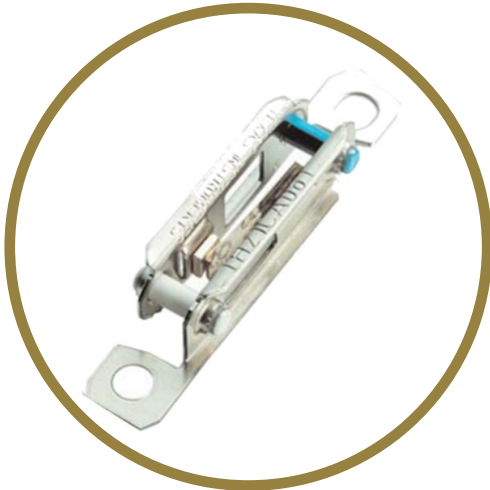


## | TH11 AND TH21

### SELF HOLD THERMAL CUT-OUTS

#### Introduction

Sensata Technologies has developed the electrical self-hold temperature cut-out in order to offer a nonself resetting device, suitable for high current applications, thus fulfilling the growing need for higher safety.



#### Key Benefits

- **Flexible Mounting:**  
3 Terminal Configurations Available
- **Robust Design:**  
The Bimetal Disc is Protected by the Metal Support
- **Full Automated Live:**  
Provides Stable Setting Value
- **Low Price:**  
The Particular Design Provides High Competitivity

#### Applications

The TH11 and TH21 are temperature resistive cut-outs for such applications as:

- Fan heaters
- Hand dryers
- Convector heaters

and various other applications which require a non-self resetting protector like transformers, cable reels etc.

#### Design and Operating Principles

The TH11 and TH21 consists of two nickel-plated supports, held together with ceramic pins. One support holds the high-performance Klixon® bimetal disc, which, in combination with the sophisticated contact system, guarantees the superior cycling performance. One ceramic pin has a layer of resistive material, functioning as a small heater when a voltage is supplied. A wide temperature range, standard 5K tolerance, different bimetal resistivity and various optional terminal configurations make the TH11 and TH21 suitable for a wide range of applications. Whereas the TH11 operates at 230 Vac. The TH21 is designed for 120 Vac applications. Because of their identical dimensions, the TH11 and TH21 can be easily exchanged with the auto reset thermal protector TH10.

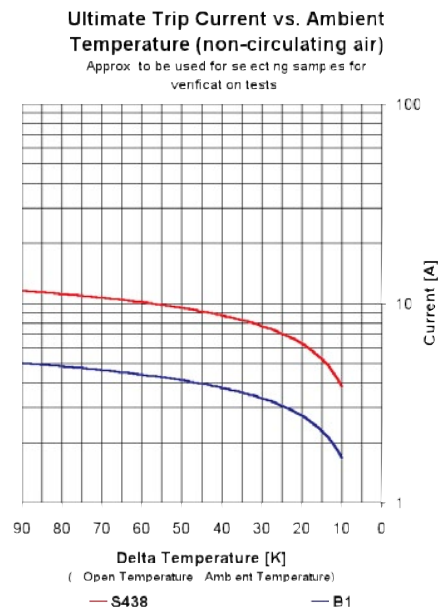
The operating principle of the TH series is both simple and effective. A current flows through the resistive Klixon® bimetal disc. When a fault condition occurs, the increased ambient temperature causes the bimetal disc to snap open the contacts. The resistive layer spots the voltage over the open contacts and a current flows through the resistor, generating sufficient heat to keep the bimetal warm and the contacts open. When the power is switched off, the device cools down to a safe temperature and the contacts will close.

|   |  |
|---|--|
| <b>Standard Operating Temperature Range</b> | From 60°C to 150°C - TH11<br>From 60°C to 130°C - TH21 |
| <b>Max. Ambient Temperature</b>             | 200°C  |
| <b>Tolerance on Open Temperature</b>        | ±5K<br>> -20°C TH11<br>> -35°C TH21                    |

### Declarations TH11

| Declarations to EN60730-2-9                   |   |
|---|---|
| <b>Purpose of the Control</b>                 | Voltage Maintained Thermal Cut-Out  |
| <b>Construction</b>                           | Incorporated, non-electric  |
| <b>Degree of Protection</b>                   | IP00  |
| <b>Terminals for Ext. Conductors</b>          | For internal conductors only  |
| <b>Method of (Dis)Connection of Terminals</b> | Riveting, soldering, spotwelding, springloaded contacting   |
| <b>Temperature Limits of the Switchhead</b>   | 200°C   |
| <b>PTI of Insulation Materials</b>            | PTI 250   |
| <b>Method of Mounting</b>                     | 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 |
| <b>Operating Time</b>                         | For continuous operation  |
| <b>Type of Action</b>                         | Type 2B   |
| <b>Reset Characteristic</b>                   | Voltage maintained off-position thru heat from the heaterfilm on one ceramic pin. Device resets by interrupting the power supply.   |
| <b>Extent of Sensing Element</b>              | Whole control   |
| <b>Control Pollution Degree</b>               | Degree 2  |

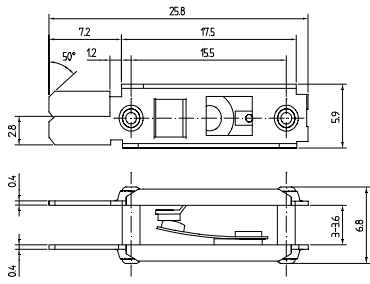
### Curves



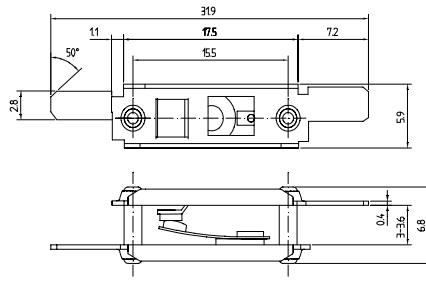


# DIMENSION AND TYPES

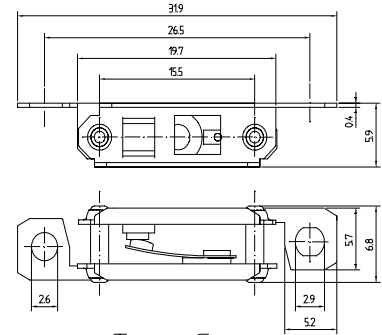
Dimensions in mm



Type A



Type B



Type C



# ORDERING OPTIONS

Example : TH11 C A 101

220V Selfhold, Terminals on Opposite End (With Holes), Steel, Standard Operating Temp 95°C, Low Resistivity Bimetal Disc (F30) 101, High Resistivity Bimetal Disc (B1) 105.

**Function** \_\_\_\_\_ **TH11** **X** **Y** **Z**

|    |               |
|----|---------------|
| 11 | 220V Selfhold |
| 21 | 110V Selfhold |

**Terminal Configuration** \_\_\_\_\_

| Code | Max. Ambient Temperature               |
|------|--|
| A    | Terminals on Same End                  |
| B    | Terminals on Opposite End              |
| C    | Terminals on Opposite End (with holes) |

**Disc and Contact Support Material** \_\_\_\_\_

| Code | Material |
|------|----------|
| A    | Steel    |

**Standard Opening Temperature** \_\_\_\_\_

| Operating Temp. | Low Resistivity Bimetal Disc. (S438) | High Resistivity Bimetal Disc. (B1) |
|-----------------|--------------------------------------|-------------------------------------|
| 60°C            | 031                                  | 035                                 |
| 65°C            | 041                                  | 045                                 |
| 70°C            | 051                                  | 055                                 |
| 75°C            | 061                                  | 065                                 |
| 80°C            | 071                                  | 075                                 |
| 85°C            | 081                                  | 085                                 |
| 90°C            | 091                                  | 095                                 |
| 95°C            | 101                                  | 105                                 |
| 100°C           | 111                                  | 115                                 |
| 105°C           | 121                                  | 125                                 |
| 110°C           | 131                                  | 135                                 |
| 115°C           | 141                                  | 145                                 |
| 120°C           | 151                                  | 155                                 |
| 125°C           | 161                                  | 165                                 |
| 130°C           | 171                                  | 175                                 |
| 135°C           | 181                                  |                                     |
| 140°C           | 191                                  |                                     |
| 145°C           | 201                                  |                                     |
| 150°C           | 211                                  |                                     |



## AGENCY APPROVALS & CERTIFICATES



|                    |                                |
|--------------------|--------------------------------|
| <b>Agency</b>      | DEKRA                          |
| <b>File Number</b> | 2014531.14                     |
| <b>Rating</b>      | 16(2)A 250 Vac @ 1.000 cycles, |
| <b>Standard</b>    | EN60730-2-9, EN60730-1         |



|                    |        |
|--------------------|--------|
| <b>Agency</b>      | UL     |
| <b>File Number</b> | E54813 |

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