RANGE

MODEL	CODE
CONNECT 1D LE	20083968
CONNECT 2D LE	20083969
CONNECT 3D LE	20083970

ACCESSORIES

Please refer to the Beretta price list and the product information sheet for the specific accessories.

ENGLISH

TABLE OF CONTENTS

Dear Customer
Thank you for having chosen the **CONNECT LE**, an innovative, modern product, of a high quality and able to ensure the utmost comfort reliably and safely; this is particularly the case if the **CONNECT LE** and the boiler to which it is connected are entrusted to the **Beretta** Technical Assistance Service, whose technicians have been specifically trained to carry out routine maintenance, in order to keep it at the highest level of efficiency, with lower operating costs and who can provide original spare parts if and when required.
This instruction manual contains important information and suggestions which must be observed in order for installation to be as simple as possible and for the best possible use to be made of the **CONNECT LE**.

Thank you once again
Riello S.p.A.

CONFORMITY

The **CONNECT LE** conforms to:
- Electromagnetic Compatibility (EMC) Directive 2004/108/EC
- Low Voltage Directive 2006/95/EC

CE

FOR THE USER

⛔ **INSTRUCTIONS FOR THE USER** this device does not require any adjustment or checks to be carried out by the user. Opening the front cover of the device is therefore strictly prohibited.

⚠ Regularly check the water pressure in the system and restore if necessary following indications provided in the instruction manual. If the pressure should fall frequently, request the intervention of a qualified technician to check the system.

In some parts of the manual, the following symbols are used:

⚠ = for actions which require particular precautions and adequate preparation

⛔ = for actions which MUST NOT be performed

This manual, Code 20085423 - Rev. 1 (06/2014) consists of 36 pages.

1 GENERAL

1.1 General instructions

⚠ On receiving the product, ensure that it is complete and integral and if it does not comply with the order made, contact the **Beretta** Agency who sold the appliance.

⚠ The appliance is to be installed by a qualified company which, on completing installation operations, will issue the owner 's declaration of conformity confirming installation in a workmanlike manner, i.e. in compliance with all National and Local regulations in force and the instructions provided by **Beretta** in the instruction manual supplied with the appliance.

⚠ It is recommended that the installer instruct the user on appliance operation and the basic safety regulations.

⚠ The appliance is only to be used for the purpose for which it was specifically intended, designed and manufactured by **Beretta**. The manufacturer does not accept any contractual or extra-contractual **Beretta** liability for damage caused to people, animals or property, due to incorrect installation, setting, or maintenance, or due to improper use.

⚠ In the event of a water leak, close the water supply and promptly alert the **Beretta** Technical Assistance or a professionally qualified technician.

⚠ Appliance maintenance is to be carried out at least once a year.

⚠ This manual is an integral part of the device and therefore should be carefully preserved and must ALWAYS accompany the product even in the event of its sale to another owner or user or transfer to another facility. In case of damage or loss, request another copy from the **Beretta** Technical Assistance for your Area.

1.2 Basic safety rules

Remember that the use of products which use fuel, electricity and water requires the observance of some basic safety rules such as:

⛔ Use of the appliance by children and unassisted disabled persons is prohibited.

⛔ It is forbidden to operate devices or electrical appliances such as switches or domestic appliances , etc. if you smell fuel or burning. Should this occur:
- ventilate the room by opening the doors and windows;
- close the fuel shut-off device;
- immediately call the **Beretta** Technical Assistance or a professionally qualified technician.

⛔ Do not touch the appliance when barefoot or with any wet parts of the body .

⛔ It is forbidden to carry out any technical intervention or clean the appliance before disconnecting it from the mains power supply by setting the power switch to "off ".

⛔ Any modifications to the safety and regulating devices without prior authorisation or instructions from the manufacturer are strictly forbidden.

⛔ Do not pull, disconnect, or twist the electrical cables coming from the appliance even if it is disconnected from the mains electricity supply.

⛔ Do not leave containers of flammable substances in the room where the appliance is installed .

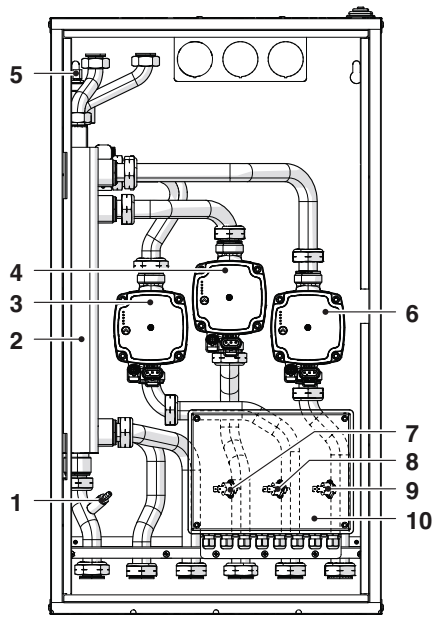
⛔ Keep all packaging materials out of the reach of children as this could be a potential source of danger. The packaging material is to be disposed of in accordance with applicable laws.

1.3 Description of the appliance

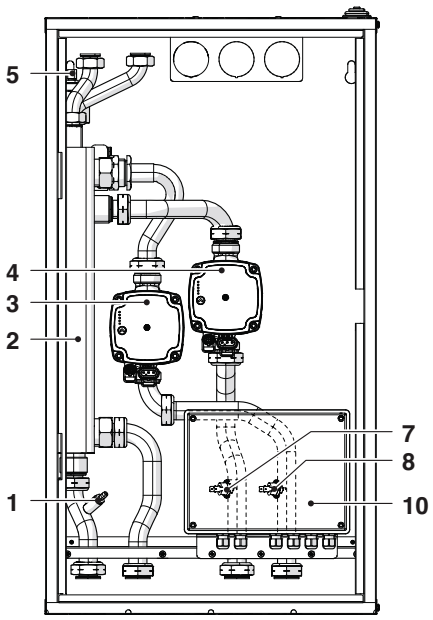
CONNECT LE is a water separator which can be used in conjunction with any boiler; it is able to separate the water in the heat generator circuit from the rest of the heating system by dividing it into one (**CONNECT 1D LE**), two (**CONNECT 2D LE**) or three zones (**CONNECT 3D LE**) which are at different temperatures. It includes a mixing bottle, an electronic board and one/two/three circulation units.
It can be housed inside a box (accessory) which can be built into the wall or it can be wall-mounted.
CONNECT 1D LE can be used as a water separator between the generator and the system (radiators, flooring or fanconvectors) when the system requires a flow rate greater than that provided by the generator itself.
CONNECT 2D LE is able to manage the delivery temperatures of 2 high temperature zones (radiators) or 2 low temperature zones (radiant panels/fanconvectors) separately.
CONNECT 3D LE is able to manage the delivery temperatures of 3 high temperature zones (radiators) or 3 low temperature zones (radiant panels/fanconvectors) separately.
The request for heat from the individual zones is via Family Remote Control - REC 08 remote controls (hereafter REC), ambient thermostats (TA) or chrono-thermostats (CT).

1.4 Structure

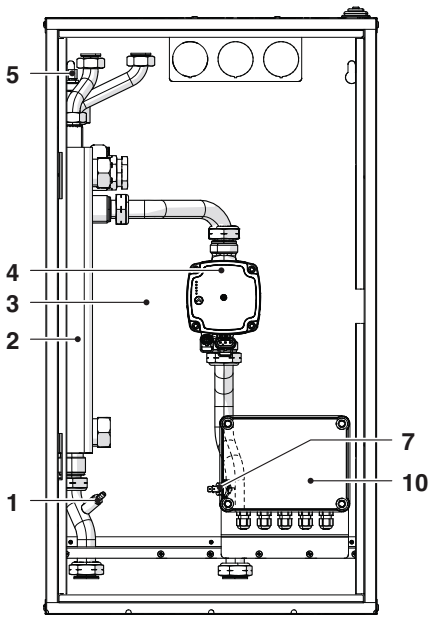
CONNECT 3D LE



CONNECT 2D LE



CONNECT 1D LE



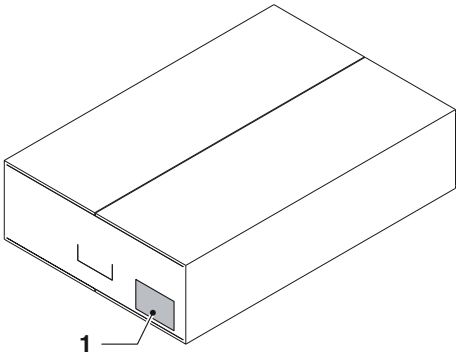
1 Drain cock
2 Mixing bottle
3 Circulation unit zone 1
4 Circulation unit zone 2
5 Mixing valve low temperature system 1
6 Circulation unit zone 3
7 Limit thermostat low temperature system 2
8 Limit thermostat low temperature system 1
9 Limit thermostat low temperature system 3
10 Electrical connection box

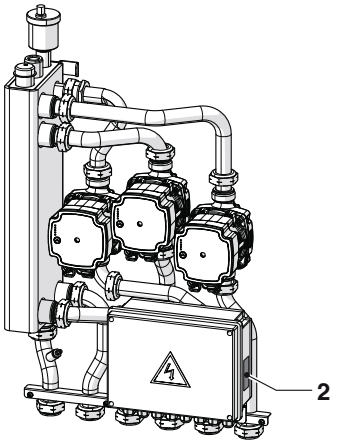
1.5 Identification

CONNECT LE can be identified by:

- **Packing label (1)**
- **Technical Data Plate (2)** with the technical data.

⚠ Tampering, removing, failure to display the Technical Data Plate or any other intervention which does not permit reliable identification of the product, makes any installation or maintenance intervention difficult.



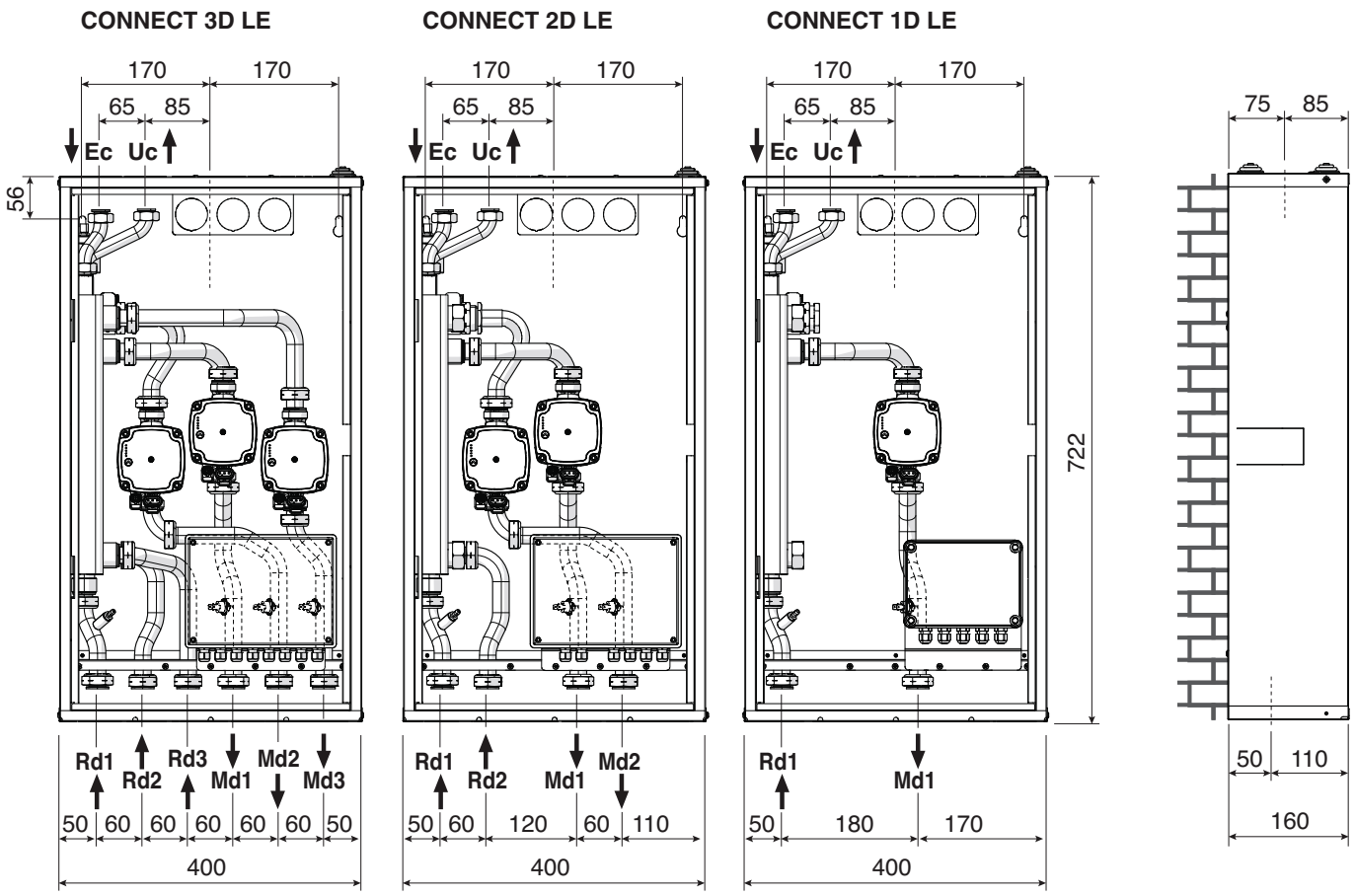


1.6 Technical data

DESCRIPTION	UM	CONNECT LE		
		3D	2D	1D
Electrical power supply	V~Hz	230(±10%)~50		
Maximum absorbed power	W	158	105	53
Power absorbed by each individual circulation unit - min/max	W	6 / 52		
Electrical power of each individual circulation unit - min/max	A	0,07 / 0,49		
Operating temperature	°C	20 ÷ 90		
Electrical protection level with wall mounted installation	-	IP10D		
Electrical protection level with “built-in” installation	-	IPX4D		
Maximum pressure	bar	3		
Ambient temperature required for installation	°C	greater than 4		

1.7 Plumbing connections

The characteristics of the plumbing connections are as follows:



Ec Boiler inlet (Ø 3/4”)
Uc Boiler outlet (Ø 3/4”)

Md1 Direct system delivery 1 (Ø 1”)
Md2 Direct system delivery 2 (Ø 1”)
Md3 Direct system delivery 3 (Ø 1”)
Rd1 Direct system return 1 (Ø 1”)
Rd2 Direct system return 2 (Ø 1”)
Rd3 Direct system return 3 (Ø 1”)

⚠ The maximum length of the plumbing connections between the boiler and the **CONNECT LE** must not exceed 15 m.

Before any of the connections are made, all the piping must be thoroughly flushed to remove any residue which could compromise the proper functioning of the **CONNECT LE**.

The plumbing connections to the boiler and the system must be carried out rationally, as indicated in the figure.

Direct connections can be made using the female couplings on the **CONNECT LE** delivery and return pipes or cocks (not supplied) can be fitted on the system side. These cocks are very useful when maintenance is carried out, as they allow just the **CONNECT LE** to be drained without having to drain the entire system.

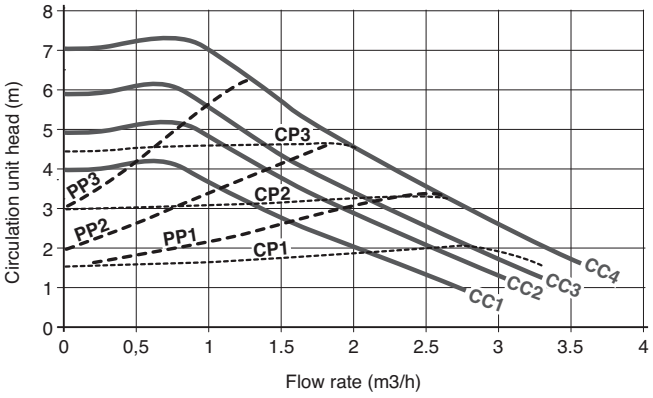
⚠ Check that the expansion vessel on the boiler has sufficient capacity for the size of the system.

⚠ Ensure that the pipe connection holes from the **CONNECT LE** to the boiler are sealed.

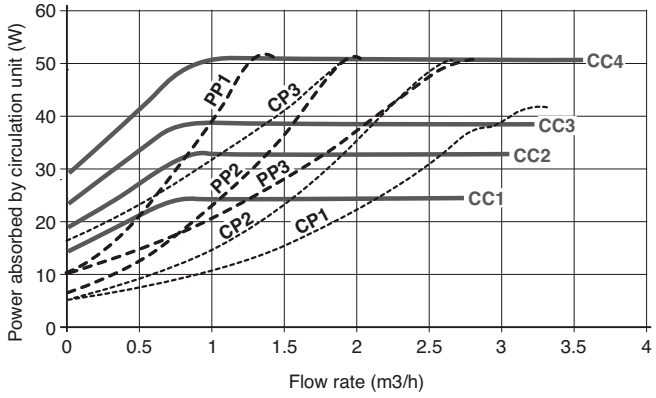
1.8 Circulation units

CONNECT LE is equipped with high efficiency electronically controlled circulation units. The performance data of these units to be used to size the system is shown in the graph.

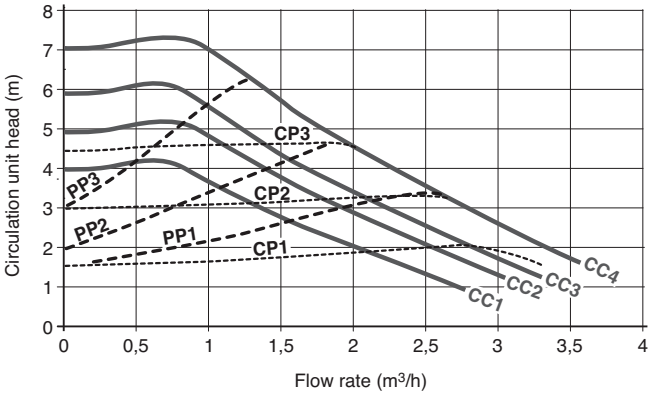
Available head of the circulation unit



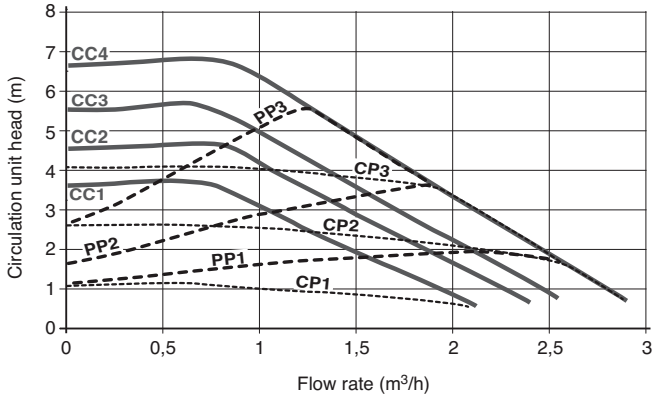
Power absorbed by the circulation unit



Residual head available to the system for CONNECT 1D LE



Residual head available to the system for CONNECT 3D LE / CONNECT 2D LE



PP1 LOW proportional head curve
PP2 AVERAGE proportional head curve
PP3 HIGH proportional head curve

CP1 LOW constant head curve
CP2 AVERAGE constant head curve
CP3 HIGH constant head curve

CC1 Curve 1 = 4 metres
CC2 Curve 2 = 5 metres
CC3 Curve 3 = 6 metres
CC4 Curve 4 MAX = 7 metres

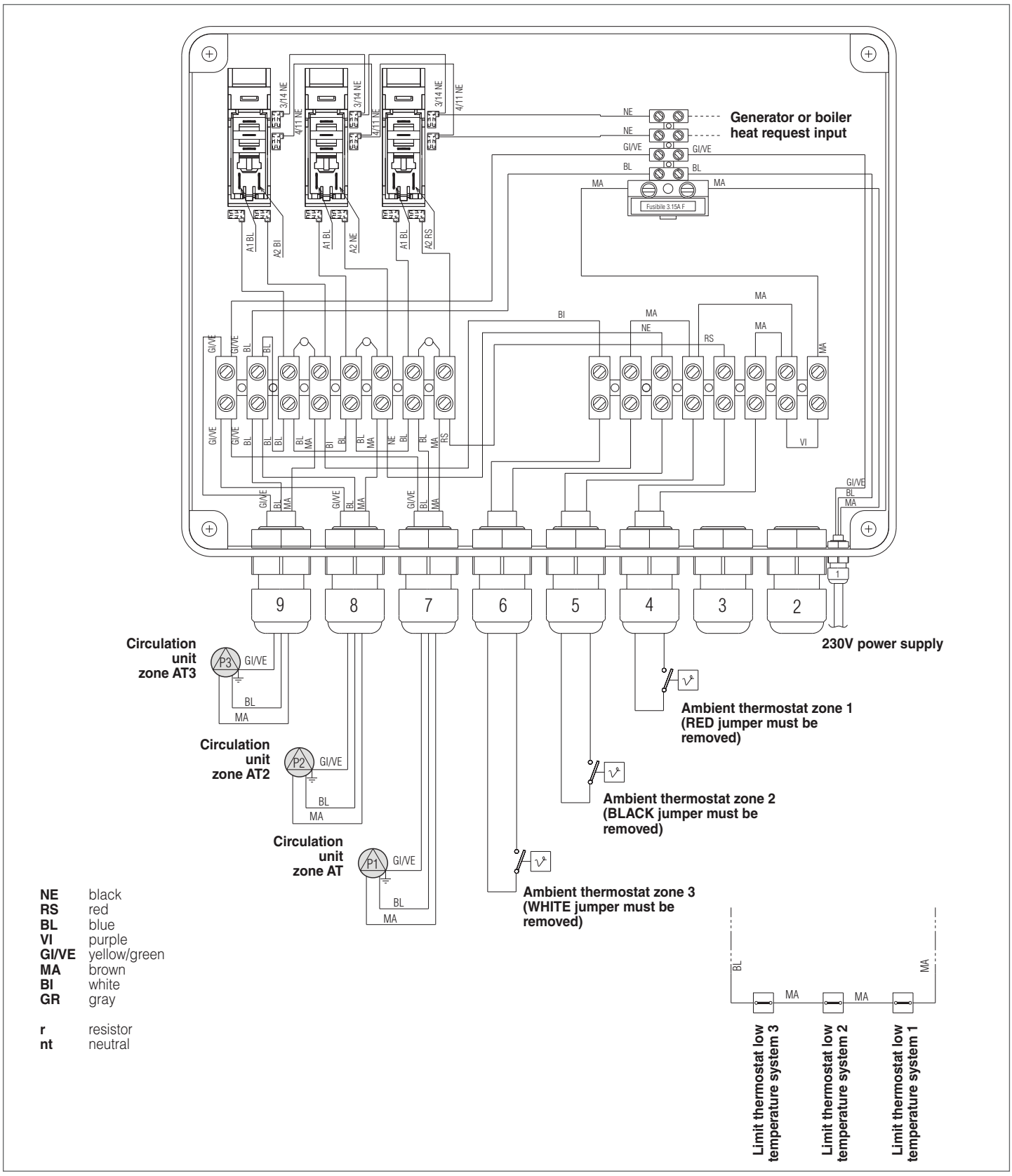
⚠ When starting up for the first time and at least once a year, it is advisable to check that the shaft of the circulation units rotate. This is necessary because, especially after lengthy periods of inactivity, deposits and/or residue may stop it rotating freely.

⚠ If there are flow regulator devices in the low temperature circuits (thermostatic, electrical or motorized zone valves, etc.) it is recommended that the circulation unit is set to "Proportional Head" and includes a differential by-pass on the manifold.

⛔ Do not run the circulation unit without water.

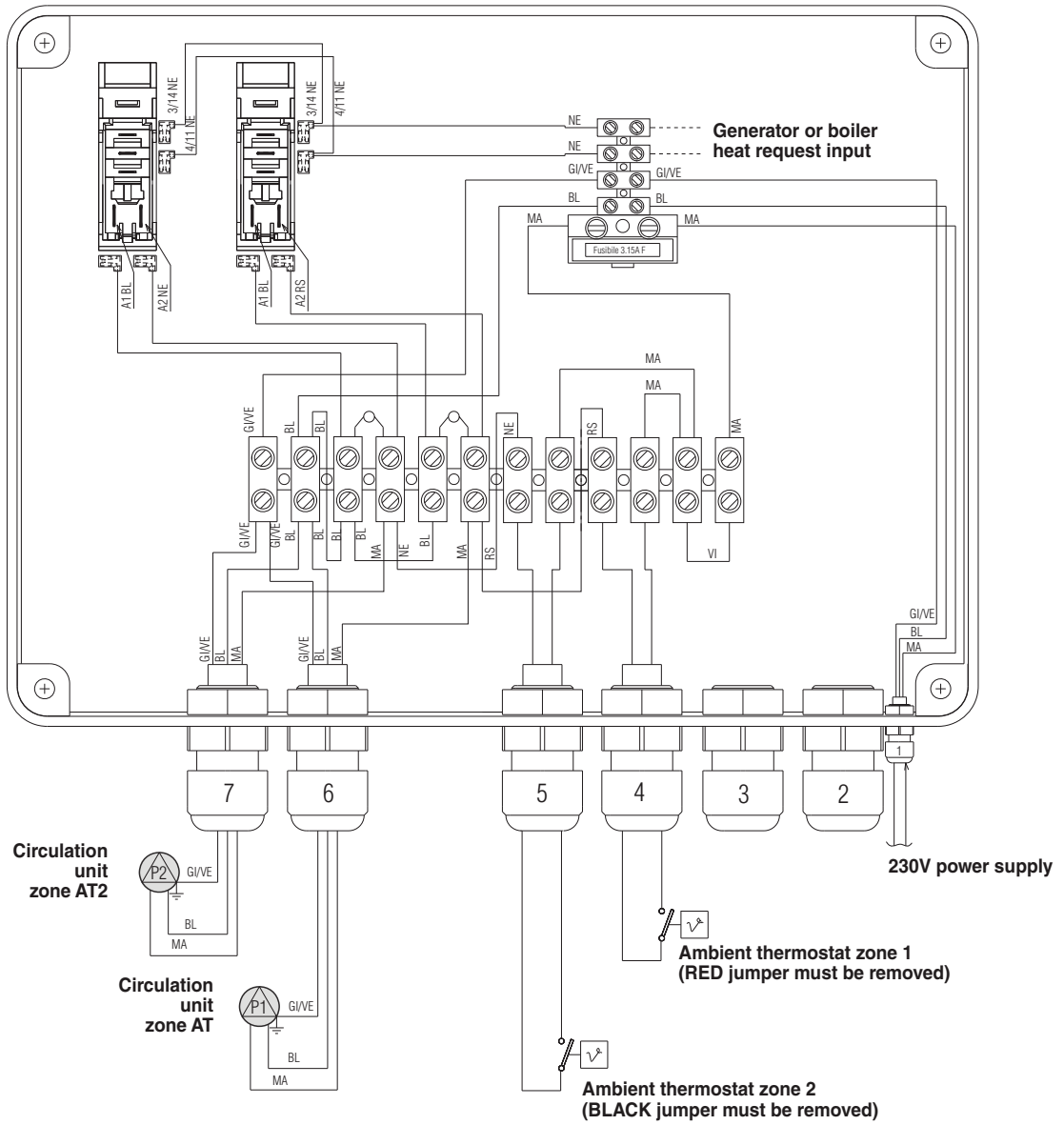
1.9 Wiring diagram

1.9.1 CONNECT 3D LE wiring diagram



⚠ If the wiring or the board are replaced, observe and respect all the connections of the cables according to the numbered sequence shown in the figure.

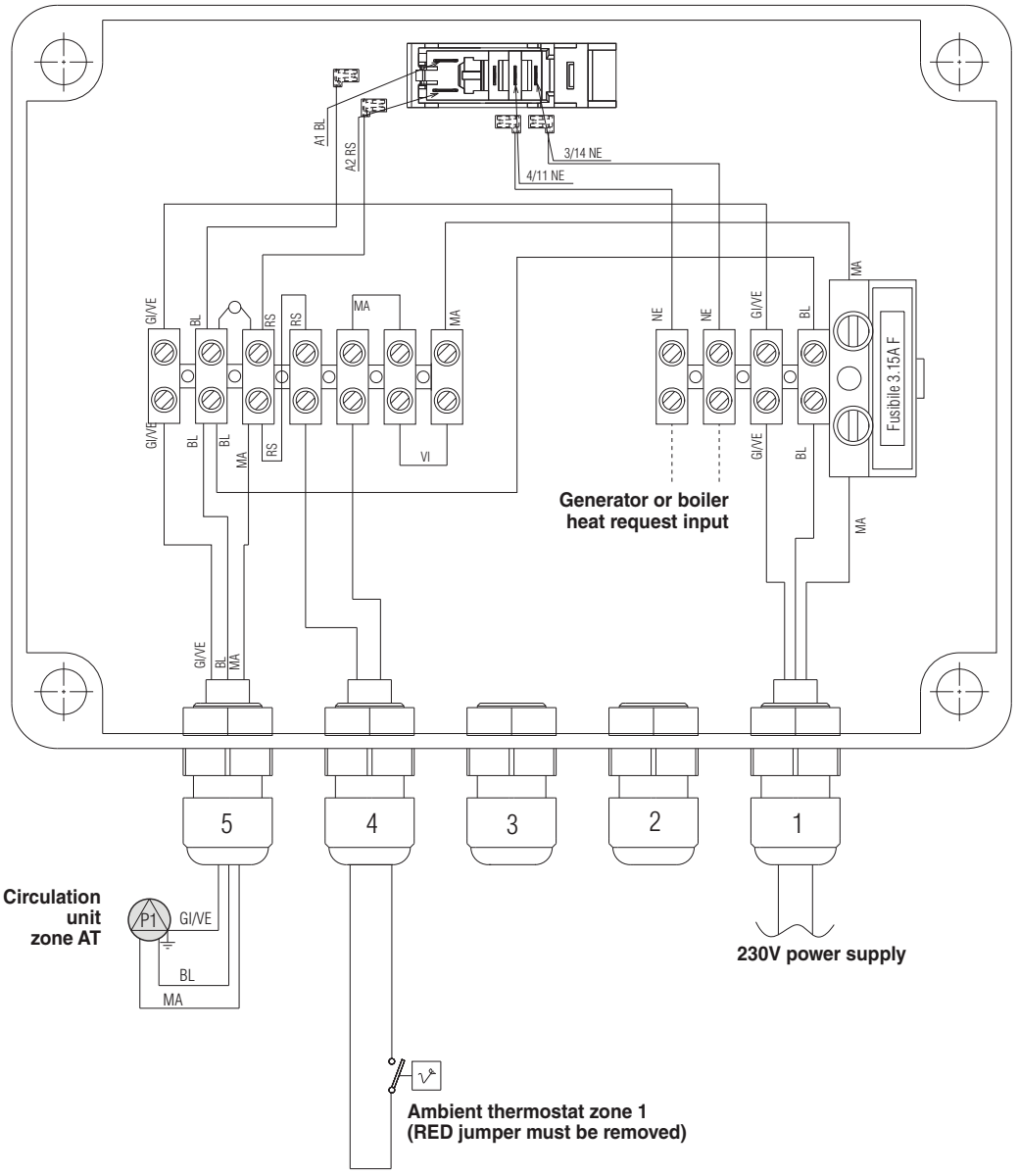
1.9.2 CONNECT 2D LE wiring diagram

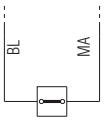


NE	black
RS	red
BL	blue
VI	purple
GI/VE	yellow/green
MA	brown
BI	white
GR	gray
r	resistor
nt	neutral

⚠ If the wiring or the board are replaced, observe and respect all the connections of the cables according to the numbered sequence shown in the figure.

1.9.3 CONNECT 1D LE wiring diagram





Limit thermostat low temperature system 1

NE	black
RS	red
BL	blue
VI	purple
GI/VE	yellow/green
MA	brown
BI	white
GR	gray
r	resistor
nt	neutral

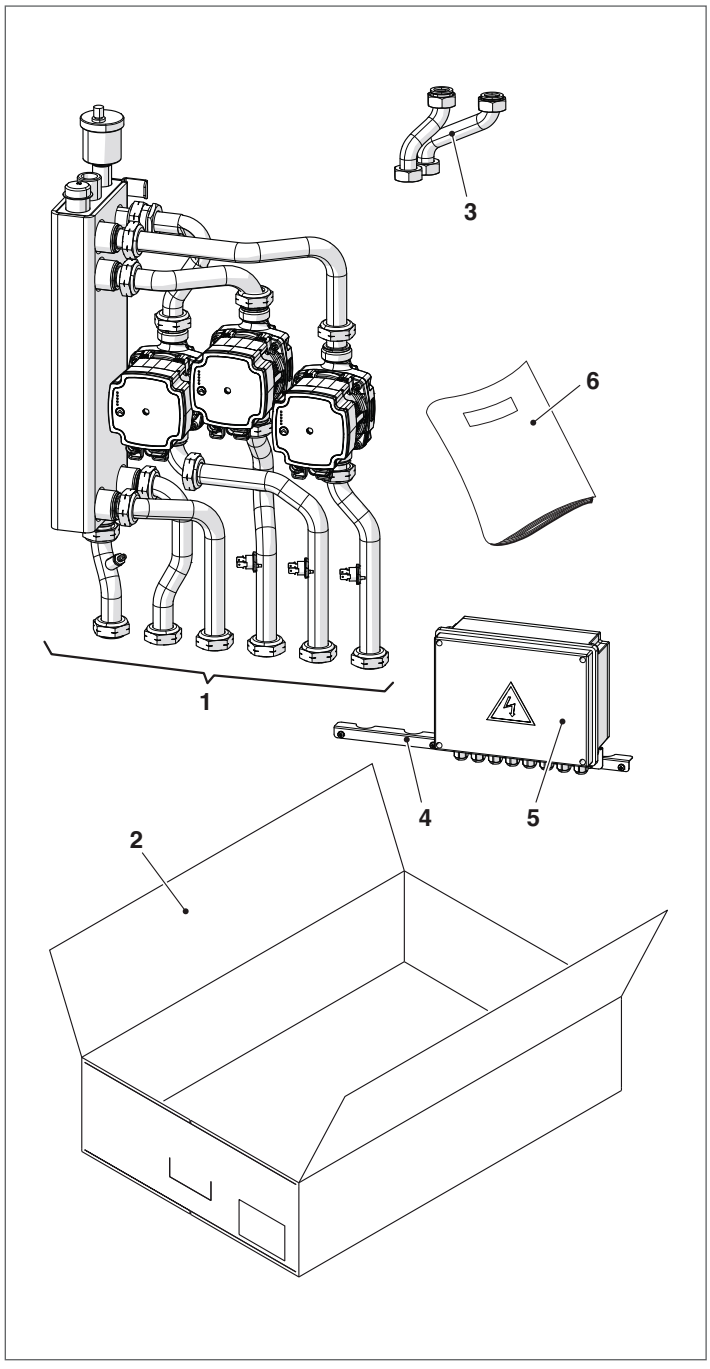
⚠ If the wiring or the board are replaced, observe and respect all the connections of the cables according to the numbered sequence shown in the figure.

2 INSTALLATION

2.1 Receiving the product

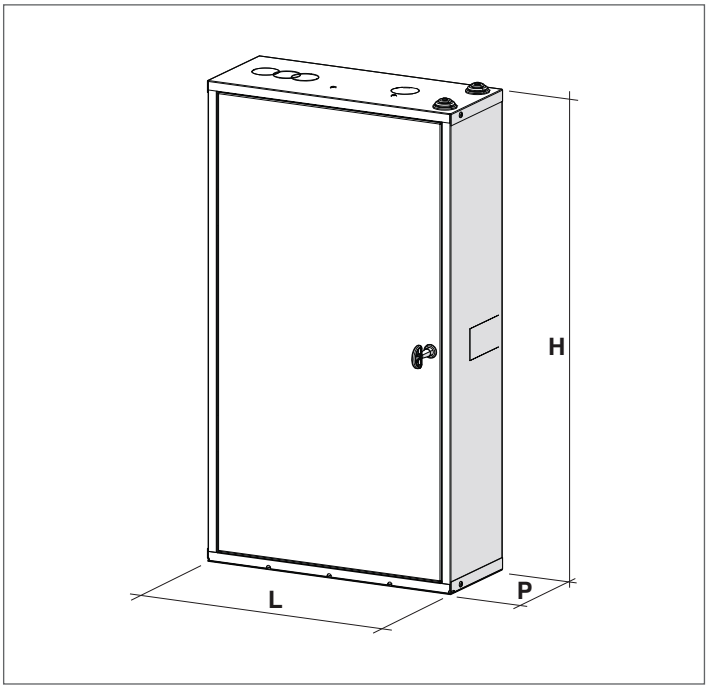
The **CONNECT LE** (1) is supplied in one package, protected by cardboard packaging (2) inside of which there is a plastic envelope containing:

- Plumbing connection ramps (3) towards the heat generator
- Brackets (4) and wiring case (5)
- Instruction manual (6)



⚠ The packing material is to be conserved and not discarded as it could be potentially dangerous.

2.2 Dimensions and weights



	CONNECT LE		
	3 D	2 D	1 D
L	400		
P	160		
H	720		
Net weight of box (*)	8		
Net weight of appliance	18	15	12

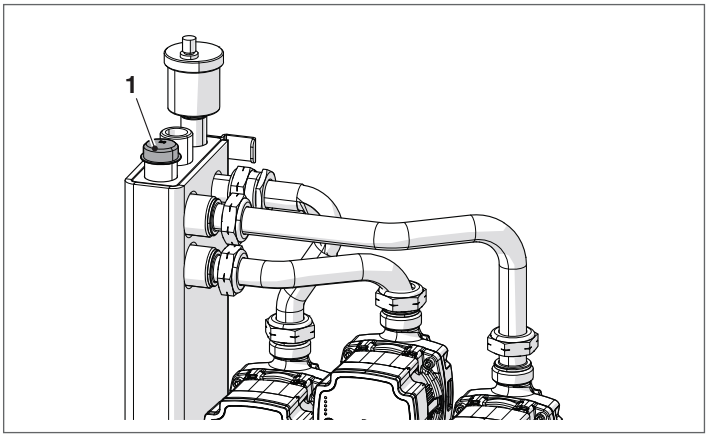
(*) The box is supplied separately, on request as an accessory .

2.3 Installation inside the box

⚠ Before installing **CONNECT LE** inside the box, check that all the connectors are correctly tightened.

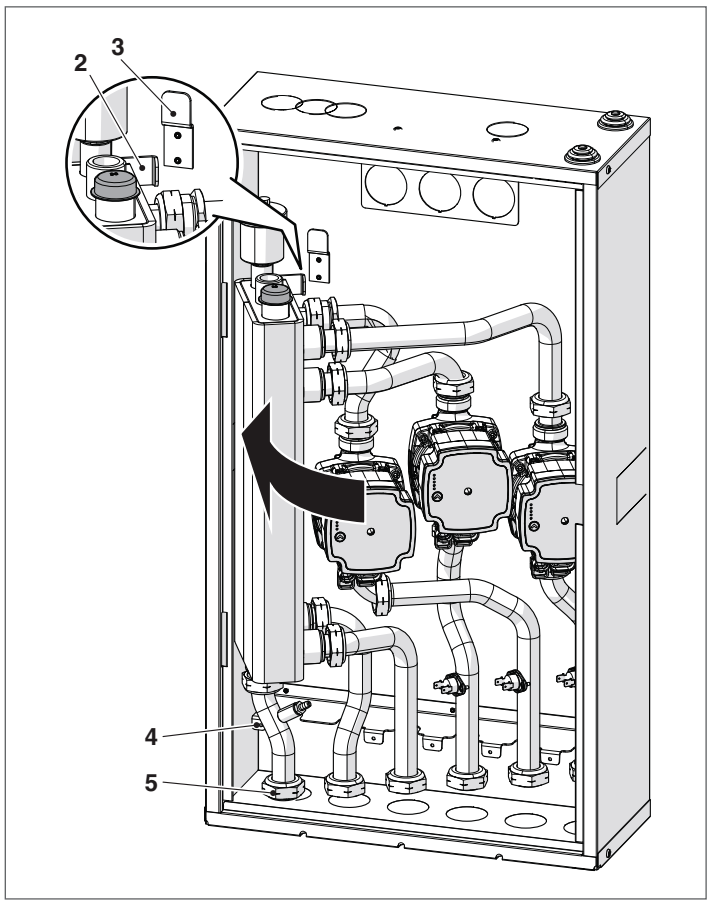
⚠ If the insulation kit is to be fitted, supplied as an accessory upon request, ensure that the hydraulic module inside the box is correctly positioned.

⚠ A suction pipe is inserted inside the mixing bottle and this must not under any circumstances be removed. Do not remove the closing plug (1) of the suction pipe, located on the top connector of the mixing bottle, until instructions to do this are given.

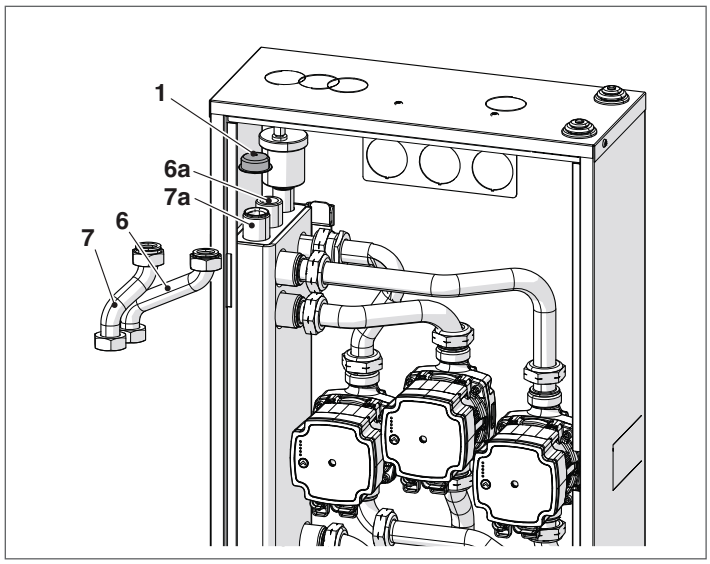


To install **CONNECT LE** inside the box, proceed as follows:

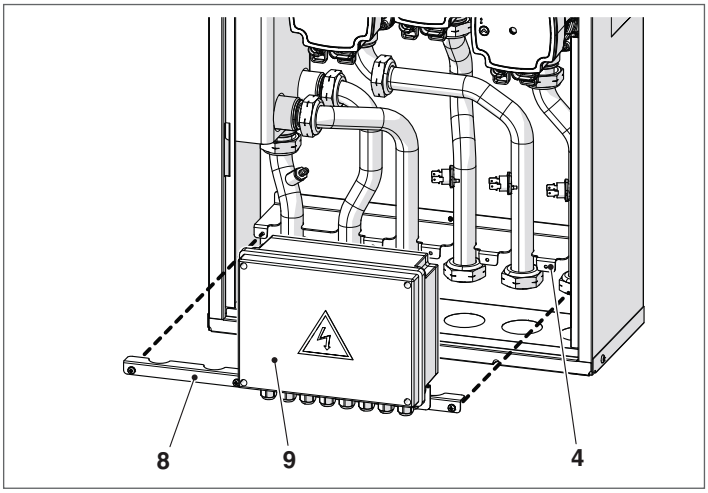
- Insert the right side of the **CONNECT LE** inside the box and rotate the left side until the **CONNECT LE** enters completely making sure that the insulator covering the mixing bottle is not damaged
- Insert the hook (2) of the mixing bottle and attach to the hook (3) on the back of the box
- Position the system delivery and return pipes into the seats positioned on the rack (4) making sure that the nuts (5) are positioned below the rack itself



- Remove the protective plug (1) on the mixing bottle
- Fit the pipes (6) and (7) on the couplings (6a) and (7a), located on the mixing bottle and positioning the designated seals supplied



- Place the bracket (8) together with the electrical connection box (9), on the rack (4) and secure it with the designated screws supplied.



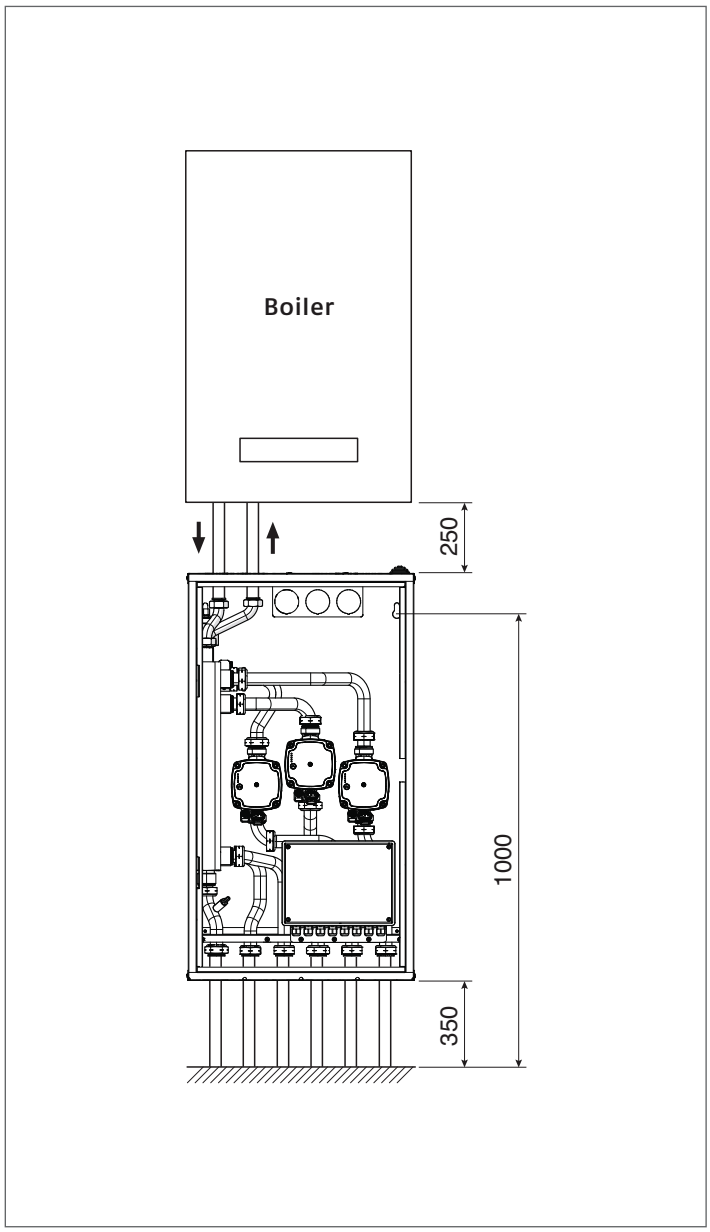
⚠ The hydraulic module is supplied already wired to the drivers of the module itself. For other connections, please refer to the wiring diagrams in this document (see *"1.9 Wiring diagram" a pagina 23*).

ENGLISH

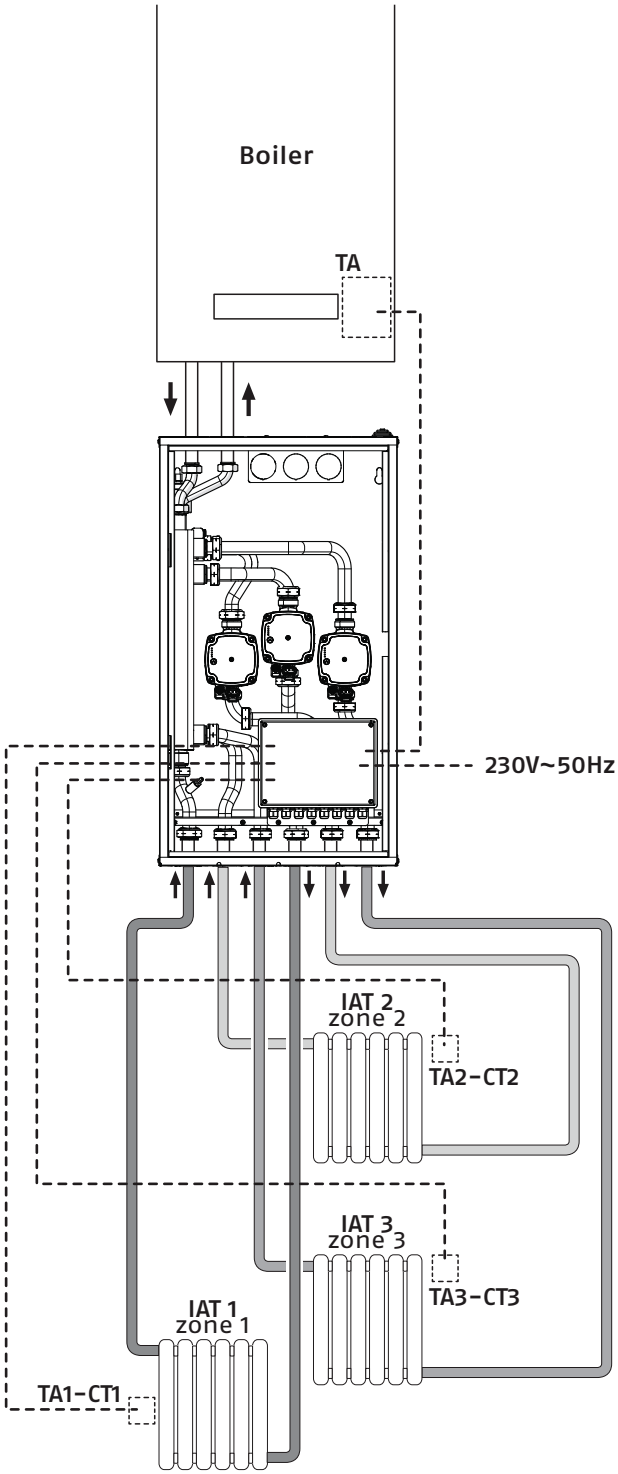
2.4 Minimum distances

The figure shows an example of a typical installation of the **CONNECT LE**.

N.B.: For the installation of any cocks, (not supplied), a niche must be formed of a sufficient size to allow them to be fitted below the **CONNECT LE** itself.



2.5 Typical installation layout



TA	Ambient thermostat connection
TA1-CT1	Ambient thermostat/chrono-thermostat zone 1 HIGH temperature
TA2-CT2	Ambient thermostat/chrono-thermostat zone 2 HIGH temperature
TA3-CT3	Ambient thermostat/chrono-thermostat zone 3 HIGH temperature
IAT1	Direct system 1 HIGH temperature
IAT2	Direct system 2 HIGH temperature
IAT3	Direct system 3 HIGH temperature

2.6 Connecting the low temperature thermostats

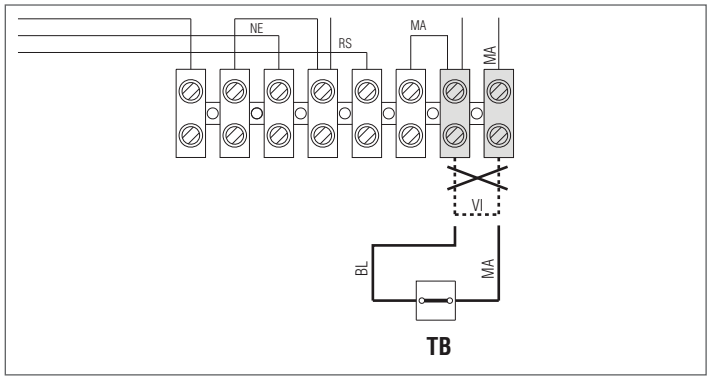
⚠ **CONNECT LE** are equipped with low temperature limit thermostats which are not to be connected in the case of high temperature systems.

For installations on low temperature systems however (flooring), proceed as follows:

- connect the low temperature thermostat cable (TB) to theTBT input if present on the boiler (see installer manual)

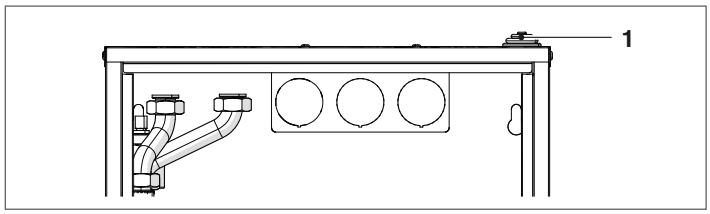
otherwise

- connect the low temperature thermostat cable (TB) inside the electrical panel of the module, removing the purple jumper (VI) and connecting the brown (MA) and blue (BL) wires in place of the jumper which was previously removed.



2.7 Electrical connections

The **CONNECT LE** is prearranged with rubber cable feed-throughs (1) located in the top section of the box allowing wiring to be passed through.

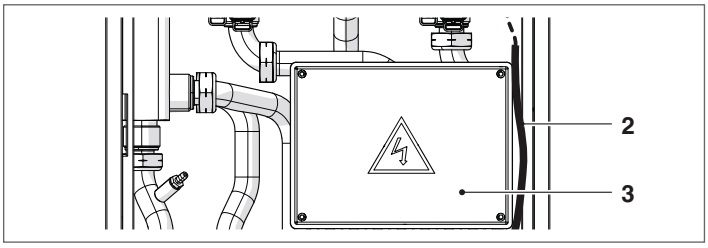


Below is an explanation of how to correctly connect the **CONNECT LE** to the various devices and the boiler.

⚠ Before carrying out any electrical intervention, set the main system switch to “off”.

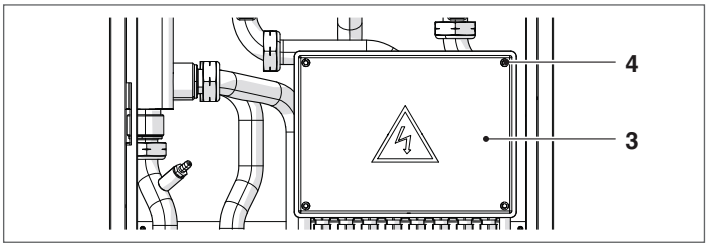
Connecting the CONNECT LE to the electrical power supply

- Pass the cable (2) which comes out of the electrical connection box (3) through the cable feed-through (1) and connect it to the electrical power supply (phase-neutral-earth) making sure not to connect it below the boiler fuse.



Access to the CONNECT LE connection terminals.

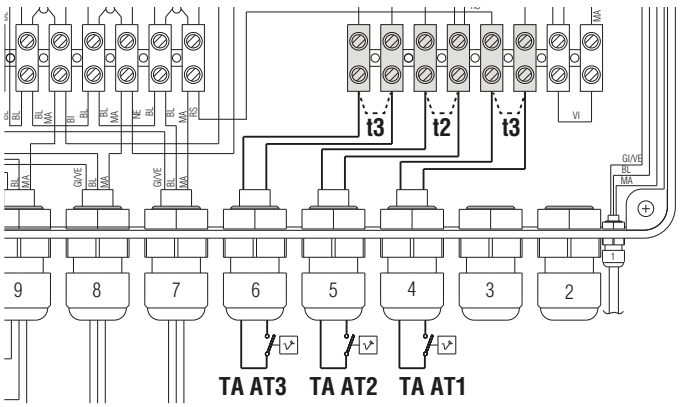
- To access the **CONNECT LE** connection terminals, loosen the four screws (4) and remove the cover (3).



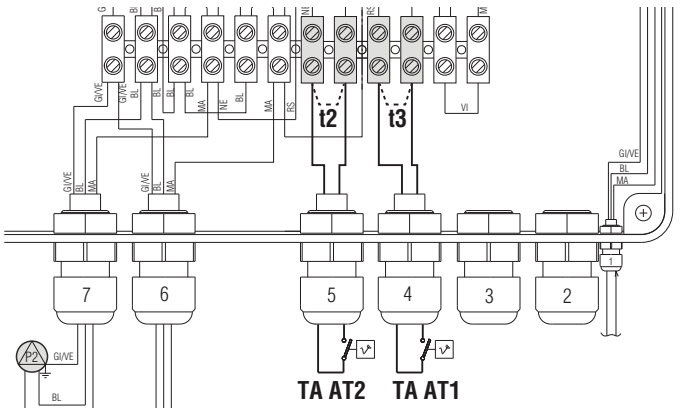
Connecting the CONNECT LE to the ambient thermostats/chrono-thermostats

- Carry out the connections of the ambient thermostats (TA) and/or chrono-thermostats (CT) of each zone, as indicated in the diagrams below. Before connection, eliminate the relative jumper (t1,t2 or t3).

CONNECT 3D LE

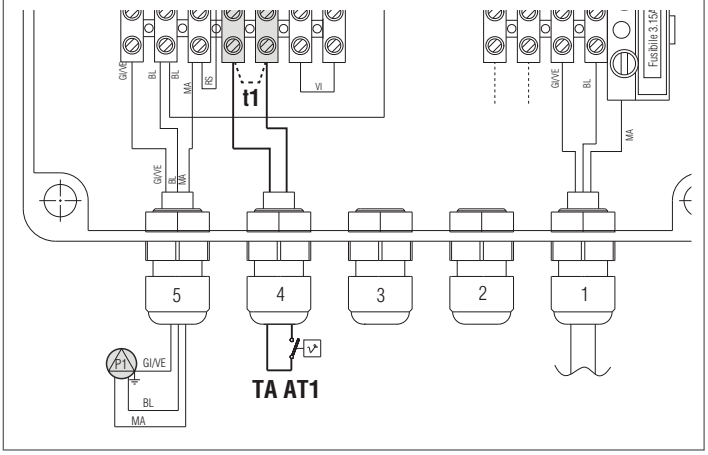


CONNECT 2D LE



ENGLISH

CONNECT 1D LE



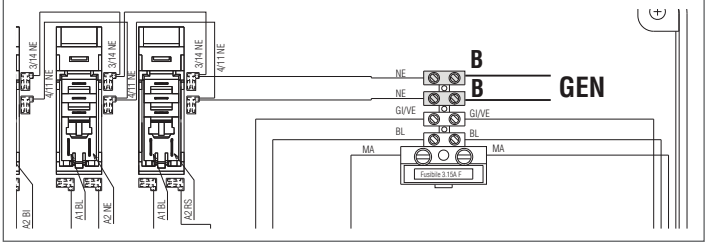
⚠ The ambient thermostats (TA) and/or chrono-thermostats (CT) of the low and high temperature systems must be connected directly to the **CONNECT LE** using a cable with a minimum section of 1 mm^2

⚠ The load represented by the pump will weigh directly on the corresponding ambient thermostat (TA) and/or chrono-thermostat (CT), therefore the TA and/or CT contact must be adapted to the application and be compatible with the electrical rate of the pump **not lower than 6A** (230 Vac~50 Hz).

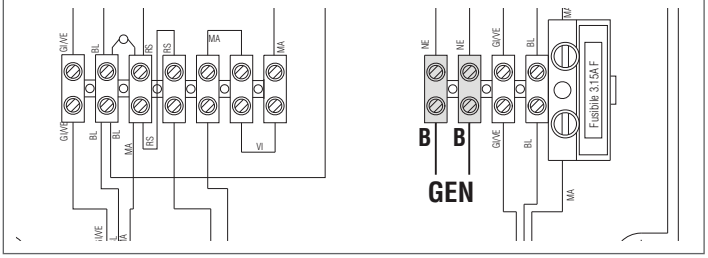
Connecting the CONNECT LE to the boiler

- Connect the **CONNECT LE** to the boiler (GEN) as indicated in the diagram below.

CONNECT 3D LE - CONNECT 2D LE



CONNECT1D LE



⚠ Connect the mammut (B-B) of the **CONNECT LE** to the mammut (TA) of the boiler using a cable with a minimum section 2x0.5 mm^2 (please refer to the wiring diagram in the instruction booklet for the installer of the specific boiler).

⚠ When using a phase-phase power supply, use a tester to determine which of the two wires has the greater potential compared to the earth and connect it to the L terminal. Connect the remaining wire to the N terminal.

⚠ For floating power supplies, i.e. those which have no earth connection, an insulation transformer must be used with a secondary unit connected to the earth.

⚠ It is mandatory:

- to use a multi-pole trip-switch to disconnect the line in compliance with CEI-EN standards (contact opening at least 3 mm)
- to use cables with a 1.5 mm^2 section and respect the L (phase) - N (neutral) connection
- that the amperage on the switch is adequate for the boiler's electrical power rating. Please refer to the technical data to check
- the electrical power rating for the model installed
- to connect the appliance to an efficient earthing system
- to ensure that access to the power socket is protected after installation.

⛔ The use of gas or water pipes to earth this appliance is strictly prohibited.

⚠ The manufacturer declines any liability for damage caused due to the lack of a proper earthing system or failure to comply with the wiring diagrams.

3 COMMISSIONING

3.1 First start-up

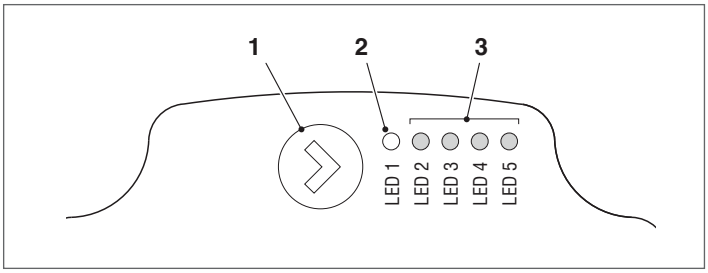
Before starting up the **CONNECT LE**, check that the plumbing and electrical connections have been carried out correctly.

3.2 Setting the circulation units

The **CONNECT LE** is equipped with digitally controlled high efficiency electronic circulation units. Below is a description of the main characteristics and the procedures to be carried out in order to set the required operation.

User interface

The user interface consists of a button (1), a two-colour LED red/purple (2) and four yellow LED (3).



The user interface allows the functions which are in operation to be displayed (operating status, alarm status) and allows the circulation unit operating mode to be set.

The performance data, indicated by the LED (2) and (3) is always displayed during normal operation of the circulation units while the parameters are set by pressing the button (1).

Indication of the operating status

When the circulation unit is operating, the LED (2) is green The four yellow LEDs (3) indicate the consumption of electrical energy (P1) as shown in the table below.

LED status	CIRCULATION UNIT status	Consumption in % of P1 MAX (*)
Green LED on + 1 yellow LED on	Operation at minimum	0-25
Green LED on + 2 yellow LED on	Operation at minimum-average	25-50
Green LED on + 3 yellow LED on	Operation at average-maximum	50-75
Green LED on + 4 yellow LED on	Operation at maximum	100

(*) For the power (P1) absorbed by the individual circulation unit, please refer to the information provided in the table *"Technical data" a pagina 21.*

Indication of the alarm status

If the circulation unit has detected one or more than one alarm, the two-colour LED (2) is red. The four yellow LEDs (3) indicate the type of alarm as shown in the table below.

LED status	ALARM description	CIRCULATION UNIT status	Possible SOLUTION
Red LED on + 1 yellow LED on (LED 5)	Motor shaft is blocked	Attempt start-up every 1.5 seconds	Wait or release motor shaft
Red LED on + 1 yellow LED on (LED 4)	Low input voltage	Warning only. The circulation unit continues to operate	Check the input voltage
Red LED on + 1 yellow LED on (LED 3)	Fault in the electrical power supply or faulty circulation unit	The circulation unit is not moving	Check the electrical power supply or replace the circulation unit

⚠ If more than one alarm activates, the circulation unit will only display the alarm with the highest priority.

Active settings display

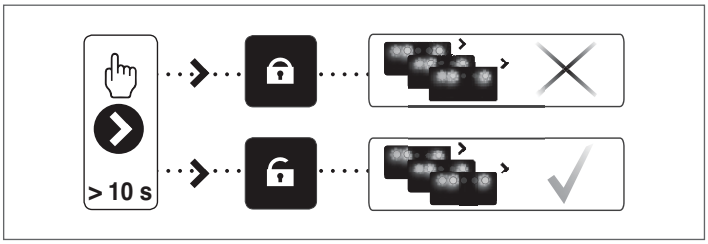
With the circulation unit powered, briefly press the button (1) to see the active configuration of the circulation unit. The LEDs indicate the active settings as shown in the table below.

DESCRIPTION	LED 1	LED 2	LED 3	LED 4	LED 5
Proportional head	Green	Yellow			
Constant head	Green		Yellow		
Constant curve	Green	Yellow	Yellow		
Curve 1 / Speed 1					
Curve 2 / Speed 2				Yellow	
Curve 3 / Speed 3				Yellow	Yellow
Curve 4 / MAX speed					Yellow

No changes can be made to the configuration of the circulation unit in this phase. Two seconds after having pressed the button (1), the user interface once again shows the normal display of the operating status.

Button lock function

The button lock function is used to prevent any setting modification being made accidentally or improper use of the circulation unit.
When the button lock function is active, it is not possible to press and hold the button (1). This prevents the user from entering the settings section of the circulation unit operating modes.
Pressing the button (1) for more than 10 seconds enables/disables the button lock function. During this passage, all LEDs (3) flash for 1 second.

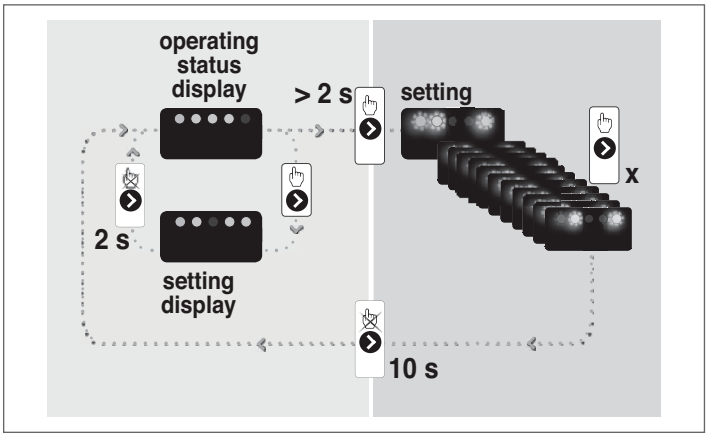


Changing the operating mode

In normal operating conditions, the circulation unit operates with the factory settings or the last settings made.

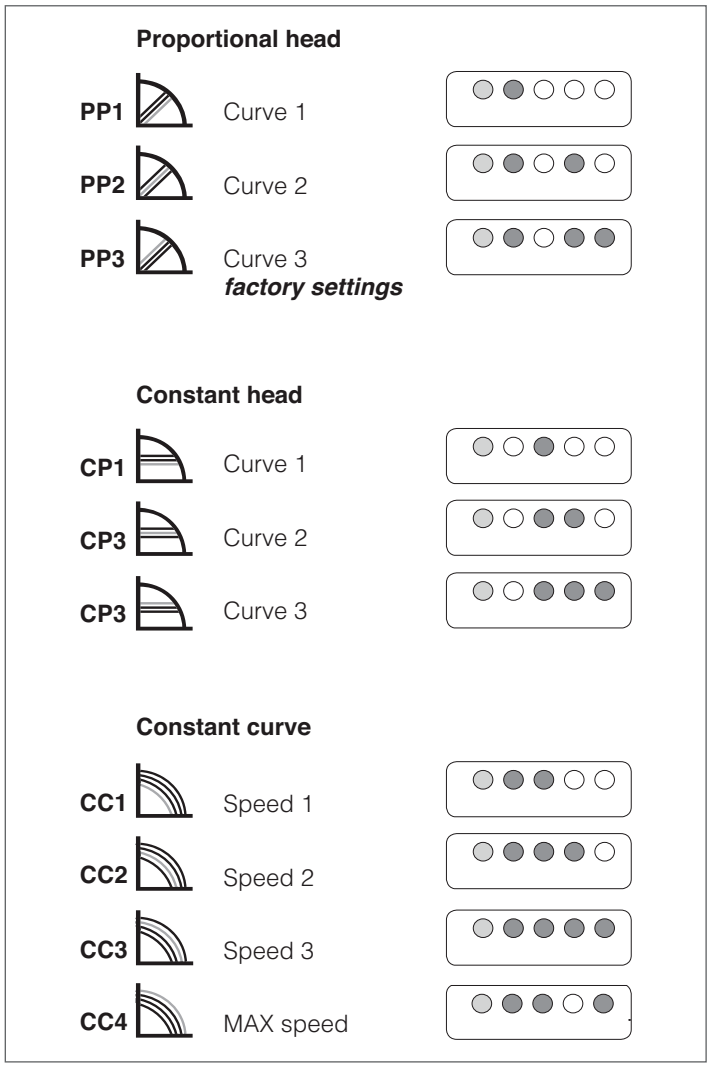
To change the configuration:

- Make sure that the button lock function is disabled
- Press the button (1) for more than 2 seconds until the leds begin to flash. Briefly press the button (1) and within 10 seconds the user interface will change to display the next series of settings. The settings available will appear in sequence
- If the button (1) is not pressed, the last setting selected will be stored.

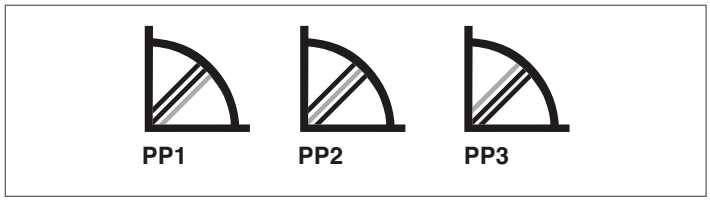


- By pressing the button (1), it will be possible to go to "**active settings**" again and check that the LEDs (2) and (3) indicate, for 2 seconds, the last setting made
- If the button (1) is not pressed for more than 2 seconds, the user interface will show "**operating status**".

The available settings are provided below together with the corresponding LEDs (2) and (3).

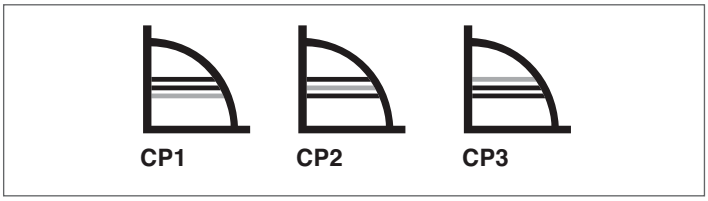


Proportional head
The circulation unit works on the basis of the heat request made by the system. The working point of the circulation unit and the selected proportional head curve move on the basis of the heat request



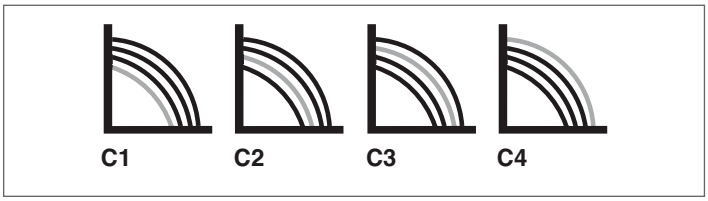
PP1 LOW proportional head curve
PP2 AVERAGE proportional head curve
PP3 HIGH proportional head curve

Constant head
The circulation unit works at constant head, irrespective of the heat request. The working point of the circulation unit will move along the selected curve on the basis of the heat request.



CP1 LOW constant head curve
CP2 AVERAGE constant head curve
CP3 HIGH constant head curve

Constant curve
The circulation unit works at constant speed, irrespective of the heat request from the system. The working point of the circulation unit will move along the selected curve on the basis of the heat request.



C1 Curve 1 = 4 metres
C2 Curve 2 = 5 metres
C3 Curve 3 = 6 metres
C4 Curve 4 MAX = 7 metres

3.3 Setting high temperature system

Set the heating temperature selector of the boiler to the value required for the high temperature system.

3.4 Checks after commissioning

Once commissioning has been completed, check:
- the plumbing circuit for leaks
- that the heating system is pressurised
- that the main switch for the system works
- that the electrical connections are correct.

⚠ If even one of these checks provides a negative result, the system is to be switched off and must not be started up again until the fault has been eliminated.

4 MAINTENANCE

4.1 Cleaning

Disconnect from the power supply before carrying out any cleaning operation by setting the main switch to “off”.
The panelling is to be cleaned with a damp cloth using soap and water.
If there are stubborn stains, use a cloth with a 50% water and denatured alcohol mixture, or use specific products.
Dry carefully after cleaning.

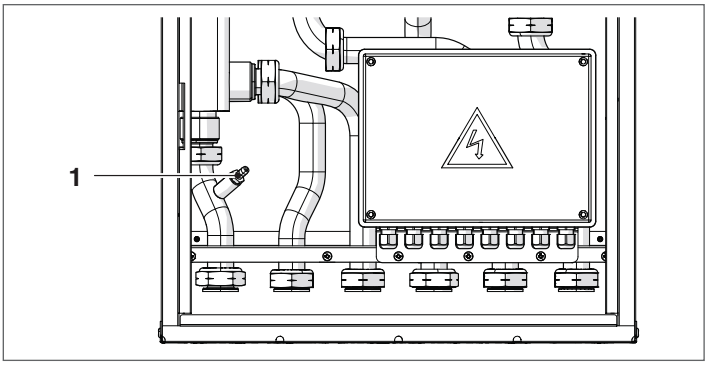
⛔ Do not use abrasive products, benzene or trichloroethylene.

4.2 Draining the CONNECT LE

Before starting draining operations, set the main switch to “off”.

To drain the **CONNECT LE**:

- Close the shut-off cocks on the side of the system (if present)
- Connect a small pipe to the drain cock (1)



- Using a CH11 wrench, open the cock (1) without unscrewing it completely
- After having drained the **CONNECT LE** close the cock (1) again.

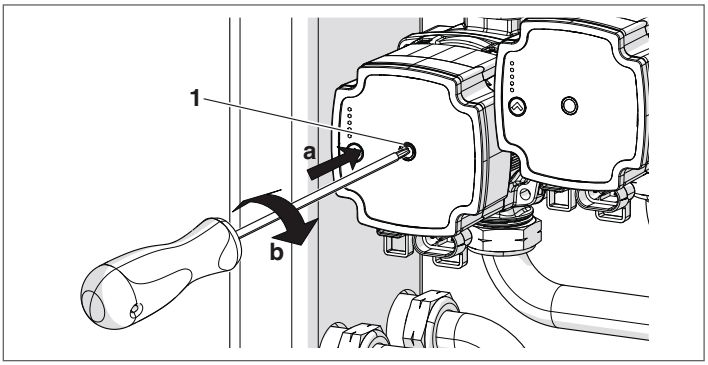
4.3 Checking the circulation units

When starting up for the first time and at least once a year, it is advisable to check that the shaft of the circulation units rotate.This is necessary because, especially after lengthy periods of inactivity, deposits and/or residue may stop it rotating freely.

Releasing the circulation unit shaft if necessary

To release the shaft, proceed as follows:

- insert a screwdriver (Phillips no.2) into the hole (1) of the circulation unit
- press (a) and turn (b) the screwdriver until the motor shaft releases



Take great care when carrying out this operation so as not to damage the components.

Do not run the circulation unit without water.