



Series C Motor Circuit Protectors

**General Information**

Designated as the Cutler-Hammer Types GMCP, HMCP, the Series C instantaneous-only motor circuit protector (MCP) is available in ratings from 3A to 600A for motor starter sizes 0 through 6. The MCP is designed to comply with the applicable requirements of Underwriters Laboratories, Inc. Standard UL489, Canadian Standards Association Standard C22.2 No. 5, and International Electrotechnical Commission Recommendations IEC 157-1.

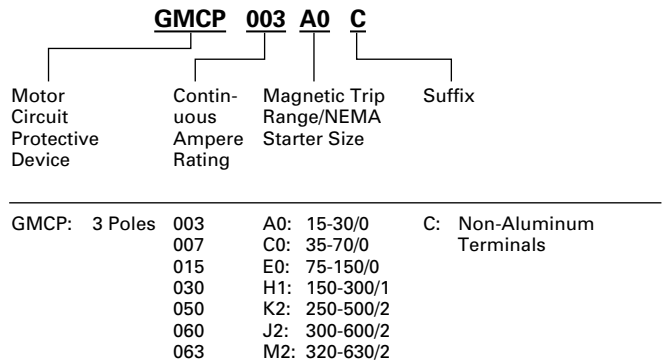
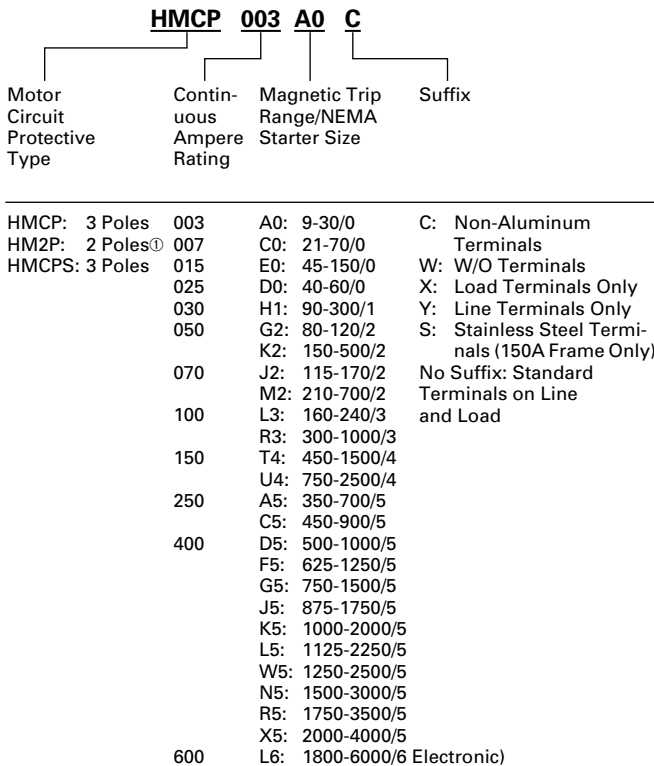
An innovative design of internal components allows higher MCP-starter combination interrupting ratings. The MCP is marked to permit proper electrical application within the assigned equipment ratings.

The MCP is a recognized component (UL File E7819) and complies with the applicable requirements of Underwriters Laboratories, Inc. Standard UL489. It is also designed to comply with the applicable requirements of Canadian Standards Association Standard C22.2 No. 5, International Electrotechnical Commission Recommendations IEC 157-1, and nameplates bear the CE marking.

**Catalog Numbering System**

This information is presented only as an aid to understanding catalog numbers. It is not to be used to build catalog numbers for circuit breakers or trip units.

**Motor Circuit Protector Catalog Number**



① On J- and K-Frame HMCPs only.

MCPs for Application with Motor Starters Equipped with Electronic Overload Relays

600 Vac Maximum, 250 Vdc Maximum

| MCP Catalog Number | NEMA Starter Size | Continuous Amperes | Cam Setting | Motor Full Load Center Amperes <sup>①</sup> | MCP Trip Setting <sup>②</sup> |
|--------------------|-------------------|--------------------|-------------|---|-------------------------------|
| HMCP5003A0C        | 0                 | 3                  | A           | .69 - .91                                   | 9                             |
|                    |                   |                    | B           | .92 - 1.0                                   | 12                            |
|                    |                   |                    | C           | 1.1 - 1.2                                   | 15                            |
|                    |                   |                    | D           | 1.3 - 1.5                                   | 18                            |
|                    |                   |                    | E           | 1.6 - 1.7                                   | 21                            |
|                    |                   |                    | F           | 1.8 - 1.9                                   | 24                            |
|                    |                   |                    | G           | 2.0 - 2.2                                   | 27                            |
|                    |                   |                    | H           | 2.3 - 2.5                                   | 30                            |
| HMCP5007C0C        | 0                 | 7                  | A           | 1.5 - 2.0                                   | 21                            |
|                    |                   |                    | B           | 2.1 - 2.5                                   | 28                            |
|                    |                   |                    | C           | 2.6 - 3.1                                   | 35                            |
|                    |                   |                    | D           | 3.2 - 3.6                                   | 42                            |
|                    |                   |                    | E           | 3.7 - 3.9                                   | 49                            |
|                    |                   |                    | F           | 4.3 - 4.7                                   | 56                            |
|                    |                   |                    | G           | 4.8 - 5.2                                   | 63                            |
|                    |                   |                    | H           | 5.3 - 5.7                                   | 70                            |
| HMCP5015E0C        | 0                 | 15                 | A           | 3.4 - 4.5                                   | 45                            |
|                    |                   |                    | B           | 4.6 - 5.6                                   | 60                            |
|                    |                   |                    | C           | 5.7 - 6.8                                   | 75                            |
|                    |                   |                    | D           | 6.9 - 7.9                                   | 90                            |
|                    |                   |                    | E           | 8.0 - 9.1                                   | 105                           |
|                    |                   |                    | F           | 9.2 - 10.3                                  | 120                           |
|                    |                   |                    | G           | 10.4 - 11.4                                 | 135                           |
|                    |                   |                    | H           | 11.5 - 12.6                                 | 150                           |
| HMCP5030H1C        | 1                 | 30                 | A           | 6.9 - 9.1                                   | 90                            |
|                    |                   |                    | B           | 9.2 - 11.4                                  | 120                           |
|                    |                   |                    | C           | 11.5 - 13.7                                 | 150                           |
|                    |                   |                    | D           | 13.8 - 16.0                                 | 180                           |
|                    |                   |                    | E           | 16.1 - 18.3                                 | 210                           |
|                    |                   |                    | F           | 18.4 - 20.6                                 | 240                           |
|                    |                   |                    | G           | 20.7 - 22.9                                 | 270                           |
|                    |                   |                    | H           | 23.0 - 25.2                                 | 300                           |
| HMCP5050K2C        | 2                 | 50                 | A           | 11.5 - 15.2                                 | 150                           |
|                    |                   |                    | B           | 15.3 - 19.1                                 | 200                           |
|                    |                   |                    | C           | 19.2 - 22.9                                 | 250                           |
|                    |                   |                    | D           | 23.0 - 26.8                                 | 300                           |
|                    |                   |                    | E           | 26.9 - 30.6                                 | 350                           |
|                    |                   |                    | F           | 30.7 - 34.5                                 | 400                           |
|                    |                   |                    | G           | 34.6 - 38.3                                 | 450                           |
|                    |                   |                    | H           | 38.4 - 42.1                                 | 500                           |
| HMCP5100R3C        | 3                 | 100                | A           | 23.0 - 30.6                                 | 300                           |
|                    |                   |                    | B           | 30.7 - 38.3                                 | 400                           |
|                    |                   |                    | C           | 38.4 - 46.0                                 | 500                           |
|                    |                   |                    | D           | 46.1 - 53.7                                 | 600                           |
|                    |                   |                    | E           | 53.8 - 61.4                                 | 700                           |
|                    |                   |                    | F           | 61.5 - 69.1                                 | 800                           |
|                    |                   |                    | G           | 69.2 - 76.8                                 | 900                           |
|                    |                   |                    | H           | 76.9 - 84.5                                 | 1000                          |
| HMCP5150T4C        | 4                 | 150                | A           | 34.6 - 46.0                                 | 450                           |
|                    |                   |                    | B           | 46.1 - 57.5                                 | 600                           |
|                    |                   |                    | C           | 57.6 - 69.1                                 | 750                           |
|                    |                   |                    | D           | 69.2 - 80.6                                 | 900                           |
|                    |                   |                    | E           | 80.7 - 92.2                                 | 1050                          |
|                    |                   |                    | F           | 92.3 - 103.7                                | 1200                          |
|                    |                   |                    | G           | 103.8 - 115.2                               | 1350                          |
|                    |                   |                    | H           | 115.3 - 126.7                               | 1500                          |
| HMCP5150U4C        | 4                 | 150                | A           | 57.0 - 75.0                                 | 750                           |
|                    |                   |                    | B           | 76.0 - 95.0                                 | 1000                          |
|                    |                   |                    | C           | 96.0 - 114.0                                | 1250                          |
|                    |                   |                    | D           | 115.0 - 130.7                               | 1500                          |
|                    |                   |                    | E           | ③   | 1750                          |
|                    |                   |                    | F           | ③   | 2000                          |
|                    |                   |                    | G           | ③   | 2250                          |
|                    |                   |                    | H           | ③   | 2500                          |

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Type ELC Current Limiter Attachment (Size 0-4)



The type ELC current limiter attachment for the Series C MCP is designed to provide increased interrupting capacity. The combination may be used for the application up to 200,000A symmetrical at 600 Vac making the MCP suitable for use in network distribution systems or other applications where unusually high fault currents are available. The current limiter connects to the load end of the MCP and is provided with terminals suitable for copper or aluminum conductors. (See table).

Limiters are coordinated with the MCP so that normal fault currents are interrupted automatically by the MCP without any damage to the limiter. Only the rare very high fault is opened by the limiter. Faults that are interrupted by the limiter are interrupted by the limiter also magnetically trip the MCP, opening all three poles, preventing single-phase operation.

Each of the three poles of the type ELC limiter is equipped with an indicator that extends when a fault is interrupted by the limiter.

Type ELC Current Limiter Terminal Wire Sizes<sup>④</sup>

| Type ELC Current Limiter Maximum Amperes | Standard Aluminum Terminals |                           | Nonstandard Terminals (Steel) |                           |
|--|-----------------------------|---------------------------|-------------------------------|---------------------------|
|  | Wire Range AWG              | Metric (mm <sup>2</sup> ) | Wire Range AWG                | Metric (mm <sup>2</sup> ) |
| 50                                       | #14-2                       | 2.5-35                    | #14-2 <sup>⑤</sup>            | 2.5-35                    |
| 100                                      | #1-4/0                      | 50-95                     | -                             | -                         |
| 150                                      | #1-4/0                      | 50-95                     | -                             | -                         |

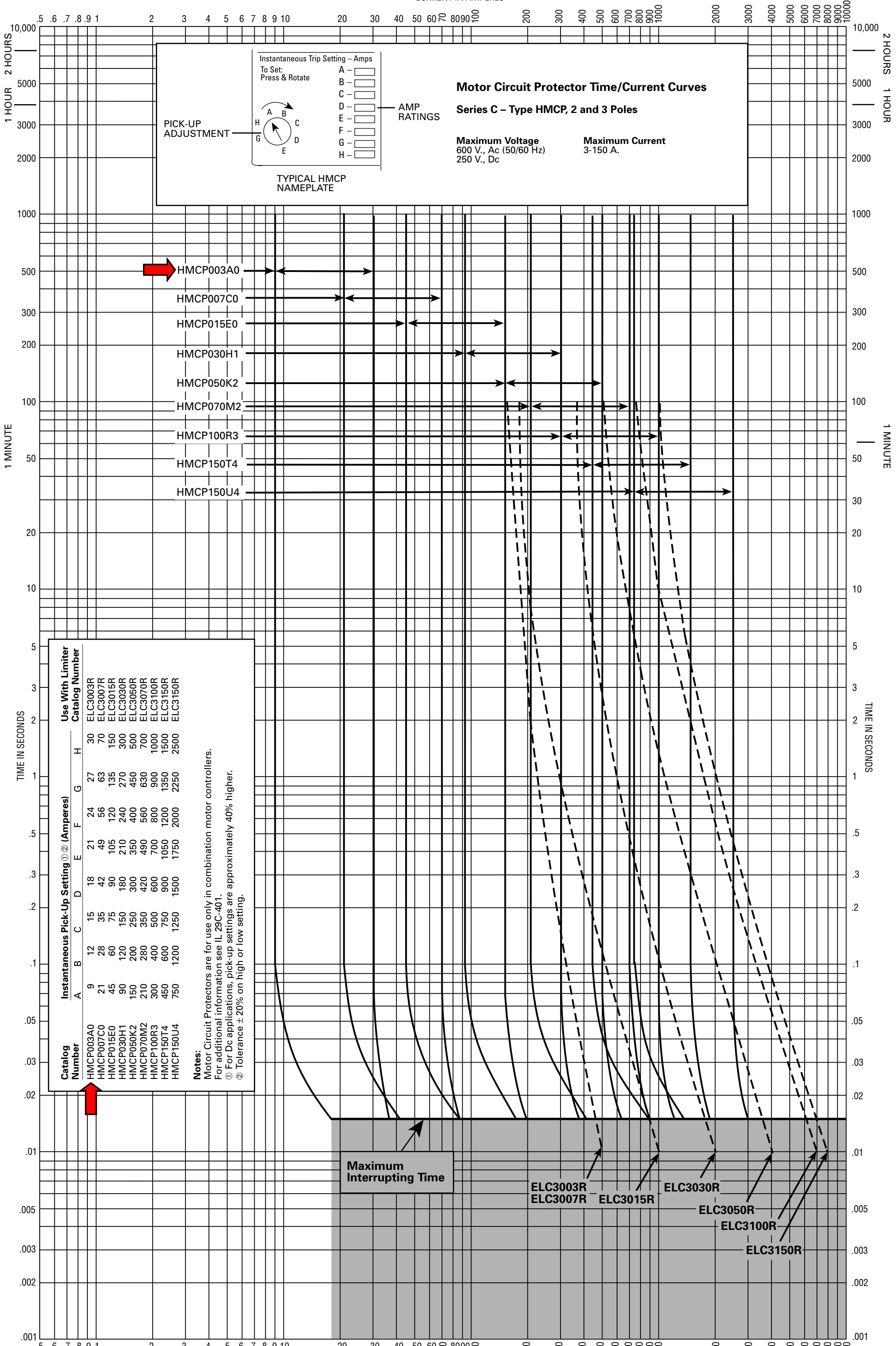
ELC Current Limiter Attachment

| MCP Rating (Amperes) | Catalog Number |
|----------------------|----------------|
| 3                    | ELC3003R       |
| 7                    | ELC3007R       |
| 15                   | ELC3015R       |
| 30                   | ELC3030R       |
| 50                   | ELC3050R       |
| 100                  | ELC3100R       |
| 150                  | ELC3150R       |

Instruction Leaflet/FRED Number 29C401

- ① Motor FLA ranges are typical. The corresponding trip setting is at 13 times the minimum FLA value shown. Where a 13 times setting is required for an intermediate FLA value, alternate cam settings and/or MCP ratings should be used.
- ② For Dc applications, actual trip levels are approximately 40% higher than values shown.
- ③ Settings above 130 amperes are for special applications. NEC Article 430-110(a) requires the ampere rating of the disconnecting means to be not less than 115% of the motor full load ampere rating.
- ④ Terminal wire connectors are UL listed for standard stranded wire sizes as defined in UL486A or UL486B.
- ⑤ Optional on special order for copper cable only.

CURRENT IN AMPERES



**Instantaneous Trip Setting - Amps**

To Set:  A -  B -  C -  D -  E -  F -  G -  H -

AMP RATINGS

**Motor Circuit Protector Time/Current Curves**

**Series C - Type HMCP, 2 and 3 Poles**

**Maximum Voltage**  
600 V., Ac (50/60 Hz)  
250 V., Dc

**Maximum Current**  
3-150 A.

TYPICAL HMCP NAMEPLATE

PICK-UP ADJUSTMENT

| Catalog Number | Instantaneous Pick-Up Setting ①② (Amperes) |      |      |      |      |      |      |      | Use With Limiter Catalog Number |
|----------------|--|------|------|------|------|------|------|------|---------------------------------|
|                | A  | B    | C    | D    | E    | F    | G    | H    |                                 |
| HMCP003A0      | 9  | 12   | 15   | 18   | 21   | 24   | 27   | 30   | ELC3003R                        |
| HMCP007C0      | 21   | 28   | 35   | 42   | 49   | 56   | 63   | 70   | ELC3007R                        |
| HMCP015E0      | 45   | 60   | 75   | 90   | 105  | 120  | 135  | 150  | ELC3015R                        |
| HMCP030H1      | 90   | 120  | 150  | 180  | 210  | 240  | 270  | 300  | ELC3030R                        |
| HMCP050K2      | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | ELC3050R                        |
| HMCP070M2      | 210  | 280  | 350  | 420  | 490  | 560  | 630  | 700  | ELC3070R                        |
| HMCP100R3      | 300  | 400  | 500  | 600  | 700  | 800  | 900  | 1000 | ELC3100R                        |
| HMCP150T4      | 450  | 600  | 750  | 900  | 1050 | 1200 | 1350 | 1500 | ELC3150R                        |
| HMCP150U4      | 750  | 1200 | 1250 | 1500 | 1750 | 2000 | 2250 | 2500 | ELC3150R                        |

**Notes:**  
 Motor Circuit Protectors are for use only in combination motor controllers.  
 For additional information see IL 29C-401.  
 ① For Ac applications, pick-up settings are approximately 40% higher.  
 ② Tolerance ± 20% on high or low setting.

**Maximum Interrupting Time**

ELC3003R  
 ELC3007R  
 ELC3015R  
 ELC3030R  
 ELC3050R  
 ELC3100R  
 ELC3150R