

Temperature controller
Temperature limiter

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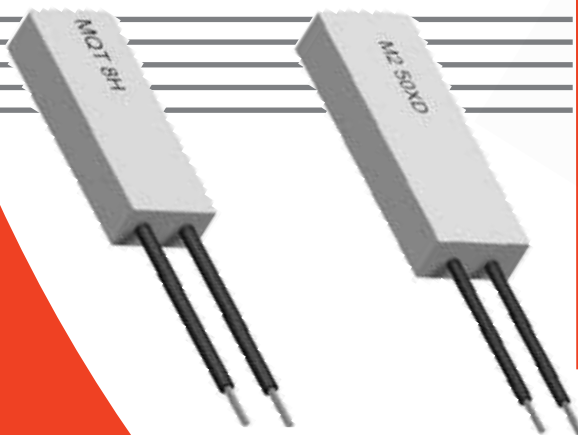
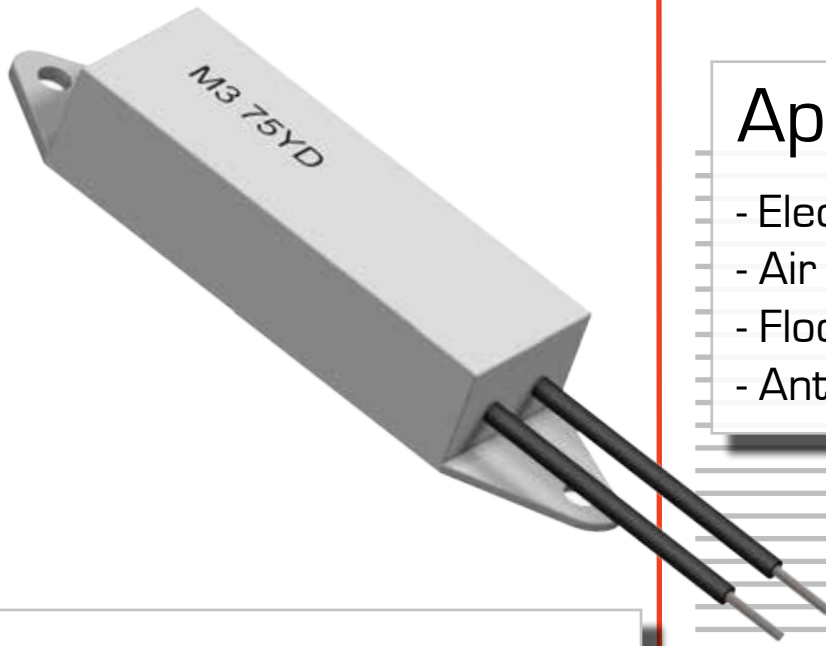
MQT8K
MQT8H
M3
M2

Applications

- Electrical controls
- Air condition
- Floor heating
- Antifreeze protection

Benefits

- Temperature setting -10°C to $+110^{\circ}\text{C}$
- Highest precision, small tolerance $\pm 3\text{K}$
- Long lifetime (>100.000 life cycles)
- Waterproofed temperature controller





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Technical data

ratings		switch type	MQT 8K	MQT 8H	M3	M2
		function	normally closed contact	when temperature is increasing, the contacts will be opened and disconnect the current		
	normally open contact	when temperature is increasing, the contacts will be closed and activate the current				
	reset	reset is done automatically				
contact configuration			X (normally closed contact) Y (normally open contact)		X (normally closed contact) Y (normally open contact) Option: switch over contact Z (3 leads XZ or YZ)	
approval according to VDE EN 60730-1 /-2-9 	response temperature	-10°C ~ +110°C			-10°C ~ +110°C	
	current / voltage	2.0 A / AC 125 V 1.3 A / AC 250 V 2.0 A / DC 12 V 1.3 A / DC 24 V 0.6 A / DC 48 V			5 A / AC 125 V 3 A / AC 240 V 5 A / DC 12 V 3 A / DC 24 V 0.8 A / DC 48 V	
	lifetime	10.000 life cycles			10.000 life cycles	
approval according to UL 873 	response temperature	-10°C ~ +100°C			-10°C ~ +110°C	
	current / voltage	2 A / AC 125 V			5 A / AC 125 V	
	lifetime	10.000 life cycles			30.000 life cycles	
ambient temperature range		-30°C ~ +85°C (standard) -30°C ~ +125°C (special) use within 60° above the response temperature, no icing and no condensing				
contact resistance		≤ 70 mΩ				
withstanding voltage		2.000 V AC/2 sec.				
insulation resistance		min. 100 MΩ				
vibration resistance		according to JIS-C-0911-1984 constant 50 Hz: 0,2 mm=1G 10 - 55 Hz: 0,35 mm fixed 2 h in X,Y and Z-direction = 0,1G to 2,2G (according to tolerance class)				
guaranteed lifetime according to manufacturer		mechanical cycles: 2.000.000 electrical cycles at rated load: 100.000				
suitable for use in protection category		I, II				
water tightness		waterproof by resin cover increased waterproof by double sealed construction on request				
standard wiring		AWM1015/AWG22 black 150mm length <+75°C AWM3271/AWG22 gray 150mm length >+76°C			AWM1015/AWG20 black 150mm length <+75°C AWM3271/AWG20 gray 150mm length >+76°C	
guidelines and norms		WEE 2002/95 EG RoHS-conformity, REACH-conformity production according to DIN EN ISO 9001				

Tolerance of setting temperature and differential vs. setting temp.

2 Amp. series MQT 8K and MQT 8H as well as 5 Amp. series M3 and M2											
response temperature		-10°C ~ -1°C		0°C ~ +50°C		+51°C ~ +65°C		+66°C ~ +75°C		+76°C ~ +110°C	
differential	execution	X	Y	X	Y	X	Y	X	Y	X	Y
	A: 3.5±1.5	(2~5)°C	-	-	±3	±3	-	-	-	-	-
B: 4.5±1.5	(3~6)°C	±4	±4	±3	±3	±4	±4	-	-	-	-
C: 6.5±1.5	(5~8)°C	±4	±4	±3	±3	±4	±4	±5	±5	-	-
D: 10±2	(8~12)°C	±4	±4	±4	±4	±5	±5	±5	±5	±5	±5

Note: 1. Above list is valid for standard tolerance

2. Special tolerance ±1.5K or ±2K are available on request

switch type	illustration	drawing dimensions (mm)	technical Specification
MQT 8K			standard execution, flat (6.4 mm), with 1 fixing eyelet, with 2 leads, 44x12.5x6.4mm option: execution MQT 8KT with tab terminals
MQT 8H			standard execution, flat (6.4 mm), without fixing eyelet, with 2 leads, 34x12.5x6.4mm option: execution MQT 8HT with tab terminals
M3			standard execution (10.8 mm), with 2 fixing eyelets, hole distance 60 mm, with leads: execution X or Y with 2 leads, 68x15.5x10.8mm option: execution M3Z with 3 leads (switch over contact XZ or YZ)
M2			standard execution (7.5 mm), without fixing eyelets, with 2 leads, 45.5x16x7.5mm option: execution M2F with fuse installed

Contact capacity by voltage used and by differential ranking

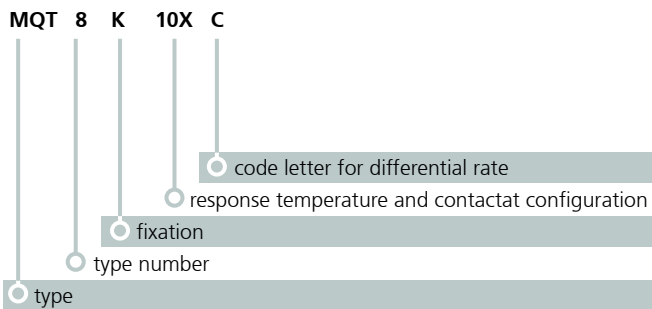
type			MQT 8	M3	M2	low current applications with crossbar contact (only for MQT)
voltage	max. current	differential	max. current (100.000 life cycles)	max. current (100.000 life cycles)	max. current (100.000 life cycles)	max. current (100.000 life cycles)
		-	DC 48V	A: 3.5±1.5 (2~5)°C	50mA – 0.3A	0.1A – 0.3A
B: 4.5±1.5 (3~6)°C	50mA – 0.3A			0.1A – 0.5A	-	
C: 6.5±1.5 (5~8)°C	50mA – 0.3A			0.1A – 0.8A	-	
D: 10±2 (8~12)°C	50mA – 0.6A			0.1A – 0.8A	0.1A – 0.8A	
AC 250V	DC 24V	A: 3.5±1.5 (2~5)°C	50mA – 0.6A	0.5A – 1.5A	-	1mA – 49mA
		B: 4.5±1.5 (3~6)°C	50mA – 0.9A	0.5A – 2A	-	
		C: 6.5±1.5 (5~8)°C	50mA – 1.3A	0.5A – 3A	-	
		D: 10±2 (8~12)°C	50mA – 1.3A	0.5A – 3A	0.5A – 3A	
AC 125V	DC 12V	A: 3.5±1.5 (2~5)°C	50mA – 1.0A	0.5A – 3A	-	1mA – 49mA
		B: 4.5±1.5 (3~6)°C	50mA – 1.5A	0.5A – 4A	-	
		C: 6.5±1.5 (5~8)°C	50mA – 2.0A	0.5A – 5A	-	
		D: 10±2 (8~12)°C	50mA – 2.0A	0.5A – 5A	0.5A – 5A	

Contact types

X normally closed	contact opens when temperature is increasing	<p>increasing temperature ↑</p> <p>top switchpoint</p> <p>differential</p> <p>below switchpoint</p> <p>decreasing temperature ↓</p> <p>— permanent line = closed contact - - - dashed line = open contact</p>
\bar{X} normally closed	contact closes when temperature is decreasing	
Y normally open	contact closes when temperature is increasing	
\bar{Y} normally open	contact opens when temperature is decreasing	

Ordering and marking example

Ordering example for standard execution



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