MB BOARD
FOR CASSETTE FAN COILS

USER MANUAL

09/2025

Cod. 4050532

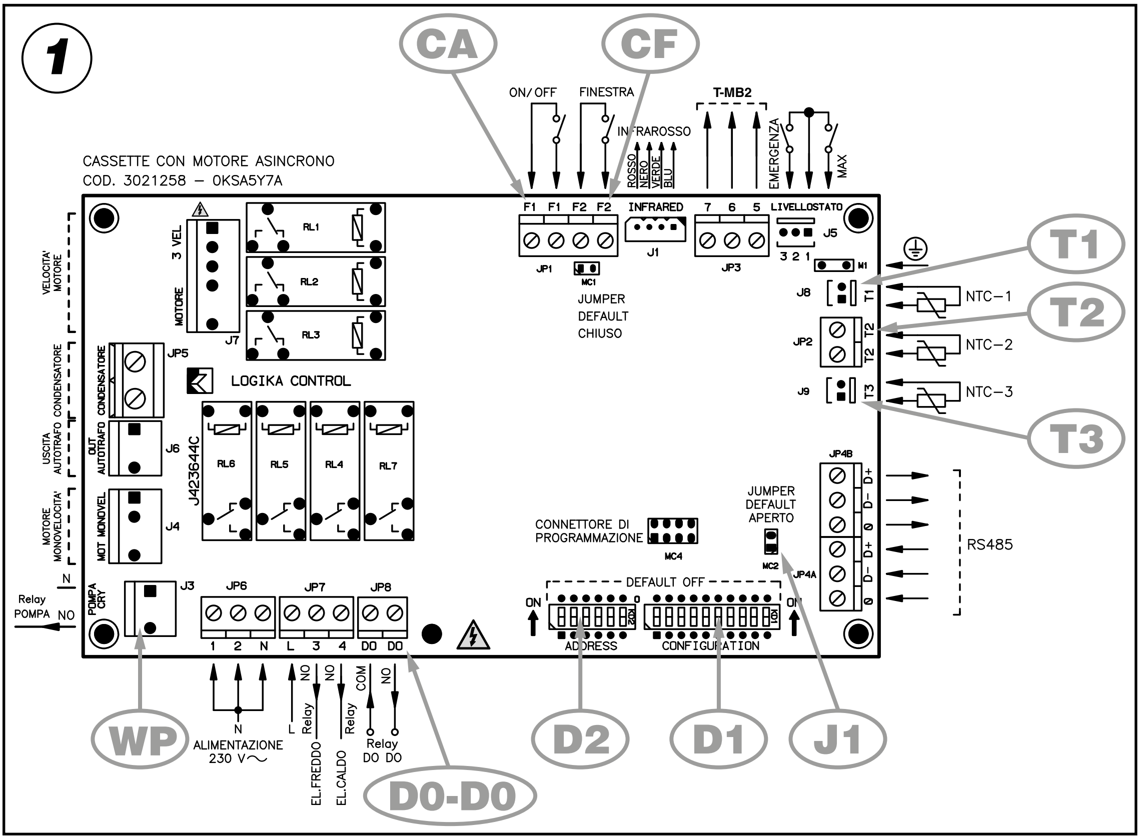
CONTENTS

READ THESE INSTRUCTIONS CAREFULLY BEFORE USING THE CONTROL

This unit is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial use by lay persons.

This unit is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.

Children should be supervised to ensure that they do not play with the appliance.



1 MOTORE ASINCRONO A 3 VELOCITÀ

THREE-SPEED ASYNCHRONOUS MOTOR

2 MOTORE ELETTRONICO ECM

ECM ELECTRONIC MOTOR

KEY:

D1 *= Configuration dipswitches*

D2 *= Address dipswitches*

J1 *= Jumper MC2*

T1 *= Air probe (fitted at the appliance intake)*

T2 *= Change-Over probe (optional)*

T3 *= Minimum probe (disabled by default)*

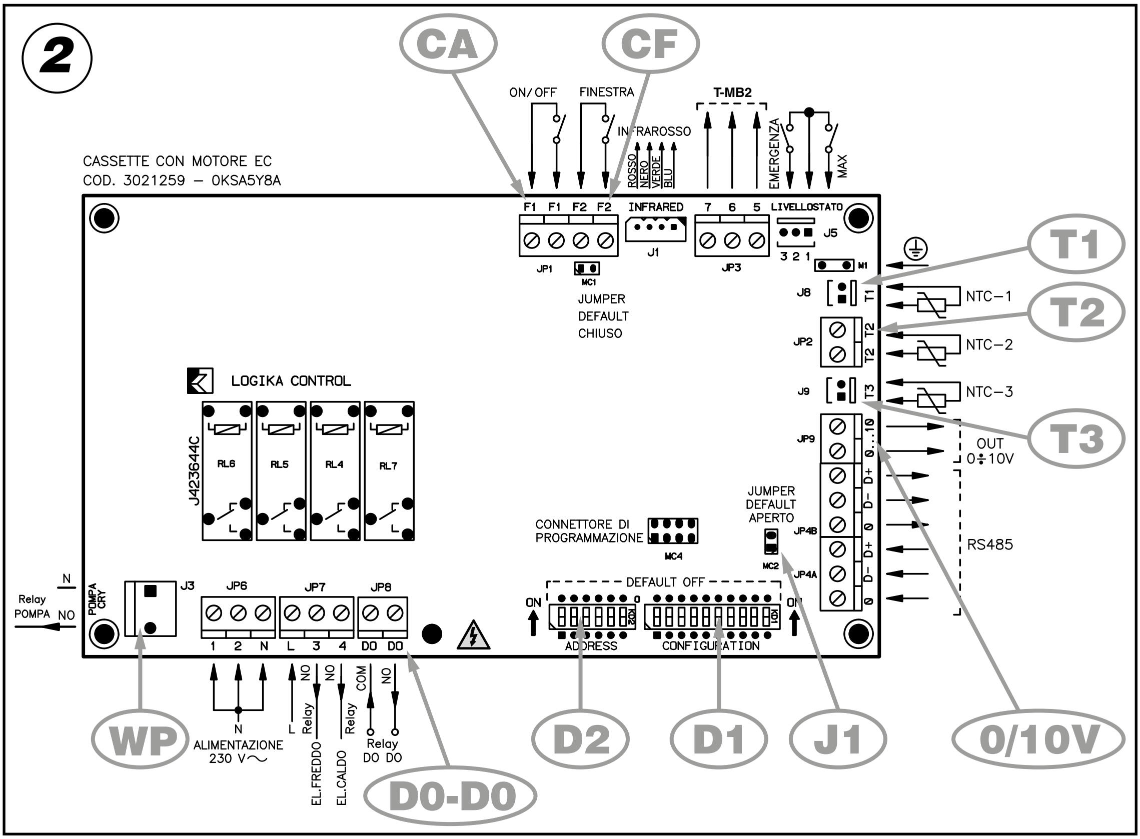
CF *= F2-F2 Window open / person presence voltage-free contact. If opened the unit stops.*

CA *= F1-F1 remote ON-OFF or remote summer/winter Change-Over (See DIP 9 setting)*

RS485 *= Terminals 0/D-/D+ for the RS485 serial connection*

0/10 *= 0/10 V output signal for inverter control (ECM motors)*

WP *= Condensate pump*



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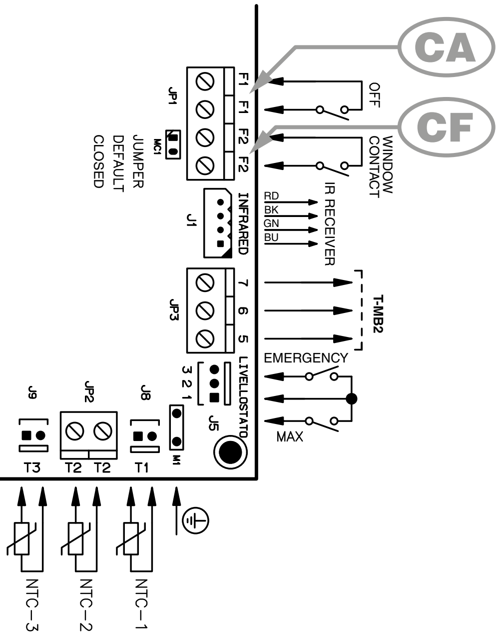
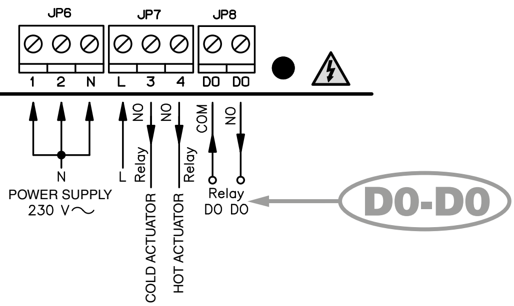




FUNCTION OF THE AUXILIARY CONTACTS

Contact CA [F1-F1]:
Remote OFF or remote Summer/Winter Change-Over (See DIP 9 setting).

- *with DIP No 9 set on OFF*
  is configured as remote OFF where:
  - *contact open = status set by control*
  - *contact closed = OFF*
- *with DIP No 9 set on ON*
  is configuredas Summer/Winter where:
  - *contact open = Winter*
  - *contact closed = Summer*

Contact CF (F2-F2):

- *window open contact*
- *person presence sensors*
- *other systems*

When the contact is closed the appliance can operate.

When the contact is open the appliance is stopped.

If used, remove the MC1 Jumper for contact closure.

Contact D0-D0:
It is a clean contact usually open which assumes significance according to DIP 8 position.

- *with DIP No 8 set on OFF*
  the contact provides the state of the machine:
  - *open contact = OFF state of the machine*
  - *closed contact = ON state of the machine*
- *with DIP No 8 set on ON*
  the contact provides the state of the condensate pump:
  - *open contact = pump ok*
  - *closed contact = activated pump alarm*

SETTING THE CONFIGURATION DIPSWITCHES

The dip switches configuration must be executed once the unit has been disconnected from the power supply.

DIP	DEFAULT	Position: ON	Position: OFF
1	**OFF**	**4 PIPE UNITS**	**2 PIPE UNITS**
2	**OFF**	*Thermoregulation with Fan*	*Thermoregulation with valves*
3	**OFF**	*T3 enabled*	*T3 disabled*
4	**OFF**	*T3 Winter and Summer when enabled*	*T3 only Winter when enabled*
5	**OFF**	*Simultaneous ventilation of valves*	*Continuous ventilation*
6	**OFF**	***Resistance-coils Management***	***Unit without electrical heater***
7	**OFF**	***Resistance-coils with T2***	***T2 as CH Change-Over (resistance phase II)***
8	**OFF**	*RL7 (D0-D0) according to the pump*	*RL7 (D0-D0) according to the state of the controller*
9	**OFF**	*CA = Remote Summer/Winter*	*CA = Remote ON/OFF*
10	**OFF**	*Slave*	*Master*

LED SIGNAL TABLE

	LED1			LED2				LED3			
	ON	**Blink**	**OFF**	**OFF**	**ON**	**Blink**	**4+2**	**OFF**	**ON**	**Blink**	**4+2**
RX485	Ko	OK									
T1			OK	OK		Ko	Ko				
T3			OK	OK	Ko		Ko				
CF								OK		open	open
CA								OK	open		open

NB = 4+2 = *4 sec. fixed + 2 flashing*
OK = *working*
Ko = *not working*
open = *open contact*

DEFAULT CONFIGURATION

- *Fan always on.*
- *Temperature control (ON/OFF) on the water valve/valves.*
- *T3 disabled.*

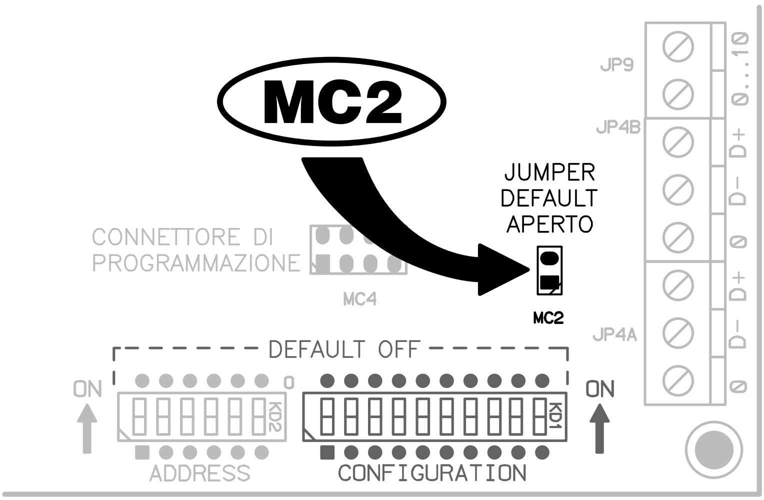
Note: *probe T3 (cut-out thermostat) is already fitted; to enable the operation of the probe, set dipswitch 3 to ON.*

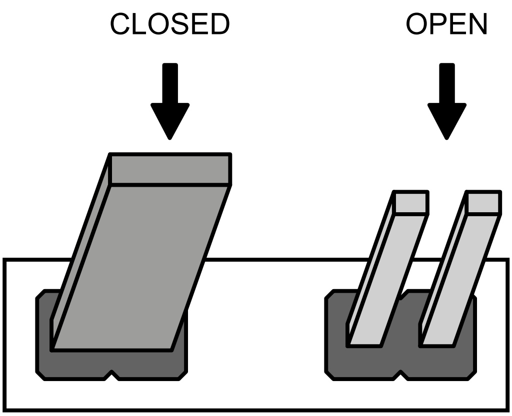
AUTOFAN FUNCTION

In standard operation the fan is always on and control is performed on the water valves.
The dipswitches can be set to allow control not only on the valves but also on the fan, however with a post-ventilation time of 3 minutes.

When reaching the set point, the water valve is de-energised, and then the fan is stopped after 3 minutes.

Note: *to avoid phenomena of stratification altering the temperature value measured by the air probe when the fan is OFF, this is started for 100 seconds every 10 minutes.*





MASTER-SLAVE OPERATION

Managing a group of appliances, via serial connection, with just one remote control or with the T-MB2 control

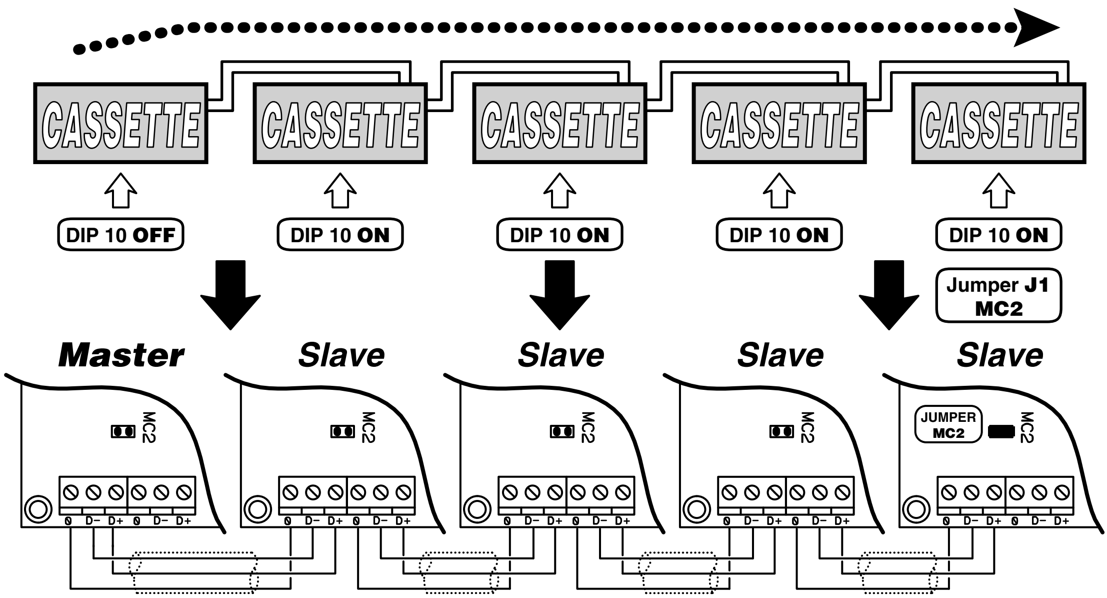
It is possible to connect multiple devices controlling them simultaneously, transmitting settings from the remote control or from the T-MB2 control to a single MASTER unit.
All other units are defined SLAVE.
The operation of each individual appliance will depend, on the other hand, on the temperature conditions measured by each of these.
Whenever a serial network is set up, the end of the line must be defined by closing jumper MC2 on the last unit connected.

Note: *The Master fan coil will have Dip 10 positioned on OFF, while all other devices connected as Slave will have Dip 10 positioned ON.*

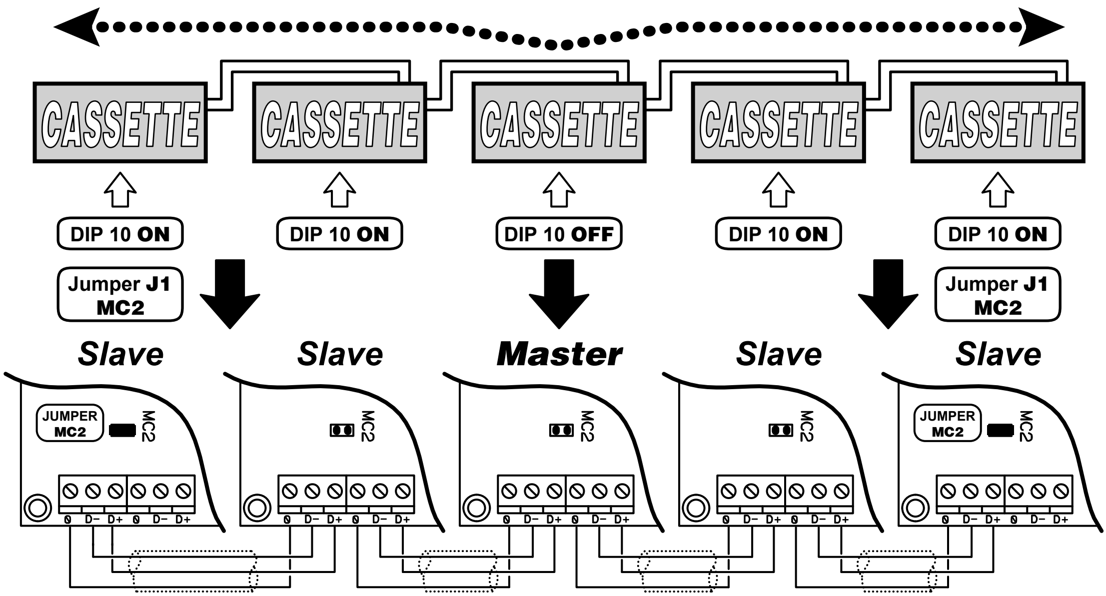
Serial Connection end network Jumper

In the case of RS485 connection (Master/ Slave or ModBus BMS), the network supplying the last machine should be disconnected. Disconnection is made closing the ***Jumper MC2.***

Connection with the *Master* at the start of the network



Connection with the *Master* inside the network



When making the electrical connections in a network of fan coils communicating via a serial line, extreme care must be paid to some important details:

1- *Connectivity to set with: RS485 Data cable characteristic impedance 120 Ohm configuration 1x2xAWG24 (1x2x0.22 mm²)*

2- *the overall length of the network must not exceed 700/800 metres*

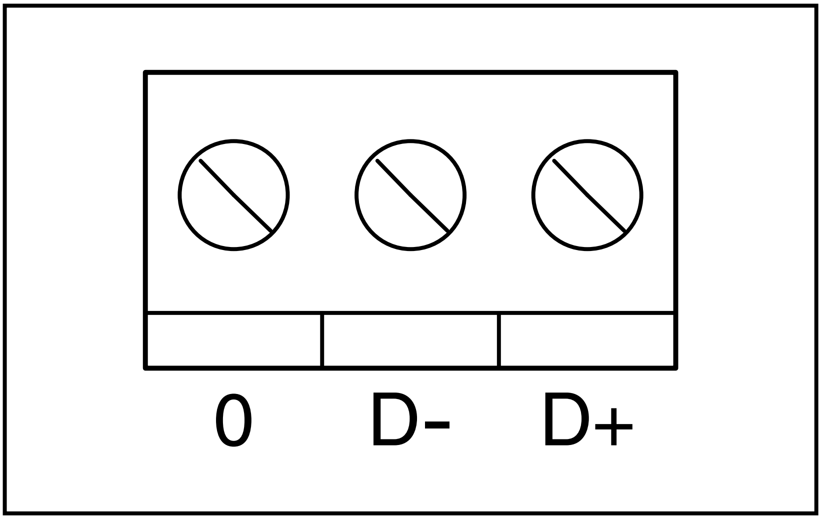
3- *a maximum of 20 fan coils can be connected*

The shielded cable to be used

TYPE | ***RS485 Data cable characteristic impedance 120 Ohm configuration 1x2xAWG24 (1x2x0.22 mm²)***

INSTALLATION NOTES

- *the cables should be tightened to a force of less than 12 kg. Higher forces may fray the wires and reduce the transmission properties;*
- *do not twist, knot, crush or fray the wires;*
- *do not lay the signal cables and power cables together;*
- *if the signal cable needs to cross a power cable, make sure the intersection is at 90°;*
- *do not join sections of cable. Always use one single cable to connect the units together;*
- *do not excessively tighten the wires under the connection terminals. Strip the end of the cable with care. Do not crush the cable at the cable glands or safety supports;*
- *always observe the positions of the colours corresponding to the start and end of the connections;*
- *once having completed the wiring, visually and physically check that the cables are in good condition and correctly positioned;*
- *install the cables and the unit in such as way as to minimise the possibility of accidental contact with other power cables or potentially dangerous cables, such as the cables for the lighting system;*
- *do not lay the 12 volt power cables and communication cables near power devices, lights, antennae, transformers or hot water or steam pipes;*
- *never position the communication cables in any conduits, pipes, junction boxes or other containers together with the power cables or the lighting system cables;*
- *always ensure there is adequate separation between the communication cables and all other electrical cables;*
- *keep the communication cables, and the units themselves, at least 2 metres away from appliances with significant inductive loads (distribution panels, motors, generators forlighting systems).*

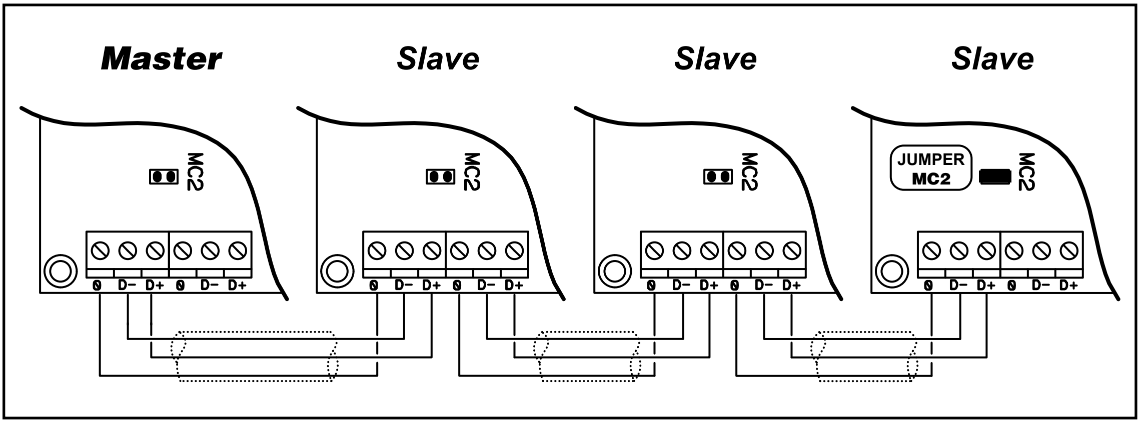


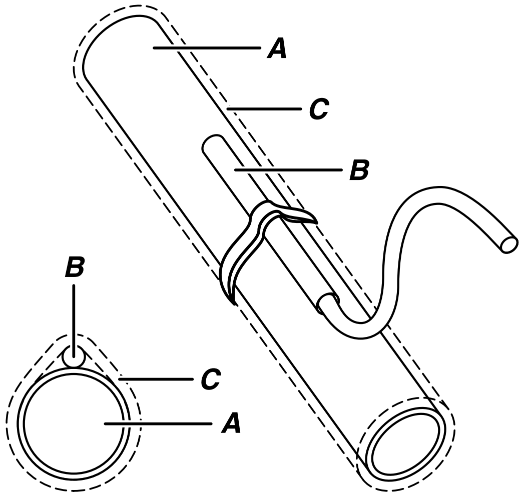
When performing the serial connection between the appliances, follow the connection symbols:

- *terminal "**D-**" with terminal "**D-**"*
- *terminal "**D+**" with terminal "**D+**"*
- *terminal "**0**": connect the shield of the serial cable.*

NEVER REVERSE THE CONNECTIONS.

Example of electrical connection



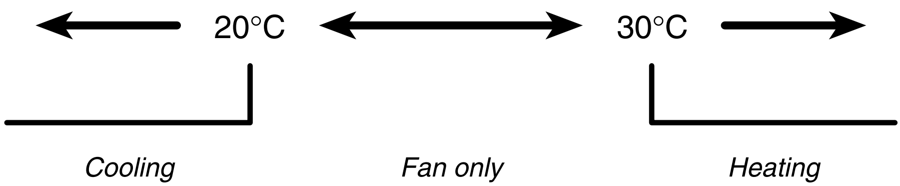


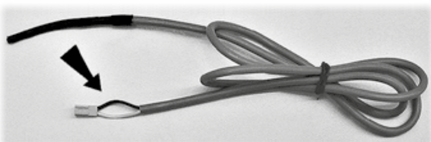
Change Over probe T2

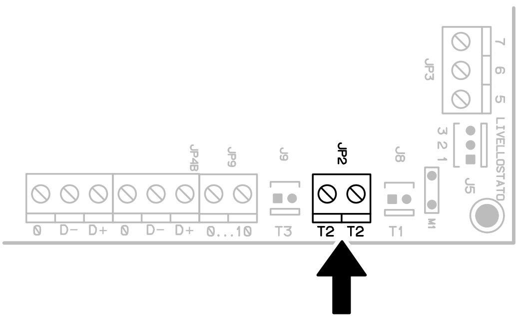
Only on the fan coil units designed for two-pipe systems, the heating/cooling changeover can be performed automatically by installing, on the water pipe supplying the coil, the Change Over probe T2 (optional). The probe should be installed before the three-way valve (not to be used with 2 way valve).
Based on the temperature measured by the probe, the appliance will switch to heating or cooling operation. If using probe T2 in installations with Master and Slave units, probe T2 must be fitted on all the appliances.

A = *Water pipe*
B = *Probe*
C = *Anti-condensation insulation*

Operating logic with probe T2







Probe T2

TYPE: NTC 10K Ohm
(25°C = 10000 Ohm)

Remove the connector and connect the two wires to terminals 0 – T2 on the board.

LEGEND

M = *Fan*
MB = *Infra-red electronic board*
AT = *Autotransformer*
C1 = *Capacitor*
EH = *Electrical heater*
E = *Hot and cold water valve (2-pipe system)*

E1 = *Hot water valve (4-pipe system)*

E2 = *Cold water valve (4-pipe system)*

T1 = *Air probe*
T2 = *CHANGE-OVER*
T3 = *Low temperature cut-out thermostat*

CONNECTIONS:

GNYE = *Yellow/Green*
RD = *Red = Low*
OG = *Orange = Medium*
BK = *Black = High*
BN = *Brown*
BU = *Dark blue*
WH = *White*

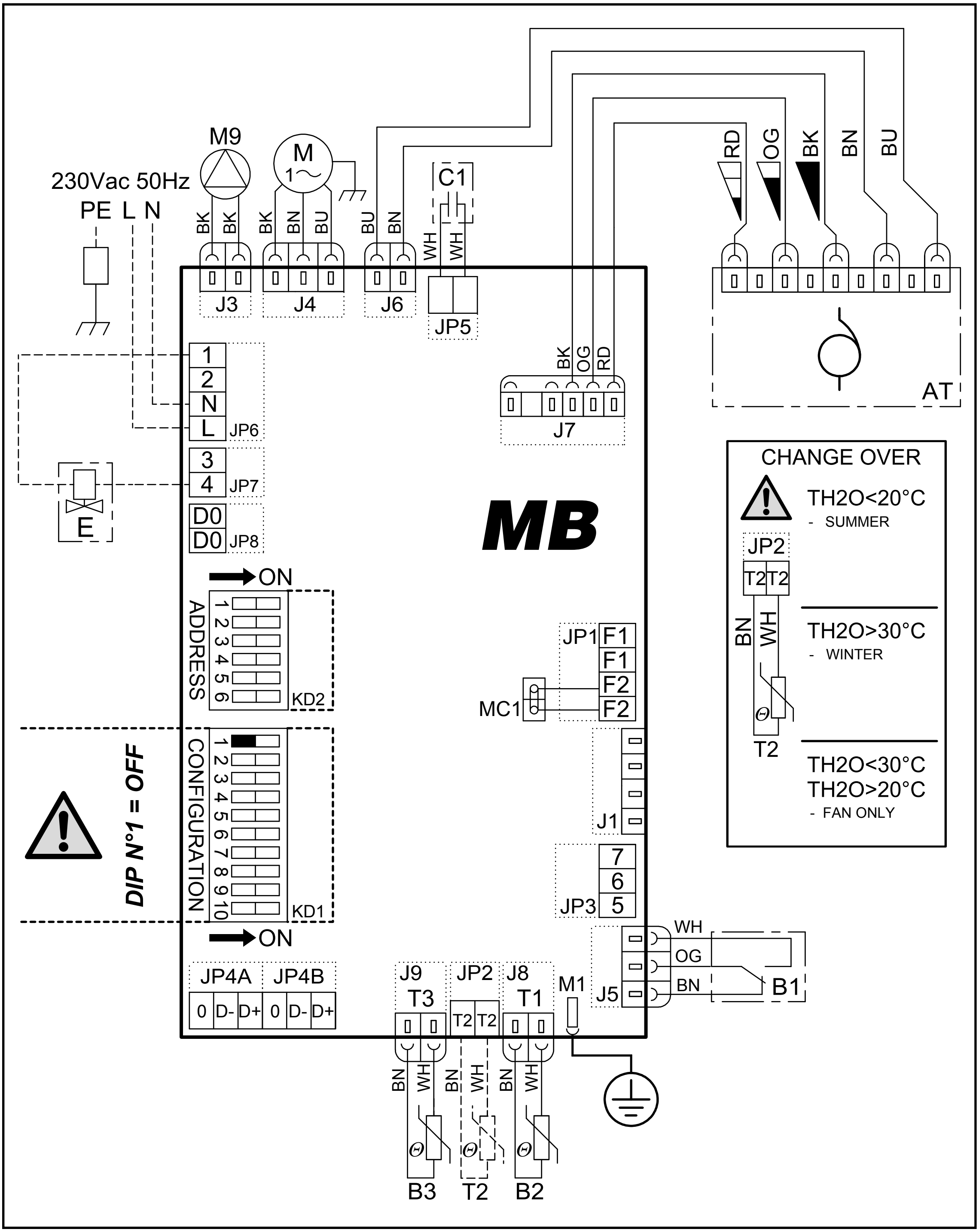
CONNECTION DIAGRAMS

1) *Connection diagram <u>of a 2-pipe system</u>*

2) *Connection diagram <u>of a 4-pipe system</u>*

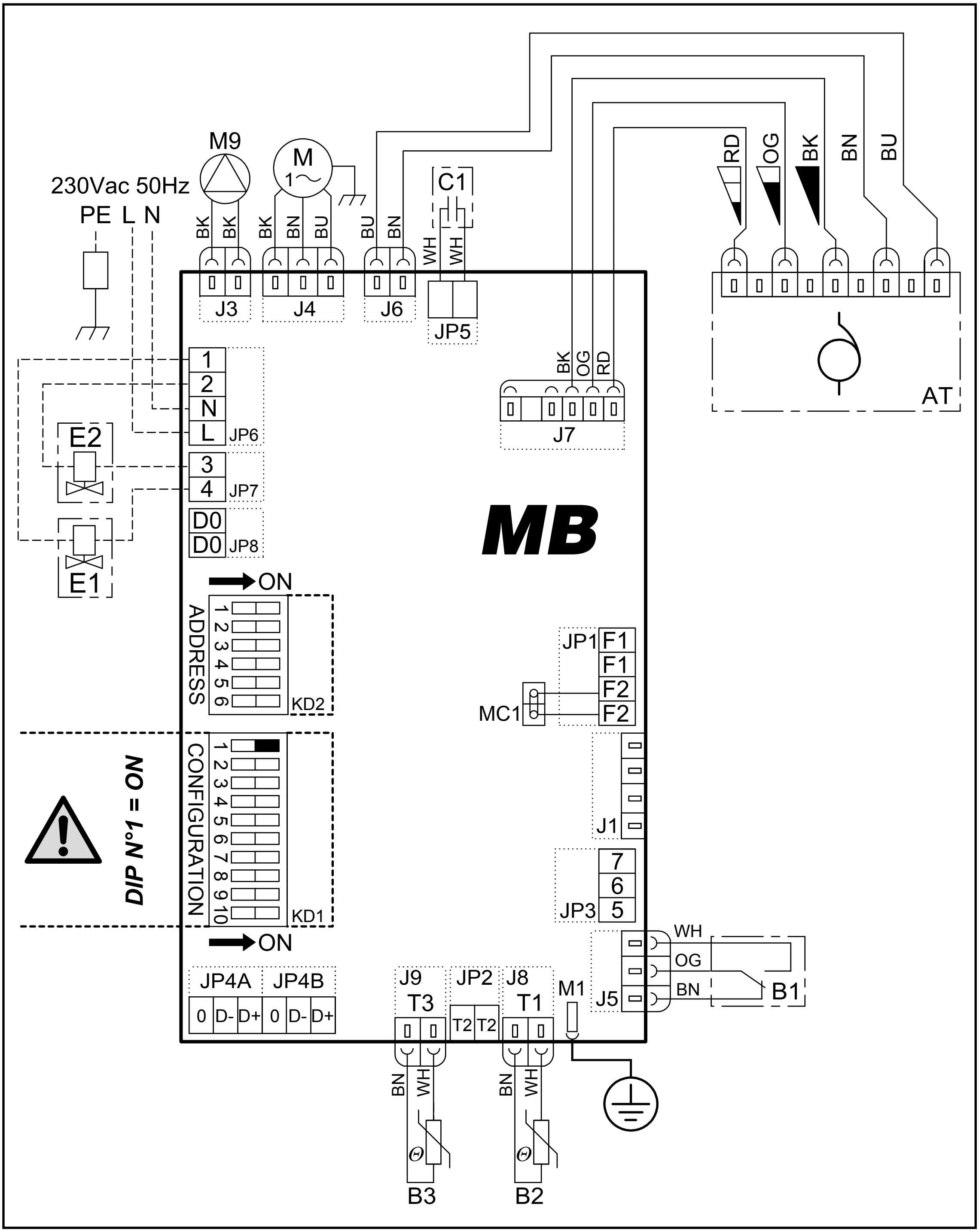
3) *Connection diagram <u>with electric resistance coil</u>*

2 pipe units

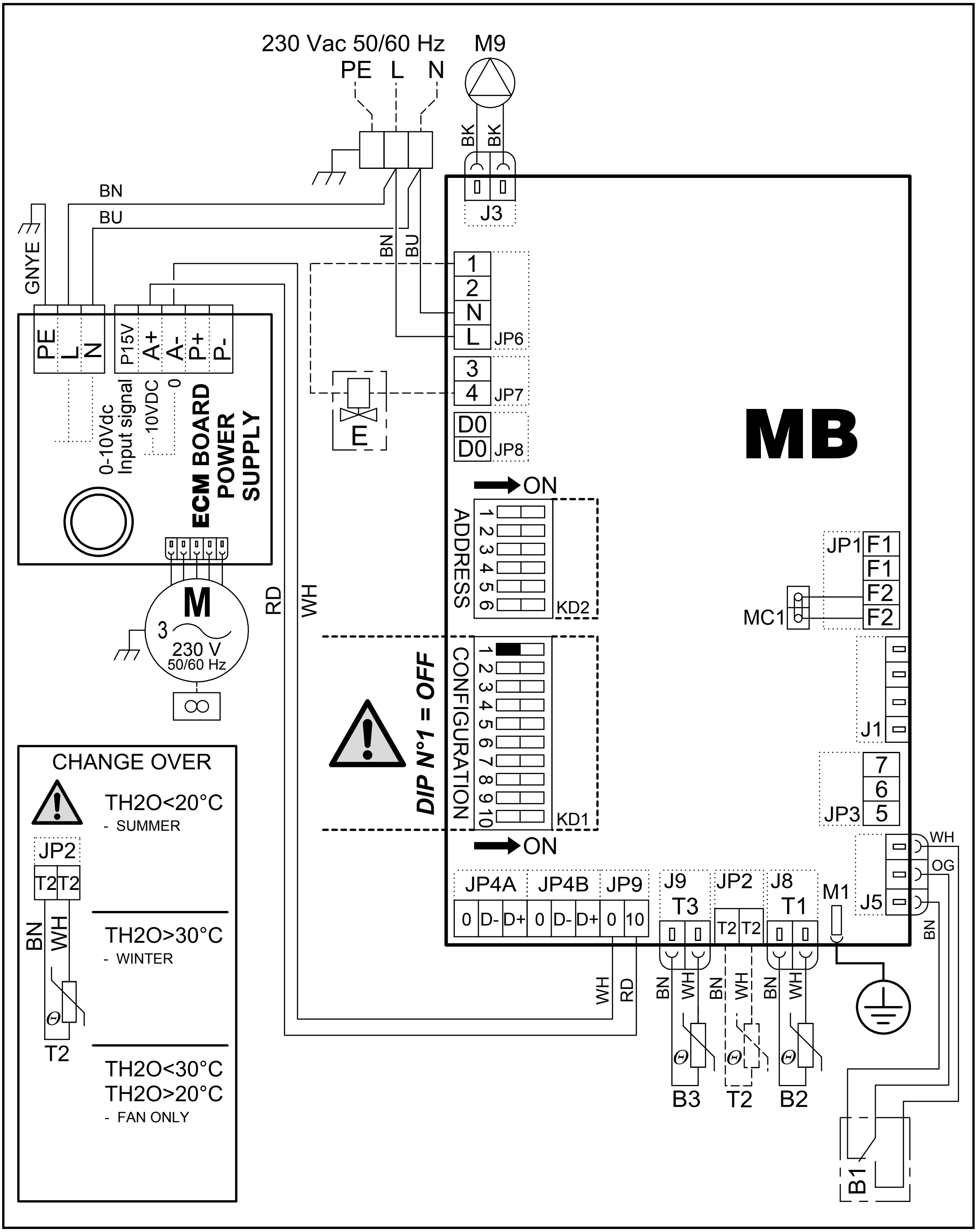


230Vac 50Hz
PE L N
M9
M
1~
BK BK
BK BN BU
BU BN
WH WH
C1
J3
J4
J6
JP5
RD OG BK BN BU
AT
BK OG RD
J7
1
2
N
L
JP6
3
4
JP7
E
D0
D0
JP8
MB
ON
ADDRESS
1 2 3 4 5 6
KD2
DIP N°1 = OFF
CONFIGURATION
1 2 3 4 5 6 7 8 9 10
KD1
ON
JP1 F1 F1 F2 F2
MC1
J1
7
6
JP3 5
CHANGE OVER
TH2O<20°C
- SUMMER
JP2
T2 T2
BN WH
T2
TH2O>30°C
- WINTER
TH2O<30°C
TH2O>20°C
- FAN ONLY
WH
OG
BN
J5
B1
M1
JP4A JP4B
0 D- D+ 0 D- D+
J9 T3
JP2 T2 T2
J8 T1
BN WH BN WH BN WH
B3 T2 B2

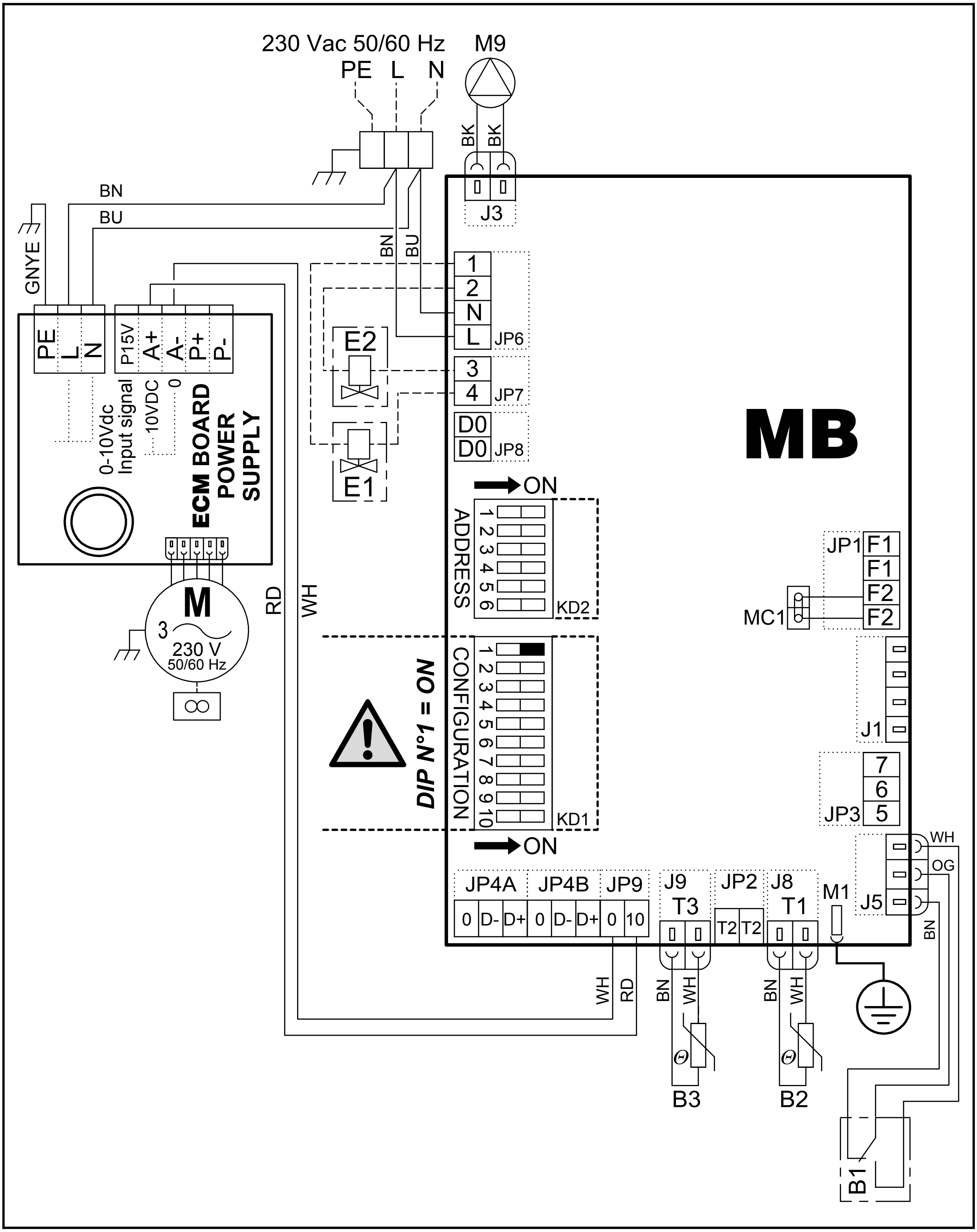
4 pipe unit


230Vac 50Hz
PE L N
M9
M
1~
C1
RD OG BK BN BU
BK BK BK BN BU BU BN WH WH
J3 J4 J6 JP5
AT
BK OG RD
J7
1 2 N L JP6
3 4 JP7
D0 D0 JP8
E2
E1
MB
ON
ADDRESS
1 2 3 4 5 6
KD2
JP1 F1 F1 F2 F2
MC1
J1
CONFIGURATION
1 2 3 4 5 6 7 8 9 10
KD1
DIP N°1 = ON
7 6 5 JP3
ON
WH OG BN
J5
B1
JP4A JP4B
0 D- D+ 0 D- D+
J9 T3 JP2 T2 T2 J8 T1 M1
BN WH BN WH
B3 B2

2 pipe units


230 Vac 50/60 Hz
PE L N
M9
BK BK
J3
BN
BU
GNYE
BN BU
1
2
N
L
JP6
3
4
JP7
D0
D0
JP8
E
MB
PE L N
P15V A+ A- P+ P-
0-10Vdc Input signal
10VDC
0
ECM BOARD POWER SUPPLY
M
3
230 V
50/60 Hz
RD
WH
ON
ADDRESS
1 2 3 4 5 6
KD2
JP1
F1
F1
F2
F2
MC1
DIP N°1 = OFF
CONFIGURATION
1 2 3 4 5 6 7 8 9 10
KD1
J1
7
6
5
JP3
ON
CHANGE OVER
TH2O<20°C
- SUMMER
JP2
T2 T2
BN WH
T2
TH2O>30°C
- WINTER
TH2O<30°C
TH2O>20°C
- FAN ONLY
JP4A
JP4B
JP9
0 D- D+ 0 D- D+ 0 10
J9
T3
JP2
T2 T2
J8
T1
M1
J5
WH
OG
BN
WH RD
BN WH
BN WH
BN WH
B3
T2
B2
B1

4 pipe units


230 Vac 50/60 Hz
PE L N
M9
BK
BK
J3
BN
BU
GNYE
BN
BU
1
2
N
L
JP6
E2
3
4
JP7
D0
D0
JP8
E1
PE
L
N
P15V
A+
A-
P+
P-
0-10Vdc
Input signal
10VDC
0
ECM BOARD
POWER
SUPPLY
MB
ON
ADDRESS
1 2 3 4 5 6
KD2
JP1
F1
F1
F2
F2
MC1
M
3
230 V
50/60 Hz
RD
WH
DIP N°1 = ON
CONFIGURATION
1 2 3 4 5 6 7 8 9 10
KD1
J1
7
6
JP3
5
ON
WH
OG
J5
BN
JP4A
JP4B
JP9
0 D- D+ 0 D- D+ 0 10
J9
T3
JP2
T2 T2
J8
T1
M1
WH
RD
BN
WH
BN
WH
B3
B2
B1

OPERATING LOGIC WITH ELECTRICAL HEATER

— Accessory —

The fans may be supplied with electric resistance coil already mounted and wired at the factory. The resistance coil is equipped with safety thermostat intended to prevent device overheating.
*The **MB** card is able to manage the operation of the resistance coil according to different modes reflecting all different plant situations:*

L1 *The resistance coil is managed as unique heating element. It is equivalent to a 4-pipe system and the card operates both the cold water valve and the heating resistance coi.*

DIP Setting
DIP 1 ON
DIP 6 ON
DIP 7 OFF

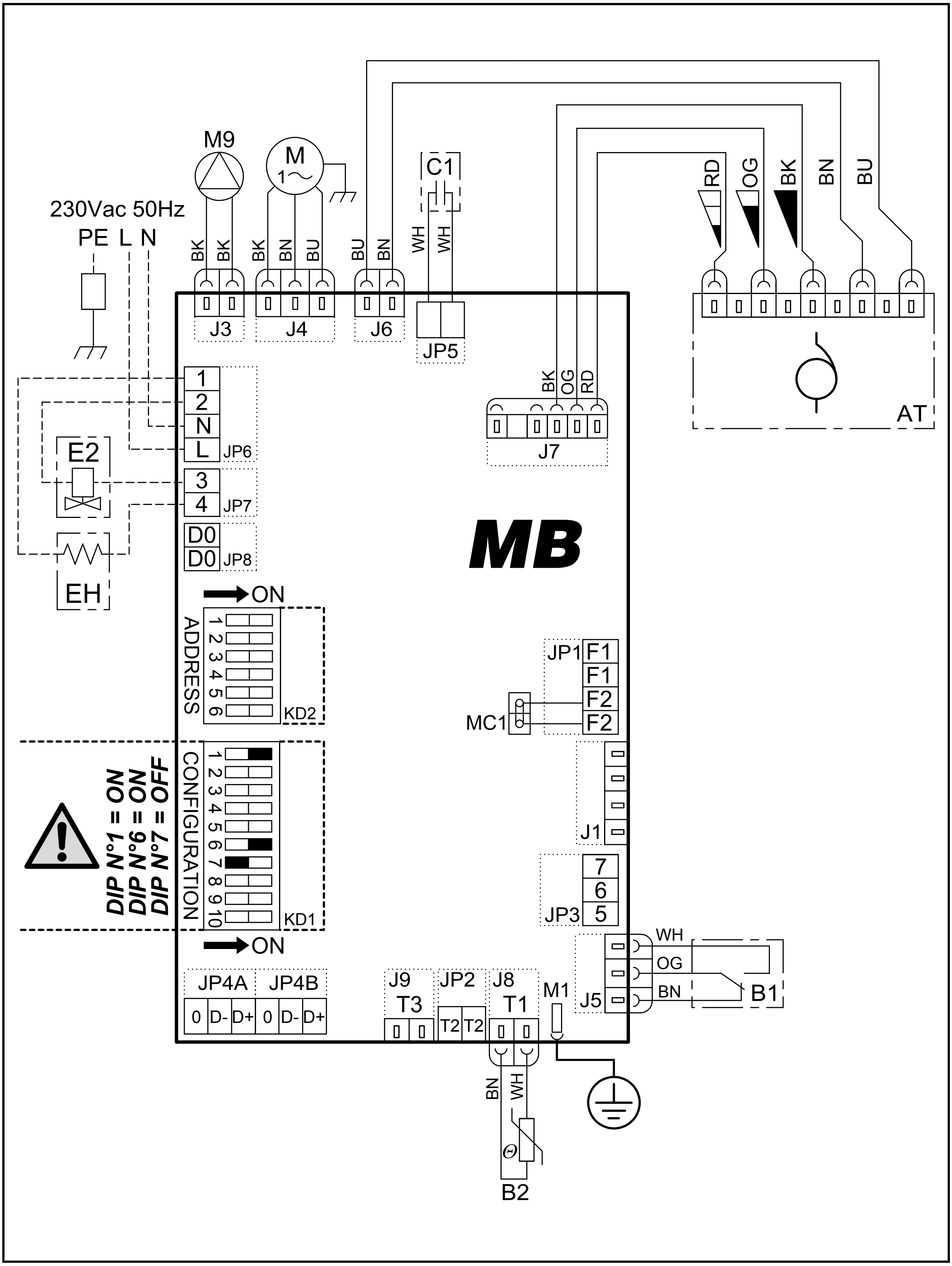
L3 *The resistance coil is managed as a heating element when it is detected that the temperature circulating in the battery (2-pipe system) is not high enough to ensure the heating function. The controller uses the T2 sensor, to be fixed on the water piping, and when the heating mode is on it activates the water valve if the temperature detected is higher than 34°C or it activates the resistance coil if the temperature detected is lower than 30°C.*

DIP Setting
DIP 1 OFF
DIP 6 ON
DIP 7 ON
and T2 connected

For the correct operation of the T2 sensor it is not possible to use 2-way valves that would prevent the circulation of the hot fluid.

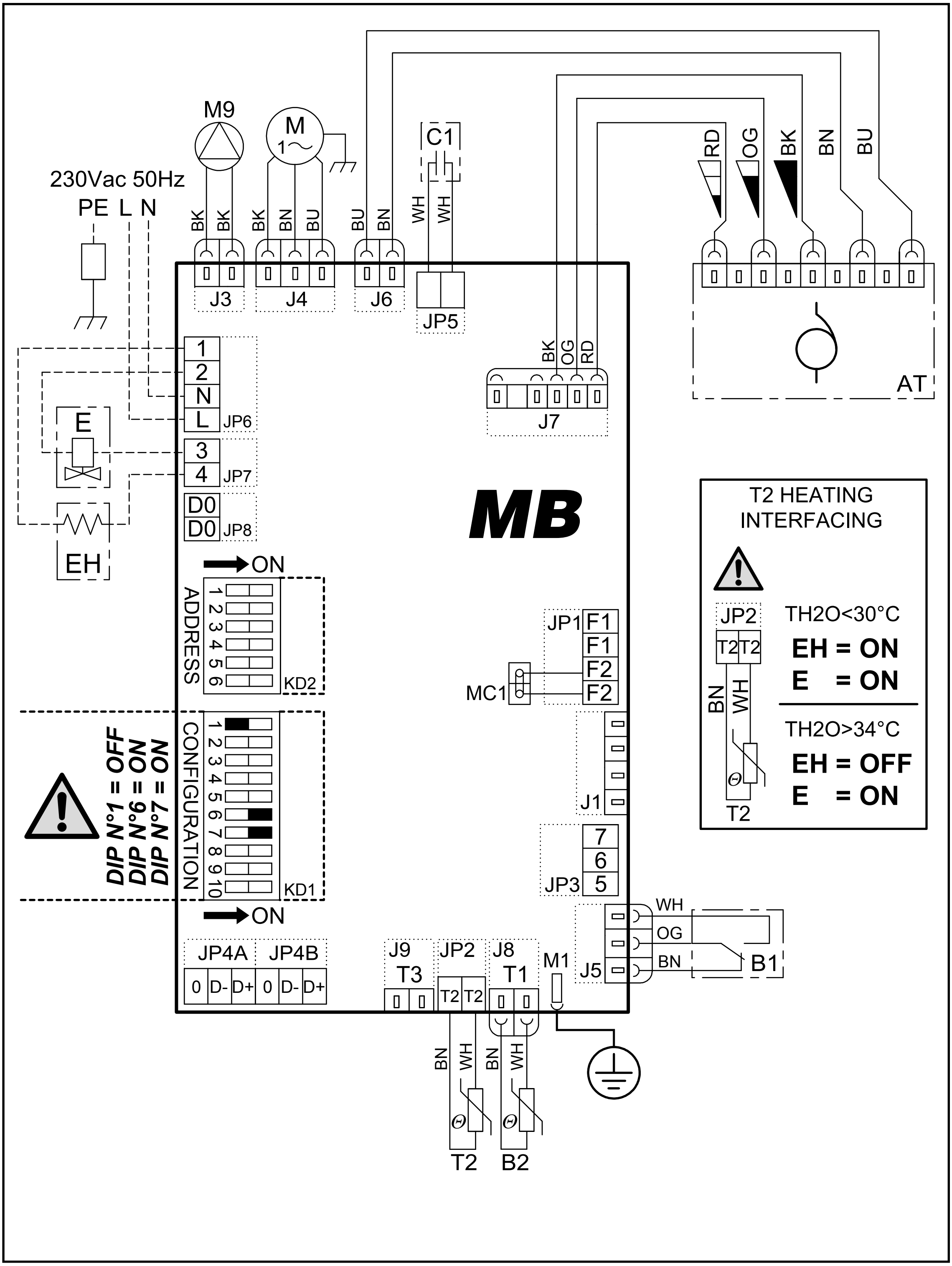
L1

4 pipe units: ***operation with electric resistance coil as main heating element.***
N.B.: you can not mount the T3 probe on Cassette with electric heater.

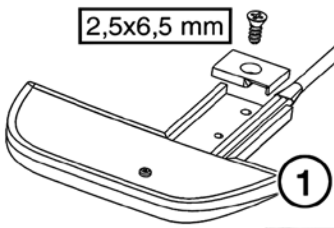

M9
M
1~
C1
230Vac 50Hz
PE L N
BK BK
BK BN BU
BU BN
WH WH
RD OG BK BN BU
J3
J4
J6
JP5
AT
BK OG RD
J7
1
2
N
L
JP6
E2
3
4
JP7
D0
D0
JP8
EH
MB
ON
ADDRESS
1 2 3 4 5 6
KD2
JP1
F1
F1
F2
F2
MC1
DIP N°1 = ON
DIP N°6 = ON
DIP N°7 = OFF
CONFIGURATION
1 2 3 4 5 6 7 8 9 10
KD1
ON
J1
7
6
5
JP3
WH
OG
BN
J5
B1
JP4A JP4B
0 D- D+ 0 D- D+
J9
T3
JP2
T2 T2
J8
T1
M1
BN WH
B2

L3

2 pipe units: ***operation with electric resistance coil as integration element.***
Activation of the resistance coil
depending on water temperature - detection through T2 probe.
N.B.: you can not mount
the T3 probe on Cassette with electric heater.



M9
M
1~
C1
230Vac 50Hz
PE L N
BK BK BK BN BU BU BN WH WH
RD OG BK BN BU
J3
J4
J6
JP5
1
2
N
L
JP6
3
4
JP7
D0
D0
JP8
E
EH
BK OG RD
J7
AT
MB
T2 HEATING INTERFACING
JP2
T2 T2
BN WH
T2
TH2O<30°C
EH = ON
E = ON
TH2O>34°C
EH = OFF
E = ON
ON
ADDRESS
1 2 3 4 5 6
KD2
JP1
F1
F1
F2
F2
MC1
J1
DIP N°1 = OFF
DIP N°6 = ON
DIP N°7 = ON
CONFIGURATION
1 2 3 4 5 6 7 8 9 10
KD1
ON
7
6
5
JP3
WH
OG
BN
J5
B1
JP4A
JP4B
0 D- D+ 0 D- D+
J9
T3
JP2
T2 T2
J8
T1
M1
BN WH BN WH
T2
B2

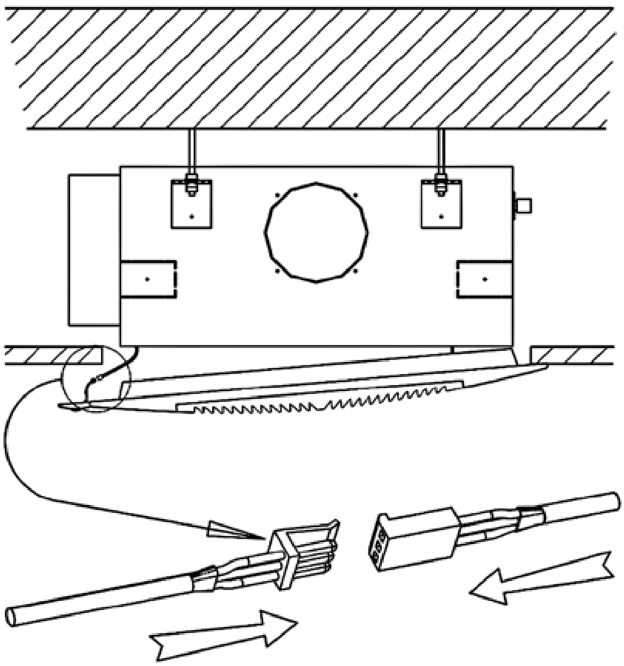


RECEIVER MOUNTING ON THE DIFFUSER

*Fasten the receiver onto the support as shown in **Figure "1"**.*

No liability is accepted for damage caused by modifications to or tampering with the appliance.

Receiver for metal diffuser (not included accessories).



DIFFUSER MOUNTING ON THE CASSETTE

After having installed the Cassette appliance on the ceiling, proceed as described below to mount the support:

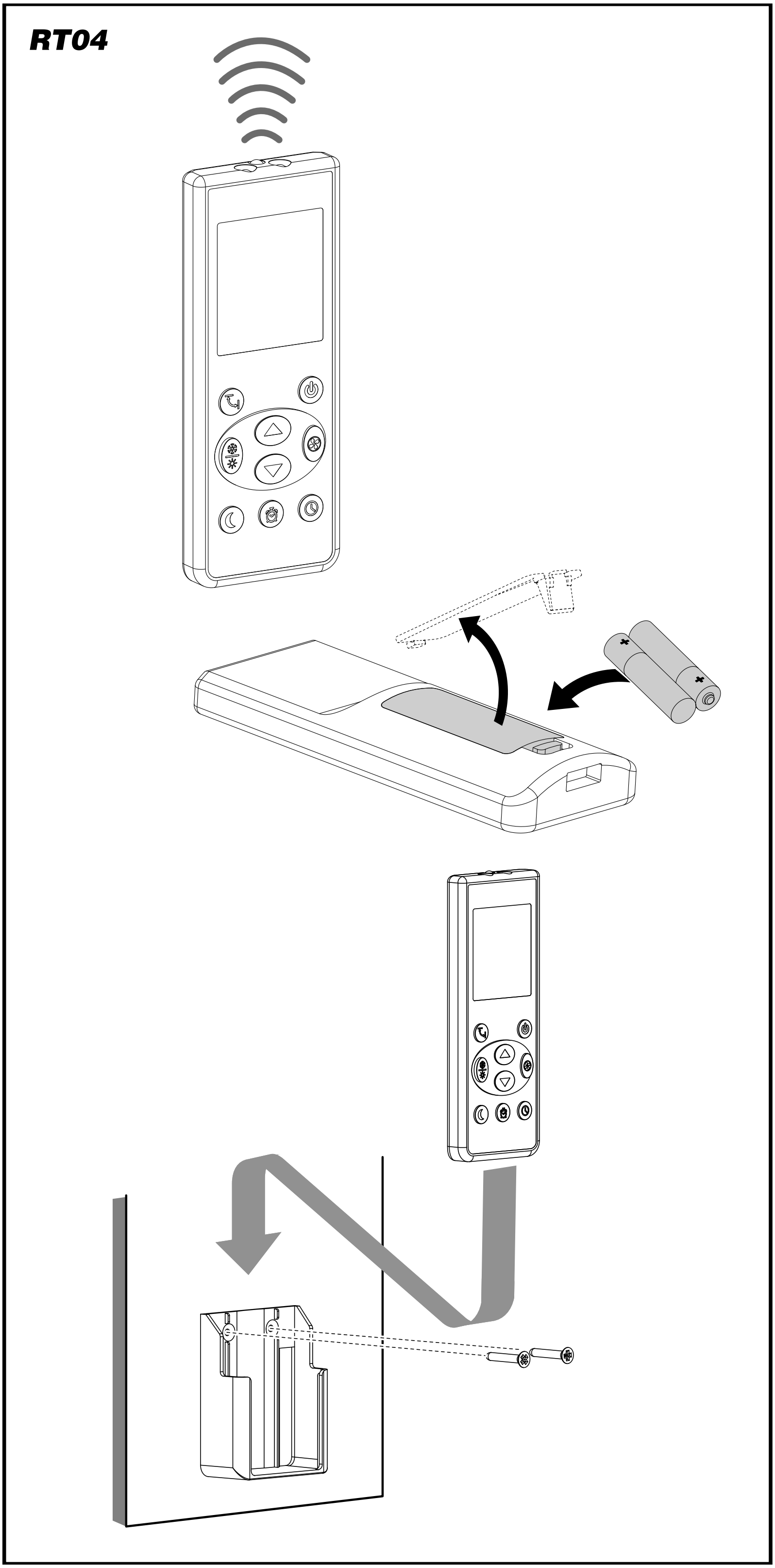
1 - *Rest the support (the side opposite the receiver) on the Cassette.*

2 - *Temporarily fasten the support using the spring.*

3 - *Connect the terminal on the receiver to the terminal on the cable running to the board.*

4 - *Rest the entire support on the Cassette and fasten it temporarily using the second spring.*

5 - *Fasten the support to the Cassette using the special screws (see the Cassette installation and maintenance manual).*



RT04
REMOTE CONTROL

GENERAL NOTES

For correct operation, aim the remote control with the transmitter head towards the receiver on the unit.
If there is something between the unit and the remote control that blocks the signal, the unit will not start up.
Do not drop the remote control or get it wet.
The maximum transmission distance is approximately 5 m.

INSERTION OF THE BATTERIES

Before using the remote control, insert the batteries (not supplied).
*The remote control requires 2 new **AAA.LR03** (alkaline) batteries.*
When it is necessary to change the batteries, choose batteries of the same type and replace both old batteries at the same time.

DISPOSE OF THE BATTERIES PROPERLY, USING THE PROPER WASTE CONTAINERS.

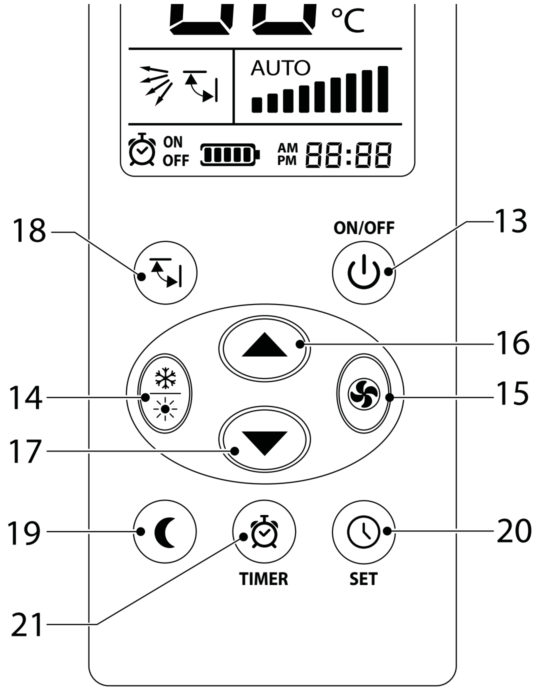
If you plan not to use the system for a long time, remove the batteries.
The batteries last about 1 year. The batteries supplied are for the initial use of the system. Their service life may shorten depending on the date of manufacture of the air unit.

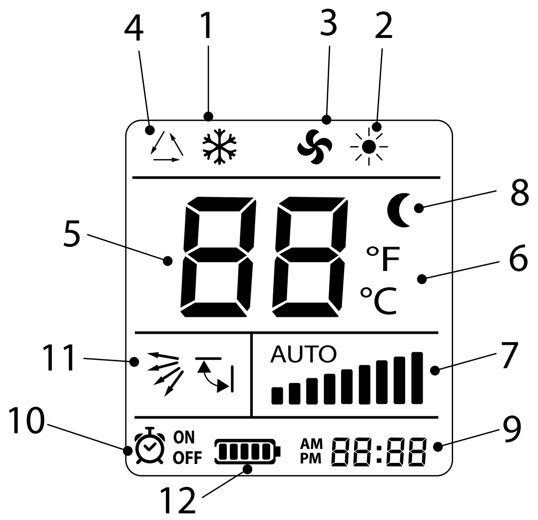
REMOTE CONTROL WALL SUPPORT FIXING

The remote control to be fixed to the wall is supplied with a suitable support.

- *Choose a place not exposed to direct sunlight.*
- *Fasten the support to a wall, pillar or similar site with the screws (not supplied).*
- *Insert the remote control into the support.*

REMOTE CONTROL





(*) = Funzione utilizzabile solo per unità dotate di gestione FLAP

Function to be used only for units equipped with FLAP management

Buttons

13. On/off

14. Operating mode selector

15. Fan speed setting

16. Set temperature setting - increase

17. Set temperature setting - decrease

18. "FLAP" air flow direction control (*)

19. “SLEEPING / ENERGY SAVING” preset

20. Clock and timer setting

21. "TIMER" activation/ deactivation

Display

1. Cooling mode

2. Heating mode

3. Only fan mode

4. Automatic mode

5. Set temperature setting

6. Temperature unit of measure

7. Fan speed

8. Sleeping / energy saving

9. Clock

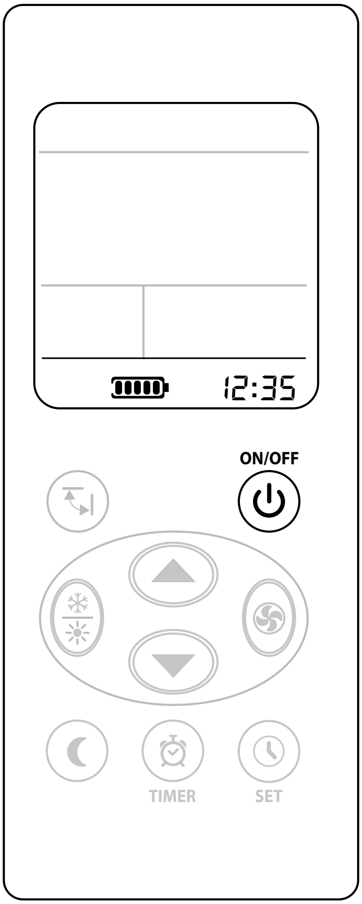
10. Active timer signalization icon

11. Air outlet flap (*)

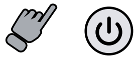
12. Battery status

POINT THE REMOTE CONTROLLER AT THE INDOOR UNIT WHEN PRESSING THE BUTTONS.

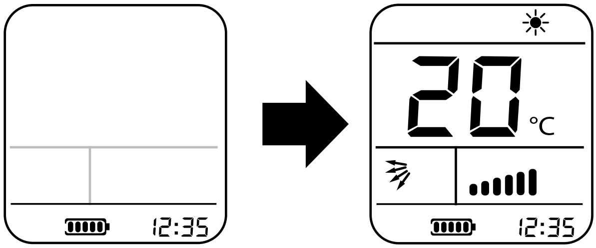
ON-OFF



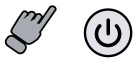
1



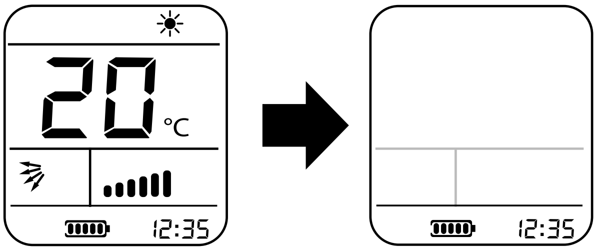
ON State



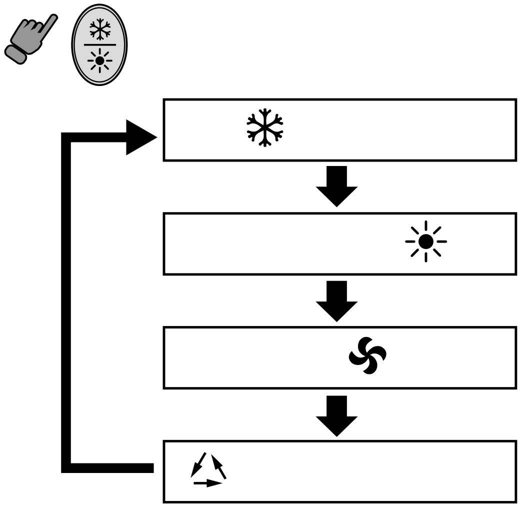
2

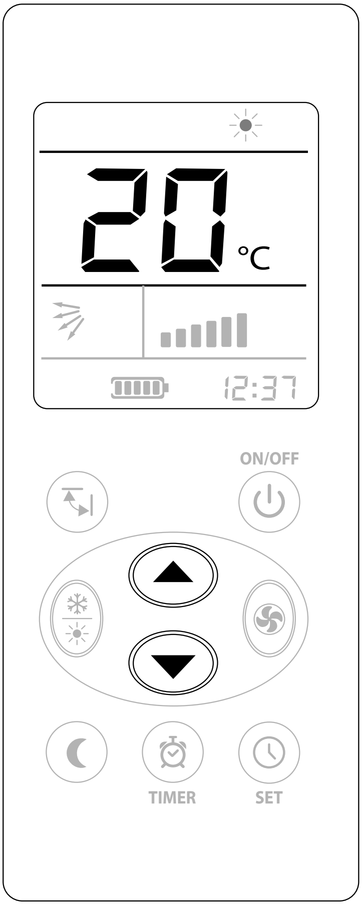


OFF State

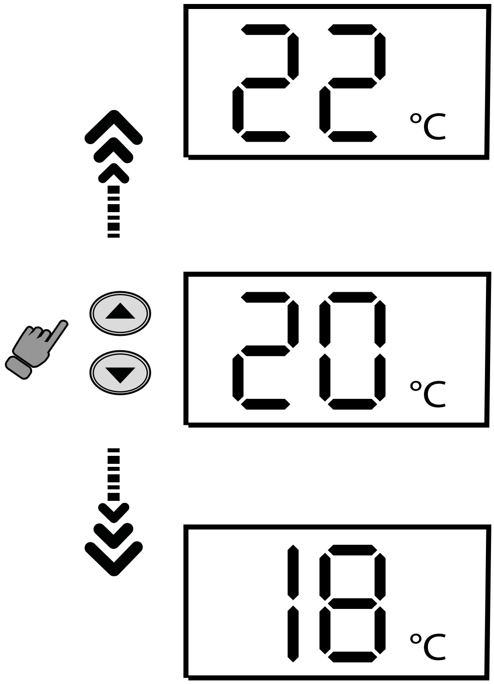


Each pressing of the button advances the mode setting in sequence.





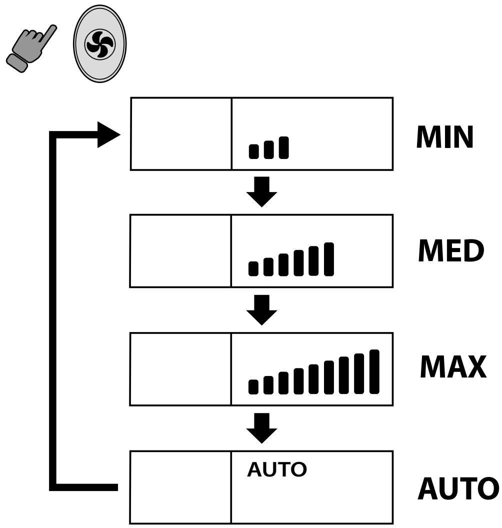
Press (▲) to raise the temperature
and press (▼) to lower the temperature.



NOTE:

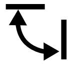
Temperature setting range: 10 – 30° C.

Each pressing of the button advances the FAN setting in sequence.

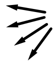


AIR FLOW DIRECTION CONTROL

Function to be used only for units equipped with FLAP management.



- *Motion activation FLAP ("SWING")*

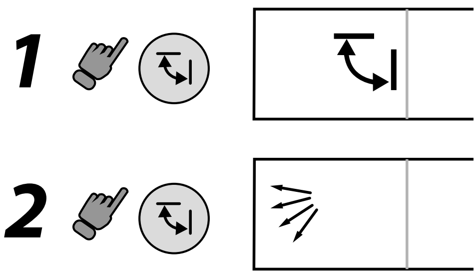


- *FLAP movement block*

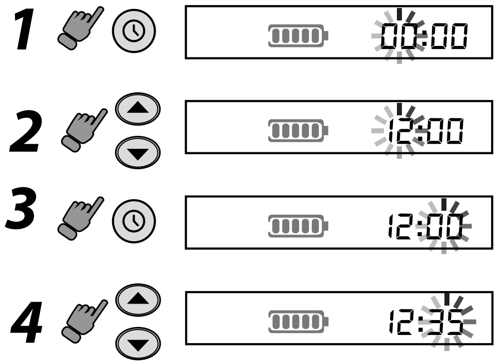
- *The wall-mounted fan coil's flap oscillates when the **SWING** mode is activated.*
- *If wanting to stop the flap in a certain position choose to deactivate the **SWING.***

ATTENTION!
Do not attempt to manually stop the flaps during the SWING function.

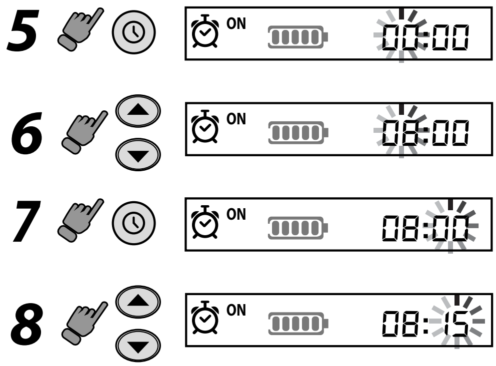
We recommend using the remote control for adjusting the air flow direction.



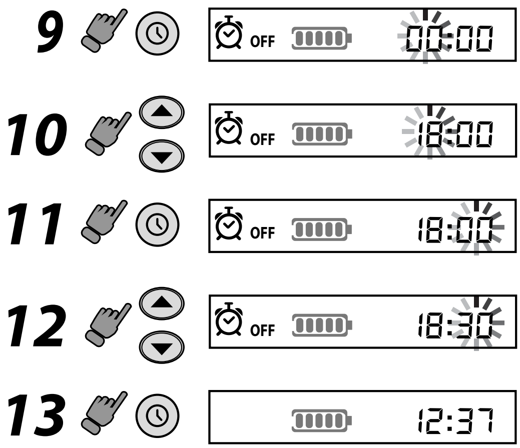
CLOCK



TIMER ON



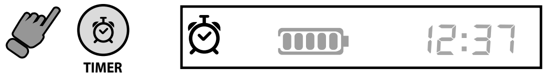
TIMER OFF



TIMER ACTIVATION

TIMER NOT ACTIVE

TIMER ACTIVE



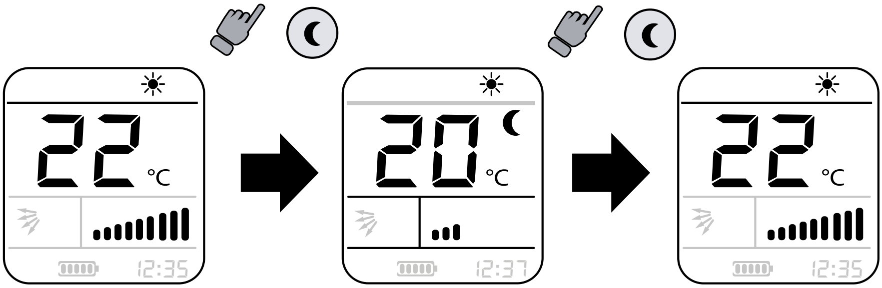
SLEEPING/ ENERGY SAVING

Press the button to select a preset:

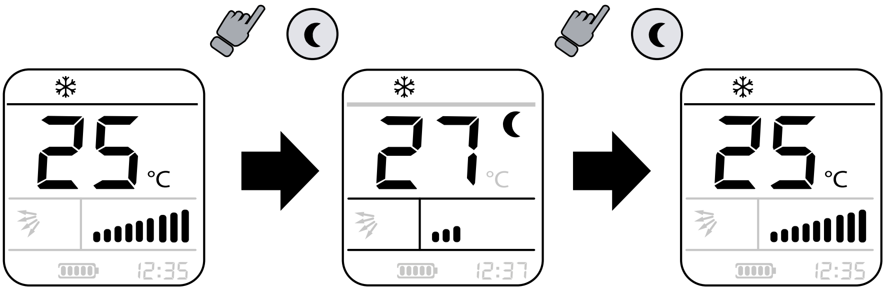
- *minimum ventilation speed;*
- *if in heating mode, the temperature goes down of 2° C compared to the current set configuration;*
- *if in cooling mode, the temperature goes up of 2° C compared to the current set configuration.*

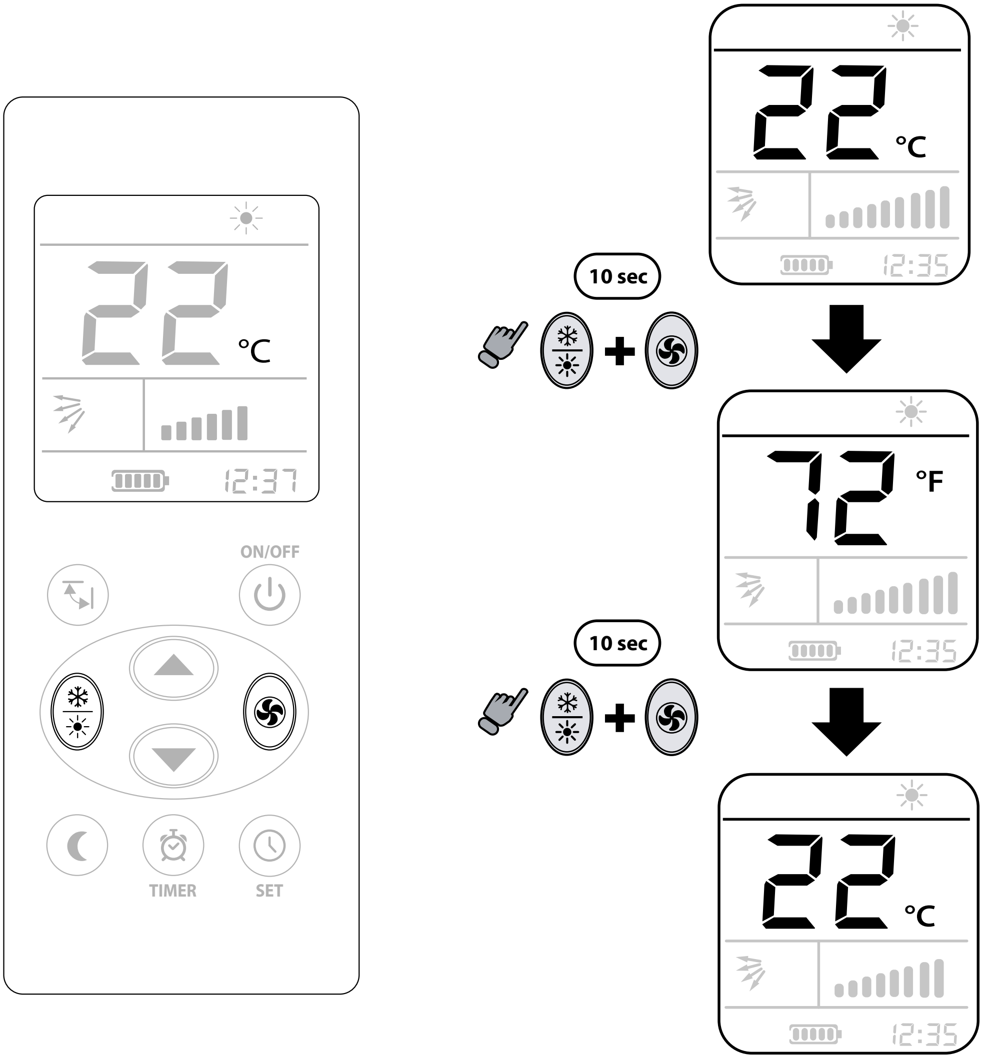
Function activable in the COOLING mode and in the HEATING mode.

HEATING



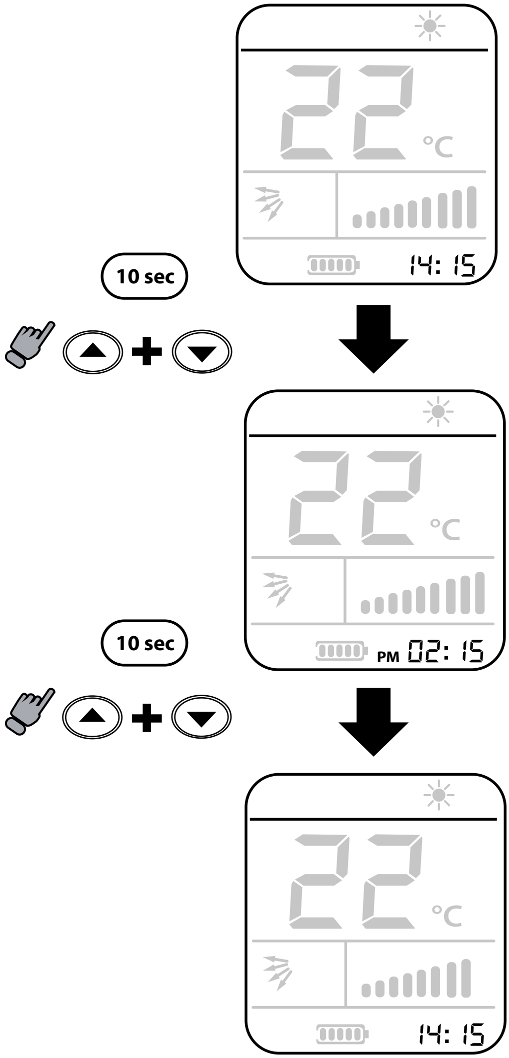
COOLING

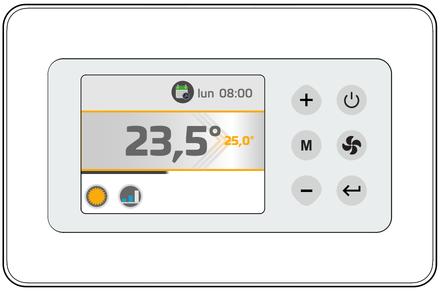


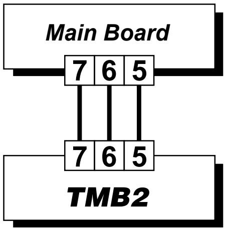


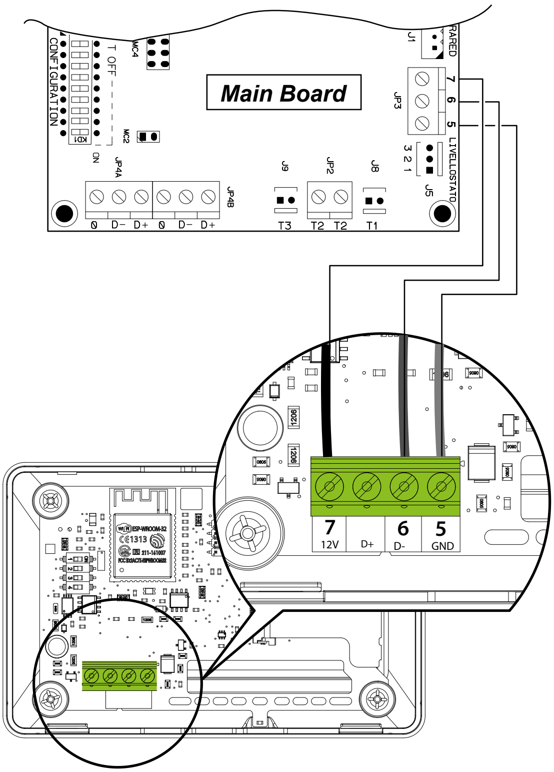
22 °C
12:37
ON/OFF
TIMER
SET
10 sec
22 °C
12:35
72 °F
12:35
10 sec
22 °C
12:35


22
°C
12:37
ON/OFF
TIMER
SET


22
°C
14: 15
10 sec
22
°C
PM 02: 15
10 sec
22
°C
14: 15







DIP2=OFF
DIP3=ON

TMB2 WALL-MOUNTED CONTROLLER

CODE | **9066994E**
9066994ESW

GENERAL NOTES

CAREFULLY READ THE CONTROL MANUAL COD. 4050329 / 4050334 BEFORE STARTING UP THE INSTALLATION AND USING THE CONTROL

The **TMB2** is a wall-mounted control that can be connected to fan coils fitted with the MB electronic board.

For the pieces of information about the control features and the operating instructions, refer to the manual supplied with the TMB2 control.