

# M Series Regulating Thermostats

The Thermtrol M Series is a premium thermostat for premium applications requiring a long life, regulating thermostat. The long life capability of the M Series derives from its semi-permanent snap spring with flat, non-distorting twin bi-metal construction. A narrow differential maintains uniform temperature stability and a low thermal-resistant plastic housing permits the M Series to react quickly to temperature variations. All M Series thermostats are built on a per order basis to your temperature specifications and are not available from stock.

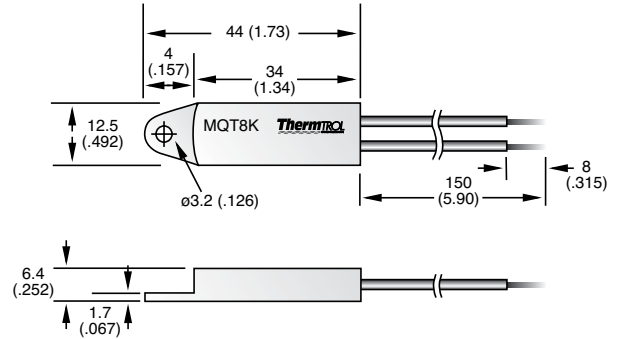
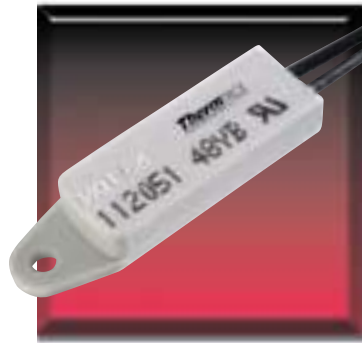
## FEATURES

- High precision
- Snap-action
- Narrow differential
- Water resistant
- Extreme long life
- Low profile
- Factory pre-set
- ROHS compliant

## APPLICATIONS

- Heating appliance
- Water bed heaters
- Blanket heaters
- Anti freeze sensors
- Medical applications
- Vending machines
- Communication equipment
- Power supplies
- Refrigeration
- Air conditioners

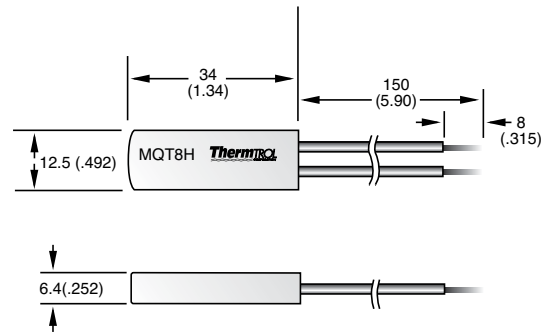
## 2 Amp Series Set Temperature Availability from -20°C to 100°C



### MQT8K

With mounting hole

UL: E104206 VDE: 102854 BEAB: C0935



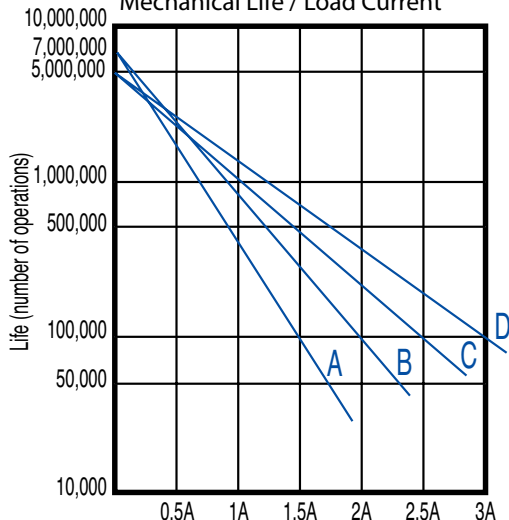
### MQT8H

No mounting hole

UL: E104206 VDE: 102854 BEAB: C0935

## 2 Amp Series

Mechanical Life / Load Current



## 2 Amp Series

Rating & Characteristics					
Voltage		Standard Contact		k contact (low current applications)	
		Differential Code	Current	Differential Code	Current
125Vac	12Vdc	D	50mA ~ 2A	D	1mA ~ 100mA
		C	50mA ~ 2A	C	
		B	50mA ~ 1.5A	B	
		A	50mA ~ 1A	A	
250Vac	24Vdc	D	30mA ~ 1.3A	D	1mA ~ 100mA
		C	30mA ~ 1.3A	C	
		B	30mA ~ 0.9A	B	
		A	30mA ~ 0.6A	A	
—	48Vdc	D	20mA ~ 0.6A	D	1mA ~ 100mA
		C	20mA ~ 0.3A	C	
		B	20mA ~ 0.3A	B	
		A	20mA ~ 0.3A	A	

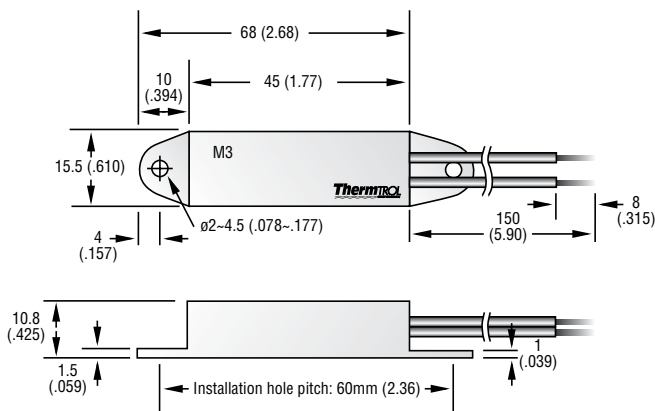
"2 Amp Series" represents the standard maximum current at 125Vac.

## 5 Amp Series Set Temperature Availability from -10°C to 110°C



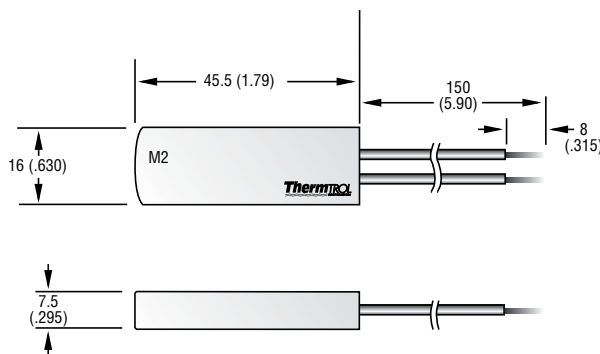
**M3**  
With mounting hole

UL: E104206  
VDE: 102855  
BEAB: C0935

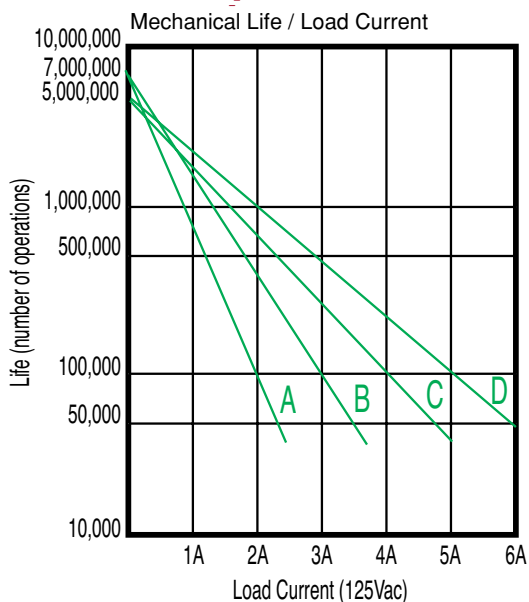


**M2**  
No mounting hole

UL: E104206  
VDE: 102855  
BEAB: C0935



### 5 Amp Series



### 5 Amp Series

Rating & Characteristics			
Voltage		Standard Contact	
		Differential Code	Current
125Vac	12Vdc	D	50mA ~ 5A
		C	50mA ~ 5A
		B	50mA ~ 4A
		A	50mA ~ 3A
250Vac	24Vdc	D	30mA ~ 3A
		C	30mA ~ 3A
		B	30mA ~ 2A
		A	30mA ~ 1.5A
—	48Vdc	D	50mA ~ 0.8A
		C	50mA ~ 0.8A
		B	50mA ~ 0.5A
		A	50mA ~ 0.3A

"5 Amp Series" represents the standard maximum current at 125Vac.

# M Series Regulating Thermostats

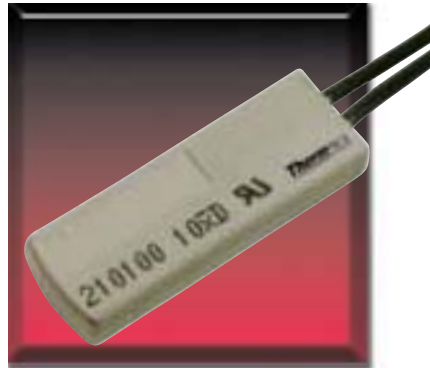
## 3 Amp High-Temperature Series Set Temperature Availability from 115C to 200C

### FEATURES

- High precision
- Snap-action
- Narrow differential
- Water resistant
- Extreme long life
- Low profile
- Factory pre-set
- ROHS compliant

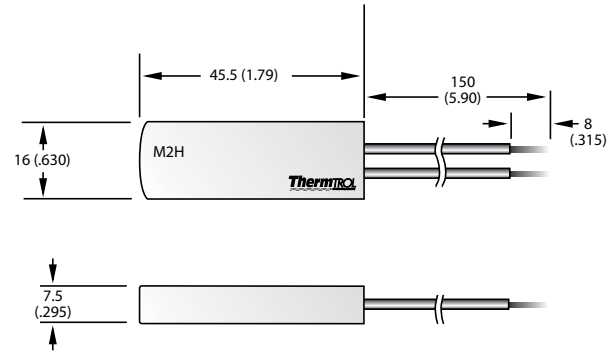
### APPLICATIONS

- Heating appliance
- Water bed heaters
- Blanket heaters
- Anti freeze sensors
- Medical applications
- Vending machines
- Communication equipment
- Power supplies
- Refrigeration
- Air conditioners



**M2H**  
No mounting hole

UL: E104206  
VDE: 102855  
BEAB: C0935



## 3 Amp Series

Relation Between Operating Voltage, Temperature Range, and Differential Rank			
Operating Voltage	Temperature Setting	Differential Rank	Contact Capacity
250Vac 24Vdc	115C ~ 150C	D	50mA ~ 3A
	151C ~ 200C	E	50mA ~ 2A
125Vac 12Vdc	115C ~ 150C	D	50mA ~ 4A
	151C ~ 200C	E	50mA ~ 3A

"3 Amp Series" represents the standard maximum current at 125Vac.

### M-Series Additional Specifications:

-30°C - 105°C (standard). Use within 60 degrees above the set temperature.

#### Insulation resistance:

100m or more

#### Contact resistance:

30m or less (lead wire resistance not included)

#### Voltage tolerance:

2000V for 2 sec. (600V for 1 minute between contacts)

#### Vibration tolerance:

Selected from JIS • C • 0911-1984

Constant vibration: 50Hz fixed/0.2mm fixed (1 G)

Sweep vibration: 10-55Hz/0.35mm fixed (0.1 - 2.2G)

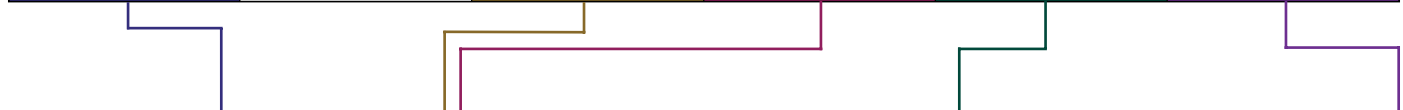
#### Impact tolerance:

No damage when dropped three times from the height of 40cm onto a concrete floor (about 70G). Withstands substantial impact once mounted.

#### Life:

2 million mechanical operations, 100,000 electrical operations at rated load.

## Numbering System (For Requesting Samples Only)



Model Number	
<b>MQT8K</b>	2 Amp with Mounting Hole
<b>MQT8H</b>	2 Amp without Mounting Hole
<b>M3</b>	5 Amp with Mounting Home
<b>M2</b>	5 Amp without Mounting Hole
<b>M2H</b>	3 Amp Hi Temp

Set Temperature	
<i>Select from range of -20°C to 200°C in 1°C increments.</i>	
Examples:	
-20	-20°C (Minimum)
200	200°C (Maximum)

Differential Code																					
Code	Temp. Range °C	-10°C min for 5 AMP		-20 - 0		1 - 50		51 - 75		76 - 110		100°C max for 2 AMP		115-150		M2H Only		151 - 200		M2H Only	
		Contact Type		X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)	X, X(BAR)	Y, Y(BAR)
<b>A</b>	3°C±1°C*	AV	AV	AV	AV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>B</b>	4.5°C±1.5°C*	AV	Std.	AV	Std.	AV	Std.	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>C</b>	6.5°C±1.5°C*	Std.	AV	Std.	AV	Std.	AV	AV	AV	AV	AV	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
<b>D</b>	10°C±2°C*	AV	AV	AV	AV	AV	AV	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.	Std.
<b>E</b>	15°C±3°C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Std.	NA	NA

\* Denotes that tighter tolerance on differential available (-20C through 110C only). M2 devices are offered with differential D. Differential A, B, & C are not available on M2 devices.

Tolerance of Temperature Setting in C							
Code	Set Temperature	-20 - 0	1 - 50	51 - 75	76 - 110	110 - 150	151 - 200
<b>T1</b>	Standard Tolerance °C	±3	±3	±4	±5	±5	±7
<b>T2</b>	Special Tolerance °C	±1.5	±1.5	±2	±3	NA	NA

Contact Type			
For Currents above 100mA		For Currents below 100mA (applicable to MQT8H, MQT8K, and MQT11H Models only)	
<b>X</b>	Contacts Open on Temperature Rise – where normal operating temp. is below thermostat activation point.	<b>KX</b>	Contacts Open on Temperature Rise – where normal operating temp. is below thermostat activation point.
<b>X(BAR)</b>	Contacts Close on Temperature Fall – where normal operating temp. is above thermostat activation point.	<b>KX(BAR)</b>	Contacts Close on Temperature Fall – where normal operating temp. is above thermostat activation point.
<b>Y</b>	Contacts Close on Temperature Rise – where normal operating temp. is below thermostat activation point.	<b>KY</b>	Contacts Close on Temperature Rise – where normal operating temp. is below thermostat activation point.
<b>Y(BAR)</b>	Contacts Open on Temperature Fall – where normal operating temp. is above thermostat activation point.	<b>KY(BAR)</b>	Contacts Open on Temperature Fall – where normal operating temp. is above thermostat activation point.

Note: M Series Thermostats are supplied with 6" long, #20 gauge PVC (UL1015) insulated leads.