Technical Data Sheet

300W Thermo Element

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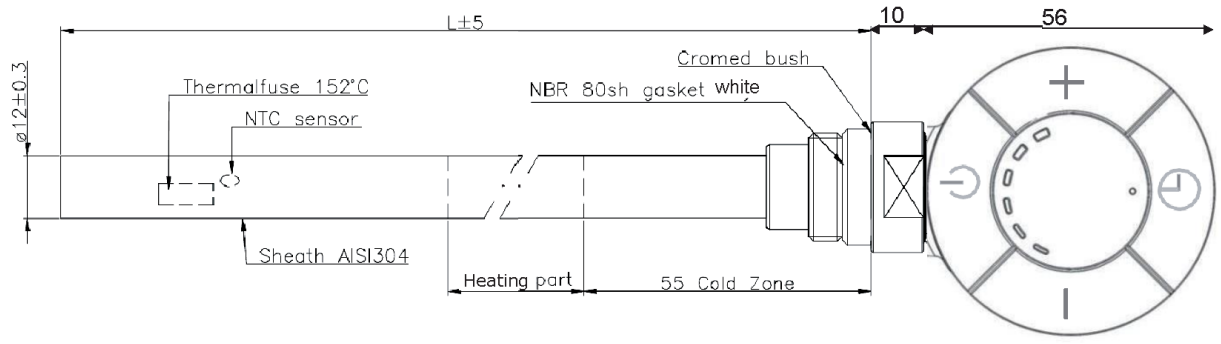
Colour options Chrome/Black

Product	Electronic control for towel radiators
Applications	Towel radiators
Insulation class	Class I, Class II
IP level	IP44
Temperature setting	Digital
Selectable temperature range	40°C ÷ 65°C ; 10°C Antifreeze
Operational temperature	-10°C ÷ 40°C
Maximal power	See table below
Supply voltage	230VAC 50Hz
Size	See figure below
Warranty	2 years
Standards	-EN 60335-1:2012 -EN 60335-2-30:2011 -EN 60335-2-43:2005 -EN 61000-3-2:2004 -EN61000-3-3:1995 -EN 50366:2003 -EN 55014-1:2008 -EN 55014-2:1998
Approval mark	CE
Case	ABS-VO
Environmental directive	WEEE, RoHS
Electromagnetic compatibility	89/336/EEC
Operative modes	Comfort, Boost2h, Timer12h, Timer24h, Antifreeze/Standby, Key-lock.
Thermostat status indicators	Boost/Timer LED (red/green/amber). Comfort Bar with 6 LEDs: 1 blue, 1 green, 2 yellows, 2 reds
Connection to mains	3 Cables (neutral, line, earth); Length 120cm; Italian plug: length 120cm; Swiss plug: length 120cm; UK plug: length 120cm; Schuko plug: length 120cm; 2 Cables (neutral, line);.
Available colors	White (RAL 9003); Chrome.
Maximal temperature of the thermal fuse	152°C

Power	(W)	100	200	300	400	500	600	700	800	900	1000
Energy density	(W/Cm^2)	1.5	2.9	4.0	4.1	4.1	4.1	4.0	4.0	4.0	4.0
L(heating element)	(mm)	350	350	370	430	450	560	630	700	760	830



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SMART is an electronic thermostat for the automatic control of electric towel radiators. By means of an internal sensor it can keepthe temperature of the towel radiator to a desired value.
Ten different electric resistances are available in a range between 100W and 1000W.

Operative modes: Comfort, Boost, Standby/Antifreeze, Timer12 and Timer24.

- **"Comfort" mode:** The thermostat keeps the internal temperature at the value set by the user.

- **"Boost" mode:** In "Boost" mode the heating element is activated for a period of 2 hours independently of the configured temperature. The temperature is however automatically controlled in order not to exceed 65°C. At the end of the 2 hours period, the device returns to "Comfort" mode**.**

- **"Timer" mode:** The control system enters "Boost" mode for 2 hours; after that it returns into "Comfort" mode for 22 or 10 hours (period configurable by the user) and then it enters again into "Boost" mode for 2 hours. This sequence is repeated endlessly.

- **"Standby/Antifreeze" mode**: In this mode the device goes in standby, however as soon as the measured temperature falls below 10°C the control system activates the heating element in order to prevent the internal liquid from freezing.

SMART is a certified product: CE

Available colors: - White (RAL 9003).
- Chrome

SMART is compliant with the following standards:

- Eco-design Directive for Energy-using Products, 2005/32/EC (<0,5W).
- EN 60335-1:2012 - EN 60335-2-30:2011 - EN 60335-2-43:2005
- EN 61000-3-2:2004 - EN 61000-3-3:1995
- EN 50366:2003
- EN 55014-1:2008 -EN 55014-2:1998

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WARNING
RISK OF ELECTRIC SHOCK!
Disconnect power supply before proceeding with installation.

Preserve with care the present instruction sheet and read carefully before using the device.

- The present device has been designed for exclusive use on a towel radiator.

- The thermostat is designed for heating the liquid contained inside a towel radiator in combination with a heating element. Any other use is forbidden.

- Before using, carefully ensure that the line voltage is the same as that specified for the device (see technical specifications).

- Only use heating elements compatible with the type of used towel radiator.

- Disconnect power supply before cleaning or before performing maintenance of the product.

- In case of damage of the power supply cable shut down the device and do not tamper with it. The damaged power supply cables can be replaced exclusively by the manufacturer or by an authorized service center. Failure to comply with the above rules could lead to compromised system safety and void the warranty.

- Store and transport the heating element exclusively in the protecting packaging.

- Replacement of the heating element can be done exclusively by the product manufacturer.

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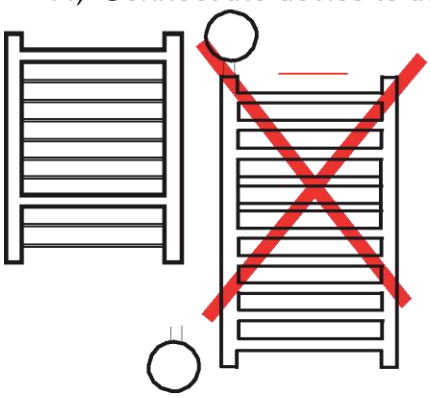
Installation Guide *To be used by installer only*

- Disconnect the device from power supply before proceeding with installation.
- Protect the device with a 30mA RCD circuit breaker.

1) Insert the heating element in the threaded opening located on the bottom part of the radiator.
2) Securely fasten the electric resistance to the body of the towel radiator with a 22mm wrench.
3) The special sheath ensures a secure mounting and eventually allows a slight supplemental torsion to perfectly align the thermostat with the radiator.
4) Tilt the radiator as in fig. 3, making sure that the opening on top of the radiator is located on the highest side. WARNING. Do not lean the radiator on the electronic control!
5) Fill the radiator with the specific liquid.
6) Put the radiator back in vertical position and check the internal level of the liquid (fig. 4).
7) Ensure a proper fastening of the heating element in the radiator.
8) Connect the device to mains and start heating (the top opening of the radiator must remain open!).
9) Set the maximal temperature and check the level of the internal liquid. Due to thermal expansion the liquid could brim over the radiator.
10) Remove the exceeding liquid (be careful to avoid burns!) in order to keep the thermostat dry and avoid the liquid reaching the border. When the level of the liquid stops growing wait for additional 5 minutes then stop heating.
11) If necessary, top up the radiator before the liquid cools down (keep the temperature of the internal liquid checked all the time).
12) Close the top opening of the radiator with the appropriate cap.
13) Hook the radiator to the wall.
14) Connect the device to the mains.



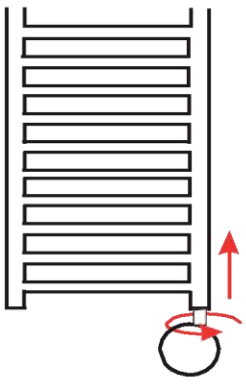


Fig.3

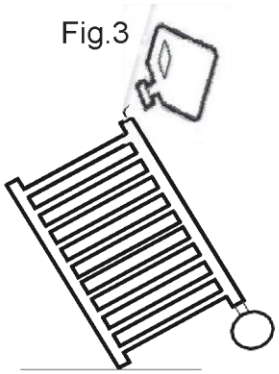
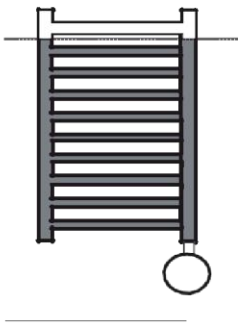


Fig.4



Accessory: To allow a mixed usage of the SMART device, connect the T-piece to the towel radiator, insert the SMART device into the vertical manifold of the T-piece and connect the return line of the heating circuit to the orthogonal connector of the T-piece.

Available Colors: White, Chrome.

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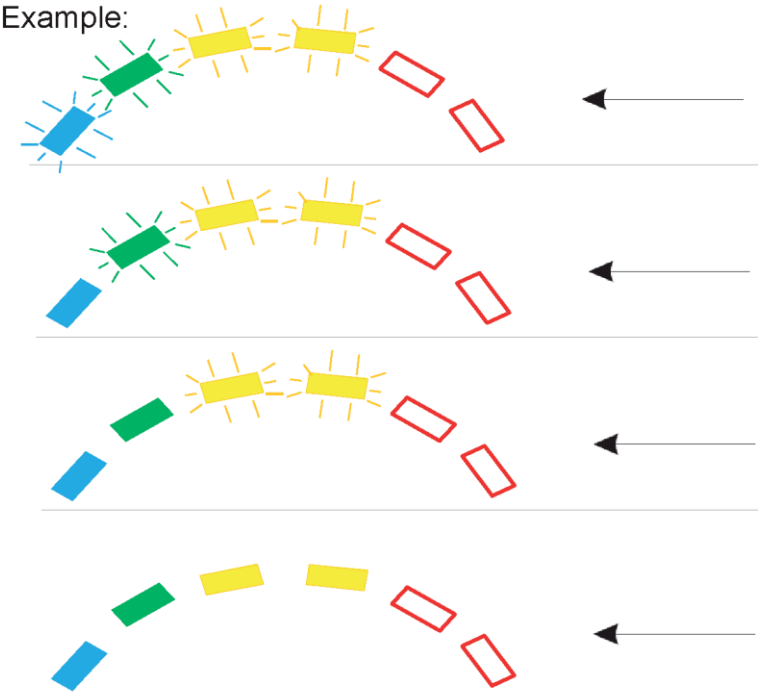
Press the [On/Standby] button to turn on the device or to enter the “Standby/Antifreeze” mode.
NOTE: When the device is switched to "Standby/Antifreeze" mode, it beeps twice for 0.5sec.
When the device is switched to “On” mode (i.e., it is turned on), it beeps for 1sec.

“Comfort” mode: In this mode the desired temperature of the radiator is selected. The temperature value is set through the [+] and [-] buttons to one of the following values:
40°C, 45°C, 50°C, 55°C, 60°C, 65°C.
The rightmost lit or blinking LED in the “Comfort bar” indicates the selected temperature. A blinking LED indicates that the corresponding temperature has not yet been reached during the heating phase. When a certain temperature level is reached, the corresponding LED stops blinking and remains lit.

Example:



The device is firstly turned on. Pressing 4 times the [+] button, the desired temperature is set to a value of 55°C (the first 4 LEDs from the left start blinking).

The radiator starts heating. When the temperature of the radiator reaches 40°C the first (blue) LED stops blinking and remains lit.

After some time, the temperature reaches 45°C and the second (green) LED also stops blinking and remains lit.

The same behavior applies to the two subsequent (yellow) LEDs, until the desired temperature of 55°C is reached (all LEDs stop blinking).

“Standby/Antifreeze” mode: In this mode the device goes in standby, however as soon as the temperature of the radiator falls below 10°C, the heating element is automatically powered on.

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Boost/Timer LED functioning summary

Blinking red	"Boost" mode active. The heating element is powered for 120 minutes (temperature of the radiator automatically limited to 65°C).
Blinking Green	"Boost" function active in Timer24 mode. The heating element is powered for 120 minutes (temperature of the radiator automatically
Permanent green	"Comfort" function active for 22hrs in Timer24 mode.
Blinking amber	"Boost" function active in Timer12 mode. The heating element is powered for 120 minutes (temperature of the radiator automatically
Permanent amber	"Comfort" function active for 10hrs in Timer12 mode.

Key lock function: It is possible to lock the buttons of the device to avoid inadvertent modifications of the settings. Press together the [+] and [-] buttons for 3 seconds to lock all the buttons except the [On/Standby] button.
To unlock the buttons, press again together the [+] and [-] buttons buttons for 3 seconds. When key lock is activated the device beeps twice. When key lock is deactivated, the device beeps four times.

Additional indications provided by the "Comfort Bar":

- The two central (yellow) LEDs blink when a button is pressed: Key lock is active.
- The external (blue and red) external LEDs blink: Failure on the temperature sensor, the heating element is deactivated. Contact customer support.

Notes.

In case of interruption of power supply, the system will recover from the previous operative mode*, except for "Boost" and "Timer" modes.
*The status of the device is saved 5 seconds after a modification occurs.

Repairs carried out by unauthorized personnel invalidate warranty.

The manufacturer reserves the right to make any changes to the product described in this manual, at any time, and without warning.

DISPOSAL

This product may not be treated as ordinary household waste. It has to be disposed in proper waste collection sites. In case of replacement, it shall bereturned to the distributor.
Such an end-of-life treatment of the product will preserve the environment and will reduce consumption of natural resources.
This symbol applied to the present product indicates the obligation to bring it to a proper waste collection site, in order to let it be disposed according to 2002/96 / CE (RAEE - WEEE) directives.

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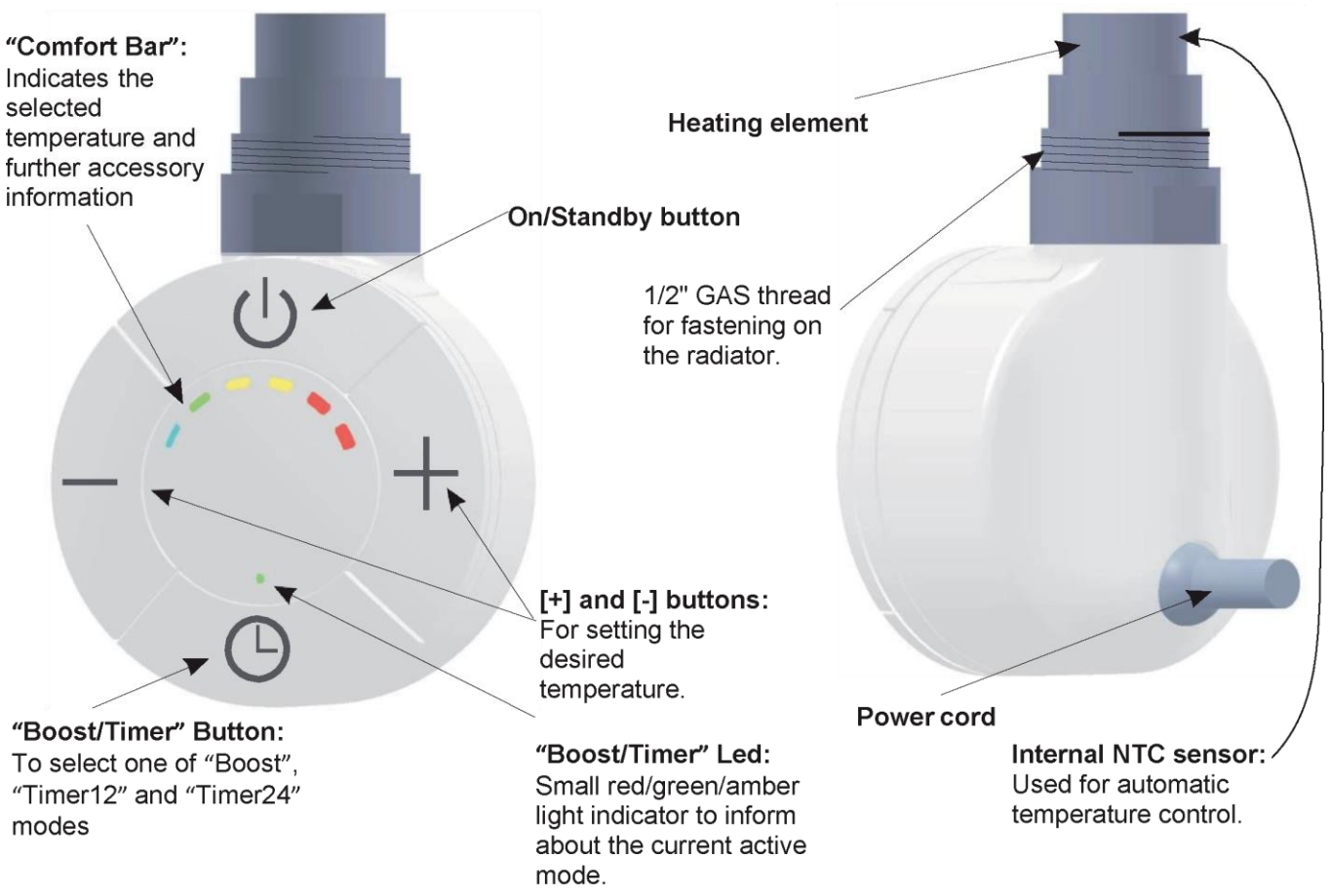
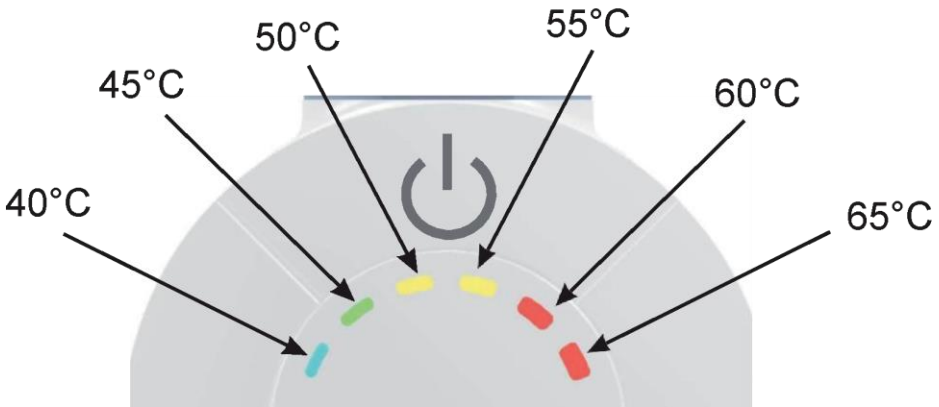
User Guide



Comfort Bar



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“Boost” mode: Press the **[Boost/Timer]** button to activate this operative mode.
This mode activates the heating element to the maximum power for 2hrs (for safety reasons the maximal temperature is limited to 65°C).
To exit the “Boost” mode press the **[Boost/timer]** button.

“Boost” mode indication: "Boost/Timer" LED has red colour and it blinks.

“Timer24” mode: Press the **[Boost/Timer]** button for 3 seconds to activate this mode.
The control system activates the “Boost” mode for 2 hours, after that it returns into “Comfort” mode and after 22 hours the “Boost” mode is started again for 2 hours. This sequence will repeat endlessly.
To exit the “Timer24” mode press the **[Boost/Timer]** button.

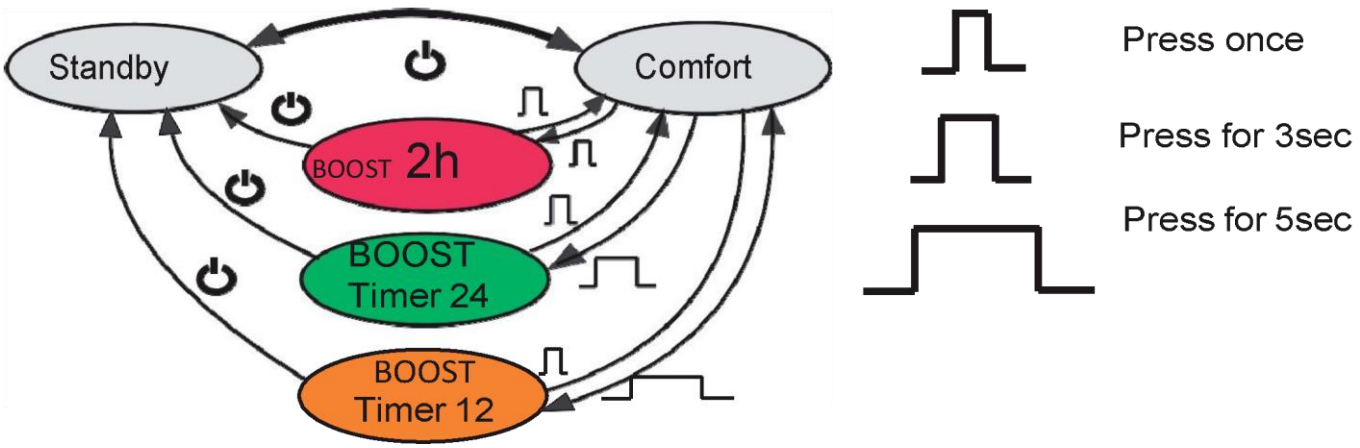
NOTE: During the first cycle the duration of the “Comfort” mode is of 21 hours.

“Timer24” indication during 2hrs “Boost”: “Boost/Timer” LED blinking green.
During 22hrs “Comfort”: “Boost/Timer” LED permanent green.

“Timer12” mode: Press the **[Boost/Timer]** button for more than 5 seconds to activate it.
The control system activates the “Boost” mode for 2 hours, after that it returns into “Comfort” mode and after 10 hours the “Boost” mode is started again for 2 hours. This sequence will repeat endlessly.
To exit the “Timer12” mode press the **[Boost/Timer]** button.

NOTE: During the first cycle the duration of the “Comfort” mode is of 9 hours.

“Timer12” indication during 2hrs “Boost”: “Boost/Timer” LED blinking amber.
During 10hrs “Comfort”: “Boost/Timer” LED permanent amber.

NOTE: For safety reasons, the maximal temperature of the radiator during the 2hrs boost is limited to 65°C.

Functional diagram