

**Certified for CSA  
C22.2 No. 100-04  
Portable Generators!**

**2 pole protection.  
Switch/Circuit Protector.  
0.1 to 30 Amp.**



**Series 24.**

**Count on it.**



## Features.

### Multi-Functional to fit your design needs.

The switchable, trip-free, MP Series 24 supplementary protector may be specified to meet a wide variety of circuit protection and/or switching requirements in ratings of 0.1 – 30A.

The snap-in mount Series 24 may be specified:

- As a circuit protector and/or switch
- As a one pole or two pole device
- With splash and/or actuator guard options
- With a variety of actuator markings & colors
- As lighted or unlighted
- With Quick Connect or screw terminations

### MP's Series 24 offers trip-free protection.

It operates as a latched mechanism, in which the switch function (Power On/Off) is independent of the trip function (Overload Protection). The latch mechanism is tripped by means of a cantilever-beam current sensing element. The contacts travel through an arc diverter chamber to reduce arc-quenching time. The overall mechanism is extremely simple in design for reliable operation.

*US Patent Number 4937548*

## Reliability.

MP's 60 years of experience in the design and manufacture of thermal circuit breakers makes the Series 24 the best in class choice for reliable circuit protection.

The Series 24 combines the functions of a Circuit Protector, Power On/Off Switch, and Indicator Light into a single package, affording the OEM many unique benefits:

- Quality & Reliability are enhanced by the integration of functions
- Fewer SKUs reduces inventory problems
- Multi-function compact device enhances design flexibility

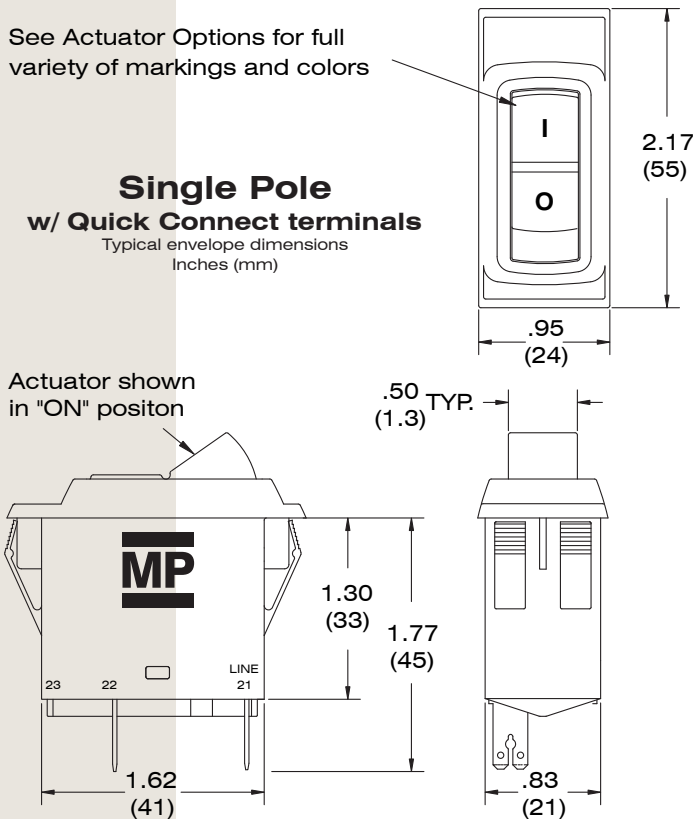
## Series 24 Physical Configuration

See Actuator Options for full variety of markings and colors

### Single Pole

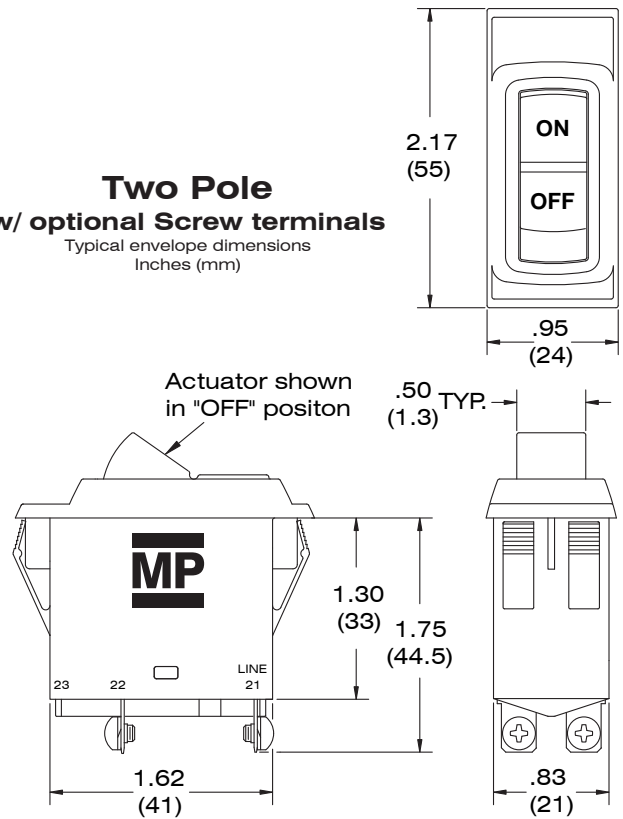
#### w/ Quick Connect terminals

Typical envelope dimensions  
Inches (mm)

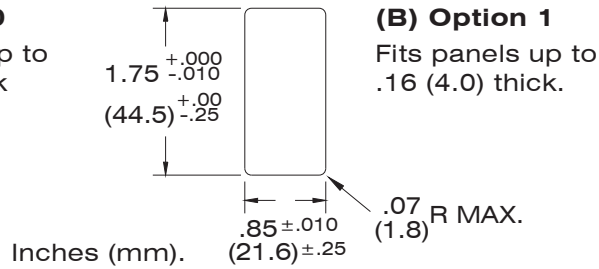
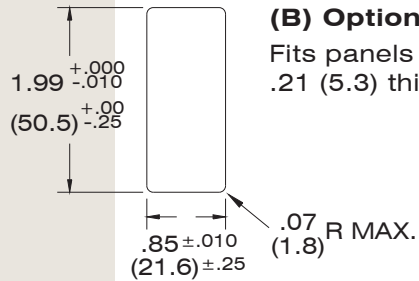


### Two Pole w/ optional Screw terminals

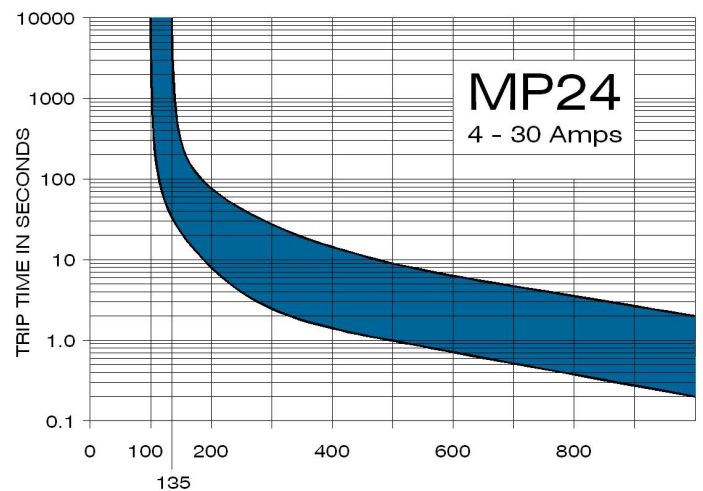
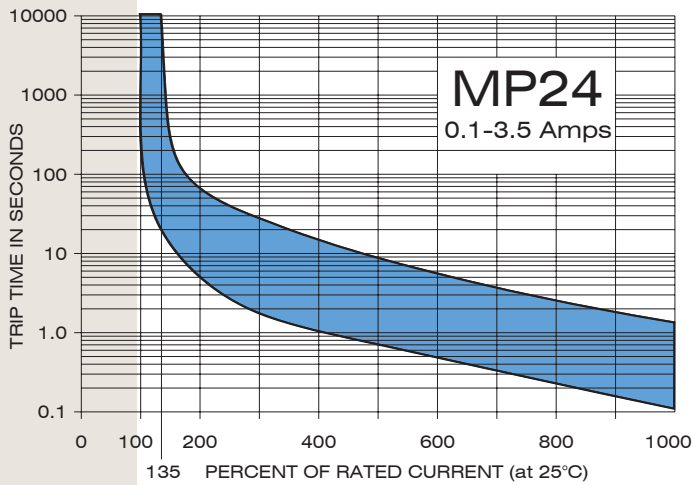
Typical envelope dimensions  
Inches (mm)



## Series 24 Panel Mount Openings (B)



## Series 24 Typical Trip Curves



## Series 24 Operating Characteristics

### Minimum Ultimate Trip

100% of rated current at 25°C/77°F.

### Voltage Drop

The Series 24 in ratings of 0.1-3.5 Amps has a maximum voltage drop of 9.0V at rated current.

### Maximum Ultimate Trip

135% of rated current at 25°C/77°F.

The Series 24 in ratings of 4-30 Amps has a maximum voltage drop of .24V at rated current.

### Overload Trip Time Data (seconds at 25°C)

| Current Rating | 200% | 500%  | 1000%   |
|----------------|------|-------|---------|
| 0.1 - 3.5 Amps | 8-60 | 0.7-5 | 0.3-2.0 |
| 4 - 30 Amps    | 8-80 | 1-4   | 0.2-1.5 |

### Typical Ambient Temperature Correction Factor

| Current Rating | -22°F<br>-30°C | 32  | 77   | 104  | 122  | 140  |
|----------------|----------------|-----|------|------|------|------|
| 0.1 - 3.5 Amps | 0.8            | 0.9 | 1.00 | 1.08 | 1.16 | 1.24 |
| 4 - 30 Amps    | 0.8            | 0.9 | 1.00 | 1.08 | 1.16 | 1.24 |



## Series 24 Specifications

### Standard Amp Ratings

Series 24 supplementary circuit protectors can be specified for 0.1A, 0.2A, 0.3A, 0.4A, 0.5A, 0.6A, 0.8A, 1A, 1.25A, 1.5A, 2A, 2.5A, 3A, 3.5A, 4A, 4.5A, 5A, 6A, 7A, 8A, 10A, 12A, 14A, 15A, 16A, 18A, 20A, 25A or 30A.

### Voltage Rating

Series 24 is rated at 250VAC/50VDC Max.

### Rated Short Circuit Capacity $I_{cn}$ (IEC60934)

0.1 – 2A,  $10 \times I_n$   
2.5 – 20A, 250A 2 pole, 150A 1 pole

### Short Circuit Current Rating (UL1077)

UL 2 pole at 250VAC  
0.1 – 0.4A, 200A (pending)  
0.5 – 30A, 5,000A

UL 2 pole at 50VDC  
0.1 – 0.4A, 1,000A (pending)  
0.5 – 30A, 1,000A

### Inrush Capacity

The Series 24 will not trip at 35X rated current for 1/2 cycle (0.008 sec.)

### Typical Life

**2 Pole**  
50,000 operations,  $I_n \leq 16A$  (240VAC/50VDC)  
30,000 operations,  $I_n \geq 17A$  (240VAC)  
10,000 operations,  $I_n \geq 17A$  (50VDC)

**1 Pole**  
30,000 operations,  $I_n \leq 20A$  (240VAC)  
30,000 operations,  $I_n \leq 16A$  (50VDC)  
30,000 operations,  $I_n \geq 17A$  (28VDC)

### Ambient Operating Temperature

-22 - +140°F (-30 - +60°C)

### Dielectric Strength

The Series 24 has dielectric strength ratings of 2,000+VAC per IEC and 1,500+VAC per UL, CSA



### Vibration

The Series 24 will withstand 8g (57-500Hz) as tested to IEC60068-2-6, Test Fc 10 frequency cycles/axis

### Shock

The Series 24 will withstand 30g (11 ms) as tested to IEC60068-2-27, Test Ea

### Degree of Protection

The Series 24 is rated at IP 40 for the operating area (IP 54 with splash protection) and IP 00 for the terminal area, per IEC 529/DIN 40050.

### Corrosion

The Series 24 will withstand 96 Hrs at 5% salt spray as tested to IEC60068-2-11, Test Ka

### Humidity

The Series 24 will withstand 240 Hrs at 95% RH as tested to IEC60068-2-3, Test Ca

### Weight

The Series 24 two pole has a typical weight of 37g.

### Regulatory Approvals

UL1077 recognized, File #E66224  
CSA certified, File #LR27156 (MC# 164913)  
VDE/IEC60934 License #40028901, 0.5-20 Amp  
CCC CQC GB17701-1999, License Pending\*

### Illumination Voltage/Power Consumed

| Nominal Lamp Voltage | Lamp current      |
|----------------------|-------------------|
| 5                    | 114 mA @ 5 VDC    |
| 14                   | 38 mA @ 12 VDC    |
| 28                   | 23 mA @ 24 VDC    |
| 115                  | <1.5 mA @ 115 VAC |
| 230                  | <1.5 mA @ 230 VAC |

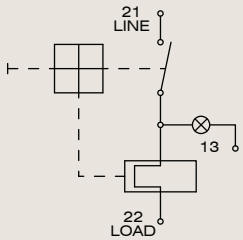
### CSA Application Codes

**1 Pole:** 4-30A, 250VAC, 50VDC, TC3, OL0 250VAC, OL1 125VAC, (50VDC 4-20A OL1, 21-30A OL0)  
SC:C1, 1kA 50VDC; SC:U3, 0.37kA 250VAC;  
SC:C1, 5kA 250VAC

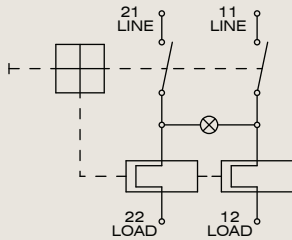
**2 Pole:** (1ph., 2 pole break) 4-30A, 250VAC, 50VDC  
TC3, OL1 250VAC, OL1 50VDC  
SC:U3, 0.37kA 250VAC; SC:C1, 5kA, 250VAC  
SC:C1, 1kA 50VDC

**Industrial Equipment:** Series 24 Quick Connect Terminals are suitable for "General Industrial" use.

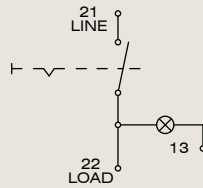
## Series 24 Poles (A)



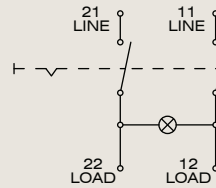
**(A) 1 pole,  
thermally  
protected**



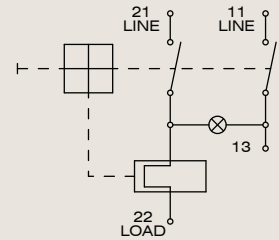
**(A) 2 poles,  
thermally  
protected**



**(A) 1 pole,  
unprotected,  
switch only**



**(A) 2 poles,  
unprotected,  
switch only**



**(A) 2 poles,  
one protected,  
one unprotected**

## Series 24 Actuator Options (C & G)

See back page for the complete list of options.



**(C) Actuator Style 1**  
Standard Rocker



**(C) Actuator Style 2**  
Rocker with  
Splash Guard



**(C) Actuator Style 3**  
Rocker with  
Actuator Guard



**(C) Actuator Style 4**  
Rocker with Splash  
& Actuator Guard



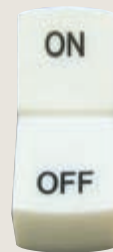
**Color 1**



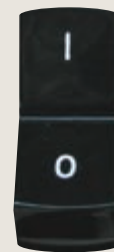
**Color 2**



**Color 3**



**Color 4**



**Color 5**

### (G) Actuator Colors

Series 24 rocker actuators are available in a variety of colors, with green, red, amber and white translucent actuators for both lighted and unlighted applications, as well as unlighted black.

Fold out the inside page to examine a few of the many options available on the Series 24.

\* Visit [www.mechprod.com](http://www.mechprod.com) for latest product updates.

## (J) Ampere Ratings

|                                 |             |              |
|---------------------------------|-------------|--------------|
| 0010 = 0.1A                     | 0150 = 1.5A | 0700 = 7.0A  |
| 0020 = 0.2A                     | 0200 = 2.0A | 0800 = 8.0A  |
| 0030 = 0.3A                     | 0250 = 2.5A | 1000 = 10.0A |
| 0040 = 0.4A                     | 0300 = 3.0A | 1200 = 12.0A |
| 0050 = 0.5A                     | 0350 = 3.5A | 1400 = 14.0A |
| 0060 = 0.6A                     | 0400 = 4.0A | 1500 = 15.0A |
| 0080 = 0.8A                     | 0450 = 4.5A | 1600 = 16.0A |
| 0100 = 1.0A                     | 0500 = 5.0A | 1800 = 18.0A |
| 0125 = 1.25A                    | 0600 = 6.0A | 2000 = 20.0A |
| (Additional ratings available)* |             | 2500 = 25.0A |
|                                 |             | 3000 = 30.0A |

**P/N: 24 AB - COE - FGH - JJJJ**

### Series Number

24 = Series 24 Suppl. Cir. Prot.

### (A) Poles

- 1 = 1 pole, thermally protected
- 2 = 2 pole, thermally protected
- 3 = 1 pole, unprotected, switch only
- 4 = 2 pole, unprotected, switch only
- 5 = 2 pole, one pole protected, one pole switch only

### (B) Panel Mount Openings

- 0 = Snap-in, 0.85 x 1.99 inch panel cutout
- 1 = Snap-in, 0.85 x 1.75 inch panel cutout

### (C) Actuator Styles

- 1 = Rocker
- 2 = Rocker with Splash Guard
- 3 = Rocker with Actuator Guard
- 4 = Rocker with Splash & Actuator Guard

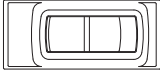
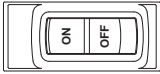

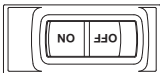
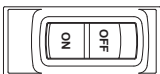
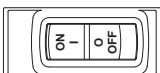
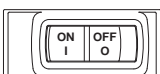
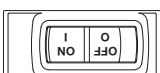
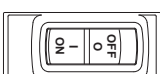
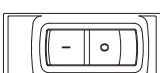

### (E) Light (Voltage) Options

- 0 = Not lighted
  - 1 = 4 - 7 VDC Incandescent
  - 2 = 10 - 14 VDC Incandescent
  - 3 = 20 - 28 VDC Incandescent
  - 4 = 90 - 140 VAC Neon
  - 5 = 185 - 275 VAC Neon
- (Options 1-5 require a translucent Actuator color)

### (F) Termination Options

- 1 = Combination .110/.250" Quick Connects
- 2 = #6-32 UNF (hardware bulk packed)
- 4 = #8-32 UNF (hardware bulk packed)

### (H) Actuator Markings

- 0 = Not marked\* 
  - 1 = ON / OFF\* 
  - 2 = ON / OFF\* 
  - 3 = ON / OFF\* 
  - 4 = ON / OFF\* 
  - 5 = ON I / O OFF 
  - 6 = ON I / O OFF 
  - 7 = ON I / O OFF 
  - 8 = ON I / O OFF 
  - 9 = I / O 
  - A = I / O 
- (\* non-VDE only)

### (G) Actuator Color

- 1 = Green - Translucent
- 2 = Red - Translucent
- 3 = Amber - Translucent
- 4 = White - Translucent
- 5 = Black - Unlighted only



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