MASTER
DIVISIONE ELETTRICA

Item no. 21420 • 31420 • 36420
FLUSH MOUNTING M420 CHRONOTHERMOSTAT WEEKLY PROGRAMMABLE 3 MODULES FOR MODO AND MIX SERIES

1. APPLICATIONS

The M420 chronothermostat has been designed to control the temperature in heating circuits (boilers, fancoils, floor heating systems, circulation pumps, etc.)

2. FIXING OPERATION

Warning: the equipment must be only installed by qualified technicians in compliance with with the scheme diagram printed on the product and the instructions of this guide. Please follow strictly the safety instructions already in use.
In order to grant protection class n.2, please follow precisely the hints given in this installation guide.
The device has been designed to be installed in dry and closed rooms in normal conditions. The device is suitable for 1B circuits in compliance with CEI EN 60730 norms.
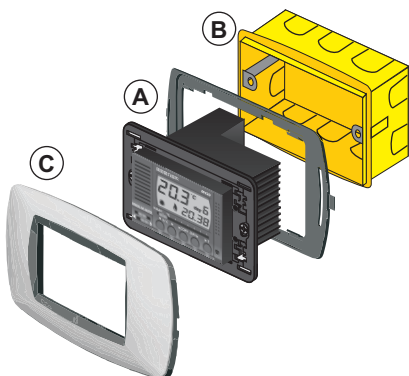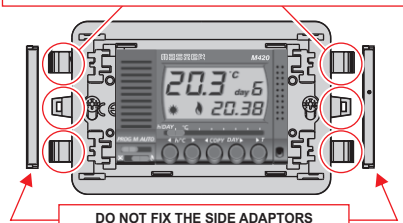
1. Remove any side adapters present and cut the 6 lateral teeth present on the device. Install the Modo/Mix adapter ring on the thermostat (A)

2. Make all the electrical connections

3. Fix the screws on the support to the 3 modules box already embedded in the wall (B) away from kitchens, heat points, windows, doors, etc. and a height of 1.5 meters above the floor. It is convenient to the final side of the tube from where the cables come.

4. Install the plate by pressure (C)

REMOVE THE 6 HOOKS FOR THE MODO AND MIX PLATES

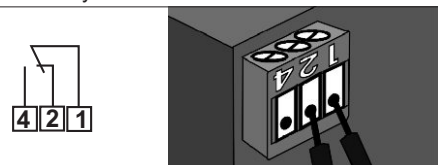DO NOT FIX THE SIDE ADAPTORS

3. CONNECTIONS

Connect with 2 wires the terminals 1-2 to the installation, substituting the traditional thermostat in any moment, without adding any other connection.
M420 is equipped with a relay with a contact switch, without any tension, for direct control of: boilers, circulating pumps, zone valves with servo heat control, air conditioning installations with fans and fancoils.
Terminal 4 is free and can be used for the on-off control of servo motors with two directions of traffic or other uses to be studied each time individually.
Please note: The terminal bar is removable, so after making the connections can be separated from the body of the device.
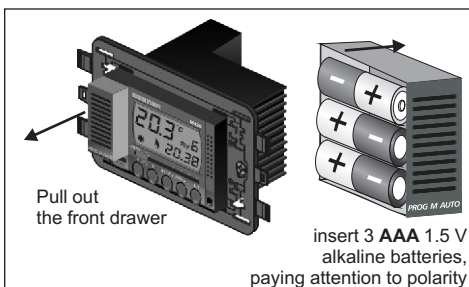

4. BATTERIES

Pull out the front drawer and insert 3 **AAA** 1.5 V long life alkaline batteries, paying attention to polarity as indicated. When you'll notice that the display is flashing or tends to fade, charging the batteries is no longer sufficient and their replacement is required.
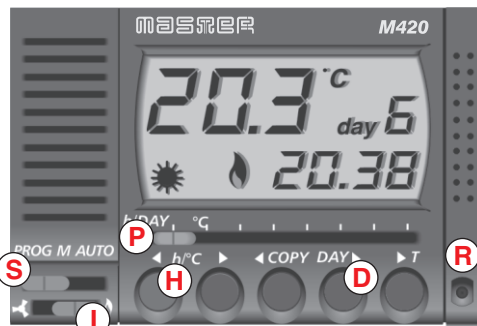During the time required for replacing the batteries, the set data won't be lost.
After replacing the batteries, the display will flash again until M420 won't require the installation activation.

Pull out the front drawer

insert 3 **AAA** 1.5 V alkaline batteries, paying attention to polarity

5. OPERATION

Operation with standard programs

After you have installed and connected it, simply follow the below indicated operations:

1 Move the S key on PROG position

2 Move the P key on the first position

3 Set the time with the keys H
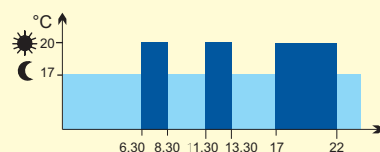
4 Set the day of the current week by pressing the D key

1 Monday	2 Tuesday
3 Wednesday	4 Thursday
5 Friday	6 Saturday
7 Sunday	

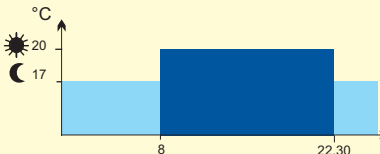**5** Move the S key on AUTO position

6 Verify that the I switch is on Winter

R Reset button. Holding it for a few seconds, all the programs set are deleted, and restores the standard program.
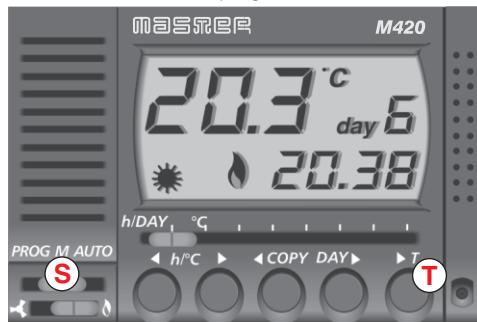
FROM MONDAY TO FRIDAY

ON SATURDAY AND SUNDAY

Operation with manual program

The manual operation keeps constant over time the temperature modality chosen between comfort, economy and frost protection ⏻ and completely excludes the executed program.

1 Move the S key on M manual position.

2 Press the T key to select the temperature index to match with manual operation:

COMFORT ☀ ECONOMY ☾ ANTIFREEZE ⏻

6. PERSONALIZATION

Time and temperature at the user's choice, please follow the steps below:

Choose the two operating temperatures, associated to temperature COMFORT ☀ and ECONOMY ☾ indications.

1 Move the S key on PROG position.

2 Move the P key on the second position.

3 Press the T key to display:
COMFORT ☀, ECONOMY ☾

4 Adjust the temperature with the H button corresponding to the indication selected.

5 Press the T key again to change the temperature and repeat the operation at point 4.

Time scheduling combined with temperature

1 Move S key on PROG position.

2 Move P key on the third position.

3 Adjust the time of first intervention with H key.

4 Move the P key to the next position and H key to adjust the time of the second intervention.

5-6-7-8 Shift P key to the next positions by adjusting with the H button the timetable for action, repeating operations n.3 and n. 4.

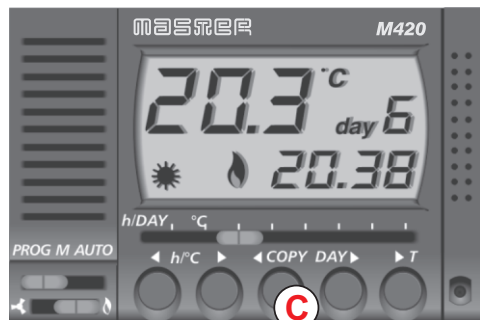**Please note:** All six timing operations must be programmed.
If you they are not needed (in order to use only two or four steps), please program with the same time two or more interventions consecutive programmed with the same time cancel each other.

9 Once programmed times per each day, press D key to change the day and repeat steps from 2 to 8 for all other days of the week. If the program of a day is good enough for the following days, you can copy it using the COPY function with C key

7. COPY FUNCTION

Copy of the program of a day to other days of the week

If the program executed is good enough for the following days, it is possible to copy it by pressing C key. The day is increased of one unit and copies the program already stored to the new day that is displayed.

PLEASE NOTE:
After performing all the programs, move the S key on AUTO!

8. JOLLY FUNCTION

With M420 is possible at any time to exclude temporarily the program set without modification, in order to get from 1 to 99 hours continuously, a constant temperature different from the one programmed.
After this period of JOLLY operation, the thermostat will restart the automatic operation.

1 Verify that the **S** key is on **AUTO** position.

2 Press **H** key to the right direction, in order to set the COMFORT temperature time that temporarily replace the program automatically.
Press the button to the left direction in order to set the ECONOMY temperature timing.
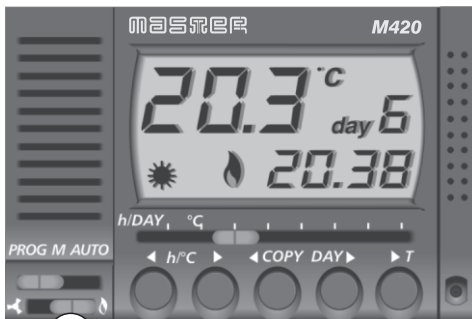
Each pressing corresponds to one hour in Jolly function. The display shows the symbol ☀ or ☾ depending on the temperature chosen.
To reduce or eliminate the Jolly period before the scheduled time, press the **H** key (the key pressed is opposite of the one pressed previously in order to insert the JOLLY function)
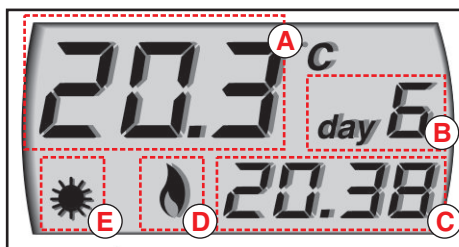
9. SUMMER AND WINTER

Using switch **I**, select the installation to be controlled: heating (winter) or air conditioning (summer).
The "Winter" position ◊ switches the burner on when the winter temperature is lower than the one who was planned.

The "Summer" position ✳ switches the summer on conditions when the room temperature is higher than what planned.

10. DISPLAY

A reading the room temperature (thermometer function)
B agenda reading for the current week or for the planned day.
C Hour and minute reading for the current time or for programmed time.
D The symbols ◊ and ✳ indicate the Winter mode (heating system) or Summer (air conditioned system) visible when the thermostat is switching on the installation.
E ☀ ☾ indicate the COMFORT or ECONOMY status.
The symbol ⏻ indicate ANTIFREEZE status.

11. TECHNICAL FEATURES

- In compliance with CEI EN 60730-1 and second parts
- Power supply: 3 AAA 1.5V alkaline long-lasting batteries without connections to the power line
- Contact capacity 5 (3) A 250 V
- Impulse voltage 4kV
- Micro disconnection (1BU)
- Switching voltage-free contacts
- T45 (maximum natural temperature)
- scale adjustable from 5 to 40 °C
- Differential + / - 0.25 K
- thermal gradient reference 4K / h
- ▢ double insulation
- protection level: IP20
- Pollution level 2
- Minimum battery life: 18 months
- Software: class A
- Antifreeze temperature pre-set at 5 °C
- flashing display when the battery charge is insufficient
- maintenance of all data during batteries substitution
- switching feature for summer / winter
- temperature compression tests 75°C
- Storage temperature-10~50°C
- Net Weight 0.15kg

12. INSTALLATION WITH OTHER SERIES

The M420 thermostat can be mounted with plates of other series different from Modo and Mix.
For such cases, follow the instructions below.

1. cut 4 teeth in the indicated position indicated in the scheme of the compatible plates series and insert the adaptors depending on the plate to be matched.
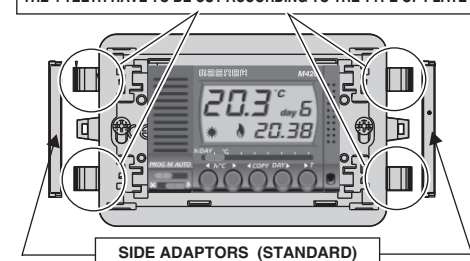2. Make the electrical connections
3. Fix the screws on the chassis to the 3 modules box already embedded in the wall, far from kitchens, heating sources, windows, doors, etc. and **at a height of 1.5 meters above the floor**.
We suggest to seal the end of the tube from which the cables are inserted.
4 Fix the plate by pressure.

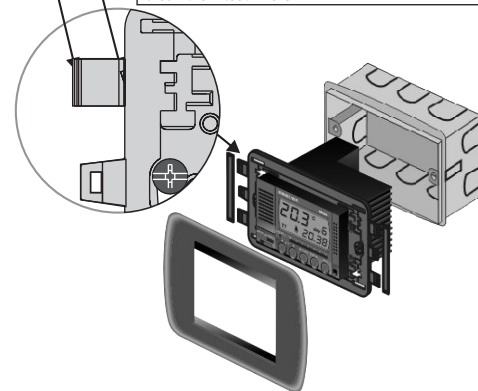| Compatible plates	Side adapters	Position of the 4 teeth to be extracted
Ticino Living International, Light, Light Tech	NO	A
Ticino Living	NO	A
Vimar Idea e Rondò	YES	B
Gewiss Playbus e Playbus young	YES	A
Ave sistema 45, Ave Banquise, Yes, Noir, Blanc	YES	-
Siemens delta futura graphit	YES	A
Legrand Ergo, Cross, Vela	YES special	A

THE 4 TEETH HAVE TO BE CUT ACCORDING TO THE TYPE OF PLATE

SIDE ADAPTORS (STANDARD)

For AVE: do not break any teeth

B- For Vimar: break here with a pair of scissors the 4 teeth

A- For BTicino, Gewiss, Siemens and Legrand: break the 4 teeth here

WARNING

The M420 thermostats are compatible with the 3 modules plates Master Modo (metal and polymer), Retro and Mix.
Compatibility with other civil series could become unvalid in case of any change made by both manufacturers.
Master owns the right to introduce all the technical changes to the product as it deems necessary without prior notice.

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