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IMPORTANT:

please read this instruction booklet carefully and keep it for future reference. The manufacturer reserves the right to make all technical and manufacturing modifications deemed necessary without prior notice.



Installation and electrical connections of devices and appliances must be carried out by skilled people and in compliance with current regulations.

The manufacturer declines any liability in connection with the use of products subject to special environmental and/or installation standards.

DISPOSAL OF ELECTRICAL & ELECTRONIC EQUIPMENT

This symbol on the product or its packaging to indicates that this product shall not be treated as household waste.

Instead, it shall be handed over to the applicable collection point for the recycling of electrical and electronic equipment, such as for example:

- sales points, in case you buy a new and similar product;
- local collection points (waste collection centre, local recycling center, etc...).

By ensuring this product is disposed of correctly, you will help prevent potential negative consequence for the environment and human health, which could otherwise be caused by inappropriate waste handing of this product.

The recycling of materials will help to conserve natural resources. For more detailed information about recycling of this product, please contact your local city office, your house hold waste disposal service or the shop where you purchased the product.



IMPORTANT NOTES

READ THIS MANUAL THOROUGHLY BEFORE INSTALLING THE BATTERIES IN THE ACTUATOR AND BEFORE PERFORMING ANY INSTALLATION, PROGRAMMING OR SERVICING OPERATIONS.

Perform the final adaptation procedure to start up the electronic actuators, with the hydraulic system full as required.

Adaptation performed when the system is empty may cause the actuator to malfunction.

For correct operation of the electronic actuator, a variable flow pump or at least a hydraulic bypass valve must be installed in the system.

The actuator is fitted with systems and devices designed to ensure the security of the system in which it is installed, and to prevent accidental or wilful tampering by the user from altering its setup.

OPERATING SECURITY DEVICES:

Keypad lock

When you install the batteries, a 10 minutes timer starts to count down. This time is renewed every time a key is pressed. **10 minutes** after the last key has been pressed, the actuator activates the keypad lock function (**as denoted by a 2 second beep**) and certain control functions are disabled.

Once the keypad lock is activated, it will no longer be possible to perform all programming and manual control operations.

The operations still possible with the keypad lock active are:

- First Adaptation to valve.
- Display of intensity of last signal received.



IMPORTANT: the keypad lock can be temporarily deactivated only by removing and re-installing after 15 seconds one of the batteries.

Adaptation lock

Installation and initial adaptation of the actuator to the radiator's needle valve can be performed at any time, even with the keypad lock active. **5 minutes** after this operation has been completed, however, the actuator activates the adaptation lock function, **denoted by 2 short beeps in rapid succession**. Adaptation cannot be repeated after this.



IMPORTANT: the adaptation lock can be deactivated only by removing and re-installing after 15 seconds one of the batteries.

⚠ IMPORTANT NOTES ⚠

Do not for any reason fit the actuator to the radiator needle valve (or screw up the ring nut) without first having carefully retracted the needle actuator rod as instructed in section 1.6 “Adaptation”.

IMPORTANT! After any operation involving removal of the batteries (e.g. troubleshooting, repairs and battery replacement), the adaptation procedure must be repeated.

This actuator is incompatible with other items of radio equipment that operate on the same frequency (868.35 MHz) on a permanent transmission basis.



The radio waves emitted by the wireless devices described in this manual do not pose a risk to the health of people.

Provided there are no obstacles between the transmitter and the actuator, 'line of sight' radio range is about 120 metres.

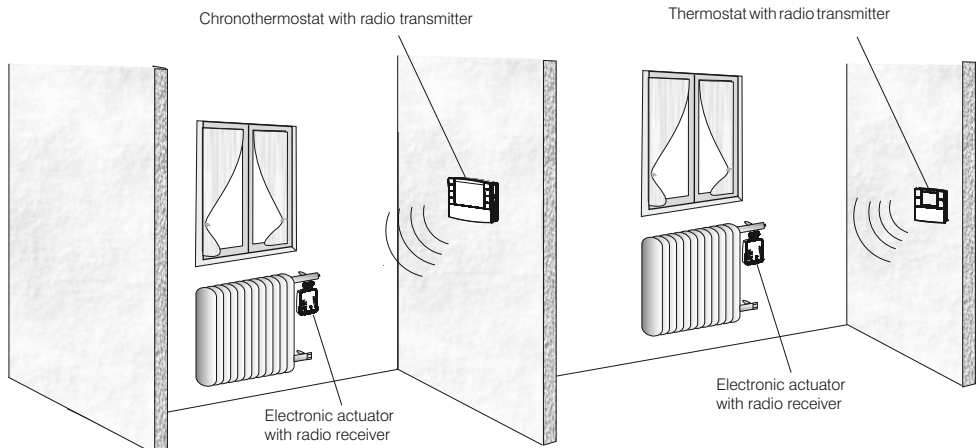
IMPORTANT: this range decreases significantly if obstacles are located between the transmitter and the actuator. The actual reduction depends on the size of the obstacle or wall through which the signal must pass and the material from which it is made.

The presence of electromagnetic interference or noise may also reduce radio range.

The following table lists typical reductions in range for obstacles commonly found in the line of sight between transmitter and actuator.

VEGETATION (domestic plants, etc.)	from 10% to 25% reduction in range
WOOD OR PLASTERBOARD WALLS	from 10% to 30% reduction in range
BRICK OR STONE WALLS	from 40% to 60% reduction in range
REINFORCED CONCRETE WALLS	from 50% to 70% reduction in range
METAL WALLS, FLOORS AND CUPBOARDS	from 65% to 90% reduction in range

Installation example



1 - INSTALLATION

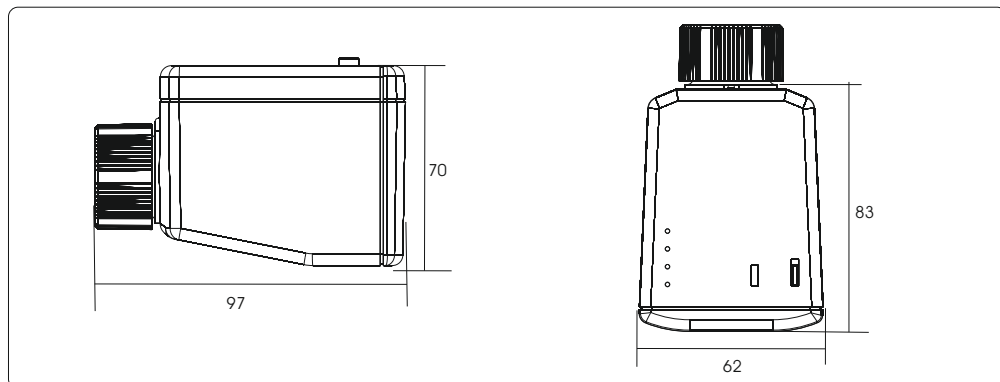
1.1 - TECHNICAL SPECIFICATIONS

Power supply	two 1,5 V alkaline batteries type NM1400, Size C (LR14) (Duracell or Energizer batteries are recommended)
Maximum power supply voltage:	3,2 V =
Output type:	motorised command for valve needle
Frequency band:	the device intentionally emits radio waves on the frequency band of "868-868.6" MHz, with a maximum power of less than 25mW e.r.p
Maximum signal range in free air:	120 m
Maximum signal range in the presence of walls:	30 m
Signal reception:	antenna built into the device
Insulation type:	Class III
Protection rating:	IP 40
Electrical pollution:	normal
Operating temperature limits:	-5 °C ÷ + 65 °C
Storage temperature limits:	-10 °C ÷ + 70 °C

1.2 - PERFORMANCE DATA

- Automatic keypad lock (anti-tamper function).
- Adaptation of the actuator to the radiator valve.
- Automatic adaptation lock (anti-tamper function).
- Coupling of the transmitter in self-learning mode, facilitated by LED signals and audible signals.
- Facility to erase transmitter coupling to the zone also in the case of transmission failure.
- A 10 seconds (factory default setting) or 5 minute delay can be set between the moment the transmitter sends the valve close signal and the moment the actuator closes the valve.
- Permanent editable memory for transmitter couplings.
- Indicator LEDs to communicate fault status due to the absence of transmission or due to insufficient power of the actuator battery and/or the associated transmitter battery.
- Automatic setting of valve to the closed position before battery is completely discharged.
- Indicator LEDs and/or audible signals to communicate actuator-radiator valve compatibility problems.
- Automatic descale operation performed on weekly basis.
- Possibilità di inserire o escludere le segnalazioni luminose di stato della valvola in normale funzionamento.
- LED and/or audible indication, on three levels, of TEST signal to check the presence and range of the transmission signal (VMETER).
- Highly reliable communications thanks to **dual data transmission**.

DIMENSIONS



1.3 - SIGNALS AND COMMANDS LEGEND

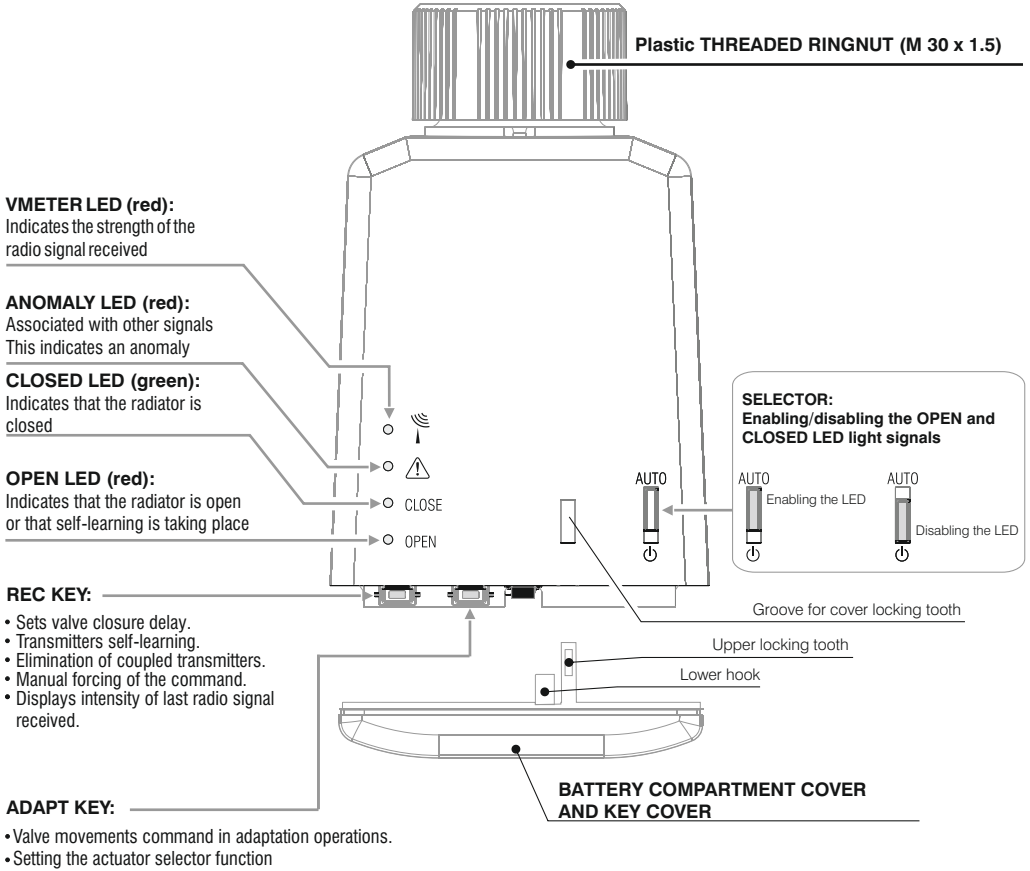


Fig. 1

Explanation of the LED and audible signals and key controls

LED	Appearance of LED signals
	Steadily off
	Flashing (t on = 50 ms) every 5 seconds
	Flashing (t on = 50 ms) every 1/2 second
	Flashing (t on = t off) every second
	1 prolonged impulse (duration indicated on a case by-case basis)
	Steadily illuminated

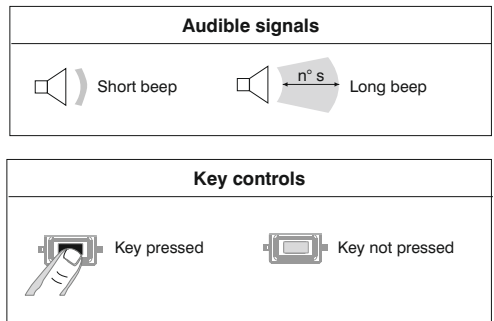


Fig. 2

1.4 - FITTING AND CHANGING THE BATTERIES

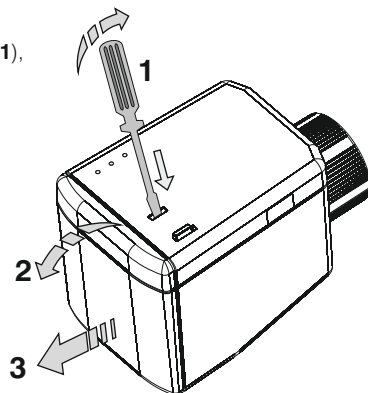


IMPORTANT: whenever you replace the batteries, a 10 minutes timer starts to count down. This time is renewed every time a key is pressed. 10 minutes after the last key has been pressed, the actuator activates the keypad lock function (**as denoted by a 2 second beep**). After this it will no longer be possible to perform the programming and manual control operations.

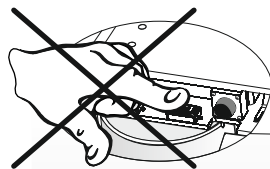
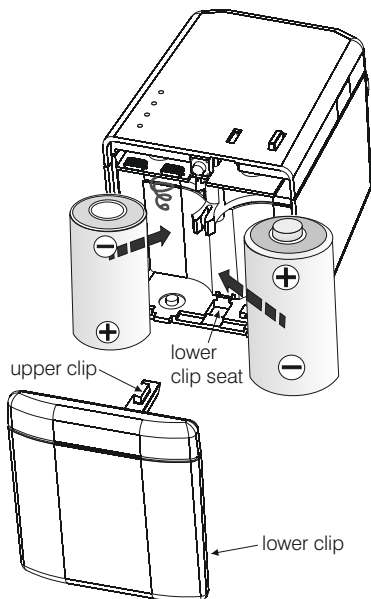
With the aid of a screwdriver release the upper clip of cover (1), rotate cover (2) and remove it (3).



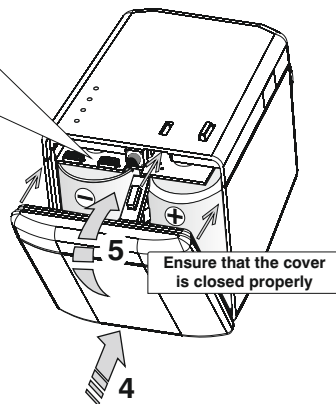
Spent batteries must be discarded in specific sorted waste collection containers or otherwise disposed of in compliance with environmental legislation.



Use 2 1.5V MN1400 alkaline batteries - Size C (LR14)
(Duracell or Energizer batteries are recommended)
Fit the 2 batteries taking care to observe the polarity shown in the figure.



IMPORTANT: while inserting batteries, be particularly careful **not to press any key** (to prevent unwanted actuator settings).



Close the battery compartment by fitting the cover:

first fit the lower clip into its seat (4) and then close the cover, pressing it until the upper clip (5) clicks into place.

IMPORTANT! There are no time limits for the battery changing procedure. If the batteries are discharged or not present the device will anyway retain the following information: self-learning data, last detected radiator valve position, valve adaptation setting, and the valve closure delay set when the actuator was first activated. When the batteries are refitted the product starts a self-test routine in which all the LEDs are illuminated simultaneously for 2 seconds. The actuator maintains the position that was active before power was lost, temporarily disabling the keypad lock and adaptation lock.

IMPORTANT: in the case of assistance involving the removal of the batteries (e.g. due to operating anomalies, faults or battery replacement), after reinserting the batteries, always repeat the forced adaptation operation as described in paragraph 1.6 in points 1 and 3.



WARNING: after the actuator **low batteries signal** (see chapter 2.6), when the battery voltage drops further until reaching a factory-set value, **the device automatically assumes the closed position and all the functions and indications are disabled** (actuator OFF). **The actuator remains switched off until the new batteries are fitted** (closure of the radiator valve and actuator power-off occurs approximately 15 days after the first appearance of the low batteries indication).

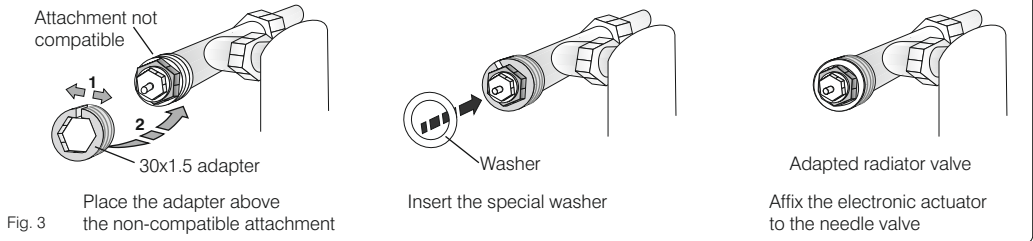
1.5 - INSTALLATION OF THE ELECTRONIC VALVE

The electronic valve actuator can be applied to different types of radiator valves; at the time of installation an **adaptation operation** must be carried out in order to identify the precise open and closed positions of the radiator valve.

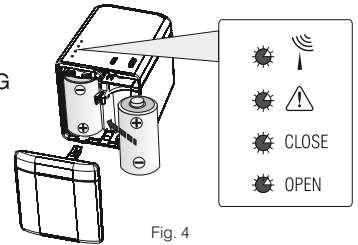
When installing the actuator adhere strictly to the following instructions, which must be carried out in the specified sequence (with reference to figures 1 and 2 of heading 1.3 "Signals and commands legend"):

Check compatibility of the **ringnut (30 x 1.5) on the electronic actuator** with the thread of the radiator valve; if the two parts are incompatible fit the specific adapter (if available) to the radiator valve or replace the radiator valve with a suitable type (see table on page 16 and figures below).

Example of adaptation of radiator valve attachment



Fit the batteries into the actuator body as shown in chapter 1.4 "FITTING AND CHANGING THE BATTERIES": all the LEDs will illuminate.



1.6 - ADAPTATION

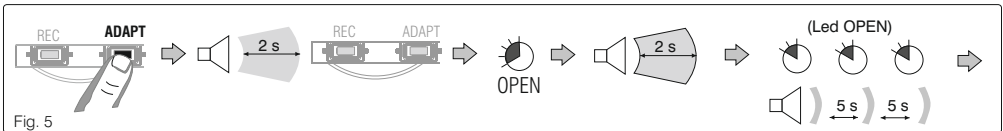
this operation is not possible if the adaptation lock is active.

to disable the adaptation lock, remove the batteries, wait 15 seconds, then replace them.

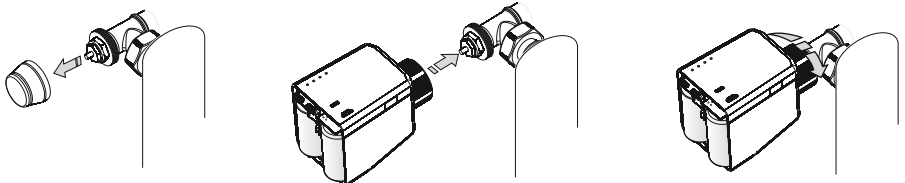
IMPORTANT: the adaptation operations must be performed exclusively when the electronic actuator battery has a sufficient charge.

In the presence of the "Low battery" signal (chapter 2.6) do not perform the adaptation operation.

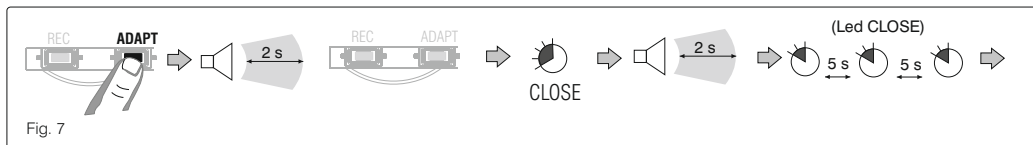
- 1) Press the **ADAPT** key until you hear a beep lasting 2 seconds; now release the key: the actuator will perform the opening operation, the **OPEN** LED flashes until the radiator valve is completely opening, as confirmed by the emission of a 2-second beep. A series of short beeps and LED signals (**OPEN** LED) at 5 second intervals indicates actuator status. **Note: in this condition the 5 minute count-down to adaptation lock activation is disabled.**



- 2) Fit the actuator to the radiator valve and tighten the ring nut by hand and then use a pipe clamp tool to tighten for a maximum of 1/4 of a turn without using excessive force.



- 3) Press the **ADAPT** key until the device emits a 2-second beep; now release the key: the actuator will perform the closing operation, the CLOSE LED flashes until the radiator valve is completely closed, as confirmed by the emission of a 2-second beep. A short flash (CLOSE LED) every 5 seconds indicates actuator status.



IMPORTANT: on completion of the adaptation procedure, you only have **5 minutes** before the adaptation lock activates, **as denoted by 2 short beeps in rapid succession.**

Note: during these 5 minutes you can repeat the adaptation procedure if necessary.

2 - INSTALLATION - START-UP - USE

2.1- SETTING THE VALVE CLOSURE DELAY



This operation is not possible if the keypad lock is active.

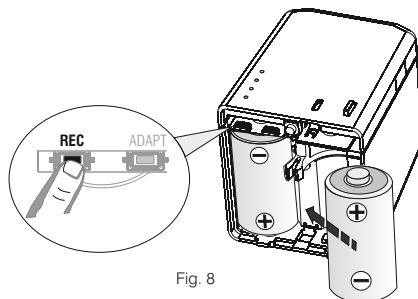
to disable the keypad lock temporarily, remove the batteries, wait 15 seconds, then replace them

To adapt the actuator to the radiator valve it has to operate, you can select an implementation delay for the **valve close** command of either 10 seconds (factory default) or 5 minutes. Proceed as follows.


Remove one of the batteries and wait for about 10 seconds, after which hold down the **“REC” key** for at least one second while reinserting the battery. All the LEDs light up and are followed by 2 short beeps: **the 5 minute delay is now set**

N.B. the delay on the opening movement is always 10 seconds.

To restore the 10 second delay, remove one of the batteries, wait for 10 seconds and reinsert it, pressing the **“REC” key** for at least one second: all the LEDs are now lit, and are followed by a short beep: **the 10 second delay is now set.**




2.2 - COUPLING TO A TRANSMITTER (thermostat or chronothermostat)

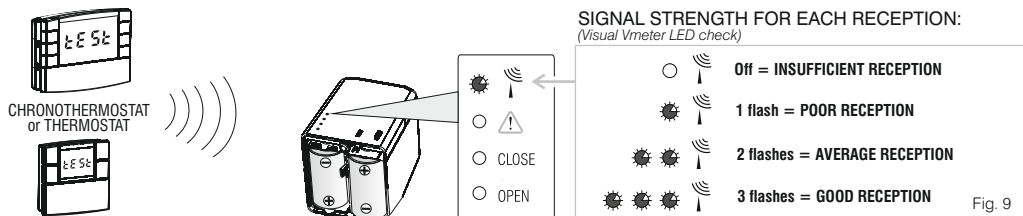
 **This operation is not possible if the keypad lock is active.**
to disable the keypad lock temporarily, remove the batteries, wait 15 seconds, then replace them

On an actuator to which no transmitter has yet been coupled and if there are no transmitters in test mode, the "CLOSE" LED will flash at 5 second intervals.

N.B.: low intensity illumination of the VMETER LED may be observed due to the presence of radio interference.

On the transmitter to be coupled activate "Test" mode, as described in the chapter "Coupling to receiver" in the transmitter manual (thermostat or chronothermostat).

During coupling, by observing the number of flashes on the VMETER LED  it is possible to check the radio signal strength received from the chronothermostat or thermostat in Test mode on the actuator, useful for example in order to choose the best installation position (see Fig. 9).



In addition, with the Test signal active from the transmitter, the actuator will display its current situation as follows:

"OPEN" LED off = no transmitter coupled to the actuator.

"OPEN" LED flashing = actuator coupled to the transmitter in test mode.

"OPEN" LED steady = actuator coupled to a transmitter other than the one in test transmission mode.

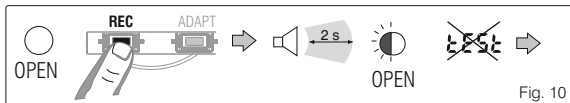
A) - FIRST COUPLING TO A TRANSMITTER

On the transmitter to be coupled activate "Test" mode, as explained in the specific chapter of the transmitter manual.

ON THE ACTUATOR (Receiver)

The "OPEN" LED is switched off (actuator not coupled)

- Hold down the "REC" key until an audible tone is emitted; then release the key: the "OPEN" LED is flashing.



ON THE TRANSMITTER: deactivate "Test" mode, as explained in the specific chapter of the transmitter manual.

The transmitter is now coupled with the actuator.

On the actuator, the OPEN or CLOSED LEDs (if not disabled using the selector) indicate normal operation.

B) - CANCELLING COUPLING TO A TRANSMITTER

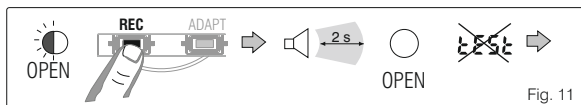
On the transmitter to be coupled activate "Test" mode, as explained in the specific chapter of the transmitter manual.

WARNING: if the "OPEN" LED is flashing this means that the transmitter in "Test" mode has already been coupled.

To confirm the coupling: deactivate "Test" mode on the transmitter.

To cancel the coupling: hold down the "REC" key on the actuator until a beep is emitted and then release the key; the "OPEN" LED is switched off (Fig. 11).

Deactivate "Test" mode on the transmitter.



The OPEN and CLOSED LEDs on the actuator (if not disabled by the selector) signal normal operation.

C) - ON THE ACTUATOR (Receiver) SUBSEQUENT TRANSMITTER COUPLINGS

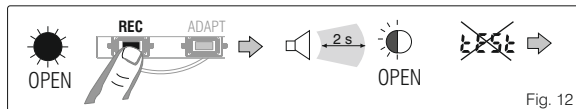
(e.g.: transmitter replacement)

On the transmitter to be coupled activate "Test" mode, as explained in the specific chapter of the transmitter manual.

ON THE ACTUATOR (Receiver): the "OPEN" LED is steadily illuminated (actuator already coupled to another transmitter)

Hold down the "REC" key until an audible tone is emitted, then release the key: the "OPEN" LED is flashing (Fig. 12).

The new transmitter is now coupled to the actuator (receiver).



ON THE TRANSMITTER: deactivate "Test" mode as explained in the specific chapter of the transmitter manual.

On the actuator, the OPEN or CLOSED LEDs (if not disabled using the selector) indicate normal operation.

WARNING: the coupling status, which is resident in the permanent memory, is not erased by the **Hardware Reset** command or when the power supply is lost.

N.B.: test mode on the transmitter automatically terminates 3 minutes from activation.


When actuator coupling operations are complete, close the actuator using the cover and check that it is closed correctly.

2.3 - OPTICAL AND ACOUSTIC CHECKING OF THE STRENGTH OF THE RECEIVED RADIO SIGNAL - VMETER

ON THE TRANSMITTER (thermostat or chronothermostat) ALREADY COUPLED TO THE ACTUATOR

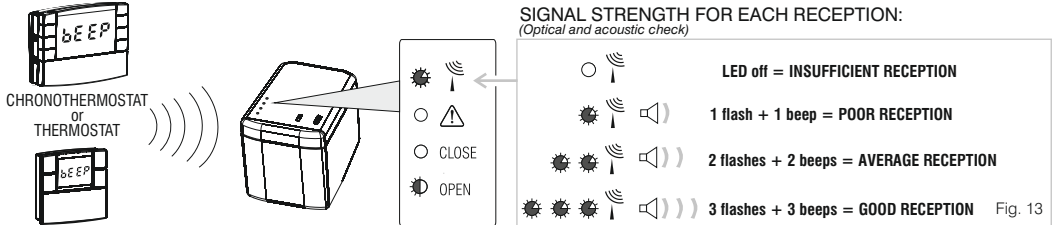
- Activate the “**check the intensity of the radio signal mode**”, as explained in the specific chapter of the transmitter. (BEEP).

ON THE ACTUATOR


- The intermittent “**OPEN**” LED indicates the transmitter coupling condition.
- The **VMETER LED** , and the audible signal, indicate the strength of the radio signal received, as illustrated in the figure 13.

N.B.: checking mode (BEEP) on the transmitter automatically terminates 3 minutes after activation.

If you wish to interrupt the check, deactivate “Check” mode **on the transmitter** as explained in the transmitter manual.



WARNING: the strength of the most recent radio signal received from the actuator can be checked also in “normal operation” (the last signal is always stored):



- Open the actuator key cover and battery compartment.
- press the “**REC**” key and hold it down for approximately 2 seconds before releasing it: the **VMETER LED**  will display the strength of the last signal received for 3 seconds: 1, 2 or 3 flashes according to the strength of the last signal received.
- Close the actuator key cover and battery compartment and check that they are closed correctly.

2.4 - NORMAL OPERATION

The transmitter (thermostat or chronothermostat) controls thermoregulation and sends commands and control signals to the actuator, which implements them.

IMPORTANT! When the transmitter sends a radio signal to open the valve, the command is implemented after about 10 seconds. When the transmitter sends a signal to close the valve, the command is implemented after a delay of 10 seconds or 5 minutes, selected when the actuator was installed (see section 2.1).

The operational security of the control is assured by the dual transmission of commands, a short time apart, and by an efficient self-diagnostic system.

Possible light signals during normal actuator operation	
VMETER LED  :	Off
LED  :	Off
“CLOSED” LED :	1 short flash at 5 seconds intervals indicates valve closed status. Rapid flashing shows that the valve is closing.
“OPEN” LED :	1 short flash at 5 seconds intervals indicates valve open status. Rapid flashing shows that the valve is opening.

N.B. the OPEN or CLOSED LED signals (if not disabled using the selector) indicate the actuator operating status.

Transmitter in OFF status

If the transmitter is set to **OFF** (system switched off) the actuator will assume the “**CLOSE**” position and will not perform thermoregulation functions. In this status the actuator can perform the weekly descale procedure (heading 2.8), receive transmitter signals, and it retains any fault signals in the memory.

Transmitter in SUMMER mode


If the transmitter is set to **SUMMER** mode the radiator valve will be closed. In this status the actuator can perform the weekly descale procedure (heading 2.8), receive transmitter signals, and it retains any fault signals in the memory.

2.5 - ENABLING OR DISABLING LIGHT SIGNALS (OPEN AND CLOSED LEDs)

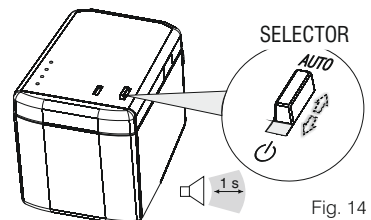
Using the selector on the actuator, it is possible to enable or disable the OPEN and CLOSED LED signals. Disabling the light signal prevents unnecessary optical disturbances, especially at night.

IMPORTANT: during programming or if signalling that the actuator is no longer adapted to the radiator valve, the LEDs in question are always active.

Selector in the **AUTO** position = OPEN and CLOSED LED signals enabled

Selector in the  position = OPEN and CLOSED LED signals disabled

N.B. each change of position of the AUTO/ selector is confirmed by a short 1 second beep.



2.6 - ANOMALY SIGNALS

The actuator may signal 4 cases of anomalies, which will be shown with the LED flashing every 5 seconds (see figures in the table).

In the event of more than one anomaly, only one will be shown, according to the following allocated priorities:

1st) Actuator not adapted to the radiator valve (*priority over all*)





2nd) Actuator batteries running low (*priority over anomalies 3 and 4*)

3th) No reception for over 40 minutes from a chronothermostat (also master) or thermostat (*priority over anomaly 4*)

4th) Batteries of the chronothermostat or thermostat associated with the actuator running low (*lowest priority of all*)

Important: in the event of more than one anomaly at the same time, it is necessary to solve the one shown first before being able to view the next. Solve each anomaly one at a time, until achieving normal actuator operation.

N.B. if the light signals are disabled (see paragraph 2.5), the OPEN and CLOSED status LEDs will be off with the exception of the "actuator no longer adapted to the radiator valve" anomaly.

Display priorities (in the presence of multiple anomalies)	ANOMALY TYPE	ACTUATOR status	LED SIGNAL (simultaneous flashing of the LEDs every 5 seconds)	SOLUTION
1°	Actuator no longer adapted to the radiator valve	Blocked	 <p>When for any reason the actuator no longer recognises the parameters stored during the actuator adaptation operation (e.g. air in the system, limescale in the valve, pressure changes etc.), this generates an anomaly that will be signalled by the flashing of the LEDs as shown in the figure on the right. The actuator cannot be moved until the anomaly is solved.</p> <p>N.B. if the light signals are disabled (see paragraph 2.5), the OPEN and CLOSED status LEDs will always be active.</p>	<p>The "Actuator no longer adapted" anomaly can be found for example in the following cases:</p> <ul style="list-style-type: none"> - Faulty needle valve - Fault in the hydraulic system with sudden loss of pressure. <p>To exit this condition, after solving the problem (replacing the valve or repairing the hydraulic system), perform a Hardware Reset (para. 2.9) on the actuator and force a new adaptation (para. 1.6).</p>
2°	Actuator low battery	Operating	 <p>When the batteries inside the actuator drop below a predetermined level, an anomaly is generated, signalled by the flashing of the LEDs as shown in the figures below. Note that when the internal batteries exceed a critical level, the actuator shuts off and remains in the closed position until they are replaced.</p> <p><i>With actuator open</i> <i>With actuator closed</i></p>	<p>Replace the batteries in the actuator (see section 1.4).</p>
3°	No transmitter signals > 40'	Closed	 <p>40 minutes after the last transmission of a chronothermostat (even the master) or thermostat associated with the actuator, an anomaly will occur, signalled by the flashing of the LEDs as shown in the figure on the left. The actuator will close.</p>	<p>Make sure that the transmitter is switched on.</p> <p>Check the radio range.</p>
4°	Chronothermostat or thermostat low battery	Operating	 <p>When an associated device is sent the "batteries running low" command, the actuator detects it and this is signalled on the LEDs as shown in the figures below:</p> <p><i>With actuator open</i> <i>With actuator closed</i></p> <p>N.B. when the batteries in the associated zone device are completely flat, after 40 minutes, the actuator will close until they are replaced.</p>	<p>Replace the batteries in the transmitter (thermostat or chronothermostat).</p>

2.7 - DELETING A TRANSMITTER COUPLING WITH THE ACTUATOR



This operation is not possible if the keypad lock is active.

to disable the keypad lock temporarily, remove the batteries, wait 15 seconds, then replace them

On the Transmitter to be deleted activate "Test" mode, as illustrated in the chapter "Coupling with the receiver" in the transmitter manual. (thermostat or chronothermostat).

The "OPEN" LED flashes **on the actuator**.

To cancel the coupling: hold down the "REC" key on the actuator until a single beep is emitted and then release the key; the "OPEN" LED is switched off (Fig. 11). Deactivate "Test" mode on the transmitter.

WARNING: with this procedure only the coupling to the transmitter in "Test" mode is eliminated: any Master transmitters linked with the actuator will not be eliminated.

In contrast, using the following elimination procedure serves to delete the **coupled transmitter** and also any **associated Master transmitters**.

Important: it is possible to erase a transmitter coupling from the memory even if the transmitter in question is not able to transmit the Test signal (fault status).

- Press the "REC" key and hold it down until the end of the sequence of beeps shown in the figure 15, then release the key. The transmitter coupling is thereby erased from the memory.
- Once the anomaly has been cancelled, the actuator will return to the condition where no transmitter is associated, forcing closure.

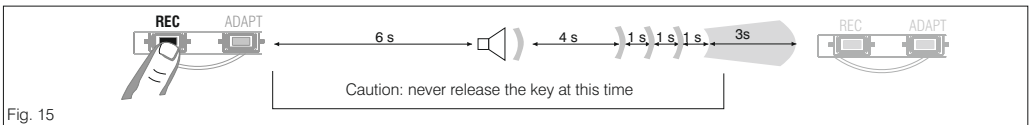


Fig. 15

WARNING: if the key is released before the start of the 3-second beep, the anomaly will not be cancelled. In addition, if the Vmeter LED on the actuator is flashing, perform a hardware reset (by removing and reinserting one of the batteries - see paragraph 2.9) and repeat the cancellation procedure.

2.8 - AUTOMATIC WEEKLY DESCALE OPERATION

To prevent harmful limescale deposits in the radiator valve, which could impair its correct operation, if the valve is not operated for one week a valve closing and opening cycle is activated automatically.

During movement of the valve the relative LED (OPEN or CLOSE) will flash.

2.9 - Hardware RESET

If the actuator malfunctions, proceed as follows to perform a "Hardware RESET":

- Remove the battery/key cover
- Remove one of the batteries and wait at least 15 seconds to fully discharge the internal buffer capacitor).
- Replace the battery with the correct polarity, being careful not to press any key.
- The actuator performs a self-test routine turning on all the LEDs at the same time for 1 second to signal that the operation has taken place. **Important: none of the previously programmed data** (self-learning, adaptation, valve closure delay settings etc.) **will be deleted.**
- Replace the battery/key cover, checking that it is closed correctly.

The hardware reset is also used to cancel the forced adaptation lock and the key lock.

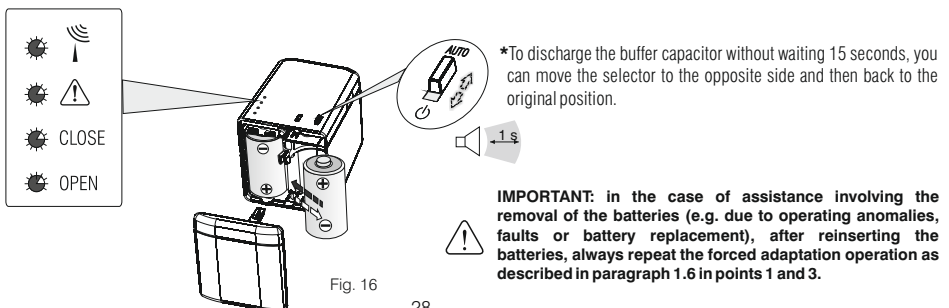



Fig. 16

2.10 - SETUP OF THE ACTUATOR FOR OPERATION WITH A MASTER DEVICE (optional)

 **this operation is not possible if the keypad lock is active.**
to disable the keypad lock temporarily, remove the batteries, wait 15 seconds, then replace them


For the "Master" function of the system exclusively Chronothermostat models with "Master" function can be utilised.

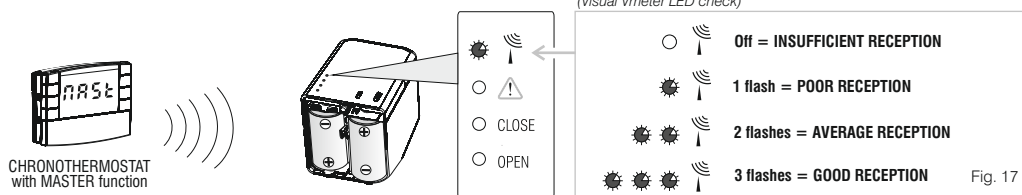
- An actuator (receiver) can be associated with a single transmitter "Master" while a "Master" transmitter can control several actuators.
- The allocation of a Master Chronothermostat to an actuator is possible only if the actuator in question is already under the control of a primary device (thermostat or Chronothermostat).
- The Master Chronothermostat can be the primary device of one or more actuators in the plant, or it may not be assumed as the primary device of any of the actuators (see example on the next page).

ALLOCATION OF A MASTER DEVICE TO THE ACTUATOR

ON THE "MASTER" CHRONOTHERMOSTAT select "Master Test" mode:

- Press the "**Master**" key and hold it down until the message "MST" is displayed, then release the key.
(see chapter "Allocation of the Master" in the chronothermostat manual).

While allocating a Master device, by observing the number of flashes on the VMETER LED , it is possible to check the radio signal strength received from the chronothermostat in MASTER Test mode on the actuator, useful for example in order to choose the best installation position (see Fig. 17).



In addition, with the Master Test signal active from the Master device, the actuator displays its current status in accordance with the following legend

LED "OPEN" off = no Master associated with the actuator.

LED "OPEN" flashing = actuator coupled and under control of the Master device test.

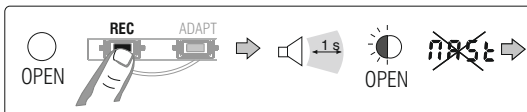
LED "OPEN" steadily illuminated = actuator coupled and under the control of a Master device other than the one that is currently transmitting.

A) - FIRST ALLOCATION OF AN ACTUATOR TO A "MASTER"

ON THE "MASTER" CHRONOTHERMOSTAT select "Master Test" mode:

ON THE ACTUATOR (Receiver)

- Hold down the "**REC**" key until an audible signal is emitted and then release it; the "OPEN" LED flashes and the actuator is set up to be controlled by the "Master" chronothermostat.



ON THE MASTER CHRONOTHERMOSTAT quit "Master Test" mode:

- Press the **Master** key and hold it down for 2 seconds, then release it.

The OPEN and CLOSED LEDs on the actuator (if not disabled by the selector) signal normal operation.

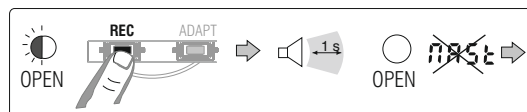
B) - CANCELLING THE ASSIGNMENT OF AN ACTUATOR TO A "MASTER"

ON THE MASTER CHRONOTHERMOSTAT select "Master Test" mode.

ON THE ACTUATOR (Receiver)

The "OPEN" LED flashes to indicate the condition of association with the active "Master".

- Hold down the "**REC**" key until a single beep is emitted, and then release it. The "OPEN" LED turns off and the actuator is set up to be controlled by the "Master" Chronothermostat.



ON THE MASTER CHRONOTHERMOSTAT quit "Master Test" mode:

- Press the **Master** key and hold it down for 2 seconds, then release it.

The OPEN and CLOSED LEDs on the actuator (if not disabled by the selector) signal normal operation.

C) - OVERWRITING THE CONTROL BY ANOTHER MASTER DEVICE ON THE ACTUATOR

For example to replace the MASTER transmitter

ON THE "MASTER" CHRONOTHERMOSTAT select "Master Test" mode.

ON THE ACTUATOR (Receiver)

LED "OPEN" steadily illuminated (actuator already allocated to another MASTER transmitter).

Hold down the "REC" key until an audible signal is emitted and then release it; the "OPEN" LED flashes (Fig. 20).

The new MASTER transmitter is associated with the actuator (receiver).

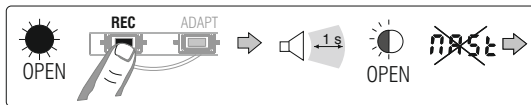


Fig. 20

ON THE MASTER CHRONOTHERMOSTAT quit "Master Test" mode:

- Press the **Master key** and hold it down for 2 seconds, then release it.

The OPEN and CLOSED LEDs on the actuator (if not disabled by the selector) signal normal operation.

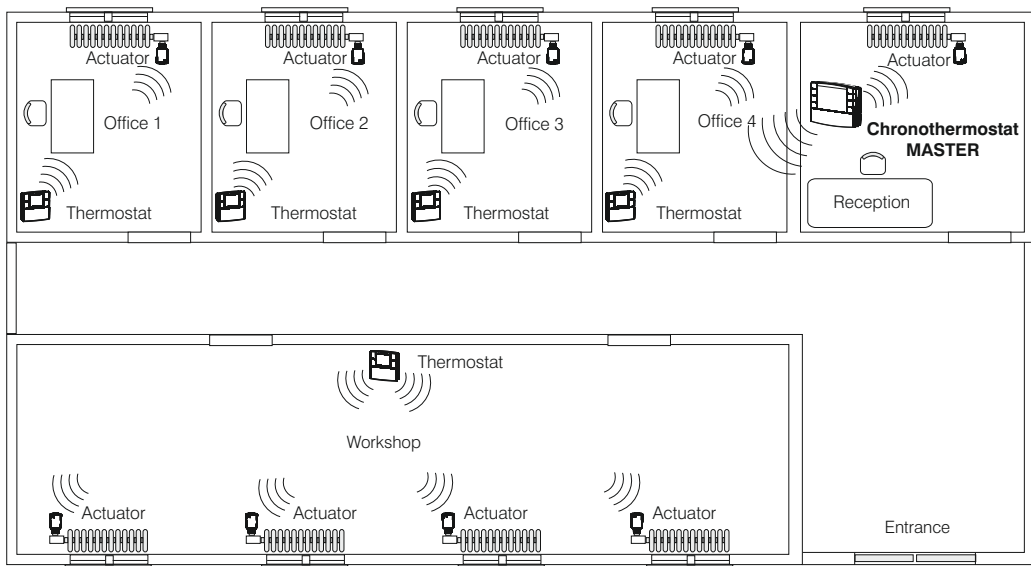
CAUTION: the allocation to a MASTER device, stored in the permanent memory, is not erased by the Hardware Reset command or when the power supply is lost.

N.B.: Master test mode on the transmitter automatically terminates 3 minutes from activation.

Once the coupling operations are complete, close the actuator cover.

Note: for the description of master functions refer to the manual of the chronothermostat with Master.

EXAMPLE OF SYSTEM WITH MASTER DEVICE



Layout of the plant

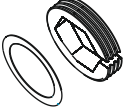
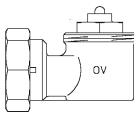
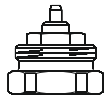
- **Offices:** a thermostat (primary device) is combined with the actuator in each office.
- **Workshop:** a single thermostat is coupled to 4 actuators as the primary device.
- **Reception:** the chronothermostat is coupled as the primary device on the actuator in the Reception area and associated as the "MASTER" on all the actuators in the system.

Operation:

- **With the Master function disabled:** each actuator is controlled by its respective thermostat. The chronothermostat only controls the Reception area actuator.
- **With Master function enabled:** if the chronothermostat is in programmed operating mode, during periods of Economy and Absence, it takes over thermoregulation functions from the primary devices (thermostats); during the programmed comfort temperature periods it delegates thermoregulation to the thermostats, performing the thermoregulation function exclusively for the Reception area actuator (in relation to which it is the primary device).
- **if the chronothermostat is in manual mode**, it disables the thermostats from performing thermoregulation also in relation to the Comfort level.

TABLE OF COMPATIBILITY AND ADAPTATION OF THE PERRY VALVE ACTUATOR WITH THE MAIN MAKES OF RADIATOR VALVES ON THE MARKET

Warning: the Valve Actuator is supplied with a ringnut for fixing to the radiator valve with 30 x 1.5 mm metric thread.

Radiator valve MAKER	FIXING TO RADIATOR VALVE (type/pitch)	ADAPTER for valve actuator		
		Characteristics		
CALEFFI	press fitting (clip)	plastic union clip / thread 30 x 1,5 with washer	Supplied	
CALEFFI CAZZANIGA LANDIS/SIEMENS HERZ HONEYWELL TIEMME MNG FAR Collettori	M 30 x 1,5 thread	no adapter		
COMAP mod. 804 common in countries: N-B-NL	M 30 x 1,5 thread	no adapter needed		
OVENTROP	M 30 x 1,5 thread	Elbow adapter (90°) part no. 1011450	Not supplied (optional)	
OVENTROP	M 30 x 1 thread	Adapter, part no. 1011445 30x1 threads to 30x1.5 threads	Not supplied Available from heating equipment suppliers.	
HERZ COMAP mod. 808 common in countries: I-F-E-GR	M 28 x 1,5 thread	Klimit adapter, part no. K371361001 28x1.5 threads to 30x1.5 threads	Not supplied Available from heating equipment suppliers.	