M Series Regulating Thermostats

FEATURES

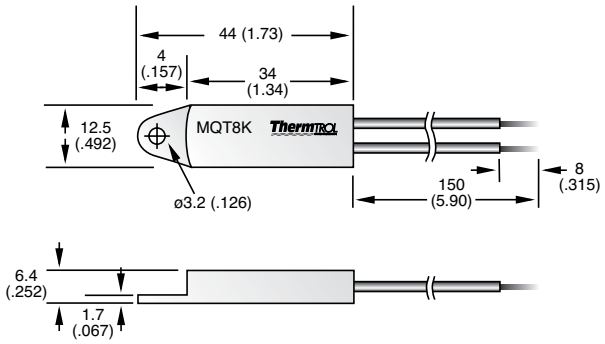
- High precision
- Snap-action
- Narrow differential
- Water resistant
- Extreme long life
- Low profile
- Factory pre-set
- ROHS compliant

APPLICATIONS

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

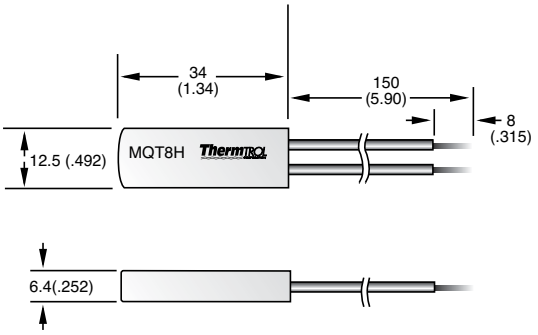
The Thermtrol M Series is a premium thermostat for premium applications requiring a long life, regulating thermostat. The long life capability of the M Series derives from its semi-permanent snap spring with flat, non-distorting twin bi-metal construction. A narrow differential maintains uniform temperature 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.

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



MQT8K
With mounting hole

UL: E104206 VDE: 102854 BEAB: C0935

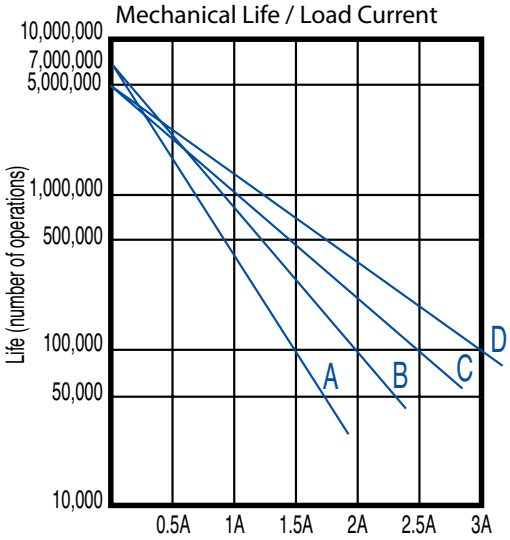


MQT8H
No mounting hole

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.

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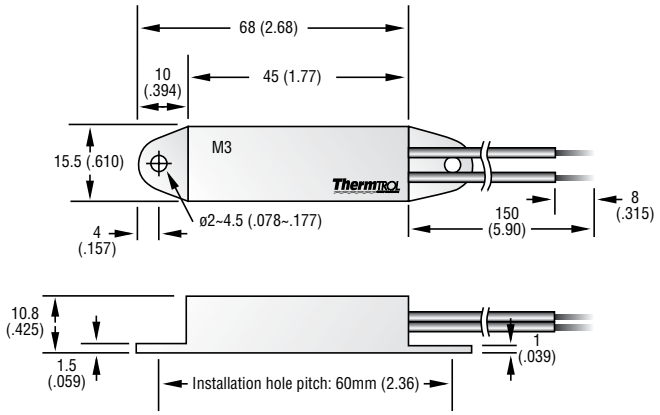
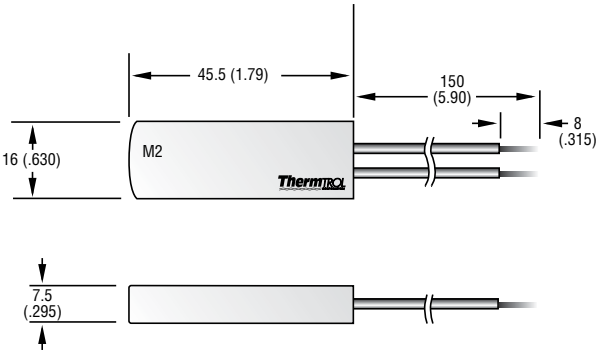
5 Amp Series Set Temperature Availability from -10°C to 110°C



M3
With mounting hole

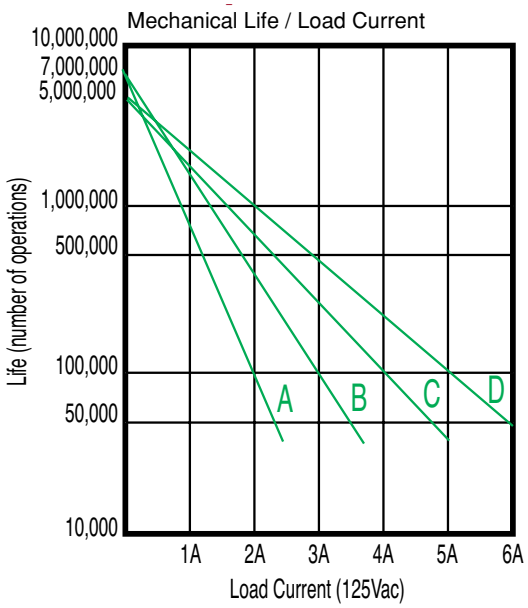
UL: E104206
VDE: 102855
BEAB: C0935



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
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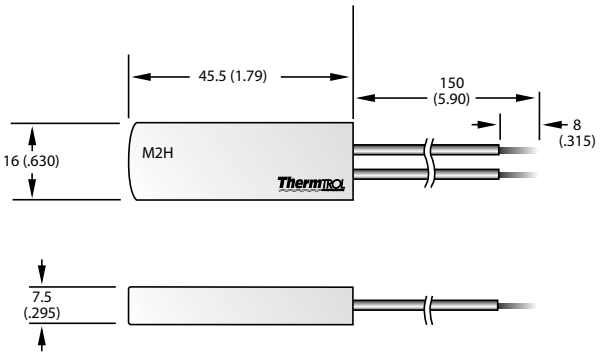
- Power supplies
- Refrigeration
- Air conditioners



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.

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Numbering System (For Requesting Samples Only)

MQT8K	SPACE	50	—	KX	—	D	—	T1

Model Number

MQT8K	2 Amp with Mounting Hole
MQT8H	2 Amp without Mounting Hole
M3	5 Amp with Mounting Home
M2	5 Amp without Mounting Hole
M2H	3 Amp Hi Temp

Set Temperature

Select from range of -20°C to 200°C in 1°C increments.

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)
A	3°C±1°C*	AV	AV	AV	AV	NA	NA	NA	NA	NA	NA	NA	NA
B	4.5°C±1.5°C*	AV	Std.	AV	Std.	AV	Std.	NA	NA	NA	NA	NA	NA
C	6.5°C±1.5°C*	Std.	AV	Std.	AV	Std.	AV	AV	AV	NA	NA	NA	NA
D	10°C±-2°C*	AV	AV	AV	AV	AV	AV	Std.	Std.	Std. 10C±3C	NA	NA	NA
E	15°C±-3°C	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Std.	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
T1	Standard Tolerance °C	±3	±3	±4	±5	±5	±7
T2	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)	
X	Contacts Open on Temperature Rise – where normal operating temp. is below thermostat activation point.	**KX**	Contacts Open on Temperature Rise – where normal operating temp. is below thermostat activation point.
X(BAR)	Contacts Close on Temperature Fall – where normal operating temp. is above thermostat activation point.	**KX(BAR)**	Contacts Close on Temperature Fall – where normal operating temp. is above thermostat activation point.
Y	Contacts Close on Temperature Rise – where normal operating temp. is below thermostat activation point.	**KY**	Contacts Close on Temperature Rise – where normal operating temp. is below thermostat activation point.
Y(BAR)	Contacts Open on Temperature Fall – where normal operating temp. is above thermostat activation point.	**KY(BAR)**	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.