

Instructions for Use

1

Electronic thermostat 230V~ display

44..085SW



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1 Use planned by the Manufacturer

The **44..085SW** is an electronic thermostat with display fed by 230V- 50Hz mains, that allows regulating room temperature. It is made in 2 modules of the system 44, the thermostat allows any electrical appliance to be switched on and off, such as circulation pumps, burners or motor-driven mixing valves. The use of the thermostat is advisable in rooms for domestic use.

It must be installed in flushed or wall mounting boxes at a height of approximately 1,5 meters from the walking surface, in a position suitable for the correct reading of room temperature, avoiding installation in niches, behind doors and curtains or areas influenced by heat sources or atmospheric factors; **In particular avoid installing the apparatus on perimeter walls or near heat sources (e.g. regulators or lamps).**

To use the thermostat in conformity with the rules established by the manufacturer it is necessary to keep to the instructions for use and installation. Any other use of the thermostat is to be considered improper. The manufacturer is not responsible for any damage due to an improper use of the apparatus.

2 Safety warning



The connection and installation of the electrical apparatuses must be done only by qualified professionals, in compliance with national and safety regulations in force.

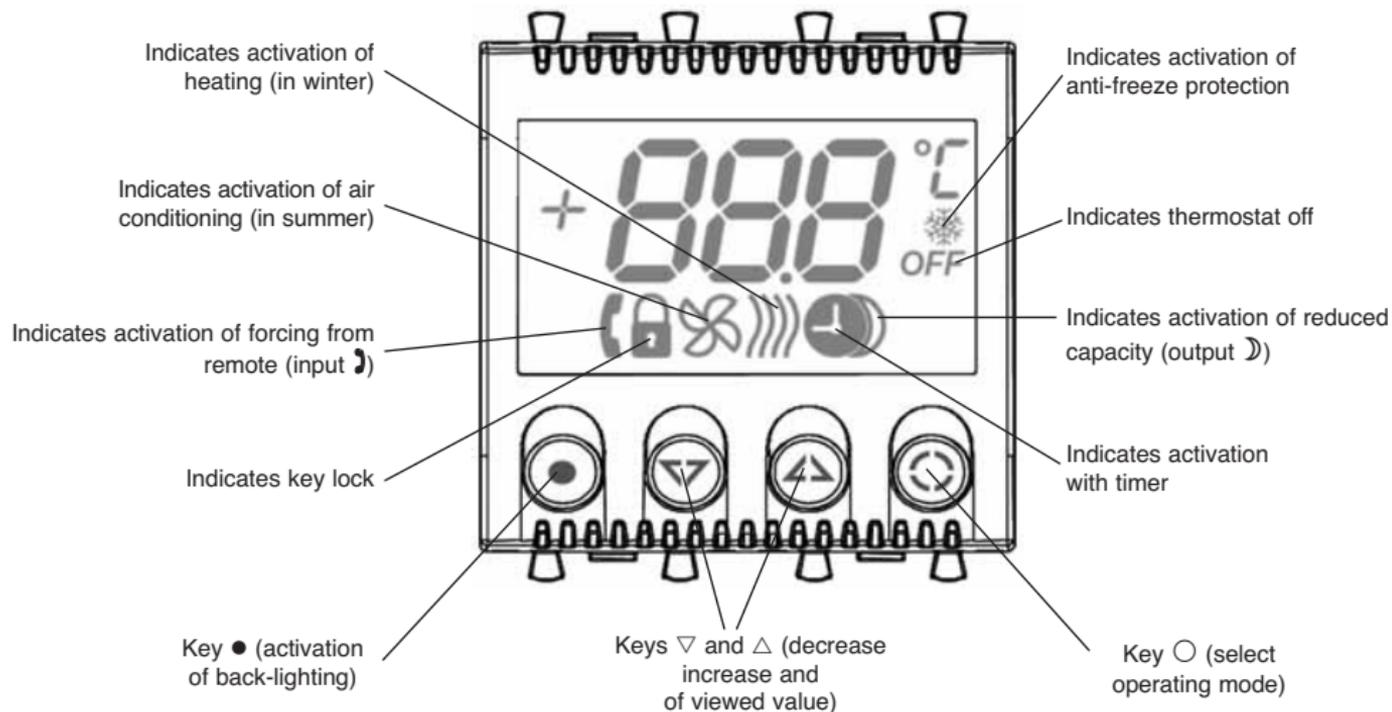
Any work on or modification to the apparatus will cause the guarantee to be voided immediately.

3 Description and installation

3.1 Description of the apparatus

On the front part there are:

- four push button keys to set room temperature and to programme the parameters of the device;
- an LCD display to show the temperature and the state of operation of the thermostat.



Note: when any key is pressed the blue back-lighting comes on to allow reading the display and identifying the function of the key even when there are no lights.

3.2 Examples of electrical connection

3.2.1 Heating

It is possible to feed the user directly through a contact in deviation (fig. 1a), or exploit this to transmit a "boiler-consent" free from potential (fig. 1b).

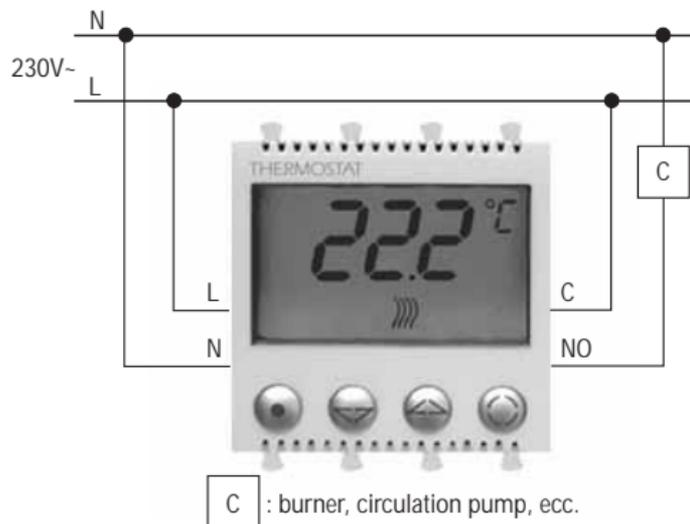


Fig. 1a

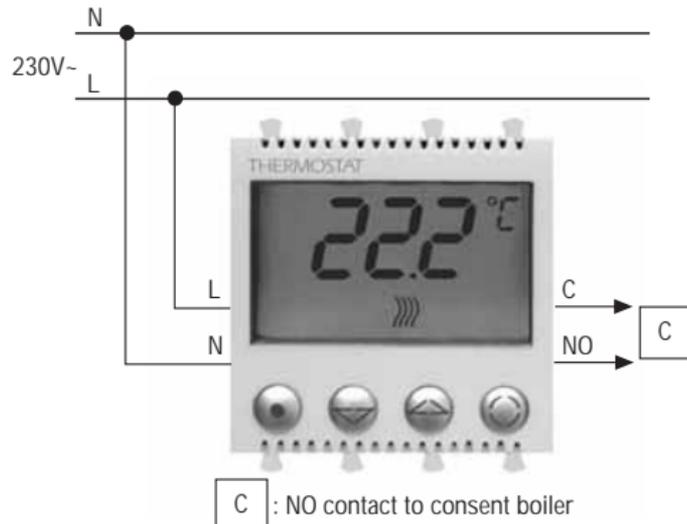


Fig. 1b

3.2.2 Air Conditioning

It is possible to feed the user directly through the contact in deviation (fig. 2a), or exploit this to transmit a "conditioner-consent" free from potential (fig. 2b).

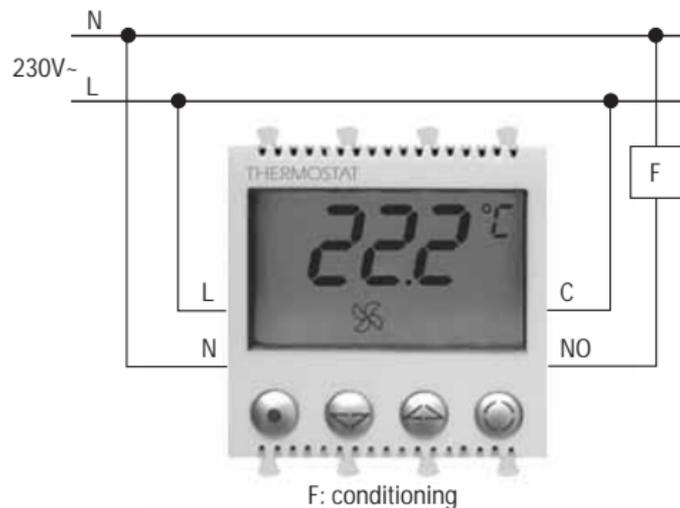


Fig. 2a

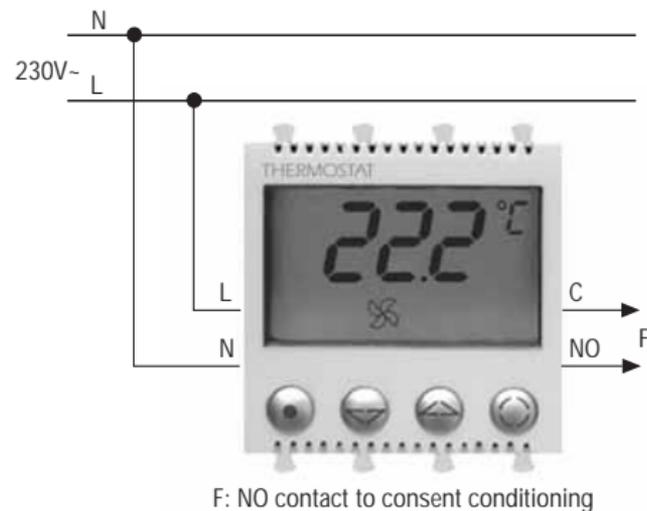


Fig. 2b

3.2.3 Reduction and remote control

Operations that can be activated with external NO contact connected to the phase terminal L (fig. 3).

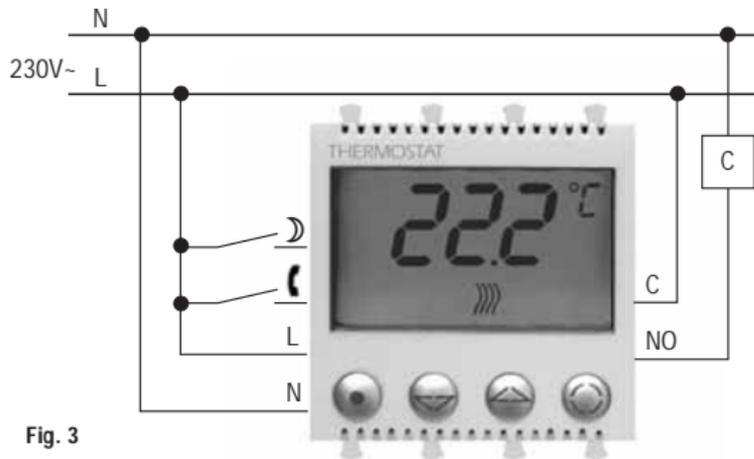


Fig. 3

4 Ways of using the apparatus

4.1 Key Functions

4.1.1 Key ●

The pressure of the key activates the rear-lighting to allow a better reading of the measured temperature.

4.1.2 Keys ▽ and △

A single pressure on the decrease/increase keys views the set temperature (set point) without modifying anything; press the keys again to set the required temperature value (set point).

4.1.3 Key ○

Press the key once to view the current state of operation of the thermostat *on* (on) - *not* (reduced capacity) - *OFF* (off); press the key again to adjust the required state of operation *not* (Reduced) and *OFF* operation modes are also shown with the relative symbols: ☾ and OFF).

4.2 Reduced capacity entry (terminal ☾)

The entry allows varying, with one single operation, the comfort level (set point) set on the thermostat, at night for example. The value of this change, given in degrees Celsius, is subtracted from the set value when operating in winter mode and is added when running in summer mode (see paragraph 5.3). The activation of this running mode is shown on the display of icon ☾.

The NO external contact must always be connected to the phase (terminal L) - (see paragraph 3.2.3).

If the thermostat is on (Operation status *on*):

- When the contact is closed, after about 1 second the thermostat goes to reduced capacity (*not*) (symbol ☾ on);
- Keeping the contact closed it is still possible to switch off the thermostat manually (*OFF*), acting on the button ○;

- Opening the contact the thermostat will return to the state set previously.

If the thermostat is off (operation status *OFF*):

- When the contact is closed the thermostat remains off (*OFF*) (symbol  on);
- Keeping the contact closed it is still possible to position the thermostat to reduced capacity (*not*) acting on the button .
- Opening the contact the thermostat will return to the state set previously.

4.3 Remote control Entry (terminal)

The entry allows activating the thermoregulation in a stable mode or with timer, by using an external contact. It is generally useful to switch on the thermostat using remote controls (e.g. telephone controllers etc.).

The NA external contact must be connected to the phase (terminal L) – (see paragraph 3.2.3).

4.3.1 Stable activation

If the thermostat is off (Operation status *OFF*):

- When the contact is closed, after about 5 seconds the thermostat switches on (*On*) (symbol  on);
- Keeping the contact closed it is not possible to switch off (*OFF*) the thermostat;
- Opening the contact, the thermostat switches off (*OFF*).

If the thermostat is on (Operation status *On*):

- when the contact is closed, after about 5 seconds the thermostat remains on (*On*) (symbol  on);
- keeping the contact closed it is not possible to switch off (*OFF*) the thermostat;
- opening the contact, the thermostat switches off (*OFF*).

If the thermostat is in reduced capacity (operation status *not*) (symbol  on):

- when the contact is closed, after about 5 seconds the thermostat goes to operation status *On* (symbol  on) except where the reduction capacity is determined by the entry ; in this case this status will be maintained (symbol  and  on);
- opening the contact the thermostat switches off (*OFF*). **Note:** should the reduction capacity be determined by the entry , the thermostat will keep the reduced capacity (symbol  and *OFF* on).

4.3.2 Activation with timer

If the thermostat is off (Operation status *OFF*):

- when the contact is closed for a time going from 1 to 5 seconds the thermostat will switch on (*On*) with timer (symbol  on). The thermostat will be active for the set amount of time (see paragraph 5.7), after this time it will switch off (*OFF*).

If the thermostat is on (Operation status *On*):

- when the contact is closed for a time going from 1 to 5 seconds the thermostat will switch on (*On*) with timer (symbol  on). The thermostat will be active for the set amount of time (see paragraph 5.7), after this time it will switch off (*OFF*).

If the thermostat is in reduced capacity (operation status *not*) (symbol  on):

- When the contact is closed for a time going from 1 to 5 seconds the thermostat will go to *On* with timer (symbol  on). The thermostat will be active for the set amount of time (see paragraph 5.7), after this time it will switch off (*OFF*).

Note: should the reduction capacity be determined by entry , closing the contact for a time going from 1 to 5 seconds, the thermostat will go to reduced capacity status with timer (with symbols  and  on). When the set time is up (see paragraph 5.7), if entry  is still closed the thermostat remains in the reduced capacity mode (symbol  on).

5 Operation and configuration methods

Pressing the keys ● and ○, at the same time for at least 5 seconds will allow access to the configuration menu.

In the configuration menu, pressing the key ○, it will be possible to select/pass to the required item and once this has been selected, use the keys ▽ and △ to change the setting. It is possible to exit the configuration menu by pressing ●, at any time, or wait for the timeout of approximately 60 seconds.

The configuration steps are suggested in the circular sequence with which they appear on the display:

5.1 Key Lock

The "Key Lock" function allows blocking the keyboard in order to avoid accidentally changing the set point (desired temperature value) and/or the operating status of the thermostat. The keys ▽ and △ will show the alternate wording "OFF/NOT" and the symbol , ad indicare rispettivamente la condizione del blocco disattivato/attivato.

Note: activating the key lock does not prevent access to the configuration menu which is necessary in order to set deactivation.

Factory settings: OFF

5.2 Operating method: Summer or Winter

The keys ▽ and △ will view alternately the symbols  and , to show the operating method of the thermostat (summer=conditioning or winter=heating, respectively).

Factory setting: Winter ()

5.3 Reduction

The "reduction" value is an absolute value that will be added to the set point in order to obtain a reduction in consumption, usually requested at night. The "reduction" value is viewed with the sign "-" (minus) if the thermostat operates in "Winter" mode, and the sign "+" (plus) if the thermostat operates in "Summer"

mode (indicating that this value will be subtracted or added to the set point according to the operating mode); this value will be viewed together with the symbol  for night time reduction. Use the keys ▽ and △ to regulate the value from -0,5 to -5,0 °C if the thermostat is in "Winter" mode (or from +0,5 to +5,0 °C if the thermostat is in "Summer" mode).

Factory setting: 3,0 °C

5.4 Anti-freeze threshold

The set value will be viewed with the anti-freeze symbol . The "anti-freeze threshold" value is a temperature value and below this the thermostat will activate an output relay even if it is switched off (operation status OFF). Use the keys ▽ and △ to regulate from +2,0 to +10,0 °C.

Factory settings: 5,0 °C

5.5 Thermal compensation

In cases where it was not possible to assemble the thermostat in an ideal position, i.e. if the thermostat is on an external wall, near a fireplace, etc., there could be a difference between the temperature picked up by the thermostat and the actual room temperature. In these cases it is possible to set a thermal compensation (example: the difference between the actual room temperature and the temperature shown on the thermostat is 2 °C, i.e. the room temperature is shown to be 2 °C higher: the compensation value will be -2 °C).

The set value will be viewed with the wording "00.0". Use the keys ▽ and △ to regulate from -5,0 to +5,0 °C.

Factory setting: 0

5.6 Thermal Differential (hysteresis)

Thermal differential is the difference between the set temperature value and the actual temperature that switches on or switches off the system. Adjusting the thermal differential to the type of system will avoid it coming on or switching off continuously; high inertia systems (for example systems with cast-iron radiators) need a low thermal differential value while low inertia systems (for example fan-convective

tors) need a high value (example: setting a room temperature to 20 °C and the thermal differential to 0,3 °C, in winter the system will switch on when room temperature falls to 20 °C and will switch off when it reaches 20,4 °C).

The set value will be viewed with the wording "d0.3". Use the keys ∇ and \triangle to regulate from 0,2 to 2,5 °C.

Factory settings: 0,3 °C

5.7 Timer

If the remote control input is closed for a time going from 1 second to 5 seconds the thermostat is activated with the timer (see paragraph 4.2). Use the keys ∇ and \triangle to regulate from 0,5 hours to 5 hours with steps of 0,5 hours.

Factory settings: 2 ore

5.8 Reset

The "rE5" sign while blinking indicates the possibility to use the function "reset" which will bring the device to the factory settings

The reset will be executed keeping the ∇ or the \triangle button pressed, or the ∇ and \triangle buttons pressed together, for at least 5 seconds: as confirmation all display symbols will be on

6 Operation

6.1 Switching on

When the feed is from the mains, it will take about 8 seconds to switch on (the time needed to acquire a temperature value). During the switching on phase there is the test of the entire display and the firmware version is then viewed (example FD.D).

6.2 Ordinary operation

In normal operation the device will view the measured temperature and the state of the relay (using the appropriate symbol \lll in winter or \lls in summer, depending on the set operating function).

If the measured temperature exceeds the room temperature measuring range, the display will flash the wording "+40.0" if the temperature exceeds the maximum limit, or "-00.0" if the temperature falls below the minimum limit.

Any manual work that varies the state of the output relay is transmitted to the same after the back lighting of the display and the keyboard has switched off (symbols \lll) and \lls are instead updated immediately).

7 Technical Specifications

- Overall dimensions: 2 modules System 44
- Protection degree: IP40 in conformity with EN 60529-1
- Terminal board with 7 terminals accessible on the back
- Voltage: 230 Vca 50-60 Hz
- Variation allowed: 190 Vca ÷ 253 Vca
- Maximum absorption: 20 mA to 230 Vca
- Output (terminals NO-C-NC): bistable relay with 1 contact in deviation free from potential. **Note: in case of power failure, the output contact keeps the previous operating mode**
- Rated load:
 - ohmic ($\cos\varphi$ 1): 2A a 250 Vca
 - inductive ($\cos\varphi$ 0,4): 2A a 250 Vca
- Updating of viewed temperature: every 8 seconds
- Type of regulation: ON/OFF
- Room temperature field of measurement: from 0 °C to 40 °C
- Temperature setting field:
 - from 2 °C to 10 °C (anti-freeze)
 - from 5 °C to 35 °C (heating or air conditioning)
- Regulation precision: $\pm 0,5$ °C max
- Thermal compensation: ± 5 °C
- Thermal differential: adjustable from 0,2 °C to 2,5 °C

- Reading resolution: 0,1 °C
- Setting resolution: 0,1 °C
- Main functions:
 - possibility of setting 3 temperature levels: comfort, reduced, anti-freeze
 - choice of operating mode: summer/winter
 - remote control of reduced capacity mode
 - thermostat activation (stable or with timer) with remote
 - possibility of blocking keyboard
 - memorization of all settings
- Protection level: II in conformity with EN 60730-1
- Type of contact opening: micro-disconnection
- Type of action: 1B
- Tracking index: PT1175
- Pollution class: 2 (normal)
- Software class: A

7.1 Weather conditions

- Temperature and relative humidity of reference: 25 °C Rel. H. 65%
- Operating temperature field: from -10 °C to +50 °C
- Maximum relative humidity: 90% at 35 °C
- Max Altitude: 2000m a.s.l.

7.2 Conformity with regulations

- CEI EN 60730-1
- CEI EN 60730-2-9

8 Maintenance

The room thermostat 44..085SW does not require maintenance. The apparatus must only be cleaned with a soft, dry cloth.

9 Disposal of the apparatus

Once use has ended, the apparatus must be disposed of in compliance with laws in force and in an environment-friendly manner.

In the case of doubts please contact the manufacturer's representative in your country.



NOTE Products should be sold in their original packaging. When this is not the case, the retailer or/and the installer is obliged to follow, as well as communicate to the user, the instructions for use which are supplied with the product. After opening the packaging, check that the appliance is undamaged. Do not use the appliance if there is any doubt, but contact a qualified technician. Even before unpacking, the appliance should be handled with care and stored in a dry place at temperatures between -5°C and $+40^{\circ}\text{C}$.

Also note:

- The 5 years warranty is applicable for any defect in or failing of the goods caused by the manufacturer's negligence. It doesn't affect your statutory rights as prescribed by law (art. 1490, 1512 C.C., DL 24/2002, Directive 1999/44/CE, art. 1519 C.C.). The defect must be notified within 2 month from the date it was discovered. Five years are intended from the date of delivery of the goods by AVE.
- AVE products are installation products. They must be installed by skilled workers in compliance with the installation regulations.
- Before carrying out any maintenance on the appliance, cut off the mains power.
- Special care should be taken in the preparation of the cable terminals to be inserted into the appliance terminals so as to maintain sufficient isolation distance between them.
- When tightening the terminal screws, special care should be taken to avoid overheating which could start a fire or damage the cables.
- The product must be used in dry, dust-free areas. Suitable products must be used in any other conditions.
- There is the possibility of electric shocks or failure of the device if the device is tampered with.
- Install products and accessories according to the prescriptions of the catalogue and the instructions sheet and in compliance with specific standards and rules.