

# Temperature threshold relay RTD and thermocouple THL36

**LOREME**

- **Suitable for heating and cooling mode.**

Application : protection relay, thermostat, threshold relay, .....

- **Temperature input**

PT100 - 3 wires / Thermocouples J,K,T

- **Fully configurable via front face**

With push button under the cover

- **Relay output (changeover contact)**

10A switching current

- **1000 pts LED display for the measure**

- **DIN Rail mounting**

- **Option : EN 14597 conformity**

Temperature regulating and limiting devices for heat generating systems.

- **Option : SIL2 hardware**



The THL36 is a compact digital thermostat, designed for simple temperature control, or for protection and safe keeping of more complex systems. Measuring input can be either RTDs or thermocouples.

## DESCRIPTION:

### Temperature measurement:

- Thermocouples : J ,K ,T
- RTD 100 ohms sensor

### Front face:

- Measure display: 7 segments 3 digits (1100 pts). green LED , digits height: 10 mm.
- resolution : 0.1 °C from -9.9 °C to +99.9 °C.
- resolution 1 °C for greater temperature with automatic decimal point display.
- Sensor break detection or scale overflow (display: LO, HI or Err).
- 1 green LED for the alarm status.
- 2 push buttons under the cover for the device configuration.

### Relay:

- Dry changeover contacts usable in alarm, regulation, thermostat, ...
- Threshold, direction (hot, cold), hysteresis, adjustable by push buttons on the front face.

### Performance / Environment

- Long-term stability 0.1% / year.
- Operating temperature up to 65 °C.
- Excellent EMC performance.
- Resistant, protected against shock and vibration.

### Installation

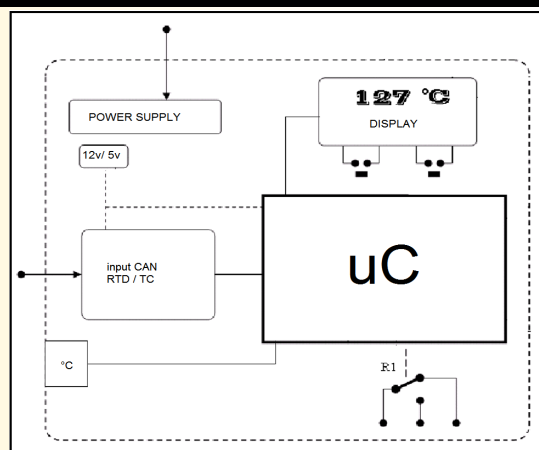
- DIN rail mounting according to EN50022.
- Connection by spring terminals max : 1 mm <sup>2</sup>.
- Insulation : power / input / relay.
- IP20 protection + conformal coating.
- Firmware update is possible via serial link.

### Operational safety data : hardware

component type B , HFT = 0

$\lambda f = 247$  fit (1/MTBF)  
DC = 89.1 % (diagnostic coverage)  
SFF = 90.9 % (probability of failure fraction)  
PFH = 27 fit (probability of failure per hour)

### Synoptic:



### Version and order code:

- THL36:** - Standard model with 10 A electromechanical relay option  
**/SIL2** SIL2 hardware
- THL36-HLD:** - Version with alarm memorization and reset button on the front panel.

Power supply to be determined when ordering

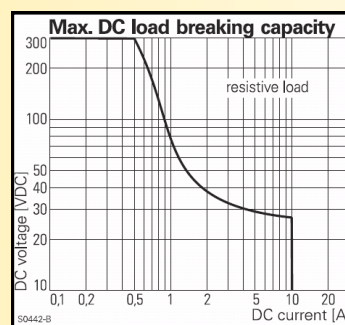
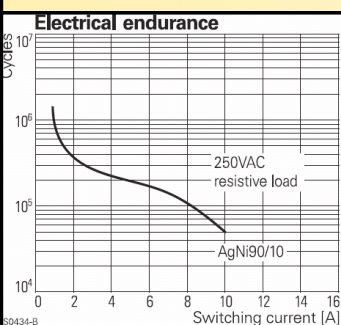
- Standard : 230 Vac 50-60 Hz +/- 15 %
- Universal : 20.....à.....265Vac/dc
- Low voltage : 9 Vdc.....à.....30Vdc

## INPUT

| TYPE                        | RANGE            | PRECISION |
|-----------------------------|------------------|-----------|
| Tc J                        | - 99....600 °C   | ± 0.4 °C  |
| Tc K                        | - 99....1000 °C  | ± 0.4 °C  |
| Tc T                        | - 99....400 °C   | ± 0.7 °C  |
| Compensation T°             | -20 to 85 °C     | ± 0.3 °C  |
| Input impedance:            | > 1 MOhms        |           |
| Breaking current detection: | 0.25 uA          |           |
| 3 wires PT100               | -50....600 °C    | ± 0.3 °C  |
| Polarization current:       | 300 uA           |           |
| Line influence:             | < 0.03 °C / Ohms |           |
| Maximum line resistance :   | 10 Ohms          |           |

## RELAY

Changeover contact  
Load 10 A / 250 Vac  
Typical response time of the threshold outputs: 750 ms  
Repeatability: +/- 0.2°C



**POWER SUPPLY** (must be defined at order) consumption < 1.5 VA  
 - Standard : 230 Vac 50-60 Hz +/- 15 %  
 - Universal : 20....à.....265Vac/dc  
 - Low voltage : 9 Vdc....à.....30Vdc

## ENVIRONMENT

Operating temperature: -20 à 65 °C  
 Storage temperature: -40 à +85 °C  
 drift (% of full scale) < 0.02 % / °C  
 humidity: 85 % not condensed

protection: IP 20  
 weight: 150 g

Dielectric strength 2500 Vrms : power (230V) / input  
 2500 Vrms : relay / input

MTBF (MIL HDBK 217F) > 4 000 000 Hrs @ 25°C  
 Life time > 200 000 Hrs @ 30°C

Shock IEC 60068-2-27 (operating) 15 G / 11 ms  
 Bump IEC 60068-2-29 (transportation) 30 G / 6 ms  
 Vibration IEC 60068-2-6 (operating) 1 G / 10 - 150 Hz  
 Vibration CEI 60068-2-6 (transportation) 2 G / 10 - 150 Hz

## Electromagnetic compatibility 2014/30/UE / Low Voltage Directive 2014/35/UE

| Immunity standard for industrial environments<br>EN 61000-6-2 |                         | Emission standard for industrial environments<br>EN 61000-6-4 |
|---------------------------------------------------------------|-------------------------|---------------------------------------------------------------|
| EN 61000-4-2 ESD                                              | EN 61000-4-8 AC MF      | EN 55011<br>group 1<br>class A                                |
| EN 61000-4-3 RF                                               | EN 61000-4-9 pulse MF   |                                                               |
| EN 61000-4-4 EFT                                              | EN 61000-4-11 AC dips   |                                                               |
| EN 61000-4-5 CWG                                              | EN 61000-4-12 ring wave |                                                               |
| EN 61000-4-6 RF                                               | EN 61000-4-29 DC dips   |                                                               |



## WIRING AND OUTLINE DIMENSIONS:

