Product Bulletin

MA10
Thermal Cut-out

Since 30 years the Texas Instruments MA10 temperature cut-out is providing a reliable protection in a variety of small domestic and personal care appliances. The MA10 has set the world standard in the field of open type temperature cut-outs.

Design and operating principles
The Klixon™ bimetal disc with welded-on contact is the heart of the MA10. It is welded on the upper terminal which is riveted to the plastic base. The lower terminal carries the stationary contact and is also riveted to the phenolic base.

The operating principle of the MA10 is both simple and effective. Its open structure allows optimum thermal response. When a fault condition occurs, the increased ambient temperature causes the Klixon™ bimetal disc to snap open the contacts. As the device cools down to a safe temperature again, the contacts will automatically reset. The MA10 is available with a wide range of calibrated preset operating temperatures (with varying tolerances). Since the current flows through the bimetal disc, changing the bimetal resistivity makes it possible to vary the product's current sensitivity. A high, middle and low current-sensitive bimetal disc is available at no additional charge.

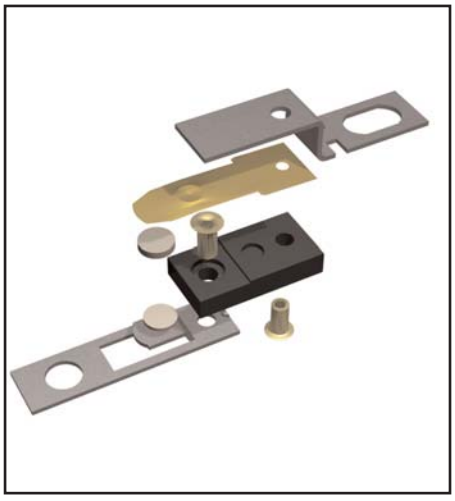
Applications
The MA10 is a temperature-sensitive safety cut-out for applications like:

- Electric room heaters
- Hair dryers
- Hand dryers
- Hair curlers

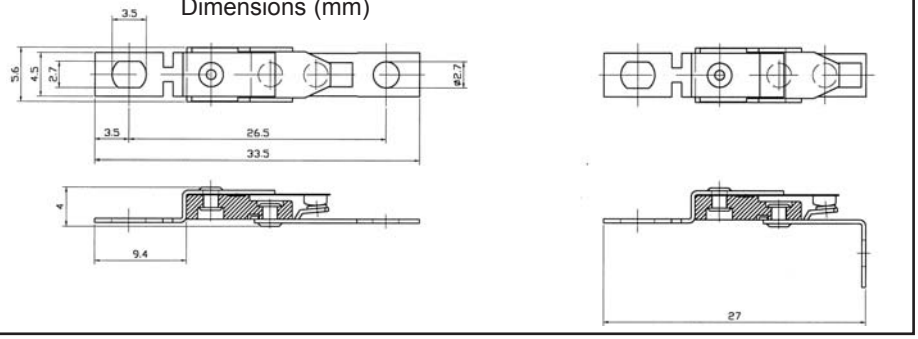
Due to its compact design, the MA10 can be mounted easily and with its wide range of operating temperatures and tolerances it provides cost-effective and reliable protection.

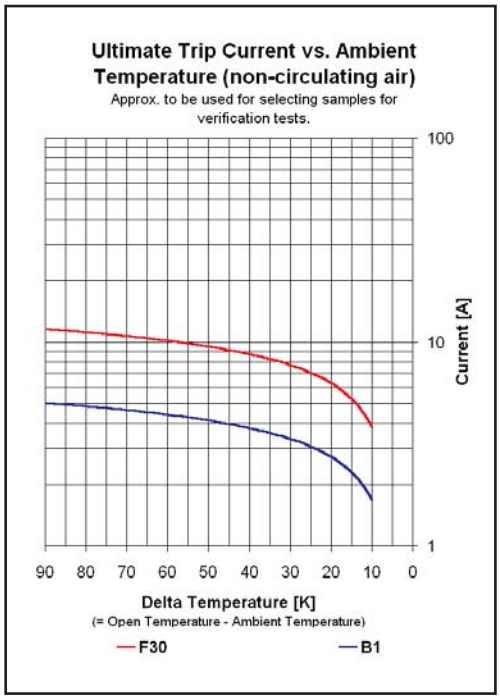
Key Benefits

- Small size
- Fast thermal response
  Bimetal disc exposed
- Low cost



Dimensions (mm)





Coding System

MA10 AA - 031 - 1

Terminal Configuration	
Code	Terminals
AA	Both terminals straight
CA	Both terminals straight NiZn plated steel

Standard opening temperature			
Operating Temp.	Low resistivity bimetal disc (F30)	Medium resistivity bimetal disc (B1)	High resistivity bimetal disc (P850)
60°C	056	060	058
65°C	096	100	098
70°C	071	075	073
75°C	051	055	053
80°C	091	095	093
85°C	061	065	063
90°C	021	025	023
95°C	031	035	033
100°C	026	030	028
105°C	016	020	018
110°C	036	040	038
115°C	041	045	043
120°C	001	005	003
125°C	081	085	083
130°C	011	015	013
135°C	006	010	008
140°C	066	070	068
145°C	076	080	078
150°C	046	050	048

Opening Temp. tolerance	
	± 15K
3	± 10K
2	± 7.5K
1	± 5K

Specifications

Standard operating temperature range	from 60°C - 150°C
Tolerance on open temperature	± 5K/±7.5K/± 10K/± 15K
Max. Ambient temperature	150°C

Declarations

Declarations to EN60730-2-9	
Purpose of the control	Thermal cut-out
Construction	Incorporated, non-electronic
Degree of protection	IP00
Terminals for ext. conductors	For internal conductors only
Method of (dis) connection of terminals	Riveting, soldering, spotwelding
Temperature limits of the switchhead	150°C
PTI of insulation materials	PTI 250
Method of mounting	By various means in conjunction with (holes in) terminals, such that adequate creepage and clearance distances are maintained between live parts and accessible metal parts
Operating time	For continuous operation
Type of action	Type 2C
Reset characteristic	Automatic
Extent of sensing element	Whole control
Control pollution degree	Normal

Certifications

Agency	File number	Rating A-res (A-ind. @ PF=0.6)V / cycles
ENEC	2014531.12	12(0) 250 / 10.000
UL	E54813	12(0) 250 / 10.000
		13(0.75) 120 / 6.000
CSA	LR31809	12(0) 250 / 10.000
		9(0) 125 / 30.000

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Sales offices

	Phone	Fax
Holland	+31 546 879560	+31 546 879204
France	+33 130 701132	+33 130 701277
Spain	+34 917 102917	+34 913 076864
Italy	+39 039 6568310	+39 039 6568316

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