

DUO PLUS



Instruction manual

IMITT
IMIT CONTROL SYSTEM

SUMMARY

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1. INTRODUCTION

Thank you for your confidence in our company and for choosing our products.

This is an easy programming, high-styling design, 24-HOUR electronic THERMOSTAT. It allows an extremely accurate room temperature adjustment in the hosting room; thus meeting any users' needs as far as room COMFORT.

IN ACCORDANCE WITH THE STANDARDS:

- EN 60730-1 and later updating
- EN 60730-2-7
- EN 60730-2-9

IN ACCORDANCE WITH GUIDELINES:

- B.T.73/23/EEC
- E.M.C. 89/336/EEC and later updating 93/68/EEC

2. TECHNICAL DATA

POWER SUPPLY= N°2 1.5V alkaline batteries, type LR6

NORMAL TEMPERATURE RANGE "T1" = 5°÷30°C

REDUCED TEMPERATURE RANGE "T2" = 6°C/16°C (winter mode)

23°C/26°C (summer mode)

ROOM TEMPERATURE RANGE ON DISPLAY= 0/40°C (accuracy 0.1°C)

TEMPERATURE UPDATING= once a minute

TEMPERATURE DIFFERENTIAL= 0.2÷0.4K

SENSING ELEMENT = NTC 2%

DEGREE OF PROTECTION= IP 20

OUTPUT= switching relay

CONTACTS RATING= 5(0.5)A/250V~

SWITCH ACTION= 1BU

INSTALLATION LOCATION = normal environment

MAXIMUM STANDING TEMPERATURE= 50°C

STORAGE TEMPERATURE= 0÷60°C

ANTIFROST= 6°C fixed

PROGRAMMING= daily

PROGRAM SETTING = by micro-switches

MINIMUM PROGRAMMING RANGE= 1 hour

SOFTWARE CLASS A

SET-TEMPERATURE OVERRIDE MODE

DISPLAY LCD

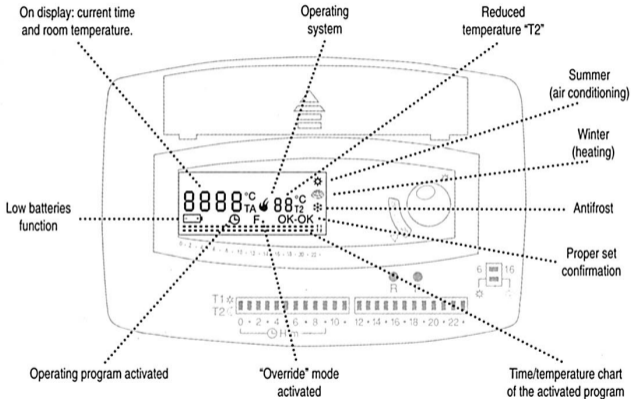
WINTER/SUMMER SWITCHING (heating/ air conditioning)

UNIT RESET

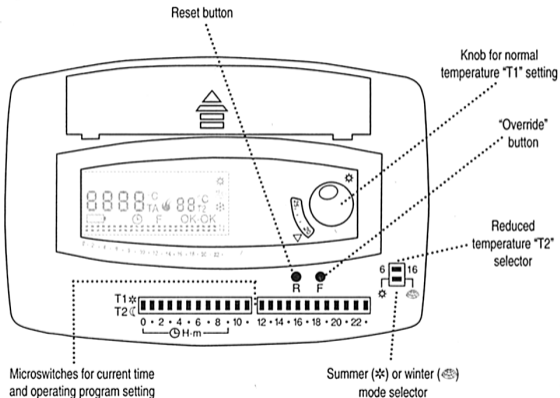
KNOB LOCK

MOUNTING= to the wall

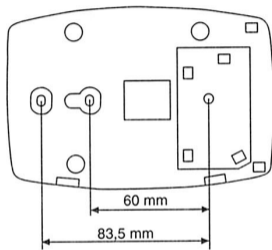
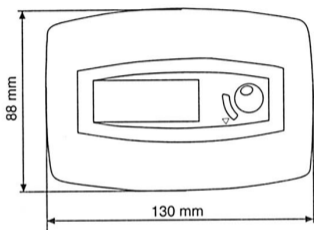
3. DISPLAY READINGS KEY



4. THERMOSTAT CONTROLS KEY



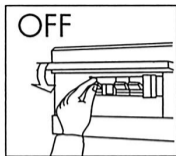
5. DIMENSIONS



6. INSTALLATION AND CONNECTIONS

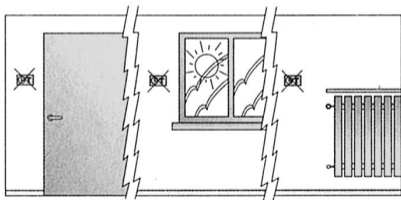
SAFETY INSTRUCTIONS

Before connecting the thermostat, make sure that the UNIT TO BE CONTROLLED (boiler, pump, air conditioning system, etc.) is NOT CONNECTED from the electrical source. Make also sure that the power supply is the same as the one specified inside the thermostat base (250V~ max).

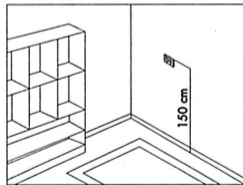


PLACEMENT OF THE THERMOSTAT

Install the thermostat away from heat sources (radiators, sunrays, kitchens) and away from doors / windows, at 1.5 mt from the floor.



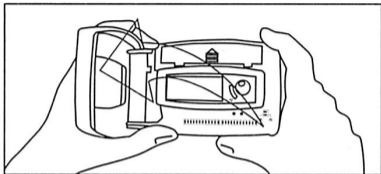
NO



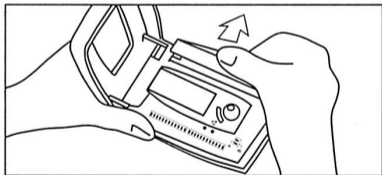
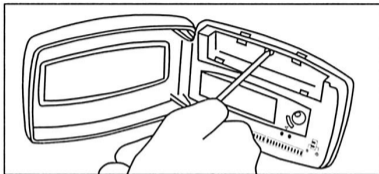
YES

INSTALLATION

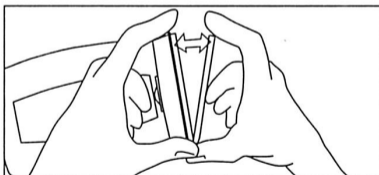
A) Open the front cover by lifting its left side



C) Remove the screw inside the battery compartment...

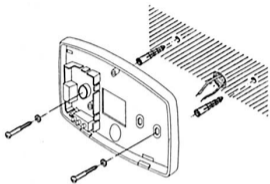


B) Remove the battery-compartment lid by pressing along the arrow

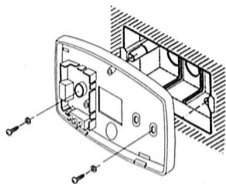


...remove the base from the frontal part of the thermostat...

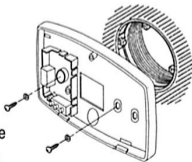
... then fix it to the wall according to the installation requirements, as shown in the figures.



Wall mounting

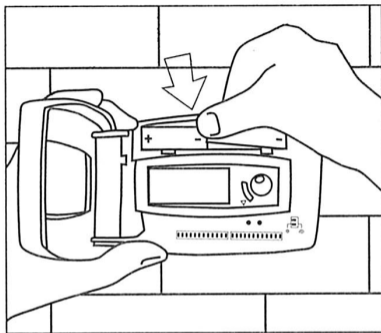
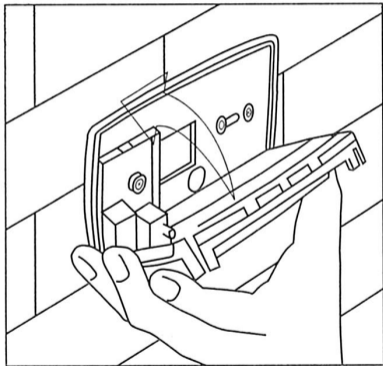


Mounting on three module built-in std box.
Distance between center lines of 83,5 mm.



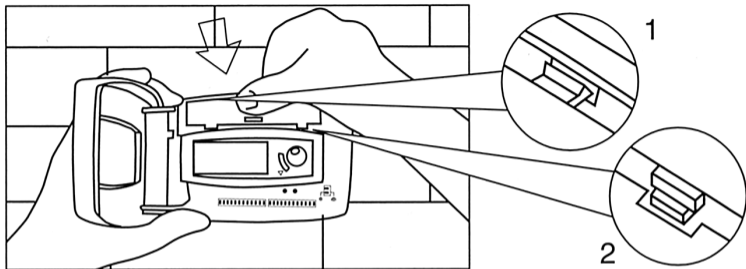
Mounting on round box. Distance
between center lines of 60 mm.

D) Connect the wires to the terminals as per wiring diagram (see next paragraph "wiring connections"), snap the unit back to its base and tighten it with the provided screw.




E) Insert n°2 1.5V alkaline batteries, type LR6 into the battery compartment, making sure that the proper polarities are maintained.

N.B. Insert the first battery into the left side of the battery compartment and the second one into the right side of the compartment. Finally press on the second battery so it fits properly.



F) Close the battery compartment by matching the two top tabs in their slots (1) and then pressing on the bottom ones (2).

BATTERY REPLACEMENT

When the display shows a blinking “” (low batteries), the thermostat will still work properly for another month, after that it will stop working and four “EEEE” will appear on the display (battery life: 1 year).

To replace batteries, follow the steps **A) B) E)** and **F)** of the previous paragraph.

WARNING:

We recommend that the batteries be replaced on the heating system start-up.

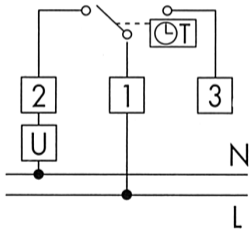
Once the batteries are replaced, close the battery compartment lid, press the reset button (R) and reset the time as described in chapter 8 (clock setting).

WIRING CONNECTIONS

Connect the wires of UNIT TO BE CONTROLLED to terminal 1 and 2 of the thermostat (see wiring diagram).

WARNING:

We strongly recommend that, while installing the thermostat, all safety instructions and laws in force be strictly followed.



U= load
1= common contact
2= Normally Open contact
3= Normally Closed contact

7. THERMOSTAT START-UP

After inserting the batteries, thus powering the thermostat, press the reset button (R) for 2-3 seconds with a pencil point. All the available cursors and symbols will then be displayed for a few seconds (self-test). The thermostat is then ready for CLOCK SETTING.

NOTE:

For a PROPER use of our product, from here on all the instruction paragraphs should be read in SEQUENCE, as per manual!

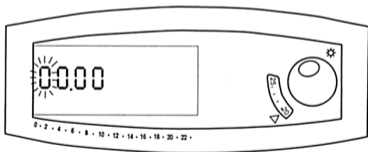
8. CLOCK SETTING

During this step, the display shows two hour-digits and two minute-digits. The first digit on the left will blink (fig. 1).

By switching down or up the micro-switches positioned under the digits from "0 to 9", the current time is set.

The following example shows how to set 09:55 a.m.:

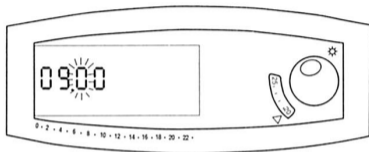
- Switch the micro-switch "0" to set the first digit on the display (the second digit will blink) (fig.2).
- Switch the micro-switch "9" to set the second digit on the display, thus completing the HOUR setting (the third digit will



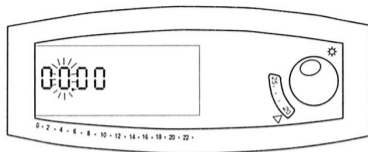
(fig. 1)

blink) (fig.3).

- Switch the micro-switch "5" to set the third digit on the display (the fourth digit will blink) (fig.4).

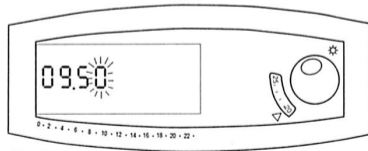


(fig. 3)



(fig. 2)

- Switch again the micro-switch "5" to set the fourth digit on the display, thus completing the MINUTE setting. The current time is now displayed.

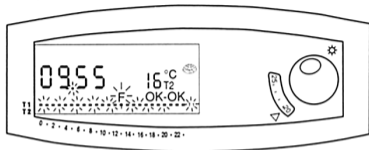


(fig. 4)

NOTE:

- When the **CLOCK SETTING** procedure is completed or in case it is not completed within 10 minutes from start-up, the thermostat will automatically start the "OVERRIDE" mode (shown by a blinking "F", "T1" and the "hours/temperature chart" on the display), assuring the working at **NORMAL** temperature "T1" ("sun" knob) (fig.5).

- The CLOCK SETTING procedure may be start again at any given time by pressing the reset button (R).



(fig. 5)

9. PROGRAM SETTING

Only after the clock is set, the program can be set.

The thermostat is equipped with a series of micro-switches, with 24 little switches, one for each hour of the day. Therefore, the program is the same for every day of the week. The setting is very simple: move up the switches (position "T1*") for the amount of hours you want the temperature set with the "sun ✱" knob (NORMAL temperature). On the contrary, lower the switches (position "T2 C"), for the amount of hours you want the REDUCED temperature (selector 6°/16°C or 23°/26°C).

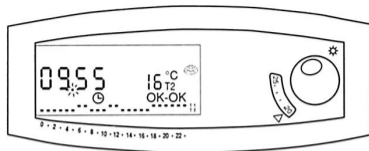
The set operating-program will be "graphically" displayed for an easy reading and a possible modification.

To ACTIVATE the program:

- Press the F button and check if the symbol "☉" and the reading "OK-OK" are on display (fig.6).

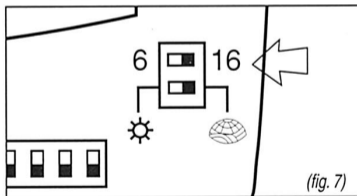
10. TEMPERATURE SETTING

- To set the NORMAL temperature "T1", simply turn the knob "sun ✱" until the little reference triangle on the front of the thermostat points to the desired temperature on the temperature scale.
- REDUCED temperature "T2" may be chosen between 6°C/16°C when in winter mode (🌐), and between 23°C/26°C when in summer mode (✱), using the selector on the right of the unit (fig. 7).



(fig. 6)

The chosen value of the REDUCED temperature "T2" will be on display.



(fig. 7)

11. NORMAL OPERATION CONDITIONS

During "normal operation" the room temperature is displayed for 20 seconds (indicated by °C TA), alternating with the display of current time for 10 seconds.

The following values are displayed as well (see chapter 3):

- The REDUCED temperature value (indicated by °C T2)
- The operational program chart with its temperature levels T1 and T2
- The symbol "clock" (🕒)
- The reading "OK-OK".
- The symbol "sun" (☀) or the symbol "igloo" (🏠) for summer or winter operation
- The symbol "flame" (🔥) indicating that the boiler or the air conditioner are on.

12. OVERRIDE MODE

This function allows the OVERRIDE of the running program so that the thermostat keeps CONSTANTLY one of the two temperature levels (NORMAL "T1" or REDUCED "T2") or the ANTIFROST mode (❄), factory pre-set at 6°C.

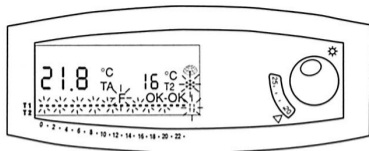
To ACTIVATE the override mode:

- Press **once** the F button to activate the ANTIFROST mode (6°C)
- Press **twice** the F button to activate the REDUCED temperature "T2" (selector 6°C/16°C or 23°C/26°C)
- Press **three** times the F button to activate the NORMAL temperature "T1" (knob "sun ☀")

When in "override" the letter "F", the override symbol (❄ ; T1 or T2) and the "hours/temperature chart" will blink on the

display (fig.8).

NOTE:Pressing the F button when the thermostat is in “override” at NORMAL temperature “T1”, it takes the unit back to normal operation under the ACTIVE program, indicated by the symbol “clock” (🕒) and by the reading “OK-OK” on the display.



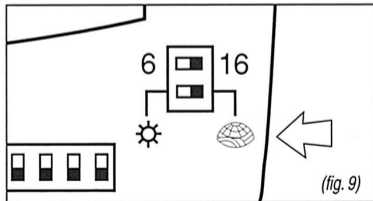
(fig. 8)

13. SUMMER/WINTER SETTING

The thermostat can be programmed for “summer” or “winter” operation, whether is connected to the air conditioner or to the boiler.

- Switch the selector on the “sun” position (☀️) for “summer” mode or on the “igloo” position (🌍) for “winter” mode (fig.9).

In both cases, either (☀️) or (🌍) will appear on the display to show which mode is on.



(fig. 9)

14. KNOB LOCK

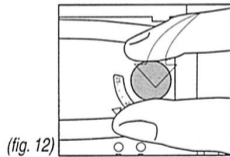
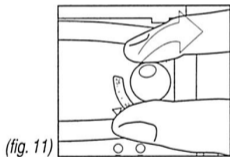
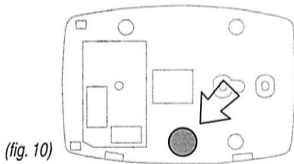
The "sun" knob, which sets the NORMAL temperature "T1", may be locked, making it possible for the thermostat to be used in public places, without possibility to change the set temperature.

How to do it:

After removing the HOLE-CAP inside the base (fig. 10), remove the knob from its seat and replace it with the HOLE-CAP itself (figs. 11 e 12).

WARNING:

THE REPLACEMENT OF THE KNOB WITH THE HOLE-CAP MUST BE CARRIED OUT ONLY BY QUALIFIED PERSONNEL.



15. UNIT RESET

When the reset key (R) is pressed, the thermostat runs a "self-test", lighting up all the segments on the display for a few seconds. After that, it starts automatically the CLOCK SETTING mode, assuring (if it has not been programmed) a simple room-thermostat operation (knob temperature "sun").

16. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	SOLUTION
The thermostat does not turn on	<ol style="list-style-type: none">1. Low batteries2. Batteries improperly installed3. False contact	<ol style="list-style-type: none">1. Replace batteries2. Check for proper polarities3. Press reset (R)
The system does not start/does not start at the preset time	<ol style="list-style-type: none">4. Wrong wiring5. Wrong program setting6. OVERRIDE mode is on7. Wrong summer/winter setting8. Wrong current time setting	<ol style="list-style-type: none">4. Check the wiring of the load with the terminals of the thermostat (#1 and #2)5. Check the proper time setting in the program (ex: micro-switch #7 activates the boiler from 7:00 to 7:59 a.m.)6. Disable the mode at issue7. Make sure that the display shows the symbol "igloo" (if connected to a boiler) or the symbol "sun" (if connected to an air-conditioner)8. Check the current time and, if wrong, reset it

PROBLEM	POSSIBLE CAUSE	SOLUTION
The displayed room temperature does not correspond to the real one	9. Wrong location of the thermostat in the installation room 10. Air draft coming from the wire conduit	9. Follow the instructions in chapter 6, paragraph "placement". 10. Seal the conduit to prevent hot or cold air drafts
The display reads "☐→" or "EEEE"	11. Low batteries	11. Replace batteries and press the reset button (R)
The front cover does not open easily	12. Wrong opening procedure	12. Lift the left side of the cover and then open it towards the left
After pressing the reset button (R), the display does not light up	13. The reset button (R) got stuck under the plastic	13. Release the button by using a pencil point, so that it goes back to its proper position
The thermostat has an "irregular" behavior	14. Non-alkaline batteries	14. Use alkaline batteries, type LR6

NOTE: in case of repeated malfunctioning, please call service. Do not tamper, for any reason, with any part of the thermostat.

IMIT

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