

## W6/W9 Series Magnetic Hydraulic P&B Circuit Breakers

- Designed for the international market. UL Recognzied (UL1077 and UL1500), CSA Accepted and VDE approved.
- Ratings to 50 amps.
- Heavy duty #10-32 stud connections. (W9)
- Quick-connect or screw terminals. (W6)
- Several delay curve options.
- Trip-free operation.



## Agency Approvals

L: Recognized as Supplementary Protector under UL 1077. Available models meet Ignition Protection requirements in accordance with UL1500. File E69543

CSA: Accepted as a Supplementary Protector. File LR15734.

**VDE:** Approved to VDE 0642/EN 60 934 (Circuit Breakers for Equipment) License No. 73782

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 confirm the product meets the requirements for a given application.

### **Electrical Data**

#### Calibration:

Breakers will hold 100% of rated current.

Breakers may trip between 101% and 124% of rated load (134% for AC/DC units).

Breakers must trip at 125% of rated load and above (135% for AC/DC units).

Dielectric Strength: 50/60 Hz., 1500V: DC, 1100V

Insulation Resistance: 100 Megaohms at 500VDC

### **Endurance:**

10,000 on/off cycles - 6000 at rated load, 4000 at no load.

Units tested at six cycles per minute, 1 second on and 9 seconds off at 25°C ambient.

Typical Resistance and Impedance

Current	DC	50/60	
(Amps.)	Resistance	Impedance	
	(Ohms)	(Ohms)	
0.2	90	90	
1.0	1.2	1.2	
2.0	0.28	0.28	
5.0	0.04	0.04	
10.0	0.013	0.013	
20.0	0.004	0.005	
30.0	0.0027	0.004	
40.0	0.002	0.002	
50.0	0.0015	0.0015	

Tolerance:  $0.1 - 4.99 \pm 15\%$ ;  $5 - 9.99 \pm 20\%$ ;  $10 - 15 \pm 25\%$ ;  $16 - 30 \pm 50\%$ .

## Mechanical/Environmental Data

Operating Temperature: -40°C to +85°C

**Humidity:** Meets requirements of Mil-STD-202 method 103. **Shock:** Tested per Mil-STD-202, method 213, test condition C

(100g @ 6 ms)

Vibration: Tested per Mil-STD-202, method 201, 10-55 Hz., 0.06"

(1.52mm) total excursion in 2 planes.

## Mechanical/Environmental Data (continued)

### **Fungus and Moisture Resistance:**

Special moisture resistant finish applied to all ferrous parts. Plastic parts are made of inherently fungus resistant material

#### Marking:

International "1" and "0" symbols are marked on the toggle for both W6 and W9. W9 units have "ON" and "OFF" molded into the area at the base of the toggle.

### Mounting:

Units are mounted with two #6-32 screws from the front of the panel. Metric models for use with M3 x 0.5 screws are available. To maintain published performance specifications, units should not be mounted more than  $90^{\circ}$  from their normal upright position.

Weight: Approximately 2.5 ounces per pole.

### **Approvals and Ratings Table 1**

W6 Series UL1077/CSA (All Circuit Functions)

Maximum Voltage	Frequency (Hz)	· · Phase		Interrupting Capacity (Amps)		
65	DC	-	0.2 - 50	2,000		
277	50/60	1	0.2 - 20	5,000		
277	50/60	1	21 - 50	2,500		
277/480	50/60	3Ø-Wye	0.2 - 20	5,000		

## W9 Series UL1077/CSA (All Circuit Functions)

Maximum Voltage	Frequency (Hz)	Phase	Current Rating (Amps)	Interrupting Capacity (Amps)	
65	DC	-	0.2 - 50	2,000	
277	50/60	1	0.2 - 50	5,000	
277/480	50/60	3Ø-Wye	0.2 - 20	5,000	

### W6 or W9 Series VDE (Circuit Function X)

Maximum Voltage	Frequency (Hz)	· · Phase		Interrupting Capacity (Amps)		
65	DC	-	0.2 - 50	2,000		
250	50/60	1	0.2 - 30	5,000		
250	50/60	1	31 - 50	2,000		
415/240	50/60	3Ø	0.2 - 30	5,000		

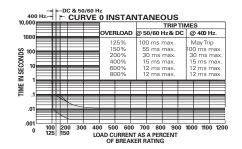
### W6 or W9 Series UL1500 (Circuit Function X)

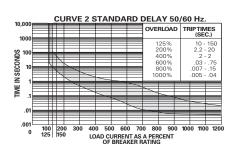
Maximum Voltage	Frequency (Hz)	Phase	Current Rating (Amps)	Interrupting Capacity (Amps)		
48	DC	-	0.2 - 50	3,000		
125/250	50/60	1	0.2 - 50	1,000		
250	50/60	3Ø-Wye	0.2 - 50	1,000		

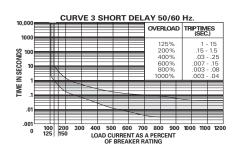


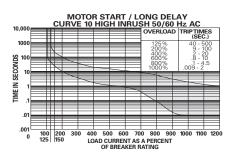
### Time vs Current Trip Curves For W6 Series and W9 Series

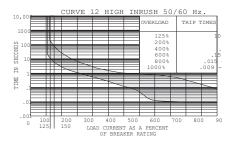
### AC 50/60 Hz.

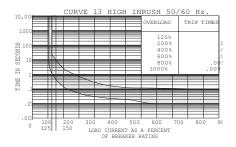




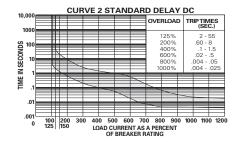


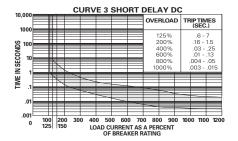


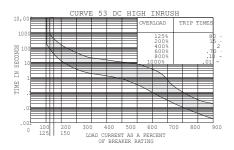




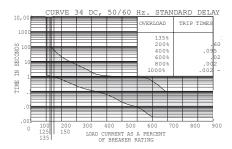
## DC







### AC/DC



### Note:

For instantaneous curves for all voltages refer to Curve 0 instantaneous under the AC 50/60 Hz. heading



Produ	uct co	de et	ructi	ıre			т	ivnical r	oroduct	code	W	67	_	X	2	Q	1	2-	20	
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1		tor pe		Rec	l toggl	e														
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VDE Type		5 6 7 A	5VDC .C/DC	250VA	AC, 41	5/240\		5VDC ecified)												
0 2 3	Delay Constants Standa Short of DC high	aneou ard del delay	ay		12 13	AC hig	gh inrus gh inrus	sh vers sh vers	ion of # ion of #	/ long de 2 3 dard dela										
	0.50	1.0 1.5	2.0 2.5	3.0 3.5	4.0 5.0	6.0 7.0	7.5 8.0		11.0 12.0	15.0 20.0	25.0 30.0	35.0 40.0	45.0 50.0		nsult fac er value				•	
	ey Appr nk UL VDI UL	1077/0 E appr	oved b	oreake	r	otected	break	er												

## Authorized distributors are more likely to stock the following items.

W67-X2Q10-3	W67-X2Q12-10	W67-X2Q13-3	W67-X2Q50-5	W67-X2Q52-30	W68-X2Q12-10	W68-X2Q110-10	W69-X2Q12-25
W67-X2Q10-5	W67-X2Q12-15	W67-X2Q13-10	W67-X2Q50-10	W67-X2Q110-15	W68-X2Q12-15	W68-X2Q110-20	W69-X2Q12-30
W67-X2Q12-2	W67-X2Q12-20	W67-X2Q13-15	W67-X2Q52-5	W67-X2Q110-20	W68-X2Q12-20	W69-X2Q12-5	W69-X2Q110-20
W67-X2Q12-3	W67-X2Q12-30	W67-X2Q13-20	W67-X2Q52-10	W68-X2Q12-3	W68-X2Q12-25	W69-X2Q12-10	W69-X2Q110-30
W67-X2Q12-5	W67-X2Q13-1	W67-X2Q13-25	W67-X2Q52-15	W68-X2Q12-5	W68-X2Q12-30	W69-X2Q12-15	
W67-X2Q12-7	W67-X2Q13-2	W67-X2Q13-30	W67-X2Q52-20	W68-X2Q12-7	W68-X2Q13-15	W69-X2Q12-20	

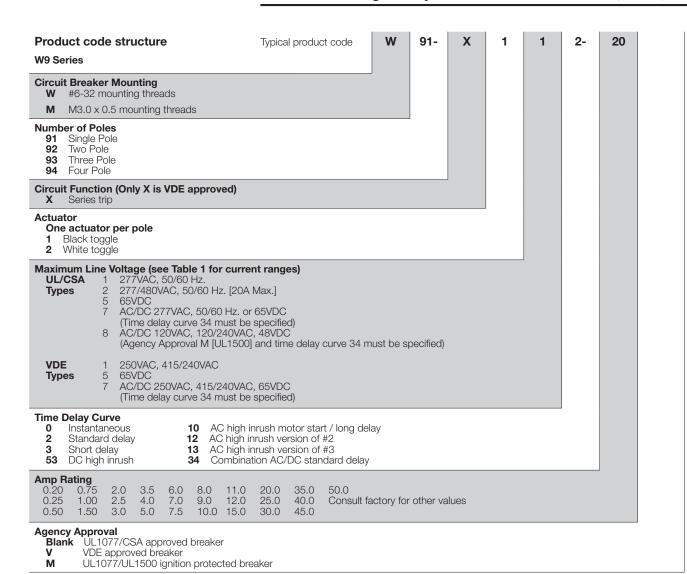
Datasheets and product data is subject to the

terms of the disclaimer and all chapters of

the 'Definitions' section, available at

http://relays.te.com/definitions





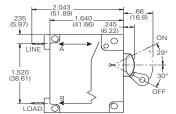
## Authorized distributors are more likely to stock the following items.

W91-X112-1	W91-X112-15	W91-X113-15	W91-X152-40	W92-X112-5	W92-X112-30	W92-X1110-30	W93-X112-30
W91-X112-2	W91-X112-20	W91-X150-5	W91-X152-50	W92-X112-7	W92-X112-40	W93-X112-5	W93-X112-40
W91-X112-3	W91-X112-40	W91-X152-10	W91-X1110-20	W92-X112-10	W92-X112-50	W93-X112-10	W93-X112-50
W91-X112-5	W91-X112-50	W91-X152-15	W92-X112-1	W92-X112-15	W92-X113-15	W93-X112-15	W93-X1110-20
W91-X112-7	W91-X113-5	W91-X152-20	W92-X112-2	W92-X112-20	W92-X113-20	W93-X112-20	W93-X1110-30
W91-X112-10	W91-X113-10	W91-X152-30	W92-X112-3	W92-X112-25	W92-X1110-20	W93-X112-25	

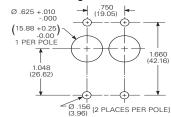


### **Outline Dimensions - Toggle Actuator Models**

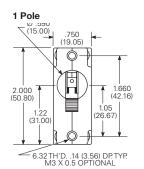
#### W6 Series



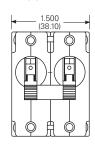
### **Panel Mounting Cutout**



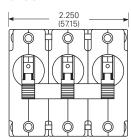
### W6 Series - One Actuator Per Pole



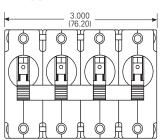
### 2 Pole



3 Pole

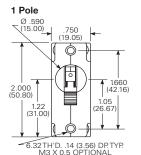


4 Pole

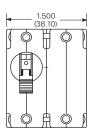


Note: Multi-pole models furnished with seperate handle tie hardware

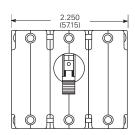
### W6 Series - One Actuator Per Unit



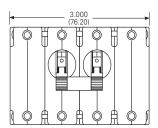
### 2 Pole



### 3 Pole

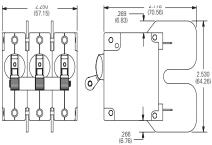


4 Pole



**Note:** 4-pole models furnished with sperate handle tie hardware

### 480V Model with Barriers

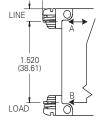


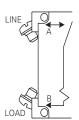
Note: 3-pole model shown

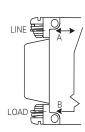
### Notes:

- 1. Terminal protrusion dimensions are referenced from back of mounting panel
- 2. Main terminals are male quick connect type .250 (6.35) wide x .031 (.79) thick x .377 (9.58) long. Optional 8-32 x .250 (6.35) or 10-32 x .250 (6.35) screw type
- 3. Panel mounting cutout detail mtg. detail tol.:  $\pm$  .005 (.13) unless noted. Add additional cutouts to correspond to number of poles. Outline drawing tolerance  $\pm$  .015 (.35) unless noted

### **Termination Options**



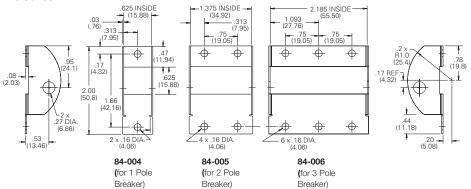






### **Outline Dimensions - Optional Toggle Guards**

### **W6 Series**





84-004 toggle guard shown with W67 series circuit breaker mounted in a panel.

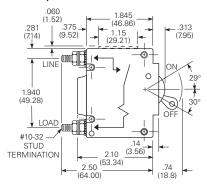
Optional toggle guards may be ordered seperately for use on W6 toggle actuator models. These guards help to prevent accidental operation and allow the breaker to be locked in the "off" position.



### **Outline Dimensions**

#### **W9 Series**

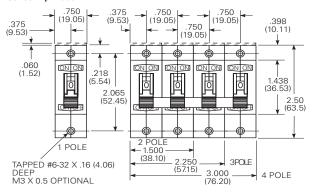
### Series Trip Model



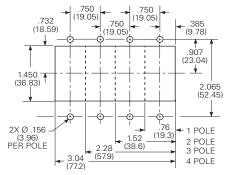
### Note:

Top mounted plate (shown with broken line) is present only on UL1500 models

### Series Trip Model



### **Panel Mounting Cutout Detail**



### Notes:

- Terminal protrusion dimensions are referenced from the back of the mounting panel
- 2. Mounting detail tolerance  $\pm$  .005 (13) unless noted
- 3. Outline drawing tolerance  $\pm$  .015 (.38) unless noted Dimensions in brackets ( ) are in milimeters.

### Disclaimer:

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In case of any potential ambiguities or questions, please don't hesitate to contact us for clarification.

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TE Connectivity: W69-X2Q12-10