

MA10

THERMAL CUT-OUT

Introduction

For 30 years Sensata Technologies' MA10 temperature cutout has provided 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 cutouts.

Sensata Technologies has been a leading global supplier of pressure sensors & switches for over 90 years.

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 pre-set 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
- Hand dryers
- Hair 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.

DESIGN SPECIFICATIONS

Standard Operating Temperature Range	From 60°C - 150°C
Tolerance on Open Temperature	± 5K/±7.5K/± 10K/± 15K
Max. Ambient Temperature	150°C

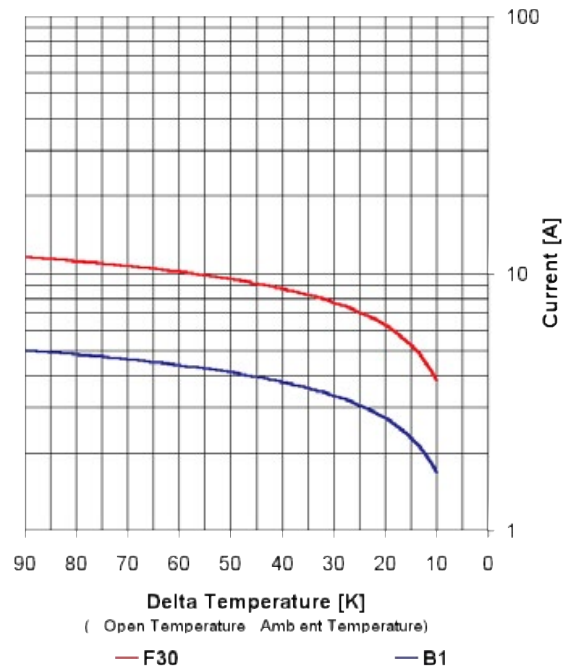
Declarations

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
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	Degree 2

Curves

Ultimate Trip Current vs. Ambient Temperature (non-circulating air)

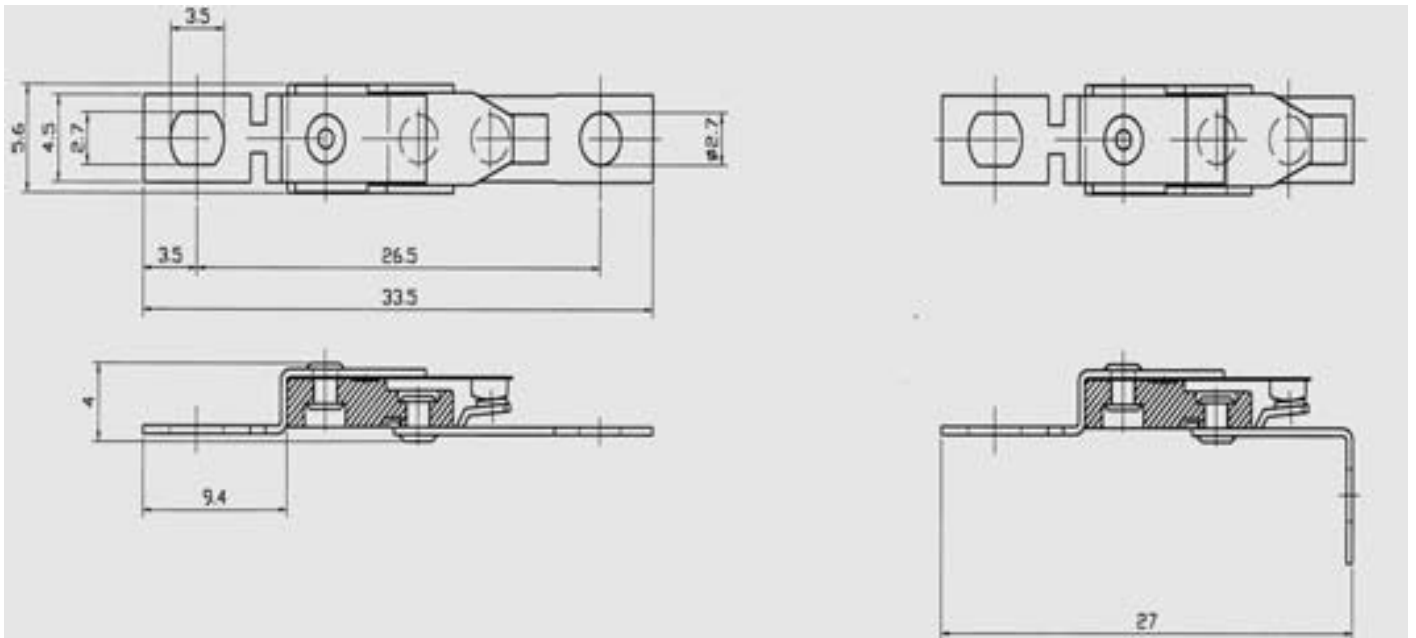
Approx. to be used for selecting samples for verification tests





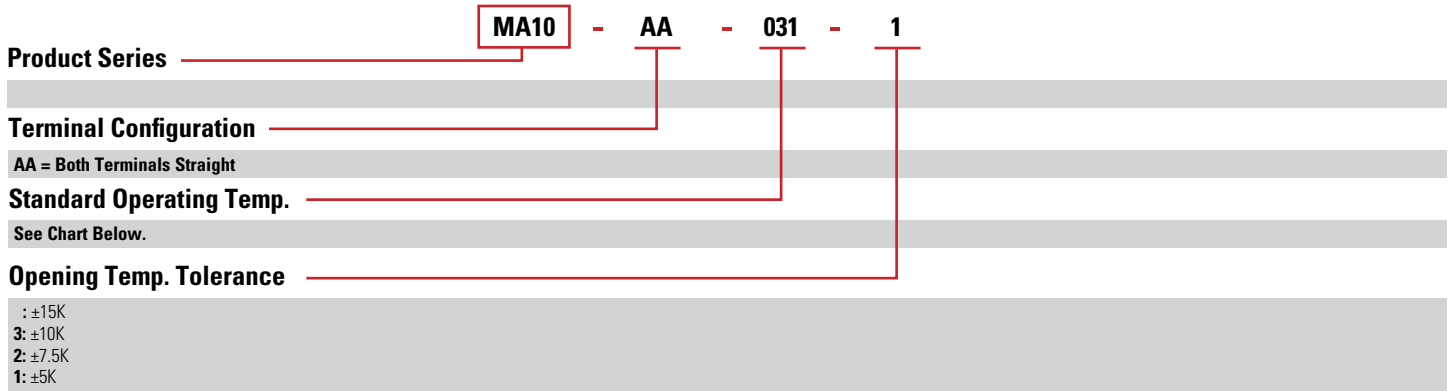
DIMENSIONS

All dimensions are in millimeters [inches].





MA10, Both Terminals Straight, Standard Opening Temp of 95°C with a low resistivity bimetal disc (F30), Opening Temp. Tolerance ±5K



Standard Operating Temperature

Operating Temp (°C)	Low Resistivity Bimetal Disc (F30)	Medium Resistivity Bimetal Disc (B1)	High Resistivity Bimetal Disc (P850)
60	056	060	058
65	096	100	098
70	071	075	073
75	051	055	053
80	091	095	093
85	061	065	063
90	021	025	023
95	031	035	033
100	026	030	028
105	016	020	018
110	036	040	038
115	041	045	043
120	001	005	003
125	081	085	083
130	011	015	013
135	006	010	008
140	066	070	068
145	076	080	078
150	046	050	048
110		039	
125		040	
140		041	
160		042	
180		043	
210		044	
240		045	



AGENCY APPROVALS AND CERTIFICATIONS



Agency	File/Report Number	Standard	Rating A-res (A-ind. @ PF=0.6)V / cycles)
DEKRA	2014531.12	EN60730-2-9 Thermal Cut-Out	12(0) 250 / 10.000
UL / C-UL	E54813	UL873	9(0.5) 250 / 10.000 18(0.75) 125 / 6.000



WARNINGS



RISK OF MATERIAL DAMAGE AND HOT ENCLOSURE

- The product's side panels may be hot, allow the product to cool before touching
- Follow proper mounting instructions including torque values
- Do not allow liquids or foreign objects to enter this product

Failure to follow these instructions can result in serious injury, or equipment damage.



HAZARD OF ELECTRIC SHOCK, EXPLOSION OR ARC FLASH

- Disconnect all power before installing or working with this equipment
- Verify all connections and replace all covers before turning on power

Failure to follow these instructions will result in death or serious injury

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