

# Motor Protection Circuit Breakers

## Product Selection

### Motor Protection Circuit Breakers

- Short Circuit Protection — Standard Magnetic Trip (13...14 x I<sub>e</sub>)
- Motor Overload Protection — Trip Class 10

2



Cat. No. 140M-C



Cat. No. 140M-D



Cat. No. 140M-F



Cat. No. 140-CMN

| Rated Operational Current (I <sub>e</sub> ) [A] | Motor Current Adjustment Range [A] | Magnetic Trip Current [A] | Max. Short Circuit Current [kA] |                    | Max. 3-phase Hp Ratings* |      |      |      | Max. kW, 3-Phase — AC-3* |          |      |      | Cat. No.     |
|---|------------------------------------|---------------------------|---------------------------------|--------------------|--------------------------|------|------|------|--------------------------|----------|------|------|--------------|
|   |                                    |                           | 400V (I <sub>cu</sub> )         | 480V (group motor) | 200V                     | 230V | 460V | 575V | 230V                     | 400/415V | 500V | 690V |              |
| <b>C-Frame</b>                                  |                                    |                           |                                 |                    |                          |      |      |      |                          |          |      |      |              |
| 0.16  | 0.10...0.16                        | 2.1                       | 100                             | 65                 | —                        | —    | —    | —    | —                        | 0.02     | 0.06 | 0.06 | 140M-C2E-A16 |
| 0.25  | 0.16...0.25                        | 3.3                       | 100                             | 65                 | —                        | —    | —    | —    | —                        | 0.04     | 0.09 | 0.09 | 140M-C2E-A25 |
| 0.4   | 0.25...0.40                        | 5.2                       | 100                             | 65                 | —                        | —    | —    | 0.25 | 0.06                     | 0.09     | 0.12 | 0.18 | 140M-C2E-A40 |
| 0.63  | 0.40...0.63                        | 8.2                       | 100                             | 65                 | —                        | —    | 0.25 | 0.33 | 0.09                     | 0.18     | 0.18 | 0.25 | 140M-C2E-A63 |
| 1   | 0.63...1.0                         | 13                        | 100                             | 65                 | —                        | —    | 0.5  | 0.75 | 0.18                     | 0.25     | 0.37 | 0.55 | 140M-C2E-B10 |
| 1.6   | 1.0...1.6                          | 21                        | 100                             | 65                 | 0.25                     | 0.33 | 1    | 1    | 0.25                     | 0.55     | 0.75 | 1.1  | 140M-C2E-B16 |
| 2.5   | 1.6...2.5                          | 33                        | 100                             | 65                 | 0.5                      | 0.75 | 1.5  | 2    | 0.37                     | 0.75     | 1.1  | 1.8  | 140M-C2E-B25 |
| 4   | 2.5...4.0                          | 52                        | 100                             | 65                 | 1                        | 1    | 3    | 3    | 0.75                     | 1.5      | 2.2  | 3    | 140M-C2E-B40 |
| 6.3   | 4.0...6.3                          | 82                        | 100                             | 65                 | 1.5                      | 2    | 5    | 5    | 1.5                      | 2.2      | 3    | 4    | 140M-C2E-B63 |
| 10  | 6.3...10                           | 130                       | 100                             | 65                 | 3                        | 3    | 7.5  | 10   | 2.2                      | 4        | 6.3  | 7.5  | 140M-C2E-C10 |
| 16  | 10...16                            | 208                       | 65                              | 30                 | 5                        | 5    | 10   | 15   | 4                        | 7.5      | 10   | 13   | 140M-C2E-C16 |
| 20  | 14.5...20                          | 260                       | 50                              | 30                 | 5                        | 7.5  | 15   | 20   | 5.5                      | 10       | 11   | 17   | 140M-C2E-C20 |
| 25  | 18...25                            | 325                       | 15                              | 25                 | 7.5                      | 7.5  | 20   | 20   | 5.5                      | 11       | 15   | 22   | 140M-C2E-C25 |
| 29  | 24...29                            | 406                       | 15                              | 25                 | 7.5                      | 10   | 20   | 25   | 7.5                      | 13       | 18.5 | 25   | 140M-C2E-C29 |
| 32  | 27...32                            | 448                       | 15                              | 25                 | 7.5                      | 10   | 25   | 30   | 7.5                      | 15       | 20   | 25   | 140M-C2E-C32 |
| <b>D-Frame</b>                                  |                                    |                           |                                 |                    |                          |      |      |      |                          |          |      |      |              |
| 2.5   | 1.6...2.5                          | 33                        | 100                             | 65                 | 0.5                      | 0.75 | 1.5  | 2    | 0.37                     | 0.75     | 1.1  | 1.8  | 140M-D8E-B25 |
| 4   | 2.5...4.0                          | 52                        | 100                             | 65                 | 1                        | 1    | 3    | 3    | 0.75                     | 1.5      | 2.2  | 3    | 140M-D8E-B40 |
| 6.3   | 4.0...6.3                          | 82                        | 100                             | 65                 | 1.5                      | 2    | 5    | 5    | 1.5                      | 2.2      | 3    | 4    | 140M-D8E-B63 |
| 10  | 6.3...10                           | 130                       | 100                             | 65                 | 3                        | 3    | 7.5  | 10   | 2.2                      | 4        | 6.3  | 7.5  | 140M-D8E-C10 |
| 16  | 10...16                            | 208                       | 100                             | 65                 | 5                        | 5    | 10   | 15   | 4                        | 7.5      | 10   | 13   | 140M-D8E-C16 |
| 20  | 14.5...20                          | 260                       | 100                             | 65                 | 5                        | 7.5  | 15   | 20   | 5.5                      | 10       | 11   | 17   | 140M-D8E-C20 |
| 25  | 18...25                            | 325                       | 65                              | 30                 | 7.5                      | 7.5  | 20   | 20   | 5.5                      | 11       | 15   | 22   | 140M-D8E-C25 |
| 29  | 24...29                            | 406                       | 50                              | 30                 | 7.5                      | 10   | 20   | 25   | 7.5                      | 13       | 18.5 | 25   | 140M-D8E-C29 |
| 32  | 27...32                            | 448                       | 50                              | 30                 | 7.5                      | 10   | 25   | 30   | 7.5                      | 15       | 20   | 25   | 140M-D8E-C32 |
| <b>F-Frame</b>                                  |                                    |                           |                                 |                    |                          |      |      |      |                          |          |      |      |              |
| 10  | 6.3...10                           | 130                       | 100                             | 65                 | 3                        | 3    | 7.5  | 10   | 2.2                      | 4        | 6.3  | 7.5  | 140M-F8E-C10 |
| 16  | 10...16                            | 208                       | 100                             | 65                 | 5                        | 5    | 10   | 15   | 4                        | 7.5      | 10   | 13   | 140M-F8E-C16 |
| 20  | 14.5...20                          | 260                       | 100                             | 65                 | 5                        | 7.5  | 15   | 20   | 5.5                      | 10       | 11   | 17   | 140M-F8E-C20 |
| 25  | 18...25                            | 325                       | 100                             | 65                 | 7.5                      | 10   | 20   | 25   | 6.3                      | 11       | 15   | 22   | 140M-F8E-C25 |
| 32  | 23...32                            | 416                       | 65                              | 65                 | 7.5                      | 10   | 25   | 30   | 7.5                      | 15       | 20   | 30   | 140M-F8E-C32 |
| 45  | 32...45                            | 585                       | 65                              | 65                 | 10                       | 15   | 30   | 40   | 13                       | 22       | 30   | 40   | 140M-F8E-C45 |
| <b>CMN-Frame</b>                                |                                    |                           |                                 |                    |                          |      |      |      |                          |          |      |      |              |
| 25  | 16...25                            | 350                       | 65                              | 65                 | 5                        | 7.5  | 15   | 20   | 7.5                      | 13       | 15   | 22   | 140-CMN-2500 |
| 40  | 25...40                            | 560                       | 65                              | 65                 | 10                       | 10   | 30   | 30   | 11                       | 22       | 25   | 30   | 140-CMN-4000 |
| 63  | 40...63                            | 882                       | 65                              | 42                 | 20                       | 20   | 40   | 60   | 20                       | 32       | 40   | 55   | 140-CMN-6300 |
| 90  | 63...90                            | 1260                      | 50                              | 35                 | 25                       | 30   | 60   | 75   | 25                       | 45       | 55   | 75   | 140-CMN-9000 |

\* Horsepower/kW ratings shown in the table above are for reference. The final selection of the MPCB depends on the actual motor full load current.



# Motor Protection Circuit Breakers and Motor Circuit Protectors

## Application Ratings

### UL/CSA Listed Application Ratings — Motor Protection Circuit Breaker (MPCB) Only

| Cat. No.         | Max. Fuse or C.B. per NEC | UL 508 — Manual Motor Controller |      |                  |      |                          |      | UL 508 Self-Protected (Type E) Combination Motor Controller |            | UL 489 Inverse Time C.B. w/UL 508 Motor Overload Protection |      |
|------------------|---------------------------|----------------------------------|------|------------------|------|--------------------------|------|---|------------|---|------|
|                  |                           | Group Motor Installation         |      | Motor Disconnect |      | Tap Conductor Protection |      | Max. Short Circuit Current [kA]                             |            | Max. Short Circuit Current [kA]                             |      |
|                  |                           | 480V                             | 600V | 480V             | 600V | 480V                     | 600V | 480Y/277V‡  | 600Y/347V‡ | 480V  | 600V |
| <b>C-Frame</b>   |                           |                                  |      |                  |      |                          |      |   |            |   |      |
| 140M-C2E-A16     | 450                       | 65                               | 47   | 65               | 47   | 65                       | 47   | 65  | 47         | —   | —    |
| 140M-C2E-A25     | 450                       | 65                               | 47   | 65               | 47   | 65                       | 47   | 65  | 47         | —   | —    |
| 140M-C2E-A40     | 450                       | 65                               | 47   | 65               | 47   | 65                       | 47   | 65  | 47         | —   | —    |
| 140M-C2E-A63     | 450                       | 65                               | 47   | 65               | 47   | 65                       | 47   | 65  | 47         | —   | —    |
| 140M-C2E-B10     | 450                       | 65                               | 47   | 65               | 47   | 65                       | 47   | 65  | 47         | —   | —    |
| 140M-C2E-B16     | 450                       | 65                               | 47   | 65               | 47   | 65                       | 47   | 65  | 47         | —   | —    |
| 140M-C2E-B25     | 450                       | 65                               | 30   | 65               | 30   | 65                       | 30   | 65  | 30         | —   | —    |
| 140M-C2E-B40     | 450                       | 65                               | 25   | 65               | 25   | 65                       | 25   | 65  | 25         | —   | —    |
| 140M-C2E-B63     | 450                       | 65                               | 30   | 65               | 30   | 65                       | —    | 65  | —          | —   | —    |
| 140M-C2E-C10     | 450                       | 65                               | 30   | 65               | 30   | 65                       | —    | 65  | —          | —   | —    |
| 140M-C2E-C16     | 450                       | 30                               | 30   | 30               | 30   | 30                       | —    | 30  | —          | —   | —    |
| 140M-C2E-C20     | 450                       | 30                               | 30   | 10               | 10   | 10                       | —    | 10  | —          | —   | —    |
| 140M-C2E-C25     | 450                       | 25                               | 10   | 10               | 5    | —                        | —    | —   | —          | —   | —    |
| 140M-C2E-C29     | 450                       | 25                               | 5    | 10               | —    | —                        | —    | —   | —          | —   | —    |
| 140M-C2E-C32     | 450                       | 25                               | 5    | 10               | —    | —                        | —    | —   | —          | —   | —    |
| <b>D-Frame</b>   |                           |                                  |      |                  |      |                          |      |   |            |   |      |
| 140M-D8E-B25     | 450                       | 65                               | 30   | 65               | 30   | 65                       | 30   | 65  | 30         | —   | —    |
| 140M-D8E-B40     | 450                       | 65                               | 30   | 65               | 30   | 65                       | 30   | 65  | 30         | —   | —    |
| 140M-D8E-B63     | 450                       | 65                               | 30   | 65               | 30   | 65                       | 30   | 65  | 30         | —   | —    |
| 140M-D8E-C10     | 450                       | 65                               | 30   | 65               | 30   | 65                       | 30   | 65  | 30         | —   | —    |
| 140M-D8E-C16     | 450                       | 65                               | 30   | 65               | 30   | 65                       | 30   | 65  | 30         | —   | —    |
| 140M-D8E-C20     | 450                       | 65                               | 30   | 65               | 30   | 65                       | —    | 65  | —          | —   | —    |
| 140M-D8E-C25     | 450                       | 30                               | 30   | 30               | 30   | 30                       | —    | 30  | —          | —   | —    |
| 140M-D8E-C29     | 450                       | 30                               | 30   | 30               | 18   | —                        | —    | —   | —          | —   | —    |
| 140M-D8E-C32     | 450                       | 30                               | 30   | 30               | 18   | —                        | —    | —   | —          | —   | —    |
| <b>F-Frame</b>   |                           |                                  |      |                  |      |                          |      |   |            |   |      |
| 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                               | 30   | 65               | 30   | 65                       | 30   | 65  | 30         | —   | —    |
| 140M-F8E-C45     | 600                       | 65                               | 18   | 65               | 18   | 65                       | —    | 65  | —          | —   | —    |
| <b>CMN-Frame</b> |                           |                                  |      |                  |      |                          |      |   |            |   |      |
| 140-CMN-2500     | 1000                      | 65                               | 42   | —                | —    | —                        | —    | —   | —          | —   | —    |
| 140-CMN-4000     | 1000                      | 65                               | 42   | —                | —    | —                        | —    | —   | —          | —   | —    |
| 140-CMN-6300     | 1000                      | 42                               | 18   | —                | —    | —                        | —    | —   | —          | —   | —    |
| 140-CMN-9000     | 1000                      | 35                               | 10   | —                | —    | —                        | —    | —   | —          | —   | —    |
| <b>I-Frame</b>   |                           |                                  |      |                  |      |                          |      |   |            |   |      |
| 140M-I8E-C80     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 30   |
| 140M-I8E-D10     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 30   |
| 140M-I8E-D16     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 30   |
| 140M-I8E-D20     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 30   |
| <b>J-Frame</b>   |                           |                                  |      |                  |      |                          |      |   |            |   |      |
| 140M-J2E-C50     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 25  | 18   |
| 140M-J2E-D10     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 25  | 18   |
| 140M-J2E-D16     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 25  | 18   |
| 140M-J2E-D25     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 25  | 18   |
| 140M-J8E-C50     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 25   |
| 140M-J8E-D10     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 25   |
| 140M-J8E-D16     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 25   |
| 140M-J8E-D25     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 25   |
| <b>L-Frame</b>   |                           |                                  |      |                  |      |                          |      |   |            |   |      |
| 140M-L2E-D25     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 25  | 18   |
| 140M-L2E-D40     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 25  | 18   |
| 140M-L2E-D63     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 25  | 18   |
| 140M-L8E-D25     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 35   |
| 140M-L8E-D40     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 35   |
| 140M-L8E-D63     | —                         | —                                | —    | —                | —    | —                        | —    | —   | —          | 65  | 35   |

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

# Motor Protection Circuit Breakers and Motor Circuit Protectors

Application Ratings

## UL Listed Application Ratings - Motor Protection Circuit Breakers with Bulletin 100-K Contactors

| Cat. No.       | UL 508 Manual Motor Controller |                        |                                 |      |                                 |      | UL 508 Type F Combination Motor Controller |                                 |            | UL 508 Type E Self-Protected Combination Motor Controller |                                 |            |
|----------------|--------------------------------|------------------------|---------------------------------|------|---------------------------------|------|--|---------------------------------|------------|---|---------------------------------|------------|
|                | Max. Fuse or C.B. per NEC      | Minimum Contactor Size | Group Motor Installation        |      | Motor Disconnect                |      | Minimum Contactor Size                     | Max. Short Circuit Current [kA] |            | Minimum Contactor Size                                    | Max. Short Circuit Current [kA] |            |
|                |                                |                        | Max. Short Circuit Current [kA] |      | Max. Short Circuit Current [kA] |      |  | 480Y/277V§                      |            |   | 600Y/347V§                      |            |
|                |                                |                        | 480V                            | 600V | 480V                            | 600V |  | 480Y/277V§                      | 600Y/347V§ |   | 480Y/277V§                      | 600Y/347V§ |
| <b>C-Frame</b> |                                |                        |                                 |      |                                 |      |  |                                 |            |   |                                 |            |
| 140M-C2E-A16   | 450                            | 100-K05                | 65                              | 47   | 65                              | 47   | 100-K05                                    | 65                              | 47         | —   | —                               | —          |
| 140M-C2E-A25   | 450                            | 100-K05                | 65                              | 47   | 65                              | 47   | 100-K05                                    | 65                              | 47         | —   | —                               | —          |
| 140M-C2E-A40   | 450                            | 100-K05                | 65                              | 47   | 65                              | 47   | 100-K05                                    | 65                              | 47         | —   | —                               | —          |
| 140M-C2E-A63   | 450                            | 100-K05                | 65                              | 47   | 65                              | 47   | 100-K05                                    | 65                              | 47         | —   | —                               | —          |
| 140M-C2E-B10   | 450                            | 100-K05                | 65                              | 47   | 65                              | 47   | 100-K05                                    | 65                              | 47         | —   | —                               | —          |
| 140M-C2E-B16   | 450                            | 100-K05                | 65                              | 47   | 65                              | 47   | 100-K05                                    | 65                              | 47         | —   | —                               | —          |
| 140M-C2E-B25   | 450                            | 100-K05                | 65                              | 30   | 65                              | 30   | 100-K05                                    | 65                              | 30         | —   | —                               | —          |
| 140M-C2E-B40   | 450                            | 100-K05                | 65                              | 30   | 65                              | 30   | 100-K05                                    | 65                              | 30         | —   | —                               | —          |
| 140M-C2E-B63   | 450                            | 100-K05                | 65                              | 30   | 65                              | 30   | 100-K05                                    | 65                              | —          | —   | —                               | —          |
| 140M-C2E-C10   | 450                            | 100-K09                | 65                              | 30   | 65                              | 30   | 100-K09                                    | 65                              | —          | —   | —                               | —          |
| 140M-C2E-C16   | 450                            | 100-K12                | 30                              | 30   | 30                              | 30   | 100-K12                                    | 30                              | —          | —   | —                               | —          |
| <b>D-Frame</b> |                                |                        |                                 |      |                                 |      |  |                                 |            |   |                                 |            |
| 140M-D8E-B25   | 450                            | 100-K05                | 65                              | 30   | 65                              | 30   | 100-K05                                    | 65                              | 30         | —   | —                               | —          |
| 140M-D8E-B40   | 450                            | 100-K05                | 65                              | 30   | 65                              | 30   | 100-K05                                    | 65                              | 30         | —   | —                               | —          |
| 140M-D8E-B63   | 450                            | 100-K05                | 65                              | 30   | 65                              | 30   | 100-K05                                    | 65                              | 30         | —   | —                               | —          |
| 140M-D8E-C10   | 450                            | 100-K09                | 65                              | 30   | 65                              | 30   | 100-K09                                    | 65                              | 30         | —   | —                               | —          |
| 140M-D8E-C16   | 450                            | 100-K12                | 65                              | 30   | 65                              | 30   | 100-K12                                    | 65                              | 30         | —   | —                               | —          |

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

# Motor Protection Circuit Breakers and Motor Circuit Protectors

## Application Ratings

### UL Listed Application Ratings - Motor Protection Circuit Breakers with Bulletin 100-C Contactors

| Cat. No.         | UL 508 Manual Motor Controller |                        |                          |      |                  |      | UL 508 Type F Combination Motor Controller |                                 |            | UL 508 Type E Self-Protected Combination Motor Controller |                                 |            |
|------------------|--------------------------------|------------------------|--------------------------|------|------------------|------|--|---------------------------------|------------|---|---------------------------------|------------|
|                  | Max. Fuse or C.B. per NEC      | Minimum Contactor Size | Group Motor Installation |      | Motor Disconnect |      | Minimum Contactor Size                     | Max. Short Circuit Current [kA] |            | Minimum Contactor Size                                    | Max. Short Circuit Current [kA] |            |
|                  |                                |                        | 480V                     | 600V | 480V             | 600V |  | 480Y/277V§                      | 600Y/347V§ |   | 480Y/277V§                      | 600Y/347V§ |
| <b>C-Frame</b>   |                                |                        |                          |      |                  |      |  |                                 |            |   |                                 |            |
| 140M-C2E-A16     | 450                            | 100-C09                | 65                       | 47   | 65               | 47   | 100-C09                                    | 65                              | 47         | 100-C09   | 65                              | 47         |
| 140M-C2E-A25     | 450                            | 100-C09                | 65                       | 47   | 65               | 47   | 100-C09                                    | 65                              | 47         | 100-C09   | 65                              | 47         |
| 140M-C2E-A40     | 450                            | 100-C09                | 65                       | 47   | 65               | 47   | 100-C09                                    | 65                              | 47         | 100-C09   | 65                              | 47         |
| 140M-C2E-A63     | 450                            | 100-C09                | 65                       | 47   | 65               | 47   | 100-C09                                    | 65                              | 47         | 100-C09   | 65                              | 47         |
| 140M-C2E-B10     | 450                            | 100-C09                | 65                       | 47   | 65               | 47   | 100-C09                                    | 65                              | 47         | 100-C09   | 65                              | 47         |
| 140M-C2E-B16     | 450                            | 100-C09                | 65                       | 47   | 65               | 47   | 100-C09                                    | 65                              | 47         | 100-C09   | 65                              | 47         |
| 140M-C2E-B25     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | 30         | 100-C09   | 65                              | 30         |
| 140M-C2E-B40     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | 30         | —   | 65                              | 25         |
| 140M-C2E-B63     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | —          | —   | 65                              | —          |
| 140M-C2E-C10     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | —          | —   | 65                              | —          |
| 140M-C2E-C16     | 450                            | 100-C12                | 30                       | 30   | 30               | 25   | 100-C12                                    | 30                              | —          | —   | 30                              | —          |
| 140M-C2E-C20     | 450                            | 100-C16                | 30                       | 30   | 30               | 30   | 100-C23                                    | 10                              | —          | —   | 10                              | —          |
| 140M-C2E-C25     | 450                            | 100-C23                | 30                       | 30   | 10               | 10   | —  | —                               | —          | —   | —                               | —          |
|                  | 450                            | 100-C30                | 30                       | 30   | 30               | 30   | —  | —                               | —          | —   | —                               | —          |
| 140M-C2E-C29     | 450                            | 100-C30                | 10                       | 5    | 10               | 5    | —  | —                               | —          | —   | —                               | —          |
| 140M-C2E-C32     | 450                            | 100-C37                | 10                       | 5    | 10               | 5    | —  | —                               | —          | —   | —                               | —          |
| <b>D-Frame</b>   |                                |                        |                          |      |                  |      |  |                                 |            |   |                                 |            |
| 140M-D8E-B25     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | 30         | 100-C09   | 65                              | 30         |
|                  | —                              | —                      | —                        | —    | —                | —    | —  | —                               | —          | 100-C23   | 65                              | 30         |
| 140M-D8E-B40     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | 30         | 100-C23   | 65                              | 30         |
| 140M-D8E-B63     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-D8E-C10     | 450                            | 100-C09                | 65                       | 30   | 65               | 30   | 100-C09                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-D8E-C16     | 450                            | 100-C12                | 65                       | 30   | 65               | 30   | 100-C12                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-D8E-C20     | 450                            | 100-C23                | 65                       | 30   | 65               | 30   | 100-C23                                    | 65                              | —          | 100-C30   | 65                              | —          |
| 140M-D8E-C25     | 450                            | 100-C23                | 65                       | 30   | 65               | 30   | 100-C23                                    | 30                              | —          | 100-C30   | 30                              | —          |
| 140M-D8E-C29     | 450                            | 100-C30                | 65                       | 10   | 65               | 10   | —  | —                               | —          | —   | —                               | —          |
| 140M-D8E-C32     | 450                            | 100-C37                | 65                       | 10   | 65               | 10   | —  | —                               | —          | —   | —                               | —          |
| <b>F-Frame</b>   |                                |                        |                          |      |                  |      |  |                                 |            |   |                                 |            |
| 140M-F8E-C10     | 600                            | 100-C30                | 65                       | 30   | 65               | 30   | 100-C30                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-F8E-C16     | 600                            | 100-C30                | 65                       | 30   | 65               | 30   | 100-C30                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-F8E-C20     | 600                            | 100-C30                | 65                       | 30   | 65               | 30   | 100-C30                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-F8E-C25     | 600                            | 100-C30                | 65                       | 30   | 65               | 30   | 100-C30                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-F8E-C32     | 600                            | 100-C30                | 65                       | 30   | 65               | 30   | 100-C30                                    | 65                              | 30         | 100-C30   | 65                              | 30         |
| 140M-F8E-C45     | 600                            | 100-C37                | 65                       | 18   | 65               | 18   | 100-C37                                    | 65                              | —          | 100-C37   | 65                              | —          |
| <b>CMN-Frame</b> |                                |                        |                          |      |                  |      |  |                                 |            |   |                                 |            |
| 140-CMN-2500     | 1000                           | 100-C16                | 65                       | 42   | —                | —    | —  | —                               | —          | —   | —                               | —          |
| 140-CMN-4000     | 1000                           | 100-C30                | 65                       | 42   | —                | —    | —  | —                               | —          | —   | —                               | —          |
| 140-CMN-6300     | 1000                           | 100-C43                | 42                       | 18   | —                | —    | —  | —                               | —          | —   | —                               | —          |
| 140-CMN-9000     | 1000                           | 100-C72                | 35                       | 10   | —                | —    | —  | —                               | —          | —   | —                               | —          |

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



# Motor Protection Circuit Breakers and Motor Circuit Protectors

Application Ratings

## UL Listed Application Ratings - Motor Circuit Protectors with Bulletin 100-C Contactors§

| Cat. No.       | UL 508 Manual Motor Controller |                        |                                 |      |                                 |      | UL 508 Type E (Self-Protected) Combination Motor Controller |   |   |
|----------------|--------------------------------|------------------------|---------------------------------|------|---------------------------------|------|---|---|---|
|                | Max. Fuse or C.B. per NEC      | Minimum Contactor Size | Group Motor Installation        |      | Motor Disconnect                |      | Minimum Contactor Size                                      | Max. Short Circuit Current [kA]<br>480Y/277V* | Max. Short Circuit Current [kA]<br>600Y/347V* |
|                |                                |                        | Max. Short Circuit Current [kA] |      | Max. Short Circuit Current [kA] |      |   |   |   |
|                |                                |                        | 480V                            | 600V | 480V                            | 600V |   |   |   |
| <b>C-Frame</b> |                                |                        |                                 |      |                                 |      |   |   |   |
| 140M-C2N-A16   | 450                            | 100-C09                | 65                              | 47   | 65                              | 47   | 100-C09   | 65  | 47  |
| 140M-C2N-A25   | 450                            | 100-C09                | 65                              | 47   | 65                              | 47   | 100-C09   | 65  | 47  |
| 140M-C2N-A40   | 450                            | 100-C09                | 65                              | 47   | 65                              | 47   | 100-C09   | 65  | 47  |
| 140M-C2N-A63   | 450                            | 100-C09                | 65                              | 47   | 65                              | 47   | 100-C09   | 65  | 47  |
| 140M-C2N-B10   | 450                            | 100-C09                | 65                              | 47   | 65                              | 47   | 100-C09   | 65  | 47  |
| 140M-C2N-B16   | 450                            | 100-C09                | 65                              | 47   | 65                              | 47   | 100-C09   | 65  | 47  |
| 140M-C2N-B25   | 450                            | 100-C09                | 65                              | 30   | 65                              | 30   | 100-C09   | 65  | —   |
| <b>D-Frame</b> |                                |                        |                                 |      |                                 |      |   |   |   |
| 140M-D8N-B25   | 450                            | 100-C09                | 65                              | 30   | 65                              | 30   | 100-C09   | 65  | —   |
|                | —                              | —                      | —                               | —    | —                               | —    | 100-C23   | 65  | 30  |
| 140M-D8N-B40   | 450                            | 100-C09                | 65                              | 30   | 65                              | 30   | 100-C23   | 65  | 30  |
| 140M-D8N-B63   | 450                            | 100-C09                | 65                              | 30   | 65                              | 30   | 100-C30   | 65  | 30  |
| 140M-D8N-C10   | 450                            | 100-C09                | 65                              | 30   | 65                              | 30   | 100-C30   | 65  | 30  |
| 140M-D8N-C16   | 450                            | 100-C12                | 65                              | 30   | 65                              | 30   | 100-C30   | 65  | 30  |
| 140M-D8N-C25   | 450                            | 100-C23                | 30                              | 30   | 30                              | 30   | 100-C30   | 65  | —   |
| 140M-D8N-C32   | 450                            | 100-C37                | 65                              | 10   | 65                              | 10   | —   | —   | —   |
| <b>F-Frame</b> |                                |                        |                                 |      |                                 |      |   |   |   |
| 140M-F8N-C25   | 600                            | 100-C23                | 65                              | 30   | 65                              | 30   | 100-C30   | 65  | 30  |
| 140M-F8N-C32   | 600                            | 100-C30                | 65                              | 30   | 65                              | 30   | 100-C30   | 65  | 30  |
| 140M-F8N-C45   | 600                            | 100-C37                | 65                              | 18   | 65                              | 18   | 100-C37   | 65  | —   |

§ Separate overload protection is required.

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

2

## Definition of Type 2 Short Circuit Coordination:

- The contactor or starter must not endanger persons or plant in the event of a short circuit.
- No damage to the motor protection device or other parts may occur with the exception of welding of the contactor or starter contacts if these can be easily separated without appreciable deformation (such as with a screwdriver).

In the event of short circuit, fast-opening, current-limiting Bulletin 140M Motor Protection Circuit Breakers make it possible to build economical, fully short-circuit coordinated starter combinations with Type 2 coordination.

## Type 2 Coordination 400V

| Cat. No.                  |                              |                          | Max. Short Circuit Current<br>[kA] | For Use With Contactors<br>Below (or larger) |
|---------------------------|------------------------------|--------------------------|------------------------------------|--|
| Standard Motor Protection | High Inrush Motor Protection | Motor Circuit Protection | 400V                               |  |
| <b>C-Frame</b>            |                              |                          |                                    |  |
| 140M-C2E-A16              | —                            | 140M-C2N-A16             | 100                                | 100-C09                                      |
| 140M-C2E-A25              | 140M-C2T-A16                 | 140M-C2N-A25             | 100                                | 100-C09                                      |
| 140M-C2E-A40              | 140M-C2T-A25                 | 140M-C2N-A40             | 100                                | 100-C09                                      |
| 140M-C2E-A63              | 140M-C2T-A40                 | 140M-C2N-A63             | 100                                | 100-C09                                      |
| 140M-C2E-B10              | 140M-C2T-A63                 | 140M-C2N-B10             | 100                                | 100-C09                                      |
| 140M-C2E-B16              | 140M-C2T-B10                 | 140M-C2N-B16             | 100                                | 100-C09                                      |
| 140M-C2E-B25              | 140M-C2T-B16                 | 140M-C2N-B25             | 50                                 | 100-C09                                      |
| 140M-C2E-B40              | 140M-C2T-B25                 | —                        | 50                                 | 100-C09                                      |
| 140M-C2E-B63              | 140M-C2T-B40                 | —                        | 50                                 | 100-C09                                      |
| 140M-C2E-C10              | 140M-C2T-B63                 | —                        | 50                                 | 100-C09                                      |
| 140M-C2E-C16              | 140M-C2T-C10                 | —                        | 50                                 | 100-C12*                                     |
| 140M-C2E-C20              | 140M-C2T-C16                 | —                        | 50                                 | 100-C23                                      |
| 140M-C2E-C25              | —                            | —                        | 15                                 | 100-C30                                      |
| 140M-C2E-C29              | —                            | —                        | 15                                 | 100-C30                                      |
| 140M-C2E-C32              | —                            | —                        | 15                                 | 100-C37                                      |
| <b>D-Frame</b>            |                              |                          |                                    |  |
| 140M-D8E-B25              | —                            | 140M-D8N-B25             | 100                                | 100-C09                                      |
| 140M-D8E-B40              | —                            | 140M-D8N-B40             | 100                                | 100-C09                                      |
| 140M-D8E-B63              | —                            | 140M-D8N-B63             | 100                                | 100-C09                                      |
| 140M-D8E-C10              | —                            | 140M-D8N-C10             | 65                                 | 100-C09                                      |
| 140M-D8E-C16              | —                            | 140M-D8N-C16             | 65                                 | 100-C12                                      |
| 140M-D8E-C20              | 140M-D8T-C16                 | —                        | 65                                 | 100-C23                                      |
| 140M-D8E-C25              | 140M-D8T-C20                 | 140M-D8N-C25             | 50                                 | 100-C23                                      |
| 140M-D8E-C29              | —                            | —                        | 65                                 | 100-C30                                      |
| 140M-D8E-C32              | —                            | 140M-D8N-C32             | 65                                 | 100-C37                                      |
| <b>F-Frame</b>            |                              |                          |                                    |  |
| 140M-F8E-C10              | —                            | —                        | 100                                | 100-C09                                      |
| 140M-F8E-C16              | —                            | —                        | 100                                | 100-C12                                      |
| 140M-F8E-C20              | —                            | —                        | 100                                | 100-C23                                      |
| 140M-F8E-C25              | —                            | 140M-F8N-C25             | 100                                | 100-C30                                      |
| 140M-F8E-C32              | 140M-F8T-C25                 | 140M-F8N-C32             | 100                                | 100-C30                                      |
| 140M-F8E-C45              | 140M-F8T-C32                 | 140M-F8N-C45             | 100                                | 100-C37                                      |
| <b>CMN-Frame</b>          |                              |                          |                                    |  |
| 140-CMN-2500              | —                            | —                        | 65                                 | 100-C16                                      |
| 140-CMN-4000              | —                            | —                        | 65                                 | 100-C30                                      |
| 140-CMN-6300              | —                            | —                        | 42                                 | 100-C43                                      |
| 140-CMN-9000              | —                            | —                        | 35                                 | 100-C72                                      |

\* Cat. No. 100-C16 contactors Type 1 only

Type 2 Coordination 480V

| Cat. No.                  |                              |                          | Max. Short Circuit Current<br>[kA] | For Use With Contactors<br>Below (or larger) |
|---------------------------|------------------------------|--------------------------|------------------------------------|--|
| Standard Motor Protection | High Inrush Motor Protection | Motor Circuit Protection |                                    |  |
| <b>C-Frame</b>            |                              |                          |                                    |  |
| 140M-C2E-A16              | —                            | 140M-C2N-A16             | 65                                 | 100-C09                                      |
| 140M-C2E-A25              | 140M-C2T-A16                 | 140M-C2N-A25             | 65                                 | 100-C09                                      |
| 140M-C2E-A40              | 140M-C2T-A25                 | 140M-C2N-A40             | 65                                 | 100-C09                                      |
| 140M-C2E-A63              | 140M-C2T-A40                 | 140M-C2N-A63             | 65                                 | 100-C09                                      |
| 140M-C2E-B10              | 140M-C2T-A63                 | 140M-C2N-B10             | 65                                 | 100-C09                                      |
| 140M-C2E-B16              | 140M-C2T-B10                 | 140M-C2N-B16             | 65                                 | 100-C09                                      |
| 140M-C2E-B25              | 140M-C2T-B16                 | 140M-C2N-B25             | 50                                 | 100-C16                                      |
| 140M-C2E-B40              | 140M-C2T-B25                 | —                        | 50                                 | 100-C30                                      |
| 140M-C2E-B63              | 140M-C2T-B40                 | —                        | 50                                 | 100-C30                                      |
| 140M-C2E-C10              | 140M-C2T-B63                 | —                        | 50                                 | 100-C30                                      |
| 140M-C2E-C16              | 140M-C2T-C10                 | —                        | 10                                 | 100-C30                                      |
| 140M-C2E-C20              | 140M-C2T-C16                 | —                        | 10                                 | 100-C30                                      |
| 140M-C2E-C25              | —                            | —                        | 10                                 | 100-C30                                      |
| 140M-C2E-C29              | —                            | —                        | 10                                 | 100-C30                                      |
| 140M-C2E-C32              | —                            | —                        | 10                                 | 100-C37                                      |
| <b>D-Frame</b>            |                              |                          |                                    |  |
| 140M-D8E-B25              | —                            | 140M-D8N-B25             | 65                                 | 100-C09                                      |
| 140M-D8E-B40              | —                            | 140M-D8N-B40             | 65                                 | 100-C09                                      |
| 140M-D8E-B63              | —                            | 140M-D8N-B63             | 65                                 | 100-C09                                      |
| 140M-D8E-C10              | —                            | 140M-D8N-C10             | 65                                 | 100-C09                                      |
| 140M-D8E-C16              | —                            | 140M-D8N-C16             | 65                                 | 100-C12                                      |
| 140M-D8E-C20              | 140M-D8T-C16                 | —                        | 65                                 | 100-C23                                      |
| 140M-D8E-C25              | 140M-D8T-C20                 | 140M-D8N-C25             | 65                                 | 100-C23                                      |
| 140M-D8E-C29              | —                            | —                        | 65                                 | 100-C30                                      |
| 140M-D8E-C32              | —                            | 140M-D8N-C32             | 65                                 | 100-C37                                      |
| <b>F-Frame</b>            |                              |                          |                                    |  |
| 140M-F8E-C10              | —                            | —                        | 65                                 | 100-C09                                      |
| 140M-F8E-C16              | —                            | —                        | 65                                 | 100-C12                                      |
| 140M-F8E-C20              | —                            | —                        | 65                                 | 100-C23                                      |
| 140M-F8E-C25              | —                            | 140M-F8N-C25             | 65                                 | 100-C30                                      |
| 140M-F8E-C32              | 140M-F8T-C25                 | 140M-F8N-C32             | 65                                 | 100-C30                                      |
| 140M-F8E-C45              | 140M-F8T-C32                 | 140M-F8N-C45             | 65                                 | 100-C37                                      |
| <b>CMN-Frame</b>          |                              |                          |                                    |  |
| 140-CMN-2500              | —                            | —                        | 65                                 | 100-C16                                      |
| 140-CMN-4000              | —                            | —                        | 65                                 | 100-C30                                      |
| 140-CMN-6300              | —                            | —                        | 42                                 | 100-C43                                      |
| 140-CMN-9000              | —                            | —                        | 35                                 | 100-C72                                      |



# Motor Circuit Protectors

## Application Ratings

### Type 2 Coordination 600V

| Cat. No.                  |                              |                          | Max. Short Circuit Current<br>[kA] | For Use With Contactors<br>Below (or larger) |
|---------------------------|------------------------------|--------------------------|------------------------------------|--|
| Standard Motor Protection | High Inrush Motor Protection | Motor Circuit Protection |                                    |  |
| <b>C-Frame</b>            |                              |                          |                                    |  |
| 140M-C2E-A16              | —                            | 140M-C2N-A16             | 47                                 | 100-C09                                      |
| 140M-C2E-A25              | 140M-C2T-A16                 | 140M-C2N-A25             | 47                                 | 100-C09                                      |
| 140M-C2E-A40              | 140M-C2T-A25                 | 140M-C2N-A40             | 47                                 | 100-C09                                      |
| 140M-C2E-A63              | 140M-C2T-A40                 | 140M-C2N-A63             | 47                                 | 100-C09                                      |
| 140M-C2E-B10              | 140M-C2T-A63                 | 140M-C2N-B10             | 47                                 | 100-C09                                      |
| 140M-C2E-B16              | 140M-C2T-B10                 | 140M-C2N-B16             | 47                                 | 100-C09                                      |
| 140M-C2E-B25              | 140M-C2T-B16                 | 140M-C2N-B25             | 10                                 | 100-C16                                      |
| 140M-C2E-B40              | 140M-C2T-B25                 | —                        | 10                                 | 100-C16                                      |
| 140M-C2E-B63              | 140M-C2T-B40                 | —                        | 5                                  | 100-C23                                      |
| 140M-C2E-C10              | 140M-C2T-B63                 | —                        | 5                                  | 100-C30                                      |
| 140M-C2E-C16              | 140M-C2T-C10                 | —                        | 5                                  | 100-C30                                      |
| 140M-C2E-C20              | 140M-C2T-C16                 | —                        | 5                                  | 100-C30                                      |
| 140M-C2E-C25              | —                            | —                        | 5                                  | 100-C30                                      |
| 140M-C2E-C29              | —                            | —                        | 5                                  | 100-C30                                      |
| 140M-C2E-C32              | —                            | —                        | 5                                  | 100-C37                                      |
| <b>D-Frame</b>            |                              |                          |                                    |  |
| 140M-D8E-B25              | —                            | 140M-D8N-B25             | 30                                 | 100-C30                                      |
| 140M-D8E-B40              | —                            | 140M-D8N-B40             | 30                                 | 100-C30                                      |
| 140M-D8E-B63              | —                            | 140M-D8N-B63             | 30                                 | 100-C30                                      |
| 140M-D8E-C10              | —                            | 140M-D8N-C10             | 30                                 | 100-C30                                      |
| 140M-D8E-C16              | —                            | 140M-D8N-C16             | 30                                 | 100-C30                                      |
| 140M-D8E-C20              | 140M-D8T-C16                 | —                        | 5                                  | 100-C30                                      |
| 140M-D8E-C25              | 140M-D8T-C20                 | 140M-D8N-C25             | 5                                  | 100-C30                                      |
| 140M-D8E-C29              | —                            | —                        | 10                                 | 100-C30                                      |
| 140M-D8E-C32              | —                            | 140M-D8N-C32             | 10                                 | 100-C37                                      |
| <b>F-Frame</b>            |                              |                          |                                    |  |
| 140M-F8E-C10              | —                            | —                        | 30                                 | 100-C30                                      |
| 140M-F8E-C16              | —                            | —                        | 30                                 | 100-C30                                      |
| 140M-F8E-C20              | —                            | —                        | 30                                 | 100-C30                                      |
| 140M-F8E-C25              | —                            | 140M-F8N-C25             | 30                                 | 100-C30                                      |
| 140M-F8E-C32              | 140M-F8T-C25                 | 140M-F8N-C32             | 30                                 | 100-C30                                      |
| 140M-F8E-C45              | 140M-F8T-C32                 | 140M-F8N-C45             | 10                                 | 100-C37                                      |
| <b>CMN-Frame</b>          |                              |                          |                                    |  |
| 140-CMN-2500              | —                            | —                        | 42                                 | 100-C16                                      |
| 140-CMN-4000              | —                            | —                        | 42                                 | 100-C30                                      |
| 140-CMN-6300              | —                            | —                        | 18                                 | 100-C43                                      |
| 140-CMN-9000              | —                            | —                        | 10                                 | 100-C72                                      |