



W23



W31

# W23/W31 series

## Toggle or Push/Pull Actuator Thermal Circuit Breaker



### Features

- 0.5 amp to 50 amp ratings may be used as on/off switch.
- Cannot be reset against overload.
- W23 has visible trip indicator.
- Screw termination.
- Trip-free operation.

### Agency Approvals

**W23 and W31 are UL 1077 Recognized as Supplementary Protectors. File E69543, and CSA Accepted as Supplementary Protectors (Appliance Component Protectors), File LR15734.**

Users should thoroughly review the technical data before selecting a product part number. It is recommended that users also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

### Electrical Data @ +25°C

**Calibration:** Will continuously carry 100% of rating, may trip between 101% and 134% of rating at 25°C. Must trip at 135% in one hour.

**Maximum Operating Voltages:** 50VDC or 250VAC (to 400 Hz).

#### Interrupting Capacity:

##### With 4X Max. Series Fuse Protection

- 0.5-50 amp models — 1000 amps at 240VAC.
- 30-50 amp models — 1000 amps at 50VDC.

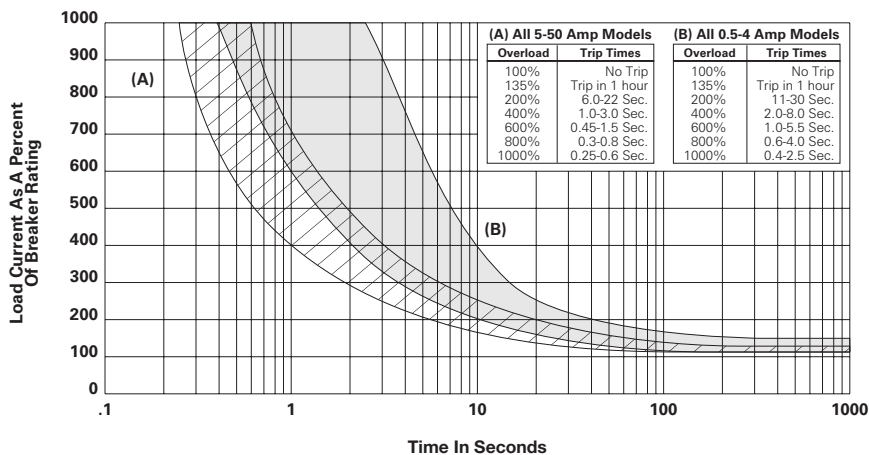
##### Without 4X Max. Series Fuse Protection

- 0.5-25 amp models — 2000 amps at 50VDC.
- 10-20 amp models — 2000 amps at 120VAC.

**Resettable Overload Capacity:** Ten times rated current.

**Dielectric Strength:** Over 1,500 volts RMS.

### Time Vs. Current Trip Curve @ +25°C



Dimensions are shown for reference purposes only.

Dimensions are in inches over (millimeters) unless otherwise specified.

Specifications and availability subject to change.

### Maximum Resistance vs. Current Rating @ +25°C

Current Rating in Amps	Maximum Resistance in Ohms ± 30%
1	.61
5	.03
10	.01
15	.006
20	.004
30	.003
40	.002
50	.002

### Mechanical/Environmental Data

**Endurance Cycling:** More than 6,000 cycles at 100% of rating, or 10,000 mechanical cycles.

**Humidity:** Will meet requirements of MIL-STD-202, Method 106.

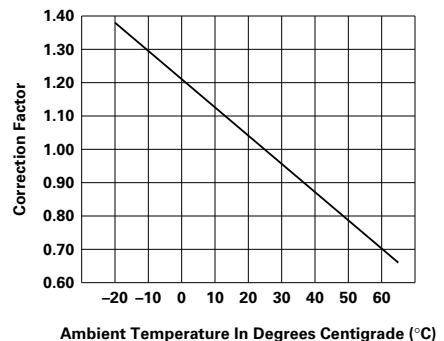
**Salt Spray:** Will meet requirements of MIL-STD-202, Method 101, Test Condition B.

**Termination:** Two #8-32 screw terminals.

**Mounting:** W23 — Threaded bushing, 3/8" (9.53mm) diameter.  
W31 — Threaded bushing, 15/32" (11.91mm) diameter, with or without anti-rotation flats.

**Weight:** Less than 2 oz. (57g).

### Ambient Compensation Chart



**To use this chart:** Read up from the ambient temperature to the curve, and across to find a correction factor. Multiply the breaker rating by the correction factor to determine the compensated rating. Calculate the overloads in terms of the compensated rating to use the published trip curve.

Ordering Information

<b>Typical Part No. ▶</b>	<b>W</b>	<b>23</b>	<b>-X</b>	<b>1</b>	<b>A</b>	<b>1</b>	<b>G</b>	<b>-5</b>
<b>1. Designator:</b> W = Circuit breaker								
<b>2. Series Number:</b> 23 = Single pole, push/pull								
<b>3. Circuit Function:</b> X = Series trip								
<b>4. Button:</b> 1 = Black with white amp rate marking and white trip band.								
<b>5. Mounting Bushing:</b> A = 3/8"-24 threaded bushing .375" (9.53mm) long, silver color								
<b>6. Terminals (See drawings for relative terminal positions):</b> 1 = Screw terminals situated 90° to each other with #8-32 screws and washers installed. 3 = Screw terminals situated parallel to each other pointing upward with #8-32 screws and washers installed.								
<b>7. Mounting Hardware:</b> A = Knurled nut/hex nut installed G = Two hex nuts/lockwasher installed Z = No mounting hardware supplied								
<b>8. Amp Rating:</b>								
0.5	3	7.5	20	35				
1	4	10	25	40				
2	5	15	30	50				

Stock Items – Authorized distributors are more likely to stock the following items.

W23-X1A1G-1	W23-X1A1G-7.50	W23-X1A1G-25	W23-X1A1G-50
W23-X1A1G-2	W23-X1A1G-10	W23-X1A1G-30	
W23-X1A1G-3	W23-X1A1G-15	W23-X1A1G-35	
W23-X1A1G-5	W23-X1A1G-20	W23-X1A1G-40	

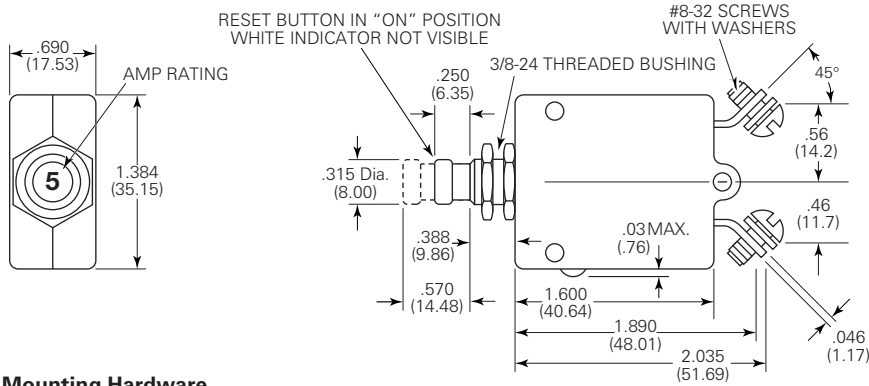
Ordering Information

<b>Typical Part No. ▶</b>	<b>W</b>	<b>31</b>	<b>-X</b>	<b>2</b>	<b>M</b>	<b>1</b>	<b>G</b>	<b>-5</b>
<b>1. Designator:</b> W = Circuit breaker								
<b>2. Series Number:</b> 31 = Single pole, toggle actuator								
<b>3. Circuit Function:</b> X = Series trip								
<b>4. Mounting Bushing:</b> 1 = 15/32"-32 threaded bushing .320" (8.13mm) long, round, silver color 2 = 15/32"-32 threaded bushing .320" (8.13mm) long, double "D," silver color								
<b>5. Toggle:</b> M = Silver color metal toggle, round, with amp rate marking on end								
<b>6. Terminals (See drawing for relative terminal positions):</b> 1 = Screw terminals situated 90° to each other with #8-32 screws and washers installed. 5 = Screw terminals situated parallel to each other pointing downward with #8-32 screws and washers installed.								
<b>7. Mounting Hardware:</b> A = Knurled nut/hex nut installed G = Two hex nuts/lockwasher installed Z = No mounting hardware supplied								
<b>8. Amp Rating:</b>								
0.5	3	7.5	20	35				
1	4	10	25	40				
2	5	15	30	50				

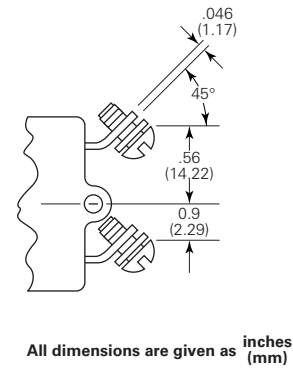
Stock Items – Authorized distributors are more likely to stock the following items.

W31-X2M1G-1	W31-X2M1G-10	W31-X2M1G-35
W31-X2M1G-2	W31-X2M1G-15	W31-X2M1G-40
W31-X2M1G-3	W31-X2M1G-20	W31-X2M1G-50
W31-X2M1G-5	W31-X2M1G-25	
W31-X2M1G-7.50	W31-X2M1G-30	

**Terminal Style 1**



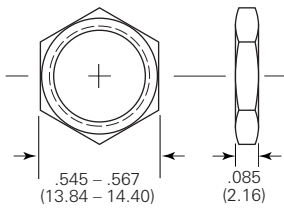
**Terminal Style 3**



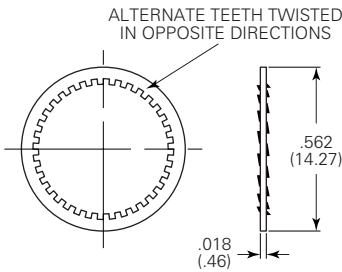
All dimensions are given as inches (mm)

**Mounting Hardware**

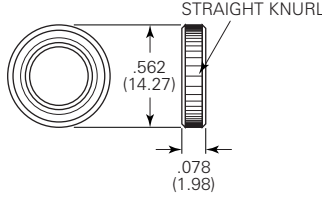
**Hex Nut**  
(55-001D - Silver Color)



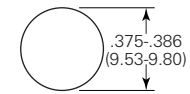
**Lockwasher**  
(88-006B - Silver Color)



**Knurled Nut**  
(55-008A - Silver Color)

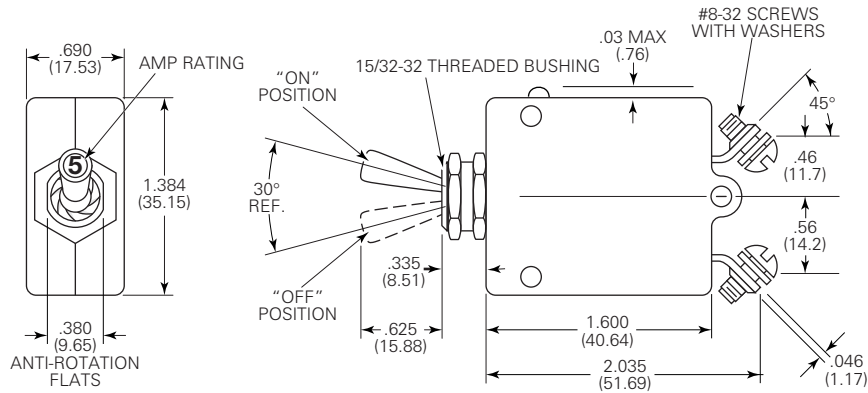


**Suggested Mounting Holes**

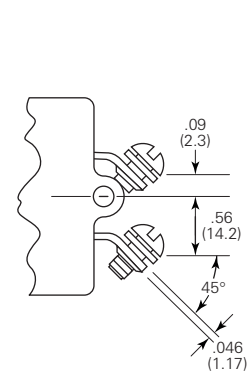


**W31 Outline Dimensions**

**Terminal Style 1**

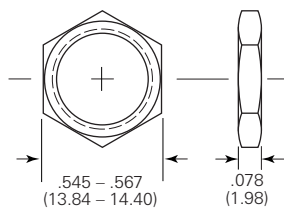


**Terminal Style 5**

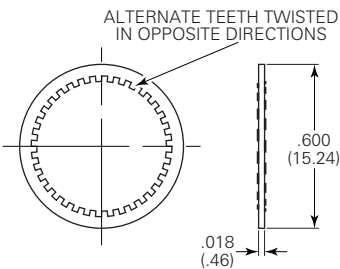


**Mounting Hardware**

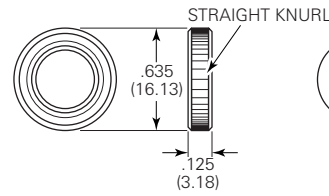
**Hex Nut**  
(55-001B - Silver Color)



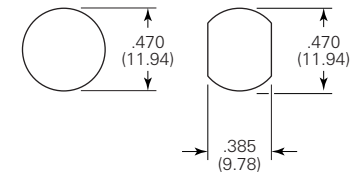
**Lockwasher**  
(88-002B - Silver Color)



**Knurled Nut**  
(55-010B - Silver Color)



**Suggested Mounting Holes**





# W58 series

## Push To Reset Only Thermal Circuit Breaker



### Features

- 0.5 amp to 30 amp ratings.
- Cannot be manually tripped.
- Button extends for visual trip indication.
- Push button to reset breaker.
- Termination is screw or .250" QC.

### Agency Approvals

W58 Series is UL 1077 Recognized as Supplementary Protectors, File E69543, and CSA Accepted as Supplementary Protectors (Appliance Component Protectors), File LR15734.

Users should thoroughly review the technical data before selecting a product part number. It is recommended that users also seek out the pertinent approvals files of the agencies/laboratories and review them to ensure the product meets the requirements for a given application.

### Electrical Data @ +25°C

**Calibration:** Breaker will continuously carry 100% of rated load. It may trip between 101% and 145% of rated load, but must trip at 145% at 25°C.

**Dielectric Strength:** Over 1,500 volts RMS.

**Maximum Operating Voltages:** 50VDC; 250VAC.

**Interrupt Capacity:** 2,000 amps at 50VDC (0.5 - 30 amp models).  
1,000 amps at 250VAC (0.5 - 30 amp models).

**Note:** 30 0amp model not UL or CSA.

**Resettable Overload Capacity:** Ten times rated current.

### Maximum Resistance vs. Current Rating @ +25°C

Current Rating in Amps	Maximum Resistance in Ohms	Current Rating in Amps	Maximum Resistance in Ohms
0.5	5.0	8	0.020
1	1.35	9	0.020
2	0.32	10	0.014
3	0.18	12	0.010
4	0.10	15	0.010
5	0.026	20	0.005
6	0.026	25	0.006
7	0.020	30*	0.004

\*No UL/CSA

### Mechanical/Environmental Data

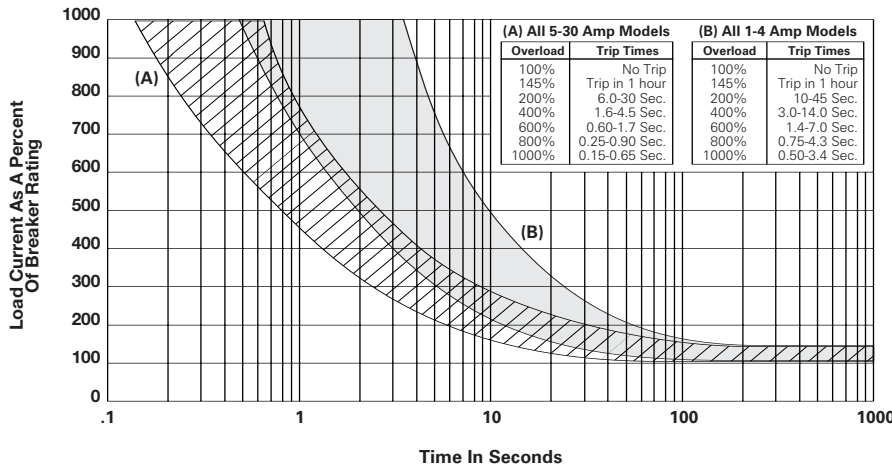
**Shock:** Withstands to 10g.

**Endurance Cycling:** Over 1,000 cycles at 200% of rated load.

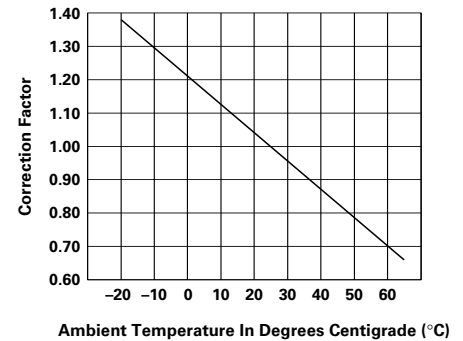
**Vibration:** Withstands to 10g at 10-55 Hz.

**Weight:** Less than 1 1/2 oz. (42.5g).

### Time vs. Current Trip Curve @ +25°C



### Ambient Compensation Chart



**To use this chart:** Read up from the ambient temperature to the curve, and across to find a correction factor. Multiply the breaker rating by the correction factor to determine the compensated rating. Calculate the overloads in terms of the compensated rating to use the published trip curve.

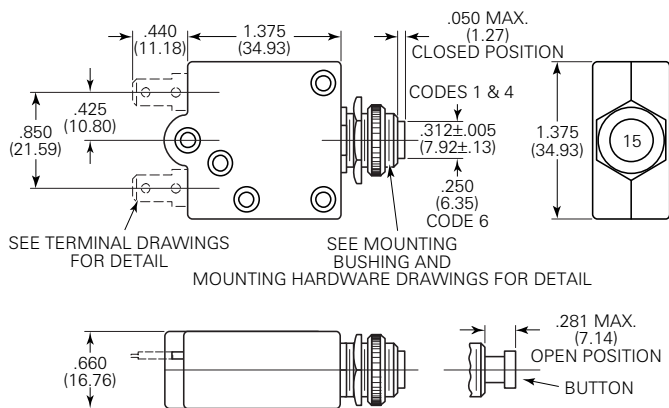
**Ordering Information**

<b>Typical Part No. ▶</b>	<b>W</b>	<b>58</b>	<b>-X</b>	<b>B</b>	<b>1</b>	<b>A</b>	<b>4</b>	<b>A</b>	<b>-5</b>
<b>1. Designator:</b> W = Circuit breaker									
<b>2. Series Number:</b> 58 = Single Pole, Push-to-Reset									
<b>3. Circuit Function:</b> X = Series Trip									
<b>4. Button:</b> A = White, plain, no rate marking, no trip band      E = White with red rate marking no trip band B = White with red rate marking, red trip band      F = White with black rate marking, no trip band C = White with black rate marking, red trip band									
<b>5. Mounting Bushing:</b> 1 = 7/16" x .500" (12.70mm) long 4 = 15/32" x .300" (7.62mm) long, black 6 = 3/8" x .465" (11.81mm) long, round									
<b>6. Terminals:</b> A = Quick connect .250" (6.35mm) straight C = 6/32 screw 90° (screws installed) D = 6/32 screw 90° (screws bulk packed)									
<b>7. Mounting Hardware:</b> 4 = Knurled nut/hex nut      15 = Two hex nuts/lock washer 6 = Knurled nut/hex nut/lock washer      99 = No mtg. hardware supplied (Use C, Step #8) 12 = Knurled nut/lock washer									
<b>Note:</b> For other hardware combinations, order separately. See mounting hardware Ordering Information table.									
<b>8. Mounting Hardware Packaging:</b> A = Assembled to bushing B = Bulk unassembled C = No mounting hardware									
<b>9. Specify Amp Rating:</b>									
0.5	3	6	9	15	30*				
1	4	7	10	20					
2	5	8	12	25		*Not UL or CSA			

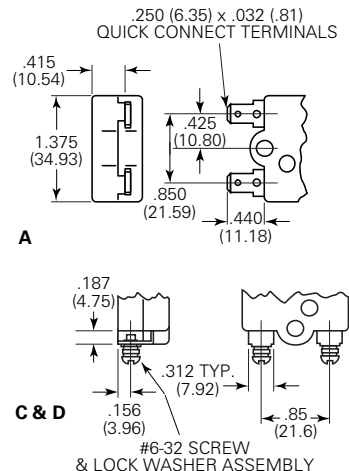
**Stock Items – Authorized distributors are more likely to stock the following items.**

W58-XB1A4A-1	W58-XB1A4A-6	W58-XB1A4A-15	W58-XC4C12A-2	W58-XC4C12A-15
W58-XB1A4A-2	W58-XB1A4A-7	W58-XB1A4A-20	W58-XC4C12A-3	W58-XC4C12A-20
W58-XB1A4A-3	W58-XB1A4A-8	W58-XB1A4A-25	W58-XC4C12A-5	W58-XC4C12A-25
W58-XB1A4A-4	W58-XB1A4A-10	W58-XB1A4A-30	W58-XC4C12A-7	W58-XC4C12A-30
W58-XB1A4A-5	W58-XB1A4A-12	W58-XC4C12A-1	W58-XC4C12A-10	

**Outline Dimensions**



**Terminal Options**



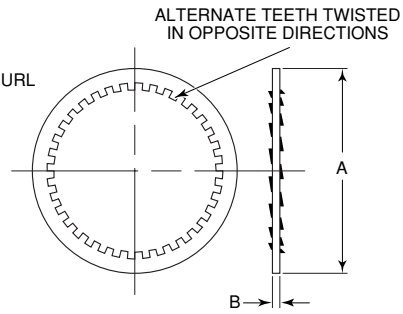
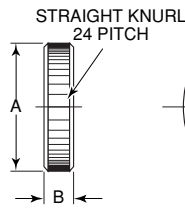
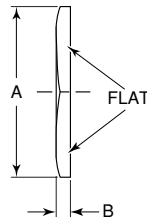
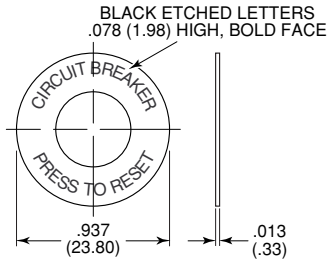
**Mounting Hardware**

Disc

Hex Nut

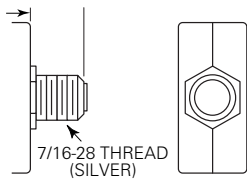
Knurled Nut

Lockwasher

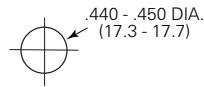


**Mounting Bushing**

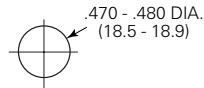
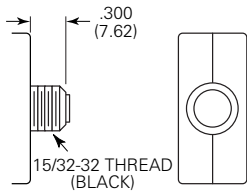
Type 1



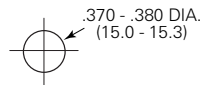
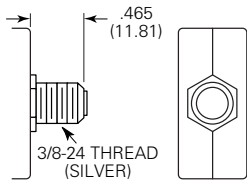
Recommended Cutout



Type 4



Type 6



**Mounting Hardware Dimensions**

Dimension		Hex Nut	Knurled Nut	Lockwasher
A.	3/8"	.556	.562	.562
	7/16"	.625	.625	.540
	15/32"	.556	.625	.600
B.	3/8"	.085	.078	.018
	7/16"	.111	.125	.022
	15/32"	.078	.125	.018

**Mounting Hardware Ordering Information**

Mounting Bushing Code	Knurled Nut	Hex Nut	Lock Washer	Push to Reset Disc
1	55-010A	55-011A	88-021B	33-012A
4	•	55-001B	88-002A	33-012C
6	55-008A	55-001D	88-006K	33-012B

• 55-010B (silver) 55-010E (black)