|  | Self-adhesive Markers <ul style="list-style-type: none"> • 40 markers/card • Package qty. 5 cards | each label 6 x 15 mm (0.236 x 0.59 in) | 140MT-C, -D 140M-F | 1492-MAS6X15 |
|  | Adhesive labels <ul style="list-style-type: none"> • White, halogen-free polyester, with acrylate adhesive • Ambient temperature range -40...+120 °C (-40...+248 °F) • Qty: 3000/roll | each label 6 x 17 mm (0.236 x 0.67 in) | 140MT-C, -D 140M-F | 1492-MDM6X17-W |
|  | | each label 8 x 20 mm (0.315 x 0.787 in) | 140MT-C, -D 140M-F | 1492-MDM8X20-W |

Specifications

Table 41 - General Data

| Attribute | | | 140MT-C | 140MT-D | 140M-F | |
|--|--------|---|---|--|----------------|----------|
| Standards compliance | | IEC | IEC/EN 60947-2, IEC/EN 60947-4-1 | | | |
| | | cULus | UL 60947-4-1, CSA C22.2, No. 60947-4-1 | | | |
| Certifications | | Regional | cULus Listed (File No. E54612, NLRV(7); E205542, NKJH(7); E518407 | | | |
| | | | CCC, EAC, CE, IEC, CB Scheme | | CCC, EAC, CE | |
| Rated Insulation Voltage U_i | IEC | [V] | 690 | | | |
| | UL/CSA | [V] | 600 | | | |
| Rated Impulse Withstand Voltage U_{imp} | | Pollution degree | 3 | | | |
| | | Main circuits U_{imp} /Overvoltage Category | 6 kV/III, 8 kV (Disconnect) | | | |
| | | Auxiliary circuits U_{imp} /Overvoltage Category | 6 kV/III | | | |
| Rated Frequency | | [Hz] | 45-65 | | | |
| Utilization Category | | IEC 60947-2 (Circuit breaker) | A | | | |
| | | IEC 60947-4-1 (Motor starter) | AC-3 | | | |
| Life Span | | Mechanical [operations] | 100,000 | 30,000 | | |
| | | Electrical (I_e max.) [operations] | 100,000 | 30,000 | | |
| Switching Frequency | | [operations/hour] | max. 25 | | | |
| Ambient Temperature | | Storage [°C (°F)] | -40...+85 (-40...185) | | | |
| | | Operation [°C (°F)] | -25...+70 (-13...158) | | | |
| Climatic resistance | | Operating Humidity/Moisture heat (60068-2-3) | 5...95% Non-condensing | | | |
| Site Altitude | | [m] | to 2000 N.N. (6561 ft) | | | |
| Protection Class | | | IP2X from all directions | | | |
| Resistance to Shock, Transport (60068-2-27) | | ON | 15 G/11 ms | | | |
| | | OFF | 30 G/11 ms | | | |
| Resistance to Vibration, Operation (60068-2-6) | | | 5 G | | | |
| Rated Thermal Current I_{th} | | up to 40 °C (104 °F) ambient temperature | [A] | 0.1...32 | 0.63...40 | 6.3...45 |
| | | up to 60 °C (140 °F) ambient temperature | [A] | 0.1...32 | 0.63...40 | 6.3...45 |
| Rated Supply Current I_e | | | [A] | 0.1...32 | 0.63...40 | 6.3...45 |
| Dependence on Temperature | | 40 °C (104 °F) | [A] | no reduction | | |
| | | 50 °C (122 °F) | [A] | no reduction | | |
| | | 60 °C (140 °F) | [A] | no reduction | | |
| | | 70 °C (158 °F) | [A] | 15% current reduction of the upper rated current I_e | | |
| Overload Protection Characteristics | | | IEC 60947-4-1 Motor protection (except Cat. Nos. 140MT-D9N, 140M-F9N) | | | |
| Ambient Temperature Compensation | | [°C (°F)] | -25...+60 (-13...+140) | | | |
| Phase-loss Protection | | | Differential release | | | |
| Trip class | | | 10 (except Cat. Nos. 140MT-D9N, 140M-F8N) fixed setting | | | |
| Magnetic Release | | | fixed setting | | | |
| Release current ($\pm 20\%$) | | for E, N Version | [A] | 14 x I_e max. ⁽¹⁾ | 13 x I_e max | |
| | | for E, N Version C36, C40 | [A] | 12 x I_e max. ⁽¹⁾ | — | |
| | | for T Version | [A] | 18...22 x I_e max. ⁽²⁾ | | |
| Total Power loss P_v | | Circuit Breaker at rated load/operating temp. | [W] | 4...11 | 4...14 | 7...22 |
| Main Disconnect Switch Application | | | Yes, with accessories | | | |
| Application Conditions | | 140MT-D...C36, -C40: Suitable for continuous operation at 90% current rating at 480V only if used in a minimum enclosure size of 250 x 175 x 150 mm (10 x 7 x 6 in). | | | | |
| | | For utilization outside North America, assemblies (of products) shall comply to the IEC 61439-1 requirements | | | | |
| | | 140M and 140MT manual motor starters are intended for use in closed areas without hazardous operating conditions such as dust or explosive or corrosive gases. Enclosures of appropriate manner need to be in place to protect devices in such environments. See Table 42 . | | | | |







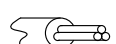
 (1) I_e max. = maximum values of setting ranges fixed magnetic setting for 140MT-D9V; see ratings.

 (2) I_e max. = maximum values of setting ranges; see ratings.

Table 42 - Minimum Enclosure Size for 140MT-C and 140MT-D Devices

| Rated Current [A] | | Application Type | | | |
|-------------------|------|---|---|--|--|
| | | 480V Group Installation and At-motor Disconnect | 600V Group Installation and At-motor Disconnect | 480Y/277V Self-protected (Type E) Combination Motor Controller | 600Y/347V Self-protected (Type E) Combination Motor Controller |
| ≤ 6.3 | [mm] | 166 x 68 x 125 | 166 x 68 x 125 | 166 x 68 x 125 | 166 x 68 x 125 |
| | [in] | 6.5 x 2.7 x 5 | 6.5 x 2.7 x 5 | 6.5 x 2.7 x 5 | 6.5 x 2.7 x 5 |
| 10...16 | [mm] | 166 x 68 x 125 | 166 x 68 x 125 | 200 x 68 x 125 | 250 x 68 x 125 |
| | [in] | 6.5 x 2.7 x 5 | 6.5 x 2.7 x 5 | 7.9 x 2.7 x 5 | 10 x 2.7 x 5 |
| 20...32 | [mm] | 166 x 68 x 125 | 250 x 68 x 125 | 200 x 68 x 125 | - |
| | [in] | 6.5 x 2.7 x 5 | 10 x 2.7 x 5 | 7.9 x 2.7 x 5 | |
| 36...40 | [mm] | 250 x 175 x 150 | 250 x 175 x 150 | 250 x 175 x 150 | |
| | [in] | 10 x 7 x 6 | 10 x 7 x 6 | 10 x 7 x 6 | |

Table 43 - MPCB Connecting Characteristics

| Connection | | No. of Conductors | 140MT-C, 140MT-D ≤ 16 A | 140MT-C, 140MT-D > 16 A | 140M-F |
|--------------------|--|-------------------|---|---|---|
| Type of terminals | | |  |  |  |
| | | | Screw Clamp up to 16 A, M4 | Screw Clamp greater than 16 A, M4 | |
| Connection Screw | | | Pozidriv No.2/Blade No.3 | Pozidriv No.2/Blade No.3 | Pozidriv No.2/Blade No.3 |
| Wiring | Solid or stranded  | 1 | 1...6 mm ² | 1.5...10 mm ² | 2.5...25 mm ² |
| | | 2 | 1...2.5 mm ² 2.5...6 mm ² | 1.5...4 mm ² 4...10 mm ² | 2.5...25 mm ² |
| | Flexible with ferrule (end sleeve)  | 1 | 1...6 mm ² | 1.5...10 mm ² | 2.5...25 mm ² |
| | | 2 | 1...2.5 mm ² 2.5...4 mm ² | 1.5...4 mm ² 4...10 mm ² | 2.5...25 mm ² |
| | Finely stranded  | 1 | 1.5...6 mm ² | 2.5...10 mm ² | 16...25 mm ² |
| | | 2 | 1.5...4 mm ² 2.5...6 mm ² | 2.5...6 mm ² 4...10 mm ² | 16...25 mm ² |
| | Cross section per UL/CSA solid, stranded  | 1 | No. 14...10 AWG | No. 14...8 AWG | No.14...8 |
| | | 2 | No. 14...10 AWG | No. 14...10 AWG No. 12...8 AWG | No.14...8 |
| Stripping length | | | 10 mm (0.39 in.) | 10 mm (0.39 in.) | 10 mm (0.39 in.) |
| Tightening torques | | [N•m]/[lb•in] | 2...2.5/18...22 | 2...2.5/18...22 | 3...3.5/27...30 |

Combination Ratings

Bulletin 140MT Devices with Bulletin 100-K Miniature IEC Contactors

Table 44 - UL 60947 Application Ratings, MPSDs and MCPs with Bulletin 100-K Miniature IEC Contactors

| Cat. No. | UL 60947-4-1 Manual Motor Controller | | | | | | UL 60947-4-1 Type F Type 1 | | |
|--|--|---------------------------------------|--------------------------------|------|--------------------------------|------|---------------------------------------|--------------------------------|--------------------------|
| | Max. Fuse or Circuit Breaker per NEC [A] | Minimum Contactor Size ⁽¹⁾ | Group Motor Installation | | Motor Disconnect | | Combination Motor Controller | | |
| | | | Max Short-circuit Current [kA] | | Max Short-circuit Current [kA] | | Minimum Contactor Size ⁽¹⁾ | Max Short-circuit Current [kA] | |
| | | | 480V | 600V | 480V | 600V | | 480Y/277V ⁽²⁾ | 600Y/347V ⁽²⁾ |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 140MT-C3E-A16 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-C3E-A25 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-C3E-A40 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-C3E-A63 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-C3E-B10 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-C3E-B16 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-C3E-B25 | 450 | 100-K05 | 65 | 30 | 65 | 30 | 100-K05 | 65 | 30 |
| 140MT-C3E-B40 | 450 | 100-K05 | 65 | 30 | 65 | 30 | 100-K05 | 65 | 30 |
| 140MT-C3E-B63 | 450 | 100-K05 | 65 | 30 | 65 | 30 | 100-K05 | 65 | — |
| 140MT-C3E-C10 | 450 | 100-K09 | 65 | 30 | 65 | 30 | 100-K09 | 65 | — |
| 140MT-C3E-C16 | 450 | 100-K12 | 30 | 30 | 30 | 30 | 100-K12 | 30 | — |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 140MT-D9E-A63 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-D9E-B10 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-D9E-B16 | 450 | 100-K05 | 65 | 50 | 65 | 50 | 100-K05 | 65 | 50 |
| 140MT-D9E-B25 | 450 | 100-K05 | 65 | 30 | 65 | 30 | 100-K05 | 65 | 30 |
| 140MT-D9E-B40 | 450 | 100-K05 | 65 | 30 | 65 | 30 | 100-K05 | 65 | 30 |
| 140MT-D9E-B63 | 450 | 100-K05 | 65 | 30 | 65 | 30 | 100-K05 | 65 | 30 |
| 140MT-D9E-C10 | 450 | 100-K09 | 65 | 30 | 65 | 30 | 100-K09 | 65 | 30 |
| 140MT-D9E-C16 | 450 | 100-K12 | 65 | 30 | 65 | 30 | 100-K12 | 65 | 30 |

(1) Similar for other contactor configurations (100-K, 104-K)

(2) For full voltage (delta) ratings above 277V or 347V, follow the NEC or CEC rules for group motor applications.

Table 45 - IEC 60947-4-1, Type 1 Coordination Ratings, MPSDs with Bulletin 100-K IEC Contactors

| Cat. No. | 415V | |
|--|--------------------------------|-----------------------------------|
| | Max Short-circuit Current [kA] | Min Contactor Size ⁽¹⁾ |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | |
| 140MT-C3E-A16 | 65 | 100-K05 |
| 140MT-C3E-A25 | 65 | 100-K05 |
| 140MT-C3E-A40 | 65 | 100-K05 |
| 140MT-C3E-A63 | 65 | 100-K05 |
| 140MT-C3E-B10 | 65 | 100-K05 |
| 140MT-C3E-B16 | 65 | 100-K05 |
| 140MT-C3E-B25 | 65 | 100-K05 |
| 140MT-C3E-B40 | 65 | 100-K05 |
| 140MT-C3E-B63 | 65 | 100-K05 |
| 140MT-C3E-C10 | 65 | 100-K09 |
| 140MT-C3E-C16 | 30 | 100-K12 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | |
| 140MT-D9E-A63 | 65 | 100-K05 |
| 140MT-D9E-B10 | 65 | 100-K05 |
| 140MT-D9E-B16 | 65 | 100-K05 |
| 140MT-D9E-B25 | 65 | 100-K05 |
| 140MT-D9E-B40 | 65 | 100-K05 |
| 140MT-D9E-B63 | 65 | 100-K05 |
| 140MT-D9E-C10 | 65 | 100-K09 |
| 140MT-D9E-C16 | 65 | 100-K12 |

(1) Similar for other contactor configurations (100-K, 104-K)

Bulletin 140MT/M Devices with Bulletin 100-C IEC Contactors

Table 46 - UL 60947 Type 1 Application Ratings, MPSDs with Bulletin 100-C IEC Contactors

| Cat. No. | UL 60947-4-1 Manual Motor Controller | | | | | | UL 60947-4-1 Type F, Type 1 | | |
|--|--|---------------------------------------|--------------------------------|------|--------------------------------|------|---------------------------------------|--------------------------------|--------------------------|
| | Max. Fuse or Circuit Breaker per NEC [A] | Minimum Contactor Size ⁽¹⁾ | Group Motor Installation | | Motor Disconnect | | Combination Motor Controller | | |
| | | | Max Short-circuit Current [kA] | | Max Short-circuit Current [kA] | | Minimum Contactor Size ⁽¹⁾ | Max Short-circuit Current [kA] | |
| | | | 480V | 600V | 480V | 600V | | 480V/277V ⁽²⁾ | 600V/347V ⁽²⁾ |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 140MT-C3E-A16 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-C3E-A25 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-C3E-A40 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-C3E-A63 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-C3E-B10 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-C3E-B16 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-C3E-B25 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | 30 |
| 140MT-C3E-B40 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | 30 |
| 140MT-C3E-B63 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | — |
| 140MT-C3E-C10 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | — |
| 140MT-C3E-C16 | 450 | 100-C12 | 30 | 30 | 30 | 30 | 100-C12 | 30 | — |
| 140MT-C3E-C20 | 450 | 100-C16 | 30 | 30 | 30 | 10 | — | — | — |
| 140MT-C3E-C25 | 450 | 100-C23 | 30 | 18 | 10 | 5 | — | — | — |
| | 450 | 100-C30 | 30 | 18 | 30 | 5 | — | — | — |
| 140MT-C3E-C29 | 450 | 100-C30 | 30 | 10 | 10 | — | — | — | |
| 140MT-C3E-C32 | 450 | 100-C37 | 30 | 10 | 10 | — | — | — | |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 140MT-D9E-A63 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-D9E-B10 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-D9E-B16 | 450 | 100-C09 | 65 | 50 | 65 | 50 | 100-C09 | 65 | 50 |
| 140MT-D9E-B25 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | 30 |
| 140MT-D9E-B40 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | 30 |
| 140MT-D9E-B63 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | 30 |
| 140MT-D9E-C10 | 450 | 100-C09 | 65 | 30 | 65 | 30 | 100-C09 | 65 | 30 |
| 140MT-D9E-C16 | 450 | 100-C12 | 65 | 30 | 65 | 30 | 100-C12 | 65 | 30 |
| 140MT-D9E-C20 | 450 | 100-C23 | 65 | 30 | 65 | 30 | 100-C23 | 65 | — |
| 140MT-D9E-C25 | 450 | 100-C23 | 50 | 30 | 50 | 30 | 100-C23 | 50 | — |
| 140MT-D9E-C29 | 450 | 100-C30 | 50 | 30 | 50 | 30 | 100-C30 | 50 | — |
| 140MT-D9E-C32 | 450 | 100-C37 | 50 | 30 | 30 | 18 | 100-C37 | 30 | — |
| 140MT-D9E-C36 | 450 | 100-C37 | 30 | 30 | 30 | 18 | 100-C37 | 30 | — |
| 140MT-D9E-C40 | 450 | 100-C37 | 30 | 30 | 30 | 18 | 100-C37 | 30 | — |
| F-Frame, Adjustable Thermal/Fixed Magnetic (13 x I_n) | | | | | | | | | |
| 140M-F8E-C10 | 600 | 100-C30 | 65 | 30 | 65 | 30 | 100-C30 | 65 | 30 |
| 140M-F8E-C16 | 600 | 100-C30 | 65 | 30 | 65 | 30 | 100-C30 | 65 | 30 |
| 140M-F8E-C20 | 600 | 100-C30 | 65 | 30 | 65 | 30 | 100-C30 | 65 | 30 |
| 140M-F8E-C25 | 600 | 100-C30 | 65 | 30 | 65 | 30 | 100-C30 | 65 | 30 |
| 140M-F8E-C32 | 600 | 100-C30 | 65 | 30 | 65 | 30 | 100-C30 | 65 | 30 |
| 140M-F8E-C45 | 600 | 100-C37 | 65 | 18 | 65 | 18 | 100-C37 | 65 | — |

(1) Similar for other contactor configurations (100-C, 104-C, 100S-C, 104S-C)

(2) For full-voltage (delta) ratings above 277V or 347V, follow the NEC or CEC rules for group motor applications.

Table 47 - UL 60947 Type 1 Application Ratings, MCPs with Bulletin 100-C IEC Contactors

| Cat. No. | UL 60947-4-1 Manual Motor Controller | | | | | |
|---|--|------------------------|--------------------------------|------|--------------------------------|------|
| | Max. Fuse or Circuit Breaker per NEC [A] | Minimum Contactor Size | Group Motor Installation | | Motor Disconnect | |
| | | | Max Short-circuit Current [kA] | | Max Short-circuit Current [kA] | |
| | | | 480V | 600V | 480V | 600V |
| D-Frame, Motor Circuit Protectors, Fixed Magnetic (14 x I_n) | | | | | | |
| 140MT-D9N-A16 | 450 | 100-C09 | 65 | 50 | 65 | 50 |
| 140MT-D9N-A25 | 450 | 100-C09 | 65 | 50 | 65 | 50 |
| 140MT-D9N-A40 | 450 | 100-C09 | 65 | 50 | 65 | 50 |
| 140MT-D9N-A63 | 450 | 100-C09 | 65 | 50 | 65 | 50 |
| 140MT-D9N-B10 | 450 | 100-C09 | 65 | 50 | 65 | 50 |
| 140MT-D9N-B16 | 450 | 100-C09 | 65 | 50 | 65 | 50 |
| 140MT-D9N-B25 | 450 | 100-C09 | 65 | 30 | 65 | 30 |
| 140MT-D9N-B40 | 450 | 100-C09 | 65 | 30 | 65 | 30 |
| 140MT-D9N-B63 | 450 | 100-C09 | 65 | 30 | 65 | 30 |
| 140MT-D9N-C10 | 450 | 100-C09 | 65 | 30 | 65 | 30 |
| 140MT-D9N-C16 | 450 | 100-C12 | 65 | 30 | 65 | 30 |
| 140MT-D9N-C20 | 450 | 100-C23 | 65 | 30 | 65 | 30 |
| 140MT-D9N-C25 | 450 | 100-C23 | 50 | 30 | 50 | 30 |
| 140MT-D9N-C29 | 450 | 100-C30 | 50 | 30 | 50 | 30 |
| 140MT-D9N-C32 | 450 | 100-C37 | 50 | 30 | 30 | 18 |
| 140MT-D9N-C36 | 450 | 100-C37 | 30 | 30 | 30 | 18 |
| 140MT-D9N-C40 | 450 | 100-C37 | 30 | 30 | 30 | 18 |
| F-Frame, Motor Circuit Protectors, Fixed Magnetic (13 x I_n) | | | | | | |
| 140M-F8N-C25 | 600 | 100-C23 | 65 | 30 | 65 | 30 |
| 140M-F8N-C32 | 600 | 100-C30 | 65 | 30 | 65 | 30 |
| 140M-F8N-C45 | 600 | 100-C37 | 65 | 18 | 65 | 18 |

Table 48 - UL 60947-4-1 Short-Circuit Current Ratings, 140MT Combination Motor Controller as Type F, Type 2 Combination with 100-C Contactors

| Cat. No. | Current Range [A] | Contactor Size ⁽¹⁾ | UL 60947-4-1 Type F, Type 2 Combination Motor Controller | | | |
|---|-------------------|-------------------------------|--|-----------|------------------------|-----------------|
| | | | Max Short-circuit Current [kA] | | Max Current Rating [A] | |
| | | | 480Y/277V | 600Y/347V | Fuse | Circuit Breaker |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | |
| 140MT-C3E-A16 | 0.10...0.16 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-A25 | 0.16...0.25 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-A40 | 0.25...0.40 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-A63 | 0.40...0.63 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-B10 | 0.63...1.0 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-B16 | 1.0...1.6 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-B25 | 1.6...2.5 | 100-C23 | 65 | 30 | 450 | 450 |
| 140MT-C3E-B40 | 2.5...4.0 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-C3E-B63 | 4.0...6.3 | 100-C30 | 65 | — | 450 | 450 |
| 140MT-C3E-C10 | 6.3...10 | 100-C30 | 65 | — | 450 | 450 |
| 140MT-C3E-C16 | 10...16 | 100-C30 | 30 | — | 450 | 450 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | |
| 140MT-D9E-A63 | 0.40...0.63 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-D9E-B10 | 0.63...1.0 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-D9E-B16 | 1.0...1.6 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-D9E-B25 | 1.6...2.5 | 100-C23 | 65 | 30 | 450 | 450 |
| 140MT-D9E-B40 | 2.5...4.0 | 100-C23 | 65 | — | 450 | 450 |
| 140MT-D9E-B40 | 2.5...4.0 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-B63 | 4.0...6.3 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-C10 | 6.3...10 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-C16 | 10...16 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-C20 | 14.5...20 | 100-C30 | 65 | — | 450 | 450 |
| 140MT-D9E-C25 | 18...25 | 100-C30 | 50 | — | 450 | 450 |
| 140MT-D9E-C29 | 23...29 | 100-C30 | 50 | — | 450 | 450 |
| 140MT-D9E-C32 | 26.5...32 | 100-C37 | 30 | — | 450 | 450 |
| 140MT-D9E-C36 | 30...36 | 100-C37 | 30 | — | 450 | 450 |
| 140MT-D9E-C40 | 34...40 | 100-C37 | 30 | — | 450 | 450 |
| 140MT-D9E-C40 | 34...40 | 100-C43 | 30 | — | 450 | 450 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (18...22 x I_n) | | | | | | |
| 140MT-D9T-A63 | 0.40...0.63 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-D9T-B10 | 0.63...1.0 | 100-C09 | 65 | 50 | 450 | 450 |
| 140MT-D9T-B16 | 1.0...1.6 | 100-C23 | 65 | 30 | 450 | 450 |
| 140MT-D9T-B25 | 1.6...2.5 | 100-C23 | 65 | — | 450 | 450 |
| 140MT-D9T-B25 | 1.6...2.5 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-B40 | 2.5...4.0 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-B63 | 4.0...6.3 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-C10 | 6.3...10 | 100-C30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-C16 | 10...16 | 100-C30 | 65 | - | 450 | 450 |
| 140MT-D9T-C20 | 14.5...20 | 100-C30 | 50 | - | 450 | 450 |
| 140MT-D9T-C25 | 18...25 | 100-C30 | 50 | - | 450 | 450 |

(1) Similar for other contactor configurations (100-C, 104-C, 100S-C, 104S-C)

Table 49 - IEC 60947-4-1, Type 2 Coordination Ratings, MPSDs with Bulletin 100-C IEC Contactors

| Cat. No. | | | IEC 60947-4-1 Type 2 Coordination | | | | | |
|--|------------------------------|--------------------------|-----------------------------------|-----------------------------------|--------------------------------|-----------------------------------|--------------------------------|-----------------------------------|
| Standard Motor Protection | High Inrush Motor Protection | Motor Circuit Protection | 400V | | 480V | | 600V | |
| | | | Max Short-circuit Current [kA] | Min Contactor Size ⁽¹⁾ | Max Short-circuit Current [kA] | Min Contactor Size ⁽¹⁾ | Max Short-circuit Current [kA] | Min Contactor Size ⁽¹⁾ |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | |
| 140MT-C3E-A16 | — | — | 100 | 100-C09 | — | — | — | — |
| 140MT-C3E-A25 | — | — | 100 | 100-C09 | — | — | — | — |
| 140MT-C3E-A40 | — | — | 100 | 100-C09 | — | — | — | — |
| 140MT-C3E-A63 | — | — | 100 | 100-C09 | — | — | — | — |
| 140MT-C3E-B10 | — | — | 100 | 100-C09 | — | — | — | — |
| 140MT-C3E-B16 | — | — | 100 | 100-C09 | — | — | — | — |
| 140MT-C3E-B25 | — | — | 65 | 100-C23 | — | — | — | — |
| 140MT-C3E-B40 | — | — | 65 | 100-C23 | — | — | — | — |
| 140MT-C3E-B63 | — | — | 65 | 100-C23 | — | — | — | — |
| 140MT-C3E-C10 | — | — | 65 | 100-C23 | — | — | — | — |
| 140MT-C3E-C16 | — | — | 50 | 100-C30 | — | — | — | — |
| 140MT-C3E-C20 | — | — | 50 | 100-C30 | — | — | — | — |
| 140MT-C3E-C25 | — | — | 15 | 100-C30 | — | — | — | — |
| 140MT-C3E-C29 | — | — | 15 | 100-C30 | — | — | — | — |
| 140MT-C3E-C32 | — | — | 15 | 100-C30 | — | — | — | — |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | |
| 140MT-D9E-A63 | — | — | 100 | 100-C09 | — | — | — | — |
| 140MT-D9E-B10 | 140MT-D9T-A63 | 140MT-D9N-B10 | 100 | 100-C09 | — | — | — | — |
| 140MT-D9E-B16 | 140MT-D9T-B10 | 140MT-D9N-B16 | 100 | 100-C09 | — | — | — | — |
| 140MT-D9E-B25 | 140MT-D9T-B16 | 140MT-D9N-B25 | 100 | 100-C09 | — | — | — | — |
| 140MT-D9E-B40 | 140MT-D9T-B25 | 140MT-D9N-B40 | 65 | 100-C09 | — | — | — | — |
| 140MT-D9E-B63 | 140MT-D9T-B40 | 140MT-D9N-B63 | 65 | 100-C09 | — | — | — | — |
| 140MT-D9E-C10 | 140MT-D9T-B63 | 140MT-D9N-C10 | 65 | 100-C09 | — | — | — | — |
| 140MT-D9E-C16 | 140MT-D9T-C10 | 140MT-D9N-C16 | 65 | 100-C23 | — | — | — | — |
| 140MT-D9E-C20 | 140MT-D9T-C16 | 140MT-D9N-C20 | 65 | 100-C23 | — | — | — | — |
| 140MT-D9E-C25 | 140MT-D9T-C20 | 140MT-D9N-C25 | 65 | 100-C23 | — | — | — | — |
| 140MT-D9E-C29 | 140MT-D9T-C25 | 140MT-D9N-C29 | 65 | 100-C30 | — | — | — | — |
| 140MT-D9E-C32 | 140MT-D9T-C29 | 140MT-D9N-C32 | 65 | 100-C30/C37 | — | — | — | — |
| 140MT-D9E-C36 | 140MT-D9T-C32 | — | 65 | 100-C30/C37 | — | — | — | — |
| 140MT-D9E-C40 | 140MT-D9T-C36 | 140MT-D9N-C40 | 65 | 100-C30/C37 | — | — | — | — |
| F-Frame, Adjustable Thermal/Fixed Magnetic (13 x I_n) | | | | | | | | |
| 140M-F8E-C10 | — | — | 100 | 100-C09 | 65 | 100-C09 | 30 | 100-C30 |
| 140M-F8E-C16 | — | — | 100 | 100-C12 | 65 | 100-C12 | 30 | 100-C30 |
| 140M-F8E-C20 | — | — | 100 | 100-C23 | 65 | 100-C23 | 30 | 100-C30 |
| 140M-F8E-C25 | — | 140M-F8N-C25 | 100 | 100-C30 | 65 | 100-C30 | 30 | 100-C30 |
| 140M-F8E-C32 | 140M-F8T-C25 | 140M-F8N-C32 | 100 | 100-C30 | 65 | 100-C30 | 30 | 100-C30 |
| 140M-F8E-C45 | 140M-F8T-C32 | 140M-F8N-C45 | 100 | 100-C37 | 65 | 100-C37 | 10 | 100-C37 |

(1) Similar for other contactor configurations (100-C, 104-C, 100S-C, 104S-C)

Bulletin 140MT/M Devices with Bulletin 100-E IEC Contactors

Table 50 - UL 60947 Type 1 Application Ratings, MPSDs with Bulletin 100-E IEC Contactors

| Cat. No. | UL 60947-4-1 Manual Motor Controller | | | | | | UL 60947-4-1 Type F Type 1 | | |
|--|--|---------------------------------------|--------------------------------|------|--------------------------------|------|---------------------------------------|--------------------------------|--------------------------|
| | Max. Fuse or Circuit Breaker per NEC [A] | Minimum Contactor Size ⁽¹⁾ | Group Motor Installation | | Motor Disconnect | | Combination Motor Controller | | |
| | | | Max Short-circuit Current [kA] | | Max Short-circuit Current [kA] | | Minimum Contactor Size ⁽¹⁾ | Max Short-circuit Current [kA] | |
| | | | 480V | 600V | 480V | 600V | | 480V/277V ⁽²⁾ | 600V/347V ⁽²⁾ |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 140MT-C3E-A16 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-C3E-A25 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-C3E-A40 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-C3E-A63 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-C3E-B10 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-C3E-B16 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-C3E-B25 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | 30 |
| 140MT-C3E-B40 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | 30 |
| 140MT-C3E-B63 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | — |
| 140MT-C3E-C10 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | — |
| 140MT-C3E-C16 | 450 | 100-E12 | 30 | 30 | 30 | 30 | 100-E12 | 30 | — |
| 140MT-C3E-C20 | 450 | 100-E16 | 30 | 30 | 30 | 10 | — | — | — |
| 140MT-C3E-C25 | 450 | 100-E26 | 30 | 18 | 10 | 5 | — | — | — |
| | 450 | 100-E30 | 30 | 18 | 30 | 5 | — | — | — |
| 140MT-C3E-C29 | 450 | 100-E30 | 30 | 10 | 10 | — | — | — | — |
| 140MT-C3E-C32 | 450 | 100-E38 | 30 | 10 | 10 | — | — | — | — |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | | | | |
| 140MT-D9E-A63 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-D9E-B10 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-D9E-B16 | 450 | 100-E09 | 65 | 50 | 65 | 50 | 100-E09 | 65 | 50 |
| 140MT-D9E-B25 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | 30 |
| 140MT-D9E-B40 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | 30 |
| 140MT-D9E-B63 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | 30 |
| 140MT-D9E-C10 | 450 | 100-E09 | 65 | 30 | 65 | 30 | 100-E09 | 65 | 30 |
| 140MT-D9E-C16 | 450 | 100-E12 | 65 | 30 | 65 | 30 | 100-E12 | 65 | 30 |
| 140MT-D9E-C20 | 450 | 100-E26 | 65 | 30 | 65 | 30 | 100-E26 | 65 | — |
| 140MT-D9E-C25 | 450 | 100-E26 | 50 | 30 | 50 | 30 | 100-E26 | 50 | — |
| 140MT-D9E-C29 | 450 | 100-E30 | 50 | 30 | 50 | 30 | 100-E30 | 50 | — |
| 140MT-D9E-C32 | 450 | 100-E38 | 50 | 30 | 30 | 18 | 100-E38 | 30 | — |
| 140MT-D9E-C36 | 450 | 100-E38 | 30 | 30 | 30 | 18 | 100-E38 | 30 | — |
| 140MT-D9E-C40 | 450 | 100-E38 | 30 | 30 | 30 | 18 | 100-E38 | 30 | — |
| 140MT-D9E-C40 | 450 | 100-E40 | 30 | 30 | 30 | 18 | 100-E40 | 30 | — |

(1) Similar for other contactor configurations (100-E, 104-E, 100S-E, 104S-E)

(2) For full-voltage (delta) ratings above 277V or 347V, follow the NEC or CEC rules for group motor applications.

Table 51 - UL 60947-4-1 Short-Circuit Current Ratings, 140MT Combination Motor Controller as Type F, Type 2 Combination with 100-E Contactors

| Cat. No. | Current Range [A] | Contactor Size ⁽¹⁾ | UL 60947-4-1 Type F, Type 2 Combination Motor Controller | | | |
|---|-------------------|-------------------------------|--|-----------|------------------------|-----------------|
| | | | Max Short-circuit Current [kA] | | Max Current Rating [A] | |
| | | | 480Y/277V | 600Y/347V | Fuse | Circuit Breaker |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | |
| 140MT-C3E-A16 | 0.10...0.16 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-A25 | 0.16...0.25 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-A40 | 0.25...0.40 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-A63 | 0.40...0.63 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-B10 | 0.63...1.0 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-B16 | 1.0...1.6 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-C3E-B25 | 1.6...2.5 | 100-E26 | 65 | 30 | 450 | 450 |
| 140MT-C3E-B40 | 2.5...4.0 | 100-E26 | 65 | 30 | 450 | 450 |
| 140MT-C3E-B63 | 4.0...6.3 | 100-E26 | 65 | – | 450 | 450 |
| 140MT-C3E-C10 | 6.3...10 | 100-E26 | 65 | – | 450 | 450 |
| 140MT-C3E-C16 | 10...16 | 100-E30 | 30 | – | 450 | 450 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | | | | |
| 140MT-D9E-A63 | 0.40...0.63 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-D9E-B10 | 0.63...1.0 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-D9E-B16 | 1.0...1.6 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-D9E-B25 | 1.6...2.5 | 100-E26 | 65 | 30 | 450 | 450 |
| 140MT-D9E-B40 | 2.5...4.0 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-B63 | 4.0...6.3 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-C10 | 6.3...10 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-C16 | 10...16 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9E-C20 | 14.5...20 | 100-E26 | 65 | – | 450 | 450 |
| 140MT-D9E-C25 | 18...25 | 100-E26 | 50 | – | 450 | 450 |
| 140MT-D9E-C29 | 23...29 | 100-E26 | 50 | – | 450 | 450 |
| 140MT-D9E-C32 | 26.5...32 | 100-E38 | 30 | – | 450 | 450 |
| 140MT-D9E-C36 | 30...36 | 100-E38 | 30 | – | 450 | 450 |
| 140MT-D9E-C40 | 34...40 | 100-E38 | 30 | – | 450 | 450 |
| | | 100-E40 | 30 | – | 450 | 450 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (18...22 x I_n) | | | | | | |
| 140MT-D9T-A63 | 0.40...0.63 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-D9T-B10 | 0.63...1.0 | 100-E09 | 65 | 50 | 450 | 450 |
| 140MT-D9T-B16 | 1.0...1.6 | 100-E26 | 65 | 30 | 450 | 450 |
| 140MT-D9T-B25 | 1.6...2.5 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-B40 | 2.5...4.0 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-B63 | 4.0...6.3 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-C10 | 6.3...10 | 100-E26 | 65 | – | 450 | 450 |
| | | 100-E30 | 65 | 30 | 450 | 450 |
| 140MT-D9T-C16 | 10...16 | 100-E26 | 65 | – | 450 | 450 |
| 140MT-D9T-C20 | 14.5...20 | 100-E26 | 50 | – | 450 | 450 |
| 140MT-D9T-C25 | 18...25 | 100-E26 | 50 | – | 450 | 450 |

(1) Similar for other contactor configurations (100-C, 104-C, 100S-C, 104S-C)

Table 52 - IEC 60947-4-1, Type 2 Coordination Ratings, MPSDs with Bulletin 100-E IEC Contactors

| Cat. No. | | IEC 60947-4-1 Type 2 Coordination | |
|---|------------------------------|-----------------------------------|-----------------------------------|
| Standard Motor Protection | High Inrush Motor Protection | 415V | |
| | | Max Short-circuit Current [kA] | Min Contactor Size ⁽¹⁾ |
| C-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | |
| 140MT-C3E-A16 | — | 100 | 100-E09 |
| 140MT-C3E-A25 | — | 100 | 100-E09 |
| 140MT-C3E-A40 | — | 100 | 100-E09 |
| 140MT-C3E-A63 | — | 100 | 100-E09 |
| 140MT-C3E-B10 | — | 100 | 100-E09 |
| 140MT-C3E-B16 | — | 100 | 100-E09 |
| 140MT-C3E-B25 | — | 65 | 100-E26 |
| 140MT-C3E-B40 | — | 65 | 100-E26 |
| 140MT-C3E-B63 | — | 65 | 100-E26 |
| 140MT-C3E-C10 | — | 65 | 100-E26 |
| 140MT-C3E-C16 | — | 50 | 100-E26 |
| 140MT-C3E-C20 | — | 50 | 100-E26 |
| 140MT-C3E-C25 | — | 15 | 100-E30 |
| 140MT-C3E-C29 | — | 15 | 100-E30 |
| 140MT-C3E-C32 | — | 15 | 100-E30 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (14 x I_n) | | | |
| 140MT-D9E-A63 | — | 100 | 100-E09 |
| 140MT-D9E-B10 | — | 100 | 100-E09 |
| 140MT-D9E-B16 | — | 100 | 100-E09 |
| 140MT-D9E-B25 | — | 100 | 100-E09 |
| 140MT-D9E-B40 | — | 65 | 100-E26 |
| 140MT-D9E-B63 | — | 65 | 100-E26 |
| 140MT-D9E-C10 | — | 65 | 100-E26 |
| 140MT-D9E-C16 | — | 65 | 100-E26 |
| 140MT-D9E-C20 | — | 65 | 100-E26 |
| 140MT-D9E-C25 | — | 65 | 100-E26 |
| 140MT-D9E-C29 | — | 65 | 100-E26 |
| 140MT-D9E-C32 | — | 65 | 100-E30 |
| 140MT-D9E-C36 | — | 65 | 100-E30 |
| 140MT-D9E-C40 | — | 66 | 100-E30 |
| 140MT-D9E-C40 | — | 65 | 100-E40 |
| D-Frame, Adjustable Thermal/Fixed Magnetic (18...22 x I_n) | | | |
| — | 140MT-D9T-A63 | 100 | 100-E09 |
| — | 140MT-D9T-B10 | 100 | 100-E09 |
| — | 140MT-D9T-B16 | 100 | 100-E09 |
| — | 140MT-D9T-B25 | 65 | 100-E26 |
| — | 140MT-D9T-B40 | 65 | 100-E26 |
| — | 140MT-D9T-B63 | 65 | 100-E26 |
| — | 140MT-D9T-C10 | 65 | 100-E26 |
| — | 140MT-D9T-C16 | 65 | 100-E26 |
| — | 140MT-D9T-C20 | 65 | 100-E26 |
| — | 140MT-D9T-C25 | 65 | 100-E26 |

(1) Similar for other contactor configurations (100-E, 104-E, 100S-E, 104S-E)

Accessory Specifications

Table 53 - Auxiliary Contact Specifications—For 140MT-C... and 140MT-D... Devices







| Attribute | | | Front-mounted Auxiliary Contacts Cat. Nos. 140MT-C-AFA, -AFAR/ -AFAR10M10 | Right Side-mounted Auxiliary Contacts Cat. No. 140MT-C-ASA | |
|--|---|-------------------|---|---|------|
| Rated Thermal Current I_{th} | at 40 °C (104 °F) ambient temperature | [A] | 5 | 10 | |
| | at 60 °C (140 °F) ambient temperature | [A] | 4 | 6 | |
| Back-up Fuses gG, gL | | [A] | 10 | 10 | |
| General Use current | | [A] | 5 | 10 | |
| Rated insulation voltage U_i | IEC | [V] | 250 | 690 | |
| | UL/CSA | [V] | 240 | 600 | |
| Contact rating code designation (UL/CSA) | | AC | B300 | A600 | |
| | | DC | R300 | Q600 | |
| Rated Supply Current I_e | AC-15 | 24V | [A] | 4 | 6 |
| | | 120V | [A] | 3 | 5 |
| | | 240V | [A] | 1.5 | 3 |
| | | 415V | [A] | — | 2 |
| | | 690V | [A] | — | 1 |
| | DC-13 | 24V | [A] | 1.2 | 2 |
| | | 125V | [A] | 0.22 | 0.55 |
| | | 250V | [A] | 0.11 | 0.27 |
| | | 400V | [A] | — | 0.15 |
| | | 500V | [A] | — | 0.13 |
| Type of Terminals | | |  |  | |
| Recommended screwdriver | | | Pozidriv No. 2/Blade No.3 | Pozidriv No. 2/Blade No.3 | |
| Flexible with insulated ferrule |  | 1 or 2 conductors | 0.5...1.5 mm ² /No. 18...14 AWG | 0.5...2.5 mm ² /No. 18...14 AWG | |
| Flexible |  | 1 or 2 conductors | 0.5...1.5 mm ² /No. 18...14 AWG | 0.75...2.5 mm ² /No. 18...14 AWG | |
| Stranded per UL/CSA |  | 1 or 2 conductors | 0.5...1.5 mm ² /No. 18...14 AWG | 0.75...2.5 mm ² /No. 18...14 AWG | |
| Solid |  | 1 or 2 conductors | 0.5...1.5 mm ² /No. 18...14 AWG | 0.5...2.5 mm ² /No. 18...14 AWG | |
| Conductor steps | | | Max 2 conductor steps allowed | Max 2 conductor steps allowed | |
| Tightening torque | | | 1...1.2 N•m/8.9...10.6 lb•in | 1...1.2 N•m/8.9...10.6 lb•in | |

Table 54 - Auxiliary Contact Specifications—For 140M-F... Devices






| Attribute | | | Front-mounted Auxiliary Contacts Cat. Nos. 140M-C-AFA..., 140M-C-AFAR... | Right Side-mounted Auxiliary Contacts Cat. Nos. 140M-C-ASA..., 140M-C-ASAR... | |
|---|---------------------------------------|------|---|---|------|
| Rated Thermal Current I_{th} | at 40 °C (104 °F) ambient temperature | [A] | 5 | 10 | |
| | at 60 °C (140 °F) ambient temperature | [A] | 4 | 6 | |
| Back-up Fuses gG, gL | | [A] | 10 | 10 | |
| Contact rating code designation (UL/CSA) | | AC | B300 | B600 | |
| | | DC | Q300 | Q600 | |
| Rated Supply Current I_e | AC-15 | 24V | [A] | 4 | 6 |
| | | 120V | [A] | 3 | 5 |
| | | 240V | [A] | 1.5 | 3 |
| | | 415V | [A] | — | 2 |
| | | 690V | [A] | — | 0.7 |
| | DC-13 | 24V | [A] | 2 | 2 |
| | | 120V | [A] | 0.5 | 0.5 |
| | | 240V | [A] | 0.25 | 0.25 |
| | 415V | [A] | — | 0.15 | |
| Type of Terminals | | |  |  | |
| Recommended screwdriver | | | Pozidriv No. 2/Blade No.3 | Pozidriv No. 2/Blade No.3 | |
| Flexible with insulated ferrule  | 1 conductor | | 0.5...1.5 mm ² | 0.5...2.5 mm ² | |
| | 2 conductors | | 0.75...1.5 mm ² | 0.75...2.5 mm ² | |
| Stranded per UL/CSA  | 1 or 2 conductors | | 0.75...1.5 mm ² /No. 18...14 AWG | 0.75...2.5 mm ² /No. 18...14 AWG | |
| Solid  | 1 or 2 conductors | | 0.75...1.5 mm ² /No. 18...14 AWG | 0.75...2.5 mm ² /No. 18...14 AWG | |
| Tightening torque | | | 1.2...1.5 N•m/10.6...13 lb•in | 1.2...1.5 N•m/10.6...13 lb•in | |

Table 55 - Undervoltage and Shunt Trip Specifications—For 140MT-C... and 140MT-D... Devices







| Attribute | | | | Undervoltage Trip for Left-side Mounting Cat. No. 140MT-C-UX | Shunt Trip for Left-side Mounting Cat. No. 140MT-C-SN | |
|---------------------------------|---|-------------------|--|---|---|-----------------|
| Actuating Voltage | Pick-up | | [V] | $0.85...1.1 \times U_s$ | $0.7...1.1 \times U_s$ | |
| | Drop-out | | [V] | $0.7...0.35 \times U_s$ | $0.7...1.1 \times U_s$ | |
| Rated AC Control Voltage | 140MT-C-UXK | 50 Hz | [V AC] | 24 | — | |
| | | 60 Hz | [V AC] | 28 | — | |
| | 140MT-C-UXD | 50 Hz | [V AC] | 110 | — | |
| | | 60 Hz | [V AC] | 120 | — | |
| | 140MT-C-UXF | 50 Hz | [V AC] | 220...230 | — | |
| | | 60 Hz | [V AC] | — | — | |
| | 140MT-C-UXA | 50 Hz | [V AC] | — | — | |
| | | 60 Hz | [V AC] | 240...260 | — | |
| | 140MT-C-UXN | 50 Hz | [V AC] | 380...400 | — | |
| | | 60 Hz | [V AC] | 440...460 | — | |
| | 140MT-C-UXB | 50 Hz | [V AC] | 415 | — | |
| | | 60 Hz | [V AC] | 480 | — | |
| | 140MT-C-SNK | 50 Hz | [V AC] | — | 24 | |
| | | 60 Hz | [V AC] | — | 24...28 | |
| | 140MT-C-SND | 50 Hz | [V AC] | — | 110 | |
| | | 60 Hz | [V AC] | — | 120 | |
| | 140MT-C-SNF | 50 Hz | [V AC] | — | 220...230 | |
| | | 60 Hz | [V AC] | — | — | |
| | 140MT-C-SNA | 50 Hz | [V AC] | — | — | |
| | | 60 Hz | [V AC] | — | 240...260 | |
| | 140MT-C-SNT | 50 Hz | [V AC] | — | 240 | |
| | | 60 Hz | [V AC] | — | 277 | |
| | 140MT-C-SNN | 50 Hz | [V AC] | — | 380...400 | |
| | | 60 Hz | [V AC] | — | 440...460 | |
| | 140MT-C-SNB | 50 Hz | [V AC] | — | 415 | |
| | | 60 Hz | [V AC] | — | 480 | |
| | On-time | | | | Continuous duty | Continuous duty |
| | Coil consumption | Pick-up | [VA/W] | 8.5/8 | 8.5/8 | |
| | | Hold-in | [VA/W] | 4/2 | 4/2 | |
| | Rated DC Control Voltage | 140MT-C-SNZJ | | [V DC] | — | 24 |
| | | On-time | | | | Max 5 s |
| | Coil consumption | Pick-up | [W] | | 50 | |
| Type of Terminals | | | |  |  | |
| Recommended screwdriver | | | | Pozidriv No. 2/Blade No.3 | Pozidriv No. 2/Blade No.3 | |
| Flexible with insulated ferrule |  | 1 or 2 conductors | 0.5...2.5 mm ² / No. 18...14 AWG | 0.5...2.5 mm ² / No. 18...14 AWG | | |
| Flexible |  | 1 or 2 conductors | 0.75...2.5 mm ² / No. 18...14 AWG | 0.75...2.5 mm ² / No. 18...14 AWG | | |
| Stranded per UL/CSA |  | 1 or 2 conductors | 0.75...2.5 mm ² / No. 18...14 AWG | 0.75...2.5 mm ² / No. 18...14 AWG | | |
| Solid |  | 1 or 2 conductors | 0.5...2.5 mm ² / No. 18...14 AWG | 0.5...2.5 mm ² / No. 18...14 AWG | | |
| Conductor steps | | | | Max 2 conductor steps allowed | Max 2 conductor steps allowed | |
| Tightening torque | | | | 1...1.2 N•m/8.9...10.6 lb•in | 1...1.2 N•m/8.9...10.6 lb•in1...1.2 | |

Table 56 - Undervoltage and Shunt Trip Specifications—For 140M-F... Devices



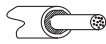







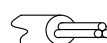
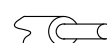
| Attribute | | | Undervoltage Trip for Left-side Mounting Cat. No. 140M-C-UX..., -UC... | Shunt Trip for Left-side Mounting Cat. No. 140M-C-SN... |
|---|-------------------|----------------|---|---|
| Actuating Voltage | Pick-up | [V] | 0.85...1.1 x U _s | 0.7...1.1 x U _s |
| | Drop-out | [V] | 0.7...0.35 x U _s | 0.7...1.1 x U _s |
| Rated AC Control Voltage | Min | 50 Hz [V AC] | 21 | 21 |
| | | 60 Hz [V AC] | 24 | 24 |
| | Max | 60 Hz [V AC] | 600 | 600 |
| | On-time | | Continuous duty | Continuous duty |
| | Coil consumption | Pick-up [VA/W] | 8.5/8 | 8.5/8 |
| Hold-in [VA/W] | | 4/2 | 4/2 | |
| Type of Terminals | | |  |  |
| Recommended screwdriver | | | Pozidriv No. 2/Blade No.3 | Pozidriv No. 2/Blade No.3 |
| Flexible with insulated ferrule  | 1 conductor | | 0.5...2.5 mm ² | 0.5...2.5 mm ² |
| | 2 conductors | | 0.75...2.5 mm ² | 0.75...2.5 mm ² |
| Stranded per UL/CSA  | 1 or 2 conductors | | 0.75...2.5 mm ² /No. 18...14 AWG | 0.75...2.5 mm ² /No. 18...14 AWG |
| Solid  | 1 or 2 conductors | | 0.75...2.5 mm ² /No. 18...14 AWG | 0.75...2.5 mm ² /No. 18...14 AWG |
| Tightening torque | | | 1.2...1.5 N•m/10.6...13.3 lb•in | 1.2...1.5 N•m/10.6...13.3 lb•in |

Table 57 - Feeder Terminals

| | | Compact Busbar Feeder Terminal | | Compact Busbar | |
|---|-------------|--|--|-----------------------------|-------------|
| | | 140MT-C-WTEN | 140M-F-WTE | 140MT-C-W... ⁽¹⁾ | 140M-F-W... |
| Rated Thermal Current I _{th} at 60 °C (140 °F) ambient temperature | [A] | 64 | 120 | 64 | 120 |
| Flexible with insulated ferrule  | 1 conductor | 2.5...25 mm ² /No. 14...4 AWG | — | — | — |
| Stranded per UL/CSA  | 1 conductor | 2.5...25 mm ² /No. 14...4 AWG | 4...50 mm ² /No. 12...1/0 MCM | — | — |
| Solid  | 1 conductor | 2.5...25 mm ² /No. 14...4 AWG | 2.5...50 mm ² /No. 12...1/0 MCM | — | — |
| De-isolation (stripping) length | [mm (in)] | 14 (0.55) | — | — | — |
| Tightening torque | | 3...3.5 N•m/27...31 lb•in | 5...6 N•m/45...54 lb•in | — | — |

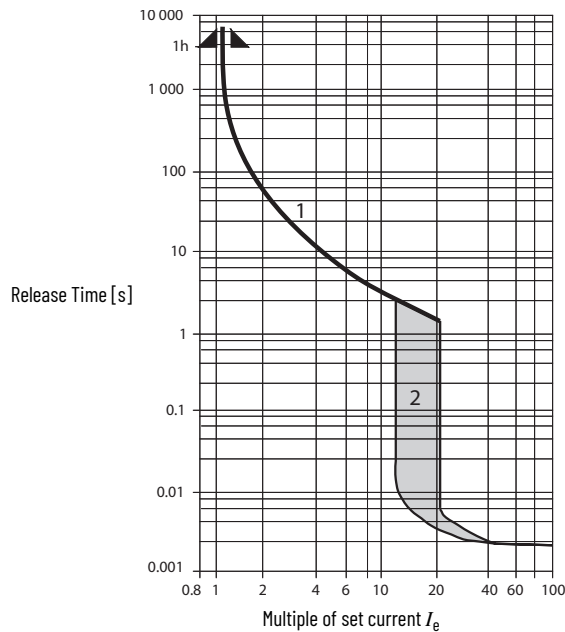
(1) Rated thermal current is 57 A at 70 °C (158 °F) ambient temperature.

Table 58 - Feeder Blocks for Compact Busbars

| | | IEC 60947 | | UL 60947/CAN/CSA-C22.2 No. 60947 | | | |
|---|-------------|--------------------------|------------------------|----------------------------------|---------------------------|--|--------------------------|
| | | 140MT-C-WBE 1, 3, 5 | 140MT-C-WBE 2, 4, 6 | 140MT-C-WBE L1, L2, L3 | 140MT-C-WBE T1, T2, T3 | 140M-F-WBE L1, L2, L3 | 140M-F-WBE T1, T2, T3 |
| Rated Thermal Current I _{th} at 60 °C (140 °F) ambient temperature | [A] | 64 | | 64 | | IEC120/UL115 | |
| Flexible with insulated ferrule  | 1 conductor | 4...25 mm ² | for use with 140MT-C-W | No. 10...4 AWG | for use with 140MT-C-W | 4...50 mm ² / No. 10...4 AWG | for use with 140M-F-W |
| Flexible  | 1 conductor | 4...25 mm ² | for use with 140MT-C-W | No. 10...4 AWG | for use with 140MT-C-W | — | — |
| Stranded per UL/CSA  | 1 conductor | 4...25 mm ² | for use with 140MT-C-W | No. 10...4 AWG | for use with 140MT-C-W | 4...25 mm ² / No. 10...4 AWG | for use with 140M-F-W |
| Solid  | 1 conductor | 2.5...25 mm ² | for use with 140MT-C-W | No. 14...4 AWG | for use with 140MT-C-W | 2.5...25 mm ² / No. 14...4 AWG | for use with 140M-F-W |
| Tightening torque | | 3...3.5 N•m | 2...2.5 N•m | 27...31 lb•in | 18...22 lb•in | 5...6 N•m/45...54 lb•in | |

Time-Current Characteristic

Figure 10 - Motor Protection Circuit Breakers Time-Current Characteristic



140MT-C, -D, 140M-F Motor Protection Circuit Breakers (for 140MT-D9V, see ratings)

Thermal Release Trip Current

The adjustable current-dependent delayed bimetal release protects motors against overload. The curve shows the mean operating current at an ambient temperature of 20 °C (68 °F) starting from the cold state. Careful testing and setting ensures effective motor protection even in the case of single phasing. The overload characteristic is also valid for transformer protection.

Magnetic Release Trip Current

The instantaneous magnetic trip has a fixed operating current setting. This corresponds to 13...14 times the maximum value of the setting range. (Transformer protection up to 20 x I_e max.) At a lower setting, it is correspondingly higher.

Current Setting $I_e F$

The overload trip corresponds to a thermal overload relay in a motor starter conforming to IEC 60947-4-1. If a different value is prescribed (for example, reduced I_e for cooling medium having a temperature higher than 40 °C (104 °F) or a place of installation higher than 2000 m (6561 ft) above sea level), the setting current is equal to the reduced rated current I_e of the motor.

Approximate Dimensions

Dimensions are in millimeters (inches) and are not intended for manufacturing purposes.

140MT-C, 140MT-D Devices and Accessories

Figure 11 - Mounting Position

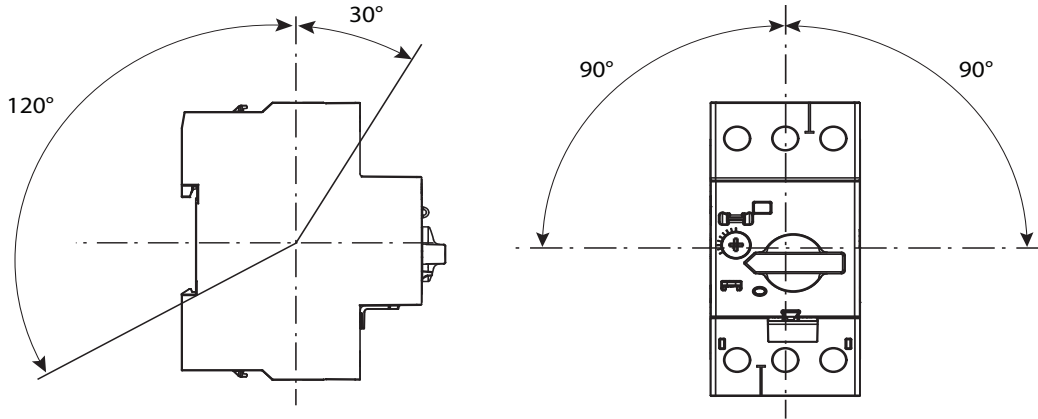
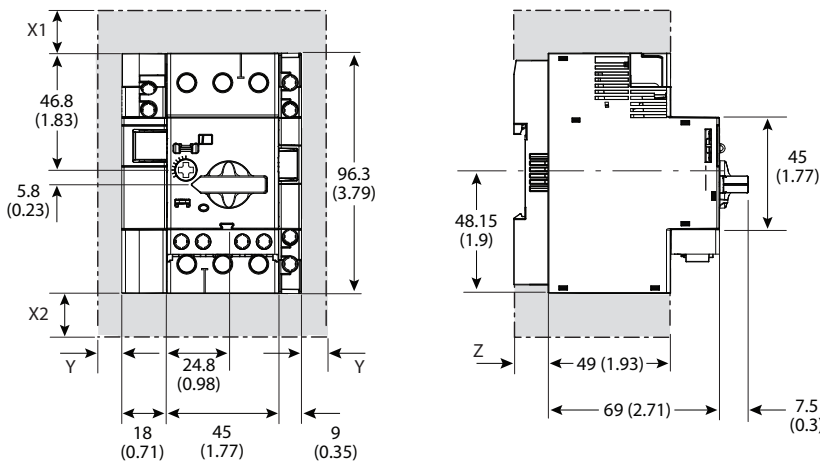
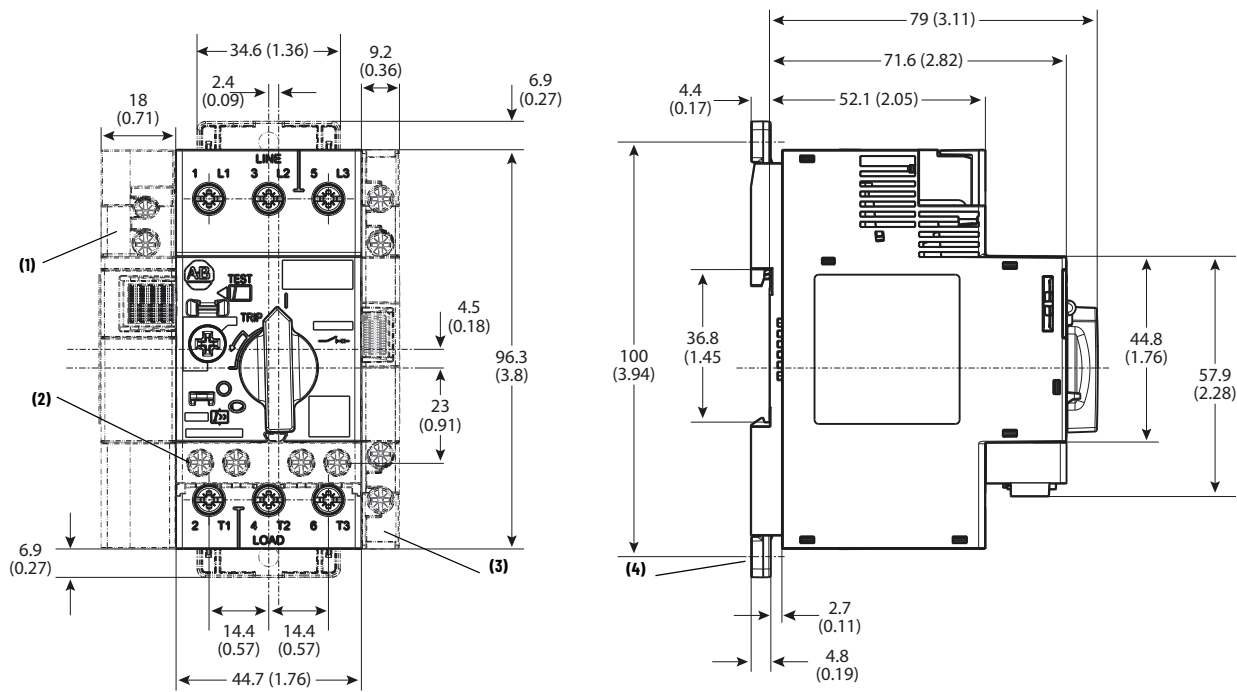


Figure 12 - Spacing Requirements



| Frame Size | Voltage [V AC] | Minimum Distance to Grounded Parts or Walls [mm (in)] | | | Z |
|------------|----------------|---|--------------|-------------|--------------|
| | | X1 | X2 | Y | |
| C-Frame | 400 | 30 (1-3/16) | 30 (1-3/16) | 9 (23/64) | 7.5 (19/64) |
| | 500 | 30 (1-3/16) | 30 (1-3/16) | 9 (23/64) | |
| | 690 | 50 (1-31/32) | 50 (1-31/32) | 30 (1-3/16) | |
| D-Frame | 400 | 30 (1-3/16) | 30 (1-3/16) | 9 (23/64) | 13.5 (17/32) |
| | 500 | 30 (1-3/16) | 30 (1-3/16) | 9 (23/64) | |
| | 690 | 50 (1-31/32) | 50 (1-31/32) | 30 (1-3/16) | |

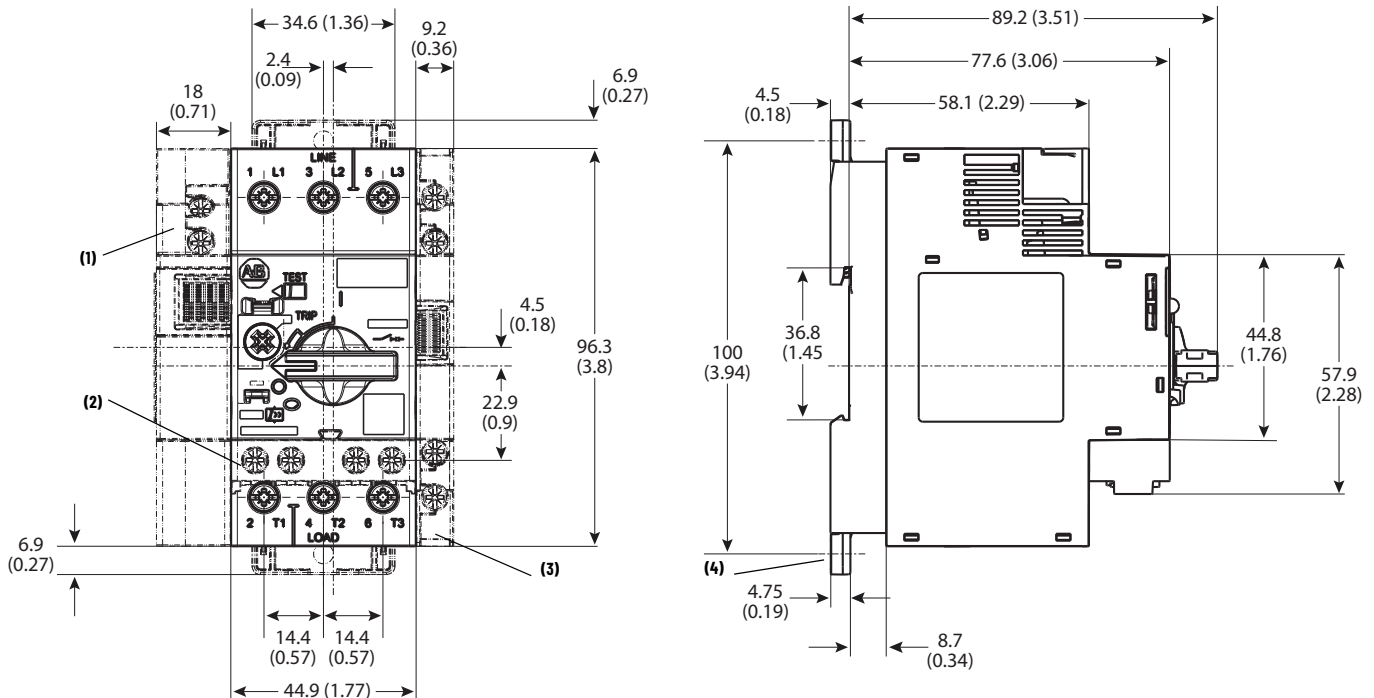
Figure 13 - Motor Protection Circuit Breaker (C-Frame), Cat. No. 140MT-C3...



| Note | Information |
|------|-----------------------------------|
| 1 | Undervoltage/shunt trip |
| 2 | Auxiliary contact (front mounted) |

| Note | Information |
|------|----------------------------------|
| 3 | Auxiliary contact (side mounted) |
| 4 | Screw mounting adapter |

Figure 14 - Motor Protection Circuit Breaker (D-Frame), Cat. No. 140MT-D9...



| Note | Information |
|------|-----------------------------------|
| 1 | Undervoltage/shunt trip |
| 2 | Auxiliary contact (front mounted) |

| Note | Information |
|------|----------------------------------|
| 3 | Auxiliary contact (side mounted) |
| 4 | Screw mounting adapter |

Figure 15 - Feeder Terminal for Compact Busbar, Cat. No. 140MT-C-WTEN

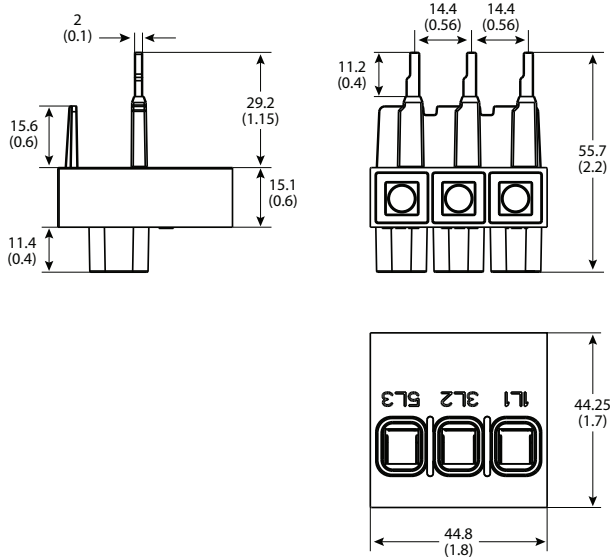


Figure 16 - Terminal Cover, Cat. No. 140MT-C-WSN

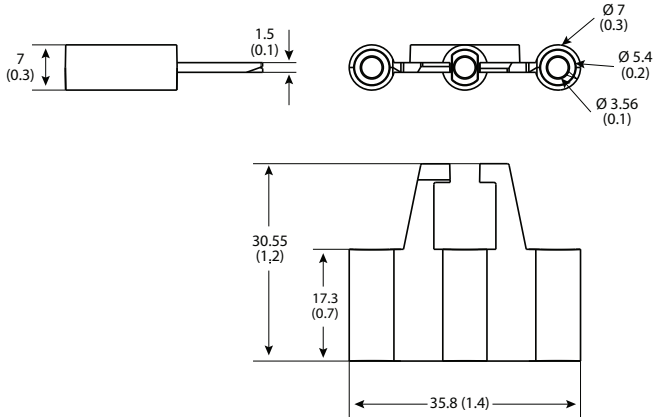
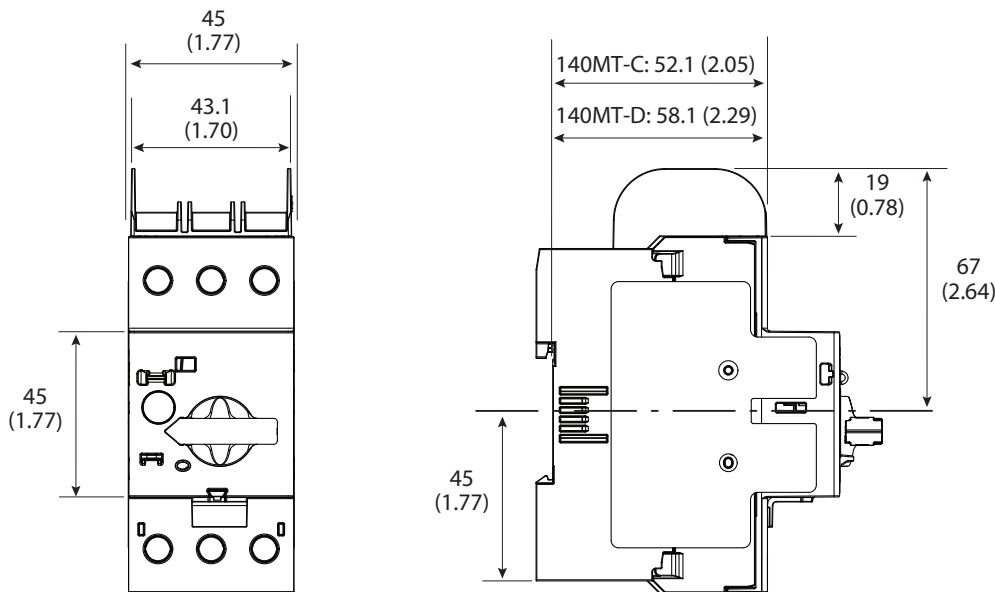
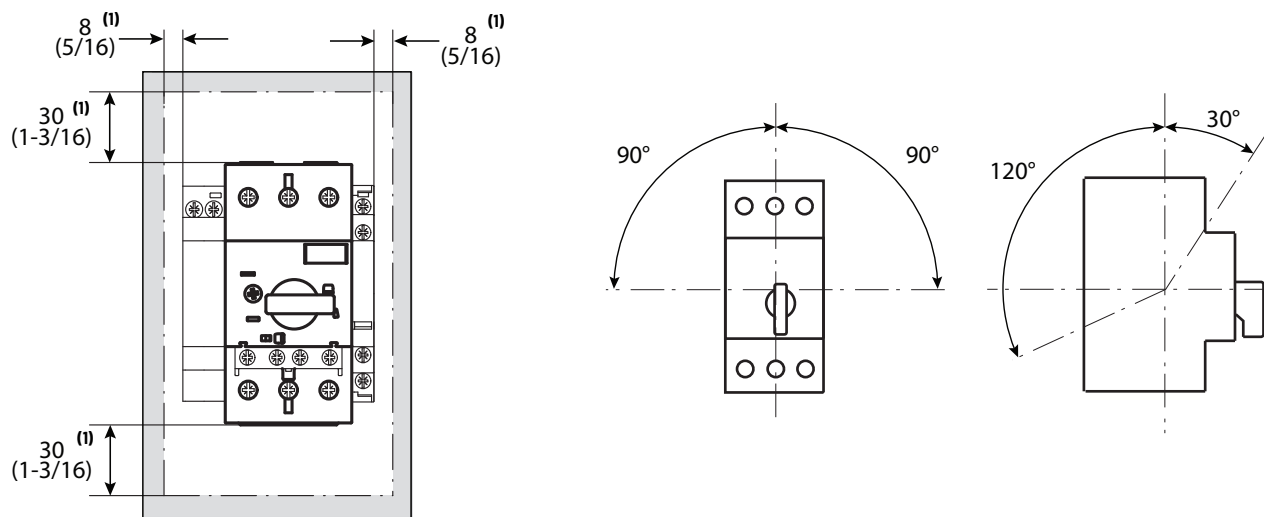


Figure 17 - 140MT-C and 140MT-D with Cat. No. 140MT-C-TE Type E Adapter



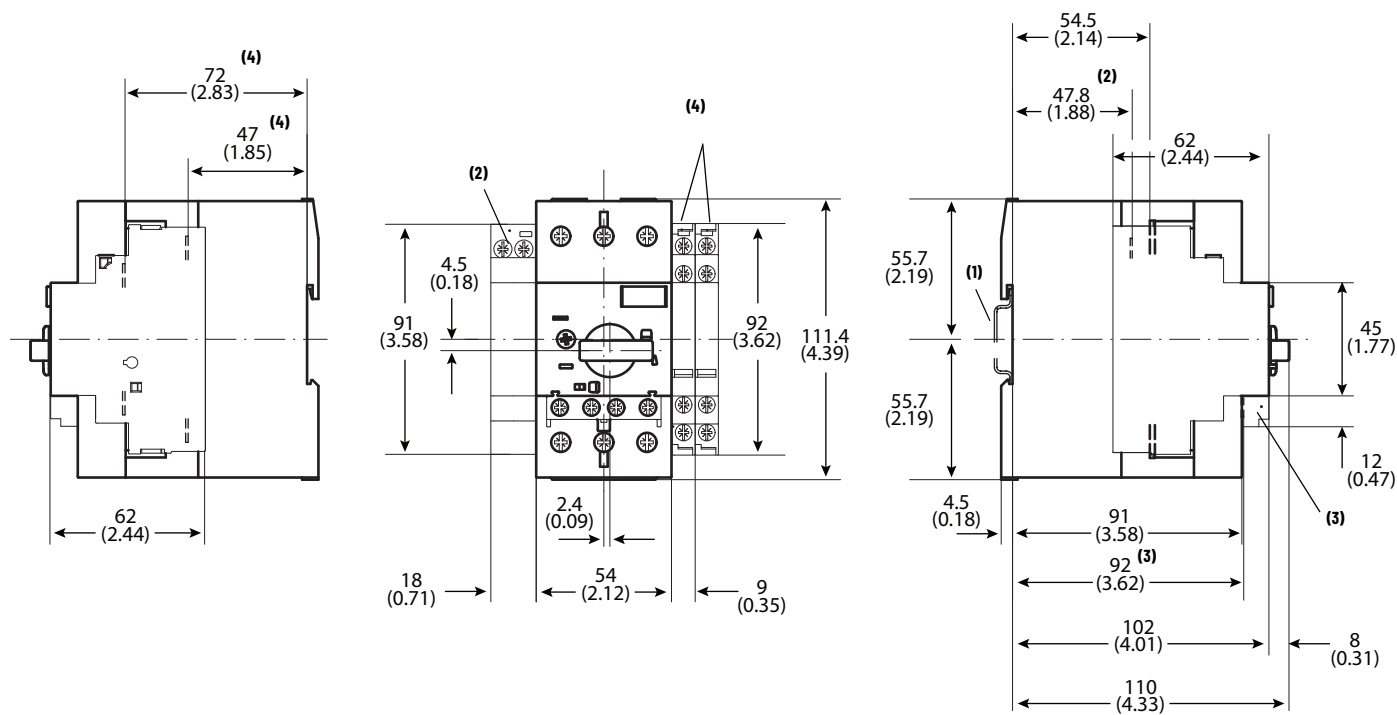
140M-F Devices and Accessories

Figure 18 - Mounting Position/Safety Clearance



| Note | Information |
|------|---|
| 1 | Minimum distance to grounded parts or walls |

Figure 19 - Motor Protection Circuit Breaker (F-Frame), Cat. No. 140M-F8...



| Note | Information |
|------|-----------------------------------|
| 1 | Mounting on 35 mm DIN Rail |
| 2 | Undervoltage/shunt trip |
| 3 | Auxiliary contact (front mounted) |
| 4 | Auxiliary contact (side mounted) |

Figure 20 - Cat. No. 140M-F-TE Type E adapter on Cat. No. 140M-F8E...

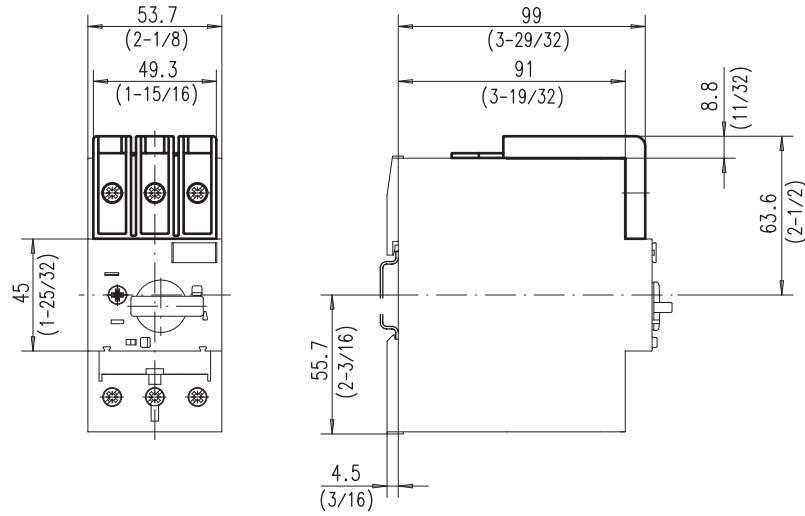
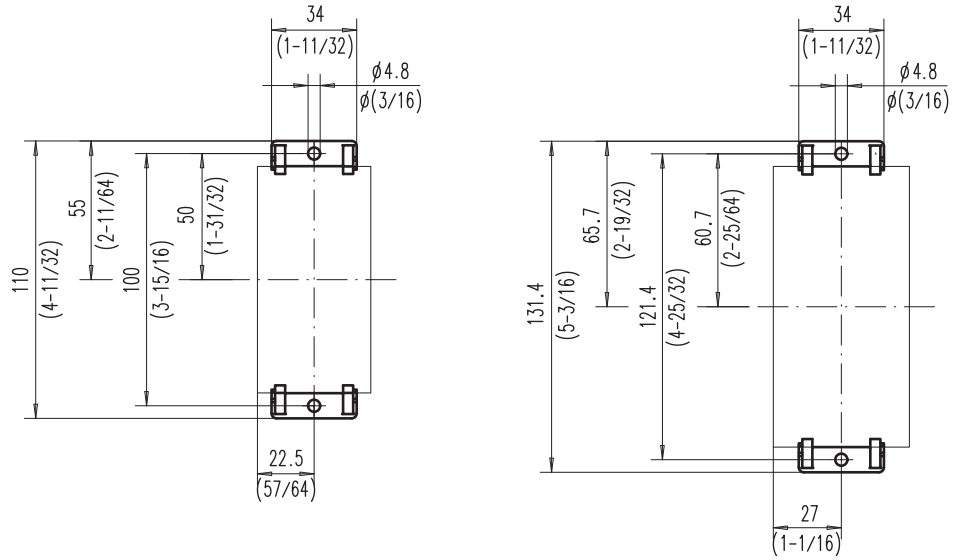


Figure 21 - Screw Adapter, Cat. No. 140M-C-N45



Enclosures

Figure 22 - 140MT-C-ENRY, 140MT-C-ENN Plastic Enclosures

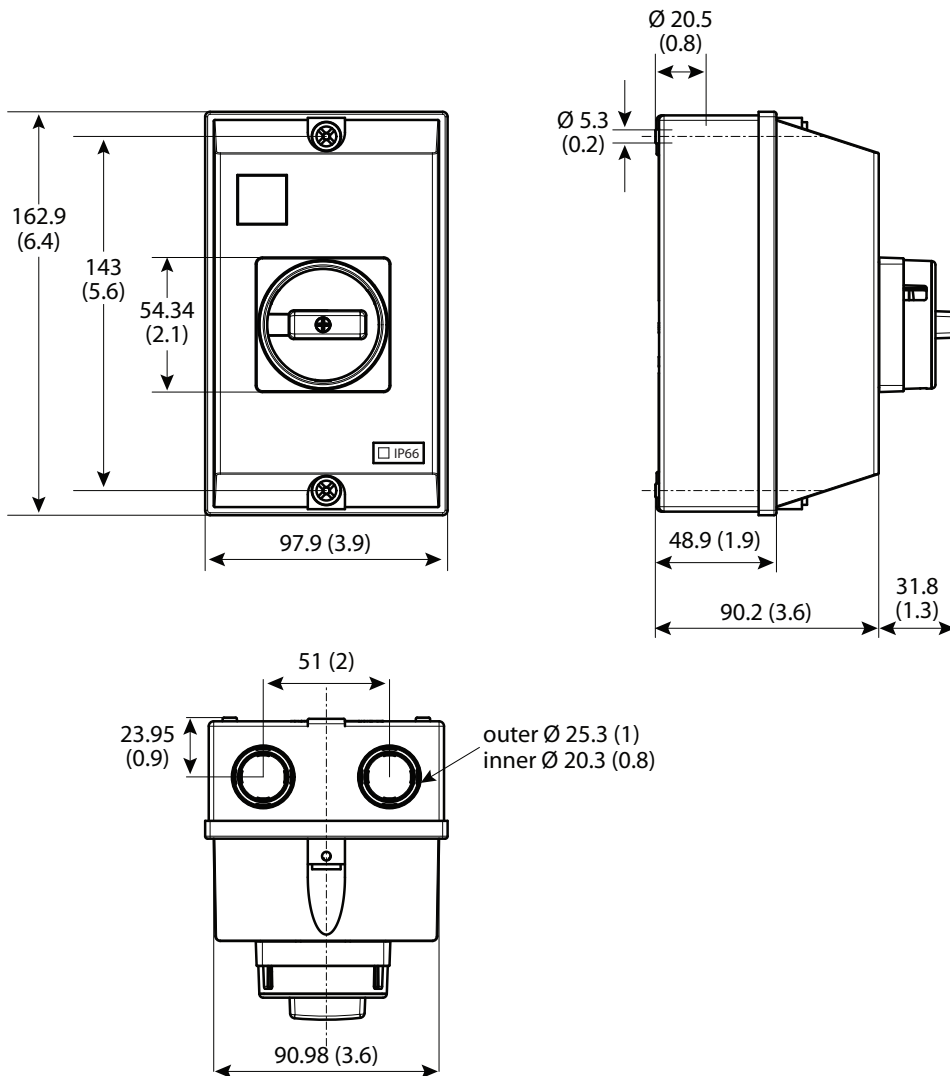
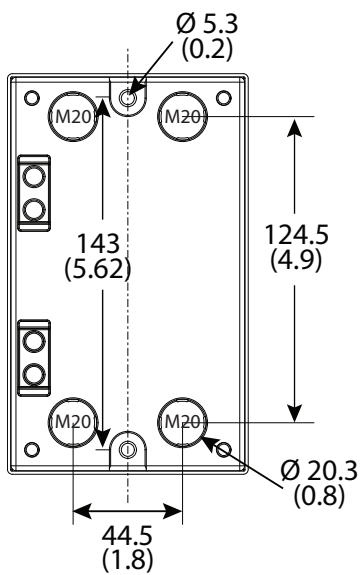


Figure 23 - Drilling Template for 140MT-C-ENRY, 140MT-C-ENN Plastic Enclosures



Notes:

Additional Resources

These documents contain additional information concerning related products from Rockwell Automation. You can view or download publications at rok.auto/literature.

| Resource | Description |
|--|---|
| Short-circuit Current Ratings and Your Industrial Control Panel, publication SCCR-AT002 | Provides examples for short-circuit current ratings of panels based on the methods stated in UL 508A Supplement B |
| Rockwell Automation Global SCCR tool, rok.auto/sccr | Provides coordinated high-fault branch circuit solutions for motor starters, soft starters, and component drives. |
| IEC Contactor Specifications, publication 100-TD013 | Provides product selection and specification information for IEC contactors. |
| UL Standards Listing for Industrial Control Products, publication CMPNTS-SR002 | Assists original equipment manufacturers (OEMs) with construction of panels, to help ensure that they conform to the requirements of Underwriters Laboratories. |
| American Standards, Configurations, and Ratings: Introduction to Motor Circuit Design, publication IC-AT001 | Provides an overview of American motor circuit design based on methods that are outlined in the NEC. |
| Industrial Components Preventive Maintenance, Enclosures, and Contact Ratings Specifications, publication IC-TD002 | Provides a quick reference tool for Allen-Bradley industrial automation controls and assemblies. |
| Safety Guidelines for the Application, Installation, and Maintenance of Solid-state Control, publication SGI-1.1 | Designed to harmonize with NEMA Standards Publication No. ICS 1.1-1987 and provides general guidelines for the application, installation, and maintenance of solid-state control in the form of individual devices or packaged assemblies incorporating solid-state components. |
| Industrial Automation Wiring and Grounding Guidelines, publication 1770-4.1 | Provides general guidelines for installing a Rockwell Automation industrial system. |
| Product Certifications website, rok.auto/certifications . | Provides declarations of conformity, certificates, and other certification details. |

Rockwell Automation Support

Use these resources to access support information.

| | | |
|---|---|--|
| Technical Support Center | Find help with how-to videos, FAQs, chat, user forums, Knowledgebase, and product notification updates. | rok.auto/support |
| Local Technical Support Phone Numbers | Locate the telephone number for your country. | rok.auto/phonesupport |
| Technical Documentation Center | Quickly access and download technical specifications, installation instructions, and user manuals. | rok.auto/techdocs |
| Literature Library | Find installation instructions, manuals, brochures, and technical data publications. | rok.auto/literature |
| Product Compatibility and Download Center (PCDC) | Download firmware, associated files (such as AOP, EDS, and DTM), and access product release notes. | rok.auto/pcdc |

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Publication 140-TD005D-EN-P - January 2023

Supersedes Publication 140-TD005C-EN-P - April 2022

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