H1

Electronic control for towel heaters

H1 is an advanced digital thermostat for electric towel with fluid heat transfer and control of environmental temperature through ambient sensor.

H1 is composed by a fixed unity (placeable in the left or in the right of the towel warmer) and its provided of a particular heating element that can rotate his body of 350°.
the backlight display offers a wide visual of information about time , mode and temperature.

H1 is a certified product.

$C\epsilon$

H1 is according to directives:

-Eco-design Directive for Energy-using Products, 2005/32/EC (<0,5W).
EN 62233:2008
EN 55014-1:2006 + A1:2009 + A2:2011
EN 55014-2:1997 + A1:2001 + IS1:2007 + A2:2008 ===> Cat. 2
EN 61000-3-2:2014
EN 61000-3-3:201

Available colors: - White
                            - Chrome

Functional characteristics

Function mode: Comfort, Night, Antifreeze, Fil-pilote, Chrono, Timer 2h, Stand -by.

- In ''Comfort'' mode:
  the electronic control maintains the set temperature at the value set by the user.
- In ''Night'' mode:
  the electronic control maintains the ambient temperature at an inferior value respect at ''Comfort'' temperature.
- In ''Antifreeze'' mode:
  the electronic control maintains the temperature over 7°C.
- In ''Fil-Pilote'' mode:
  the electronic control operation is decided by the signal sent by the ''Fil-Pilote'' system.
- In ''Timer 2h'' mode:
  the electronic control activates the heating element for 2 hours, unconditionally by set temperature. At the end of this period, the thermostat operates again with the previously set mode. During the 2 hours, for security reasons, the ambient temperature can't go higher than 32°C.
- In ''Chrono'' mode :
  the electronic control operates according to a daily program with weekly repetition, the program can be setted by the user.
- In ''Stand-by'' mode:
  the heating element is deactivated but the electronic control is operative.

Other information:
- Big backlight display shows: hour, setted temperature and function/mode.
- 3 presetted daily programs and 1 program settable by the user.
- ''Open window detection '' Function: this function deactivates the heating element for a max of 30 mins if there is an open window in the room, allowing an energetic saving.

Technical Features

Functions	Comfort, Night, Antifreeze (7°C), Stand-by, Chrono, Timer 2h, ECO, Fil-Pilote (on II Class), Open window detection, ASC
Certifications	CE
Voltage and Frequency	230 VAC - 50 Hz
Disponible Powers	From 100 to 1000 Watt
Temperature control range	7°C ÷ 32°C
Insulation Class	Class I, Class II
IP Protection	IP44
Dimensions	71 x 97,5 x 47 mm
Colors	White,Chrome
Optional	

Notes

Reparations: Must be conducted by an autorized assistance center
Compatibility with others products: Contact your supplier.
Warranty: 2 years of warranty from purchasing date.
 Warranty doesn't responds of this cases:
- Products damaged by the customer;
- Products that have been installed or used by the customer not in according with this manual;
- Products that have been modified by the customer.

> **Caution**
> **Danger of electric shock.**
> **Disconnect the power supply before installation.**

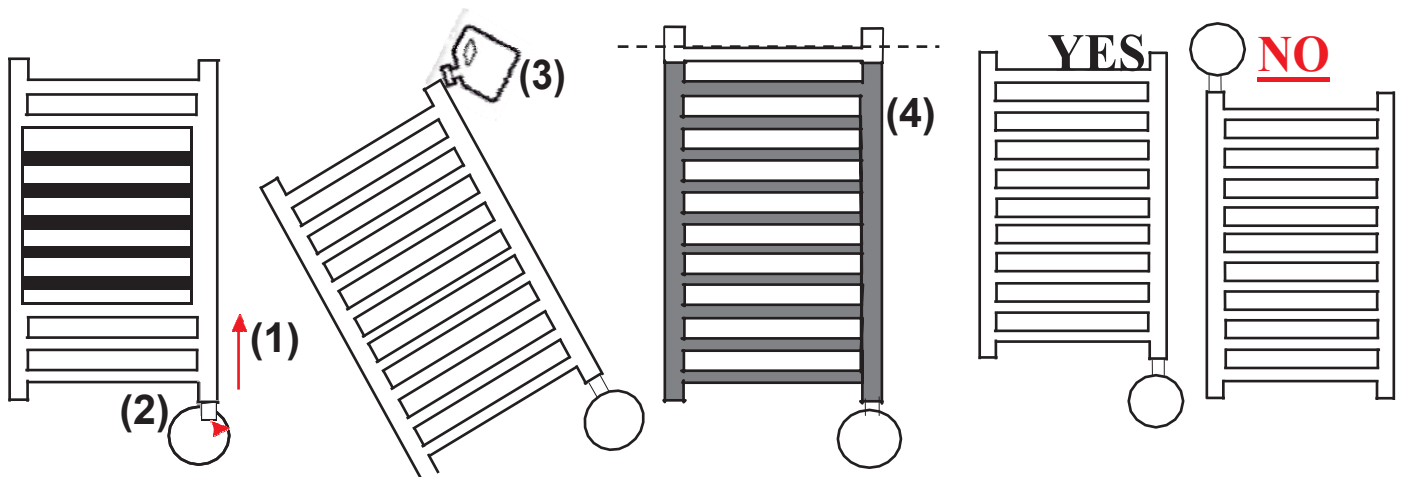Keep this instruction sheet carefully and read it carefully before using this device.

•This device has been designed exclusively for use on towel warmers.

•This thermostat is used to heat the liquid contained inside a heated towel rail in combination with a heating element. Any other use is prohibited.

 •Before use, check that the mains voltage is the same as that of the thermostat (see technical specifications).

•Only use heating elements suitable for the type of towel warmer used.

•Disconnect the power supply before cleaning or maintenance.

•In case of damage to the power cable, switch the device off and do not tamper with it. Damaged power cables can only be replaced by the manufacturer or an authorized service center. Failure to comply with the above can compromise system security and void the warranty.

•Store and transport the heating element only in protective packaging.

•Replacement of the heating element can only be performed by the manufacturer.

•The device can be used by children aged over 8 years and by persons with reduced physical, sensory or mental abilities, under surveillance. Children must not play with the appliance.

•User cleaning and maintenance must not be carried out by children without supervision.
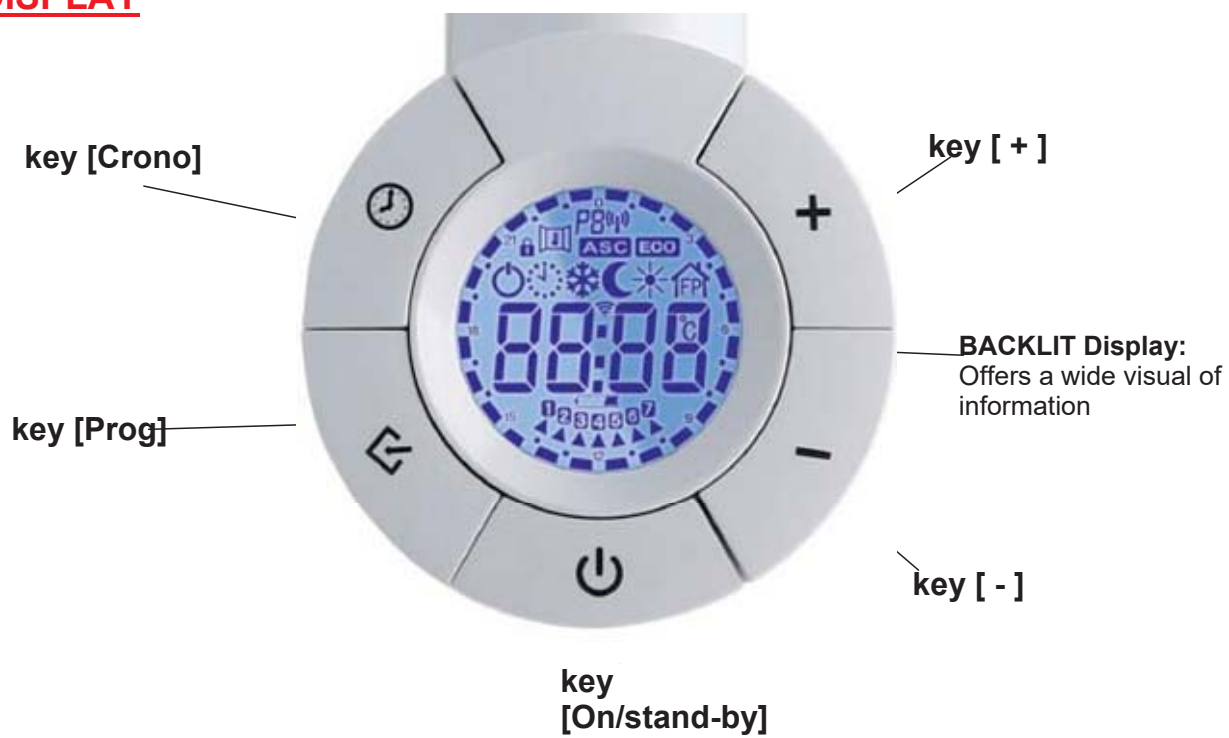
Installation instructions

• Disconnect the appliance from the mains before installation or maintenance.
• Protect the device with a 30mAdifferential switch (RCD).

1) Insert the heating element into the threaded opening in the lower part of the heated towel rail.
2) With a 22mm wrench, adequately tighten the resistance with the electronic control to the body of the towel heater.
3) The special gasket ensures the tightness of the assembly and allows a slight additional twist in order to align the thermostat with the towel warmer.
4) Place the towel warmer in an oblique position (fig 3) making sure that the upper opening of the towel warmer is in the highest part.
   N.B. Do not place the towel warmer on the electronic control of the element heating.
5) Fill the towel warmer with the appropriate liquid.
6) Position the towel warmer vertically and check the level of the internal liquid fig.3.
7) Make sure of the correct tightening between the towel warmer and the heating element.
8) Connect the device to the power supply and activate the heating (In this phase do not close the upper opening of the towel heater!).
9) Set the maximum temperature and observe the increase in the liquid level.
   - For expansion, the liquid may come out of the towel warmer.
   -Remove the excess liquid (with caution to avoid burns) in order not to wet the thermostat and make sure that the liquid does not reach the edge.
10) When the liquid level stops rising, wait another 5 minutes and switch off.
11) If the towel warmer should be refilled, do not wait until it cools down (always paying attention to the temperature of the internal liquid).
12) Close the upper opening of the towel warmer with the dedicated cap.
13) Hook the towel warmer with the appropriate supports on the wall.
14) Connect the thermostat to the power supply. For versions without an electric plug it is necessary to install an appropriate device that ensures complete omnipolar disconnection in the conditions of the overvoltage category III
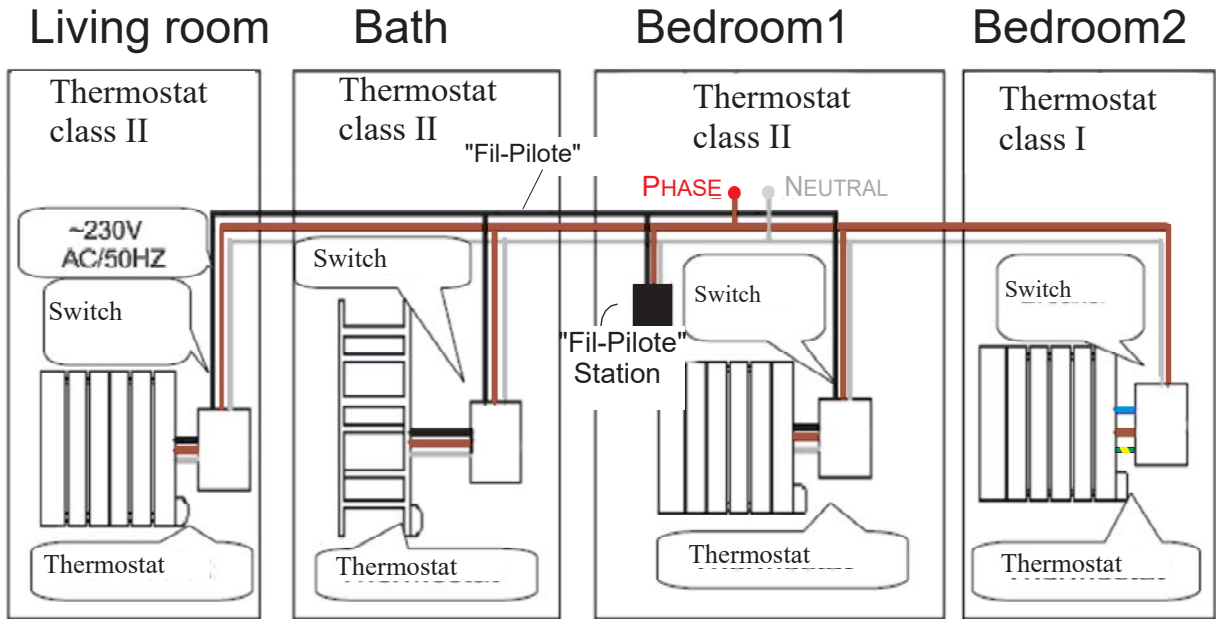
DISPLAY

key [Crono]

key [+]

key [Prog]

BACKLIT Display:
Offers a wide visual of information

key [-]

key
[On/stand-by]

BODY

Warming element

350° revolving insert

Back

NTC Probe

Alimentation cable

Connection to the Fil-Pilote system

(only for versions with "Fil-Pilote")

Example

| Living room | Bath | Bedroom1 | Bedroom2 |

Thermostat class II | Thermostat class II | Thermostat class II | Thermostat class I

"Fil-Pilote"

PHASE   NEUTRAL

~230V AC/50HZ

Switch

Switch

"Fil-Pilote" Station

Switch

Switch

Thermostat | Thermostat | Thermostat | Thermostat

1. One with "Fil-Pilote" function (class II) can be controlled remotely by a control unit that supports the "Fil-Pilote" system. The brown wire is the phase (L), the gray wire is the neutral (N) and the black wire is used for the reception of the Fil-Pilote signal.
⚠ **Do not connect the black wire to the ground.**

2. One without "Fil-Pilote" function (class I), can't be controlled remotely. The brown wire is the phase (L), the blue wire is the neutral (N) and the yellow / green wire must be connected to the ground.

Function:
"Open window detection".

"keys lock" icon.

Function mode icons:
6- Fil-Pilote
5-Comfort;
4-Night;
3-Antifreeze;
2-Crono;
1-Stand-By

Comfort/Night bar
"Chrono" mode.

Current Chrono program

ASC & ECO functions indicator

Clock / selected temperature

Current Day

1. ON / STAND-BY

Press the **[On / Stand-by]** key to turn on the unit or activate the "Stand-by" mode.
When it is active, the set mode and temperature are displayed. During "Stand-by" the display shows the symbol On / Off, the current time and the day of the week.
NOTE: When the device enters "Stand-by" mode, 2 sounds of 0.5 seconds are emitted.
When the device is switched on, it emits single sound one second long.

Mod. Comfort

Mod. Stand-by

2. COMFORT / NIGHT MODE

Two different temperature levels can be set:
- "COMFORT" TEMPERATURE: this is the temperature used for the "Chrono", "Fil-Pilote" and "Comfort" modes.
- "NIGHT" TEMPERATURE: this is the temperature used for "Night" and "Chrono" modes.
The desired temperature setting can be set by pressing the **[+]** and **[-]** buttons.
The temperature regulation range is between 7 ° C and 32 ° C.

IMPORTANT!

The "Night" temperature is always lower than the "Comfort" temperature and the priority is assigned to the "Comfort" temperature. For this reason the "Night" temperature can be set in the range 7 ° C ÷ ("Comfort" - 0.5 ° C), on the contrary the "Comfort" temperature can be set within the entire range: ("Night" + 0 , 5 ° C) to 32 ° C.

3. OPERATIVE MODE

Press **[Prog]** to select the desired mode (see the picture).

⏻	🕐	❄	🌙	☀	🏠 FP	**2h**
On/Stand-By	Crono	Antifreeze	Night	Comfort	Fil - Pilote	2 hours

COMFORT MODE

The "Comfort" mode allows you to maintain the set room temperature.
To set this mode:
- Press the **[Prog]** key until the "Comfort" mode icon appears on the display.
- Set the desired temperature with the **[+]** and **[-]** buttons.

NIGHT MODE

In "Night" mode, a temperature lower than the "Comfort" temperature is set.
We recommend using this mode at night or when the room is not used for 2 hours or more.
- Press the **[Prog]** key until the "Night" icon appears on the display.
- Set the desired temperature with the **[+]** and **[-]** buttons.

ANTIFREEZE MODE

In the "Antifreeze" mode the temperature is set at 7 ° C. The appliance activates the heating element when the room temperature drops below 7 ° C. We recommend using this mode when the room is not used for several days.
- Press the **[Prog]** key until the "Antifreeze" icon appears on the display.

TIMER 2H MODE

The "2h Timer" mode can be used to quickly heat the room or speed up the drying of the wipes.

- Press the **[Prog]** key until the ""2h" icon appears on the display.

The appliance is switched on at maximum power for 2 hours, but the ambient temperature, for safety reasons, can't be higher than 32°C. The "2h Timer" mode automatically stops after a period of 2 hours and return to the previously set operating mode. If necessary, the user can return to other modes at any time by simply pressing the **[Prog]** key.

FIL-PILOTE MODE

(Only for models equipped with "Fil-Pilote" connection).
In "Fil-Pilote" mode the appliance is managed by a central system, which sets the operating mode for all connected thermostats.
The device also recognizes the most advanced "Fil-Pilote" system with six orders that allows the use of the functions described below.
1 Standby: switch off the heating element, the thermostat remains on.
2 Comfort: maintains the "Comfort" temperature set by the user.
3.Eco: maintains the ambient temperature lower than 3.5 ° C compared to the "Comfort" temperature.
4. Anti-freeze : maintains the ambient temperature at 7 ° C.
5.Comfort-1: maintains the ambient temperature lower than 1 ° C with respect to the temp. "Comfort".
6.Comfort-2: maintains the ambient temperature lower than 2 ° C with respect to the temp. "Comfort".

NOTES: activating this mode in versions without fil-pilote, the thermostat operates in Comfort mode.
To activate the "Fil-Pilote" function:
- Press the **[Prog]** key until the "Fil-Pilote" mode icon appears on the display.
- Set the comfort temperature with the **[+]** and **[-]** buttons.
If the "Fil-Pilote" system is not installed, the system operates in "Comfort" mode.

CHRONO MODE

Chrono mode programmation
a) Set the current day and time
- Activate the "Stand-by" mode and press the **[Crono]** key for more than 3 seconds.
- The display will show the words: "Ted ''
- Press the **[Prog]** key to enter the mode.
  Set the current day with the **[+]** and **[-]** keys (from 1 to 7).
- Press the **[Prog]** button again to confirm.
  The display now shows the current time to be confirmed
  'Hours': use the **[+]** and **[-]** keys to set the time and confirm with the **[Prog]** key.
  'Minutes': repeat the same procedure and confirm with the **[Prog]** key.
- At the end the thermostat returns to "Stand-by" mode.

b) Set the program for the Chrono mode:
- Enter "Stand-by" mode and press the **[Chrono]** key for more than 3 seconds.
- At the top of the display you will see the words: "Ted''
- To set the time sequence of the "Chrono" mode, press the **[+]** key until
  that the word ''Prog'' (Programming) appears on the display.
  [See the photo on the right]
- Press the **[Prog]** key to enter the mode.
  Now a time sequence can be set for each day of the week.
  Starting with day 1, select the desired sequence with the keys **[+]** and **[-]**
  to select, for each hour, between the "Comfort" temperature (full bar) button **[+]**
  and the "Night" temperature (empty bar) **[-]** key.
  Press **[Prog]** to confirm the first day setting,
  repeat the same procedure for the remaining 6 days of the week.

CHRONO MODE

c) To use a predefined mode (P1 P2 P3) or the programmable mode (P4) press the

[Stand-By / ON] key and exit stand-by mode, press the **[Prog]** key until ⏱ symbol appears in the display. At the top of the display the program in use is displayed (from P1 to P4),

programs are selected by pressing the **[Chrono]** key, in the external part of the display you can see, for each program, the time operation bars of the indicated program.

Chrono mode preset programs

P1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
						■	■	■	■							■	■	■	■	■	■	■		lun-ven
						■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		sab-dom

P2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
							■	■	■	■	■	■	■	■	■	■	■							lun-ven
																								sab-dom

P3

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
						■	■	■	■				■	■	■	■	■	■	■	■	■	■		lun-ven
							■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■		sab-dom

Keys lock

This feature allows the user to lock the keypad to prevent accidental changes. All buttons on the remote control are locked. To activate the key lock function, press **[Prog]** for 3 seconds. To deactivate the function, repeat the procedure.

Open window Function

The device allows to detect the presence of an open window to limit the energy consumption, to activate this mode, activate the Stand-by mode, press the **[Chrono]** key for more than 3 seconds, scroll the modes with the key **[+]** and select FUNC with the **[Prog]** key, the window icon will flash in the upper left of the display, using the **[+]** key select ON / OFF, visible in the center of the display, and confirm with **[Prog]** .

the icon will be active during the thermostat operation, if the open window is detected, the icon will be flashing and the system will turn off the heating for a maximum of 30 minutes or until a temperature increase of at least 1, 5 ° C.

ASC Function

This function allows you to optimize the operating times of the device, in order to limit consumption, by activating this mode the device will record the time necessary to bring a specific room to the set temperature, adjusting its operation automatically, in this way thermostat can be activated after time setted if is possible to reach the desired temperature in less time than that foreseen by the operating time intervals that have been set. activate Stand-by mode, press the **[Chrono]** key for more than 3 seconds, scroll through the modes with

the **[+]** key and select FUNC with the **[Prog]** key, press it until the icon appears on the upper part of the screen, select ON with the **[+]** key and press **[Prog]** again to confirm. After a few seconds, the remote control automatically returns to Stand-By mode.

ECO MODE

This mode reduces the consumption of electricity at 3 ° C (Comfort - 3 ° C). in Stand-by mode, press the **[Chrono]** key for more than 3 seconds, scroll the voices with the **[+]** key and select FUNC with the **[Prog]** key, press it until the ECO icon appears, select ON with the button **[+]** and press **[Prog]** again to confirm. After a few seconds, the remote control automatically returns to Stand-By mode.

The thermostat is supplied in 2 different versions; in the first version on the lower left, the heating element is supplied together with the thermostat, already mounted. In the second version, however, it will be necessary to provide for the assembly of the element itself as supplied separately.
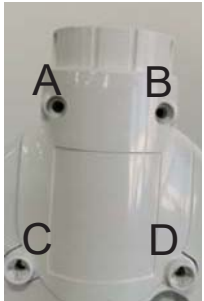
Assembly

(For without resistance elements)

 1- Remove the rear half of the plastic trim cover

 2- Also remove the front half of the ring nut

 3- Remove the 4 screws (A, B, C, D) of the rear cover to access the Fast-on for the resistance connection

 4- Remove the back cover, the Fast-on connectors for the resistance connection are indicated by the arrows (1) and (2).

Heating element mounting

1- Place the resistive element in such a way that the two rubber o-rings match with the corresponding guides, in the plastic body of the chrono thermostat.

2- Connect the 2 Fast-on connectors to the connectors previously indicated by the arrows; press until you feel the joint.
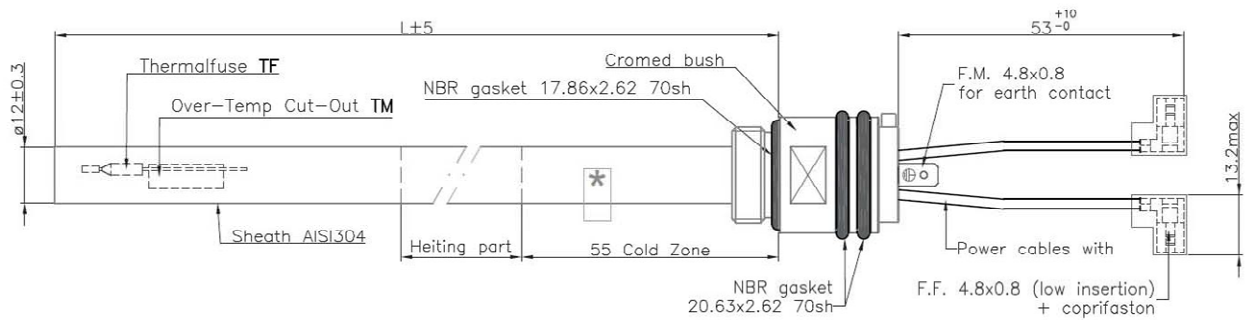

3- When both connectors are connected, close the chrono thermostat cover, now ready for use.

Heating Element

The following resistive element is supplied.
Below are the instructions for connecting the thermostat resistance.

Code	L	Power	Watt density	Thermostat T-O C-O	Thermalfuse
HT	(mm)	(W)	(W/cm²)	(℃)	(℃)
LT71914	350	100	1,3	80	152
LT71915	350	200	2,7	80	152
LT71916	370	250	3,0	80	152
LT71917	370	300	3,6	90	152
LT71918	430	400	3,8	90	152
LT71919	450	500	4,4	90	152
LT71920	560	600	3,9	90	152
LT71921	630	700	3,9	90	152
LT71922	700	750	3,6	90	152
LT71923	700	800	3,9	90	152
LT71924	760	900	3,9	100	152
LT71925	830	1000	3,9	100	152

Assembly

(For on-board heating element versions)

1- For versions with resistance on board, only the thermostat must be installed.

2- Insert the heating element into one of the two lower holes of the heated towel rail.

3- Fasten the heating element to the body of the towel heater using a 22 mm wrench.

4- After fixing, make sure that the thermostat rotation range is sufficient to satisfy the final positioning needs.

Assembly

(For on-board heating element versions)

5- Once assembled and verified the circular movement excursion, it will be necessary to mount the plastic protections for the resistance base.

6- Insert the front part first, with protruding and perforated flaps

7- The front part must be lodged in its seat exerting a pressure in the middle of it.

8- Position the rear part with the same procedure, making sure that it is securely hooked to the chrono thermostat body.

8-Final result

The manufacturer reserves the right to make any changes at any time he deems necessary to improve the product without prior notice.

DISPOSAL
This appliance is not an ordinary waste. It must be disposed of through appropriate collection centers. In case of replacement, it can be return to the distributor. This end-of-life treatment of the product will allow us to preserve our environment and to curb the consumption of natural resources. This symbol applied to the product indicates the obligation to deliver it to the appropriate collection centers to be disposed of in compliance with the directive 2002/96 / CE (WEEE).