



# NOARK

Catalog

## Molded Case Circuit Breakers Molded Case Motor Circuit Protectors Molded Case Switches

Ex9 Series - M



Excellent Products. Exceptional Value.

[na.noark-electric.com](http://na.noark-electric.com)

## Company Overview

**NOARK Electric** is a global manufacturer of low-voltage electrical components for industrial applications. We specialize in motor controls and circuit protection for original equipment manufacturers. Our mission is to provide customers with the highest quality products at an exceptional value and back them with world-class service and support. Every NOARK product is tested and certified to the highest industry standards.

### Research and Development

The entire portfolio of high-quality NOARK products is designed for manufacturing and assembly. Each component is developed in-house by our engineering team to meet the strictest standards and performance requirements. This dedication to excellence has led to the development of patented technology found in many of our products.

### World-class Manufacturing

After being thoroughly tested, approved and certified – each NOARK product is sent into production at our state-of-the-art manufacturing facilities. This allows us to maintain strict quality control standards throughout the manufacturing process. In addition, NOARK Electric adheres to a policy of environmental protection and sustainability.

### North American Distribution

NOARK's primary distribution center is located in Pomona, CA, with the aim of ensuring prompt and reliable deliveries of the entire product range to our customers all over North America. Our supply chain team works closely with our factories and logistics partners to ensure the availability of our products on the North American market and provide logistics services on the level which our customers expect.

NOARK Electric is a wholly subsidiary of the largest electrical manufacturing group in Asia with over 30 thousand employees and sales revenue of \$10 billion USD. We have corporate facilities in Los Angeles, Shanghai and Prague to service the requirements of individual markets and countries.

|             |                       |                       |                   |               |                            |
|-------------|-----------------------|-----------------------|-------------------|---------------|----------------------------|
| <b>140+</b> | <b>300+</b>           | <b>20</b>             | <b>22</b>         | <b>3</b>      | <b>10,000,000+</b>         |
| Countries   | Overseas Distributors | Overseas Subsidiaries | Logistics Centers | R & D Centers | Sq.Ft. Manufacturing Space |



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\*Note that Molded Case Motor Circuit Protectors Dimensions and Mounting Positions are the same as those of the Molded Case Circuit Breakers.

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\*Note that Molded Case Switches Dimensions and Mounting Positions are the same as those of the Molded Case Circuit Breakers.

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## Molded Case Circuit Breakers/Motor Circuit Protection and Switches



**Handle Lock (KLK)**  
(D83)



**Mechanical Interlock (MIT)**  
(D83)



**Motor Operator (MOD)**  
(D84)



**Alarm Switch (AL)/  
Auxiliary Contact (AX)**  
(D80)



**IEC Rotary Handle (RHD)**  
Close Coupled (D85)



**Under-Voltage Trip (UVT)**  
(D82)



**Molded Case Circuit Breaker (A3-37)**  
**Molded Case Motor Circuit Protectors (B46-64)**  
**Molded Case Switch (C65-75)**



**DIN Rail Plate (DRP)**  
(D85)



**Shunt Trip (SHT)**  
(D81)



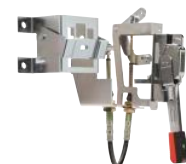
**NEMA Extended  
Rotary Handle  
Through the Door (D86)**



**Terminal Lugs (LTC)**  
(D89)



**Rear Connection Kit (RCP)**  
(D92)



**NEMA Flange Handle  
Mechanism (FHM)**  
Through the Door (D86)



# Molded Case Circuit Breakers

## M1-M6



## M1-M6 Product Overview

### Features

#### Molded Case Circuit Breakers, 15-1200 Amperes

NOARK Electric offers a complete range of Molded Case Circuit Breakers in six frame sizes: M1 - 150A, M2 - 250A, M3 - 400A, M4 - 600A, M5 - 800A, and M6 - 1200A. Each frame size offers a range of interrupting ratings from 240-690 Vac and 250-600 Vdc/1000 Vdc.

- High-breaking capacity and a patented arc extinguishing design
- Bearing-type spindle reduces the operating force required to open and close the operating mechanism
- High quality compact modular design
- Fixed and adjustable trip unit settings
- Line and load lugs installed standard
- 5-Year limited warranty

Wide range of accessories:

- Alarm switch and auxiliary contact
- Shunt and under-voltage trip
- Rotary type handle
- Flange type handle
- Motor Operator
- Mechanical Interlock



### Certifications

- UL 489 Listed, File Number E355392
- UL listed to UL489 and Canada CSA standards 22.2 No. 5
- IEC/EN 60947-2
- CE Compliant
- UL489B, File Number E513573



## M1-M6 & M1PVS Product Selection Guide

### Label

- 1 Handle
- 2 Product Series
- 3 Product Selection
- 4 Test Button
- 5 Adjustable Current and Magnetic Setting (M1~M5) or Electronic Trip (M6)
- 6 Brand
- 7 UL Listed Mark
- 8 CE Mark
- 9 Rated Current



### Product Selection Guide

#### M1PVS

| M                       | 1          | PV                                      | S                   | 80       | T                   | 3          | L                                                  | A <sup>††</sup>                                                                                      |
|-------------------------|------------|-----------------------------------------|---------------------|----------|---------------------|------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------|
| NOARK<br>Ex9 Series - M | Frame Size | Photovoltaic Code                       | Interrupting Rating | Amperage | Trip Unit           | Pole       | Terminal Option                                    | Jumper Connection Type                                                                               |
|                         | 1: 80 A    | 1000VDC type in compliance with UL 489B | S: 10kA @1000Vdc    | 15~80 A  | T: Thermal-Magnetic | 3: 3 Poles | Blank: Bus Bar Connection<br>L: Lug Line/Load Side | A: Jumper Connection A<br>B: Jumper Connection B<br>C: Jumper Connection C<br>D: Jumper Connection D |

#### M1-M6

| M                       | 1                                                                     | S                                                  | 100                                                                                               | T                                              | 2                                                                                                                       | L                     | F <sup>†</sup>                               | C <sup>***</sup>                                                               |
|-------------------------|-----------------------------------------------------------------------|----------------------------------------------------|---------------------------------------------------------------------------------------------------|------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|-----------------------|----------------------------------------------|--------------------------------------------------------------------------------|
| NOARK<br>Ex9 Series - M | Frame Size                                                            | Interrupting Rating                                | Amperage                                                                                          | Trip Unit                                      | Pole                                                                                                                    | Terminal Option       | Rate Code                                    | Neutral Protection Code                                                        |
|                         | 1: 150 A<br>2: 250 A<br>3: 400 A<br>4: 600 A<br>5: 800 A<br>6: 1200 A | S: Standard<br>N: Normal<br>H <sup>**</sup> : High | M1: 15~150 A<br>M2: 100~250 A<br>M3: 225~400 A<br>M4: 400~600 A<br>M5: 600~800A<br>M6: 800~1200 A | T: Thermal-Magnetic<br>E: Electronic (M6 only) | 1: 1 Pole (M1/M2 Only)<br>22: 2 Poles (M1/M2 Only)<br>2: 2 Poles (3 Pole Case)<br>3: 3 Poles<br>4: 4 Poles (M5-M6 Only) | L: Lug Line/Load Side | Blank: Standard (80% Rated)<br>F: 100% Rated | Blank: Neutral Pole without protection<br>C: Neutral Pole with 100% protection |

\*\* Used for M1-M5

\*\*\* M5 4P Only

†: M6 only

†† Product equipped with factory installed jumpers

NOARK takes no responsibility if the customer changes the jumper configuration in the field.

# M1PVS 15~80A (1000 VDC)

## Connection A 3-Pole

### Fixed Magnetic • Fixed Thermal

| Rated Amperage (A)                         | Catalog Number | Part Number |
|--------------------------------------------|----------------|-------------|
| 15                                         | M1PVS15T3LA    | 1102471     |
| 20                                         | M1PVS20T3LA    | 1102475     |
| 25                                         | M1PVS25T3LA    | 1102479     |
| 30                                         | M1PVS30T3LA    | 1102483     |
| 35                                         | M1PVS35T3LA    | 1102487     |
| 40                                         | M1PVS40T3LA    | 1102491     |
| 45                                         | M1PVS45T3LA    | 1102495     |
| <b>Adjustable Magnetic • Fixed Thermal</b> |                |             |
| 50                                         | M1PVS50T3LA    | 1102499     |
| 60                                         | M1PVS60T3LA    | 1102503     |
| 70                                         | M1PVS70T3LA    | 1102507     |
| 80                                         | M1PVS80T3LA    | 1102511     |

## Connection B 3-Pole

### Fixed Magnetic • Fixed Thermal

| Rated Amperage (A)                         | Catalog Number | Part Number |
|--------------------------------------------|----------------|-------------|
| 15                                         | M1PVS15T3LB    | 1102472     |
| 20                                         | M1PVS20T3LB    | 1102476     |
| 25                                         | M1PVS25T3LB    | 1102480     |
| 30                                         | M1PVS30T3LB    | 1102484     |
| 35                                         | M1PVS35T3LB    | 1102488     |
| 40                                         | M1PVS40T3LB    | 1102492     |
| 45                                         | M1PVS45T3LB    | 1102496     |
| <b>Adjustable Magnetic • Fixed Thermal</b> |                |             |
| 50                                         | M1PVS50T3LB    | 1102500     |
| 60                                         | M1PVS60T3LB    | 1102504     |
| 70                                         | M1PVS70T3LB    | 1102508     |
| 80                                         | M1PVS80T3LB    | 1102512     |

## Connection C 3-Pole

### Fixed Magnetic • Fixed Thermal

| Rated Amperage (A)                         | Catalog Number | Part Number |
|--------------------------------------------|----------------|-------------|
| 15                                         | M1PVS15T3LC    | 1102473     |
| 20                                         | M1PVS20T3LC    | 1102477     |
| 25                                         | M1PVS25T3LC    | 1102481     |
| 30                                         | M1PVS30T3LC    | 1102485     |
| 35                                         | M1PVS35T3LC    | 1102489     |
| 40                                         | M1PVS40T3LC    | 1102493     |
| 45                                         | M1PVS45T3LC    | 1102497     |
| <b>Adjustable Magnetic • Fixed Thermal</b> |                |             |
| 50                                         | M1PVS50T3LC    | 1102501     |
| 60                                         | M1PVS60T3LC    | 1102505     |
| 70                                         | M1PVS70T3LC    | 1102509     |
| 80                                         | M1PVS80T3LC    | 1102513     |

## Connection D 3-Pole

### Fixed Magnetic • Fixed Thermal

| Rated Amperage (A)                         | Catalog Number | Part Number |
|--------------------------------------------|----------------|-------------|
| 15                                         | M1PVS15T3LD    | 1102474     |
| 20                                         | M1PVS20T3LD    | 1102478     |
| 25                                         | M1PVS25T3LD    | 1102482     |
| 30                                         | M1PVS30T3LD    | 1102486     |
| 35                                         | M1PVS35T3LD    | 1102490     |
| 40                                         | M1PVS40T3LD    | 1102494     |
| 45                                         | M1PVS45T3LD    | 1102498     |
| <b>Adjustable Magnetic • Fixed Thermal</b> |                |             |
| 50                                         | M1PVS50T3LD    | 1102502     |
| 60                                         | M1PVS60T3LD    | 1102506     |
| 70                                         | M1PVS70T3LD    | 1102510     |
| 80                                         | M1PVS80T3LD    | 1102514     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

## M1 Lug Line/Load Side Connection



**M1N  
1 Pole**  
10kA @480Vac  
50kA @240Vac

| Rated<br>Amperage<br>(A) | 1-Pole                         |                |
|--------------------------|--------------------------------|----------------|
|                          | Fixed Magnetic • Fixed Thermal |                |
|                          | Catalog<br>Number              | Part<br>Number |
| 15                       | M1N15T1L                       | 1102223        |
| 20                       | M1N20T1L                       | 1102224        |
| 25                       | M1N25T1L                       | 1102225        |
| 30                       | M1N30T1L                       | 1102226        |
| 35                       | M1N35T1L                       | 1102227        |
| 40                       | M1N40T1L                       | 1102228        |
| 45                       | M1N45T1L                       | 1102229        |
| 50                       | M1N50T1L                       | 1102230        |
| 60                       | M1N60T1L                       | 1102231        |
| 70                       | M1N70T1L                       | 1102232        |
| 80                       | M1N80T1L                       | 1102233        |
| 90                       | M1N90T1L                       | 1102234        |
| 100                      | M1N100T1L                      | 1102235        |
| 125                      | M1N125T1L                      | 1102236        |
| 150                      | M1N150T1L                      | 1102237        |



**M1S  
2 Pole**  
35 kA @ 480 Vac  
50 kA @ 240 Vac  
14 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 2-Pole                              |                |
|--------------------------|-------------------------------------|----------------|
|                          | Fixed Magnetic • Adjustable Thermal |                |
|                          | Catalog<br>Number                   | Part<br>Number |
| 15                       | M1S15T22L                           | 1102277        |
| 20                       | M1S20T22L                           | 1102278        |
| 25                       | M1S25T22L                           | 1102279        |
| 30                       | M1S30T22L                           | 1102280        |
| 35                       | M1S35T22L                           | 1102281        |
| 40                       | M1S40T22L                           | 1102282        |
| 45                       | M1S45T22L                           | 1102283        |
| 50                       | M1S50T22L                           | 1102284        |
| 60                       | M1S60T22L                           | 1102285        |
| 70                       | M1S70T22L                           | 1102286        |
| 80                       | M1S80T22L                           | 1102287        |
| 90                       | M1S90T22L                           | 1102288        |
| 100                      | M1S100T22L                          | 1102289        |
| 125                      | M1S125T22L                          | 1102264        |
| 150                      | M1S150T22L                          | 1102265        |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

## M1 Lug Line/Load Side Connection



### M1N 2 Pole

65 kA @ 480Vac  
100 kA @ 240Vac  
20 kA @ 600Vac

| Rated<br>Amperage<br>(A) | 2-Pole                              |                |
|--------------------------|-------------------------------------|----------------|
|                          | Fixed Magnetic • Adjustable Thermal |                |
|                          | Catalog<br>Number                   | Part<br>Number |
| 15                       | M1N15T22L                           | 1102290        |
| 20                       | M1N20T22L                           | 1102291        |
| 25                       | M1N25T22L                           | 1102292        |
| 30                       | M1N30T22L                           | 1102293        |
| 35                       | M1N35T22L                           | 1102294        |
| 40                       | M1N40T22L                           | 1102295        |
| 45                       | M1N45T22L                           | 1102296        |
| 50                       | M1N50T22L                           | 1102297        |
| 60                       | M1N60T22L                           | 1102298        |
| 70                       | M1N70T22L                           | 1102299        |
| 80                       | M1N80T22L                           | 1102300        |
| 90                       | M1N90T22L                           | 1102301        |
| 100                      | M1N100T22L                          | 1102302        |
| 125                      | M1N125T22L                          | 1102166        |
| 150                      | M1N150T22L                          | 1102167        |



### M1H 2 Pole

100 kA @ 480 Vac  
150 kA @ 240 Vac  
25 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 2-Pole                              |                |
|--------------------------|-------------------------------------|----------------|
|                          | Fixed Magnetic • Adjustable Thermal |                |
|                          | Catalog<br>Number                   | Part<br>Number |
| 15                       | M1H15T22L                           | 1102303        |
| 20                       | M1H20T22L                           | 1102304        |
| 25                       | M1H25T22L                           | 1102305        |
| 30                       | M1H30T22L                           | 1102306        |
| 35                       | M1H35T22L                           | 1102307        |
| 40                       | M1H40T22L                           | 1102308        |
| 45                       | M1H45T22L                           | 1102309        |
| 50                       | M1H50T22L                           | 1102310        |
| 60                       | M1H60T22L                           | 1102311        |
| 70                       | M1H70T22L                           | 1102312        |
| 80                       | M1H80T22L                           | 1102313        |
| 90                       | M1H90T22L                           | 1102314        |
| 100                      | M1H100T22L                          | 1102315        |
| 125                      | M1H125T22L                          | 1102168        |
| 150                      | M1H150T22L                          | 1102169        |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

## M1 Lug Line/Load Side Connection



### M1S 3 Pole

35 kA @ 480 Vac  
50 kA @ 240 Vac  
14 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 3-Pole                              |                |
|--------------------------|-------------------------------------|----------------|
|                          | Fixed Magnetic • Adjustable Thermal |                |
|                          | Catalog<br>Number                   | Part<br>Number |
| 15                       | M1S15T3L                            | 1100027        |
| 20                       | M1S20T3L                            | 1100028        |
| 25                       | M1S25T3L                            | 1100029        |
| 30                       | M1S30T3L                            | 1100030        |
| 35                       | M1S35T3L                            | 1100031        |
| 40                       | M1S40T3L                            | 1100032        |
| 45                       | M1S45T3L                            | 1100033        |
| 50                       | M1S50T3L                            | 1100034        |
| 60                       | M1S60T3L                            | 1100035        |
| 70                       | M1S70T3L                            | 1100036        |
| 80                       | M1S80T3L                            | 1100037        |
| 90                       | M1S90T3L                            | 1100038        |
| 100                      | M1S100T3L                           | 1100039        |
| 125                      | M1S125T3L                           | 1102170        |
| 150                      | M1S150T3L                           | 1102171        |



### M1N 3 Pole

65 kA @ 480 Vac  
100 kA @ 240 Vac  
20 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 3-Pole                              |                |
|--------------------------|-------------------------------------|----------------|
|                          | Fixed Magnetic • Adjustable Thermal |                |
|                          | Catalog<br>Number                   | Part<br>Number |
| 15                       | M1N15T3L                            | 1100040        |
| 20                       | M1N20T3L                            | 1100041        |
| 25                       | M1N25T3L                            | 1100042        |
| 30                       | M1N30T3L                            | 1100043        |
| 35                       | M1N35T3L                            | 1100044        |
| 40                       | M1N40T3L                            | 1100045        |
| 45                       | M1N45T3L                            | 1100046        |
| 50                       | M1N50T3L                            | 1100047        |
| 60                       | M1N60T3L                            | 1100048        |
| 70                       | M1N70T3L                            | 1100049        |
| 80                       | M1N80T3L                            | 1100050        |
| 90                       | M1N90T3L                            | 1100051        |
| 100                      | M1N100T3L                           | 1100052        |
| 125                      | M1N125T3L                           | 1102172        |
| 150                      | M1N150T3L                           | 1102173        |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

## M1 Lug Line/Load Side Connection



### M1H 3 Pole

100 kA @ 480 Vac  
150 kA @ 240 Vac  
25 kA @ 600 Vac

|  | Rated<br>Amperage<br>(A) | 3-Pole                              |                |
|--|--------------------------|-------------------------------------|----------------|
|  |                          | Fixed Magnetic • Adjustable Thermal |                |
|  |                          | Catalog<br>Number                   | Part<br>Number |
|  | 15                       | M1H15T3L                            | 1101548        |
|  | 20                       | M1H20T3L                            | 1101549        |
|  | 25                       | M1H25T3L                            | 1101550        |
|  | 30                       | M1H30T3L                            | 1101551        |
|  | 35                       | M1H35T3L                            | 1101552        |
|  | 40                       | M1H40T3L                            | 1101553        |
|  | 45                       | M1H45T3L                            | 1101554        |
|  | 50                       | M1H50T3L                            | 1101556        |
|  | 60                       | M1H60T3L                            | 1101555        |
|  | 70                       | M1H70T3L                            | 1101556        |
|  | 80                       | M1H80T3L                            | 1101557        |
|  | 90                       | M1H90T3L                            | 1101558        |
|  | 100                      | M1H100T3L                           | 1101559        |
|  | 125                      | M1H125T3L                           | 1102174        |
|  | 150                      | M1H150T3L                           | 1102175        |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

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Trip Curve ..... A29-A36  
Dimensions..... A37-A41  
Mounting Position ..... A42-A45

Accessories..... D77-D104

## M2 Lug Line/Load Side Connection



### M2N 1 Pole

10 kA @ 480 Vac  
50 kA @ 240 Vac

| Rated<br>Amperage<br>(A) | 1-Pole                         |                |
|--------------------------|--------------------------------|----------------|
|                          | Fixed Magnetic • Fixed Thermal |                |
|                          | Catalog<br>Number              | Part<br>Number |
| 100                      | M2N100T1L                      | 1102323        |
| 125                      | M2N125T1L                      | 1102324        |
| 150                      | M2N150T1L                      | 1102325        |
| 175                      | M2N175T1L                      | 1102326        |
| 200                      | M2N200T1L                      | 1102327        |
| 225                      | M2N225T1L                      | 1102328        |
| 250                      | M2N250T1L                      | 1102329        |



### M2S 2 Pole

35 kA @ 480 Vac  
50 kA @ 240 Vac  
14 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 2-Pole                         |                |
|--------------------------|--------------------------------|----------------|
|                          | Fixed Magnetic • Fixed Thermal |                |
|                          | Catalog<br>Number              | Part<br>Number |
| 100                      | M2S100T22L                     | 1102337        |
| 125                      | M2S125T22L                     | 1102338        |
| 150                      | M2S150T22L                     | 1102339        |
| 175                      | M2S175T22L                     | 1102340        |
| 200                      | M2S200T22L                     | 1102341        |
| 225                      | M2S225T22L                     | 1102342        |
| 250                      | M2S250T22L                     | 1102343        |



### M2N 2 Pole

65 kA @ 480 Vac  
100 kA @ 240 Vac  
20 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 2-Pole                         |                |
|--------------------------|--------------------------------|----------------|
|                          | Fixed Magnetic • Fixed Thermal |                |
|                          | Catalog<br>Number              | Part<br>Number |
| 100                      | M2N100T22L                     | 1102351        |
| 125                      | M2N125T22L                     | 1102352        |
| 150                      | M2N150T22L                     | 1102353        |
| 175                      | M2N175T22L                     | 1102354        |
| 200                      | M2N200T22L                     | 1102355        |
| 225                      | M2N225T22L                     | 1102356        |
| 250                      | M2N250T22L                     | 1102357        |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

Specifications ..... A21-A24  
Interruption Polarity..... A24  
Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
Dimensions..... A37-A41  
Mounting Position ..... A42-A45

Accessories ..... D77-D104

## M2 Lug Line/Load Side Connection



### M2S 3 Pole

35 kA @ 480 Vac  
50 kA @ 240 Vac  
14 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 3-Pole                                   |             |
|--------------------------|------------------------------------------|-------------|
|                          | Adjustable Magnetic • Adjustable Thermal |             |
|                          | Catalog Number                           | Part Number |
| 100                      | M2S100T3L                                | 1100221     |
| 125                      | M2S125T3L                                | 1100222     |
| 150                      | M2S150T3L                                | 1100223     |
| 175                      | M2S175T3L                                | 1100224     |
| 200                      | M2S200T3L                                | 1100225     |
| 225                      | M2S225T3L                                | 1100226     |
| 250                      | M2S250T3L                                | 1101958     |



### M2N 3 Pole

65 kA @ 480 Vac  
100 kA @ 240 Vac  
20 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 3-Pole                                   |             |
|--------------------------|------------------------------------------|-------------|
|                          | Adjustable Magnetic • Adjustable Thermal |             |
|                          | Catalog Number                           | Part Number |
| 100                      | M2N100T3L                                | 1100227     |
| 125                      | M2N125T3L                                | 1100228     |
| 150                      | M2N150T3L                                | 1100229     |
| 175                      | M2N175T3L                                | 1100230     |
| 200                      | M2N200T3L                                | 1100231     |
| 225                      | M2N225T3L                                | 1100232     |
| 250                      | M2N250T3L                                | 1101959     |



### M2H 3 Pole

100 kA @ 480 Vac  
150 kA @ 240 Vac  
25 kA @ 600 Vac

| Rated<br>Amperage<br>(A) | 3-Pole                                   |             |
|--------------------------|------------------------------------------|-------------|
|                          | Adjustable Magnetic • Adjustable Thermal |             |
|                          | Catalog Number                           | Part Number |
| 100                      | M2H100T3L                                | 1101645     |
| 125                      | M2H125T3L                                | 1101646     |
| 150                      | M2H150T3L                                | 1101647     |
| 175                      | M2H175T3L                                | 1101648     |
| 200                      | M2H200T3L                                | 1101649     |
| 225                      | M2H225T3L                                | 1101650     |
| 250                      | M2H250T3L                                | 1101960     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

Specifications ..... A21-A24  
Interruption Polarity..... A24  
Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
Dimensions..... A37-A41  
Mounting Position ..... A42-A45

Accessories..... D77-D104

## M3 Lug Line/Load Side Connection



| M3S<br>2 Pole in a<br>3 Pole Case<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>14 kA @ 600 Vac | Rated<br>Amperage<br>(A) | 2-Pole*                                  |             |
|--------------------------------------------------------------------------------------------|--------------------------|------------------------------------------|-------------|
|                                                                                            |                          | Adjustable Magnetic • Adjustable Thermal |             |
|                                                                                            |                          | Catalog Number                           | Part Number |
|                                                                                            | 225                      | M3S225T2L                                | 1100315     |
|                                                                                            | 250                      | M3S250T2L                                | 1100316     |
|                                                                                            | 300                      | M3S300T2L                                | 1100317     |
|                                                                                            | 350                      | M3S350T2L                                | 1100318     |
|                                                                                            | 400                      | M3S400T2L                                | 1100319     |



| M3S<br>3 Pole<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>14 kA @ 600 Vac | Rated<br>Amperage<br>(A) | 3-Pole                                   |             |
|------------------------------------------------------------------------|--------------------------|------------------------------------------|-------------|
|                                                                        |                          | Adjustable Magnetic • Adjustable Thermal |             |
|                                                                        |                          | Catalog Number                           | Part Number |
|                                                                        | 225                      | M3S225T3L                                | 1100365     |
|                                                                        | 250                      | M3S250T3L                                | 1100366     |
|                                                                        | 300                      | M3S300T3L                                | 1100367     |
|                                                                        | 350                      | M3S350T3L                                | 1100368     |
|                                                                        | 400                      | M3S400T3L                                | 1100369     |



| M3N<br>2 Pole in a<br>3 Pole Case<br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>25 kA @ 600 Vac | Rated<br>Amperage<br>(A) | 2-Pole*                                  |             |
|---------------------------------------------------------------------------------------------|--------------------------|------------------------------------------|-------------|
|                                                                                             |                          | Adjustable Magnetic • Adjustable Thermal |             |
|                                                                                             |                          | Catalog Number                           | Part Number |
|                                                                                             | 225                      | M3N225T2L                                | 1100320     |
|                                                                                             | 250                      | M3N250T2L                                | 1100321     |
|                                                                                             | 300                      | M3N300T2L                                | 1100322     |
|                                                                                             | 350                      | M3N350T2L                                | 1100323     |
|                                                                                             | 400                      | M3N400T2L                                | 1100324     |



| M3N<br>3 Pole<br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>25 kA @ 600 Vac | Rated<br>Amperage<br>(A) | 3-Pole                                   |             |
|-------------------------------------------------------------------------|--------------------------|------------------------------------------|-------------|
|                                                                         |                          | Adjustable Magnetic • Adjustable Thermal |             |
|                                                                         |                          | Catalog Number                           | Part Number |
|                                                                         | 225                      | M3N225T3L                                | 1100370     |
|                                                                         | 250                      | M3N250T3L                                | 1100371     |
|                                                                         | 300                      | M3N300T3L                                | 1100372     |
|                                                                         | 350                      | M3N350T3L                                | 1100373     |
|                                                                         | 400                      | M3N400T3L                                | 1100374     |

\*3-pole Case

• Lug Line/Load Side Connection MCCB sold with Terminal Lugs

## M3 Lug Line/Load Side Connection



### M3H 2 Pole in a 3 Pole Case

100 kA @ 480 Vac  
150 kA @ 240 Vac  
30 kA @ 600 Vac

Rated  
Amperage  
(A)

### 2-Pole\*

Adjustable Magnetic • Adjustable Thermal

Catalog Number

Part  
Number

225

M3H225T2L

1101692

250

M3H250T2L

1101693

300

M3H300T2L

1101694

350

M3H350T2L

1101695

400

M3H400T2L

1101696



### M3H 3 Pole

100 kA @ 480 Vac  
150 kA @ 240 Vac  
30 kA @ 600 Vac

Rated  
Amperage  
(A)

### 3-Pole

Adjustable Magnetic • Adjustable Thermal

Catalog Number

Part  
Number

225

M3H225T3L

1101722

250

M3H250T3L

1101723

300

M3H300T3L

1101724

350

M3H350T3L

1101725

400

M3H400T3L

1101726

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

\*3-Pole Case

Specifications ..... A21-A24  
Interruption Polarity..... A24  
Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
Dimensions..... A37-A41  
Mounting Position ..... A42-A45

Accessories..... D77-D104

## M4 Lug Line/Load Side Connection



| <b>M4S</b><br>2 Pole in a<br>3 Pole Case<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>2-Pole*</b>                             |             |
|---------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------|-------------|
|                                                                                                   |                          | <b>Fixed Magnetic • Adjustable Thermal</b> |             |
|                                                                                                   |                          | Catalog Number                             | Part Number |
|                                                                                                   | 400                      | M4S400T2L                                  | 1100435     |
|                                                                                                   | 500                      | M4S500T2L                                  | 1100436     |
|                                                                                                   | 600                      | M4S600T2L                                  | 1100437     |



| <b>M4S</b><br>3 Pole<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b>                              |             |
|-------------------------------------------------------------------------------|--------------------------|--------------------------------------------|-------------|
|                                                                               |                          | <b>Fixed Magnetic • Adjustable Thermal</b> |             |
|                                                                               |                          | Catalog Number                             | Part Number |
|                                                                               | 400                      | M4S400T3L                                  | 1100411     |
|                                                                               | 500                      | M4S500T3L                                  | 1100412     |
|                                                                               | 600                      | M4S600T3L                                  | 1100413     |



| <b>M4N</b><br>2 Pole in a<br>3 Pole Case<br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>30 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>2-Pole*</b>                             |             |
|----------------------------------------------------------------------------------------------------|--------------------------|--------------------------------------------|-------------|
|                                                                                                    |                          | <b>Fixed Magnetic • Adjustable Thermal</b> |             |
|                                                                                                    |                          | Catalog Number                             | Part Number |
|                                                                                                    | 400                      | M4N400T2L                                  | 1100438     |
|                                                                                                    | 500                      | M4N500T2L                                  | 1100439     |
|                                                                                                    | 600                      | M4N600T2L                                  | 1100440     |



| <b>M4N</b><br>3 Pole<br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>30 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b>                                   |             |
|--------------------------------------------------------------------------------|--------------------------|-------------------------------------------------|-------------|
|                                                                                |                          | <b>Adjustable Magnetic • Adjustable Thermal</b> |             |
|                                                                                |                          | Catalog Number                                  | Part Number |
|                                                                                | 400                      | M4N400T3L                                       | 1100414     |
|                                                                                | 500                      | M4N500T3L                                       | 1100415     |
|                                                                                | 600                      | M4N600T3L                                       | 1100416     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

\*3-Pole Case

Specifications ..... A21-A24  
 Interruption Polarity..... A24  
 Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
 Dimensions..... A37-A41  
 Mounting Position ..... A42-A45

Accessories ..... D77-D104

M4 Lug Line/Load Side Connection



| M4H<br>2 Pole in a<br>3 Pole Case<br><br>100 kA @ 480 Vac<br>150 kA @ 240 Vac<br>50 kA @ 600 Vac | Rated<br>Amperage<br>(A) | 2-Pole*                             |             |
|--------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------|-------------|
|                                                                                                  |                          | Fixed Magnetic • Adjustable Thermal |             |
|                                                                                                  |                          | Catalog Number                      | Part Number |
|                                                                                                  | 400                      | M4H400T2L                           | 1101762     |
|                                                                                                  | 500                      | M4H500T2L                           | 1101763     |
|                                                                                                  | 600                      | M4H600T2L                           | 1101764     |



| M4H<br>3 Pole<br><br>100 kA @ 480 Vac<br>150 kA @ 240 Vac<br>50 kA @ 600 Vac | Rated<br>Amperage<br>(A) | 3-Pole                                   |             |
|------------------------------------------------------------------------------|--------------------------|------------------------------------------|-------------|
|                                                                              |                          | Adjustable Magnetic • Adjustable Thermal |             |
|                                                                              |                          | Catalog Number                           | Part Number |
|                                                                              | 400                      | M4H400T3L                                | 1101750     |
|                                                                              | 500                      | M4H500T3L                                | 1101751     |
|                                                                              | 600                      | M4H600T3L                                | 1101752     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

\*3-Pole Case

|                            |         |                         |         |                   |          |
|----------------------------|---------|-------------------------|---------|-------------------|----------|
| Specifications .....       | A21-A24 | Trip Curve .....        | A29-A36 | Accessories ..... | D77-D104 |
| Interruption Polarity..... | A24     | Dimensions .....        | A37-A41 |                   |          |
| Trip Unit .....            | A25-A28 | Mounting Position ..... | A42-A45 |                   |          |

## M5 Lug Line/Load Side Connection



| <b>M5S</b><br>2 Pole in a<br>3 Pole Case<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>2-Pole*</b><br>Adjustable Magnetic • Adjustable Thermal |             |
|---------------------------------------------------------------------------------------------------|--------------------------|------------------------------------------------------------|-------------|
|                                                                                                   |                          | Catalog Number                                             | Part Number |
|                                                                                                   |                          | 600                                                        | M5S600T2L   |
|                                                                                                   | 700                      | M5S700T2L                                                  | 1102011     |
|                                                                                                   | 800                      | M5S800T2L                                                  | 1102012     |



| <b>M5S</b><br>3 Pole<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b><br>Adjustable Magnetic • Adjustable Thermal |             |
|-------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------|-------------|
|                                                                               |                          | Catalog Number                                            | Part Number |
|                                                                               |                          | 600                                                       | M5S600T3L   |
|                                                                               | 700                      | M5S700T3L                                                 | 1102029     |
|                                                                               | 800                      | M5S800T3L                                                 | 1102030     |

| <b>M5S</b><br>4 Pole<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b><br>Neutral 0% Protection<br>Fixed Magnetic • Adjustable Thermal |             |
|-------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------|-------------|
|                                                                               |                          | Catalog Number                                                                | Part Number |
|                                                                               |                          | 600                                                                           | M5S600T4L   |
|                                                                               | 700                      | M5S700T4L                                                                     | 1102047     |
|                                                                               | 800                      | M5S800T4L                                                                     | 1102048     |

| <b>M5S</b><br>4 Pole<br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b><br>Neutral 100% Protection<br>Fixed Magnetic • Adjustable Thermal |             |
|-------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------|-------------|
|                                                                               |                          | Catalog Number                                                                  | Part Number |
|                                                                               |                          | 600                                                                             | M5S600T4LC  |
|                                                                               | 700                      | M5S700T4LC                                                                      | 1102065     |
|                                                                               | 800                      | M5S800T4LC                                                                      | 1102066     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

\*3-Pole Case

Specifications ..... A21-A24  
 Interruption Polarity..... A24  
 Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
 Dimensions..... A37-A41  
 Mounting Position ..... A42-A45

Accessories ..... D77-D104

## M5 Lug Line/Load Side Connection



| <b>M5N</b><br><b>2 Pole in a 3 Pole Case</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>30 kA @ 600 Vac | Rated Amperage (A) | <b>2-Pole*</b>                             |             |
|--------------------------------------------------------------------------------------------------------|--------------------|--------------------------------------------|-------------|
|                                                                                                        |                    | <b>Fixed Magnetic • Adjustable Thermal</b> |             |
|                                                                                                        |                    | Catalog Number                             | Part Number |
|                                                                                                        | 600                | M5N600T2L                                  | 1102013     |
|                                                                                                        | 700                | M5N700T2L                                  | 1102014     |
|                                                                                                        | 800                | M5N800T2L                                  | 1102015     |



| <b>M5N</b><br><b>3 Pole</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>30 kA @ 600 Vac | Rated Amperage (A) | <b>3-Pole</b>                                   |             |
|---------------------------------------------------------------------------------------|--------------------|-------------------------------------------------|-------------|
|                                                                                       |                    | <b>Adjustable Magnetic • Adjustable Thermal</b> |             |
|                                                                                       |                    | Catalog Number                                  | Part Number |
|                                                                                       | 600                | M5N600T3L                                       | 1102031     |
|                                                                                       | 700                | M5N700T3L                                       | 1102032     |
|                                                                                       | 800                | M5N800T3L                                       | 1102033     |

| <b>M5N</b><br><b>4 Pole</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>30 kA @ 600 Vac | Rated Amperage (A) | <b>4-Pole</b><br>Neutral 0% Protection     |             |
|---------------------------------------------------------------------------------------|--------------------|--------------------------------------------|-------------|
|                                                                                       |                    | <b>Fixed Magnetic • Adjustable Thermal</b> |             |
|                                                                                       |                    | Catalog Number                             | Part Number |
|                                                                                       | 600                | M5N600T4L                                  | 1102049     |
|                                                                                       | 700                | M5N700T4L                                  | 1102050     |
|                                                                                       | 800                | M5N800T4L                                  | 1102051     |

| <b>M5N</b><br><b>4 Pole</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>30 kA @ 600 Vac | Rated Amperage (A) | <b>4-Pole</b><br>Neutral 100% Protection   |             |
|---------------------------------------------------------------------------------------|--------------------|--------------------------------------------|-------------|
|                                                                                       |                    | <b>Fixed Magnetic • Adjustable Thermal</b> |             |
|                                                                                       |                    | Catalog Number                             | Part Number |
|                                                                                       | 600                | M5N600T4LC                                 | 1102067     |
|                                                                                       | 700                | M5N700T4LC                                 | 1102068     |
|                                                                                       | 800                | M5N800T4LC                                 | 1102069     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

\*3-Pole Case

Specifications ..... A21-A24  
 Interruption Polarity..... A24  
 Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
 Dimensions..... A37-A41  
 Mounting Position ..... A42-A45

Accessories..... D77-D104

## M5 Lug Line/Load Side Connection



| <b>M5H</b><br>2 Pole in a<br>3 Pole Case<br>100 kA @ 480 Vac<br>150 kA @ 240 Vac<br>50 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>2-Pole*</b><br>Fixed Magnetic • Adjustable Thermal |             |
|-----------------------------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------|-------------|
|                                                                                                     |                          | Catalog Number                                        | Part Number |
|                                                                                                     |                          | 600                                                   | M5H600T2L   |
|                                                                                                     | 700                      | M5H700T2L                                             | 1102017     |
|                                                                                                     | 800                      | M5H800T2L                                             | 1102018     |



| <b>M5H</b><br>3 Pole<br>100 kA @ 480 Vac<br>150 kA @ 240 Vac<br>50 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b><br>Adjustable Magnetic • Adjustable Thermal |             |
|---------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------|-------------|
|                                                                                 |                          | Catalog Number                                            | Part Number |
|                                                                                 |                          | 600                                                       | M5H600T3L   |
|                                                                                 | 700                      | M5H700T3L                                                 | 1102035     |
|                                                                                 | 800                      | M5H800T3L                                                 | 1102036     |

| <b>M5H</b><br>4 Pole<br>100 kA @ 480 Vac<br>150 kA @ 240 Vac<br>50 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b><br>Neutral 0% Protection<br>Fixed Magnetic • Adjustable Thermal |             |
|---------------------------------------------------------------------------------|--------------------------|-------------------------------------------------------------------------------|-------------|
|                                                                                 |                          | Catalog Number                                                                | Part Number |
|                                                                                 |                          | 600                                                                           | M5H600T4L   |
|                                                                                 | 700                      | M5H700T4L                                                                     | 1102053     |
|                                                                                 | 800                      | M5H800T4L                                                                     | 1102054     |

| <b>M5H</b><br>4 Pole<br>100 kA @ 480 Vac<br>150 kA @ 240 Vac<br>50 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b><br>Neutral 100% Protection<br>Fixed Magnetic • Adjustable Thermal |             |
|---------------------------------------------------------------------------------|--------------------------|---------------------------------------------------------------------------------|-------------|
|                                                                                 |                          | Catalog Number                                                                  | Part Number |
|                                                                                 |                          | 600                                                                             | M5H600T4LC  |
|                                                                                 | 700                      | M5H700T4LC                                                                      | 1102071     |
|                                                                                 | 800                      | M5H800T4LC                                                                      | 1102072     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

\*3-Pole Case

Specifications ..... A21-A24  
 Interruption Polarity..... A24  
 Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
 Dimensions..... A37-A41  
 Mounting Position ..... A42-A45

Accessories ..... D77-D104

## M6 Lug Line/Load Side Connection



| <b>M6S</b><br><b>3 Pole</b><br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b><br><b>Electronic Trip Unit • 80% Rated</b> |             |
|--------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------|-------------|
|                                                                                      |                          | Catalog Number                                           | Part Number |
|                                                                                      |                          | 800                                                      | M6S800E3L   |
|                                                                                      | 1000                     | M6S1000E3L                                               | 1101842     |
|                                                                                      | 1200                     | M6S1200E3L                                               | 1101843     |



| <b>M6S</b><br><b>3 Pole</b><br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b><br><b>Electronic Trip Unit • 100% Rated</b> |             |
|--------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------|-------------|
|                                                                                      |                          | Catalog Number                                            | Part Number |
|                                                                                      |                          | 800                                                       | M6S800E3LF  |
|                                                                                      | 1000                     | M6S1000E3LF                                               | 1101902     |
|                                                                                      | 1200                     | M6S1200E3LF                                               | 1101903     |



| <b>M6S</b><br><b>4 Pole</b><br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b><br><b>Electronic Trip Unit • 80% Rated</b> |             |
|--------------------------------------------------------------------------------------|--------------------------|----------------------------------------------------------|-------------|
|                                                                                      |                          | Catalog Number                                           | Part Number |
|                                                                                      |                          | 800                                                      | M6S800E4L   |
|                                                                                      | 1000                     | M6S1000E4L                                               | 1101854     |
|                                                                                      | 1200                     | M6S1200E4L                                               | 1101855     |



| <b>M6S</b><br><b>4 Pole</b><br>42 kA @ 480 Vac<br>65 kA @ 240 Vac<br>22 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b><br><b>Electronic Trip Unit • 100% Rated</b> |             |
|--------------------------------------------------------------------------------------|--------------------------|-----------------------------------------------------------|-------------|
|                                                                                      |                          | Catalog Number                                            | Part Number |
|                                                                                      |                          | 800                                                       | M6S800E4LF  |
|                                                                                      | 1000                     | M6S1000E4LF                                               | 1101914     |
|                                                                                      | 1200                     | M6S1200E4LF                                               | 1101915     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

Specifications ..... A21-A24  
 Interruption Polarity..... A24  
 Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
 Dimensions..... A37-A41  
 Mounting Position ..... A42-A45

Accessories ..... D77-D104

## M6 Lug Line/Load Side Connection



| <b>M6N</b><br><b>3 Pole</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>42 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b>                           |             |
|---------------------------------------------------------------------------------------|--------------------------|-----------------------------------------|-------------|
|                                                                                       |                          | <b>Electronic Trip Unit • 80% Rated</b> |             |
|                                                                                       |                          | Catalog Number                          | Part Number |
|                                                                                       | 800                      | M6N800E3L                               | 1101844     |
|                                                                                       | 1000                     | M6N1000E3L                              | 1101845     |
|                                                                                       | 1200                     | M6N1200E3L                              | 1101846     |



| <b>M6N</b><br><b>3 Pole</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>42 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>3-Pole</b>                            |             |
|---------------------------------------------------------------------------------------|--------------------------|------------------------------------------|-------------|
|                                                                                       |                          | <b>Electronic Trip Unit • 100% Rated</b> |             |
|                                                                                       |                          | Catalog Number                           | Part Number |
|                                                                                       | 800                      | M6N800E3LF                               | 1101904     |
|                                                                                       | 1000                     | M6N1000E3LF                              | 1101905     |
|                                                                                       | 1200                     | M6N1200E3LF                              | 1101906     |



| <b>M6N</b><br><b>4 Pole</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>42 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b>                           |             |
|---------------------------------------------------------------------------------------|--------------------------|-----------------------------------------|-------------|
|                                                                                       |                          | <b>Electronic Trip Unit • 80% Rated</b> |             |
|                                                                                       |                          | Catalog Number                          | Part Number |
|                                                                                       | 800                      | M6N800E4L                               | 1101856     |
|                                                                                       | 1000                     | M6N1000E4L                              | 1101857     |
|                                                                                       | 1200                     | M6N1200E4L                              | 1101858     |



| <b>M6N</b><br><b>4 Pole</b><br>65 kA @ 480 Vac<br>100 kA @ 240 Vac<br>42 kA @ 600 Vac | Rated<br>Amperage<br>(A) | <b>4-Pole</b>                            |             |
|---------------------------------------------------------------------------------------|--------------------------|------------------------------------------|-------------|
|                                                                                       |                          | <b>Electronic Trip Unit • 100% Rated</b> |             |
|                                                                                       |                          | Catalog Number                           | Part Number |
|                                                                                       | 800                      | M6N800E4LF                               | 1101916     |
|                                                                                       | 1000                     | M6N1000E4LF                              | 1101917     |
|                                                                                       | 1200                     | M6N1200E4LF                              | 1101918     |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

Specifications ..... A21-A24  
 Interruption Polarity..... A24  
 Trip Unit..... A25-A28

Trip Curve ..... A29-A36  
 Dimensions..... A37-A41  
 Mounting Position ..... A42-A45

Accessories ..... D77-D104

## M1PVS Specifications

|                                            |                    | M1PVS                                      |
|--------------------------------------------|--------------------|--------------------------------------------|
| Rated Service Current                      |                    | 15, 20, 25, 30, 35, 40, 45, 50, 60, 70, 80 |
| Number of Poles                            |                    | 3                                          |
| Rated Service Voltage                      |                    | 1000Vdc                                    |
| Short-Circuit Interrupting Rating @1000Vdc |                    | 10                                         |
| Trip Unit                                  |                    | TM                                         |
| Ambient Temperature                        |                    | -20°C~50°C                                 |
| Certification                              |                    | UL489B                                     |
| Mechanical Life                            |                    | 10,000                                     |
| Electrical Life (Operations @1000Vdc)      |                    | 1,000                                      |
| Dimensions (mm/in)                         | M1PVS-A/B          | W 90 (3.5)                                 |
|                                            |                    | D 84.5 (3.33)                              |
|                                            |                    | H 201 (7.91)                               |
|                                            | M1PVS-C/D          | W 90 (3.5)                                 |
|                                            |                    | D 84.5 (3.33)                              |
|                                            |                    | H 238 (9.37)                               |
| Weight (With Jumper)                       | M1PVS-A/B (kg/lbs) | 1.50/3.29                                  |
|                                            | M1PVS-C/D (kg/lbs) | 1.659/3.64                                 |
| <b>Accessories</b>                         |                    |                                            |
| Alarm Switch                               |                    | ■                                          |
| Auxiliary Contact                          |                    | ■                                          |
| Shunt Trip                                 |                    | ■                                          |
| Under-Voltage Trip                         |                    | ■                                          |
| Handle Lock                                |                    | ■                                          |
| Flange Handle                              |                    | ■                                          |
| Rotary Handle                              |                    | ■                                          |
| Mechanical Interlock                       |                    | ■                                          |
| Motor Operator                             |                    | ■                                          |
| <b>Terminations</b>                        |                    |                                            |
| Connections                                |                    | Jumpers                                    |
| Cable Selection                            |                    | CU                                         |

A

## M1-M3 Specifications

|                                                                            |                                                            | M1        |                              |     |     |                                                 |     |     | M2        |         |     |    |       |     |    | M3      |     |    |
|----------------------------------------------------------------------------|------------------------------------------------------------|-----------|------------------------------|-----|-----|-------------------------------------------------|-----|-----|-----------|---------|-----|----|-------|-----|----|---------|-----|----|
| Rated Current (A)                                                          |                                                            | 15~150    |                              |     |     |                                                 |     |     | 100~250   |         |     |    |       |     |    | 225~400 |     |    |
| Number of Poles                                                            |                                                            | 1         | 2                            |     |     | 2*, 3                                           |     |     | 1         | 2       |     |    | 2*,3  |     |    |         |     |    |
| Breaker Type                                                               |                                                            | N         | S                            | N   | H   | S                                               | N   | H   | N         | S       | N   | S  | N     | H   | S  | N       | H   |    |
| Rated Voltage<br>50/60 Hz                                                  | Vac                                                        | 480       | 600                          |     |     | 600**                                           |     |     | 480       | 600     |     |    | 600** |     |    |         |     |    |
|                                                                            | Vdc                                                        | 250       | 500                          |     |     |                                                 |     |     | 250       | 500     |     |    |       |     |    |         |     |    |
| Interrupting Capacity (kA rms)                                             |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Circuit Breaker Ratings<br>UL 489<br>CSA C22.2<br>(kA rms)<br>Vac 50/60 Hz | 240 Vac                                                    | 50        | 50                           | 100 | 150 | 50                                              | 100 | 150 | 50        | 50      | 100 | 50 | 100   | 150 | 65 | 100     | 150 |    |
|                                                                            | 480 Vac                                                    | 10        | 35                           | 65  | 100 | 35                                              | 65  | 100 | 10        | 35      | 65  | 35 | 65    | 100 | 42 | 65      | 100 |    |
|                                                                            | 600 Vac                                                    | -         | 14                           | 20  | 25  | 14                                              | 20  | 25  | -         | 14      | 20  | 14 | 20    | 25  | 18 | 25      | 30  |    |
|                                                                            | 250 Vdc 1 Pole                                             | 25        | -                            |     |     |                                                 |     |     | 25        | -       |     |    |       |     |    |         |     |    |
|                                                                            | 500 Vdc 2 Poles                                            | -         | 20                           | 35  | 50  | 20                                              | 35  | 50  | -         | 20      | 35  | 20 | 35    | 50  | 35 | 50      | 65  |    |
|                                                                            | 600 Vdc 3 Poles                                            | -         |                              |     |     | 20                                              | 35  | 50  | -         |         |     | 20 | 35    | 50  | 35 | 50      | 65  |    |
| Circuit Breaker Ratings<br>IEC 60947-2                                     | 220 / 240 Vac                                              | 50        | 50                           | 100 | 150 | 50                                              | 100 | 150 | 50        | 50      | 100 | 50 | 100   | 150 | 65 | 100     | 150 |    |
|                                                                            | 380 / 415 Vac                                              | -         | 5                            | 8   | 10  | 5                                               | 8   | 10  | -         | 6       | 10  | 6  | 10    | 12  | 10 | 15      | 20  |    |
|                                                                            | 660 / 690 Vac                                              | -         | 5                            | 8   | 10  | 5                                               | 8   | 10  | -         | 6       | 10  | 6  | 10    | 12  | 10 | 15      | 20  |    |
|                                                                            | 250 Vdc 1 Pole                                             | 25        | -                            |     |     |                                                 |     |     | 25        | -       |     |    |       |     |    |         |     |    |
|                                                                            | 500 Vdc 2 Poles                                            | -         | 20                           | 35  | 50  | 20                                              | 35  | 50  | -         |         |     | 20 | 35    | 50  | 35 | 50      | 65  |    |
|                                                                            | 500 Vdc 3 Poles                                            | -         | -                            |     |     |                                                 | 25  | 35  | 50        | -       |     |    | 25    | 35  | 50 | 35      | 50  | 65 |
| Current Rating (A) @ 104 °F (40 °C)                                        |                                                            | 15~150    |                              |     |     |                                                 |     |     | 100~250   |         |     |    |       |     |    | 225~400 |     |    |
| Thermal-Magnetic<br>Trip Units                                             | A = Adjustable<br>T = Thermal<br>F = Fixed<br>M = Magnetic | FT/<br>FM | 15~45 FT/FM<br>50~150A AT/FM |     |     | 15~45A FT/FM<br>50~100A AT/FM<br>125~150A AT/AM |     |     | FT/<br>FM | AT / AM |     |    |       |     |    |         |     |    |
| Accessories                                                                |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Alarm Switch                                                               |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Auxiliary Contact                                                          |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Shunt Trip                                                                 |                                                            | -         | ■                            |     |     |                                                 |     |     | -         | ■       |     |    |       |     |    |         |     |    |
| Under-Voltage Trip                                                         |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Handle Operators                                                           |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Handle Lock                                                                |                                                            | ■         |                              |     |     | ■                                               |     |     | ■         |         |     |    | ■     |     |    |         |     |    |
| Flange Handle                                                              |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Mechanical Interlock                                                       |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Handle Operators                                                           |                                                            | -         |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Motor Operator                                                             |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Terminal Cover and Kits                                                    |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Connection                                                                 |                                                            |           |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |
| Lug Line/Load Side Connection                                              |                                                            | ■         |                              |     |     |                                                 |     |     |           |         |     |    |       |     |    |         |     |    |

\* 2 pole in a 3 pole case

\*\* 600 Vdc only available for 3 pole and 4 pole

# M4-M6 Specifications

|                                                                            |                                                            | M4      |     |     | M5      |     |     | M6         |         |
|----------------------------------------------------------------------------|------------------------------------------------------------|---------|-----|-----|---------|-----|-----|------------|---------|
| Rated Current (A)                                                          |                                                            | 400~600 |     |     | 600~800 |     |     | 800~1,200  |         |
| Number of Poles                                                            |                                                            | 2*,3    |     |     | 2*,3,4  |     |     | 3, 4       |         |
| Breaker Type                                                               |                                                            | S       | N   | H   | S       | N   | H   | S          | N       |
| Rated Voltage<br>50/60 Hz                                                  | Vac                                                        | 600**   |     |     |         |     |     | 600        |         |
|                                                                            | Vdc                                                        |         |     |     |         |     |     | -          |         |
| Interrupting Capacity (kA rms)                                             |                                                            |         |     |     |         |     |     |            |         |
| Circuit Breaker Ratings<br>UL 489<br>CSA C22.2<br>(kA rms)<br>Vac 50/60 Hz | 240 Vac                                                    | 65      | 100 | 150 | 65      | 100 | 150 | 65         | 100     |
|                                                                            | 480 Vac                                                    | 42      | 65  | 100 | 42      | 65  | 100 | 42         | 65      |
|                                                                            | 600 Vac                                                    | 22      | 30  | 50  | 22      | 30  | 50  | 22         | 42      |
|                                                                            | 500 Vdc 2 Poles                                            | 35      | 50  | 65  | 35      | 50  | 65  | -          |         |
|                                                                            | 600 Vdc 3 Poles                                            | 35      | 50  | 65  | 35      | 50  | 65  |            |         |
| Circuit Breaker Ratings<br>IEC 60947-2                                     | 220 / 240 Vac                                              | 65      | 100 | 150 | 65      | 100 | 150 | 65<br>(45) | 85 (45) |
|                                                                            | 380 / 415 Vac                                              |         |     |     |         |     |     |            |         |
|                                                                            | 660 / 690 Vac                                              | 12      | 15  | 20  | 12      | 15  | 20  | 30         | 30      |
| Ultimate Breaking<br>Capacity (Icu = 100% Ics)<br>(kA rms)                 | 500 Vdc 3 Poles                                            | 35      | 50  | 65  | 35      | 50  | 65  | -          |         |
|                                                                            | 500 Vdc 2 Poles                                            | 35      | 50  | 65  | 35      | 50  | 65  |            |         |
| Current Rating (A) @ 104 °F (40 °C)                                        |                                                            | 400~600 |     |     | 600~800 |     |     | 800~1,200  |         |
| Thermal-Magnetic<br>Trip Units                                             | A = Adjustable<br>T = Thermal<br>F = Fixed<br>M = Magnetic | AT / AM |     |     |         |     |     | Electronic |         |
| Accessories                                                                |                                                            |         |     |     |         |     |     |            |         |
| Alarm Switch                                                               |                                                            |         |     |     |         |     |     |            |         |
| Auxiliary Contact                                                          |                                                            |         |     |     |         |     |     |            |         |
| Shunt Trip                                                                 |                                                            |         |     |     |         |     |     |            |         |
| Under-Voltage Trip                                                         |                                                            |         |     |     |         |     |     |            |         |
| Handle Operators                                                           |                                                            |         |     |     | ■       |     |     | ■          |         |
| Handle Lock                                                                |                                                            | ■       |     |     |         |     |     |            |         |
| Flange Handle                                                              |                                                            |         |     |     |         |     |     |            |         |
| Mechanical Interlock                                                       |                                                            |         |     |     |         |     |     |            |         |
| Motor Operator                                                             |                                                            |         |     |     |         |     |     |            |         |
| Terminal Cover and Kits                                                    |                                                            |         |     |     | -       |     |     | -          |         |
| Connection                                                                 |                                                            |         |     |     |         |     |     |            |         |
| Lug Line/Load Side Connection                                              |                                                            |         |     |     | ■       |     |     |            |         |

\* 2 pole in a 3 pole case

\*\* 600 Vdc only available for 3 pole and 4 pole

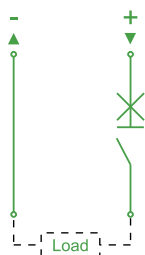
## M1-M6 Specifications

|                                                                   |          | M1                              | M2                             | M3                                  | M4                               | M5                                 |                                                     | M6      |                                |         |                               |
|-------------------------------------------------------------------|----------|---------------------------------|--------------------------------|-------------------------------------|----------------------------------|------------------------------------|-----------------------------------------------------|---------|--------------------------------|---------|-------------------------------|
| Insulation Voltage (Vi)                                           |          | 800 Vac                         |                                |                                     |                                  |                                    |                                                     |         |                                |         |                               |
| Impulse Withstand Voltage (Vimp)                                  |          | 8 kVac                          |                                |                                     |                                  |                                    |                                                     |         |                                |         |                               |
| Operational Voltage (Ve)                                          | IEC      | 690 Vac                         |                                |                                     |                                  |                                    |                                                     |         |                                |         |                               |
|                                                                   | UL       | 600 Vac                         |                                |                                     |                                  |                                    |                                                     |         |                                |         |                               |
| IEC Ics (% Icu)                                                   |          | 100%                            |                                |                                     |                                  |                                    |                                                     |         |                                |         |                               |
| Operating temperature                                             |          | -25°C to 70°C                   |                                |                                     |                                  |                                    |                                                     |         |                                |         |                               |
| Utilization Category                                              |          | A                               |                                |                                     |                                  |                                    |                                                     |         |                                |         |                               |
| Mechanical Operating Cycles                                       |          | 10,000                          |                                |                                     | 8,000                            |                                    | 3,000                                               |         |                                |         |                               |
| Electrical Operating Cycles                                       |          | 6,000                           |                                |                                     | 5,000                            |                                    | 500                                                 |         |                                |         |                               |
| Dimensions<br>LxWxD in (mm)                                       | 1 Pole   | 6.46x1.4x3.33<br>(164x35x84.5)  | 7.17x1.57x3.47<br>(182x40x88)  | -                                   |                                  |                                    |                                                     |         |                                |         |                               |
|                                                                   | 2 Poles  | 6.46x2.44x3.33<br>(164x62x84.5) | 7.17x2.95x3.47<br>(182x75x88)  | -                                   |                                  |                                    |                                                     |         |                                |         |                               |
|                                                                   | 2 Poles* | 6.46x3.54x3.33<br>(164x90x84.5) | 7.17x4.13x3.47<br>(182x105x88) | 11.22x5.51x4.59<br>(285x140x116.5)  | 12.32x7.68x5.43<br>(313x195x138) | -                                  |                                                     |         |                                |         |                               |
|                                                                   | 3 Poles  |                                 |                                |                                     |                                  | 16.18x7.68x7.58<br>(411x195x192.5) | 17.72x8.27x6.6<br>(450x210x167.6)                   |         |                                |         |                               |
|                                                                   | 4 Poles  | -                               |                                |                                     |                                  | 16.18x10.2x7.58<br>(411x260x192.5) | 17.72x11.43x6.6<br>(450x280x167.6)                  |         |                                |         |                               |
| Weight of Unit lb (kg)                                            | 1 Pole   | 1.47 (0.67)                     | 1.76 (0.8)                     | -                                   |                                  |                                    |                                                     |         |                                |         |                               |
|                                                                   | 2 Poles  | 2.53 (1.15)                     | 3.3 (1.5)                      | -                                   |                                  |                                    |                                                     |         |                                |         |                               |
|                                                                   | 2 Poles* | 3.17 (1.44)                     | 3.75 (1.70)                    | 8.97 (4.07)                         | 20.94 (9.5)                      | 27.8 (12.5)                        | -                                                   |         |                                |         |                               |
|                                                                   | 3 Poles  | 3.68 (1.67)                     | 4.41 (2.00)                    | 13.45 (6.1)                         | 25.35 (11.5)                     | 33.18 (15.05)                      | 55.56 (25.2)                                        |         |                                |         |                               |
|                                                                   | 4 Poles  | -                               |                                |                                     |                                  | 43.43 (19.7)                       | 69.67 (31.6)                                        |         |                                |         |                               |
| Cable Connection Wire<br>167 °F (75 °C) Cu Wire Only<br>AWG (mm²) |          | 1-Hole                          | 14-3/0<br>(2.5-95)             | 1-Hole<br>8 - 350 kcmil<br>(10-185) | 1-Hole                           | 3/0 - 500<br>kcmil<br>(95-240)     | 2-Holes<br>(2x) 3/0 - 400<br>kcmil<br>((2x) 95-185) | 2-Holes | 250-600kc-<br>mil<br>(120-300) | 3-Holes | 3/0-<br>750 kcmil<br>(95-300) |
|                                                                   |          |                                 |                                |                                     | 2-Holes                          | 3 - 250<br>kcmil<br>(35-120)       |                                                     | 3-Holes | 250-500<br>kcmil<br>(100-250)  | 4-Holes | 3/0-<br>500 kcmil<br>(95-240) |
| Lugs in-lb (N.m)                                                  |          | 89 (10)                         |                                | 230 (23)                            | 310 (35)                         |                                    | 398 (45)                                            |         | 310 (35)                       |         |                               |

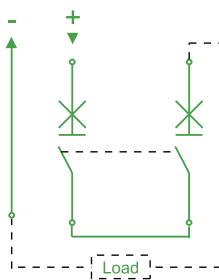
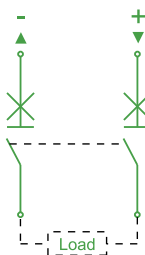
\* 2 pole in a 3 pole case

## M1-M5 Interruption Polarity for DC Application

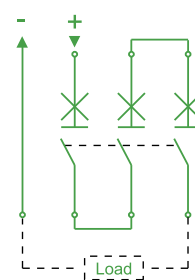
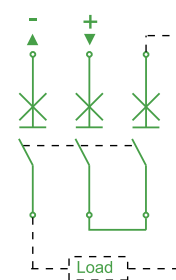
1 Pole



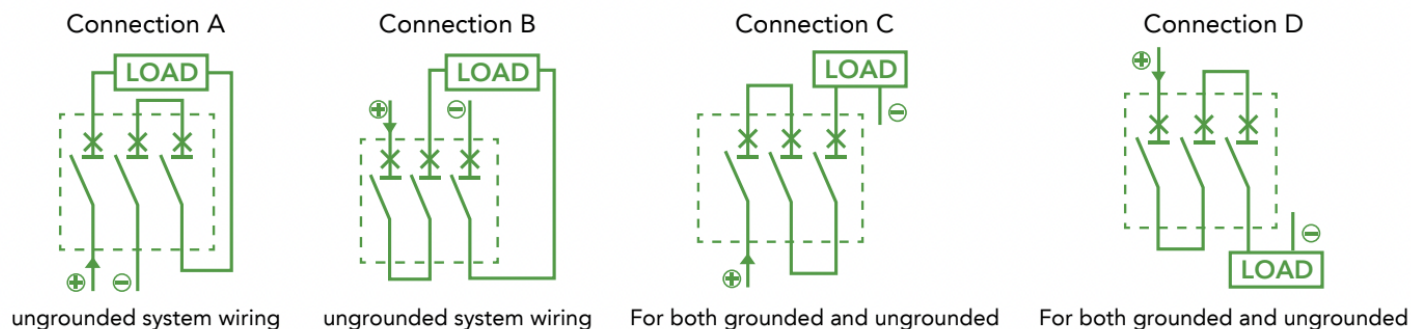
2 Poles



3 Poles

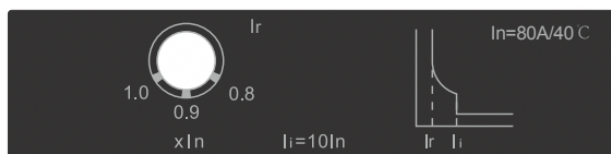


## M1PVS Jumper Connection Type and Trip Unit



### M1PVS

- Fixed Thermal: 15~45 A rated current
- Adjustable Thermal: 50~80 A rated current
- Adjustable: 0.8~1 x  $I_n$
- Fixed Magnetic: 150~800 A tripping current



### M1PVS Trip Unit

|                                         | $I_R$                  | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A |
|-----------------------------------------|------------------------|------|------|------|------|------|------|------|------|------|------|------|
|                                         |                        |      |      |      |      |      |      |      |      |      |      |      |
| Adjustable Thermal Overload Protection  | 0.8 $\times I_n$       |      |      |      |      |      |      |      | 40   | 48   | 56   | 64   |
|                                         | 0.9 $\times I_n$       |      |      |      |      |      |      |      | 45   | 54   | 63   | 72   |
|                                         | 1.0 $\times I_n$       |      |      |      |      |      |      |      | 50   | 60   | 70   | 80   |
| Fixed Magnetic Short Circuit Protection | $I_i$                  | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A |
|                                         | Fixed 1.0 $\times I_n$ | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 600  | 700  | 800  |

## M1 Trip Unit

### M1 1 Pole

- Fixed Magnetic: 150~1,500 A tripping current
- Fixed Thermal: 15~150 A rated current

### M1 2 Poles

- Fixed Thermal: 15~45 A rated current
- Adjustable Thermal: 50~150 A rated current  
Adjustable: 0.8~1 x  $I_n$
- Fixed Magnetic: 150~1,500 A tripping current

### M1 3 Poles

- Fixed Thermal: 15~45A rated current
- Adjustable Thermal: 50~150A rated current  
Adjustable: 0.8~1 x  $I_n$
- Fixed Magnetic: 150~1,000 A tripping current
- Adjustable Magnetic: 125~150 A rated current  
Adjustable: 5~10 x  $I_n$



### M1 - 1 Pole

| Fixed Thermal<br>Overload Protection          | $I_R$                | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A | 90 A | 100 A | 125 A | 150 A |
|-----------------------------------------------|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
|                                               | Fixed<br>1.0 x $I_n$ | 15   | 20   | 25   | 30   | 35   | 40   | 45   | 50   | 60   | 70   | 80   | 90   | 100   | 125   | 150   |
| Fixed Magnetic<br>Short Circuit<br>Protection | $I_i$                | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A | 90 A | 100 A | 125 A | 150 A |
|                                               | Fixed<br>10 x $I_n$  | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 600  | 700  | 800  | 900  | 1000  | 1250  | 1500  |

### M1 - 2 Poles

| Fixed Thermal<br>Overload Protection          | $I_R$                | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A | 90 A | 100 A | 125 A | 150 A |
|-----------------------------------------------|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
|                                               | Fixed<br>1.0 x $I_n$ | 15   | 20   | 25   | 30   | 35   | 40   | 45   |      |      |      |      |      |       |       |       |
| Adjustable<br>Thermal Overload<br>Protection  | 0.8 x $I_n$          |      |      |      |      |      |      |      | 40   | 48   | 56   | 64   | 72   | 80    | 100   | 120   |
|                                               | 0.9 x $I_n$          |      |      |      |      |      |      |      | 45   | 54   | 63   | 72   | 81   | 90    | 112.5 | 135   |
|                                               | 1.0 x $I_n$          |      |      |      |      |      |      |      | 50   | 60   | 70   | 80   | 90   | 100   | 125   | 150   |
| Fixed Magnetic<br>Short Circuit<br>Protection | $I_R$                | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A | 90 A | 100 A | 125 A | 150 A |
|                                               | Fixed<br>1.0 x $I_n$ | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 600  | 700  | 800  | 900  | 1000  | 1250  | 1500  |

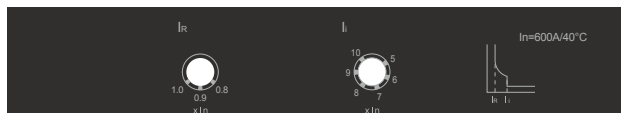
### M1 - 3 Pole

| Fixed Thermal<br>Overload Protection               | $I_R$                | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A | 90 A | 100 A | 125 A | 150 A |
|----------------------------------------------------|----------------------|------|------|------|------|------|------|------|------|------|------|------|------|-------|-------|-------|
|                                                    | Fixed<br>1.0 x $I_n$ | 15   | 20   | 25   | 30   | 35   | 40   | 45   |      |      |      |      |      |       |       |       |
| Adjustable Thermal<br>Overload Protection          | 0.8 x $I_n$          |      |      |      |      |      |      |      | 40   | 48   | 56   | 64   | 72   | 80    | 100   | 120   |
|                                                    | 0.9 x $I_n$          |      |      |      |      |      |      |      | 45   | 54   | 63   | 72   | 81   | 90    | 112.5 | 135   |
|                                                    | 1.0 x $I_n$          |      |      |      |      |      |      |      | 50   | 60   | 70   | 80   | 90   | 100   | 125   | 150   |
| Fixed Magnetic<br>Short Circuit<br>Protection      | $I_i$                | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A | 90 A | 100 A | 125 A | 150 A |
|                                                    | Fixed<br>1.0 x $I_n$ | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 600  | 700  | 800  | 900  | 1000  | 1250  | 1500  |
| Adjustable<br>Magnetic Short<br>Circuit Protection | $I_i$                | 15 A | 20 A | 25 A | 30 A | 35 A | 40 A | 45 A | 50 A | 60 A | 70 A | 80 A | 90 A | 100 A | 125 A | 150 A |
|                                                    | 5 x $I_n$            |      |      |      |      |      |      |      |      |      |      |      |      |       | 625   | 750   |
|                                                    | 6 x $I_n$            |      |      |      |      |      |      |      |      |      |      |      |      |       | 750   | 900   |
|                                                    | 7 x $I_n$            |      |      |      |      |      |      |      |      |      |      |      |      |       | 875   | 1050  |
|                                                    | 8 x $I_n$            |      |      |      |      |      |      |      |      |      |      |      |      |       | 1000  | 1200  |
|                                                    | 9 x $I_n$            |      |      |      |      |      |      |      |      |      |      |      |      |       | 1125  | 1350  |
|                                                    | 10 x $I_n$           |      |      |      |      |      |      |      |      |      |      |      |      |       | 1250  | 1500  |

## M2-M5 Trip Unit

### M2 1 Pole

- Fixed Magnetic: 1,000~2,500 A tripping current
- Fixed Thermal: 100~250 A rated current



### M2 2 Poles/3 Poles

- Adjustable Thermal: 100-250A rated current  
Adjustable:  $0.8 \sim 1 \times I_n$
- Adjustable Magnetic: 700~2500A tripping current  
Adjustable:  
M2 - 2 Poles/3 Poles  $100 \sim 150 = 7 \sim 12 \times I_n$   
M2 - 2 Poles/3 Poles  $175 \sim 250 = 5 \sim 10 \times I_n$

### M3/M4/M5 3 Poles

- Adjustable Thermal: 225 ~ 800A  
Adjustable:  $0.8 \sim 1 \times I_n$
- Adjustable Magnetic: 1125-8000A tripping current  
Adjustable:  $5 \sim 10 \times I_n$

### M2 - 1 Pole

| Fixed Thermal Overload Protection       | $I_R$                  | 100 A | 125 A | 150 A | 175 A | 200 A | 225 A | 250 A |
|-----------------------------------------|------------------------|-------|-------|-------|-------|-------|-------|-------|
|                                         | Fixed $1.0 \times I_n$ | 100   | 125   | 150   | 175   | 200   | 225   | 250   |
| Fixed Magnetic Short Circuit Protection | $I_i$                  | 100A  | 125A  | 150A  | 175A  | 200A  | 225A  | 250A  |
|                                         | Fixed $10 \times I_n$  | 1000  | 1250  | 1500  | 1750  | 2000  | 2250  | 2500  |

### M2 - 2 Poles/3 Pole

| Adjustable Thermal Overload Protection       | $I_R$            | 100 A | 125 A | 150 A | 175 A | 200 A | 225 A | 250 A |
|----------------------------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|
|                                              | $0.8 \times I_n$ | 80    | 100   | 120   | 140   | 160   | 180   | 200   |
|                                              | $0.9 \times I_n$ | 90    | 112.5 | 135   | 157.5 | 180   | 202.5 | 225   |
|                                              | $1.0 \times I_n$ | 100   | 125   | 150   | 175   | 200   | 225   | 250   |
| Adjustable Magnetic Short Circuit Protection | $I_i$            | 100 A | 125 A | 150 A | 175 A | 200 A | 225 A | 250 A |
|                                              | $7 \times I_n$   | 700   | 875   | 1050  |       |       |       |       |
|                                              | $8 \times I_n$   | 800   | 1000  | 1200  |       |       |       |       |
|                                              | $9 \times I_n$   | 900   | 1125  | 1350  |       |       |       |       |
|                                              | $10 \times I_n$  | 1000  | 1250  | 1500  |       |       |       |       |
|                                              | $11 \times I_n$  | 1100  | 1375  | 1650  |       |       |       |       |
|                                              | $12 \times I_n$  | 1200  | 1500  | 1800  |       |       |       |       |
| Adjustable Magnetic Short Circuit Protection | $I_i$            | 100A  | 125A  | 150A  | 175A  | 200A  | 225A  | 250A  |
|                                              | $5 \times I_n$   |       |       |       | 875   | 1000  | 1125  | 1250  |
|                                              | $6 \times I_n$   |       |       |       | 1050  | 1200  | 1350  | 1500  |
|                                              | $7 \times I_n$   |       |       |       | 1225  | 1400  | 1575  | 1750  |
|                                              | $8 \times I_n$   |       |       |       | 1400  | 1600  | 1800  | 2000  |
|                                              | $9 \times I_n$   |       |       |       | 1575  | 1800  | 2025  | 2250  |
|                                              | $10 \times I_n$  |       |       |       | 1750  | 2000  | 2250  | 2500  |

### M3 - 400 A

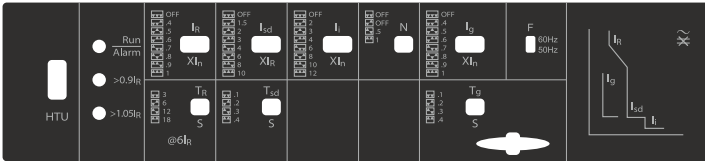
### M4 - 600 A

### M5 - 800 A

| Adjustable Thermal Overload Protection       | $I_R$            | 225 A | 250 A | 300 A | 350 A | 400 A | 400 A | 500 A | 600 A | 600 A | 700 A | 800 A |
|----------------------------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                              | $0.8 \times I_n$ | 180   | 200   | 240   | 280   | 320   | 320   | 400   | 480   | 480   | 560   | 640   |
|                                              | $0.9 \times I_n$ | 202.5 | 225   | 270   | 315   | 360   | 360   | 450   | 540   | 540   | 630   | 720   |
|                                              | $1.0 \times I_n$ | 225   | 250   | 300   | 350   | 400   | 400   | 500   | 600   | 600   | 700   | 800   |
| Adjustable Magnetic Short Circuit Protection | $I_i$            | 225 A | 250 A | 300 A | 350 A | 400 A | 400 A | 500 A | 600 A | 600 A | 700 A | 800 A |
|                                              | $5 \times I_n$   | 1,125 | 1,250 | 1,500 | 1,750 | 2,000 | 2,000 | 2,500 | 3,000 | 3,000 | 3,500 | 4,000 |
|                                              | $6 \times I_n$   | 1,350 | 1,500 | 1,800 | 2,100 | 2,400 | 2,400 | 3,000 | 3,600 | 3,600 | 4,200 | 4,800 |
|                                              | $7 \times I_n$   | 1,575 | 1,750 | 2,100 | 2,450 | 2,800 | 2,800 | 3,500 | 4,200 | 4,200 | 4,800 | 5,600 |
|                                              | $8 \times I_n$   | 1,800 | 2,000 | 2,400 | 2,800 | 3,200 | 3,200 | 4,000 | 4,800 | 4,800 | 5,600 | 6,400 |
|                                              | $9 \times I_n$   | 2,025 | 2,250 | 2,700 | 3,150 | 3,600 | 3,600 | 4,500 | 5,400 | 5,400 | 6,300 | 7,200 |
|                                              | $10 \times I_n$  | 2,250 | 2,500 | 3,000 | 3,500 | 4,000 | 4,000 | 5,000 | 6,000 | 6,000 | 7,000 | 8,000 |

## M6 Trip Unit

### Electronic Trip Unit



**These trip functions are available:**

**L=Long-time Delay:** Long-time Delay Protection Current; Long-time Delay Protection Time

**S=Short-time Delay:** Short-time Delay Protection Current: Short-time Delay Protection Time

**I=Instantaneous Trip**

**G=Ground Fault Protection Current:** Short-time Delay Protection Time

**Neutral Protection:** Long-time Delay, Short-time Delay, Instantaneous protection

**Frequency Selection available:** 50 or 60 Hz

**Long-time delay protection current (IR):** 8 specific setting (IR): OFF, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1.0\*I<sub>n</sub>

**Note:**

Thermal memory function: protect load circuits against the affects of repeated overload conditions. When circuit breaker immediately closes after a long-time trip, and the continuous current exceeds the long-time setting value (I<sub>r</sub>), thermal memory function will automatically reduce the trip time. Given repeated overload current, thermal memory function will make circuit breaker trip in gradually reduced time. When the load current resumes normally, thermal current function will start to reset. It will totally reset in about 1 hour. So next long-time trip time will correspond to the setting value. Thermal memory function will be cleared in OFF setting.

**Long-time delay protection time (TR):** 4 specific setting (TR) @6\*IR: 3s, 6s, 12s, 18s

| Working Current (I)  | Long-time delay protection time (TR) |
|----------------------|--------------------------------------|
| $\leq 1.05 \cdot IR$ | $\geq 2h$ not trip                   |
| $\leq 1.3 \cdot IR$  | $< 1h$ trip                          |
| $= 6 \cdot IR$       | 3s/6s/12s/18s                        |

**Short-time delay protection current (Isd):** 8 specific setting (Isd): OFF, 1.5, 2, 3, 4, 6, 8, 10\*I<sub>r</sub>

**Short-time delay protection time (Tsd):** 4 specific setting (Tsd): 0.1s, 0.2s, 0.3s, 0.4s

**Instantaneous protection Current (Ii):** 8 specific setting (Ii): OFF, 2, 3, 4, 6, 8, 10, 12\*I<sub>n</sub>

**Neutral Protecting:**

**Neutral long-time delay protection, 3 specific setting IR(N):** OFF, 0.5, 1

Neutral Line Short-time delay protection setting, same as power line, Isd(N)

Neutral Line Instantaneous protection setting, same as power line, Ii(N)

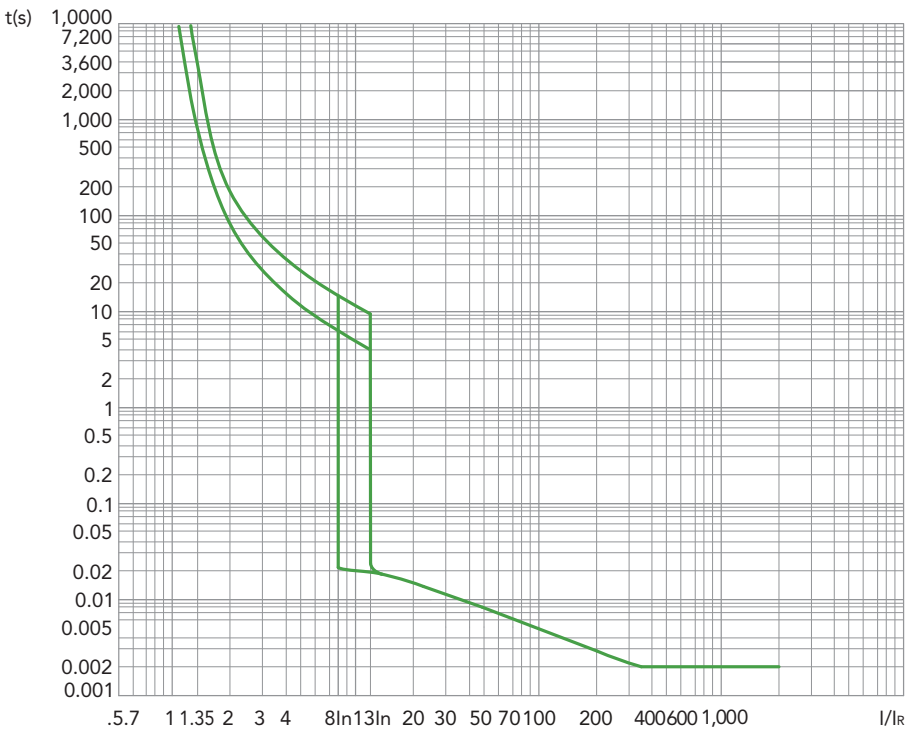
**Ground Fault Protection Current Setting:** 8 specific setting (I<sub>g</sub>): OFF, 0.4, 0.5, 0.6, 0.7, 0.8, 0.9, 1\*I<sub>n</sub>

**Ground Fault Protection Time Setting:** 4 specific setting (T<sub>g</sub>): 0.1s, 0.2s, 0.3s, 0.4s

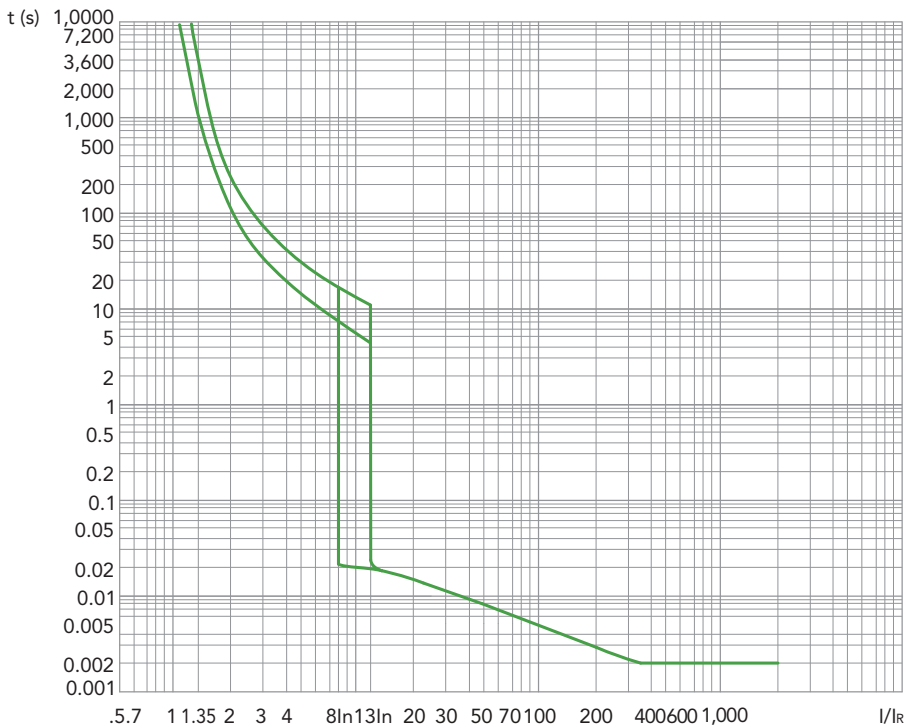
**Frequency Selection Setting:** 2 specific setting: 50Hz, 60Hz

M1PVS Trip Curves

M1PVS (15~35 A)

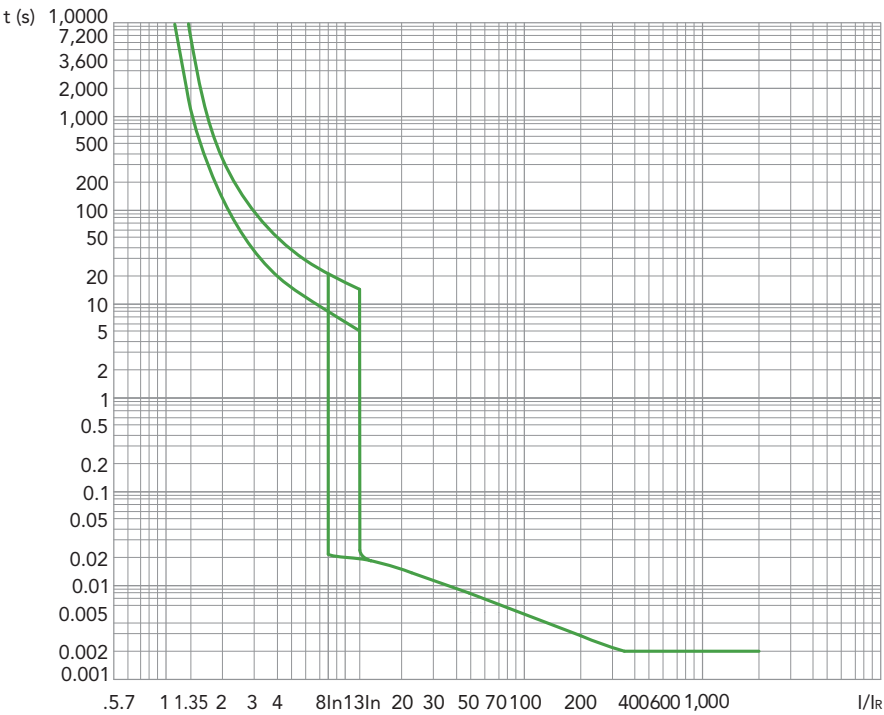


M1PVS (40~50 A)



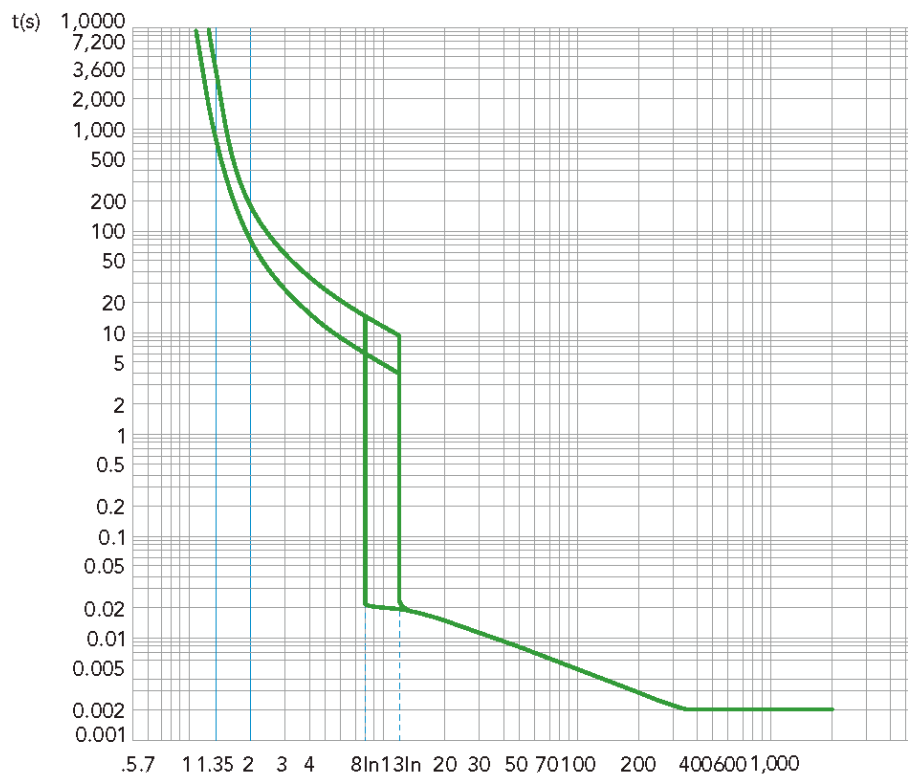
M1PVS Trip Curves

M1PVS (60~80 A)

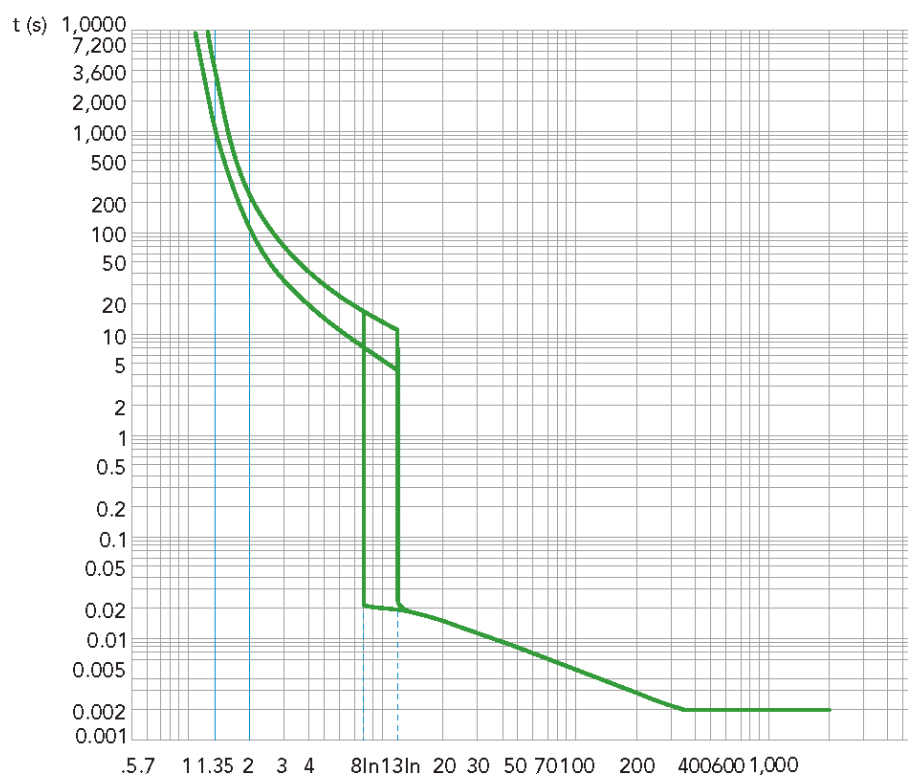


# M1 Trip Curves

M1 (15~35 A)

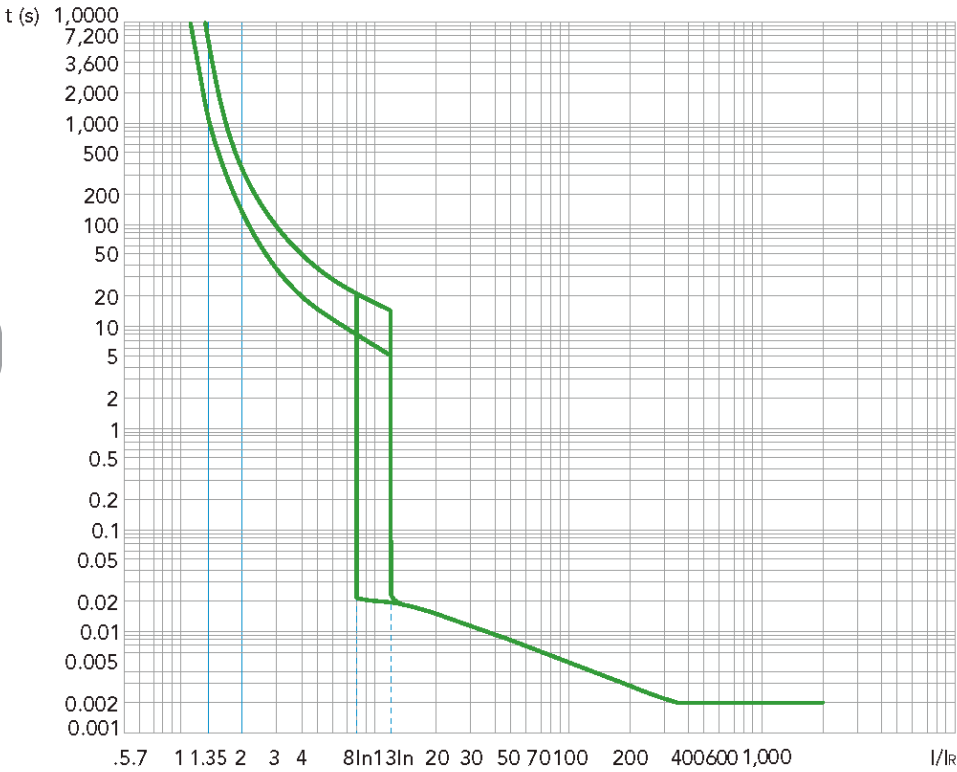


M1 (40~50 A)

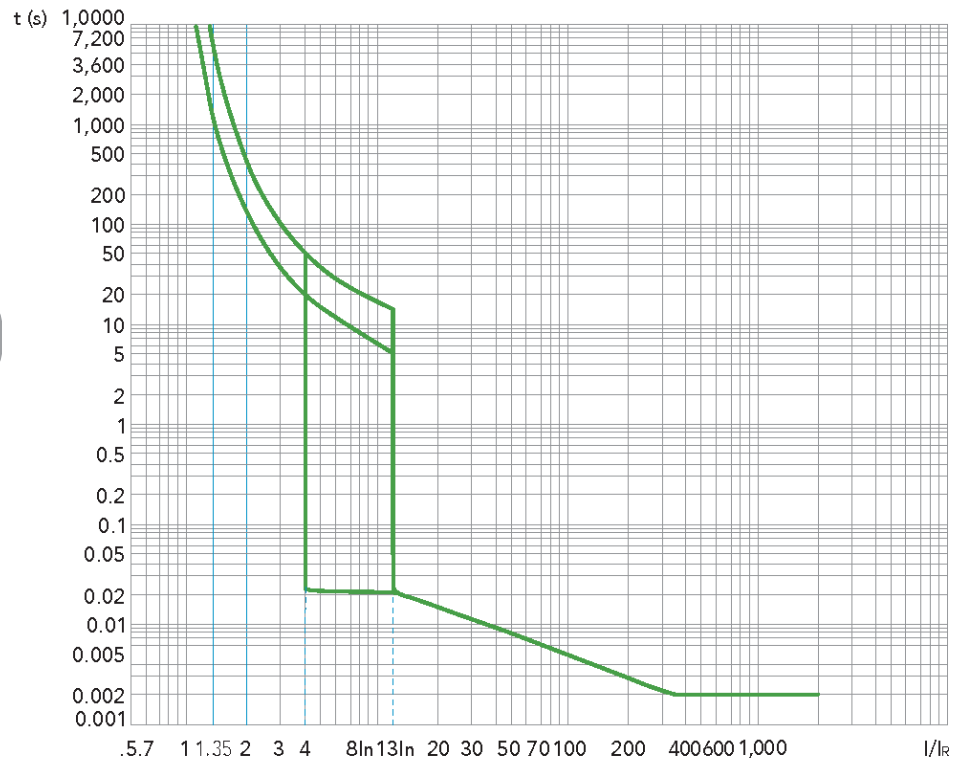


M1 Trip Curves

M1 (60~100 A)

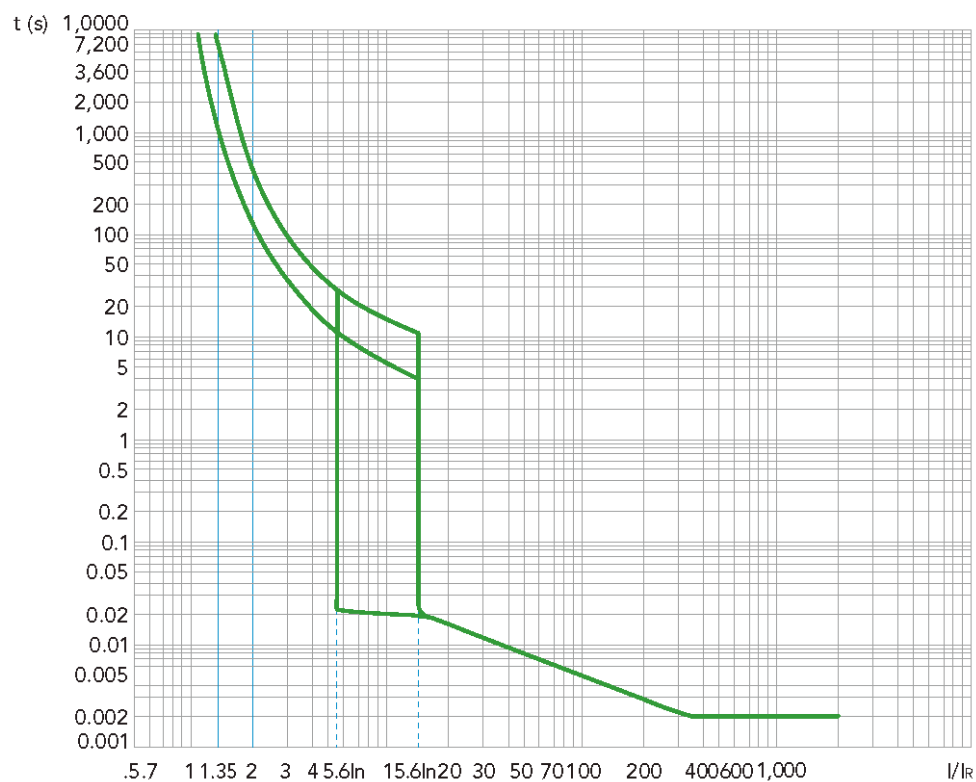


M1 (125~150 A)

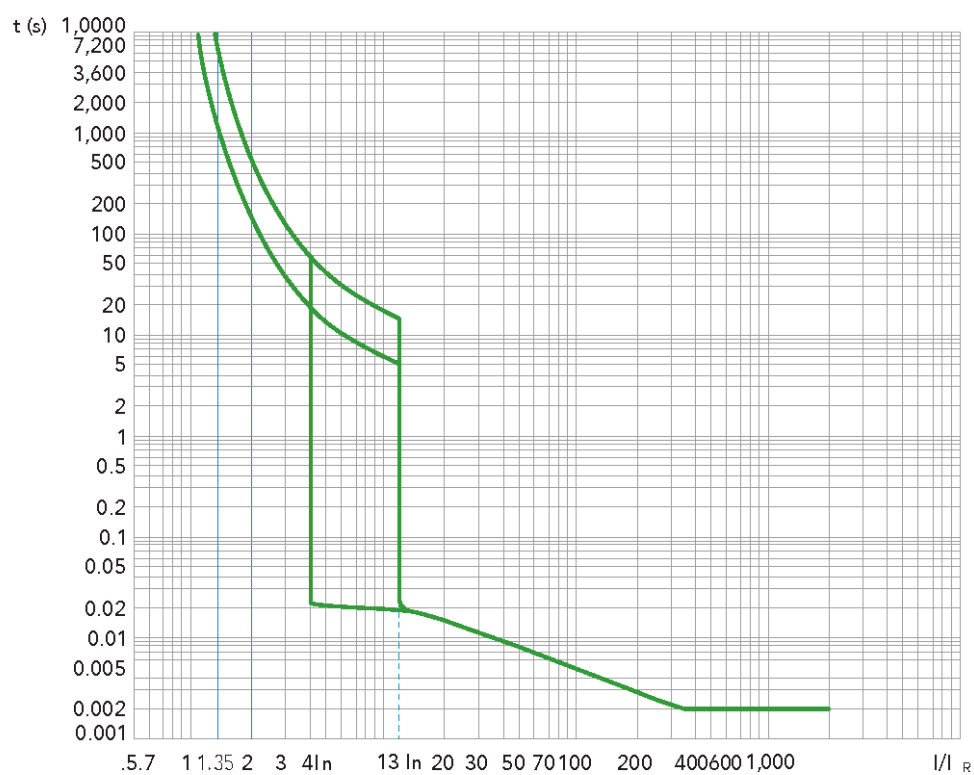


## M2 Trip Curves

M2 (100~150 A)

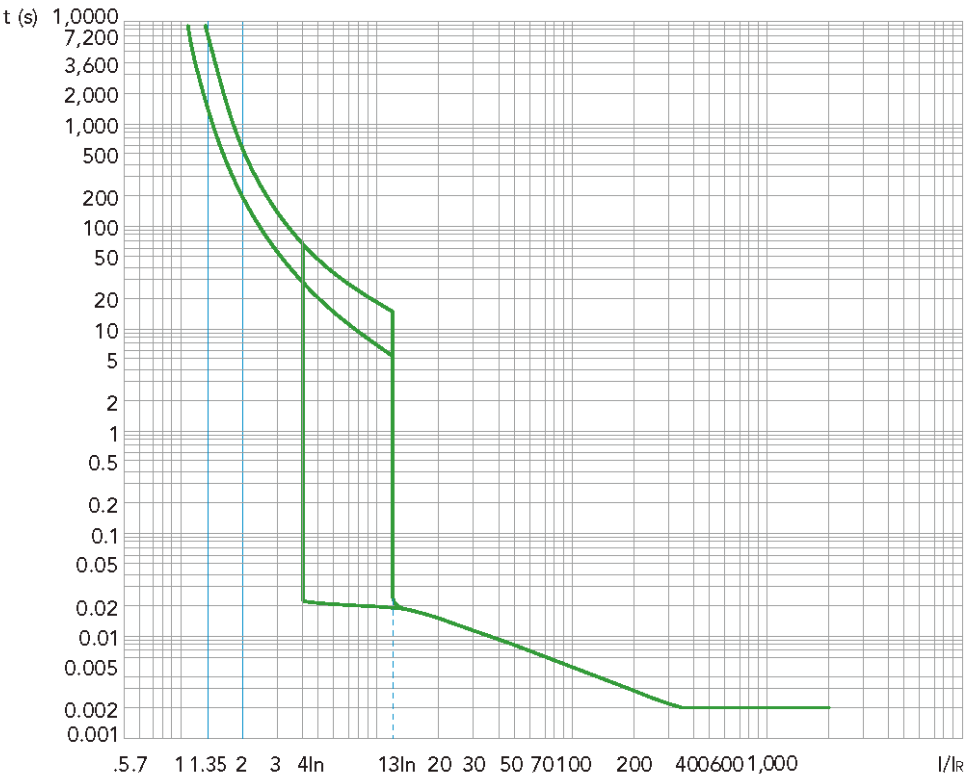


M2 (175~250 A)

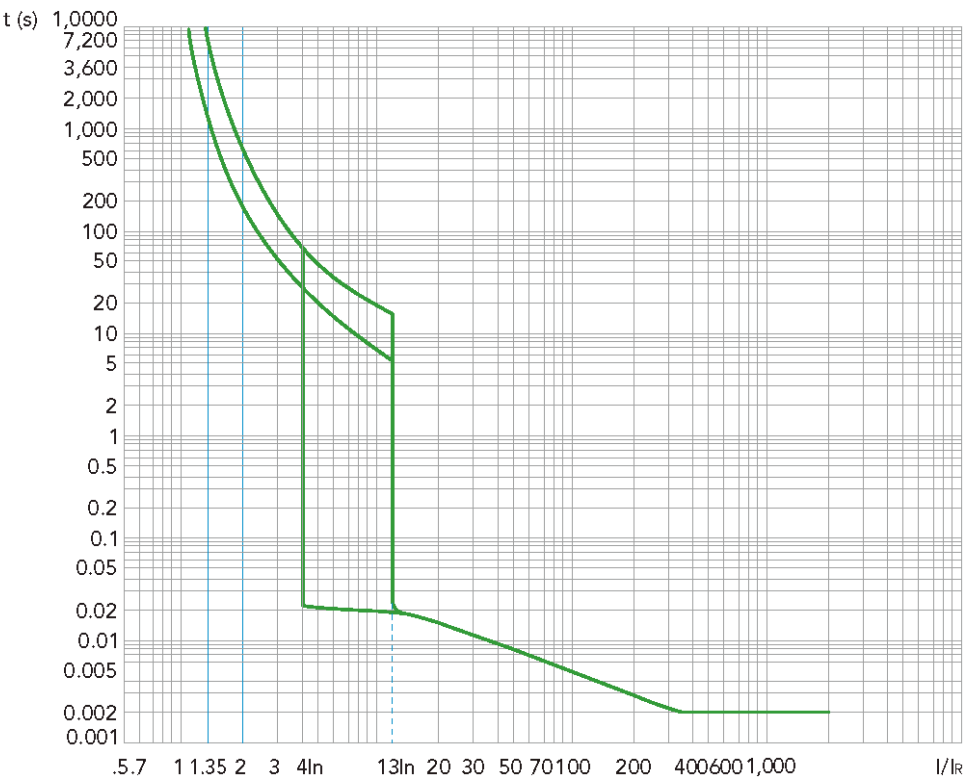


M3 Trip Curves

M3 (225~350 A)

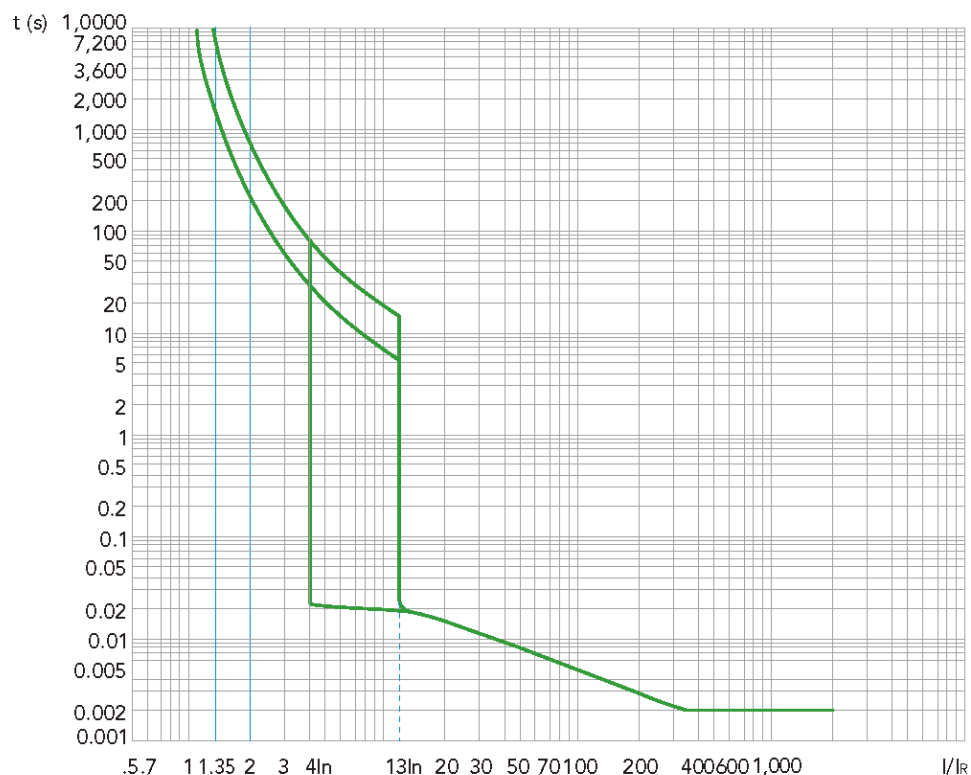


M3 (400 A)

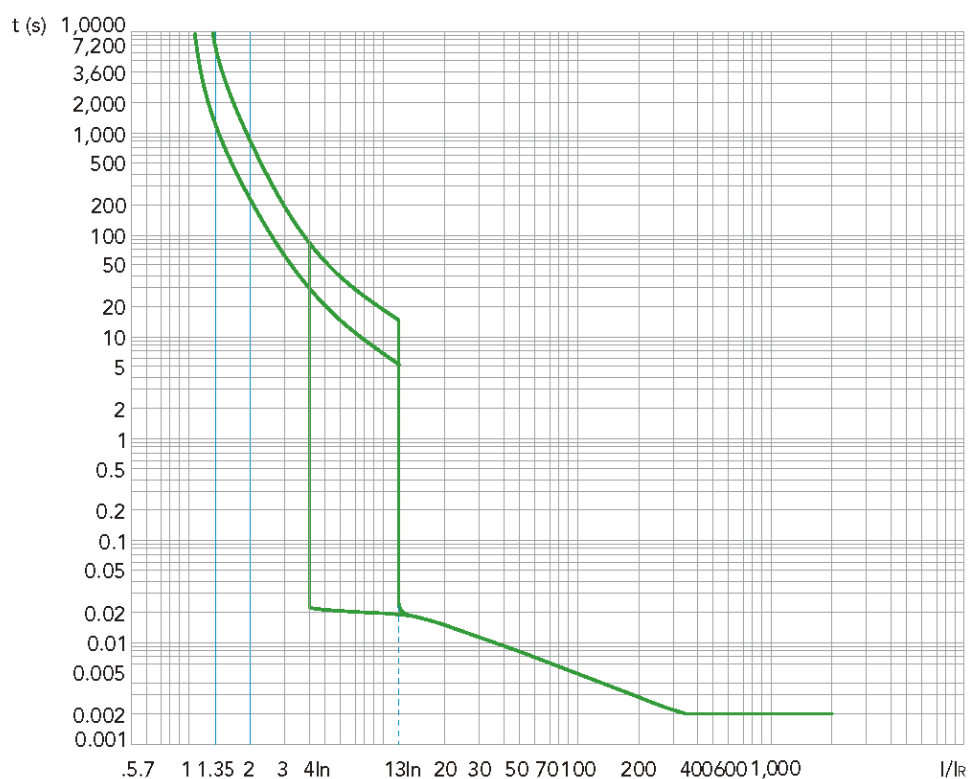


# M4 Trip Curves

M4 (400 A)

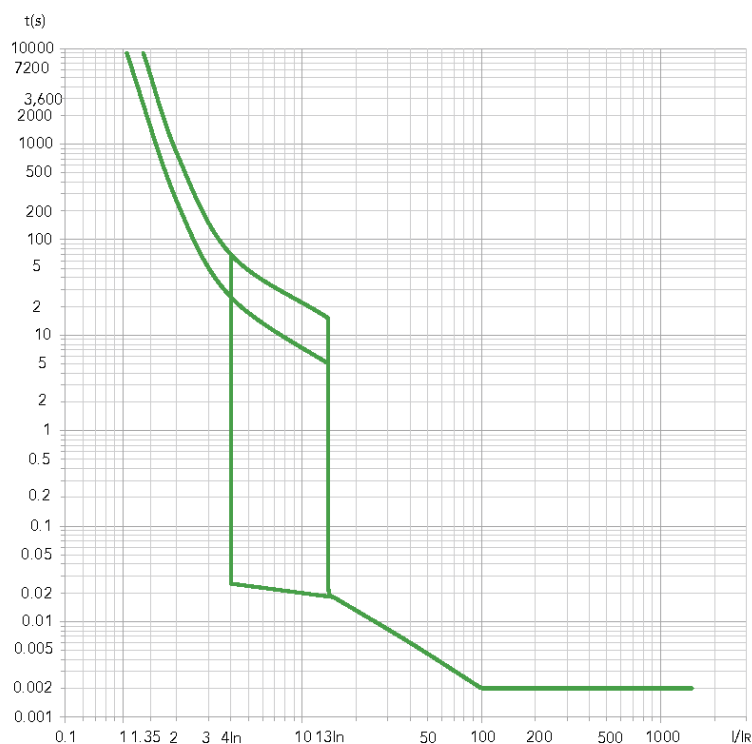


M4 (500~600 A)

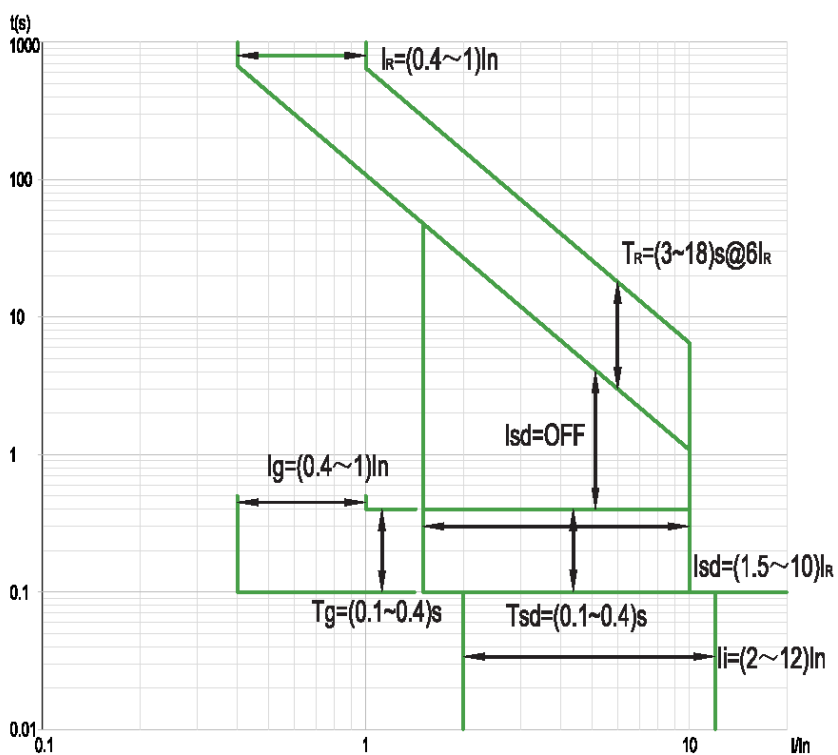


## M5-M6 Trip Curves

M5 (600~800 A)

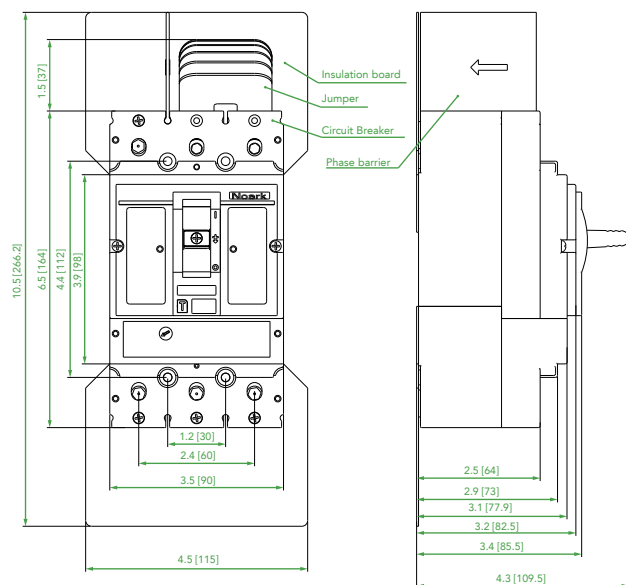


M6 (800-1200A)

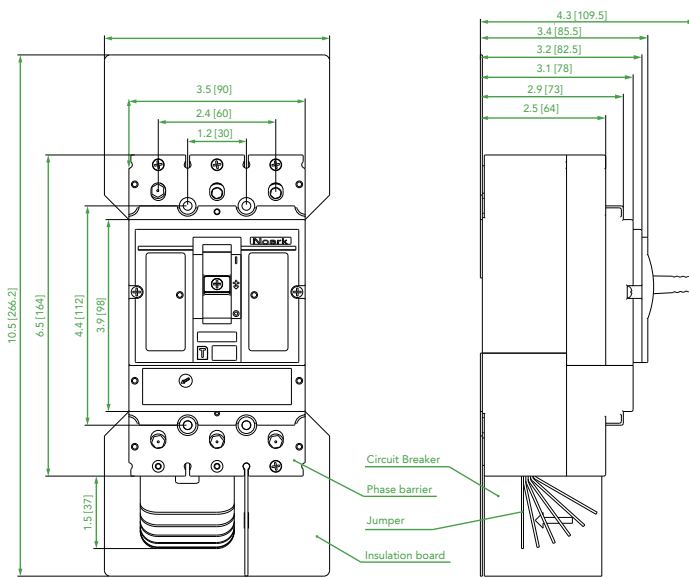


## M1PVS Dimensions

M1PVS Connection  
A Unit in [mm]

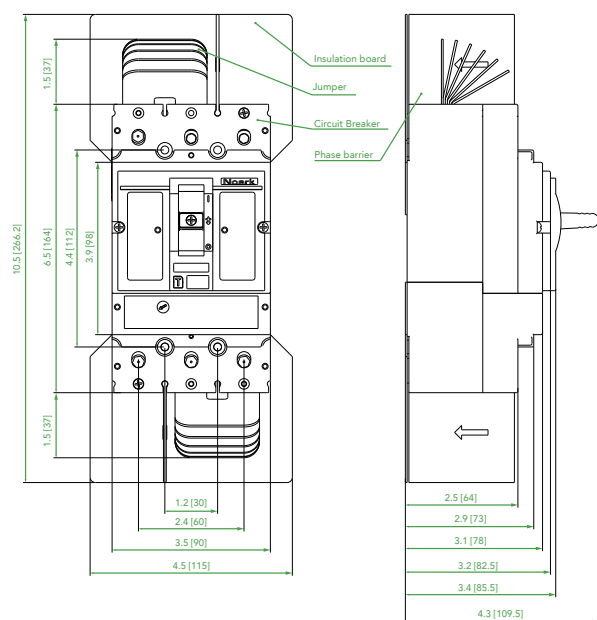


M1PVS Connection  
B Unit in [mm]

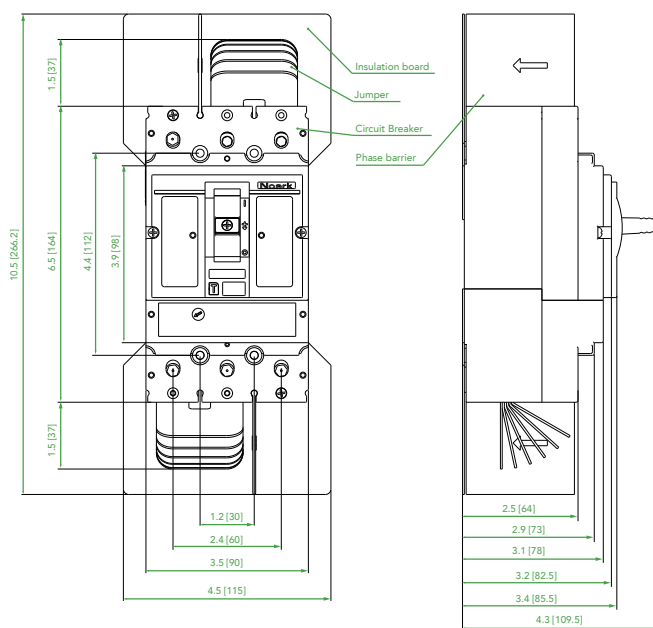


A

M1PVS Connection  
C Unit in [mm]

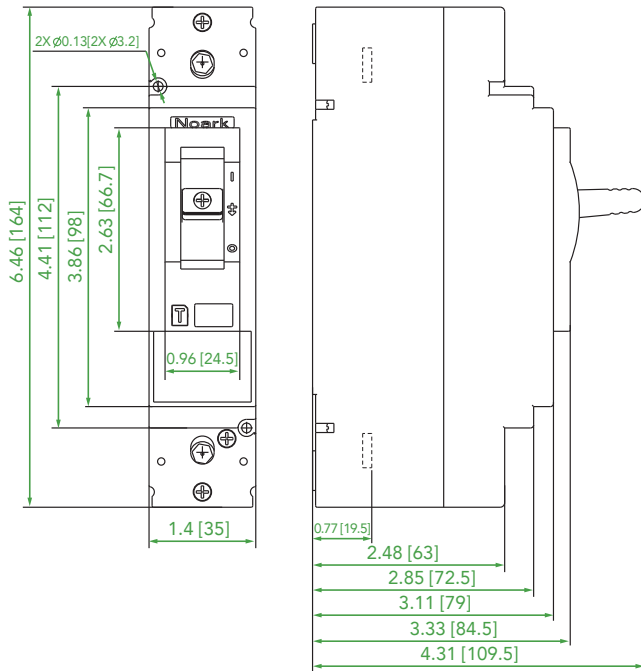


M1PVS Connection  
D Unit in [mm]

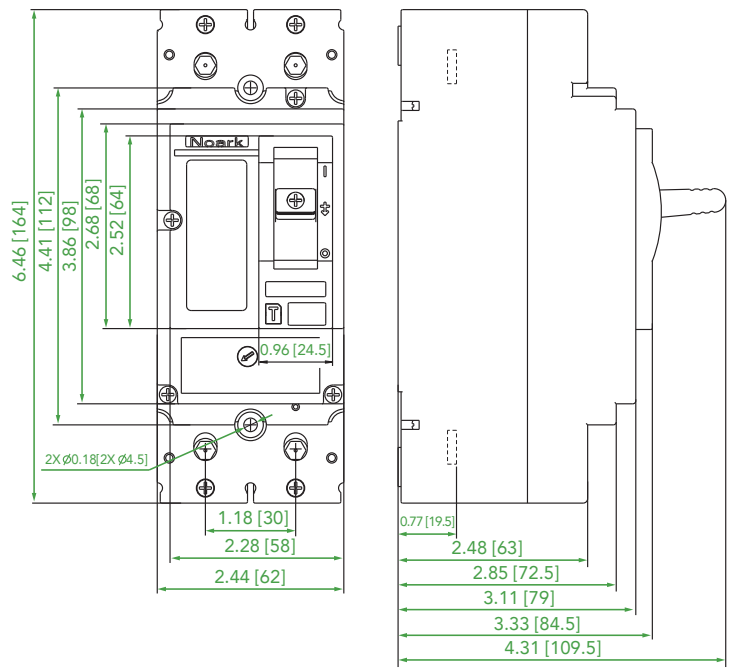


## M1/M1M/M1D Dimensions

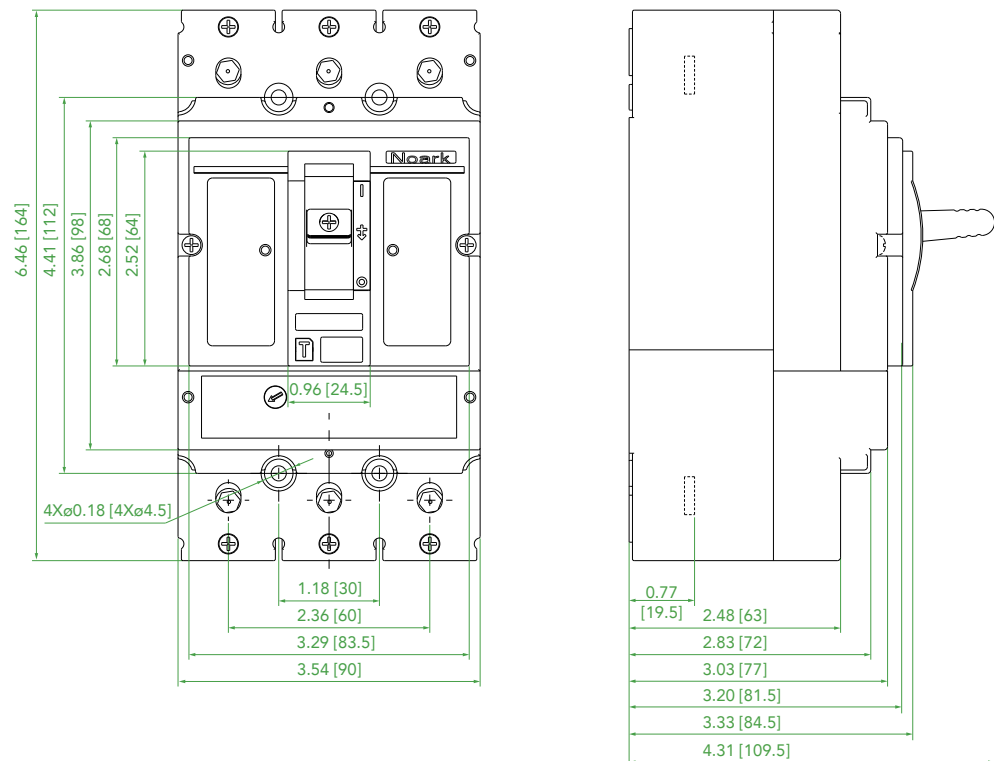
M1/M1M/M1D  
1 Pole Unit in [mm]



M1/M1M/M1D  
2 Pole Unit in [mm]

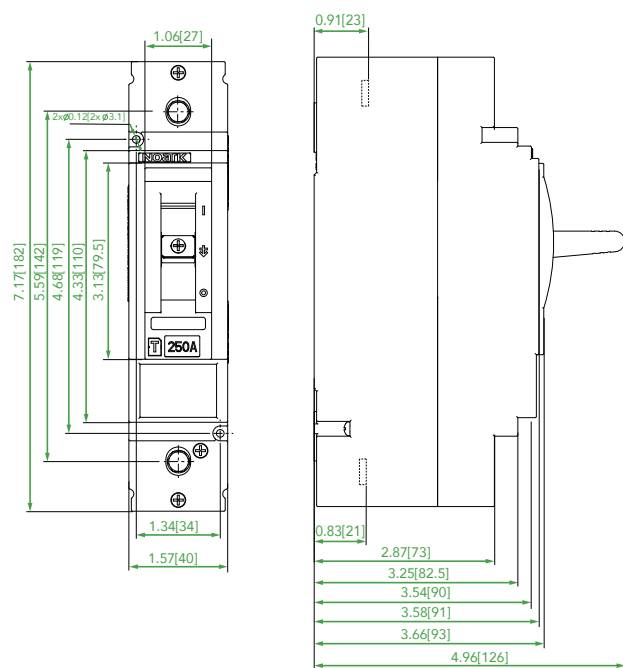


M1/M1M/M1D  
3 Pole Unit in [mm]

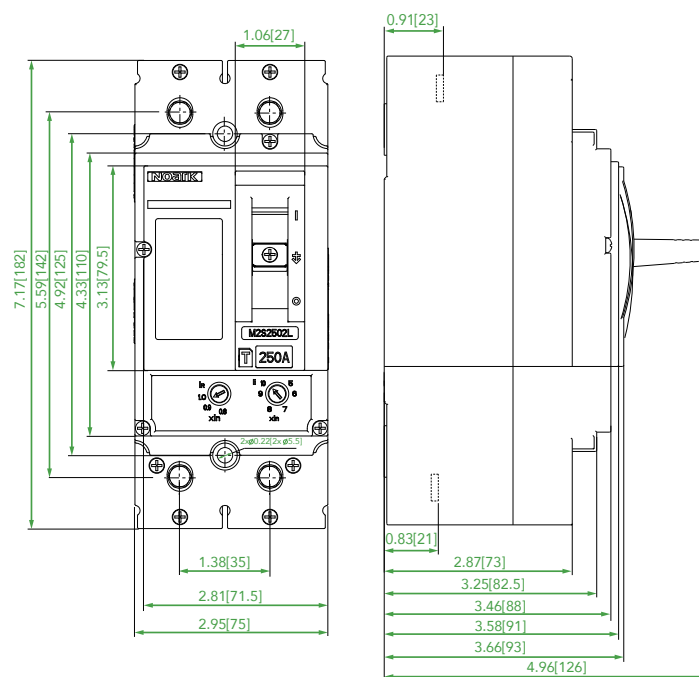


## M2/M2M/M2D Dimensions

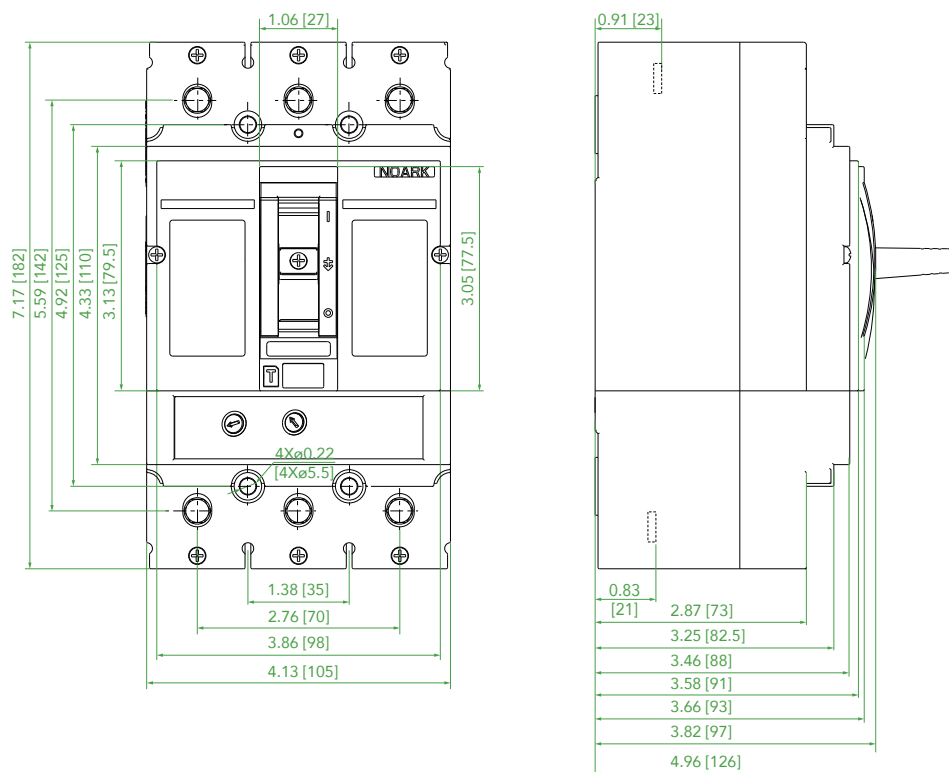
M2/M2M/M2D  
1 Pole Unit in [mm]



M2/M2M/M2D  
2 Pole Unit in [mm]

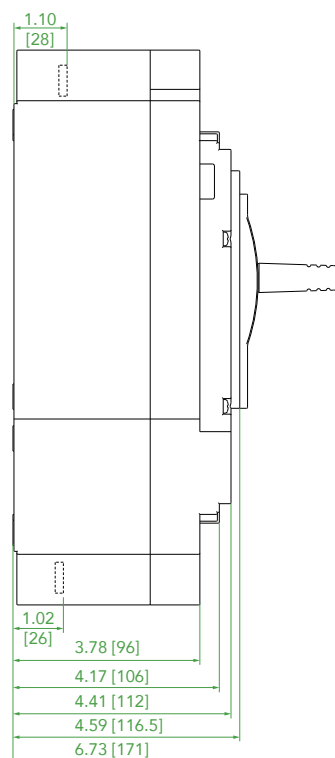
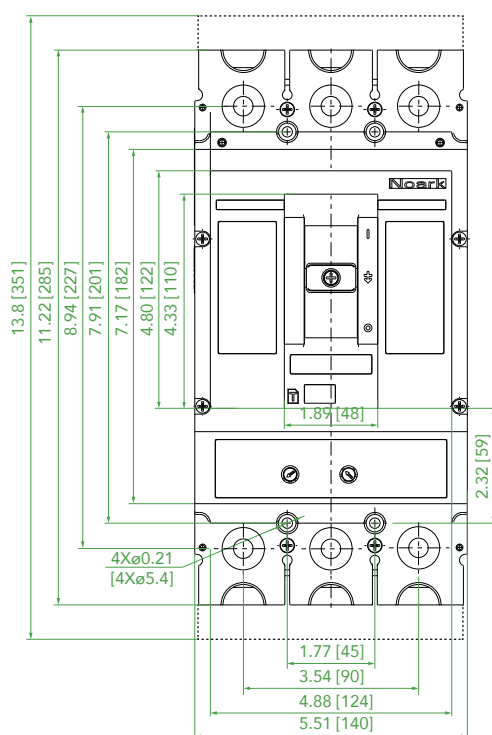


M2/M2M/M2D  
3 Pole Unit in [mm]

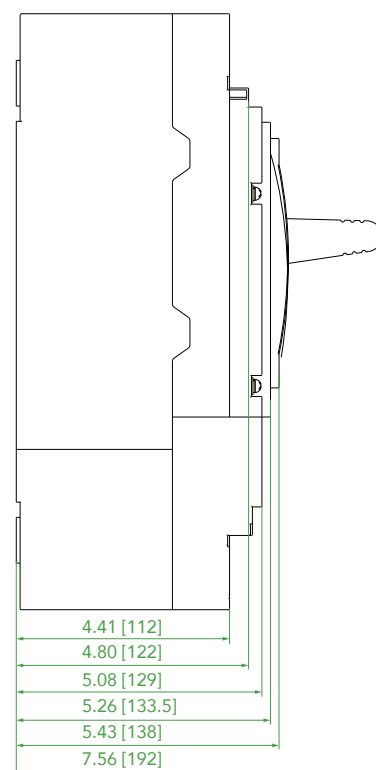
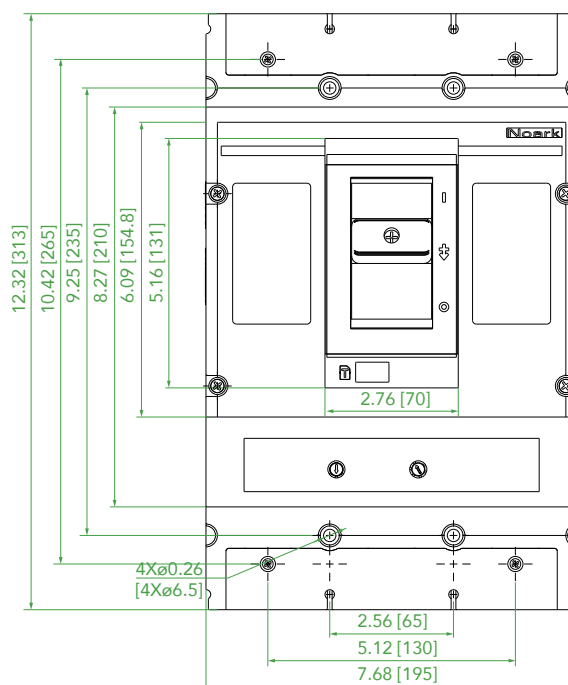


## M3/M3M/M3D - M4/M4M/M4D Dimensions

M3/M3M/M3D  
3 Pole Unit in [mm]

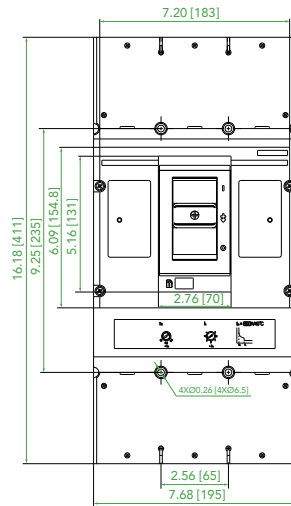


M4/M4M/M4D  
3 Pole Unit in [mm]

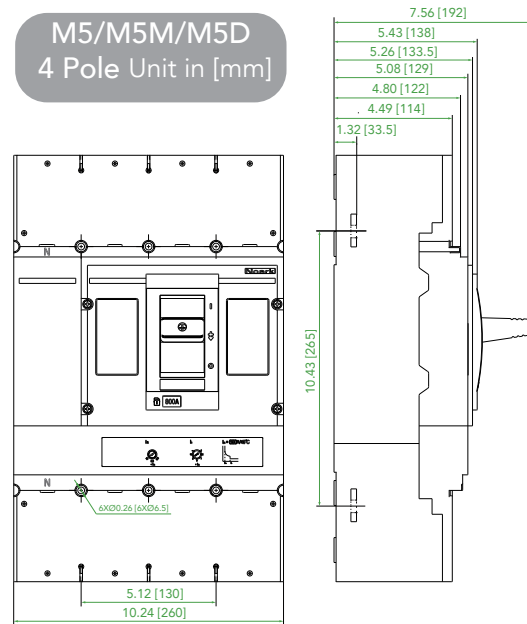


## M5/M5M/M5D - M6/M6M/M6D Dimensions

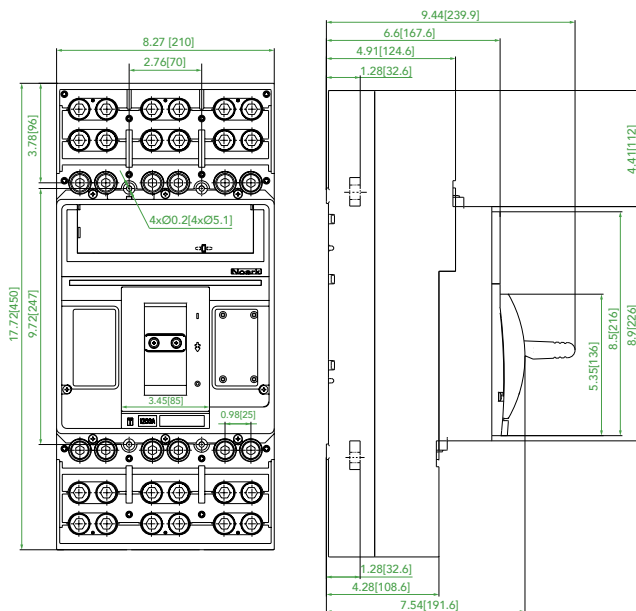
M5/M5M/M5D  
3 Pole Unit in [mm]



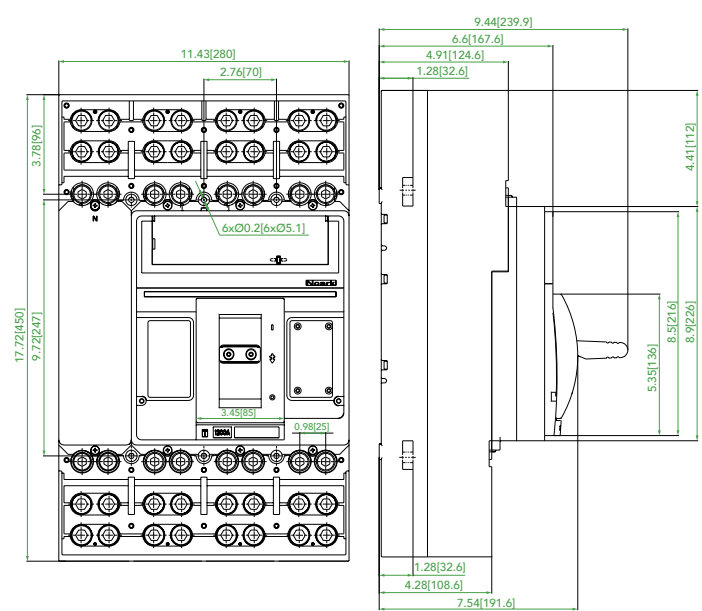
M5/M5M/M5D  
4 Pole Unit in [mm]



M6/M6M/M6D  
3 Pole Unit in [mm]

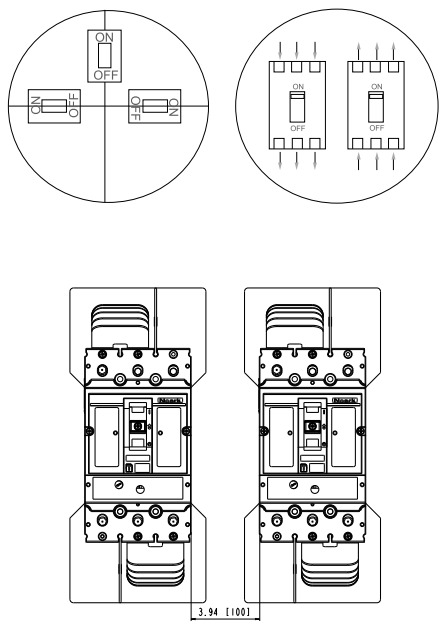


M6/M6M/M6D  
4 Pole Unit in [mm]

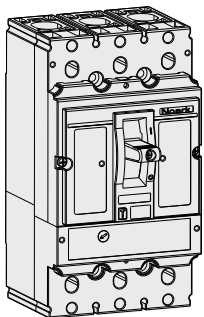
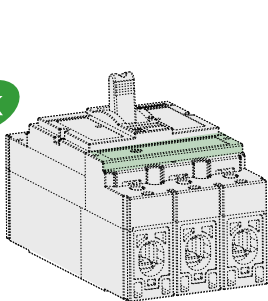


M1PVS Mounting Positions

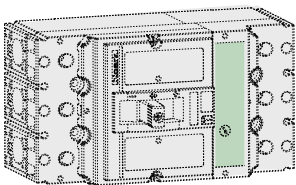
M1PVS  
Reverse Feed Allowed



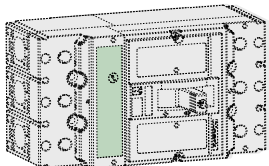
OK



OK

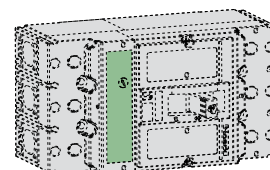
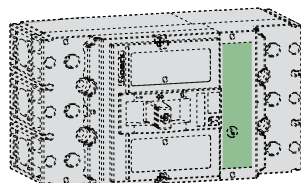
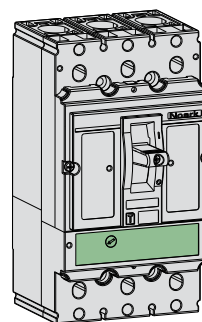
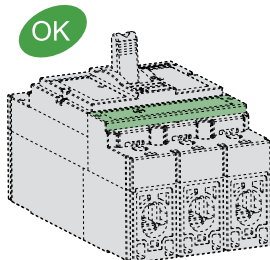
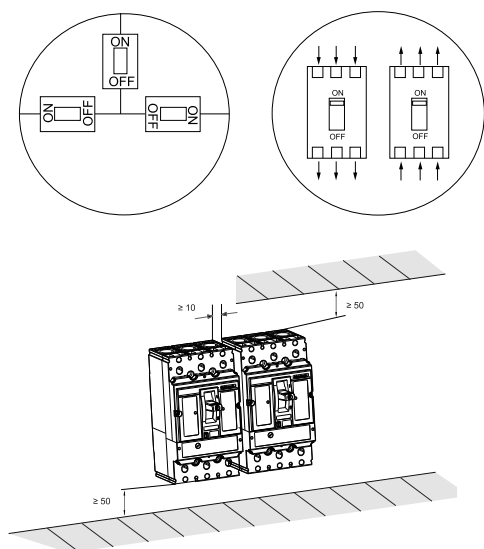


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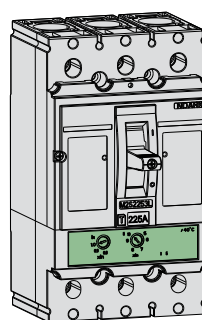
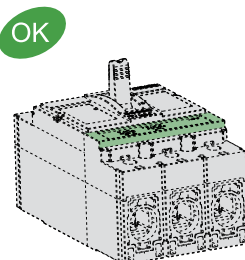
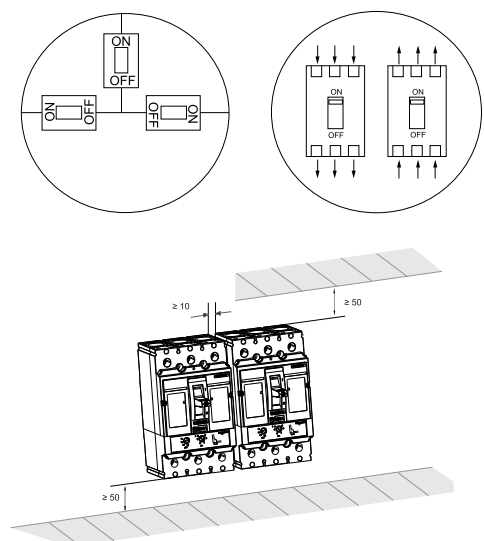
## M1/M1M/M1D-M2/M2M/M2D Mounting Positions

### M1/M1M/M1D Reverse Feed Allowed



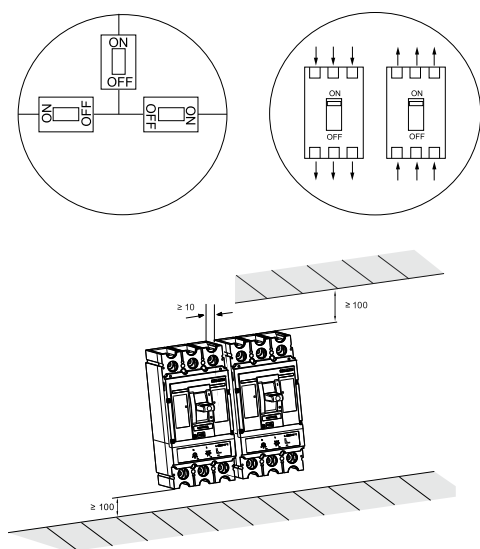
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### M2/M2M/M2D Reverse Feed Allowed

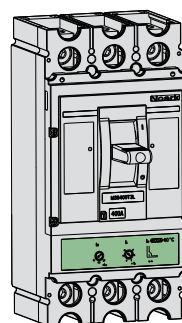
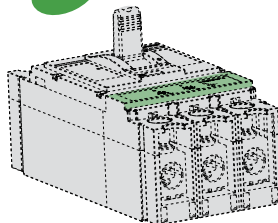


## M3/M3M/M3D-M4/M4M/M4D Mounting Positions

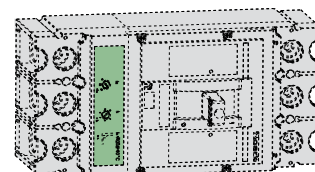
### M3/M3M/M3D Reverse Feed Allowed



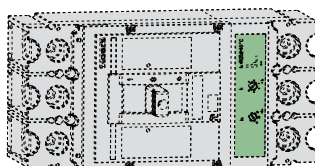
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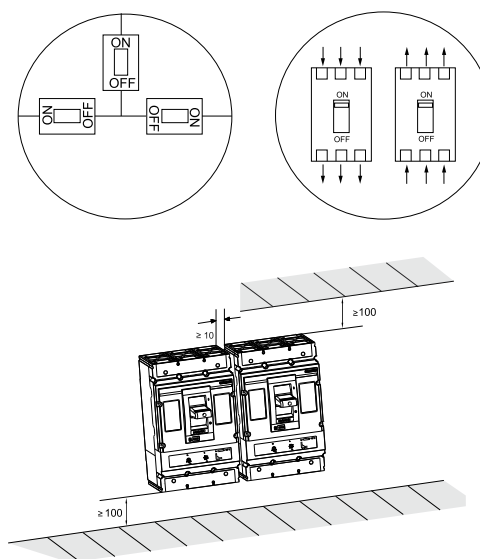
OK



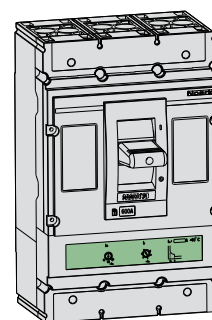
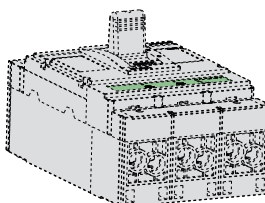
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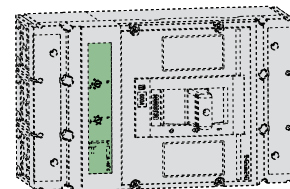
### M4/M4M/M4D Reverse Feed Allowed



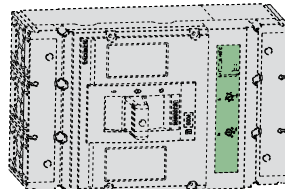
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OK

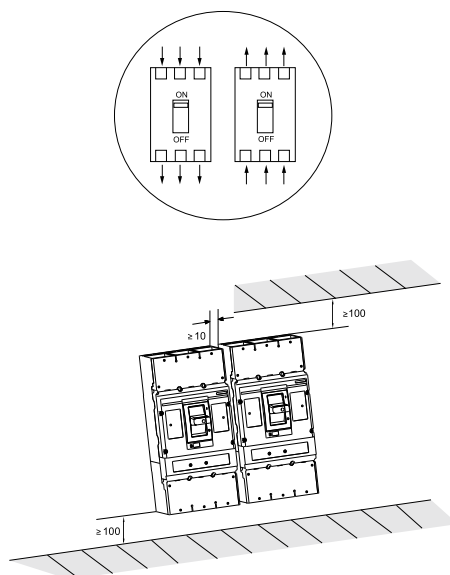


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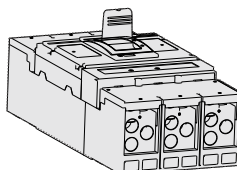


## M5/M5M/M5D-M6/M6M/M6D Mounting Positions

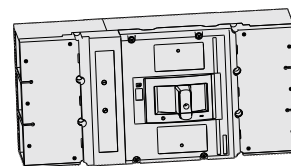
### M5/M5M/M5D Reverse Feed Allowed



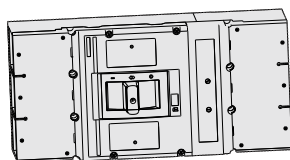
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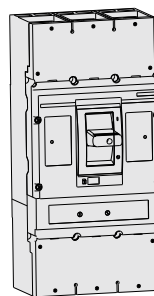
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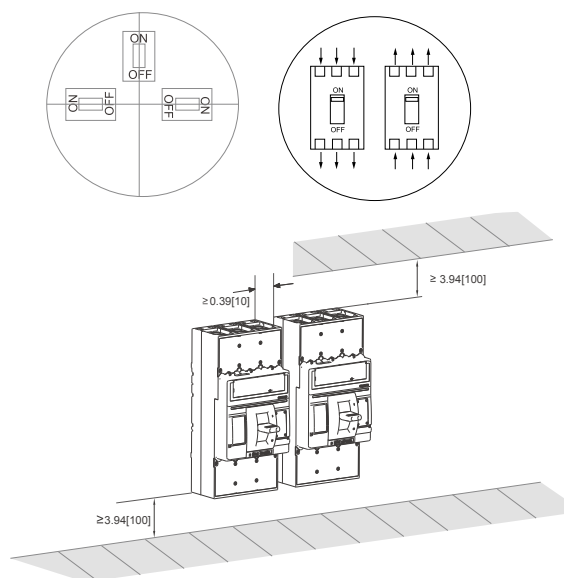


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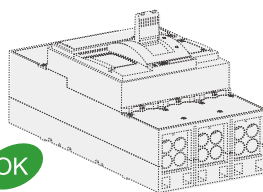


A

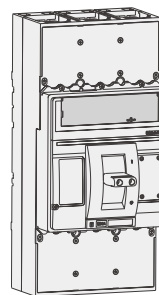
### M6/M6M/M6D



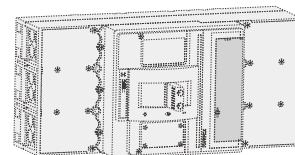
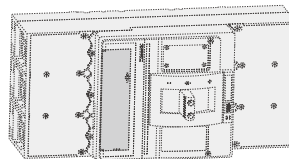
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NOARK



# Molded Case Motor Circuit Protectors

M1M-M6M



## M1M-M6M Product Overview

### Features

#### Ex9 Series - M Molded Case Motor Circuit Protectors, 3~1200 A

NOARK Electric offers a complete range of 3 pole Molded Case Motor Circuit Protectors (MCPs, magnetic only) which are used to protect the three phase asynchronous motors in six frame sizes: M1M - 150 A, M2M - 250 A, M3M - 400 A, M4M - 600 A, M5M - 800 A, and M6M - 1,200 A. Each frame size offers a range of interrupting voltage ratings from 240-690 Vac. This series MCP conforms to global standards that include UL 489, CSA C22.2 No 5 and IEC 60947-2.

The traditional system used for this purpose is based on three different devices: a circuit breaker for protection against short-circuit, a thermal relay for protection against overload and phase loss or unbalance of phase, and a contactor for motor switching.

In particular, when selecting these devices, different factors must be taken into consideration, such as:

- The rated motor power
- The type of motor: with cage rotor or with wound rotor
- The fault current at the point of the network where the motor is installed

### Certifications

- UL 489 Recognized, File Number E355392  
(Standard for connection terminals which allows the user to apply field wiring directly to the breaker)
- UL Recognized to UL489 and CSA standards 22.2 No. 5
- IEC/EN 60947-2
- CE Compliant
- RoHS Compliant



M1M-M6M Product Selection Guide

Label

- 1 Product Series
- 2 Handle
- 3 Product Selection
- 4 Test Button
- 5 Instantaneous Trip
- 6 Brand
- 7 UL Listed Mark
- 8 CE Mark
- 9 Rated Current



Product Selection Guide

| M                       | 1                                                                     | M                        | S                                                                                                                                                                                                                                        | 100                                                                          | T                                               | 3          | L                                                                                                                                                                                                | F <sup>+</sup>                                         |
|-------------------------|-----------------------------------------------------------------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| NOARK<br>Ex9 Series - M | Frame<br>Size                                                         | Type                     | Interrupting Rating                                                                                                                                                                                                                      | Amperage                                                                     | Trip Unit                                       | Pole       | Terminal Option                                                                                                                                                                                  | Rate Code                                              |
|                         | 1: 150 A<br>2: 250 A<br>3: 400 A<br>4: 600 A<br>5: 800 A<br>6: 1200 A | M: Motor Protection Type | S: Up to 50kA @ 240Vac (M1/M2)<br>65 kA @ 240Vac (M3/M4/M5/M6)<br>42kA @ 480Vac<br>22kA @ 600Vac<br><br>N: 100 kA @ 240Vac<br>Up to 65kA @ 480Vac<br>30kA @ 600Vac<br><br>H: 150 kA @ 240Vac<br>** 100kA @ 480Vac<br>Up to 50kA @ 600Vac | M1: 3~150 A<br>M2: 250 A<br>M3: 400 A<br>M4: 600 A<br>M5: 800A<br>M6: 1200 A | T: Magnetic Only<br><br>E: Electronic (M6 only) | 3: 3 Poles | L: Lug Line/Load Side Connection<br>(Standard configuration for M1: 1 hole, M2: 1 hole, M3: 1 hole, M4: 2 hole, M5: 600A, 700A 2 hole, M5: 800A 3 hole, M6: 800A, 1000A 3 hole, M6: 1200A 4 hole | Blank: Standard MCCB (80% Rated)<br>F: 100% Rated MCCB |

# M1M-M6M Ratings

| Breaker Frame | Current Range (A) | Poles | Rated Voltage 50V 60Hz Vac | Breaker Type | Interrupting Capacity (kA ms) UL 489 and CSA C22 2 No.5 |         |         | Trip Unit Type      | Insulation Voltage (Vi) | Impulse Withstand Voltage (Vimp) | Operational Voltage (Ve) |         | Mechanical Operating Cycles | Electrical Operating Cycles |
|---------------|-------------------|-------|----------------------------|--------------|---------------------------------------------------------|---------|---------|---------------------|-------------------------|----------------------------------|--------------------------|---------|-----------------------------|-----------------------------|
|               |                   |       |                            |              | 240 Vac                                                 | 480 Vac | 600 Vac |                     |                         |                                  | UL                       | IEC     |                             |                             |
| M1M           | 3~150             | 3     | 600                        | S            | 50                                                      | 35      | 14      | Adjustable Magnetic | 800 Vac                 | 8kVac                            | 600 Vac                  | 690 Vac | 10,000                      | 6,000                       |
| M2M           | 250               |       |                            | N            | 100                                                     | 65      | 20      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | H            | 150                                                     | 100     | 25      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | S            | 50                                                      | 35      | 14      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | N            | 100                                                     | 65      | 20      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | H            | 150                                                     | 100     | 25      |                     |                         |                                  |                          |         |                             |                             |
| M3M           | 400               |       |                            | S            | 65                                                      | 42      | 18      |                     |                         |                                  |                          |         | 8,000                       | 5,000                       |
|               |                   |       |                            | N            | 100                                                     | 65      | 25      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | H            | 150                                                     | 100     | 30      |                     |                         |                                  |                          |         |                             |                             |
| M4M           | 600               |       |                            | S            | 65                                                      | 42      | 22      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | N            | 100                                                     | 65      | 30      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | H            | 150                                                     | 100     | 50      |                     |                         |                                  |                          |         |                             |                             |
| M5M           | 800               |       |                            | S            | 65                                                      | 42      | 22      |                     |                         |                                  |                          |         | 3,000                       | 500                         |
|               |                   |       |                            | N            | 100                                                     | 65      | 30      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | H            | 150                                                     | 100     | 50      |                     |                         |                                  |                          |         |                             |                             |
| M6M           | 1200              |       |                            | S            | 65                                                      | 42      | 22      |                     |                         |                                  |                          |         |                             |                             |
|               |                   |       |                            | N            | 100                                                     | 65      | 42      |                     |                         |                                  |                          |         |                             |                             |

B

## M1M Lug Line/Load Side Connection



| Continuous Amperes | Cam Setting | Full Load Current Amperes | MCP Trip Setting | S Interrupting - Lug Line/Load Side |             | N Interrupting - Lug Line/Load Side |             | H Interrupting - Lug Line/Load Side |             |
|--------------------|-------------|---------------------------|------------------|-------------------------------------|-------------|-------------------------------------|-------------|-------------------------------------|-------------|
|                    |             |                           |                  | 35kA @ 480 Vac                      |             | 65kA @ 480 Vac                      |             | 100kA @ 480 Vac                     |             |
|                    |             |                           |                  | Catalog Number                      | Part Number | Catalog Number                      | Part Number | Catalog Number                      | Part Number |
| 3                  | A           | 1.6~1.7                   | 21               | M1MS03T3L                           | 1102138     | M1MN03T3L                           | 1102139     | M1MH03T3L                           | 1102140     |
|                    | B           | 1.8~1.9                   | 24               |                                     |             |                                     |             |                                     |             |
|                    | C           | 2.0~2.2                   | 27               |                                     |             |                                     |             |                                     |             |
|                    | D           | 2.3~2.4                   | 30               |                                     |             |                                     |             |                                     |             |
|                    | E           | 2.5~2.6                   | 33               |                                     |             |                                     |             |                                     |             |
| 7                  | A           | 2.7~3.1                   | 35               | M1MS07T3L                           | 1102141     | M1MN07T3L                           | 1102142     | M1MH07T3L                           | 1102143     |
|                    | B           | 3.2~3.6                   | 42               |                                     |             |                                     |             |                                     |             |
|                    | C           | 3.7~4.2                   | 49               |                                     |             |                                     |             |                                     |             |
|                    | D           | 4.3~4.7                   | 56               |                                     |             |                                     |             |                                     |             |
|                    | E           | 4.8~5.2                   | 63               |                                     |             |                                     |             |                                     |             |
|                    | F           | 5.3~5.8                   | 70               |                                     |             |                                     |             |                                     |             |
| 15                 | A           | 5.7~6.8                   | 75               | M1MS15T3L                           | 1101418     | M1MN15T3L                           | 1101424     | M1MH15T3L                           | 1101430     |
|                    | B           | 6.9~7.9                   | 90               |                                     |             |                                     |             |                                     |             |
|                    | C           | 8.0~9.1                   | 105              |                                     |             |                                     |             |                                     |             |
|                    | D           | 9.2~10.3                  | 120              |                                     |             |                                     |             |                                     |             |
|                    | E           | 10.4~11.4                 | 135              |                                     |             |                                     |             |                                     |             |
|                    | F           | 11.5~12.6                 | 150              |                                     |             |                                     |             |                                     |             |
| 30                 | A           | 11.5-13.7                 | 150              | M1MS30T3L                           | 1101419     | M1MN30T3L                           | 1101425     | M1MN30T3L                           | 1101431     |
|                    | B           | 13.8-16.0                 | 180              |                                     |             |                                     |             |                                     |             |
|                    | C           | 16.1-18.3                 | 210              |                                     |             |                                     |             |                                     |             |
|                    | D           | 18.4-20.6                 | 240              |                                     |             |                                     |             |                                     |             |
|                    | E           | 20.7-22.9                 | 270              |                                     |             |                                     |             |                                     |             |
|                    | F           | 23.0-25.2                 | 300              |                                     |             |                                     |             |                                     |             |
|                    | G           | 25.3-26.1                 | 330              |                                     |             |                                     |             |                                     |             |
| 50                 | A           | 19.2-22.9                 | 250              | M1MS50T3L                           | 1101420     | M1MN50T3L                           | 1101426     | M1MH50T3L                           | 1101432     |
|                    | B           | 23.0-26.8                 | 300              |                                     |             |                                     |             |                                     |             |
|                    | C           | 26.9-30.6                 | 350              |                                     |             |                                     |             |                                     |             |
|                    | D           | 30.7-34.5                 | 400              |                                     |             |                                     |             |                                     |             |
|                    | E           | 34.6-38.3                 | 450              |                                     |             |                                     |             |                                     |             |
|                    | F           | 38.4-42.1                 | 500              |                                     |             |                                     |             |                                     |             |
|                    | G           | 42.2-43.5                 | 550              |                                     |             |                                     |             |                                     |             |

## M1M Lug Line/Load Side Connection



| Continuous Amperes | Cam Setting | Full Load Current Amperes | MCP Trip Setting | S Interrupting - Lug Line/Load Side |             | N Interrupting - Lug Line/Load Side |             | H Interrupting - Lug Line/Load Side |             |
|--------------------|-------------|---------------------------|------------------|-------------------------------------|-------------|-------------------------------------|-------------|-------------------------------------|-------------|
|                    |             |                           |                  | 35kA @ 480 Vac                      |             | 65kA @ 480 Vac                      |             | 100kA @ 480 Vac                     |             |
|                    |             |                           |                  | Catalog Number                      | Part Number | Catalog Number                      | Part Number | Catalog Number                      | Part Number |
| 70                 | A           | 26.9-32.2                 | 350              | M1MS70T3L                           | 1101421     | M1MN70T3L                           | 1101427     | M1MH70T3L                           | 1101433     |
|                    | B           | 32.3-37.6                 | 420              |                                     |             |                                     |             |                                     |             |
|                    | C           | 37.7-43.0                 | 490              |                                     |             |                                     |             |                                     |             |
|                    | D           | 43.1-48.4                 | 560              |                                     |             |                                     |             |                                     |             |
|                    | E           | 48.5-53.7                 | 630              |                                     |             |                                     |             |                                     |             |
|                    | F           | 53.8-59.1                 | 700              |                                     |             |                                     |             |                                     |             |
|                    | G           | 59.2-60.9                 | 770              |                                     |             |                                     |             |                                     |             |
| 100                | A           | 38.4-46.0                 | 500              | M1MS100T3L                          | 1101423     | M1MN100T3L                          | 1101429     | M1MH100T3L                          | 1101435     |
|                    | B           | 46.1-53.7                 | 600              |                                     |             |                                     |             |                                     |             |
|                    | C           | 53.8-61.4                 | 700              |                                     |             |                                     |             |                                     |             |
|                    | D           | 61.5-69.1                 | 800              |                                     |             |                                     |             |                                     |             |
|                    | E           | 69.2-76.8                 | 900              |                                     |             |                                     |             |                                     |             |
|                    | F           | 76.9-84.5                 | 1000             |                                     |             |                                     |             |                                     |             |
|                    | G           | 84.6-87.0                 | 1100             |                                     |             |                                     |             |                                     |             |
| 150                | A           | 57.7~69.1                 | 750              | M1MS150T3L                          | 1102147     | M1MN150T3L                          | 1102148     | M1MH150T3L                          | 1102149     |
|                    | B           | 69.2~80.6                 | 900              |                                     |             |                                     |             |                                     |             |
|                    | C           | 80.7~92.2                 | 1050             |                                     |             |                                     |             |                                     |             |
|                    | D           | 92.3~103.7                | 1200             |                                     |             |                                     |             |                                     |             |
|                    | E           | 103.8~115.2               | 1350             |                                     |             |                                     |             |                                     |             |
|                    | F           | 115.3~126.7               | 1500             |                                     |             |                                     |             |                                     |             |
|                    | G           | 126.9~130.5               | 1650             |                                     |             |                                     |             |                                     |             |

B

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

|                      |         |                         |          |
|----------------------|---------|-------------------------|----------|
| Specifications ..... | B55     | Dimensions .....        | A37-A41  |
| Trip Unit .....      | B56-B57 | Mounting Position ..... | A42-A45  |
| Trip Curve .....     | B58-B63 | Accessories .....       | D77-D104 |

## M2M and M3M Lug Line/Load Side Connection



| Continuous Amperes | Cam Setting | Full Load Current Amperes | MCP Trip Setting | S Interrupting - Lug Line/Load Side |             | N Interrupting - Lug Line/Load Side |             | H Interrupting - Lug Line/Load Side |             |
|--------------------|-------------|---------------------------|------------------|-------------------------------------|-------------|-------------------------------------|-------------|-------------------------------------|-------------|
|                    |             |                           |                  | 35kA @ 480 Vac                      |             | 65kA @ 480 Vac                      |             | 100kA @ 480 Vac                     |             |
|                    |             |                           |                  | Catalog Number                      | Part Number | Catalog Number                      | Part Number | Catalog Number                      | Part Number |
| 250                | A           | 96.2-115.3                | 1250             | M2MS250T3L                          | 1101998     | M2MN250T3L                          | 101999      | M2MH250T3L                          | 102000      |
|                    | B           | 115.4-134.5               | 1500             |                                     |             |                                     |             |                                     |             |
|                    | C           | 134.6-153.7               | 1750             |                                     |             |                                     |             |                                     |             |
|                    | D           | 153.8-173.0               | 2000             |                                     |             |                                     |             |                                     |             |
|                    | E           | 173.1-192.2               | 2250             |                                     |             |                                     |             |                                     |             |
|                    | F           | 192.3-211.4               | 2500             |                                     |             |                                     |             |                                     |             |
|                    | G           | 211.5-217.6               | 2750             |                                     |             |                                     |             |                                     |             |



| Continuous Amperes | Cam Setting | Full Load Current Amperes | MCP Trip Setting | S Interrupting - Lug Line/Load Side |             | N Interrupting - Lug Line/Load Side |             | H Interrupting - Lug Line/Load Side |             |
|--------------------|-------------|---------------------------|------------------|-------------------------------------|-------------|-------------------------------------|-------------|-------------------------------------|-------------|
|                    |             |                           |                  | 42kA @ 480 Vac                      |             | 65kA @ 480 Vac                      |             | 100kA @ 480 Vac                     |             |
|                    |             |                           |                  | Catalog Number                      | Part Number | Catalog Number                      | Part Number | Catalog Number                      | Part Number |
| 400                | A           | 153.8-184.5               | 2000             | M3MS400T3L                          | 1101491     | M3MN400T3L                          | 1101496     | M3MH400T3L                          | 1101501     |
|                    | B           | 184.6-215.3               | 2400             |                                     |             |                                     |             |                                     |             |
|                    | C           | 215.4-246.0               | 2800             |                                     |             |                                     |             |                                     |             |
|                    | D           | 246.1-276.8               | 3200             |                                     |             |                                     |             |                                     |             |
|                    | E           | 276.9-307.6               | 3600             |                                     |             |                                     |             |                                     |             |
|                    | F           | 307.7-338.4               | 4000             |                                     |             |                                     |             |                                     |             |
|                    | G           | 338.5-348.1               | 4400             |                                     |             |                                     |             |                                     |             |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

## M4M and M5M Lug Line/Load Side Connection



| Continuous Amperes | Cam Setting | Full Load Current Amperes | MCP Trip Setting | S Interrupting - Lug Line/Load Side |             | N Interrupting - Lug Line/Load Side |             | H Interrupting - Lug Line/Load Side |             |
|--------------------|-------------|---------------------------|------------------|-------------------------------------|-------------|-------------------------------------|-------------|-------------------------------------|-------------|
|                    |             |                           |                  | 42kA @ 480 Vac                      |             | 65kA @ 480 Vac                      |             | 100kA @ 480 Vac                     |             |
|                    |             |                           |                  | Catalog Number                      | Part Number | Catalog Number                      | Part Number | Catalog Number                      | Part Number |
| 600                | A           | 230.8-276.8               | 3000             | M4MS600T3L                          | 1101528     | M4MN600T3L                          | 1101531     | M4MH600T3L                          | 1101534     |
|                    | B           | 276.9-323.0               | 3600             |                                     |             |                                     |             |                                     |             |
|                    | C           | 323.1-369.0               | 4200             |                                     |             |                                     |             |                                     |             |
|                    | D           | 369.2-415.3               | 4800             |                                     |             |                                     |             |                                     |             |
|                    | E           | 415.4-461.4               | 5400             |                                     |             |                                     |             |                                     |             |
|                    | F           | 461.5-507.6               | 6000             |                                     |             |                                     |             |                                     |             |
|                    | G           | 507.7-522.2               | 6600             |                                     |             |                                     |             |                                     |             |



| Continuous Amperes | Cam Setting | Full Load Current Amperes | MCP Trip Setting | S Interrupting - Lug Line/Load Side |             | N Interrupting - Lug Line/Load Side |             | H Interrupting - Lug Line/Load Side |             |
|--------------------|-------------|---------------------------|------------------|-------------------------------------|-------------|-------------------------------------|-------------|-------------------------------------|-------------|
|                    |             |                           |                  | 42kA @ 480 Vac                      |             | 65kA @ 480 Vac                      |             | 100kA @ 480 Vac                     |             |
|                    |             |                           |                  | Catalog Number                      | Part Number | Catalog Number                      | Part Number | Catalog Number                      | Part Number |
| 800                | A           | 230.8-276.8               | 3000             | M5MS800T3L                          | 1102114     | M5MN800T3L                          | 1102117     | M5MH800T3L                          | 1102120     |
|                    | B           | 276.9-323.0               | 3600             |                                     |             |                                     |             |                                     |             |
|                    | C           | 323.1-369.0               | 4200             |                                     |             |                                     |             |                                     |             |
|                    | D           | 369.2-415.3               | 4800             |                                     |             |                                     |             |                                     |             |
|                    | E           | 415.4-461.4               | 5400             |                                     |             |                                     |             |                                     |             |
|                    | F           | 461.5-507.6               | 6000             |                                     |             |                                     |             |                                     |             |
|                    | G           | 507.7-522.2               | 6600             |                                     |             |                                     |             |                                     |             |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

M6M Lug Line/Load Side Connection



| Continuous<br>Amperes | Cam<br>Setting | Full Load<br>Current<br>Amperes | MCP<br>Trip<br>Setting | S Interrupting -<br>Lug Line/Load Side |             | N Interrupting -<br>Lug Line/Load Side |             |
|-----------------------|----------------|---------------------------------|------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                       |                |                                 |                        | 42kA @ 480 Vac                         |             | 65kA @ 480 Vac                         |             |
|                       |                |                                 |                        | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
| 1200                  | 2              | 184.6-276.8                     | 2400                   | M6MS1200E3LF                           | 1101939     | M6MN1200E3LF                           | 1101942     |
|                       | 3              | 276.9-369.1                     | 3600                   |                                        |             |                                        |             |
|                       | 4              | 369.2-553.7                     | 4800                   |                                        |             |                                        |             |
|                       | 6              | 553.8-738.4                     | 7200                   |                                        |             |                                        |             |
|                       | 8              | 738.5-923.0                     | 9600                   |                                        |             |                                        |             |
|                       | 10             | 923.1-1107.6                    | 12000                  |                                        |             |                                        |             |
|                       | 12             | 1107.7-1309.1                   | 14400                  |                                        |             |                                        |             |

- Lug Line/Load Side Connection MCCB sold with Terminal Lugs

# M1M-M6M Ratings

|                                                                                                   |                                | M1M   |     |     | M2M |     |     | M3M |     |     | M4M |     |     | M5M |     |     | M6M      |          |
|---------------------------------------------------------------------------------------------------|--------------------------------|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------|----------|
| Current Range (A)                                                                                 |                                | 3~150 |     |     | 250 |     |     | 400 |     |     | 600 |     |     | 800 |     |     | 1200     |          |
| Number of Poles                                                                                   |                                | 3     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Breaker Type                                                                                      |                                | S     | N   | H   | S   | N   | H   | S   | N   | H   | S   | N   | H   | S   | N   | H   | S        | N        |
| Rated Voltage<br>50/60 Hz Vac                                                                     |                                | 600   |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Interrupting Capacity (kA rms)                                                                    |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Circuit Breaker Ratings<br>UL 489<br>CSA C22.2<br>(kA rms)<br>Vac 50/60 Hz                        | 240 Vac                        | 50    | 100 | 150 | 50  | 100 | 150 | 65  | 100 | 150 | 65  | 100 | 150 | 65  | 100 | 150 | 65       | 100      |
|                                                                                                   | 480 Vac                        | 35    | 65  | 100 | 35  | 65  | 100 | 42  | 65  | 100 | 42  | 65  | 100 | 42  | 65  | 100 | 42       | 65       |
|                                                                                                   | 600 Vac                        | 14    | 20  | 25  | 14  | 20  | 25  | 18  | 25  | 30  | 22  | 30  | 50  | 22  | 30  | 50  | 22       | 42       |
| Circuit Breaker Ratings<br>IEC 60947-2 Ultimate<br>Breaking Capacity (Icu =<br>100% Ics) (kA rms) | 220 / 240 Vac<br>380 / 415 Vac | 50    | 100 | 150 | 50  | 100 | 150 | 65  | 100 | 150 | 65  | 100 | 150 | 65  | 100 | 150 | 65<br>45 | 85<br>45 |
|                                                                                                   | 660 / 690 Vac                  | 5     | 8   | 10  | 6   | 10  | 12  | 10  | 15  | 20  | 12  | 15  | 20  | 12  | 15  | 20  | 30       | 30       |
| Magnetic<br>Trip Units                                                                            | A = Adjustable<br>M = Magnetic | AM    |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Accessories                                                                                       |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Alarm Switch                                                                                      |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Auxiliary Contact                                                                                 |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Shunt Trip                                                                                        |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Under-Voltage Trip                                                                                |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Handle Operators                                                                                  |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Handle Lock                                                                                       |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Flange Handle                                                                                     |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Mechanical Interlock                                                                              |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Motor Operator                                                                                    |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Terminal Cover and Kits                                                                           |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Connection                                                                                        |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |
| Lug Line/Load Side Connection                                                                     |                                |       |     |     |     |     |     |     |     |     |     |     |     |     |     |     |          |          |

| Breaker<br>Frame | Dimensions LxWxD<br>in (mm) |         |                                    |         | Weight lb (kg) |         |          |                  |         |
|------------------|-----------------------------|---------|------------------------------------|---------|----------------|---------|----------|------------------|---------|
|                  | 1 Pole                      | 2 Poles | 3 Poles                            | 4 Poles | 1 Pole         | 2 Poles | 2 Poles* | 3 Poles          | 4 Poles |
| M1M              | -                           | -       | 6.46x3.54x3.33<br>(164x90x34.5)    | -       | -              | -       | -        | 3.68<br>(1.67)   | -       |
| M2M              | -                           | -       | 7.17x4.13x3.47<br>(182x105x38)     | -       | -              | -       | -        | 4.41<br>(2)      | -       |
| M3M              | -                           | -       | 11.22x5.51x4.59<br>(285x140x116.5) | -       | -              | -       | -        | 13.45<br>(6.1)   | -       |
| M4M              | -                           | -       | 12.32x7.68x5.43<br>(313x195x138)   | -       | -              | -       | -        | 25.35<br>(11.5)  | -       |
| M5M              | -                           | -       | 16.18x7.68x7.58<br>(411x195x192.5) | -       | -              | -       | -        | 33.18<br>(15.05) | -       |
| M6M              | -                           | -       | 17.72x8.27x6.6<br>(450x210x167.6)  | -       | -              | -       | -        | 55.56<br>(25.2)  | -       |

M1M-M3M Trip Unit

Adjustable Magnetic

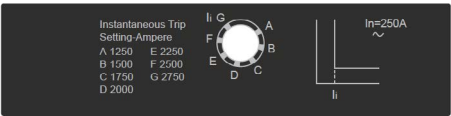
- Adjustable Magnetic
- 21-4400A Tripping Current
- Continuous Amperes: M1M~M3M 3~400A
- Frames applicable to M1M:150A, M2M: 250A, M3M: 400A,

|                                              |                | M1M |    |     |     |     |     |      |      |
|----------------------------------------------|----------------|-----|----|-----|-----|-----|-----|------|------|
| Adjustable Magnetic Short Circuit Protection | I <sub>i</sub> | 3A  | 7A | 15A | 30A | 50A | 70A | 100A | 150A |
|                                              | A              | 21  | 35 | 75  | 150 | 250 | 350 | 500  | 750  |
|                                              | B              | 24  | 42 | 90  | 180 | 300 | 420 | 600  | 900  |
|                                              | C              | 27  | 49 | 105 | 210 | 350 | 490 | 700  | 1050 |
|                                              | D              | 30  | 56 | 120 | 240 | 400 | 560 | 800  | 1200 |
|                                              | E              | 33  | 63 | 135 | 270 | 450 | 630 | 900  | 1350 |
|                                              | F              |     | 70 | 150 | 300 | 500 | 700 | 1000 | 1500 |
|                                              | G              |     |    |     | 330 | 550 | 770 | 1100 | 1650 |

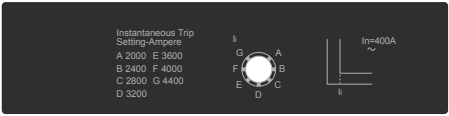
Instantaneous Trip Setting-Ampere  
A 750 E 1350  
B 900 F 1500  
C 1050 G 1650  
D 1200

In=150A

|                                              |                | M2M   |  |
|----------------------------------------------|----------------|-------|--|
| Adjustable Magnetic Short Circuit Protection | I <sub>i</sub> | 250 A |  |
|                                              | A              | 1250  |  |
|                                              | B              | 1500  |  |
|                                              | C              | 1750  |  |
|                                              | D              | 2000  |  |
|                                              | E              | 2250  |  |
|                                              | F              | 2500  |  |
|                                              | G              | 2750  |  |



|                                              |                | M3M  |  |
|----------------------------------------------|----------------|------|--|
| Adjustable Magnetic Short Circuit Protection | I <sub>i</sub> | 400A |  |
|                                              | A              | 2000 |  |
|                                              | B              | 2400 |  |
|                                              | C              | 2800 |  |
|                                              | D              | 3200 |  |
|                                              | E              | 3600 |  |
|                                              | F              | 4000 |  |
|                                              | G              | 4400 |  |



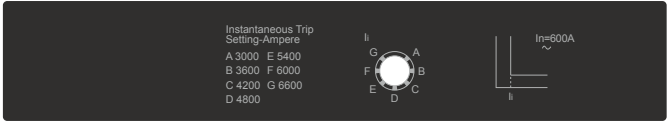
M4M-M6M Trip Unit

Adjustable Magnetic

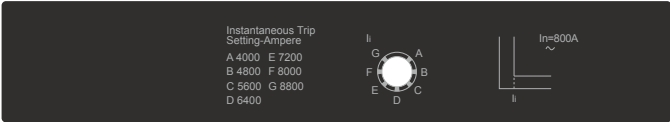
- Adjustable Magnetic
- 3000-14400A Tripping Current
- Continuous Amperes: M4M~M6M 600~1200A
- Frames applicable to M4M: 600A, M5M: 800A, M6M: 1200A

B

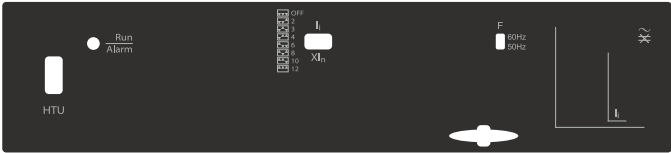
| M4M                                          |       |      |
|----------------------------------------------|-------|------|
| Adjustable Magnetic Short Circuit Protection | $I_i$ | 600A |
|                                              | A     | 3000 |
|                                              | B     | 3600 |
|                                              | C     | 4200 |
|                                              | D     | 4800 |
|                                              | E     | 5400 |
|                                              | F     | 6000 |
|                                              | G     | 6600 |



| M5M                                          |       |      |
|----------------------------------------------|-------|------|
| Adjustable Magnetic Short Circuit Protection | $I_i$ | 800A |
|                                              | A     | 4000 |
|                                              | B     | 4800 |
|                                              | C     | 5600 |
|                                              | D     | 6400 |
|                                              | E     | 7200 |
|                                              | F     | 8000 |
|                                              | G     | 8800 |

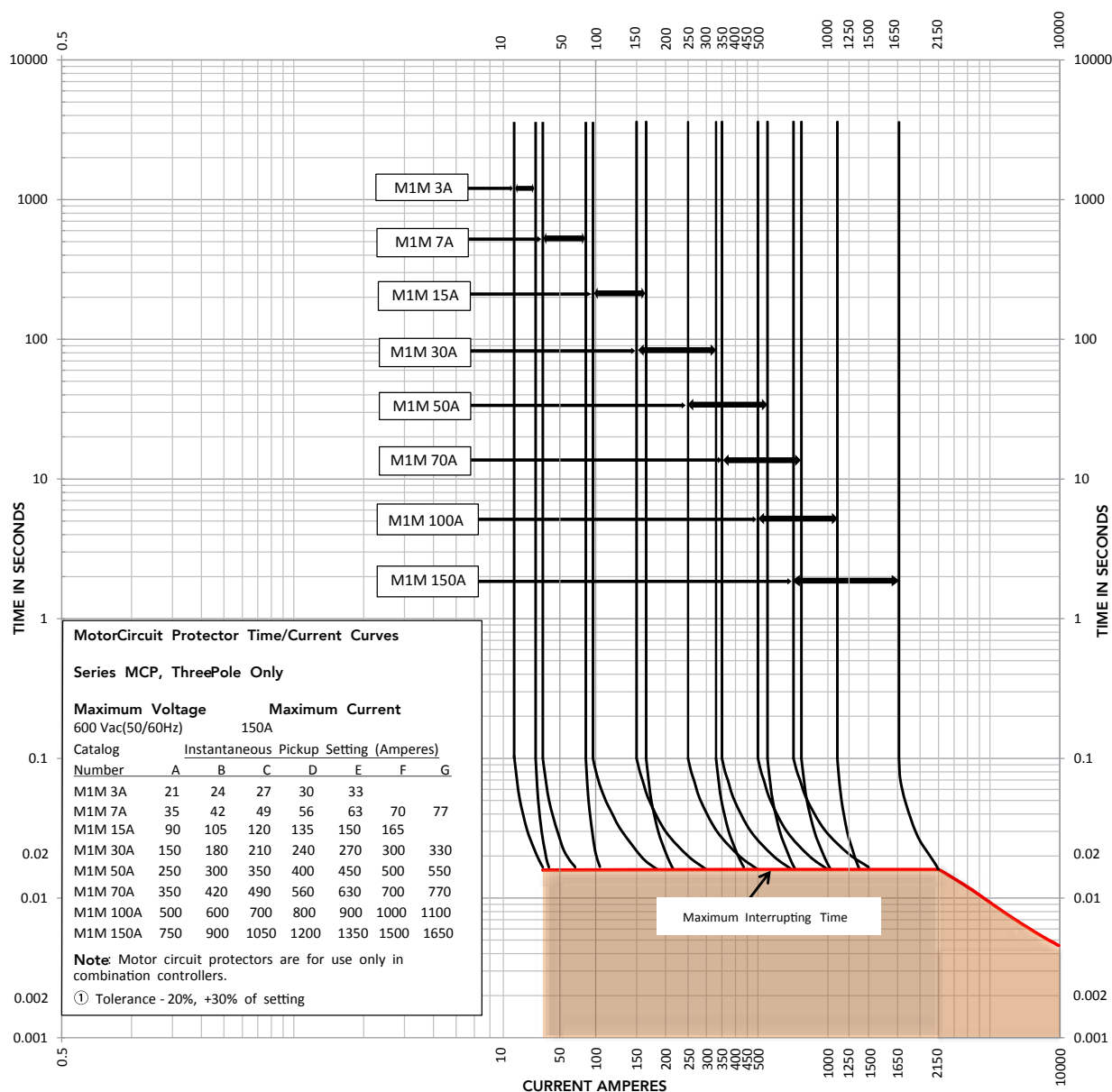


| M6M                                          |       |       |
|----------------------------------------------|-------|-------|
| Adjustable Magnetic Short Circuit Protection | $I_i$ | 1200A |
|                                              | 2     | 2400  |
|                                              | 3     | 3600  |
|                                              | 4     | 4800  |
|                                              | 6     | 7200  |
|                                              | 8     | 9600  |
|                                              | 10    | 12000 |
|                                              | 12    | 14400 |



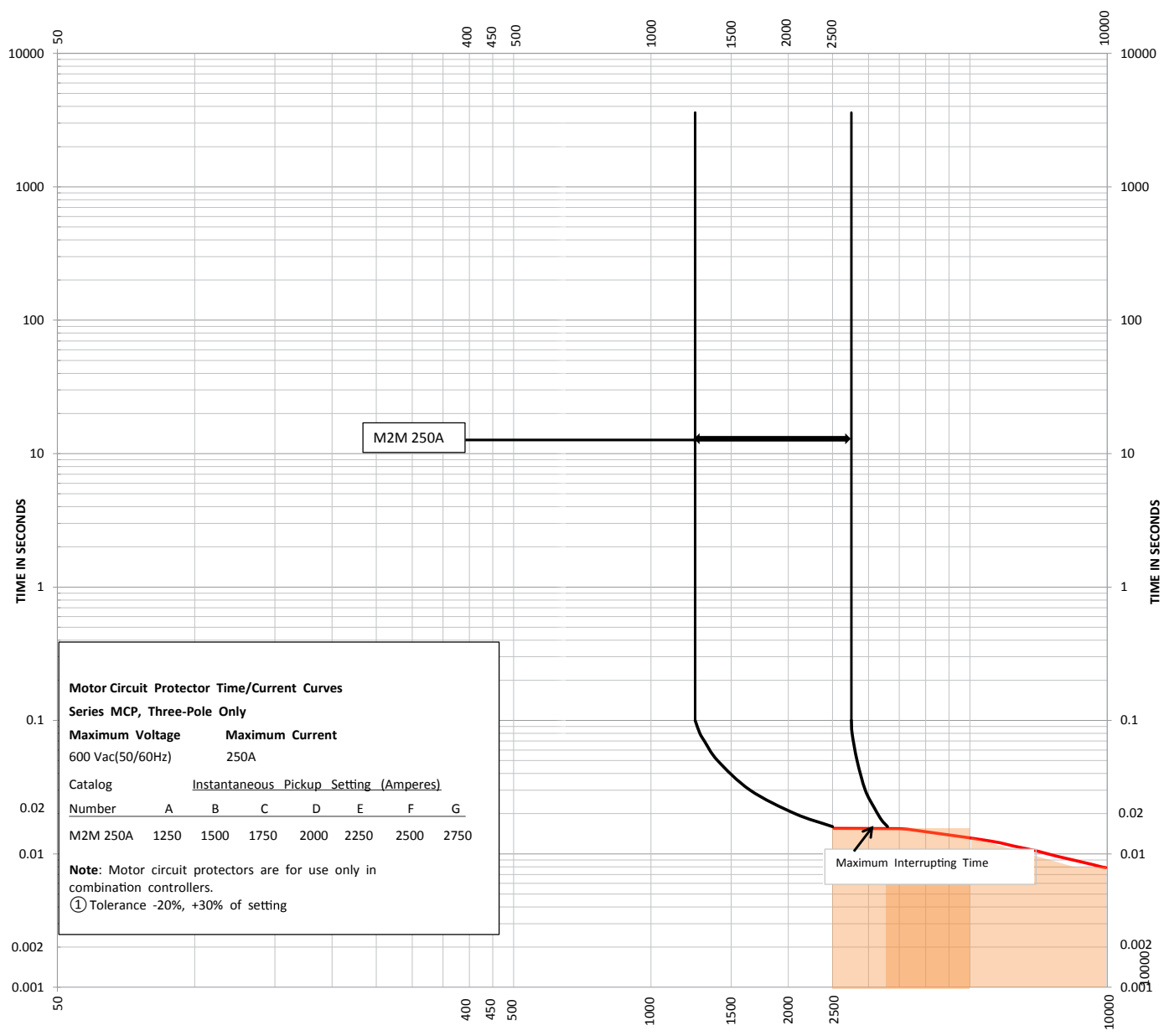
## M1M Trip Curve

### Motor Circuit Protector Time/Current Curves for M1M CURRENT AMPERES



M2M Trip Curve

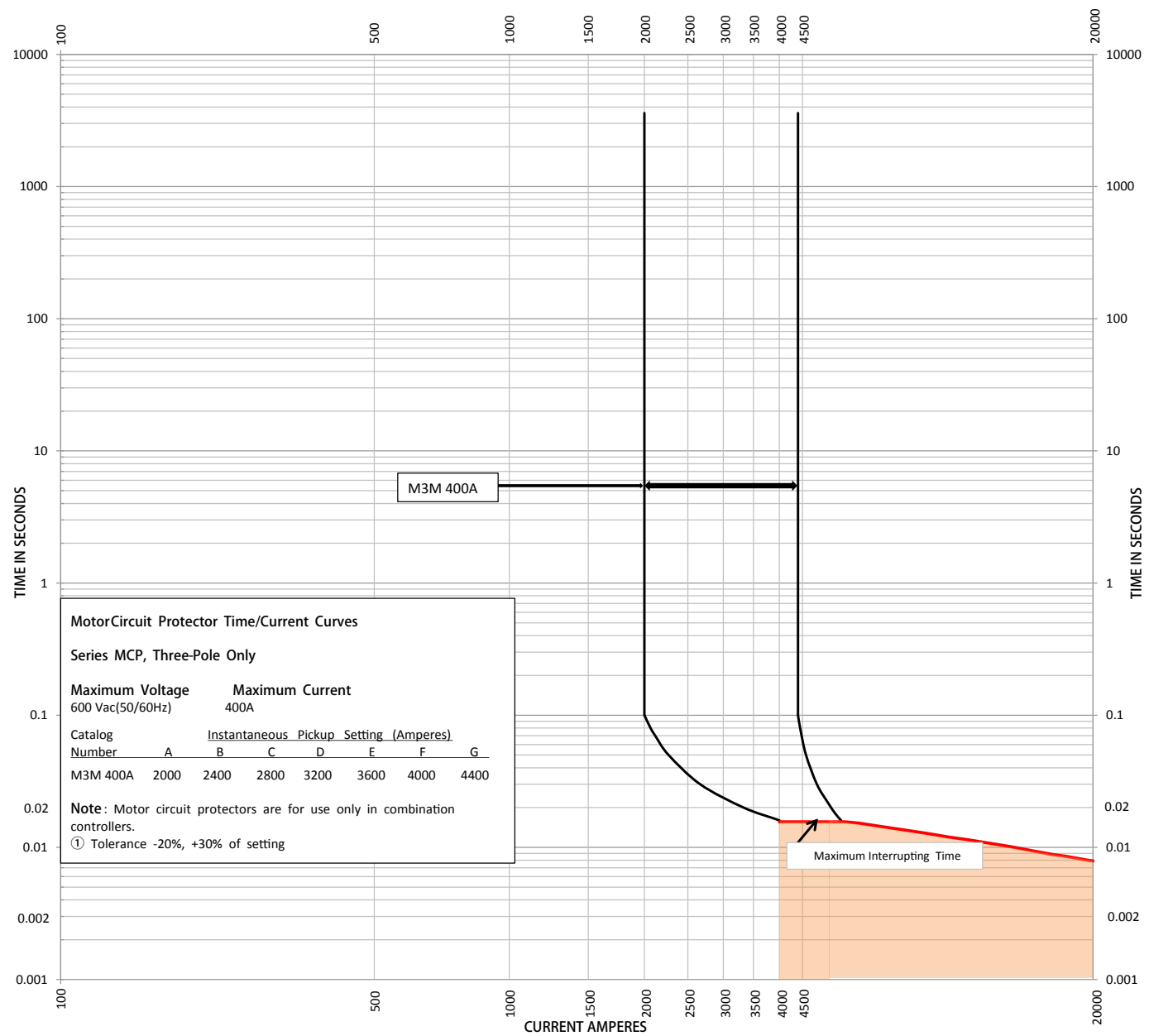
Motor Circuit Protector Time/Current Curves for M2M  
CURRENT AMPERES



B

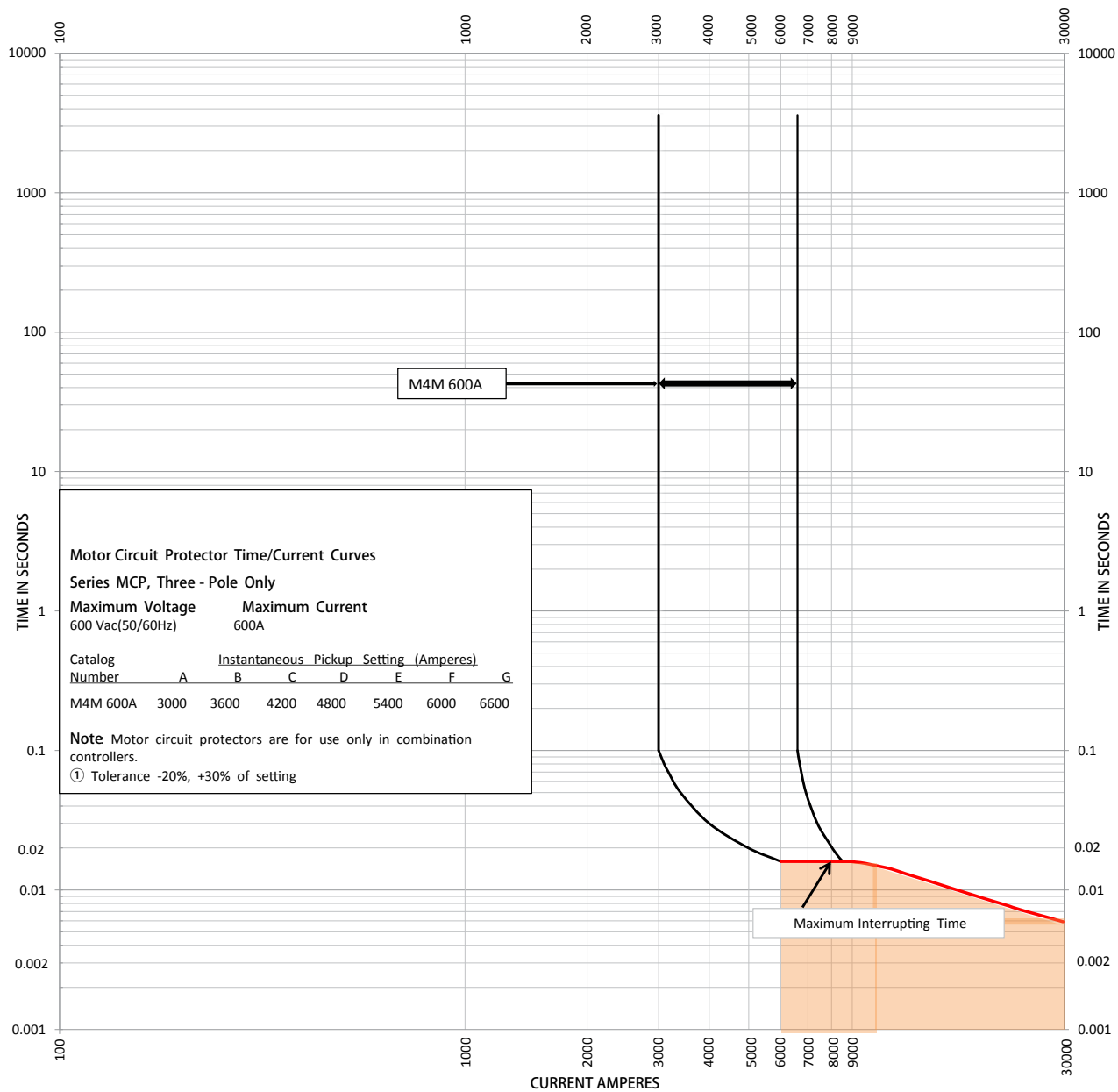
M3M Trip Curve

Motor Circuit Protector Time/Current Curves for M3M  
CURRENT AMPERES



M4M Trip Curve

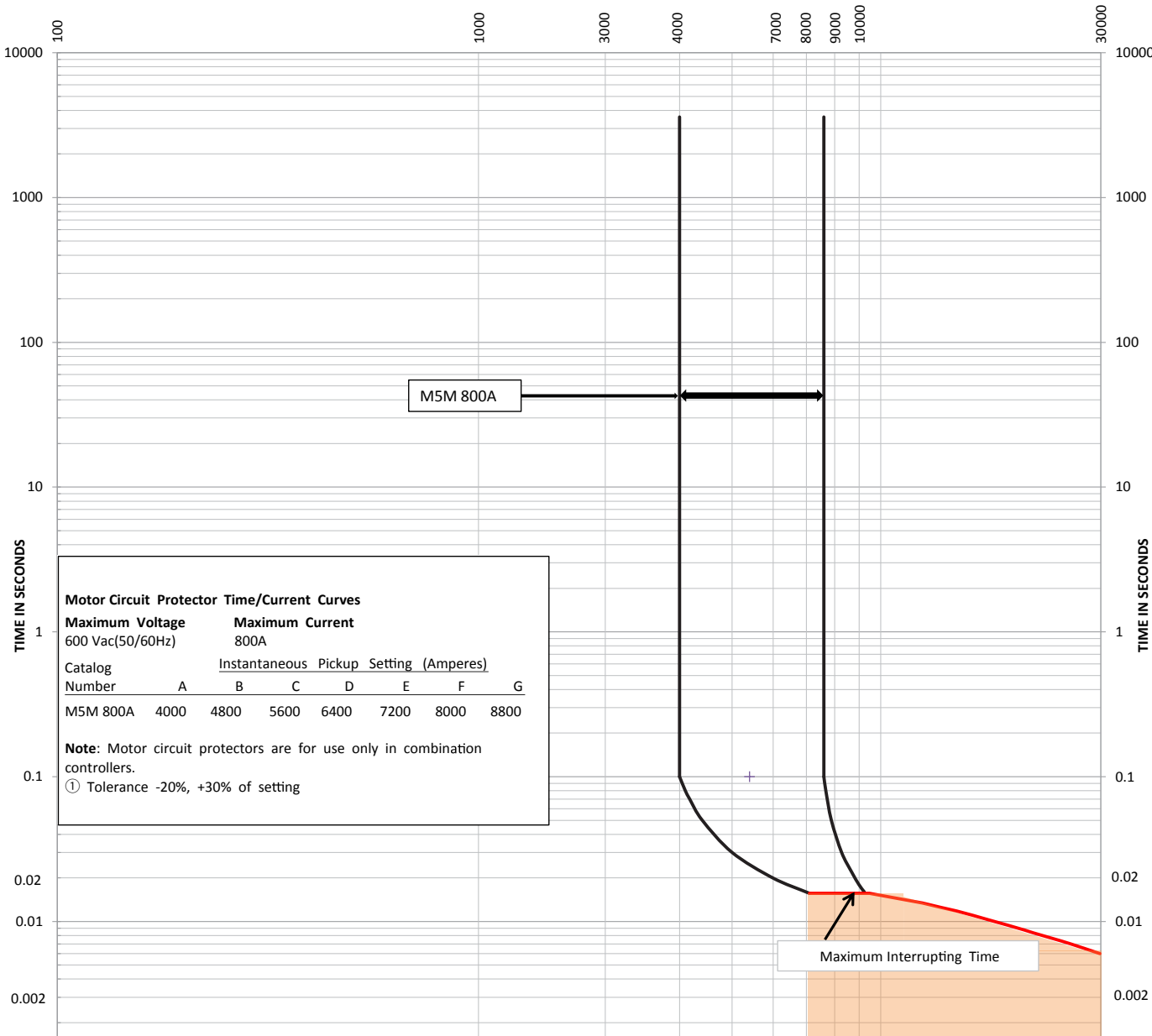
Motor Circuit Protector Time/Current Curves for M4M  
CURRENT AMPERES



B

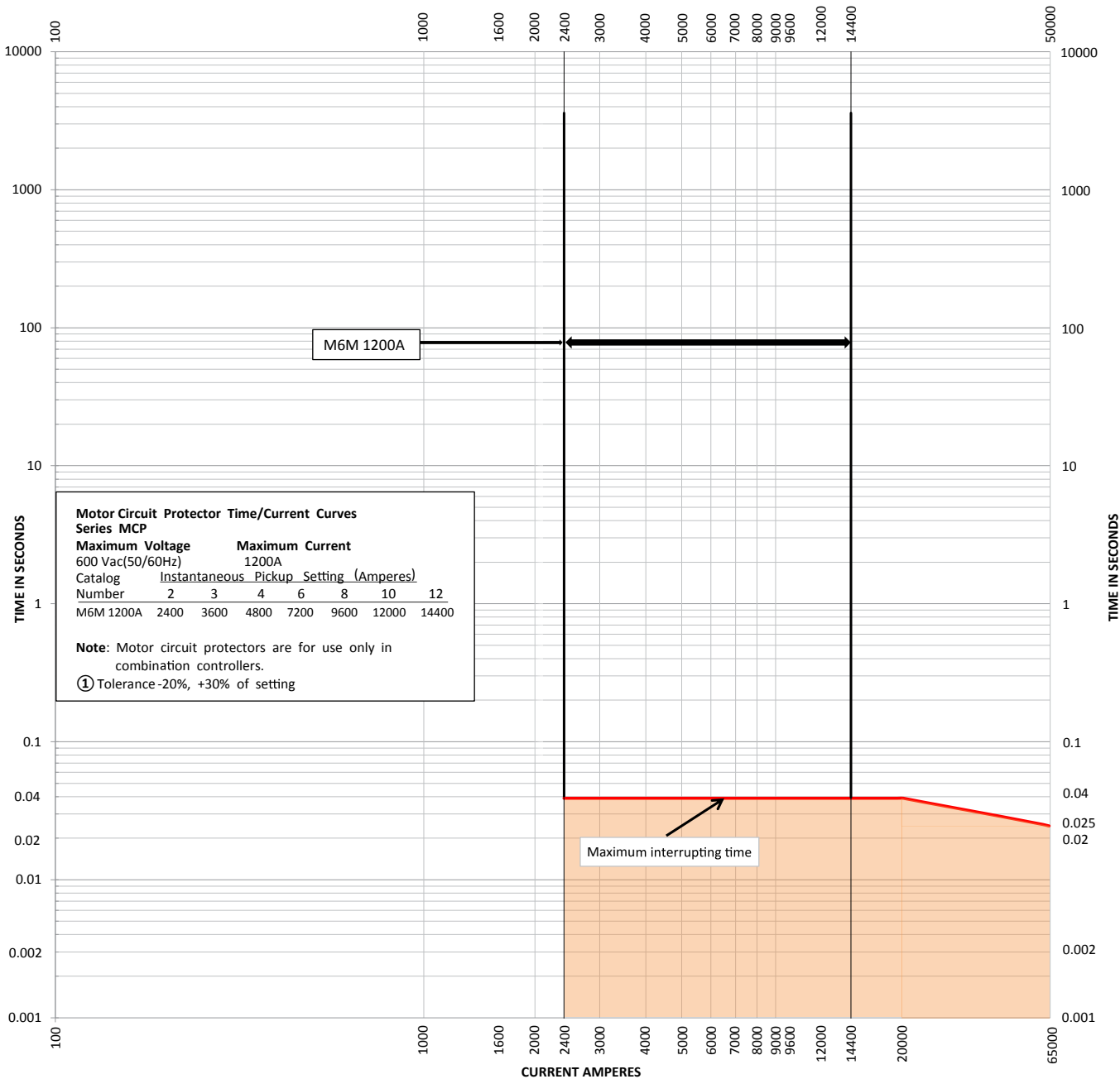
M5M Trip Curve

Motor Circuit Protector Time/Current Curves for M5M  
CURRENT AMPERES



M6M Trip Curve

Motor Circuit Protector Time/Current Curves for M6M  
CURRENT AMPERES



B

For MCP Mounting Positions, please see  
pages A42-A45.

# Molded Case Switches

## M1D-M6D



## M1D-M6D Product Overview

### Features

#### **Ex9 Series - M Molded Case Switches, 100~1200 A**

NOARK Electric offers a complete range of Molded Case Switches in six frame sizes: M1 - 150 A, M2 - 250 A, M3 - 400 A, M4 - 600 A, M5 - 800 A, and M6 - 1,200 A. Each frame size offers a range of interrupting voltage ratings from 240-690 Vac and 250-600 Vdc. The Ex9 Series – M Molded Case Switches are only used for magnetic protection applications mainly as supply circuit protection and emergency-off disconnect switches. The Ex9 Series – M conforms to global standards that include UL 489, CSA C22.2 No 5 and IEC 60947-2.

#### **The Ex9 Series – M offers:**

- Instantaneous trip ability and a new patented arc extinguishing design
- New patented technology reduces the manual operating force
- High-quality compact modular with energy saving and environmentally friendly design
- Installation flexibility:
  - ✓ Lug Line/Load Side Connection
  - ✓ Rear Connection
- Wide range of accessories:
  - ✓ Alarm Switch and Auxiliary Contact
  - ✓ Shunt and Under-Voltage Trip
  - ✓ Interlock
  - ✓ NEMA and ICE Type Rotary Handle
  - ✓ NEMA Type Flange Handle
  - ✓ Motor Operator

## M1D-M6D National and International Standards

### Certifications

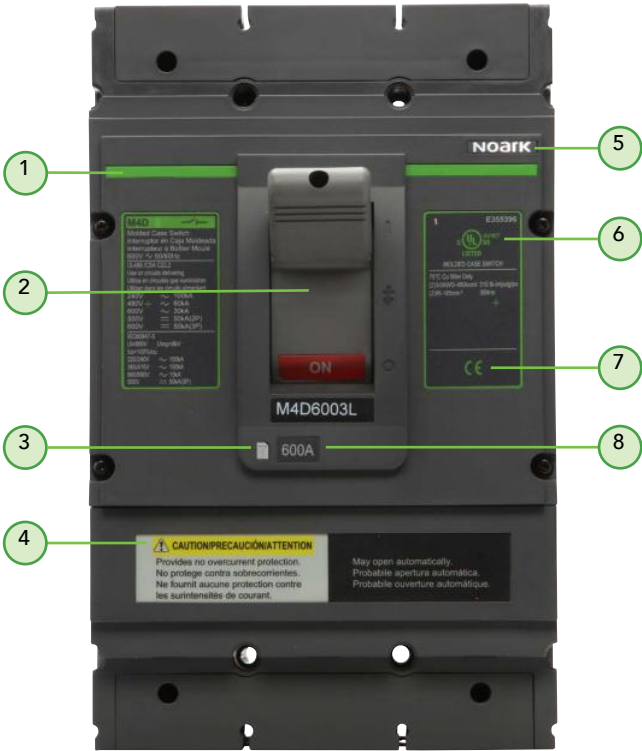
- UL 489 Listed, File Number E355396  
(Standard for connection terminals which allows the user to apply field wiring directly to the breaker)
- UL listed to UL489 and CSA standards 22.2 No. 5
- IEC/EN 60947-2
- CE Compliant
- RoHS Compliant



M1D-M6D Product Selection Guide

Label

- 1 Product Series
- 2 Handle
- 3 Test Button
- 4 Warning Label
- 5 Brand
- 6 UL Listed Mark
- 7 CE Mark
- 8 Rated Current



Product Selection Guide

| M                       | 1                                                                     | D                       | H                                                                                     | 100                                                                          | 2                                               | L                                            | F <sup>1</sup>                                           |
|-------------------------|-----------------------------------------------------------------------|-------------------------|---------------------------------------------------------------------------------------|------------------------------------------------------------------------------|-------------------------------------------------|----------------------------------------------|----------------------------------------------------------|
| NOARK<br>Ex9 Series - M | Frame<br>Size                                                         | Protection Type         | Switch Type                                                                           | Amperage                                                                     | Pole                                            | Terminal Option                              | Rate Code                                                |
|                         | 1: 150 A<br>2: 250 A<br>3: 400 A<br>4: 600 A<br>5: 800 A<br>6: 1200 A | D: Disconnect<br>Switch | Blank: Disconnect<br>Interrupting<br>Capacity<br><br>H: High Interrupting<br>Capacity | M1: 3~150 A<br>M2: 250 A<br>M3: 400 A<br>M4: 600 A<br>M5: 800A<br>M6: 1200 A | 2*: 2 Poles<br><br>3: 3 Poles<br><br>4: 4 Poles | L: Lug Line/Load Side<br>Connection (1-Hole) | Blank: Standard MCCB<br>(80% Rated)<br><br>F: 100% Rated |

## M1D-M6D Specifications

| Switch Frame | Rated Current (A) | Poles | Rated Voltage |     | Switch Type | Withstand Rating* (kA rms) |         |         |                 |                 | Insulation Voltage (V) | Impulse Withstand Voltage (Vimp) | Operational Voltage (Ve) |         | Mechanical Operating Cycles | Electrical Operating Cycles |
|--------------|-------------------|-------|---------------|-----|-------------|----------------------------|---------|---------|-----------------|-----------------|------------------------|----------------------------------|--------------------------|---------|-----------------------------|-----------------------------|
|              |                   |       | Vac 50/60 Hz  | Vdc |             | 240 Vac                    | 480 Vac | 600 Vac | 500 Vac 2 Poles | 600 Vac 3 Poles |                        |                                  | UL                       | IEC     |                             |                             |
| M1D          | 100-150           | 2,3   | 600           | 600 | M1D         | 100                        | 65      | 20      | 35              | 35              | 800 Vac                | 8 kVac                           | 600 Vac                  | 690 Vac | 10,000                      | 6,000                       |
|              |                   |       |               |     | M1DH        | 150                        | 100     | 25      | 50              | 50              |                        |                                  |                          |         |                             |                             |
| M2D          | 100-250           |       |               |     | M2D         | 100                        | 65      | 20      | 35              | 35              |                        |                                  |                          |         |                             |                             |
|              |                   |       |               |     | M2DH        | 150                        | 100     | 25      | 50              | 50              |                        |                                  |                          |         | 8,000                       | 5,000                       |
| M3D          | 250-400           |       |               |     | M3D         | 100                        | 65      | 25      | 50              | 50              |                        |                                  |                          |         |                             |                             |
|              |                   |       |               |     | M3DH        | 150                        | 100     | 30      | 65              | 65              |                        |                                  |                          |         |                             |                             |
| M4D          | 400-600           | 2,3,4 | 600           | 600 | M4D         | 100                        | 65      | 30      | 50              | 60              | 800 Vac                | 8 kVac                           | 600 Vac                  | 690 Vac | 3,000                       | 500                         |
|              |                   |       |               |     | M4DH        | 150                        | 100     | 50      | 65              | 65              |                        |                                  |                          |         |                             |                             |
| M5D          | 800               |       |               |     | M5D         | 100                        | 65      | 30      | 50              | 50              |                        |                                  |                          |         |                             |                             |
|              |                   |       |               |     | M5DH        | 150                        | 100     | 50      | 65              | 65              |                        |                                  |                          |         |                             |                             |
| M6D          | 800-1200          | 3,4   | -             | -   | M6D         | 100                        | 65      | 42      | -               | -               |                        |                                  |                          |         |                             |                             |

| Breaker Frame | Dimensions LxWxD in (mm)           |                                    | Weight lb (kg) |               |              | Cable Lugs                                | Cable Lug Torque in-lb (Nm) |
|---------------|------------------------------------|------------------------------------|----------------|---------------|--------------|-------------------------------------------|-----------------------------|
|               | 3 Poles                            | 4 Poles                            | 2 Poles*       | 3 Poles       | 4 Poles      |                                           |                             |
| M1D           | 6.46x3.54x3.33<br>(164x90x84.5)    | -                                  | 3.17 (1.44)    | 3.68 (1.67)   | -            | One #14 to 3/0 CU or One #12 to 3/0 AL    | 89 (10)                     |
| M2D           | 7.17x4.13x3.47<br>(182x105x88)     | -                                  | 3.75 (1.70)    | 4.41 (2.00)   | -            | One #3 to 300kcmil CU/AL                  | 230 (23)                    |
| M3D           | 11.22x5.51x4.59<br>(285x140x116.5) | -                                  | 8.97 (4.07)    | 13.45 (6.1)   | -            | One 4/0 to 600 kcmil CU/AL                | 310 (35)                    |
| M4D           | 12.32x7.68x5.43<br>(313x195x138)   | -                                  | 20.94 (9.5)    | 25.35 (11.5)  | -            | Two 2/0 to 500 kcmil CU/AL                | -                           |
| M5D           | 16.18x7.68x7.58<br>(411x195x192.5) | 16.18x10.2x7.58<br>(411x260x192.5) | 27 (12.15)     | 33.18 (15.05) | 43.43 (19.7) | Two 200 to 600 kcmil CU/AL                | 398 (45)                    |
|               |                                    |                                    |                |               |              | Three 250kcmil to 500kcmil CU/AL 800A Max | -                           |
| M6D           | 22.64x9.84x15.16<br>(575x320x385)  | 22.64x12.6x15.16<br>(575x320x385)  | -              | 55.56 (25.2)  | 69.67 (31.6) | (3) 3/0 to 750kcmil CU/AL 800A Max        | -                           |
|               |                                    |                                    |                |               |              | (4) 3/0 to 500kcmil CU/AL 1200A Max       | 310 (35)                    |

## M1D Lug Line/Load Side



- Lug Line/Load Side Connection MCS sold with Terminal Lugs

| M1D<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|--------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                    |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                    |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                    | 100                      | M1D1002L                               | 1100458     | M1D1003L                               | 1100454     |

| M1D<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|--------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                    |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                    |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                    | 150                      | M1D1502L                               | 1102196     | M1D1503L                               | 1102197     |

| M1DH<br>100kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|----------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                      |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                      |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                      | 100                      | M1DH1002L                              | 1101776     | M1DH1003L                              | 1101772     |

| M1DH<br>100kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|----------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                      |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                      |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                      | 150                      | M1DH1502L                              | 1102203     | M1DH1503L                              | 1102204     |

## M2D Lug Line/Load Side



- Lug Line/Load Side Connection MCS sold with Terminal Lugs

C

| M2D<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|--------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                    |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                    |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                    | 125                      | M2D1252L                               | 1100699     | M2D1253L                               | 1100695     |
|                    | 150                      | M2D1502L                               | 1100707     | M2D1503L                               | 1100703     |
|                    | 225                      | M2D2252L                               | 1100466     | M2D2253L                               | 1100462     |
| 250                | M2D2502L                 | 1101984                                | M2D2503L    | 1101980                                |             |

| M2DH<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|---------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                     |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                     |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                     | 125                      | M2DH1252L                              | 1101794     | M2DH1253L                              | 1101782     |
|                     | 150                      | M2DH1502L                              | 1101795     | M2DH1503L                              | 1101783     |
|                     | 225                      | M2DH2252L                              | 1101796     | M2DH2253L                              | 1101784     |
| 250                 | M2DH2502L                | 1101992                                | M2DH2503L   | 1101988                                |             |

## M3D and M4D Lug Line/Load Side

### M3D Lug Line/Load Side

| M3DH<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|---------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                     |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                     |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                     | 250                      | M3D2502L                               | 1100716     | M3D2503L                               | 1100711     |
|                     | 400                      | M3D4002L                               | 1100475     | M3D4003L                               | 1100470     |

| M3DH<br>100kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|----------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                      |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                      |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                      | 250                      | M3DH2502L                              | 1101817     | M3DH2503L                              | 1101805     |
|                      | 400                      | M3DH4002L                              | 1101818     | M3DH4003D                              | 1101814     |

### M4D Lug Line/Load Side

| M4D<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|--------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                    |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                    |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                    | 600                      | M4D6002L                               | 1100484     | M4D6003L                               | 1100480     |

| M4DH<br>100kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                                |             | 3 Poles                                |             |
|----------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                      |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                      |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                      | 600                      | M4DH6002L                              | 1101832     | M4DH6003L                              | 1101828     |

## M5D and M6D Lug Line/Load Side

### M5D Lug Line/Load Side

| M5D<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                       |             | 3 Poles                       |             | 4 Poles                       |             |
|--------------------|--------------------------|-------------------------------|-------------|-------------------------------|-------------|-------------------------------|-------------|
|                    |                          | Lug Line/Load Side Connection |             | Lug Line/Load Side Connection |             | Lug Line/Load Side Connection |             |
|                    |                          | Catalog Number                | Part Number | Catalog Number                | Part Number | Catalog Number                | Part Number |
|                    | 800                      | M5D8002L                      | 1100484     | M5D8003L                      | 1102076     | M5D8004L                      | 1102078     |

| M5DH<br>100kA@480Vac | Rated<br>Amperage<br>(A) | 2 Poles                       |             | 3 Poles                       |             | 4 Poles                       |             |
|----------------------|--------------------------|-------------------------------|-------------|-------------------------------|-------------|-------------------------------|-------------|
|                      |                          | Lug Line/Load Side Connection |             | Lug Line/Load Side Connection |             | Lug Line/Load Side Connection |             |
|                      |                          | Catalog Number                | Part Number | Catalog Number                | Part Number | Catalog Number                | Part Number |
|                      | 800                      | M5DH8002L                     | 1102080     | M5DH8003L                     | 1102082     | M5DH8004L                     | 1102084     |

### M6D Lug Line/Load Side

| M6D<br>65kA@480Vac | Rated<br>Amperage<br>(A) | 3 Poles                                |             | 4 Poles                                |             |
|--------------------|--------------------------|----------------------------------------|-------------|----------------------------------------|-------------|
|                    |                          | Lug Line/Load Side Connection (1-Hole) |             | Lug Line/Load Side Connection (1-Hole) |             |
|                    |                          | Catalog Number                         | Part Number | Catalog Number                         | Part Number |
|                    | 800                      | M6D8003LF                              | 1101922     | M6D8004LF                              | 1101928     |
|                    | 1000                     | M6D10003LF                             | 1101923     | M6D10004LF                             | 1101929     |
|                    | 1200                     | M6D12003LF                             | 1101924     | M6D12004LF                             | 1101930     |

## M1D-M6D Specifications

|                                                                               |                 | M1D/H     |      | M2D/H     |      | M3D/H   |      | M4D/H   |      | M5D/H |       | M6D      |     |
|-------------------------------------------------------------------------------|-----------------|-----------|------|-----------|------|---------|------|---------|------|-------|-------|----------|-----|
| Rated Current (A)                                                             |                 | 100 ~ 150 |      | 125 ~ 250 |      | 250~400 |      | 400~600 |      | 800   |       | 800~1200 |     |
| Number of Poles                                                               |                 | 2, 3      |      |           |      |         |      |         |      |       | 2,3,4 |          | 3,4 |
| Switch Type                                                                   |                 | M1D       | M1DH | M2D       | M2DH | M3D     | M3DH | M4D     | M4DH | M5D   | M5DH  | M6D      |     |
| Rated Voltage<br>50/60 Hz                                                     | Vac             | 600       |      |           |      |         |      |         |      |       |       |          |     |
|                                                                               | Vdc             | 600       |      |           |      |         |      |         |      |       |       | -        |     |
| Withstand Rating* (kA rms)                                                    |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Circuit Breaker Ratings<br>UL 489-<br>-C-SA C22.2<br>(kA rms)<br>Vac 50/60 Hz | 240 Vac         | 100       | 150  | 100       | 150  | 100     | 150  | 100     | 150  | 100   | 150   | 100      |     |
|                                                                               | 480 Vac         | 65        | 100  | 65        | 100  | 65      | 100  | 65      | 100  | 65    | 100   | 65       |     |
|                                                                               | 600 Vac         | 20        | 25   | 20        | 25   | 25      | 30   | 30      | 50   | 30    | 50    | 42       |     |
|                                                                               | 500 Vdc 2 Poles | 35        | 50   | 35        | 50   | 50      | 65   | 50      | 65   | 50    | 65    | -        |     |
|                                                                               | 600 Vdc 3 Poles | 35        | 50   | 35        | 50   | 50      | 65   | 50      | 65   | 50    | 65    | -        |     |
| Circuit Breaker Ratings<br>IEC 60947-2                                        | 220 / 240 Vac   | 100       | 150  | 100       | 150  | 100     | 150  | 100     | 150  | 100   | 150   | 85 (60)  |     |
|                                                                               | 380 / 415 Vac   |           |      |           |      |         |      |         |      |       |       |          |     |
|                                                                               | 660 / 690 Vac   | 8         | 10   | 10        | 12   | 15      | 20   | 15      | 20   | 15    | 20    |          |     |
| Ultimate Breaking<br>Capacity (Icu = 100%<br>Ics) (kA rms)                    | 500 Vdc 3 Poles | 35        | 50   | 35        | 50   | 50      | 65   | 50      | 65   | -     | -     | -        |     |
|                                                                               | 500 Vdc 2 Poles | 35        | 50   | 35        | 50   | 50      | 65   | 50      | 65   | 50    | 50    | -        |     |
| Trip Current (A)                                                              |                 | 15xIn     |      | 12xIn     |      | 12xIn   |      | 10xIn   |      | 10xIn |       | 15xIn    |     |
| Accessories                                                                   |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Alarm Switch                                                                  |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Auxiliary Contact                                                             |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Shunt Trip                                                                    |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Under-Voltage Trip                                                            |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Handle Operators                                                              |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Handle Lock                                                                   |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Flange Handle                                                                 |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Mechanical Interlock                                                          |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Motor Operator                                                                |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Terminal Cover and Kits                                                       |                 |           |      |           |      |         |      |         |      |       |       |          |     |
| Lug Line/Load Side Connection                                                 |                 |           |      |           |      |         |      |         |      |       |       |          |     |

\*NOTE: The withstand rating is the fault, at rated voltage, that the molded case switch will withstand without damage when protected by a circuit breaker or fuse with an equal continuous current rating.

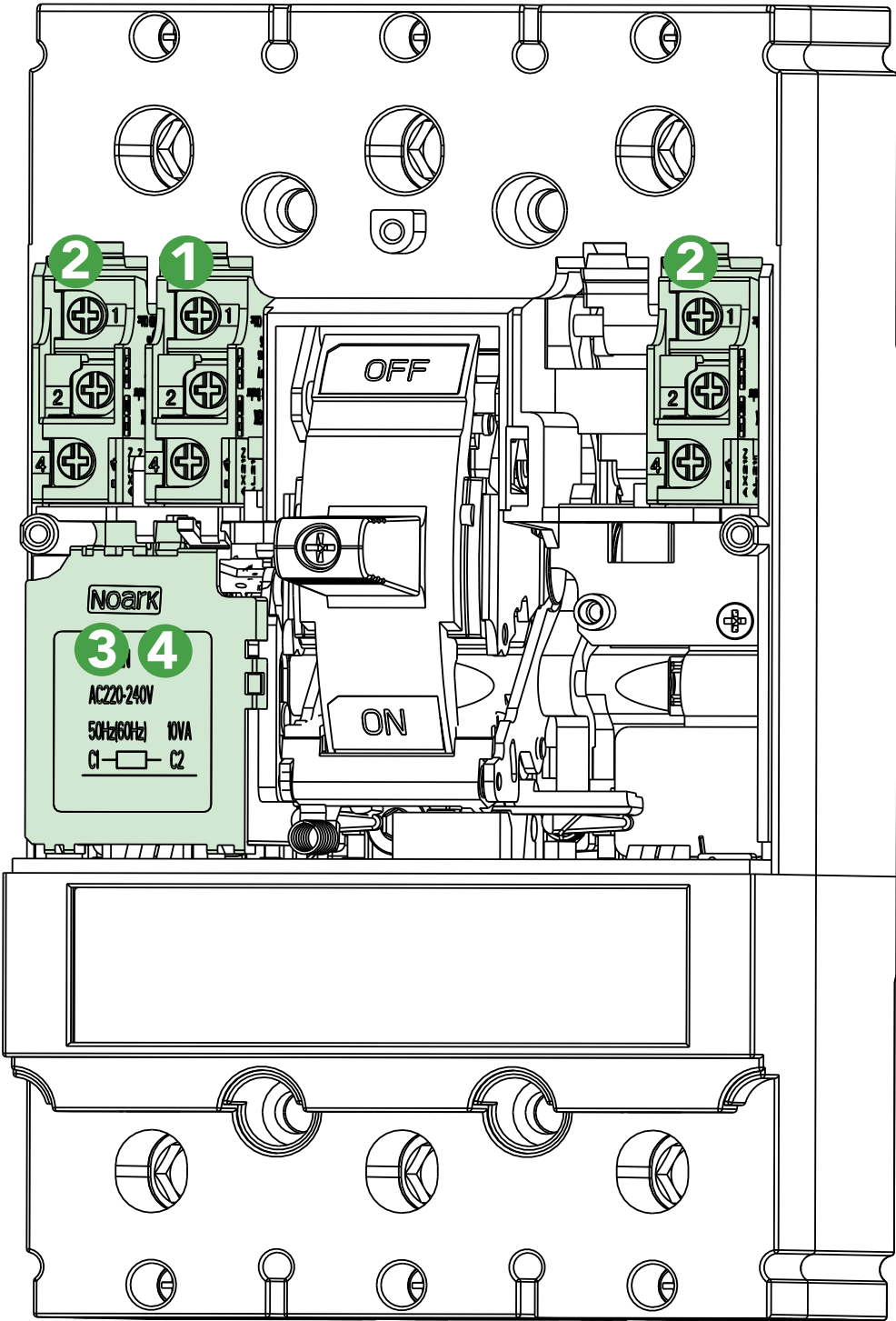
## M1D-M6D Specifications

|                                                                   |         | M1D                             | M2D                                 | M3D                                | M4D                              | M5D                                                                             | M6D                                                                                   |                                |         |                                  |
|-------------------------------------------------------------------|---------|---------------------------------|-------------------------------------|------------------------------------|----------------------------------|---------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------|---------|----------------------------------|
| Insulation Voltage (Vi)                                           |         | 800 Vac                         |                                     |                                    |                                  |                                                                                 |                                                                                       |                                |         |                                  |
| Impulse Withstand Voltage (Vimp)                                  |         | 8 kVac                          |                                     |                                    |                                  |                                                                                 |                                                                                       |                                |         |                                  |
| Operational Voltage (Ve)                                          | IEC     | 690 Vac                         |                                     |                                    |                                  |                                                                                 |                                                                                       |                                |         |                                  |
|                                                                   | UL      | 600 Vac                         |                                     |                                    |                                  |                                                                                 |                                                                                       |                                |         |                                  |
| IEC Ics (% Icu)                                                   |         | 100%                            |                                     |                                    |                                  |                                                                                 |                                                                                       |                                |         |                                  |
| Utilization Category                                              |         | A                               |                                     |                                    |                                  |                                                                                 |                                                                                       |                                |         |                                  |
| Mechanical Operating Cycles                                       |         | 10,000                          |                                     | 8,000                              |                                  | 3,000                                                                           |                                                                                       |                                |         |                                  |
| Electrical Operating Cycles                                       |         | 6,000                           |                                     | 5,000                              |                                  | 500                                                                             |                                                                                       |                                |         |                                  |
| Dimensions LxWxD in (mm)                                          |         | 6.46x3.54x3.33<br>(164x90x84.5) | 7.17x4.13x3.47<br>(182x105x88)      | 11.22x5.51x4.59<br>(285x140x116.5) | 12.32x7.68x5.43<br>(313x195x138) | 3P: 16.18x7.68x7.58<br>(411x195x192.5)<br>4P:16.18x10.2x7.58<br>(411x260x192.5) | 3p:<br>17.72x8.27x6.6<br>(450x210x167.6)<br>4P:<br>17.72x11.43x6.6<br>(450x280x167.6) |                                |         |                                  |
| Weight of Unit lb (kg)                                            | 2 Poles | 3.17 (1.44)                     | 3.75 (1.70)                         | 8.97 (4.07)                        | 20.94 (9.5)                      | 27 (12.15)                                                                      | -                                                                                     |                                |         |                                  |
|                                                                   | 3 Poles | 3.68 (1.67)                     | 4.41 (2.00)                         | 13.45 (6.1)                        | 25.35 (11.5)                     | 33.18 (15.05)                                                                   | 55.56 (25.2)                                                                          |                                |         |                                  |
|                                                                   | 4 Poles | -                               | -                                   | -                                  | -                                | 43.43 (19.7)                                                                    | 69.67 (31.6)                                                                          |                                |         |                                  |
| Cable Connection Wire<br>167 °F (75 °C) Cu Wire Only<br>AWG (mm²) |         | 1-Hole<br>14-3/0<br>(2.5-95)    | 1-Hole<br>3 - 350 kcmil<br>(10-185) | 1-Hole                             | #4/0-600<br>kcmil<br>(95-240)    | 2-Holes<br>(2x) 2/0-500<br>kcmil<br>((2x) 95-185)                               | 2-Holes                                                                               | 250-600kc-<br>mil<br>(120-300) | 3-Holes | 3/0-<br>750<br>kcmil<br>(95-300) |
|                                                                   |         |                                 |                                     | 2-Holes                            | 3 -<br>250 kcmil<br>(35-120)     |                                                                                 | 3-Holes                                                                               | 250-500<br>kcmil<br>(100-250)  | 4-Holes | 3/0-<br>500<br>kcmil<br>(95-240) |
| Lugs lb-in (N.m)                                                  |         | 89 (10)                         | 230 (23)                            | 310 (35)                           |                                  | 398 (45)                                                                        |                                                                                       | 310 (35)                       |         |                                  |

For MCS Mounting Positions, please see pages A42-A45.



# Molded Case Accessories



## Molded Case Accessories Overview

### Internal Accessories



1 Alarm Switch (AL)



2 Auxiliary Contact (AX)



3 Shunt Trip (SHT)



4 Under-Voltage Trip (UVT)

### External Accessories



Handle Lock (KLK)



Mechanical Interlock (MIT)



Motor Operator (MOD)



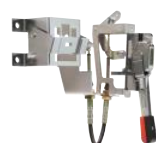
Internal Cabinet Handle



IEC Rotary Handle (RHD)  
(Closed Coupled)



Standard Extended Rotary  
Handle (ERH)  
(Through the Door)



NEMA Flange Handle  
Mechanism (FHM)  
(Through the Door)



Extended Rotary Handle

Molded Case Accessories Overview

Connection Hardware

Terminal Lugs (LTC)

Rear Connection Kit (RCP)

Multi-Wire Terminal Lug Kits

Terminal Cover

Conversion Kits and Phase Barriers



| Accessory Description          | Frame Size | Bus Pad Dimensions (mm) |       |        |           |       |        | Bolt Size | Bolt Torque     | Catalog Number |
|--------------------------------|------------|-------------------------|-------|--------|-----------|-------|--------|-----------|-----------------|----------------|
|                                |            | Up-Side                 |       |        | Down-Side |       |        |           |                 |                |
|                                |            | Width                   | Depth | Height | Width     | Depth | Height |           |                 |                |
| Lug to Bus Bar Conversion Kits | M1         | 14.2                    | 14.8  | 18.5   | 14.2      | 16.8  | 17.5   | M6*16     | 6N.m/53.1 lb in | CKLB21         |
|                                | M2         | 20                      | 18.5  | 22     | 20        | 30.5  | 20     | M8*20     | 8N.m/97.4 lb in | CKLB22         |
|                                | M3         | 30                      | 30    | 25.8   | 26        | 27    | 23.9   | M10*30    | 25Nm/222lb-in   | Not Required   |
|                                | M4         | 50                      | 33.3  | 31.5   | 50        | 33    | 31.5   | M12*30    | 18Nm/156lb-in   | Not Required   |
|                                | M5         | 50                      | 33.4  | 31.5   | 50        | 33    | 31.5   | M12*30    | 18Nm/156lb-in   | Not Required   |
|                                | M6         | 50                      | 30.3  | 30.6   | 50        | 27.7  | 30.6   | M10*40    | 25Nm/222lb-in   | Not Required   |

## Internal Accessories

### Alarm Switch (AL)



**Function:**

- Sends a signal when the circuit breaker trips
- UL File Number E355392

1

### Auxiliary Contact (AX)



**Function:**

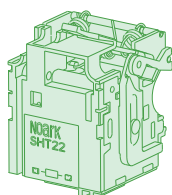
- Indicates the state of a circuit breaker (on/off)
- UL File Number E355392

2

| Accessory Description          | Rated Operational Voltage   | Rated Operational Current             | Catalog Number |
|--------------------------------|-----------------------------|---------------------------------------|----------------|
| Alarm Switch<br>1NO / 1NC      | 240/480 Vac,<br>110/220 Vdc | .25A @ 110V                           | AL/AX21P*      |
| Auxiliary Contact<br>1NO / 1NC |                             | .25A @ 220V<br>5A @ 240V<br>2A @ 480V |                |

\*AL/AX21P is an Alarm switch when inserted in position '1' on the breaker and Auxiliary contact when inserted in position '2' on the breaker.

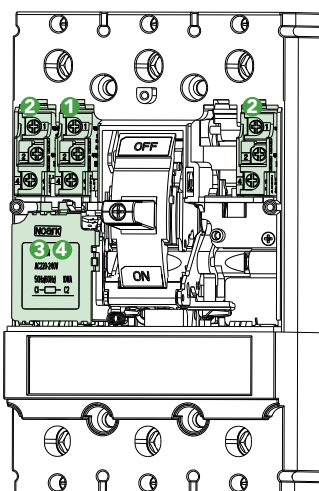
### Shunt Release (SHT)



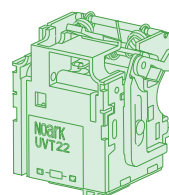
**Function:**

- Allows circuit breaker to be remotely operated
- Response Voltage, Pick-Up:  $U_s$  70-110%
- Opening Time: Interrupts Automatically  $\geq 10$  ms,  $\leq 60$  ms
- UL File Number E355392

3



### Under-Voltage Trip (UVT)



**Function:**

- Prevents circuit breaker from closing during an under-voltage situation
- Response Voltage, Drop:  $U_e$  35-70%
- Response Voltage, Pick-Up:  $U_e$  85-110%
- Opening Time: Interrupts Automatically  $\geq 10$  ms,  $\leq 60$  ms
- UL File Number E355392

4

| Accessory Description | Frame Size | Voltage     | Catalog Number |
|-----------------------|------------|-------------|----------------|
| Shunt Trip            | M1         | 100-130 Vac | SHT21NA        |
|                       |            | 220-240 Vac | SHT21NB        |
|                       |            | 480-500 Vac | SHT21ND        |
|                       |            | 24 Vdc      | SHT21NE        |
|                       | M2-M3      | 100-130 Vac | SHT22NA        |
|                       |            | 220-240 Vac | SHT22NB        |
|                       |            | 480-500 Vac | SHT22ND        |
|                       |            | 24 Vdc      | SHT22NE        |
|                       | M4-M5      | 100-130 Vac | SHT24NA        |
|                       |            | 220-240 Vac | SHT24NB        |
|                       |            | 480-500 Vac | SHT24ND        |
|                       |            | 24 Vdc      | SHT24NE        |
|                       | M6         | 220-240Vac  | SHT26NB        |
|                       |            | 480-500Vac  | SHT26ND        |
|                       |            | 24-30Vdc    | SHT26NE        |

| Accessory Description | Frame Size | Voltage     | Catalog Number |
|-----------------------|------------|-------------|----------------|
| Under-Voltage Trip    | M1         | 110-127 Vac | UVT21NA        |
|                       |            | 220-240 Vac | UVT21NB        |
|                       |            | 24-30 Vdc   | UVT21ND        |
|                       | M2-M3      | 110-127 Vac | UVT22NA        |
|                       |            | 220-240 Vac | UVT22NB        |
|                       |            | 24-30 Vdc   | UVT22ND        |
|                       | M4-M5      | 110-127 Vac | UVT24NA        |
|                       |            | 220-240 Vac | UVT24NB        |
|                       | M6         | 24-30 Vdc   | UVT24ND        |
|                       |            | 110-127 Vac | UVT26NA        |
|                       |            | 220-240 Vac | UVT26NB        |
|                       |            | 480-500 Vac | UVT26NC1       |

Green Highlight = Most Popular

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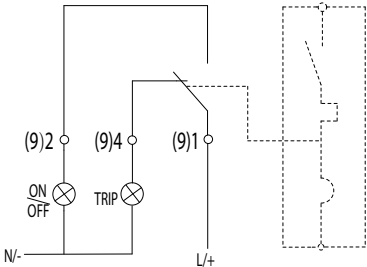
Internal Accessories: Alarm Switch and Auxiliary Contact



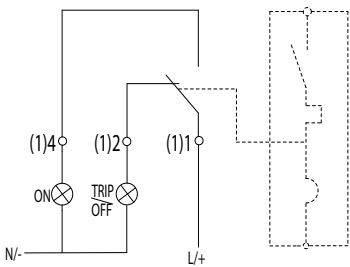
| AL/AX                   | 21            | P               |
|-------------------------|---------------|-----------------|
| Description             | Type          | Device Category |
| Alarm Auxiliary Contact | 21: for M1-M6 | P: UL 489       |

- 5A @ 240Vac
- 2A @ 480Vac
- 0.25A @ 110Vdc
- 0.25A @ 220Vdc

| Accessory Description   | Product  | Part Number |
|-------------------------|----------|-------------|
| Alarm Auxiliary Contact | AL/AX21P | 1100554     |

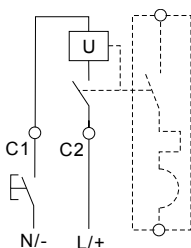


Wiring Diagram of Alarm Contact (Switch)



Wiring Diagram of Auxiliary Contact

## Internal Accessories: Shunt Trip



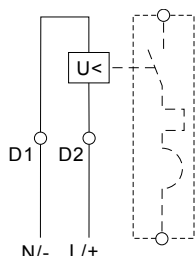
- Response Voltage, Pick-Up:  $U_s$  70-110%
- Opening Time: Interrupts Automatically  $\geq 10$  ms,  $\leq 60$  ms

| SHT         | 21                                                         | N               | A                                                                                                                     |
|-------------|------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------------------------|
| Description | Type                                                       | Device Category | Control Voltage                                                                                                       |
| Shunt Trip  | 21: for M1<br>22: for M2-M3<br>24: for M4-M5<br>26: for M6 | N: UL 489       | A: 100~130 Vac<br>B: 220~240 Vac<br>C: 380~440 Vac<br>D: 480~500 Vac<br>E: 24 Vdc<br>H: 220~250 Vdc<br>G: 110~125 Vdc |

| Accessory Description | Type  | Voltage     | VA Rating | Catalog Number | Part Number |
|-----------------------|-------|-------------|-----------|----------------|-------------|
| Shunt Trip            | M1    | 100-130 Vac | 94 W      | SHT21NA        | 1100505     |
|                       |       | 220-240 Vac | 325 W     | SHT21NB        | 1100506     |
|                       |       | 380-440 Vac | 152 W     | SHT21NC        | 1100507     |
|                       |       | 480-500 Vac | 197 W     | SHT21ND        | 1100508     |
|                       |       | 24 Vdc      | 85 W      | SHT21NE        | 1100509     |
|                       | M2-M3 | 100-130 Vac | 228 W     | SHT22NA        | 1100513     |
|                       |       | 220-240 Vac | 427 W     | SHT22NB        | 1100514     |
|                       |       | 380-440 Vac | 255 W     | SHT22NC        | 1100515     |
|                       |       | 480-500 Vac | 329 W     | SHT22ND        | 1100516     |
|                       |       | 24 Vdc      | 57 W      | SHT22NE        | 1100517     |
|                       | M4-M5 | 100-130 Vac | 228 W     | SHT24NA        | 1100521     |
|                       |       | 220-240 Vac | 427 W     | SHT24NB        | 1100522     |
|                       |       | 380-440 Vac | 225 W     | SHT24NC        | 1100523     |
|                       |       | 480-500 Vac | 329 W     | SHT24ND        | 1100524     |
|                       |       | 24 Vdc      | 57 W      | SHT24NE        | 1100525     |
|                       | M6    | 100-130Vac  | 31 W      | SHT26NA        | 1101168     |
|                       |       | 220-240Vac  | 92 W      | SHT26NB        | 1101169     |
|                       |       | 380-440Vac  | 75 W      | SHT26NC        | 1101170     |
|                       |       | 480-500Vac  | 75 W      | SHT26ND        | 1101171     |
|                       |       | 24-30Vdc    | 14 W      | SHT26NE        | 1101172     |
|                       |       | 110-125Vdc  | 44 W      | SHT26NG        | 1101173     |
|                       |       | 220-250Vdc  | 92 W      | SHT26NH        | 1101174     |

Dimensions .....D93

## Internal Accessories: Under Voltage Trip



| UVT                | 21                                                         | N               | A                                                                                                                                |
|--------------------|------------------------------------------------------------|-----------------|----------------------------------------------------------------------------------------------------------------------------------|
| Description        | Type                                                       | Device Category | Control Voltage                                                                                                                  |
| Under-Voltage Trip | 21: for M1<br>22: for M2-M3<br>24: for M4-M5<br>26: for M6 | N: UL 489       | A: 110~127 Vac<br>B: 220~240 Vac<br>C: 380~440 Vac<br>D: 24~30 Vdc<br>E: 48 Vdc<br>F: 60 Vdc<br>G: 110~125 Vdc<br>H: 220~250 Vdc |

- Response Voltage, Drop:  $U_e$  35-70%
- Response Voltage, Pick-Up:  $U_e$  85-110%
- Opening Time: Interrupts Automatically  $\geq 10$  ms,  $\leq 60$  ms

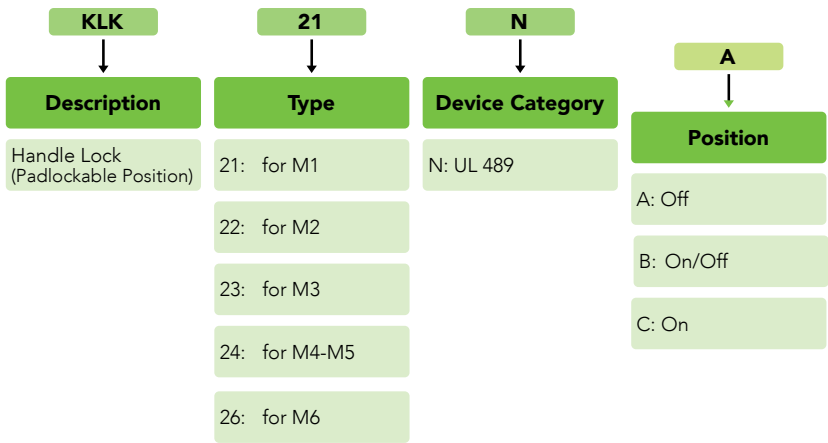
| Accessory Description | Type  | Voltage     | Catalog Number | Part Number |
|-----------------------|-------|-------------|----------------|-------------|
| Under-Voltage Trip    | M1    | 110-127 Vac | UVT21NA        | 1100529     |
|                       |       | 220-240 Vac | UVT21NB        | 1100530     |
|                       |       | 380-440 Vac | UVT21NC        | 1100531     |
|                       |       | 24-30 Vdc   | UVT21ND        | 1100532     |
|                       |       | 48 Vdc      | UVT21NE        | 1100533     |
|                       |       | 60 Vdc      | UVT21NF        | 1100534     |
|                       |       | 110-125 Vdc | UVT21NG        | 1100535     |
|                       |       | 220-250 Vdc | UVT21NH        | 1100536     |
|                       | M2-M3 | 110-127 Vac | UVT22NA        | 1100537     |
|                       |       | 220-240 Vac | UVT22NB        | 1100538     |
|                       |       | 380-440 Vac | UVT22NC        | 1100539     |
|                       |       | 24-30 Vdc   | UVT22ND        | 1100540     |
|                       |       | 48 Vdc      | UVT22NE        | 1100541     |
|                       |       | 60 Vdc      | UVT22NF        | 1100542     |
|                       |       | 110-125 Vdc | UVT22NG        | 1100543     |
|                       |       | 220-250 Vdc | UVT22NH        | 1100544     |
|                       | M4-M5 | 110-127 Vac | UVT24NA        | 1100545     |
|                       |       | 220-240 Vac | UVT24NB        | 1100546     |
|                       |       | 380-440 Vac | UVT24NC        | 1100547     |
|                       |       | 24-30 Vdc   | UVT24ND        | 1100548     |
|                       |       | 48 Vdc      | UVT24NE        | 1100549     |
|                       |       | 60 Vdc      | UVT24NF        | 1100550     |
|                       |       | 110-125 Vdc | UVT24NG        | 1100551     |
|                       |       | 220-250 Vdc | UVT24NH        | 1100552     |
|                       | M6    | 110-127Vac  | UVT26NA        | 1101175     |
|                       |       | 220-240Vac  | UVT26NB        | 1101176     |
|                       |       | 380-440Vac  | UVT26NC        | 1101177     |
|                       |       | 480-500Vac  | UVT26NC1       | 1101178     |
|                       |       | 24-30Vdc    | UVT26ND        | 1101179     |
|                       |       | 110-125Vdc  | UVT26NG        | 1101180     |
|                       |       | 220-250Vdc  | UVT26NH        | 1101181     |

Dimensions .....D93

External Accessories: Handle Lock and Mechanical Interlocks



Handle Lock

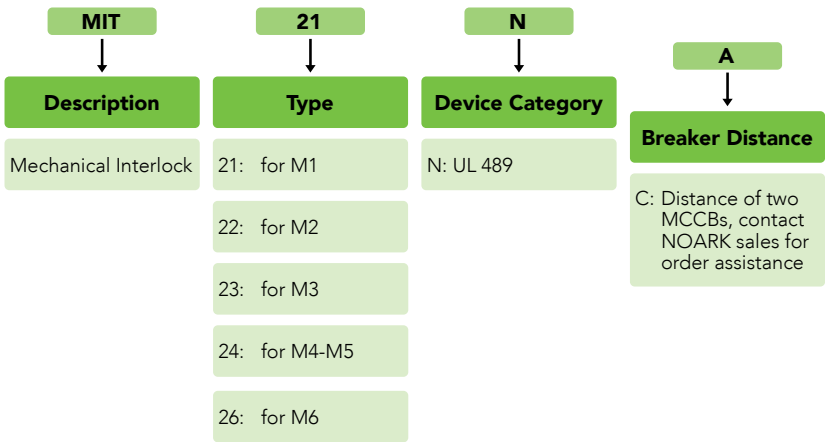


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| Accessory Description | Type  | Position | Catalog Number | Part Number |
|-----------------------|-------|----------|----------------|-------------|
| Handle Lock           | M1    | Off      | KLK21NA        | 1100575     |
|                       |       | On/Off   | KLK21NB        | 1100576     |
|                       |       | On       | KLK21NC        | 1100577     |
|                       | M2    | Off      | KLK22NA        | 1100578     |
|                       |       | On/Off   | KLK22NB        | 1100579     |
|                       |       | On       | KLK22NC        | 1100580     |
|                       | M3    | Off      | KLK23NA        | 1100581     |
|                       |       | On/Off   | KLK23NB        | 1100582     |
|                       |       | On       | KLK23NC        | 1100583     |
|                       | M4-M5 | Off      | KLK24NA        | 1100584     |
|                       |       | On/Off   | KLK24NB        | 1100585     |
|                       |       | On       | KLK24NC        | 1100586     |
|                       | M6    | Off      | KLK26NA        | 1101182     |



Mechanical Interlocks



| Accessory Description | Type  | Catalog Number | Part Number |
|-----------------------|-------|----------------|-------------|
| Mechanical Interlock  | M1    | MIT21NA        | 1100596     |
|                       | M2    | MIT22NA        | 1100599     |
|                       | M3    | MIT23NA        | 1100602     |
|                       | M4-M5 | MIT24NA        | 1100605     |
|                       | M6    | MIT26NA        | 1101183     |

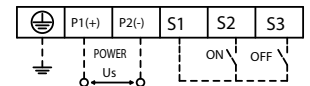
Dimensions .....D94

## External Accessories: Motor Operator and Phase Barrier

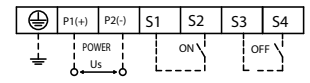


Motor Operator

| MOD            | 21            | N               | A               |
|----------------|---------------|-----------------|-----------------|
| Description    | Type          | Device Category | Control Voltage |
| Motor Operator | 21: for M1    | N: UL 489       | A: 120 Vac/dc   |
|                | 22: for M2    |                 | B: 240 Vac/dc   |
|                | 23: for M3    |                 | C: 24 Vdc       |
|                | 24: for M4-M5 |                 |                 |



MOD21N / MOD22N



MOD23N / MOD24N

| Accessory Description | Type  | Voltage    | Catalog Number | Part Number |
|-----------------------|-------|------------|----------------|-------------|
| Motor Operator        | M1    | 120 Vac/dc | MOD21NA        | 1100563     |
|                       |       | 240 Vac/dc | MOD21NB        | 1100564     |
|                       |       | 24 Vdc     | MOD21NC        | 1100565     |
|                       | M2    | 120 Vac/dc | MOD22NA        | 1100566     |
|                       |       | 240 Vac/dc | MOD22NB        | 1100567     |
|                       |       | 24 Vdc     | MOD22NC        | 1100568     |
|                       | M3    | 120 Vac/dc | MOD23NA        | 1100569     |
|                       |       | 240 Vac/dc | MOD23NB        | 1100570     |
|                       |       | 24 Vdc     | MOD23NC        | 1100571     |
|                       | M4-M5 | 120 Vac/dc | MOD24NA        | 1100572     |
|                       |       | 240 Vac/dc | MOD24NB        | 1100573     |
|                       |       | 24 Vdc     | MOD24NC        | 1100574     |



Phase Barriers

| PHS           | 21            |
|---------------|---------------|
| Description   | Type          |
| Phase Barrier | 21: for M1    |
|               | 22: for M2    |
|               | 23: for M3    |
|               | 24: for M4-M5 |
|               | 26: for M6    |

- For a 2-pole frame, 2 pcs of PHS are needed for the line/load sides.
- For a 3-pole frame, 4 pcs of PHS are needed for the line/load sides.
- For a 4-pole frame, 6 pcs of PHS are needed for the line/load sides.

| Accessory Description | Type  | Catalog Number | Part Number |
|-----------------------|-------|----------------|-------------|
| Phase Barrier         | M1    | PHS21          | 852546      |
|                       | M2    | PHS22          | 852547      |
|                       | M3    | PHS23          | 852548      |
|                       | M4-M5 | PHS24          | 852549      |
|                       | M6    | PHS26          | 852550      |

Dimensions ..... D95 to D96

## External Accessories: IEC Rotary Handle and DIN Rail Plate



### Rotary Handle

- Grey/Green or Yellow/Red
- IP 30

| RHD                                | 21         | N               | 1             |
|------------------------------------|------------|-----------------|---------------|
| Description                        | Type       | Device Category | Color         |
| IEC Rotary Handle (Closed Coupled) | 21: for M1 | N: UL 489       | 1: Grey/Green |
|                                    | 22: for M2 |                 | 2: Red/Yellow |
|                                    | 23: for M3 |                 |               |
|                                    | 24: for M4 |                 |               |

| Accessory Description                 |       |            | Type | Catalog Number | Part Number |
|---------------------------------------|-------|------------|------|----------------|-------------|
| IEC Rotary Handle<br>(Closed Coupled) | IP 30 | Grey/Green | M1   | RHD21N1        | 1100555     |
|                                       |       |            | M2   | RHD22N1        | 1100556     |
|                                       |       |            | M3   | RHD23N1        | 1100557     |
|                                       |       |            | M4   | RHD24N1        | 1100558     |
|                                       |       | Red/Yellow | M1   | RHD21N2        | 1100613     |
|                                       |       |            | M2   | RHD22N2        | 1100614     |
|                                       |       |            | M3   | RHD23N2        | 1100615     |
|                                       |       |            | M4   | RHD24N2        | 1100616     |



### Din Rail Plate

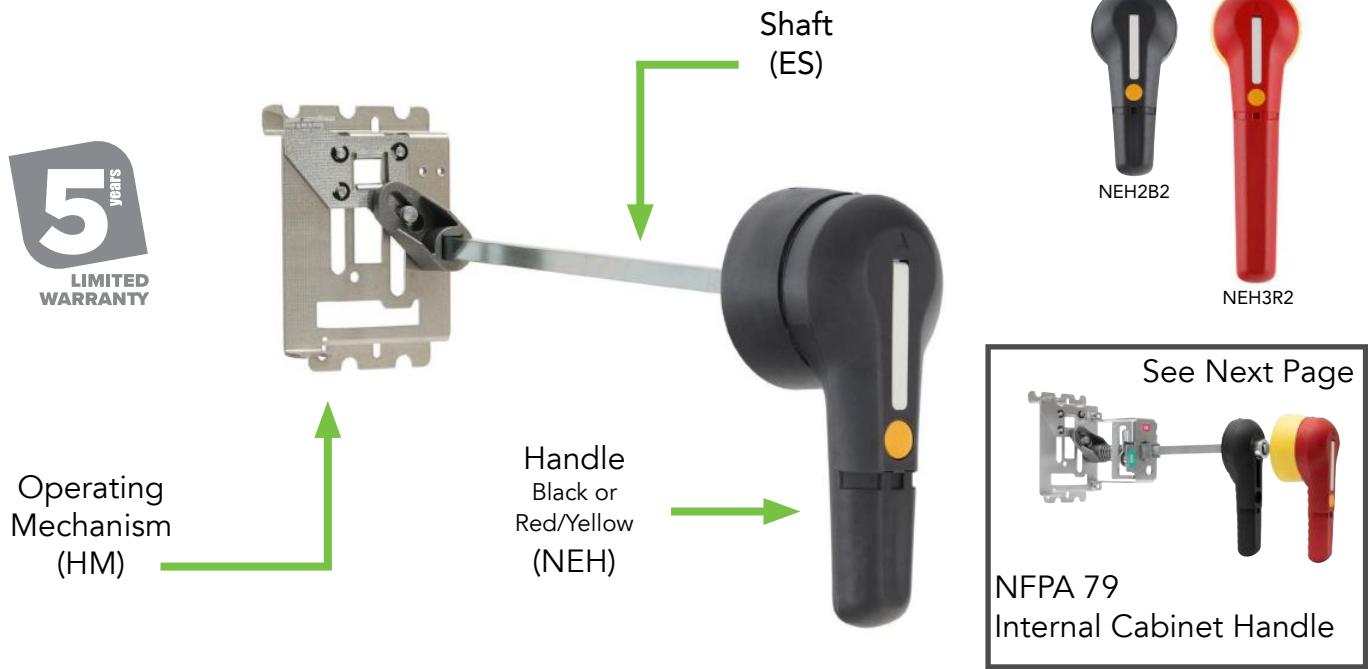
| DRP            | 21         | N    |
|----------------|------------|------|
| Description    | Type       | Area |
| DIN Rail Plate | 21: for M1 |      |
|                | 22: for M2 |      |

| Accessory Description | Type | Catalog Number | Part Number |
|-----------------------|------|----------------|-------------|
| DIN Rail Plate        | M1   | DRP21N         | 1101164     |
|                       | M2   | DRP22N         | 1101165     |

Dimensions..... D97  
to D98

External Accessories: Extended Rotary Handle

Shown: NEH2R2 handle with ES32A extended handle shaft and HM1A operating mechanism.



NEMA extended rotary handle mechanism selection consists of 3 components (sold separately): operating mechanism (HM), shaft (ES), and rotary handle (NEH).

- UL File Numbers E484125 and E355392

Selection Process

- Step 1.** Identify breaker frame size to select corresponding operating mechanism (HM/HMD/HOM).
- Step 2.** Select shaft (ES) based on the length needed and diameter required.
- Step 3.** Select handle (NEH) with the matching shaft diameter based on desired color combination and UL rating.

Step 1

| Operating Mechanism |                    |                |
|---------------------|--------------------|----------------|
| Select One          |                    |                |
| Frame Size          | Use Shaft Diameter | Catalog Number |
| M1                  | 10mm <sup>2</sup>  | HM1A           |
| M1 2-Pole           | 10mm <sup>2</sup>  | HMD1A          |
| M2                  | 10mm <sup>2</sup>  | HM2A           |
| M2 2-Pole           | 10mm <sup>2</sup>  | HMD2A          |
| M3                  | 12mm <sup>2</sup>  | HM3B           |
| M4 / M5             | 12mm <sup>2</sup>  | HM4B           |
| M6                  | 12mm <sup>2</sup>  | HOM6B          |

+

| Shaft                                 |                   |                |
|---------------------------------------|-------------------|----------------|
| Select One                            |                   |                |
| Shaft Diameter                        | Length            | Catalog Number |
| 10mm <sup>2</sup><br>M1 or M2         | 7.9 inch (200mm)  | ES20A          |
|                                       | 12.6 inch (320mm) | ES32A          |
|                                       | 19.7 inch (500mm) | ES50A          |
| 12mm <sup>2</sup><br>M3, M4, M5 or M6 | 7.9 inch (200mm)  | ES20B          |
|                                       | 12.6 inch (320mm) | ES32B          |
|                                       | 19.7 inch (500mm) | ES50B          |

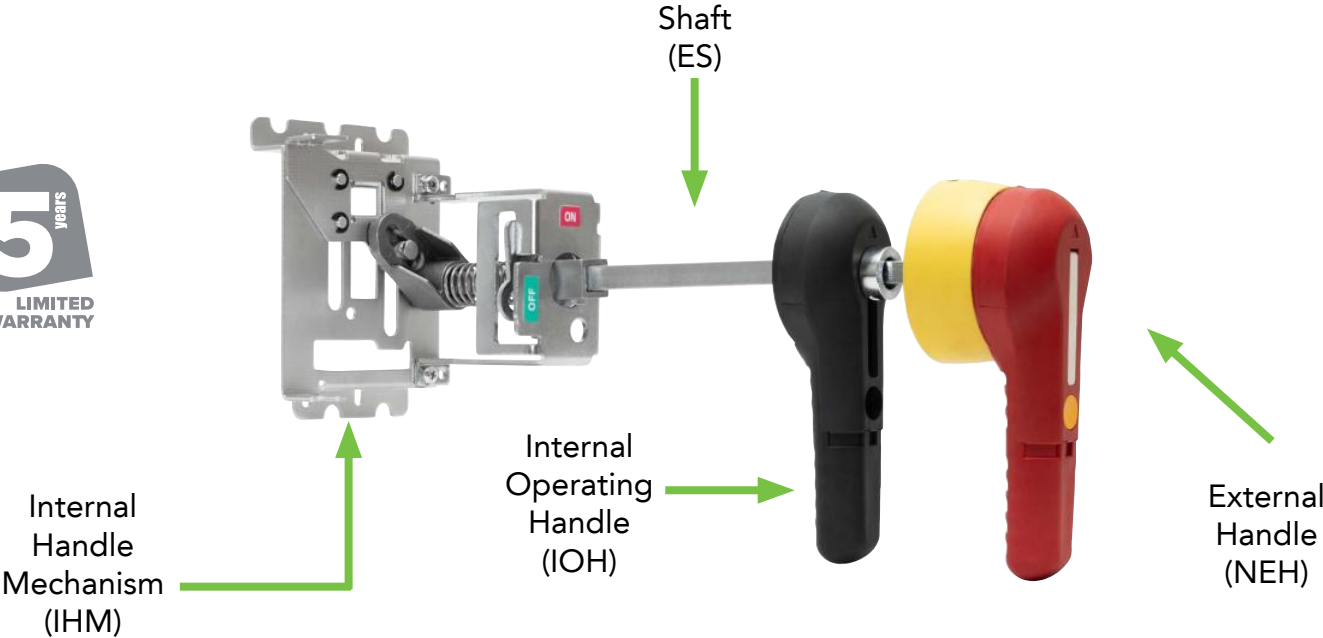
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| 4/4X Handle      |                    |              |                |
|------------------|--------------------|--------------|----------------|
| Select One       |                    |              |                |
| Frame Size       | Use Shaft Diameter | Color        | Catalog Number |
| M1 or M2         | 10mm <sup>2</sup>  | Black        | NEH2B2         |
|                  |                    | Red / Yellow | NEH2R2         |
| M3, M4, M5 or M6 | 12mm <sup>2</sup>  | Black        | NEH3B2         |
|                  |                    | Red / Yellow | NEH3R2         |

External Accessories: NFPA 79 Internal Cabinet Handle



D



Selection Process

• UL File Numbers E484125 and E355392

- Step 1.** Identify breaker frame size to select corresponding internal handle mechanism (IHM).  
**Step 2.** Select shaft (ES) based on the length needed and diameter required.  
**Step 3.** Select the internal operating handle (IOH) based on the breaker frame size.  
**Step 4.** Select handle (NEH) with the matching shaft diameter based on desired color combination and UL rating.

Step 1

Step 2

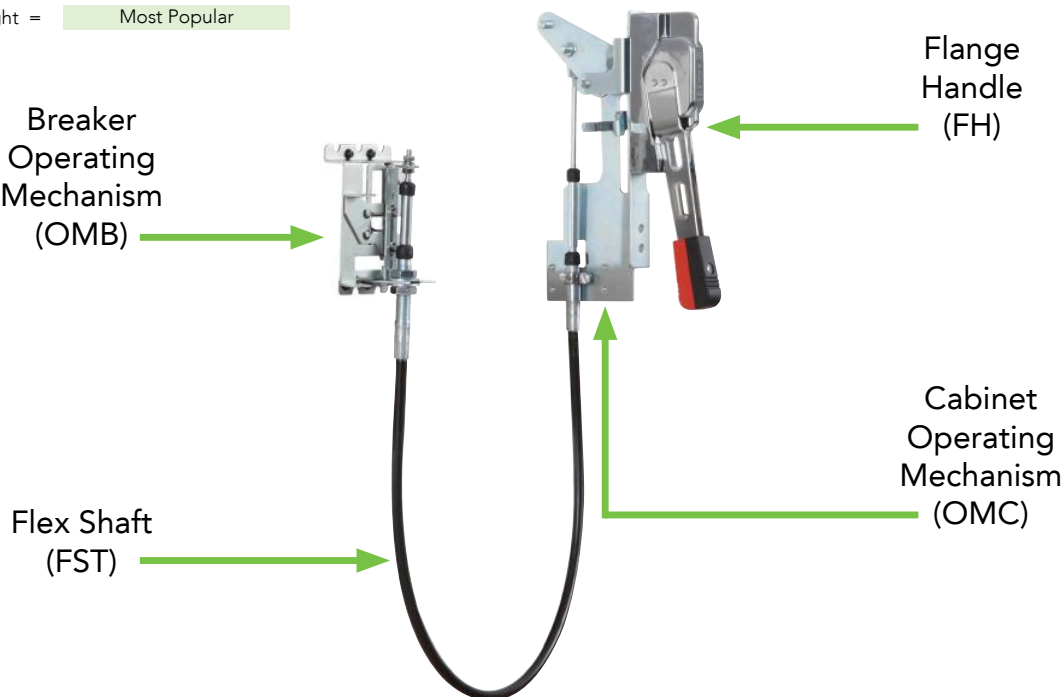
Step 3

Step 4

| Internal Handle Mechanism |                    |                | + | Shaft                             |                   |                | + | Internal Operating Handle |                    |                | + | 4/4X Handle  |                    |              |                |
|---------------------------|--------------------|----------------|---|-----------------------------------|-------------------|----------------|---|---------------------------|--------------------|----------------|---|--------------|--------------------|--------------|----------------|
| Select One                |                    |                |   | Select One                        |                   |                |   | Select One                |                    |                |   | Select One   |                    |              |                |
| Frame Size                | Use Shaft Diameter | Catalog Number |   | Shaft Diameter                    | Length            | Catalog Number |   | Frame Size                | Use Shaft Diameter | Catalog Number |   | Frame Size   | Use Shaft Diameter | Color        | Catalog Number |
| M1                        | 10mm <sup>2</sup>  | IHM1           |   | 10mm <sup>2</sup><br>M1 or M2     | 7.9 inch (200mm)  | ES20A          |   | M1 or M2                  | 10mm <sup>2</sup>  | IOH2           |   | M1 or M2     | 10mm <sup>2</sup>  | Black        | NEH2B2         |
| M2                        | 10mm <sup>2</sup>  | IHM2           |   |                                   | 12.6 inch (320mm) | ES32A          |   |                           |                    |                |   |              |                    | Red / Yellow | NEH2R2         |
| M3                        | 12mm <sup>2</sup>  | IHM3           |   |                                   | 19.7 inch (500mm) | ES50A          |   |                           |                    |                |   | M3, M4 or M5 | 12mm <sup>2</sup>  | Black        | NEH3B2         |
| M4 or M5                  | 12mm <sup>2</sup>  | IHM4           |   | 12mm <sup>2</sup><br>M3, M4 or M5 | 7.9 inch (200mm)  | ES20B          |   | M3, M4 or M5              | 12mm <sup>2</sup>  | IOH3           |   |              |                    | Red / Yellow | NEH3R2         |
|                           |                    |                |   |                                   | 12.6 inch (320mm) | ES32B          |   |                           |                    |                |   |              |                    |              |                |
|                           |                    |                |   |                                   | 19.7 inch (500mm) | ES50B          |   |                           |                    |                |   |              |                    |              |                |

External Accessories: M1-M6 Flange Handle Mechanism

Green Highlight = Most Popular



M1-M5 Flange handle mechanism selection is separated into 4 components (sold separately): flange handle (FH), flex shaft (FST), cabinet operating mechanism (OMC) and breaker operating mechanism (OMB). NOARK UL MCCB frame size: M1 (15-150A), M2 (175-250A), M3 (300-400A), M4 (500-600A), M5 (700-800A), and M6 (800-1200A).

Selection Process

- UL File Numbers E355392, E484125

- Step 1. Select desired flange handle.  
Step 2. Select cabinet operating mechanism.  
Step 3. Select breaker operating mechanism based on frame size.  
Step 4. Select flex shaft\* based on enclosure requirements.

Step 1

| Flange Handle               |                                                        |                |
|-----------------------------|--------------------------------------------------------|----------------|
| Select One                  |                                                        |                |
| Frame Size                  | Handle Type / Length                                   | Catalog Number |
| M1 / M2 / M3 / M4 / M5 / M6 | Compact fixed length (9.57 in)<br>UL 4, 4X Rated       | FH4XC          |
|                             | Adjustable length (11.81 - 13.62 in)<br>UL 4, 4X Rated | FH4XD          |

Step 2

| Cabinet Operating Mechanism |                |
|-----------------------------|----------------|
| Select One                  |                |
| Frame Size                  | Catalog Number |
| M1 / M2 / M3 / M4 / M5 / M6 | OMC            |

Step 3

| Breaker Operating Mechanism |                |
|-----------------------------|----------------|
| Select One                  |                |
| Frame Size                  | Catalog Number |
| M1                          | OMB21          |
| M2                          | OMB22          |
| M3                          | OMB23          |
| M4 / M5                     | OMB24          |
| M6                          | OMB26          |

Step 4

| Flex Shaft*            |        |                |
|------------------------|--------|----------------|
| Select One             |        |                |
| Frame Size             | Length | Catalog Number |
| M1 / M2 / M3 / M4 / M5 | 3 feet | FST3           |
|                        | 4 feet | FST4           |
|                        | 5 feet | FST5           |
|                        | 6 feet | FST6           |
| M6                     | 4 feet | FSB4           |
|                        | 5 feet | FSB5           |
|                        | 6 feet | FSB6           |
|                        | 7 feet | FSB7           |

\* When selecting the length of shaft, ensure minimum bending radius of 6 inches is maintained to operate properly. Contact NOARK if additional lengths are needed.

Connection Hardware: Terminal Lugs



1-Hole

- Terminal lugs included with molded case circuit breakers standard. Listed individually for replacement purposes only.
- Sold Individually  
Example: Line / Load Terminal Lugs for 3-pole breaker requires six
- UL File Number E349009

| Accessory Description | Frame Size | Configuration               | Specifications                                               | Catalog Number |
|-----------------------|------------|-----------------------------|--------------------------------------------------------------|----------------|
| Terminal Lugs         | M1 (150A)  | 1-Hole Standard             | #14 AWG~3/0 AWG<br>1 CU wire<br>#12 AWG~3/0 AWG<br>1 AL wire | LTC21NAA       |
|                       | M2 (250A)  | 1-Hole Standard             | #3 AWG~300kcmil<br>1 CU/AL wire                              | LTC22NAA       |
|                       | M3 (400A)  | 1-Hole Standard             | #4/0 AWG~750 kcmil<br>1 CU/AL wire                           | LTC23NAA       |
|                       |            | 2-Hole** Optional           | #3 AWG~250 kcmil<br>2 CU/AL wire                             | LTC23NBA       |
|                       | M4 (600A)  | 2-Hole Standard             | #2/0 AWG~500 kcmil<br>2 CU/AL wire                           | LTC24NBA       |
|                       | M5 (800A)  | 2-Hole (700A) Standard      | 75°C<br>Al/Cu Wire<br>(2) 250kcmil-600kcmil                  | LTC25NBA       |
|                       |            | 3-Hole (800A) Standard      | 75°C<br>Al/Cu Wire<br>(3) 250kcmil-500kcmil                  | LTC25NCA       |
|                       | M6 (1200A) | 3-Hole (800-1000A) Standard | 75°C<br>Al/Cu Wire<br>(3) 3/0 AWG*-750kcmil                  | LTC26NCA       |
|                       |            | 4-Hole (1200A) Standard     | 75°C<br>Al/Cu Wire<br>(4) 3/0 AWG*-500kcmil                  | LTC26NDA       |

NOTE: Terminals are rated 90° when a 100% breaker is used.

\*\* Requires external terminal cover part no. TC23NB ordered separately

\* AWG = American Wire Gauge



| Accessory Description | Type | Configuration | Catalog Number |
|-----------------------|------|---------------|----------------|
| Terminal Cover        | M3   | 2-Holes       | TC23NB         |

- Required for installation of M3 2-Hole terminal LTC23NB or LTC23NBA

Green Highlight = Most Popular

## Connection Hardware: Multi-Wire Terminal Lug Kits



- Multi-wire terminal lug kits include: three terminal lugs and one terminal shield.
- Al/Cu rated
- UL File Number E355392

Green Highlight = Most Popular

| Accessory Description        | Frame Size   | Configuration                         | Specifications                                                                                  | Catalog Number |
|------------------------------|--------------|---------------------------------------|-------------------------------------------------------------------------------------------------|----------------|
| Multi-wire Terminal Lug Kits | M1<br>(150A) | 3-Hole                                | 167 °F (75 °C)<br>#12 AWG*~#3 AWG* Al wire<br>or<br>#14 AWG*~#3 AWG* Cu wire                    | LK21NCA        |
|                              |              | 6-Hole                                | 167 °F (75 °C)<br>#12 AWG*~#6 AWG* Al wire<br>or<br>#14 AWG*~#6 AWG* Cu                         | LK21NFA        |
|                              | M2<br>(250A) | 3-Hole                                | 167 °F (75 °C)<br>#8 AWG*~#2/0 AWG* Al/Cu wire                                                  | LK22NCA        |
|                              |              | 3-Hole<br>(one large,<br>two small)   | 167 °F (75 °C)<br>#3 AWG*~#2/0 AWG*, (1) Al/Cu wire<br>and<br># 12 AWG*~#1 AWG*, (2) Al/Cu wire | LK22NGA        |
|                              |              | 6-Hole                                | 167 °F (75 °C)<br>#12 AWG*~#6 AWG Al/Cu wire                                                    | LK22NFA        |
|                              | M3<br>(400A) | 2-Hole                                | 167 °F (75 °C)<br>#3AWG*~250 kcmil Al/Cu wire                                                   | LK23NBA        |
|                              |              | 3-Hole                                | 167 °F (75 °C)<br>#3AWG*~250 kcmil Al/Cu wire                                                   | LK23NCA        |
|                              |              | 5-Hole<br>(two large,<br>three small) | 167 °F (75 °C)<br>#12 AWG*~#1 AWG*, (3) Al/Cu wire<br>and<br>#3 AWG*~#3/0 AWG*, (2) Al/Cu wire  | LK23NEA        |
|                              |              | 6-Hole                                | 167 °F (75 °C)<br>12 AWG*~#3 AWG* Al/Cu wire                                                    | LK23NFA        |
|                              | M4<br>(600A) | 3- Hole                               | 167 °F (75 °C)<br>#2/0 AWG*~250 kcmil Al/Cu wire                                                | LK24NCA        |
|                              |              | 5-Hole                                | 167 °F (75 °C)<br>#12 AWG*~#1 AWG*, (3) Al/Cu wire<br>and<br>#3 AWG*~#3/0 AWG*, (2) Al/Cu wire  | LK24NEA        |

\* AWG = American Wire Gauge

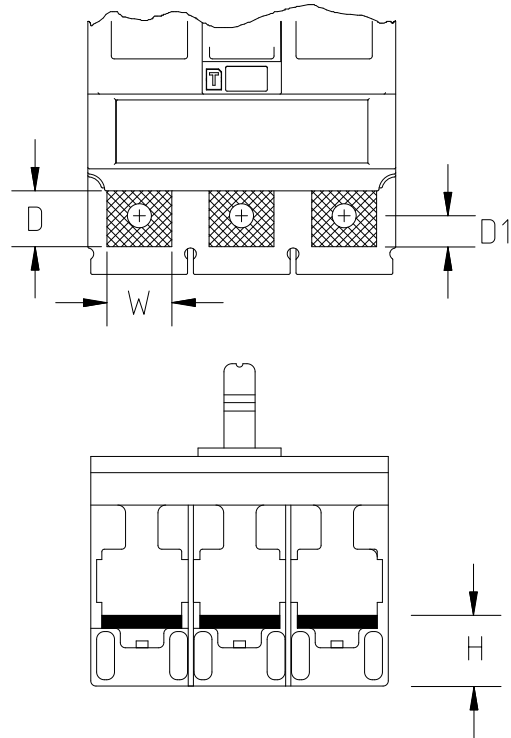
Additional products, accessories and higher ratings available. Contact your NOARK representative or visit [na.noark-electric.com](http://na.noark-electric.com) for additional information.

Lugs to Bus Bar Conversion Kits

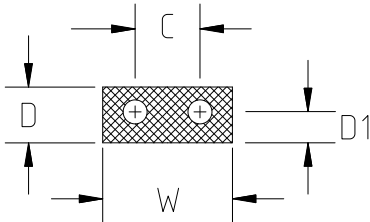


| Accessory Description          | Frame Size | Bus Pad Dimensions (mm) |       |        |           |       |        | Bolt Size | Bolt Torque     | Catalog Number |
|--------------------------------|------------|-------------------------|-------|--------|-----------|-------|--------|-----------|-----------------|----------------|
|                                |            | Up-Side                 |       |        | Down-Side |       |        |           |                 |                |
|                                |            | Width                   | Depth | Height | Width     | Depth | Height |           |                 |                |
| Lug to Bus Bar Conversion Kits | M1         | 14.2                    | 14.8  | 18.5   | 14.2      | 16.8  | 17.5   | M6*16     | 6N.m/53.1 lb in | CKLB21         |
|                                | M2         | 20                      | 18.5  | 22     | 20        | 30.5  | 20     | M8*20     | 8N.m/97.4 lb in | CKLB22         |
|                                | M3         | 30                      | 30    | 25.8   | 26        | 27    | 23.9   | M10*30    | 25Nm/222lb-in   | Not Required   |
|                                | M4         | 50                      | 33.3  | 31.5   | 50        | 33    | 31.5   | M12*30    | 18Nm/156lb-in   | Not Required   |
|                                | M5         | 50                      | 33.4  | 31.5   | 50        | 33    | 31.5   | M12*30    | 18Nm/156lb-in   | Not Required   |
|                                | M6         | 50                      | 30.3  | 30.6   | 50        | 27.7  | 30.6   | M10*40    | 25Nm/222lb-in   | Not Required   |

M1-M5 Breaker Bus Pad Dimensions



M6 Breaker Bus Pad Dimensions



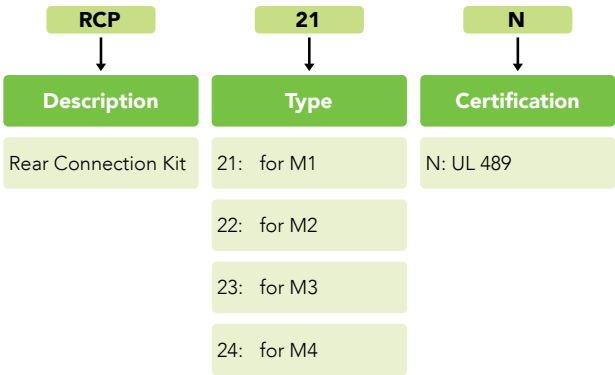
CKLB Conversion Kit



Connection Hardware: Rear Connection Kit and Terminal Cover



| Accessory Description | Type | Catalog Number | Part Number |
|-----------------------|------|----------------|-------------|
| Rear Connection Kit   | M1   | RCP21N         | 1100587     |
|                       | M2   | RCP22N         | 1100588     |
|                       | M3   | RCP23N         | 1100589     |
|                       | M4   | RCP24N         | 1100590     |



Terminal Cover

| PN      | SKU    | Applicable Products | Description                                                           |
|---------|--------|---------------------|-----------------------------------------------------------------------|
| 1102599 | TC21N  | M1                  | Extended terminal cover for M1                                        |
| 1102600 | TC22N  | M2                  | Extended terminal cover for M2                                        |
| 1101186 | TC23NB | M3                  | Extended terminal cover suitable for LTC23NBA                         |
| 1102601 | TC23N  | M3                  | Extended terminal cover suitable for LTC23NCA, LTC23NEA, and LTC23NFA |
| 1102602 | TC24N  | M4                  | Extended terminal cover for M4                                        |

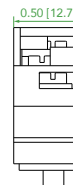
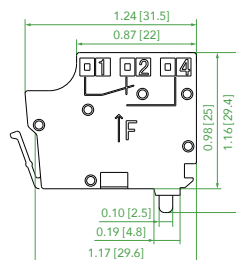
Dimensions ..... D103 to D104

## Internal Accessory Dimensions

### AL/AX21P

Alarm Switch / Auxiliary Contact

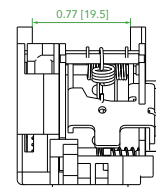
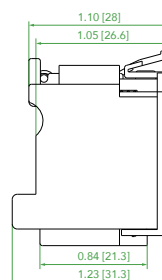
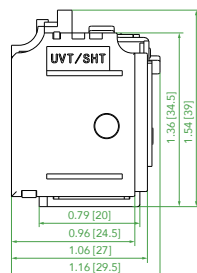
Unit: in [mm]



### SHT21N / UVT21N

Shunt Trip / Under-Voltage Trip for M1

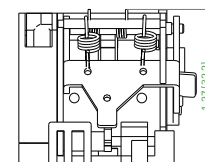
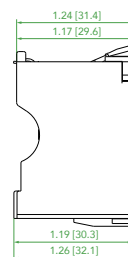
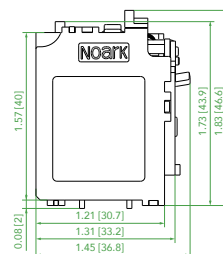
Unit: in [mm]



### SHT22N-24N / UVT22N-24N

Shunt Trip / Under-Voltage Trip for M2-M4

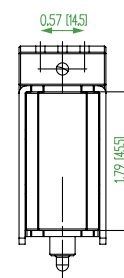
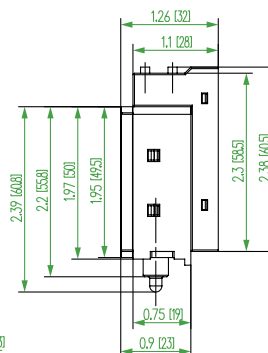
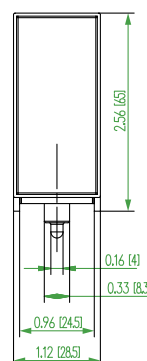
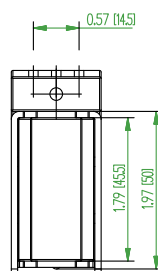
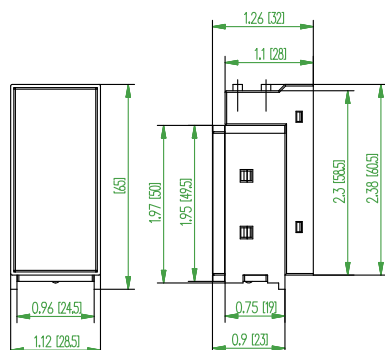
Unit: in [mm]



### SHT26N / UVT26N

Shunt Trip / Under-Voltage Trip for M2-M4

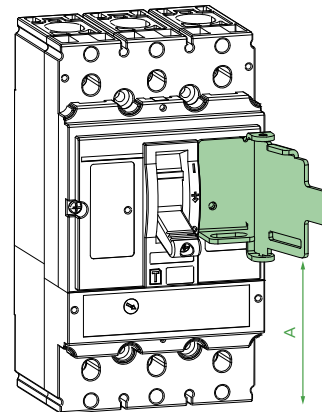
Unit: in [mm]



## External Accessory Dimensions

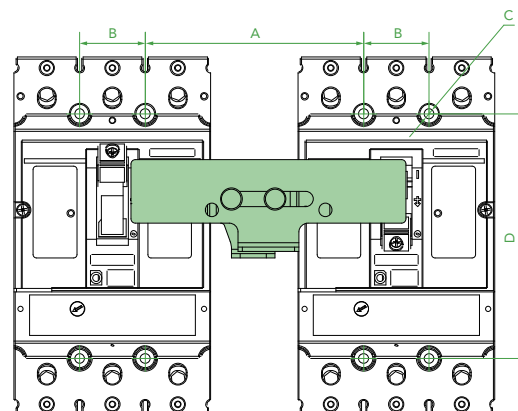
### KLK Handle Lock Unit: in [mm]

| Handle Lock | A            |
|-------------|--------------|
| KLK21N      | 5.71 [145]   |
| KLK22N      | 6.50 [165]   |
| KLK23N      | 8.46 [215]   |
| KLK24N      | 10.51 [267]  |
| KLK26N      | 6.59 [167.5] |

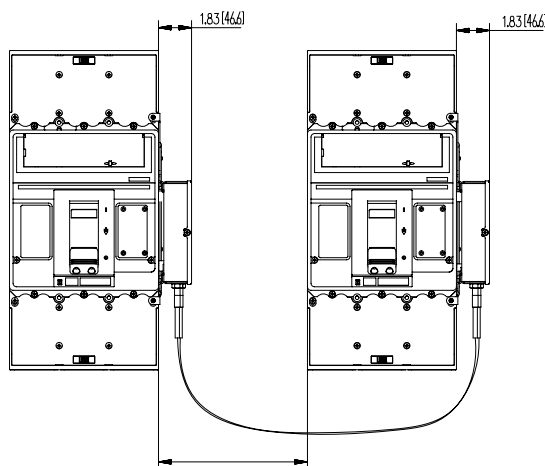


### MIT Mechanical Interlock Unit: in [mm]

| Mechanical Interlock | A          | B         | C            | D          |
|----------------------|------------|-----------|--------------|------------|
| MIT21N               | 3.94 [100] | 1.18 [30] | ø0.18 [ø4.5] | 4.41 [112] |
| MIT22N               | 4.53 [115] | 1.38 [35] | ø0.22 [ø5.5] | 4.92 [125] |
| MIT23N               | 5.63 [143] | 1.77 [45] | ø0.22 [ø5.5] | 7.91 [201] |
| MIT24N               | 8.03 [204] | 2.56 [65] | ø0.26 [ø6.5] | 9.25 [235] |



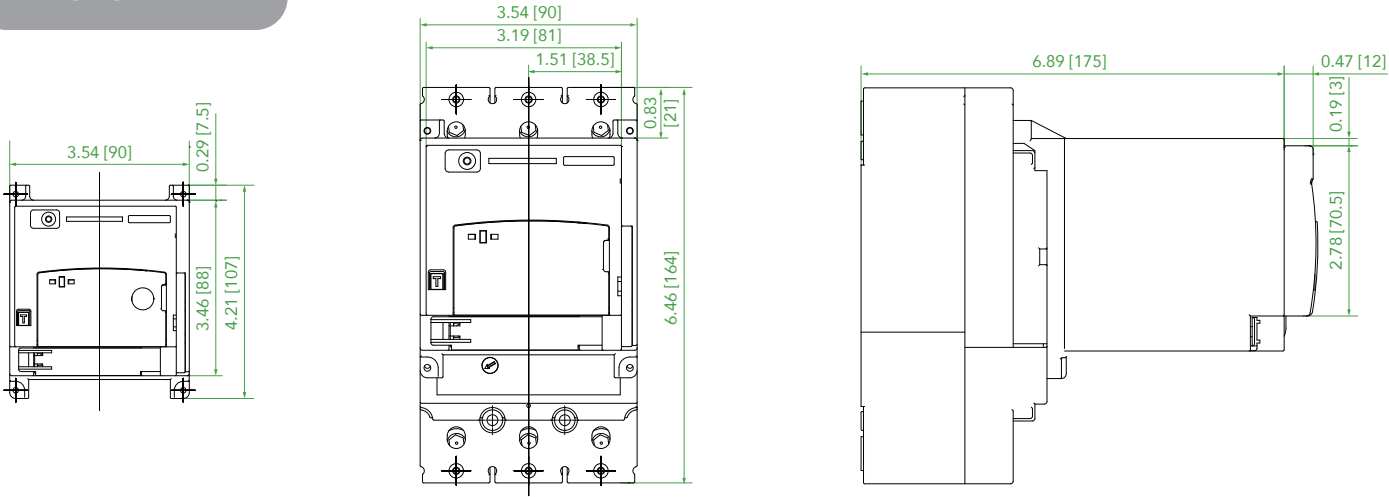
### MIT26N Mechanical Interlock Unit: in [mm]



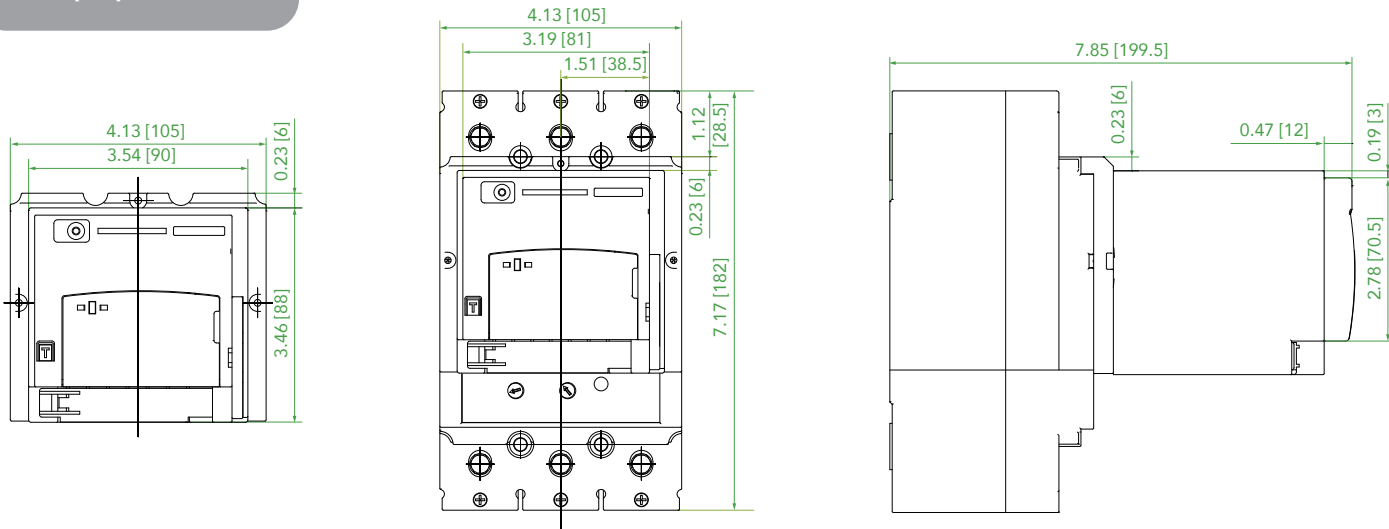
The minimum distance is 1.97[50]  
The maximum distance is 59.06[1500]

External Accessory Dimensions

**MOD21N**  
Motor Operator for M1  
Unit: in [mm]

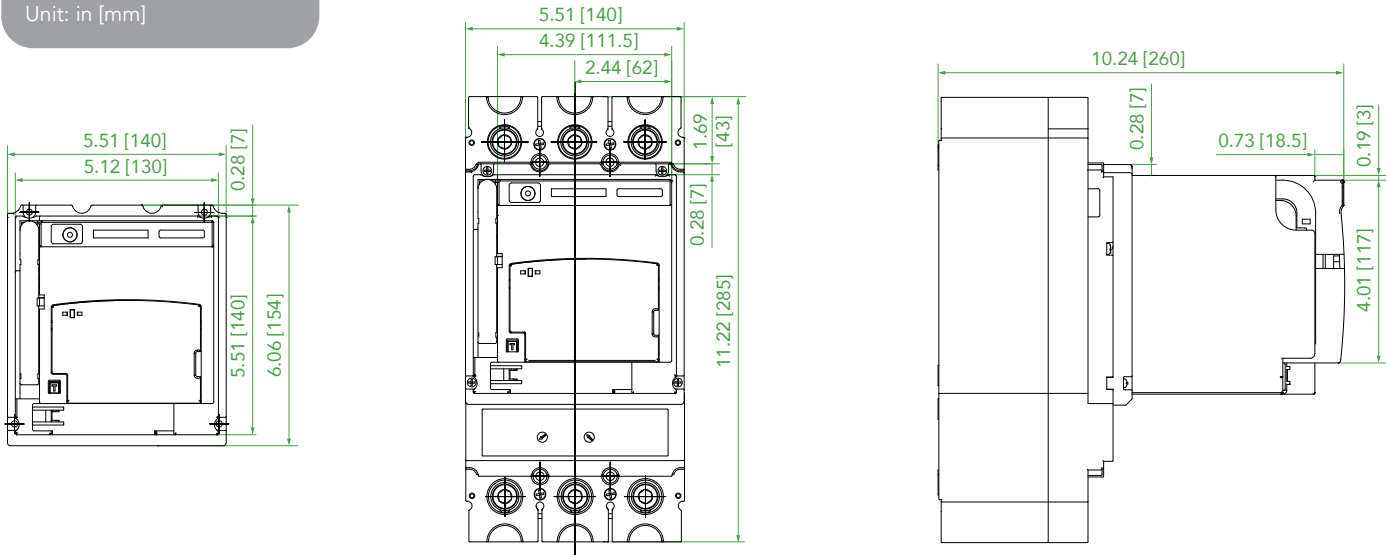


**MOD22N**  
Motor Operator for M2  
Unit: in [mm]

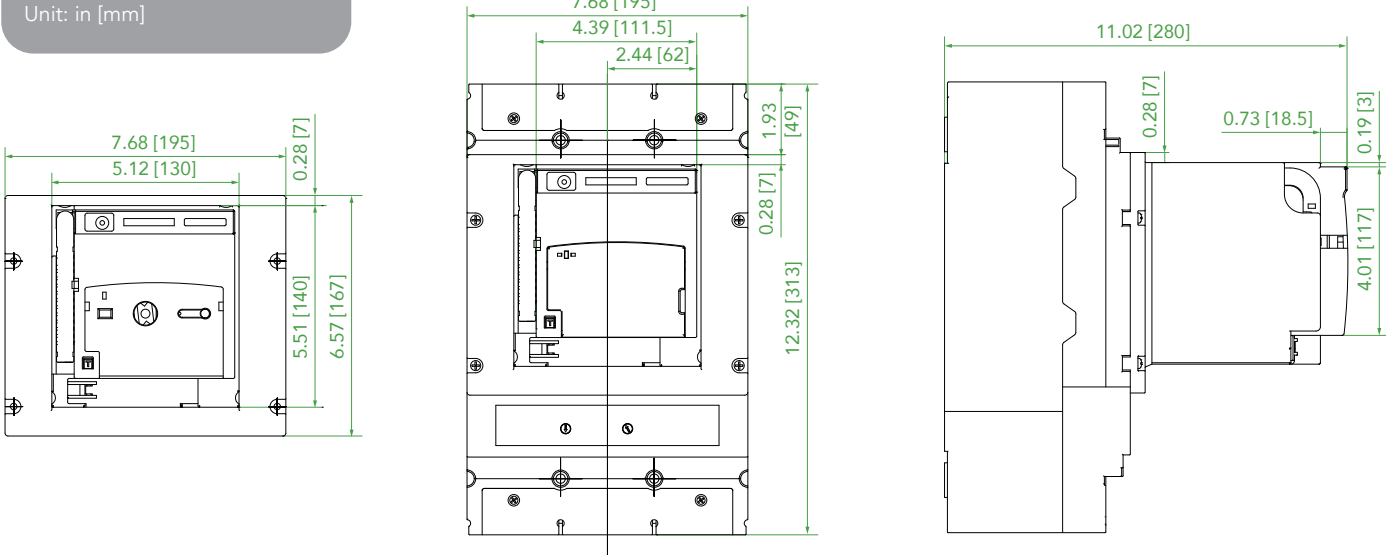


External Accessory Dimensions

**MOD23N**  
Motor Operator for M3  
Unit: in [mm]

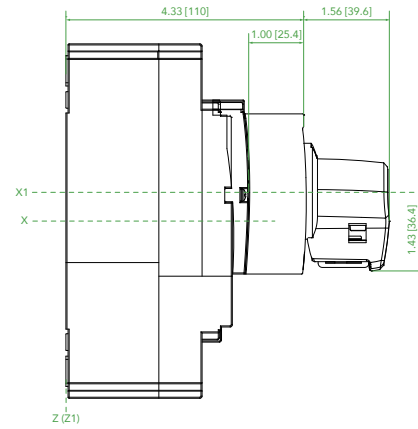


**MOD24N**  
Motor Operator for M4-M5  
Unit: in [mm]

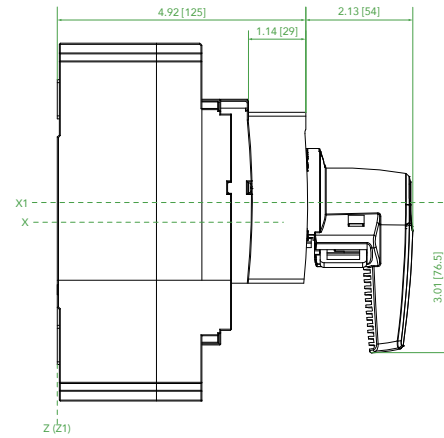


## External Accessory Dimensions

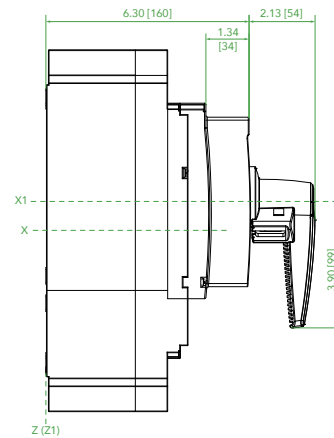
**RHD21N**  
IEC Rotary Handle for M1  
Unit: in [mm]



**RHD22N**  
IEC Rotary Handle for M2  
Unit: in [mm]

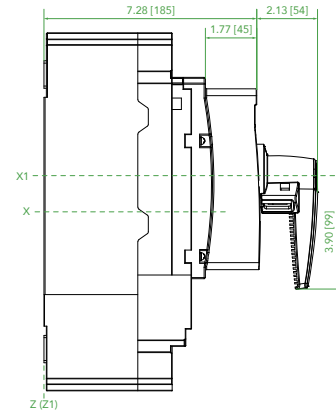
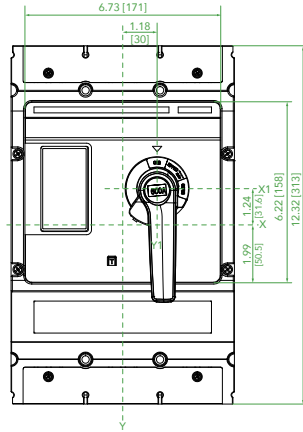


**RHD23N**  
IEC Rotary Handle for M3  
Unit: in [mm]

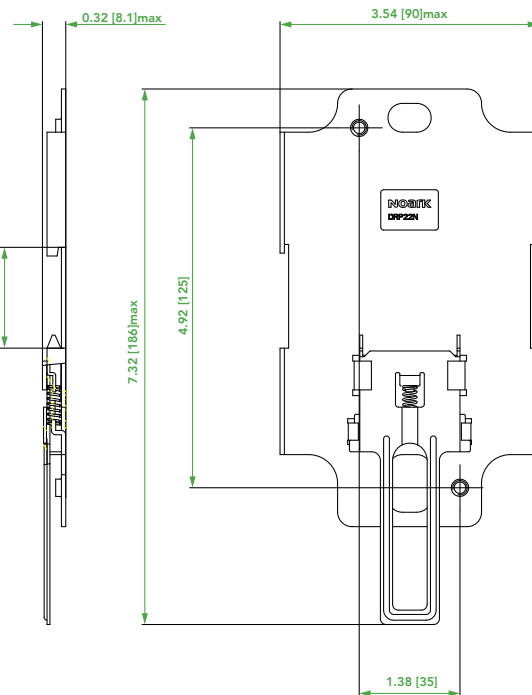
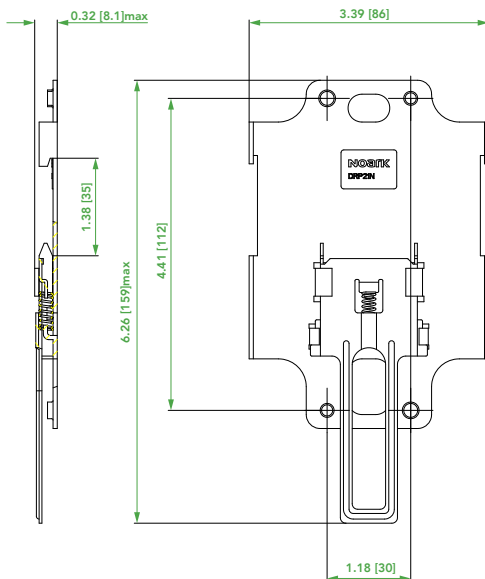


## External Accessory Dimensions

**RHD24N**  
IEC Rotary Handle for M4  
Unit: in [mm]



**DRP21N**  
Din Rail Plate for M1  
Unit: in [mm]



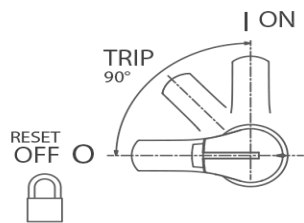
**DRP22N**  
Din Rail Plate for M2  
Unit: in [mm]

## External Accessory Dimensions

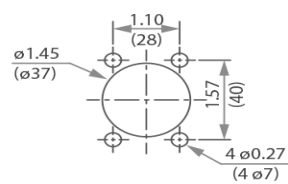
### NEMA Extended Rotary Handle

Unit: in [mm]

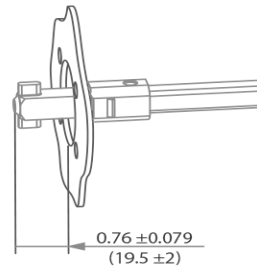
Padlocking Position



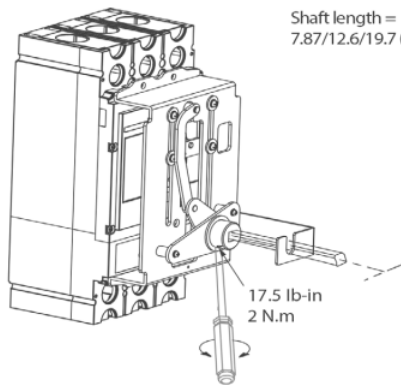
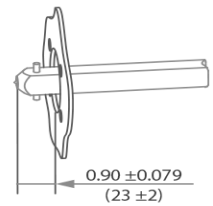
Door Drilling



A

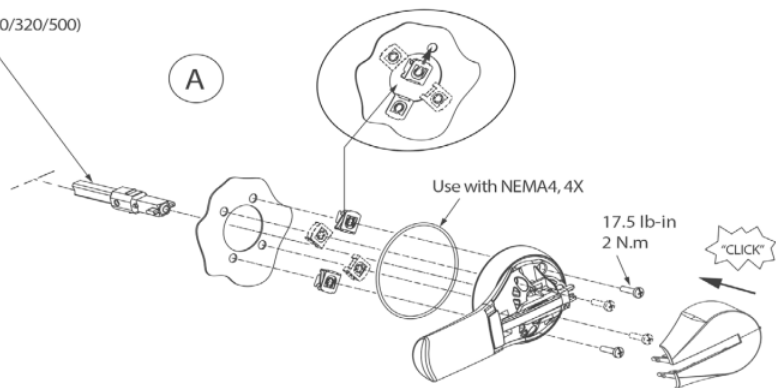


B



Shaft length =  
7.87/12.6/19.7 (200/320/500)

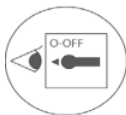
A



Use with NEMA4, 4X

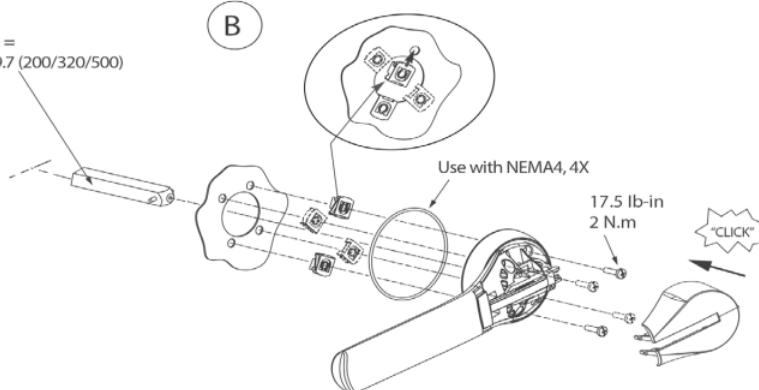
17.5 lb-in  
2 N.m

"CLICK"



Shaft length =  
7.87/12.6/19.7 (200/320/500)

B



Use with NEMA4, 4X

17.5 lb-in  
2 N.m

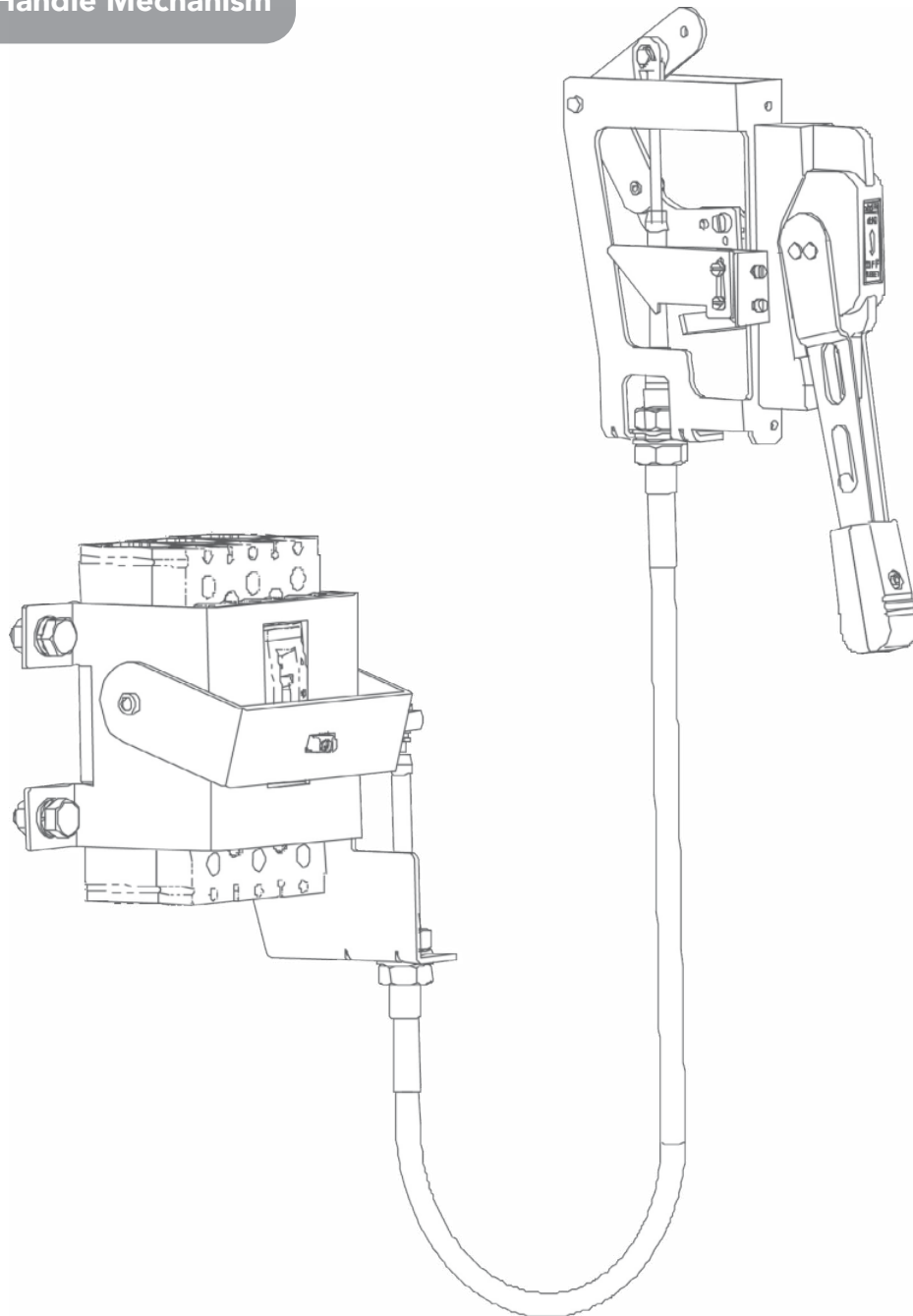
"CLICK"

A External Operation: EH2 Type

B External Operation: EH3 Type

## External Accessory Dimensions

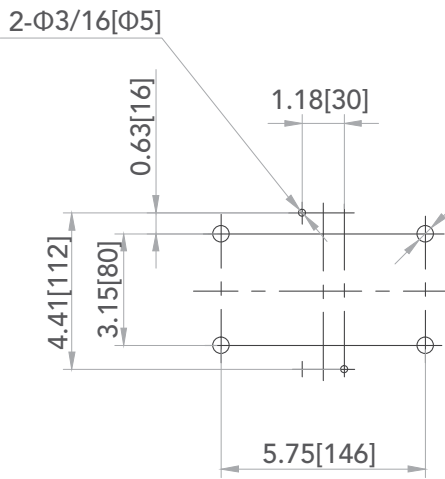
### NEMA Flange Handle Mechanism



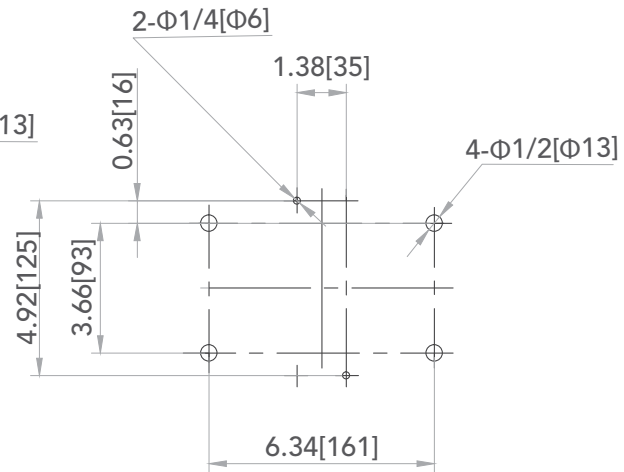
## External Accessory Dimensions

### NEMA Flange Handle Mechanism

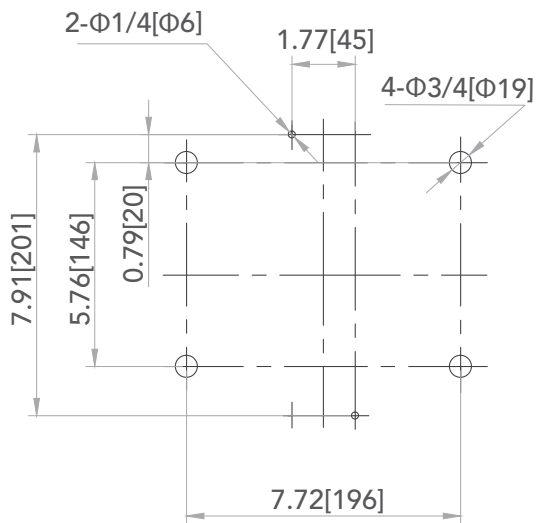
#### Drilling Plate for Operating Mechanism



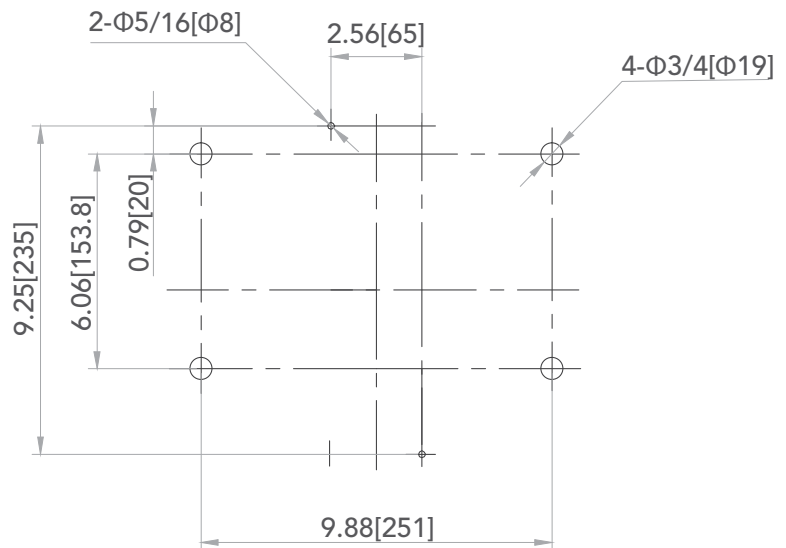
Drilling Plate for OM21



Drilling Plate for OM22



Drilling Plate for OM23



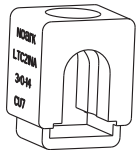
Drilling Plate for OM24

## Connection Hardware Dimensions

### LTC21-26N

#### Terminal Lug Connection

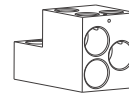
Unit: in [mm]



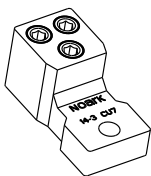
**M1** 1-Hole  
167 °F (75 °C)  
Cu wire only  
14-3/0 AWG  
2.5~95 mm<sup>2</sup>  
89 in-lb (10 N.m)



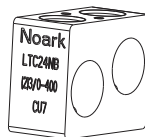
**M3** 2-Holes  
167 °F (75 °C)  
Cu wire only  
3 AWG - 250 kcmil  
35~120 mm<sup>2</sup>  
310 in-lb (35 N.m)



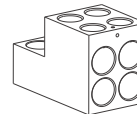
**M6** 3-Holes  
75°C/90°C  
Al/Cu Wire  
(3)3/0AWG-750kcmil  
310 lb-in/pulg/po  
(3)95-300mm<sup>2</sup>  
35N·m



**M1** 3-Holes  
167 °F (75 °C)  
Cu wire only  
14-10 AWG  
2.5~6 mm<sup>2</sup>  
44.5 in-lb (5 N.m)  
8-3 AWG  
10~35 mm<sup>2</sup>  
89 in-lb (10 N.m)



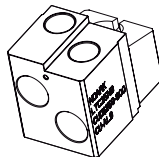
**M4** 2-Holes  
167 °F (75 °C)  
Cu wire only  
(2) 3/0 AWG - 400 kcmil  
(2) 95~185 mm<sup>2</sup>  
310 in-lb (35 N.m)



**M6** 4-Holes  
75°C/90°C  
Al/Cu Wire  
(4)3/0AWG-500kcmil  
310 lb-in/pulg/po  
(4)95-240mm<sup>2</sup>  
35N·m



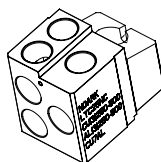
**M2** 1-Hole  
167 °F (75 °C)  
Cu wire only  
8 AWG - 350 kcmil  
10~185 mm<sup>2</sup>  
230 in-lb (23 N.m)



**M5** 2-Holes  
75/90°C  
Al/Cu Wire Only  
(2)250kcmil-600kcmil  
398 lb-in/pulg/po  
(2)120-300mm<sup>2</sup>  
45N·m



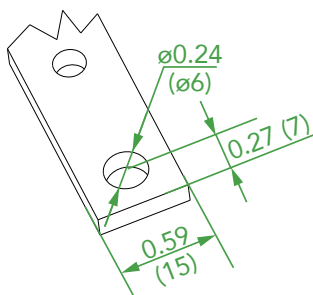
**M3** 1-Hole  
167 °F (75 °C)  
Cu wire only  
3/0 AWG - 500 kcmil  
95~240 mm<sup>2</sup>  
310 in-lb (35 N.m)



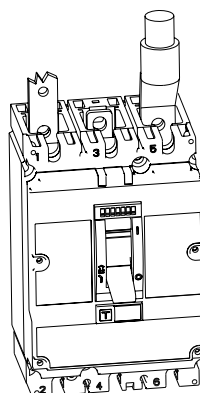
**M5** 3-Holes  
75/90°C  
Al/Cu Wire Only  
(3)250kcmil-500kcmil  
398 lb-in/pulg/po  
(3)120-240mm<sup>2</sup>  
45N·m

### Bus Bar Connection

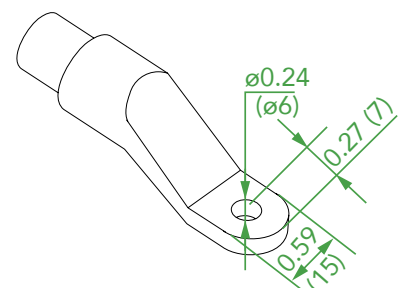
Unit: in [mm]



Bus Bar Connection  
Copper Plate



Distance Between Poles  
1.18 (30)



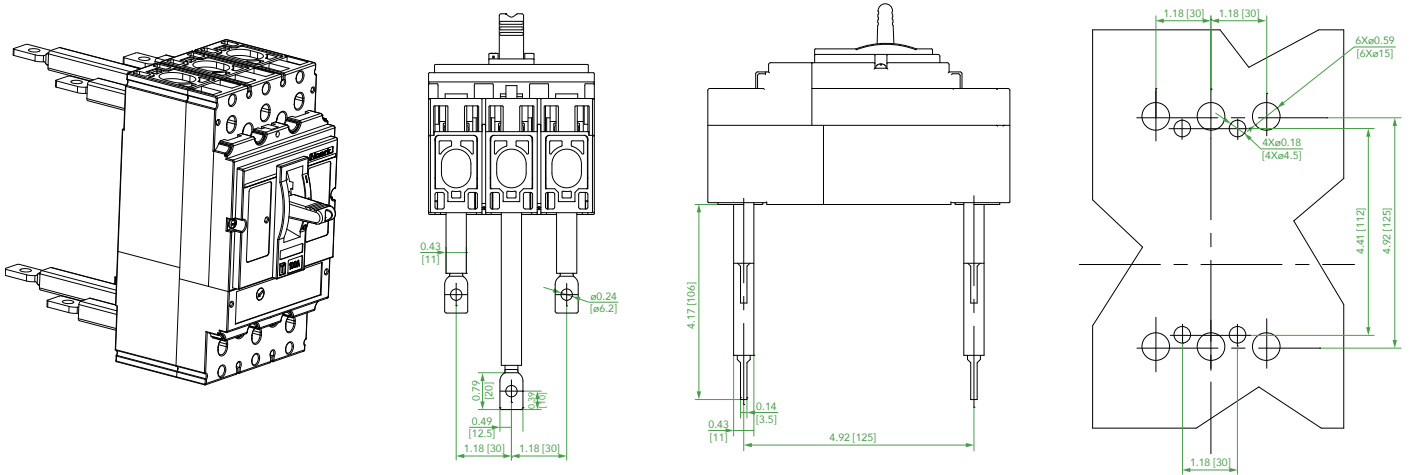
Bus Bar Connection  
Copper Cable

## Connection Hardware Dimensions

### RCP21N

Rear Connection Kit for M1

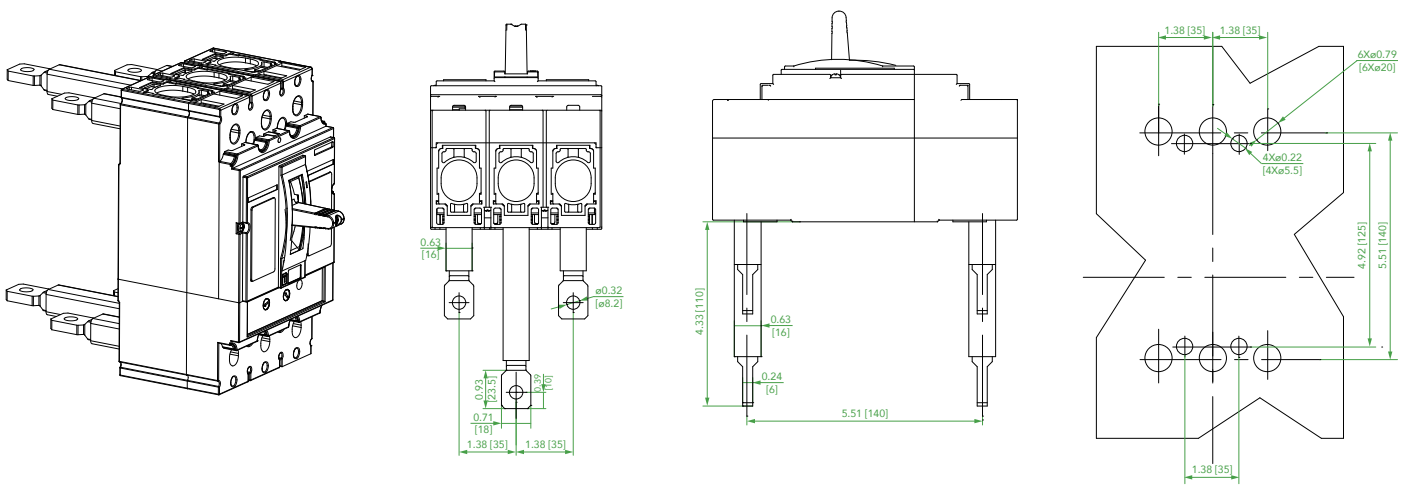
Unit: in [mm]



### RCP22N

Rear Connection Kit for M2

Unit: in [mm]

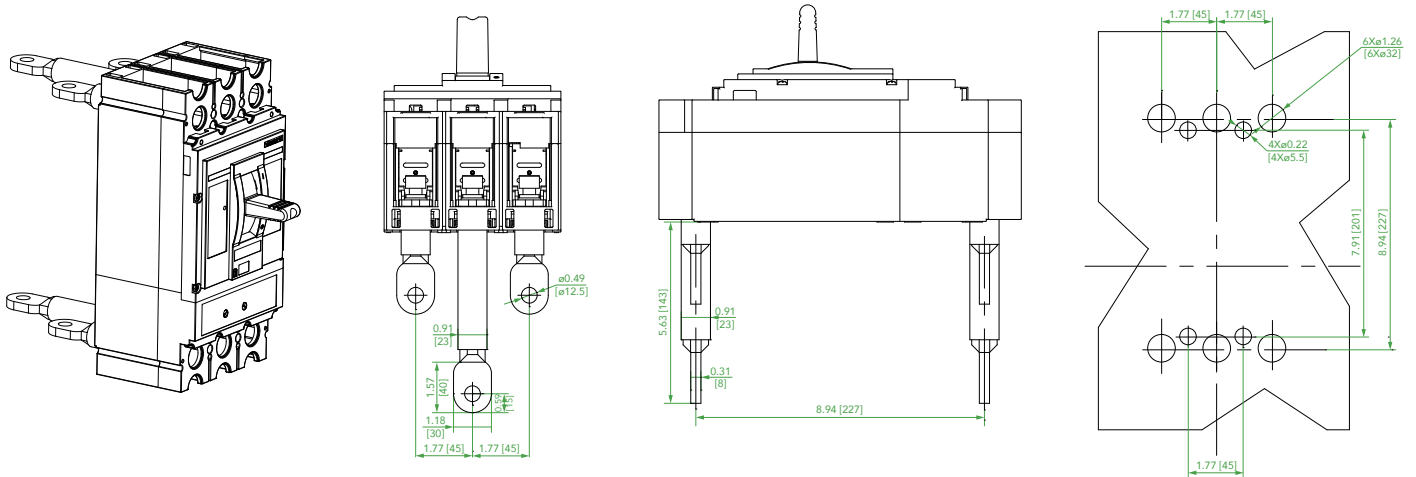


## Connection Hardware Dimensions

### RCP23N

Rear Connection Kit for M3

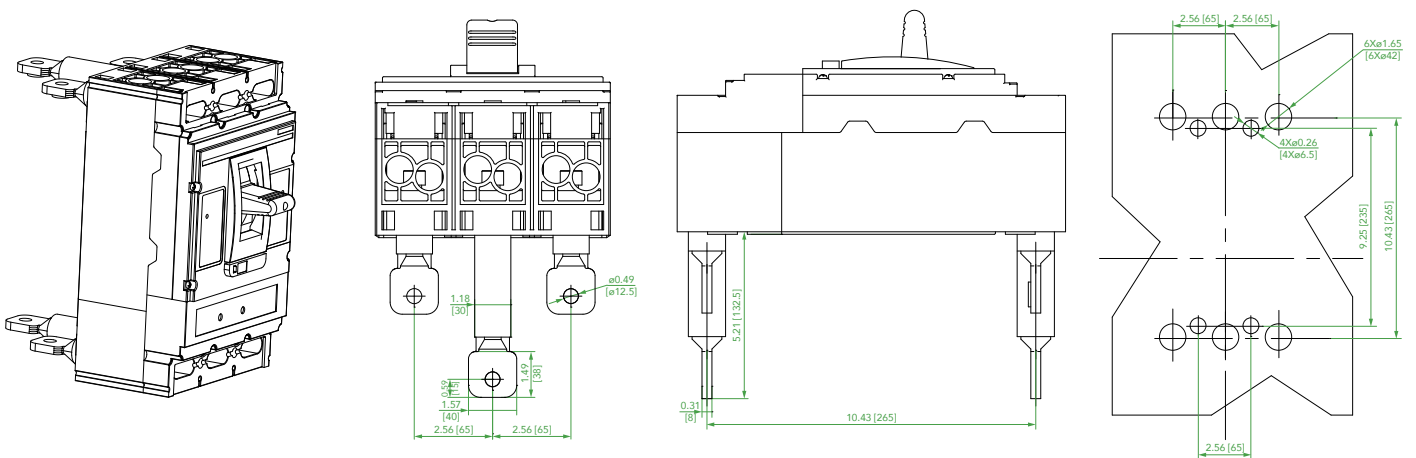
Unit: in [mm]



### RCP24N

Rear Connection Kit for M4

Unit: in [mm]



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nasales@noark-electric.com  
na.noark-electric.com

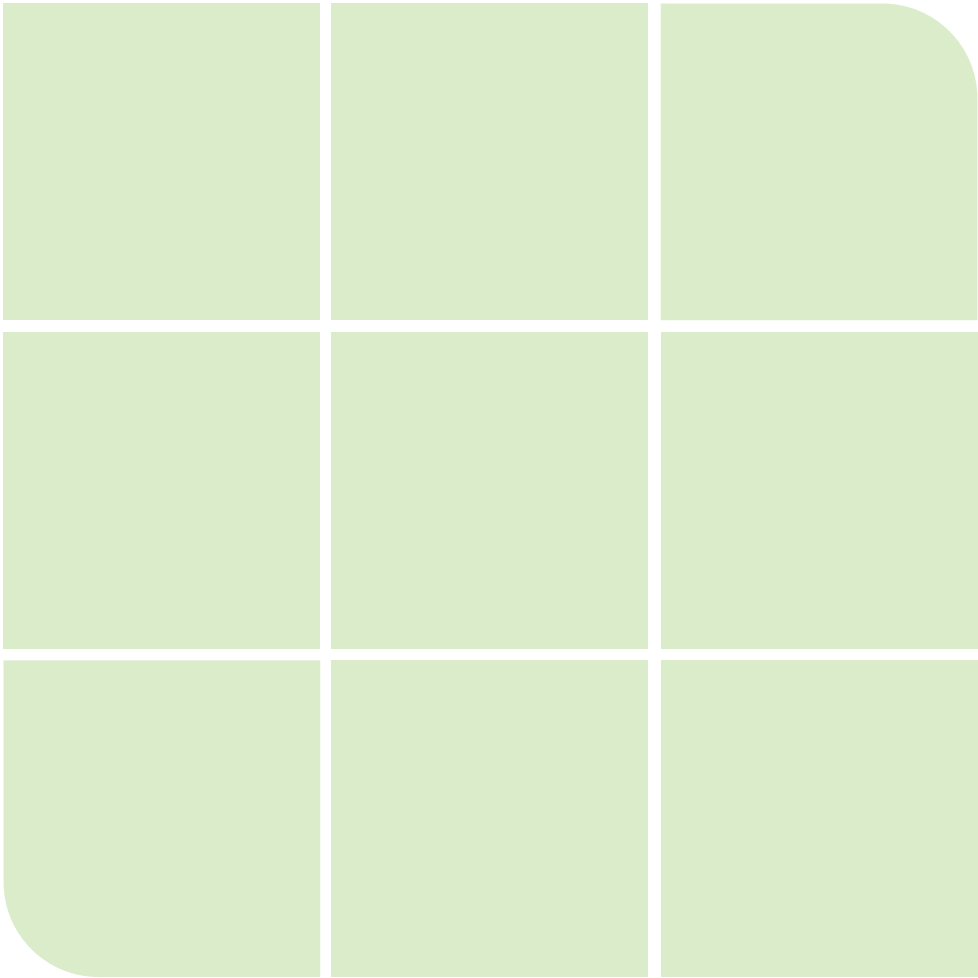
**NOARK Electric (Canada)**  
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casales@noark-electric.com



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