

Field mount electronic thermostat
with local display

LOREME

CONFIGURATION HANDBOOK

THL101



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Device Presentation

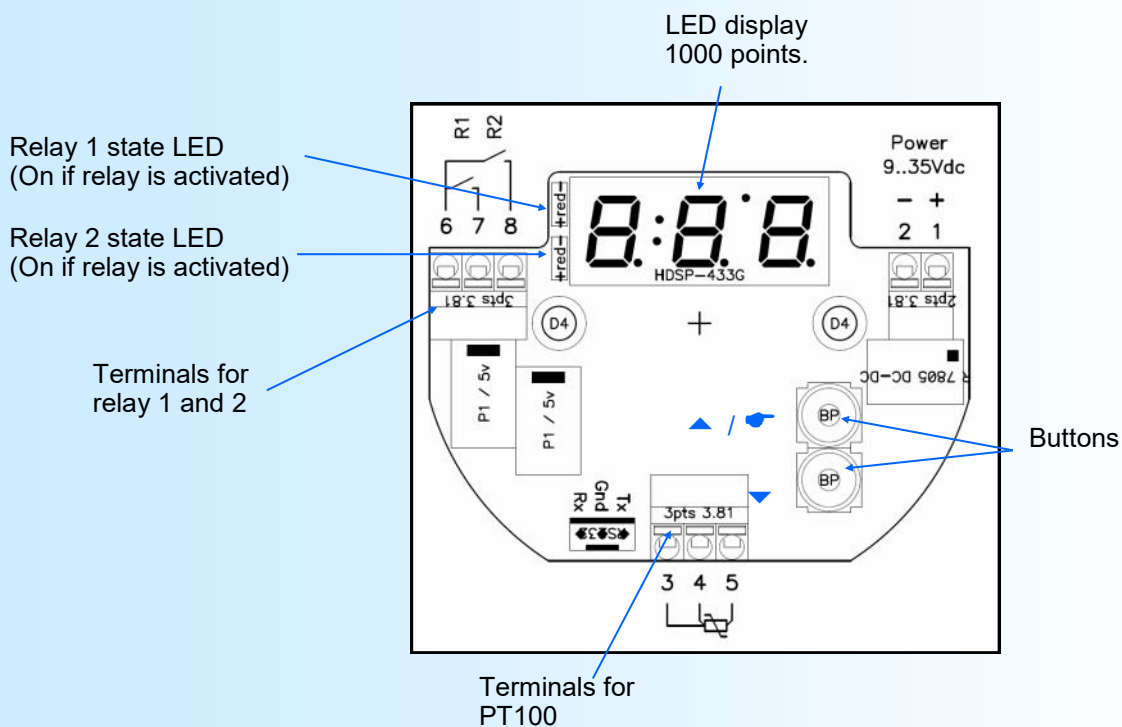
The THL101 is a outdoor field thermostat with local indicator for a PT100 2 or 3 wires input, mounted in an enclosure resistant to harsh environments (> IP65).

It brings together on the same circuit functions of measurement, display, and alarm configuration. It consists of:

- a 3 digits green LED display,
- 2 LED for the state of the relay,
- 2 relays,
- 2 buttons for setting the alarm relay.

Technical specifications can be downloaded at: http://www.loreme.fr/fichtech/THL101_eng.pdf

USER INTERFACE



Push button functions

- ▲ / ● Configuration access or <YES> or value increment button.
- ▼ <NO> or value decrement button.

Visualization

The device displays the temperature measured over a range of -99 ° C to 650 ° C.


An overflow will be indicated by the message "Hi" and an underflow will be indicated by the message "Lo".

A sensor failure is indicated by the message "Err" and a defect in the measuring circuit is indicated by "----".





Configuration

The buttons are used to configure the two alarm relays. The configurable parameters are:





- The threshold,
- the hysteresis.
- The type of alarm detection, high or low.

Access to the configuration is done by pressing the  button.





1) Relays configuration

When entering configuration mode, the unit displays 'AL1'. The button  provides access to configuration sections of the relay 1. The button  provide access to configuration sections of the relay 2 , The unit displays 'AL2', The button  provides access to configuration sections of the relay 2 and the key  exits of configuration sections.

1.1) Threshold configuration

The device displays the message 'thr'. Pressing  button provides access to the threshold setting and pressing  button to switches to the next topic. The device displays the threshold value and the buttons  or  permits to increment or decrement the value. the display blinks during the setting. The adjusted value is automatically validated after 4 seconds if no button is pressed.

1.2) Hysteresis (dead band) configuration

The device displays the message 'db'. Pressing  button provides access to the hysteresis setting and pressing  button to switches to the next topic. The device displays the hysteresis value and the buttons  or  permits to increment or decrement the value. the display blinks during the setting. The adjusted value is automatically validated after 4 seconds if no button is pressed.

1.3) Type of detection

The user can, with this setting, set the direction of the threshold detection. It works in this manner:


- **High threshold** detection (cooling):
 - .alarm is activated when temperature goes above threshold,
 - .alarm is removed when temperature goes below threshold minus hysteresis.
- **low threshold** detection (heating):
 - .alarm is activated when temperature goes below threshold,
 - .alarm is removed when temperature goes above threshold plus hysteresis.

The configuration possibilities are:

- High detection with the display 'AHi'.
- Low detection with the display 'ALo'.

The actual configuration is displayed on topic access.



Pressing  button validates the displayed choice and ends the configuration.

Press  button to display next choice.

2) End of configuration

The new parameters are saved in non volatile memory and the message 'End' is displayed briefly, indicating that the parameters have been successfully saved. Then, device returns to measure mode.

Note:

If the waiting time for action on the buttons  &  exceeds 30 seconds then the device automatically returns to measurement mode without saving the new settings.

EMC Consideration

1) Introduction

To meet its policy concerning EMC, based on the Community directives **2014/30/EU** & **2014/35/EU**, the LOREME company takes into account the standards relative to this directives from the very start of the conception of each product.

The set of tests performed on the devices, designed to work in an industrial environment, are made in accordance with **IEC 61000-6-4** and **IEC 61000-6-2** standards in order to establish the EU declaration of conformity. The devices being in certain typical configurations during the tests, it is impossible to guarantee the results in every possible configurations. To ensure optimum operation of each device, it would be judicious to comply with several recommendations of use.

2) Recommendations of use

2.1) General remarks

- Comply with the recommendations of assembly indicated in the technical sheet (direction of assembly, spacing between the devices, ...).
- Comply with the recommendations of use indicated in the technical sheet (temperature range, protection index).
- Avoid dust and excessive humidity, corrosive gas, considerable sources of heat.
- Avoid disturbed environments and disruptive phenomena or elements.
- If possible, group together the instrumentation devices in a zone separated from the power and relay circuits.
- Avoid the direct proximity with considerable power distance switches, contactors, relays, thyristor power groups, ...
- Do not get closer within fifty centimeters of a device with a transmitter (walkie-talkie) of a power of 5 W, because the latter can create a field with an intensity higher than 10 V/M for a distance fewer than 50 cm.

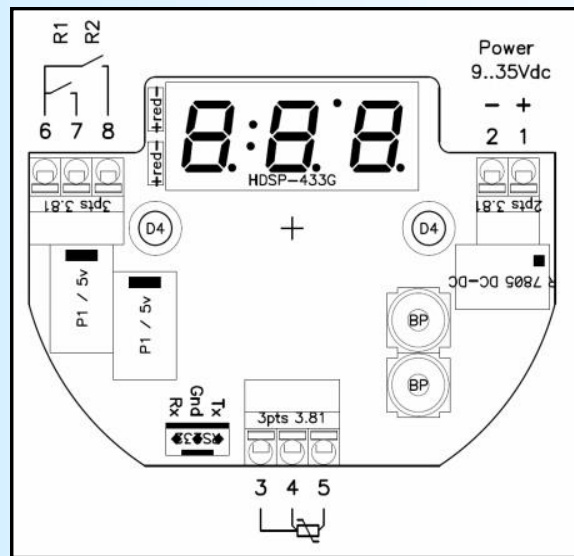
2.2) Power supply

- Comply with the features indicated in the technical sheet (power supply voltage, frequency, allowance of the values, stability, variations ...).
- It is better that the power supply should come from a system with section switches equipped with fuses for the instrumentation element and that the power supply line be the most direct possible from the section switch.
- Avoid using this power supply for the control of relays, of contactors, of electrogates, ...
- If the switching of thyristor statical groups, of engines, of speed variator, ... causes strong interferences on the power supply circuit, it would be necessary to put an insulation transformer especially intended for instrumentation linking the screen to earth.
- It is also important that the installation should have a good earth system and it is better that the voltage in relation to the neutral should not exceed 1V, and the resistance be inferior to 6 ohms.
- If the installation is near high frequency generators or installations of arc welding, it is better to put suitable section filters.

2.3) Inputs / Outputs

- In harsh conditions, it is advisable to use sheathed and twisted cables whose ground braid will be linked to the earth at a single point.
- It is advisable to separate the input / output lines from the power supply lines in order to avoid the coupling phenomena.
- It is also advisable to limit the lengths of data cables as much as possible.

Wirings



Power supply +:	terminal 1.
Power supply -:	terminal 2.
Input PT100:	terminals 3, 4, 5.
Relay 1:	terminals 7, 6
Relay 2:	terminals 8, 6