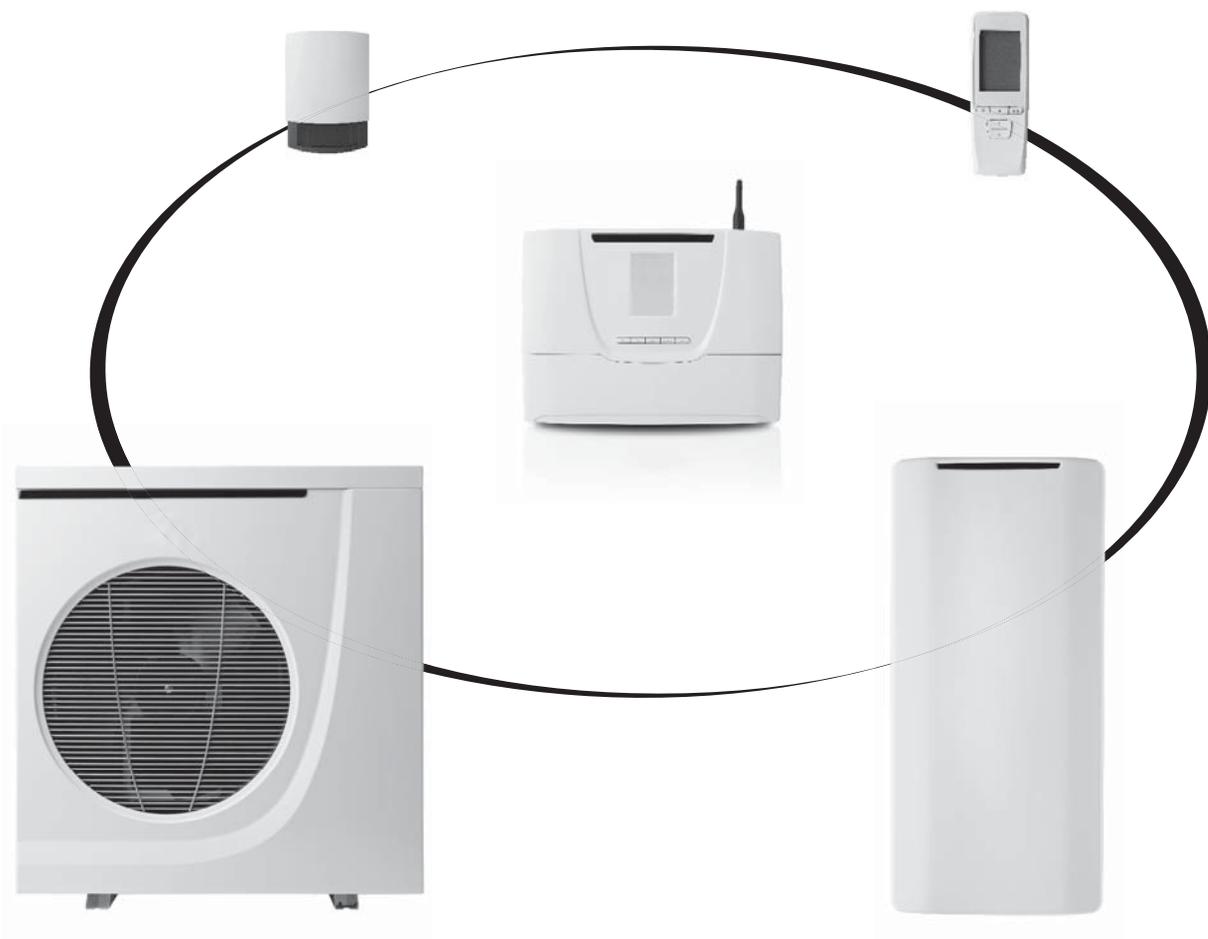


# STANDALONE

## System Installation



**Standalone system  
for heating and hot water**



# TABLE OF CONTENTS

## INTRODUCTION

1	Instructions guidance .....	3
	1.1 Product documentation.....	3
	1.2 Associated documents .....	3
	1.3 Explanation of symbols.....	3
	1.4 Guarantee registration.....	3
2	System description.....	3
	2.1 Concept of operation .....	3
	2.2 Example of Installation – Diagram 4 (4.1) : Standalone with 1 low heating temperature zone (30-40°C) or 1 middle heating temperature zone (< 60°C) .....	4
	2.3 Example of Installation – Diagram 4 (4.2) : Standalone with 2 low heating temperature zones (30-40°C) or 2 middle heating temperature zones (< 60°C)....	5
	2.4 Example of Installation – Diagram 4 (4.3) : Standalone + with 3 low heating temperature zones (30-40°C) or 3 middle heating temperature zones (< 60°C)....	6
	2.5 Example of Installation – Diagram 4 : Standalone with Domestic Hot Water cylinder .....	7
3	Safety instructions and regulations .....	8
	3.1 Safety instructions .....	8
	3.2 Regulations.....	8

## INSTALLATION

4	System appliance installation .....	9
	4.1 Recommendations before installing .....	9
	4.2 Mounting.....	10
5	Hydraulic connection.....	10
	5.1 Heat pump circuit.....	10
	5.2 Heating circuit.....	12
	5.3 Domestic Hot Water circuit .....	13
6	Electrical connections .....	15
	6.1 Heat pump.....	15
	6.2 Electrical wiring.....	15
	6.3 Hydraulic module.....	16
	6.4 Systempro control unit.....	16

# TABLE OF CONTENTS

## COMMISSIONING

7	Filling the glycol circuit.....	18
8	Activating the heat pump .....	19
9	Activating the room thermostat .....	20
10	Activating the control unit.....	20
	10.1 Configuring the installation .....	20
	10.2 Wiring summary.....	21
	10.3 "Thermostat / sensor" menu .....	21
	10.4 Thermostat(s).....	22
	10.5 Outdoor sensor.....	22
	10.6 Self check.....	23
	10.7 Settings.....	23
	10.8 Commissioning.....	25
	10.9 Status reports .....	29
	10.10 Options .....	30
	10.11 Heating system test.....	30
	10.12 Finishing .....	30
11	Re-check and restart.....	31
12	User information.....	31

## MAINTENANCE

13	Trouble-shooting .....	32
	13.1 Fault diagnosis .....	32
	13.2 Fault codes.....	32
	13.3 Heat pump status .....	33
14	Servicing .....	33
	14.1 Annual Maintenance.....	33
	14.2 Control unit maintenance menu .....	33

## INTRODUCTION

### 1 Instructions guidance

#### 1.1 Product documentation

The instructions are an integral part of the system appliances and must be handed to the user on completion of the installation in order to comply with the current regulation.

- Carefully read the manual, to understand all the information to enable safe installation, use and servicing. No liability can be accepted in the event of damage for not complying with the guidance in this instruction manual.

These instructions consist of, Installation, Servicing, Fault Finding. The instructions are an integral part of the appliance and must be handed to the user on completion of the installation.

#### 1.2 Associated documents

- Heat pump use and installation instructions
- Hydraulic module use and installation instructions
- **Systempro** Control unit use and installation instructions
- **Climapro2 RF programmable** Room thermostat use and installation instructions
- Wireless outdoor sensor installation instructions
- Accessories installation instructions (motorized 2 port valve...)

#### 1.3 Explanation of symbols



**DANGER: Risk of injuries.**



**DANGER: Risk of electric shock.**



**ATTENTION: Risk of damage to the appliance or to its surroundings.**



**IMPORTANT: Important information.**

#### 1.4 Guarantee registration

We recommend you complete and return as soon as possible your guarantee registration card (delivered with the hydraulic module). If your guarantee registration card is missing you can obtain a copy or record your registration by telephoning the Glow-worm Customer Service number 01773 596510.

## 2 System description

### 2.1 Concept of operation

The Standalone system consists of the following components:

- A **Glow-worm Envirosorb 5** heat pump,
- A "Standalone" hydraulic module,
- The **Systempro** control unit
- A Climapro2 RF wireless programmable room thermostat,
- A wireless photovoltaic outdoor sensor

The following options may be added to the system:

- 2 port valves for zoning,
- A domestic hot water cylinder.

#### 2.1.1 Operating principle in heating

The system is designed to provide a heating need of 6kW max at the reference temperature.

The heat generator consists of a heat pump and a hydraulic module equipped with an electric heater. The heat emitters can also be low temperature (heated floor, gentle heat radiators...) or medium temperature (steel panels...). In order to always obtain the best comfort/economy trade-off, the module heat pump and/or electric heater supply the heating installation with hot water at the temperature necessary to obtain the desired ambient temperature.

When the power of the heat pump is insufficient to provide heating, the self-controlled electric heater in the module can operate simultaneously, up to a power of 4kW, as a backup. This guarantees optimal use of the heat pump while guaranteeing that the total electrical power consumption will never exceed 6kW. When the heat pump is not operating, the electric heater can reach a power level of 6kW.

The changeover point between the heat pump and the electric heater is managed automatically, depending on the outside and ambient temperatures. Thus, the system always optimises the use of the heat pump with respect to the electric top-up heater.

#### 2.1.2 Operating principle of the domestic hot water system

The domestic hot water heating circuit consists of a heat pump, a 3-way valve and a FLUROCYL hot water tank equipped with an electric heater.

In order to always obtain the best comfort/economy trade-off, the heat pump and/or the FLUROCYL tank electric heater provide the energy needed to maintain the stored water at the required temperature.

The lower part of the tank is heated 3 times a day by the heat pump. In order to provide maximum economy, the electric heater heats the top part of the tank just to provide the comfort desired by the user.

The lower the hot water temperature setting, the more the heat pump will provide energy and, therefore, more economic operation.

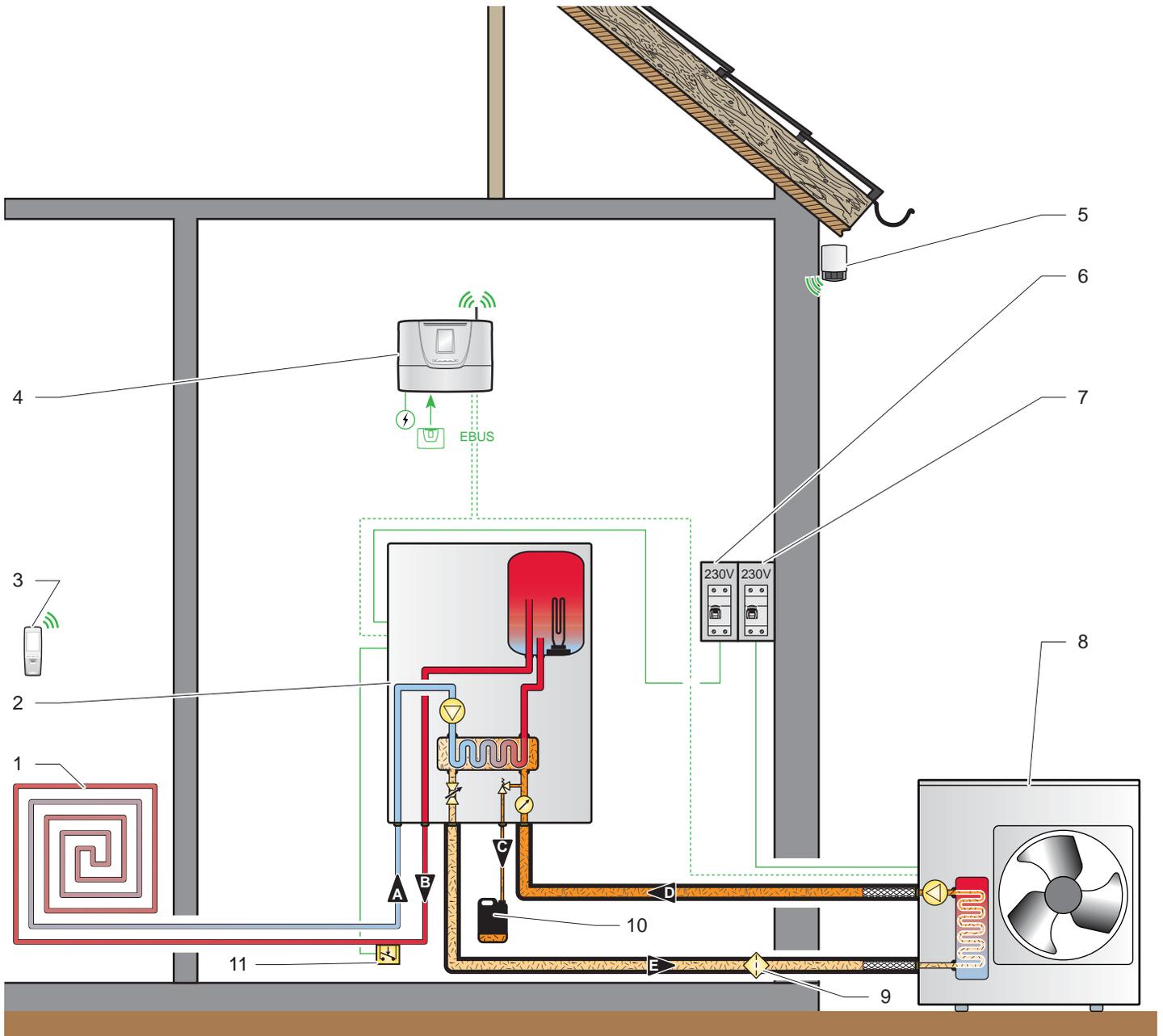
**2.2 Example of Installation – Diagram 4 (4.1) : Standalone with 1 low heating temperature zone (30-40°C) or 1 middle heating temperature zone (< 60°C)**



Refer to the chapters “Hydraulic connection” and “Electrical Connection” to connect the system.



This diagram shows the case of an installation with a single zone low temperature heating floor (= outlet temperature < 40°C).



**Key**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1 Heating circuit (UFH shown, but can be underfloor or radiators)</li> <li>2 "Electrical" hydraulic module</li> <li>3 Climapro2 RF programmable wireless room thermostat</li> <li>4 Systempro control unit</li> <li>5 Wireless outdoor sensor</li> <li>6 "Electrical" hydraulic module electrical supply + protection (This must have it's own single isolation)</li> <li>7 Heat pump electrical supply + protection (This must have it's own single isolation)</li> <li>8 Heat pump</li> <li>9 Heat pump circuit filter (not supplied)</li> <li>10 Glycol PRV discharge</li> <li>11 Overheating safety (if underfloor heating)</li> </ul> | <ul style="list-style-type: none"> <li>A Heating circuit return</li> <li>B Heating circuit flow</li> <li>C Heat pump circuit safety valve discharge</li> <li>D Heat pump circuit flow</li> <li>E Heat pump circuit return</li> </ul> |
|---|--|

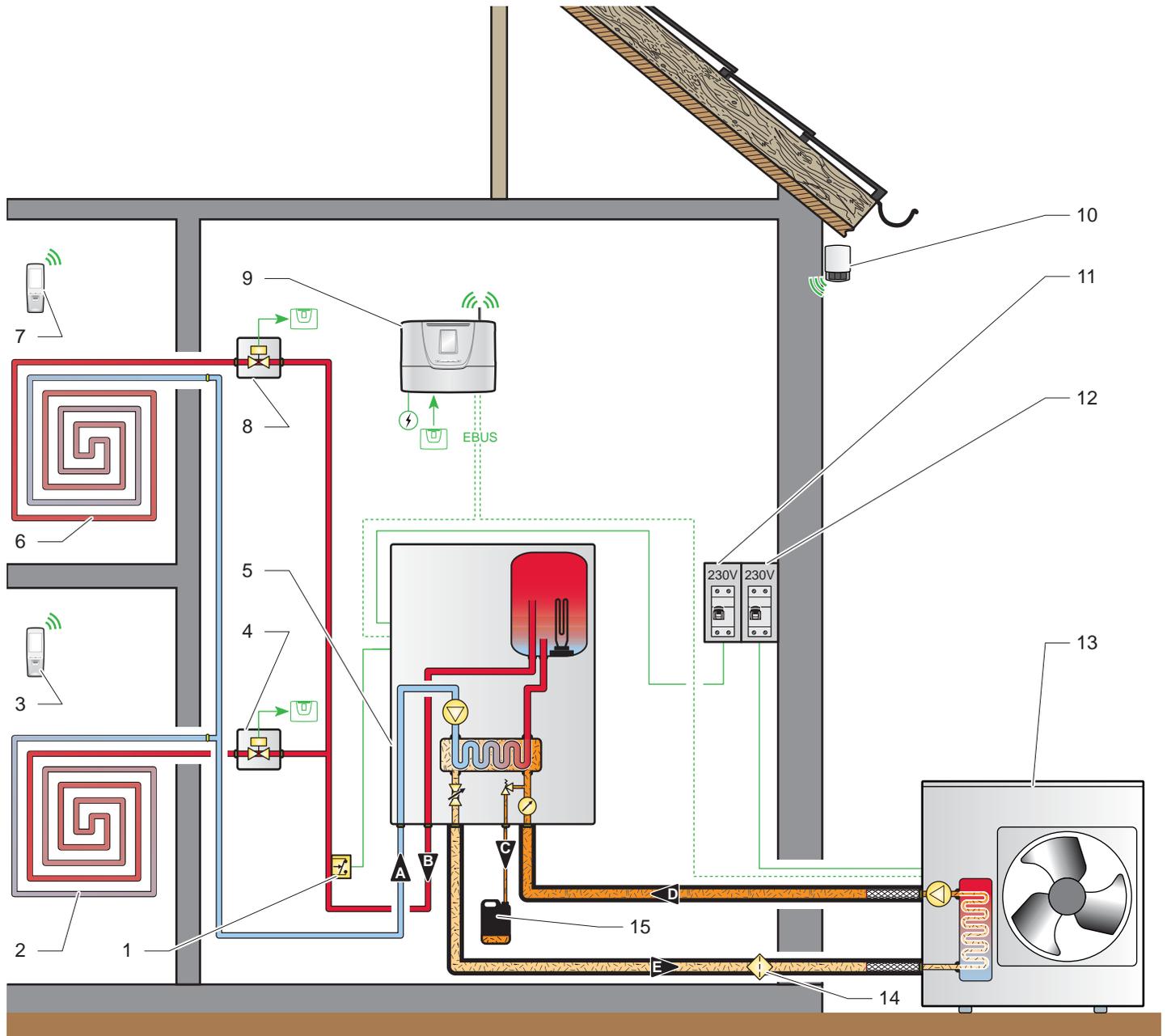
**2.3 Example of Installation – Diagram 4 (4.2) : Standalone with 2 low heating temperature zones (30-40°C) or 2 middle heating temperature zones (< 60°C)**



Refer to the chapters "Hydraulic connection" and "Electrical Connection" to connect the system.



This diagram shows the case of an installation with a dual zone low temperature heating floor (= outlet temperature < 40°C). Zones must be same temperatures.



- |   |   |
|---|---|
| <p><b>Key</b></p> <ul style="list-style-type: none"> <li>1 Overheating safety (if underfloor heating)</li> <li>2 Heating circuit "zone 1" (UFH shown, but can be underfloor or radiators)</li> <li>3 Climapro2 RF programmable wireless room thermostat "zone 1"</li> <li>4 2 port valve "heating zone 1"</li> <li>5 "Electrical" hydraulic module</li> <li>6 Heating circuit "zone 1" (UFH shown, but can be underfloor or radiators)</li> <li>7 Climapro2 RF programmable wireless room thermostat "zone 2"</li> <li>8 2 port valve "heating zone 2"</li> <li>9 Systempro control unit</li> <li>10 Wireless outdoor sensor</li> <li>11 "Electrical" hydraulic module electrical supply + protection (This must have it's own single isolation)</li> </ul> | <ul style="list-style-type: none"> <li>12 Heat pump electrical supply + protection (This must have it's own single isolation)</li> <li>13 Heat pump</li> <li>14 Heat pump circuit filter (not supplied)</li> <li>15 Glycol PRV discharge</li> <li>A Heating circuit return</li> <li>B Heating circuit flow</li> <li>C Heat pump circuit safety valve discharge</li> <li>D Heat pump circuit flow</li> <li>E Heat pump circuit return</li> </ul> |
|---|---|

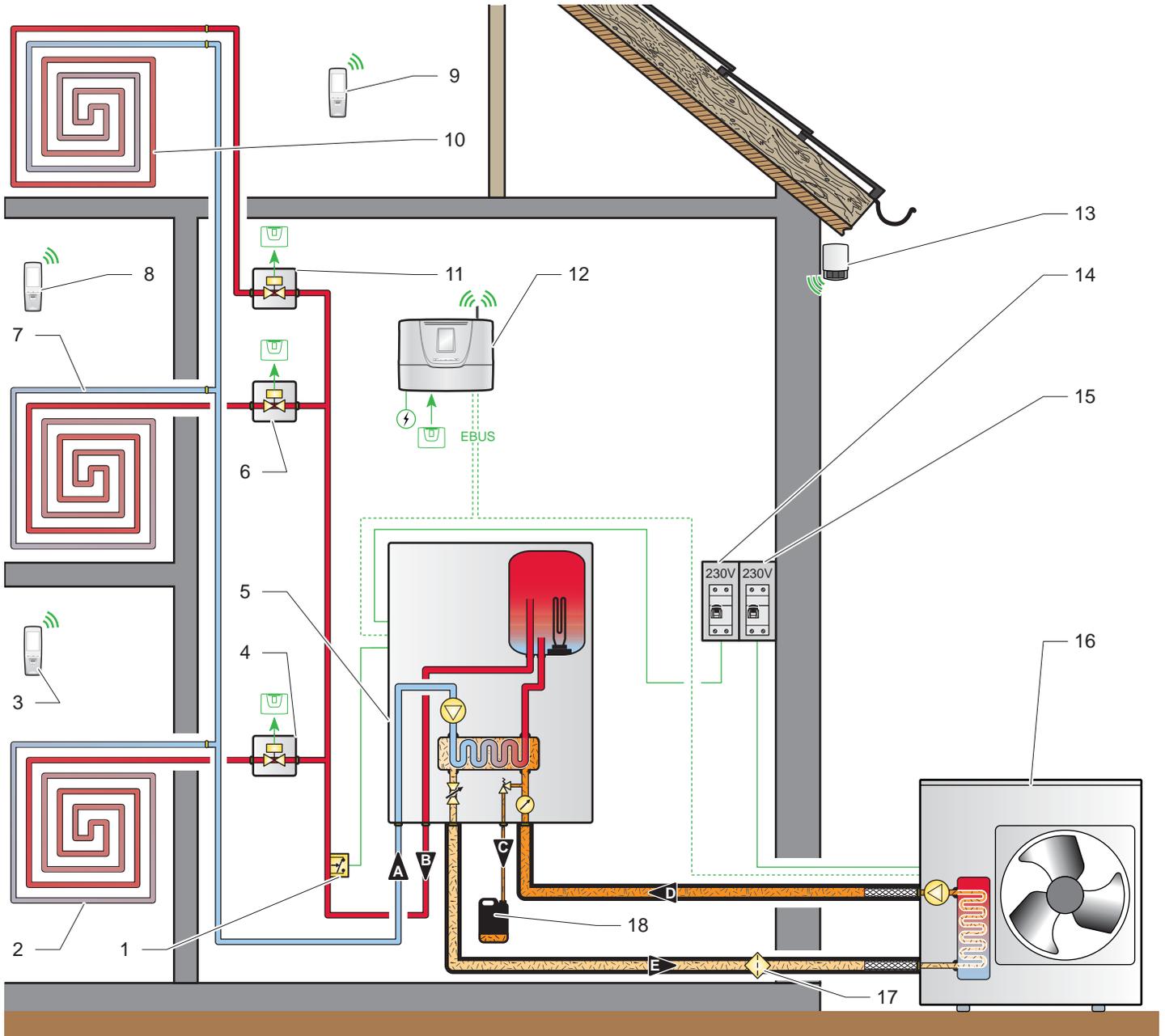
**2.4 Example of Installation – Diagram 4 (4.3) : Standalone + with 3 low heating temperature zones (30-40°C) or 3 middle heating temperature zones (< 60°C)**



Refer to the chapters "Hydraulic connection" and "Electrical Connection" to connect the system.



This diagram shows the case of an installation with a three zone low temperature heating floor (= outlet temperature < 40°C). Zones must be same temperatures.

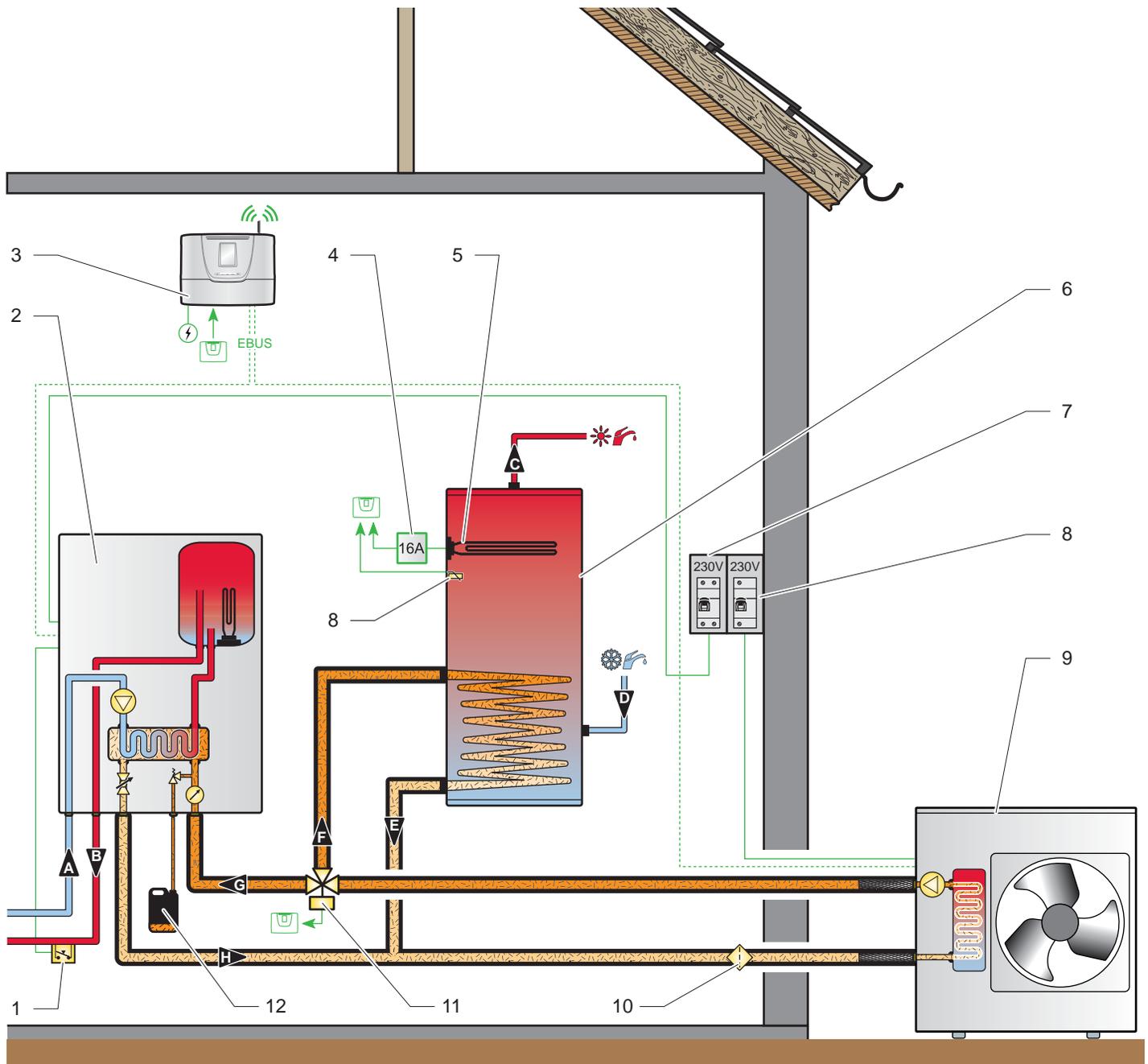


- Key**
- |   |  |
|---|--|
| 1 Overheating safety (if underfloor heating)                                | 13 Wireless outdoor sensor   |
| 2 Heating circuit "zone 1" (UFH shown, but can be underfloor or radiators)  | 14 "Electrical" hydraulic module electrical supply + protection (This must have it's own single isolation) |
| 3 Climapro2 RF programmable wireless room thermostat "zone 1"               | 15 Heat pump electrical supply + protection (This must have it's own single isolation)                     |
| 4 2 port valve "heating zone 1"   | 16 Heat pump   |
| 5 "Electrical" hydraulic module   | 17 Heat pump circuit filter (not supplied)   |
| 6 2 port valve "heating zone 2"   | 18 Glycol PRV discharge  |
| 7 Heating circuit "zone 2" (UFH shown, but can be underfloor or radiators)  | A Heating circuit return   |
| 8 Climapro2 RF programmable wireless room thermostat "zone 2"               | B Heating circuit flow   |
| 9 Climapro2 RF programmable wireless room thermostat "zone 3"               | C Heat pump circuit safety valve discharge   |
| 10 Heating circuit "zone 3" (UFH shown, but can be underfloor or radiators) | D Heat pump circuit flow   |
| 11 2 port valve "heating zone 3"  | E Heat pump circuit return   |
| 12 Systempro control unit   |  |

2.5 Example of Installation – Diagram 4 : Standalone with Domestic Hot Water cylinder



Refer to the chapters “Hydraulic connection” and “Electrical Connection” to connect the system.



Key

- |    |   |   |  |
|----|---|---|--|
| 1  | Overheating safety (if underfloor heating)  | A | Heating circuit return                     |
| 2  | "Electrical" hydraulic module   | B | Heating circuit flow                       |
| 3  | Systempro control unit  | C | Domestic hot water flow                    |
| 4  | Power relay for the electric heater (not supplied)  | D | Cold water supply                          |
| 5  | Exchanger tank electric top-up heater   | E | Heat pump circuit return                   |
| 6  | Domestic hot water tank   | F | Heat pump circuit flow to cylinder circuit |
| 7  | "Electrical" hydraulic module electrical supply + protection (This must have it's own single isolation) | G | Heat pump circuit flow to module circuit   |
| 8  | Heat pump electrical supply + protection (This must have it's own single isolation)                     | H | Heat pump circuit return                   |
| 9  | Heat pump   |   |  |
| 10 | Heat pump circuit filter (not supplied)   |   |  |
| 11 | 3 port valve  |   |  |
| 12 | Glycol PRV discharge  |   |  |

## 3 Safety instructions and regulations

### 3.1 Safety instructions



**Incorrect installation can cause electric shock or appliance damage.**

- Never disable security devices and do not try to adjust them.
- Be sure to consider the following handling techniques and precautions:
  - Grip the appliance at its base
  - Use safety clothing where appropriate, e.g. gloves, safety footwear.
- Ensure safe lifting techniques are used:
  - Keep back straight.
  - Avoid twisting at the waist.
  - Avoid upper body/top heavy bending.
  - Always grip using the palm of the hand.
  - Use designated hand holds.
  - Keep load as close to body as possible.
  - Always use assistance if required.
- Under no circumstances must the user interfere with or adjust sealed parts.
- When assembling the connections, correctly position the seals to avoid any leakage of water.
- This appliance contains metal parts. Care should be taken with regard to edges.

The basic safety instructions must be followed before attempting to maintain or replace spare parts:

- Stop the appliance.
- Electrically isolate the appliance from the power supply.
- Hydraulically isolate the appliance using the isolation valves if provided.
- Should you need to replace hydraulic components, drain the appliance.
- Protect all the electrical components from water while working on the appliance.
- Use only original spare parts.
- Use only new O-rings and gaskets.
- After having completed work on water carrying components, check for their tightness.
- When work on the appliance is completed, perform an operational test and check for safety.

#### R410A Refrigerant Fluid



**Important: any action carried out on the refrigerant circuit must be performed by qualified authorised personnel.**

- Use only R410A refrigerant.



**Venting refrigerating fluid into the atmosphere is prohibited. The refrigerant must be properly recovered in a container suitable for recycling.**



**The draining and refilling operations must be performed in a well-ventilated area and with the necessary protective equipment (risk of burns).**

### 3.2 Regulations

#### 3.2.1 Statutory requirements

##### IMPORTANT

Where no British Standards exists, materials and equipment should be fit for their purpose and of suitable quality and workmanship.

The installation of this appliance must be carried out by a competent person in accordance the rules in force in the countries of destination.

Manufacturer's instructions must not be taken as overriding statutory requirements.

##### Standards

On installing and commissioning the appliance you must adhere to the technical rules, standards and provisions in effect at the time.

##### Reminder of existing regulatory acts

- EC regulation No. 2037/2000 from the 29th of June 2000  
This European regulation repeals regulation No. 3093/94 and presents the elimination schedules of CFC and HCFC. It also deals with the collection of refrigerants, system leaks, particularly systems containing more than 3 kg of CFC or HCFC, as well as the minimum level of qualification required by the technicians.
- EC regulation No. 0842/2006 from the 17th of May 2006 regarding the containment, use, collection and disposal of the fluorinated greenhouse gases, the labelling and elimination of the products and equipment containing these gases, the restriction of use and banning of certain products from the market, as well as the training and certification of personnel and companies operating in the activities targeted by this regulation: refrigeration, air-conditioning, heat pumps and fire protection systems containing greenhouse gases.

#### 3.2.2 Other regulations

##### Control of Substances Hazardous to Health

Under Section 6 of The Health and Safety at Work Act 1974, we are required to provide information on substances hazardous to health. The adhesives and sealants used in this appliance are cured and give no known hazard in this state.

The refrigerant used in this appliance is R410a the use of which is strictly controlled by F Gas regulation EN842/2006.

## INSTALLATION

### 4 System appliance installation

#### 4.1 Recommendations before installing

##### 4.1.1 Heating circuit design

###### General

The heat transmitters may be low temperature (eg underfloor heating or high temperature (radiator...)).

The pipe sections are to be determined using a flow / pressure curve (refer to the chapter "Activating the control unit" ► Commissioning ► Heating circuit adjustment"). The distribution will be determined by the flow corresponding to the power actually required, regardless of the maximum power that can be provided by the installation's generators.



**We recommend that you allow for sufficient flow to ensure that the temperature difference between the flow and the return is equal to 7 K for floor heating and 15 K for radiators.**



**Make sure the heating circuit water flow is greater than 900 l / h.**

Installation pipework must be designed and installed to ensure venting of air from the system is possible.



**TRVs must be fitted on all radiators, with the exception to reference rooms.**

The total volume of water for the heating circuit depends, among other factors, on the cold static load of the Hydraulic module's expansion vessel.



The heating system volume should be calculated to ensure that the expansion vessel is suitable, it may be necessary to add an additional vessel.

- In GB, Guidance on vessel sizing is also given in the current issue of BS5449 and BS7074 Part 1.

Il est recommandé de prévoir un robinet de vidange au point le plus bas de l'installation.

- Drain taps shall be to the current issue of BS2879.

It is recommended that a drainage valve be installed at the lowest point of the installation.

- Drain taps shall be to the current issue of BS2879.
- Install the following components in the return of the heating circuit (not supplied):
  - a heating filter
  - a ¼ turn shut-off valve,
  - an air separator (if necessary),
  - an anti-sludge filter (if necessary).
- In the case of a heated floor, install a manual reset overheat safety device (55°C) on the heating circuit flow (refer to the

Chapter - System description). Connect the overheat safety device to the electric supply for the module circuit board (refer to the module installation manual).

###### Water treatment

**Existing system-** It is essential that prior to installing the new appliances the system is thoroughly flushed.

**New system-** For optimum performance after installation, the appliances and its associated central heating system should also be flushed.

Flushing shall be carried out in accordance with BS 7593, a chemical cleanser can be used either Sentinel X300, X400 or Fernox F3 are suitable.

It is recommended to flush existing systems first before fitting the new appliances.

- Ensure all cleanser is removed from the whole system before adding an inhibitor.

For long-term corrosion protection after flushing, an inhibitor suitable for stainless steel heat exchangers can be used. Either Sentinel X100 or Fernox F1 inhibitor can be used.

The module is suitable for use on systems using softened water.

##### 4.1.2 Heat pump circuit design

Installation pipework must be designed and installed to ensure venting of air from the system is possible.



**Make sure the circuit's water flow corresponds to the appliance's nominal water flow.**

- Install the following components to the hydraulic module, in the direction of the heat pump (not supplied):
  - a filter,
  - a ¼ turn shut-off valve on each side of the filter,
- Install a ¼ turn shutoff valve in the flow of the heat pump.



**In order to avoid the transmission of vibrations to surrounding structures, use hoses for the hydraulic connections at least 1 metre from the heat pump.**



**Insulate the pipes with an UV- and high-temperature-resistant insulation.**

##### 4.1.3 Domestic hot water circuit design

###### Water pressure

The maximum working pressure of the domestic hot water circuit is 10 bar. If the cold water supply pressure exceeds this, then a pressure-reducing valve must be fitted in the supply to the boiler.

###### 'Hard' water areas

In areas where the water is 'hard' (i.e. more than 200 mg/L of calcium carbonate), it is recommended that the hot water setting is reduced and that a scale reducer is fitted, refer to the manufacturer's instructions or consult the local water company for additional advice.

## 4.2 Mounting



Install the **Systempro** control unit near the hydraulic module to facilitate system commissioning.

- Consult the corresponding installation manual and install the following elements:
  - the heat pump,
  - the hydraulic module,
  - the **Systempro** control unit,
  - the **Climapro2** wireless room thermostat,
  - the wireless outdoor sensor.

## 5 Hydraulic connection

- Take care to clean the pipes before assembly removing any debris or burrs. Grease and oils may need to be removed they are not possible to remove by cleansing and flushing. Foreign bodies in the system may enter the appliance and interrupt its operation.
- Do not use any solvent products, due to the risk of damaging the circuit.
- Only use original seals supplied with the appliance.
- Check that there are no leaks. Repair if necessary.

### 5.1 Heat pump circuit

- Comply with the values given in the table below when making the hydraulic connections of the heat pump circuit.

Linear distance (without elbows or additional pressure drops)	Min. diameter of tubes to be installed
≤ 20 m	Ø ¾"
≤ 30 m	Ø 1"

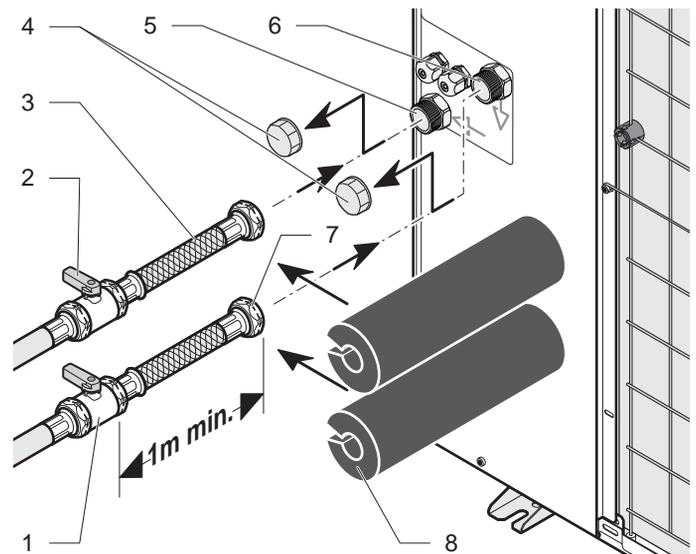


**In the case of an installation with the domestic hot water tank option, deduce the pressure drop of the 3-way valve with respect to the max. linear distance allowed between the domestic hot water tank and the PAC + between the PAC and the hydraulic module (see chapter "Connection of an exchanger tank for domestic hot water").**

### 5.1.1 Connection to the heat pump



**Insulate the pipes with an UV- and high-temperature-resistant insulation.**



key

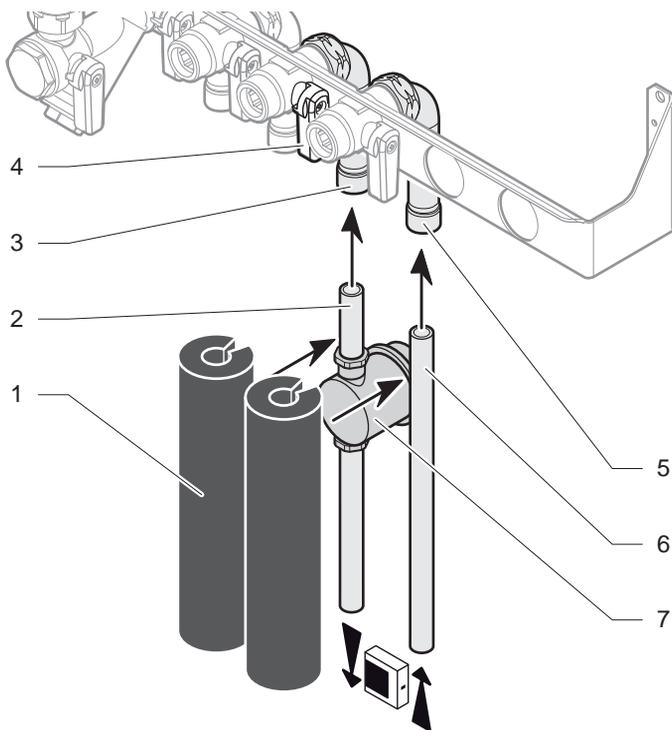
- 1 Heat pump flow circuit ¼ turn shut-off valve in the direction of the building (not included)
- 2 Return circuit ¼ turn shut-off valve in the direction of the heat pump (not included)
- 3 Return circuit hose in the direction of the heat pump (not supplied)
- 4 Cap
- 5 Return connection (Ø1 ") to the heat pump
- 6 Flow heat pump connection (Ø1 ") to the building
- 7 Flow heat pump circuit hose in the direction of the building (not supplied)
- 8 Insulation (not supplied)

- Remove the protection caps (4) located on the connections.
- Connect a hose (3) and a shut-off valve (2) to the return connection (5) to the heat pump.
- Connect a hose (7) and a shut-off valve (1) to the flow heat pump connection (6) in the direction of the building.

### 5.1.2 Connection to the hydraulic module



**Insulate the pipes with an UV- and high-temperature-resistant insulation.**



**Key**

- 1 Insulation (not supplied)
- 2 Heat pump return circuit
- 3 Return connection (Ø 3/4") to the heat pump
- 4 Return circuit 1/4 turn shut-off valve in the direction of the heat pump (not included)
- 5 Flow heat pump connection (Ø 3/4") to the building
- 6 Flow heat pump circuit to the building
- 7 Filter (not supplied)

- Install a filter to the circuit returning to the heat pump. Install it between the 2 shut-off valves in order to be able to remove it from the circuit and clean it periodically.
- Connect the flow heat pump circuit (6).
- Connect the return circuit (2) to the heat pump.

### 5.1.3 Connection of the domestic hot water cylinder (option)

- Refer to the instructions supplied with the 3-way valve and the domestic hot water cylinder for their hydraulic connections to the heat pump circuit.

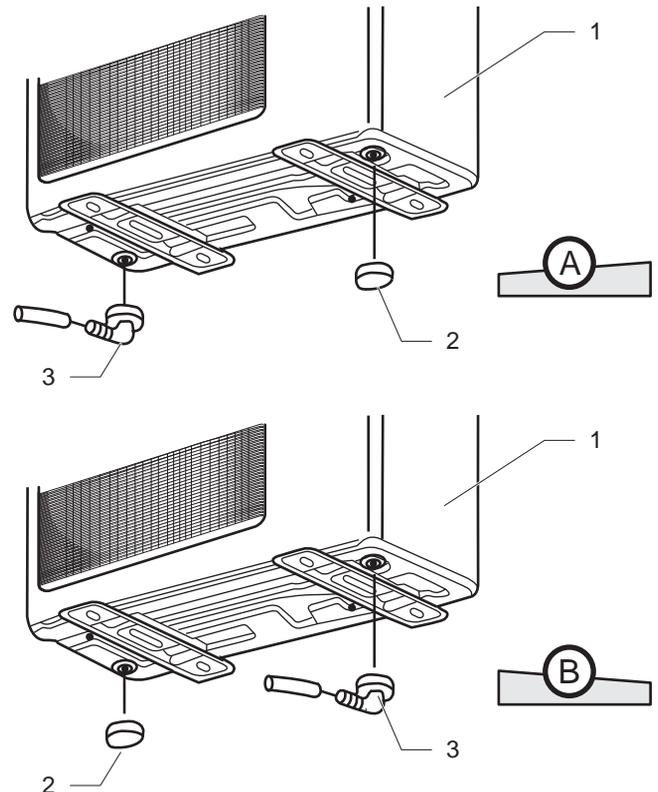


*The pressure loss of the 3-way valve has an equivalent length tubes 3/4" or 1" for 2m.*

- Deduce the pressure loss from the 3-way valve compared to the authorized max. linear distance of the heat pump circuit.

### 5.1.4 Removal of condensate

When the heat pump is operational, it will produce condensation that needs to be drained off.



**Key**

- A Configuration with inclination to the left
- B Configuration with inclination to the right
- 1 Heat pump
- 2 Plug
- 3 Drainage elbow

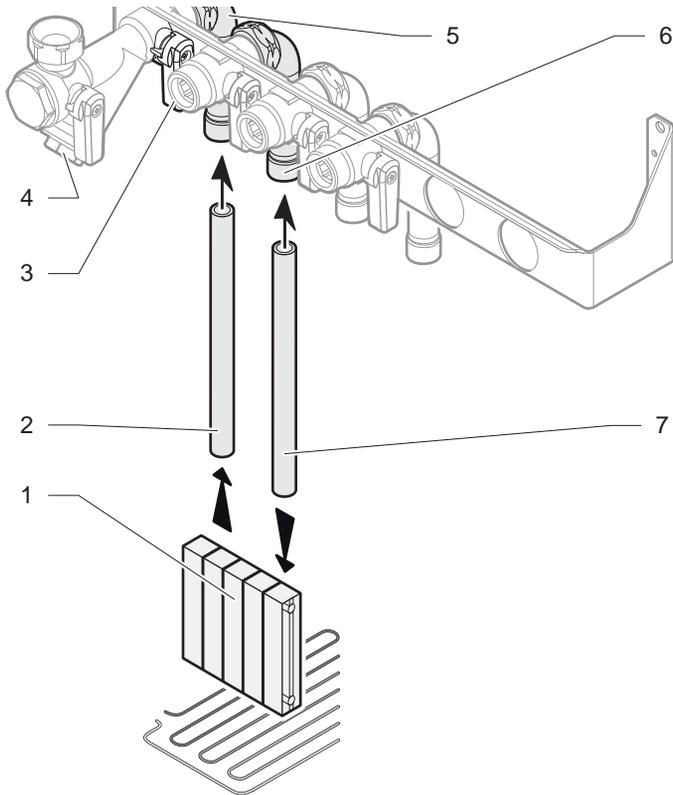
- Insert the drainage elbow (3) and pipe into the correct opening depending on the angle of the heat pump.
- Seal off the other opening with the supplied plug (2).

## 5.2 Heating circuit

### 5.2.1 Connection from the hydraulic module to the heating circuit



*Make the connection limiting the load losses to a minimum (the circuit should be as short as possible, avoid bends and narrow sections...).*



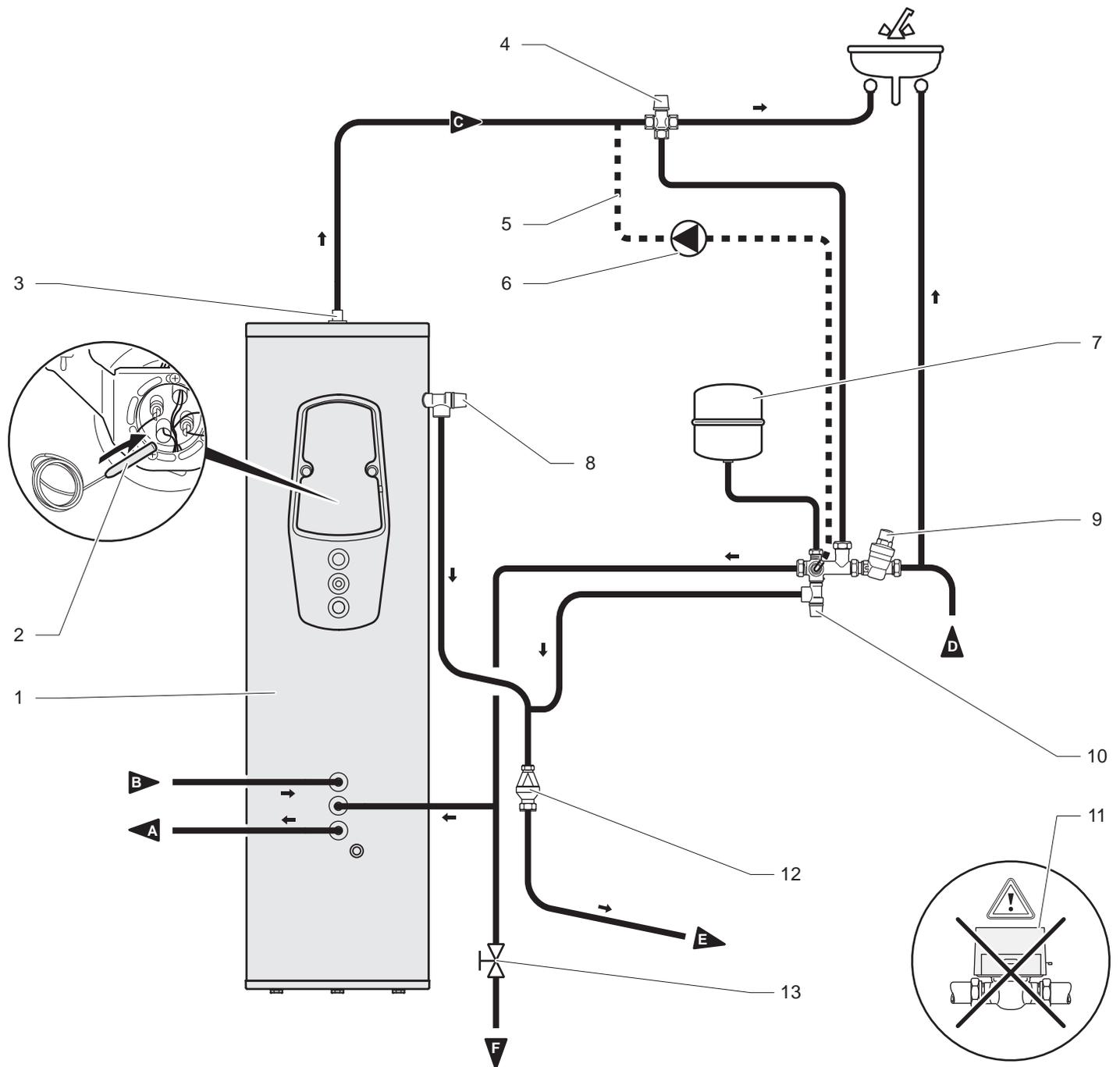
#### Key

- 1 Heating circuit
  - 2 Return heating tubing leading to the hydraulic module (not included)
  - 3 Return heating circuit ¼ turn shut-off valve leading to the hydraulic module (not included)
  - 4 Return heating circuit filter leading to the hydraulic module (not supplied)
  - 5 Return heating connection (Ø ¾") leading to the hydraulic module
  - 6 Flow heating connection (Ø ¾") leading to the hydraulic module
  - 7 Flow heating tubing leading to the hydraulic module (not included)
- Connect a pipe (2) to the return connection (5) leading to the hydraulic module.
  - Connect a pipe (7) to the flow connection (6) leading away from the hydraulic module.
  - Connect the pipes (2) and (7) to the heating circuit.

5.3 Domestic Hot Water circuit



The motorised 2-port valve delivered with the FLUROCYL cylinder is not necessary for the STANDALONE system.



Key

- |  |                            |
|--|----------------------------|
| 1 Domestic hot water cylinder                          | 11 Motorised 2 port valve  |
| 2 Upper temperature sensor                             | 12 Tundish                 |
| 3 Hot water connection                                 | 13 Flurocyl drain valve    |
| 4 Thermostat mixer                                     | A Heat pump circuit return |
| 5 Legionella loop (optional)                           | B Heat pump circuit flow   |
| 6 Pump   | C Domestic hot water flow  |
| 7 Expansion vessel                                     | D Cold water supply        |
| 8 Temperature and pressure relief valve (95°C, 7 bar)  | E Tundish discharge        |
| 9 Pressure limiting valve (3.5 bar) with line strainer | F Drain point              |
| 10 Expansion relief valve (6.0 bar)                    |                            |

## 5.3.1 Domestic hot water pipework

- Connect the hot water outlet to the 22mm hot water connection of the cylinder.
- Lay a further 22mm pipe to the first T-piece.

A pipe of 15mm diameter should then be sufficient.

- If the pipe is very long or several outlets are supplied, continue with another 22mm pipe.

## 5.3.2 Thermostatic mixing valve

A hot water thermostatic mixing valve ensures the hot water from the cylinder is mixed with cold water to a desired maximum temperature between 30°C and 60°C.

- Set the thermostatic mixing valve to the desired maximum temperature during the system commissioning.



**Risk of scalding! Set the thermostat mixer to 60°C or below and check the temperature at a hot water tap to ensure effective protection against scalding.**

## 5.3.3 Mains water supply

The performance of unvented cylinders depends on the available mains water pressure and the pipe size.

In order for the performance of the Flurocyl cylinder to be ideal, an appropriate cold water supply must be available. The measured static pressure must be at least 2.0 bar. A corresponding flow rate of at least 20 - 25 l/min should be available.

NOTE: The mains water pressure is reduced during periods of high water consumption. Make sure you take measurements during these periods.

Example: The available flow rate of mixed water at 40°C is 25 l/min (15 l/min hot water of 60°C from the cylinder mixed with 10 l/min cold water of 10°C) if the measured static cold mains water pressure is 2 bar.

The cylinder operates satisfactorily at a mains water pressure of below 2 bar, but at a reduced flow rate. The unvented cylinder should not be installed if the mains water pressure is below 1 bar. You can obtain information on alternative hot water supply systems from Glow-worm.

To keep the friction losses at a minimum, a minimum diameter of 22mm is recommended for the cold water supply in the building, satisfactory performances can also be achieved with 15mm pipes however.

## 5.3.4 Cold water inlet controls and pipework

- Connect both parts of the water control pack.
- When installing the valves, make sure they are aligned in such a way that the 15mm connection of the expansion relief valve can be connected to the tundish.
- Install the assembled water control pack in the cold water supply at an appropriate place next to the cylinder.

- Make sure there is sufficient space for maintenance and the connection of the discharge pipe from the expansion relief valve.
- Install the drain valve in the cold water supply at the lowest point between the cylinder and the water control pack.

We recommend applying a hose, which reaches about 1m under the base of the cylinder, to the outlet of the drain valve.



**Risk of bursts for the cylinder! No stop valve may be installed between the cold water control pack and the cylinder.**

- Install the water pack so that a discharge pipe of the expansion relief valve can be fitted with constant outward slope which can end at a safe, visible point where there is no risk of freezing.



**Risk of the cylinder bursting due to overpressure! The outlet of the expansion relief valve must not be covered or closed.**

- Test the expansion relief valve regularly to avoid calcification.

To ensure an optimum performance of the cylinder, in particularly buildings in which a pressure controlled cold water is used, copper pipes with a diameter of at least 22mm should be used for the pipe from the main stop valve of the building to the cylinder.

If the discharge pipes are all together, the expansion relief valve may not be installed more than 500 mm away from the temperature and pressure relief valve.

The Flurocyl cylinder is supplied with an external hot water expansion vessel (DW EV).

- Connect this expansion vessel to the installed water control pack as follows:
  - Screw the expansion vessel directly onto the water control pack, via the connection intended for this purpose or
  - Connect the expansion vessel to the water control pack with a copper pipe or an appropriate hose. Make sure the expansion vessel is supported sufficiently.
- Use the supplied mounting bracket if the expansion vessel is to be mounted on the wall.
- Connect thermostatic mixing valve cold supply to the pressure controlled cold water connection of the water control pack (if convenient).



**In areas with high water pressure (4 bar or more), a bath or shower mixer valve could also be connected to the pressure-controlled cold water connection of the water control pack. This is to ensure the pressure of the hot and cold water supply to the mixer valve is about the same. Any second cold water supply connection should be installed between the water control pack and the cylinder by means of a T-piece.**

## 6 Electrical connections



**Incorrect installation can cause electric shock or appliance damage. The electrical connection of the appliance must be made only by a qualified engineer.**

The appliance must be connected directly to an accessible, fixed, switched, electrical outlet.

The manufacturer declines any responsibility for damages to persons or others caused by the incorrect installation of the appliance earthing. This includes failure to comply with current standards.

Electrical components have been tested to meet the equivalent requirements of BSEN 7671 and the BEAB regulations.

### Main board



#### Key

- 1 Electrical wires
- 2 Insulation

When you connect the electrical wires to a connector on the electronic board:

- Maintain a maximum distance of 20 mm between the connector and the outer insulation.
- If using single core wires are used ensure that they are wrapped together in an insulating sheath.

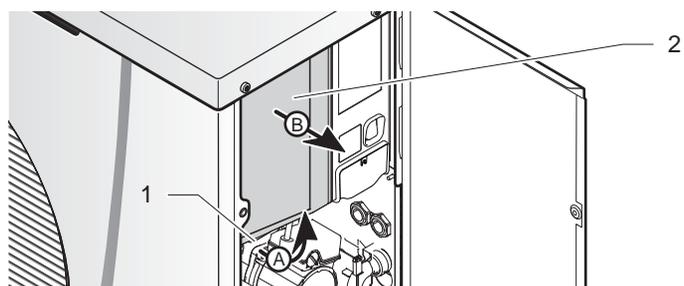
### 6.1 Heat pump

The cables connecting the isolator and the heat pump must be:

- suitable for a fixed installation.
- weather resistant.
- equipped with wires adapted to appliance's power rating.
- Connect the heat pump to an electrical panel via an independent protection system (20A differential breaker with at least 3 mm between each contact).

Additional protection may be required during installation to ensure overvoltage category II.

#### 6.1.1 Access to main board



#### Key

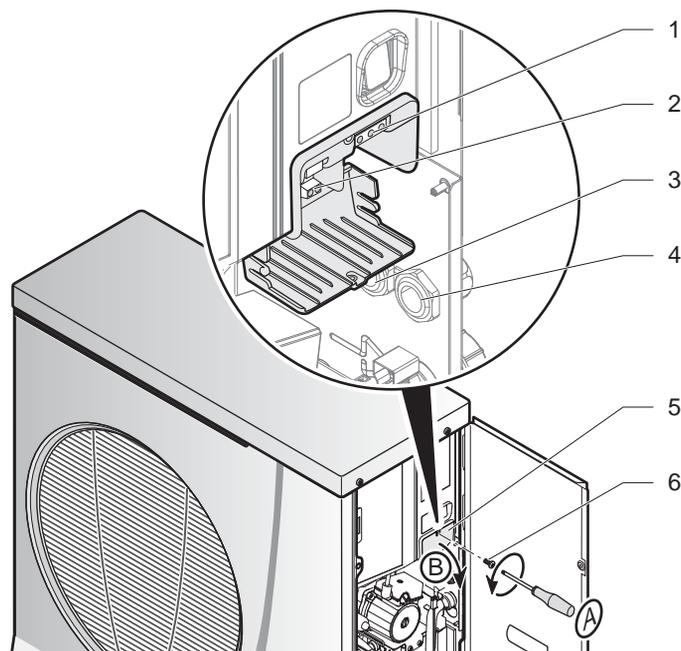
- 1 Handle
- 2 Box

- Remove the box (2) by pulling it toward you using the handle (1).

### 6.2 Electrical wiring



**Insert the Ebus 24V cable and 230V power cable in different casings.**



#### Key

- 1 230 V supply connection terminal block
- 2 Ebus connection terminal
- 3 Clamp for Ebus cable
- 4 Clamp for 230 V power cable
- 5 Access hatch to electrical connections
- 6 Access hatch screw

- Remove the screw (6) from the access hatch (5).
- Open the access hatch (5).

#### Ebus Connection

- Connect a 2 x 0.75 mm<sup>2</sup> cable to the heat pump's BUS terminal (2).
- Pass the cable through the cable clamp (3).
- Connect the Ebus cable to the **Systempro** control unit.
- Tighten the clamp.

#### 230V Connection

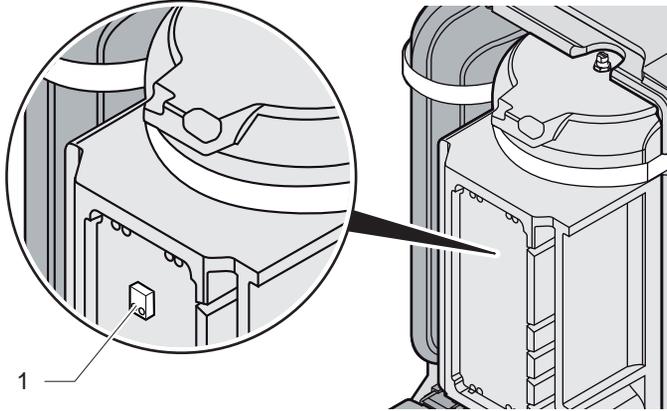
- Connect a 3 x 2.5 mm<sup>2</sup> cable to the heat pump's power terminal 230V (1).
- Pass the cable through the cable clamp (4).
- Connect the heat pump's power cable to the installation's electrical panel: single-phase network 230V + neutral + earth.
- Close the access hatch with the screw (6).
- Tighten the clamp.

## 6.3 Hydraulic module

- Connect the hydraulic module to an electrical panel via an independent protective system (32A differential breaker with a separation of at least 3mm between all contacts).

Additional protection may be required during installation to ensure overvoltage category II.

### EBUS Connection



#### Key

1 Ebus connection terminal

- Connect a 2 x 0.75 mm<sup>2</sup> cable to the hydraulic module's BUS terminal (2).
- Connect the Ebus cable to the **Systempro** control unit.

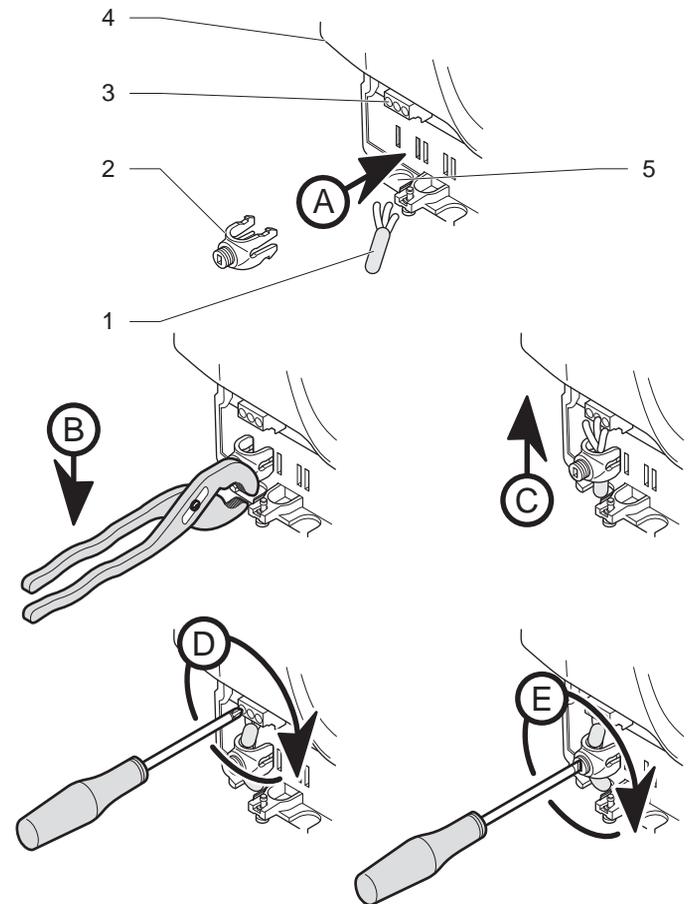
### 230V Connection

- Connect a 3 x 4 mm<sup>2</sup> cable to the hydraulic module's power terminal 230V (1).
- Connect the hydraulic module's power cable to the installation's electrical panel: single-phase network 230V + neutral + earth.

## 6.4 Systempro control unit

- The electrical installation in the dwelling must permit the power supply to the equipment to be isolated by a double pole isolation switch and be fused. The double pole isolation switch must incorporate a gap of 3mm between the contacts.
- Use a power cable suitable for the mains connection, minimum 0.75 mm. If the cable is damaged, it must be replaced by a qualified engineer.

### 6.4.1 Wiring to the Systempro control unit



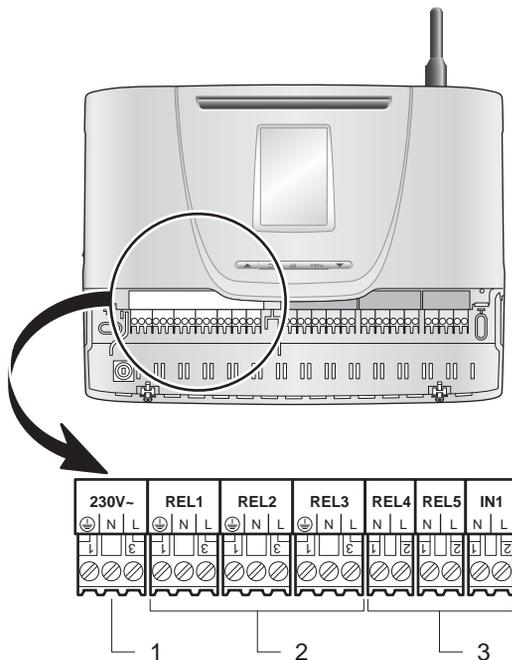
#### Key

- 1 230 V power cable
- 2 Break out tab
- 3 Anti-tamper connection
- 4 Power connection
- 5 Control unit

- Gently remove the break out tab (2) from the control unit with pliers (A).
- Connect the control unit following the order (B) to (D).
- Pass the power cable (1) through the anti-tamper connector (3).
- Connect the power supply to the 230 V connector (4) following the instructions given on the connector.
- Tighten the power cable (1) in the anti-tamper connector (3).

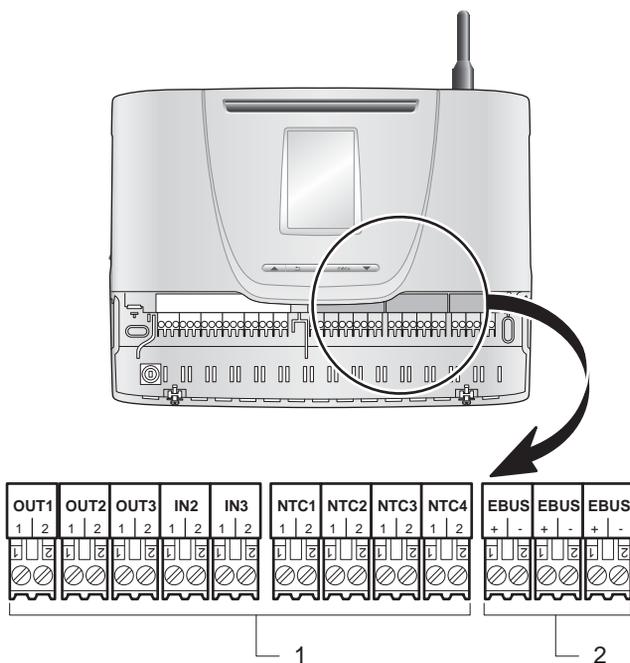
6.4.2 Internal connection

230V connection (High voltage)



- Key**
- 1 230 V connector (3-pin: earth / neutral / live)
  - 2 Connectors (3 pins: earth / neutral / live): REL1, REL2 and REL3
  - 3 Connectors (2 pins: live / neutral): REL4, REL5 and IN1

24V connection (Low voltage)



- Key**
- 1 Connectors (2 pins) OUT1, OUT2, OUT3, IN2, IN3, NTC1, NTC2, NTC3 and NTC4
  - 2 EBUS connectors (2 pins)

6.4.3 System connection

- Refer to the table below for the wiring of the systempro.
- **Diagram 4 (4.1) : Standalone with 1 low heating temperature zone (30-40°C) or 1 middle heating temperature zone (< 60°C)**

Key	Description	Cable min.
230V~	Control unit electrical supply	3 x 0.75 mm <sup>2</sup>
REL1	Domestic hot water cylinder 3-way valve	3 x 0.75 mm <sup>2</sup>
REL2	16A power relay for the domestic hot water cylinder electric heater (not supplied)	3 x 0.75 mm <sup>2</sup>
NTC2	DHW cylinder thermistor (*)	2 x 0.75 mm <sup>2</sup>
EBUS	EBUS connection of the heat pump	2 x 0.75 mm <sup>2</sup>
EBUS	EBUS connection of the hydraulic module	2 x 0.75 mm <sup>2</sup>

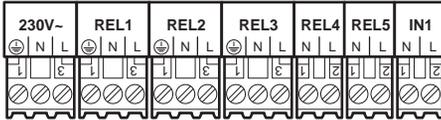
- **Diagram 4 (4.2) : Standalone with 2 low heating temperature zones (30-40°C) or 2 middle heating temperature zones (< 60°C)**

Key	Description	Cable min.
230V~	Control unit electrical supply	3 x 0.75 mm <sup>2</sup>
REL1	Domestic hot water cylinder 3-way valve	3 x 0.75 mm <sup>2</sup>
REL2	16A power relay for the domestic hot water cylinder electric heater (not supplied)	3 x 0.75 mm <sup>2</sup>
REL4	Heating circuit 2 port valve "area 2"	3 x 0.75 mm <sup>2</sup>
REL5	Heating circuit 2 port valve "area 1"	3 x 0.75 mm <sup>2</sup>
NTC2	DHW cylinder thermistor (*)	2 x 0.75 mm <sup>2</sup>
EBUS	EBUS connection of the heat pump	2 x 0.75 mm <sup>2</sup>
EBUS	EBUS connection of the hydraulic module	2 x 0.75 mm <sup>2</sup>

- **Diagram 4 (4.3) : Standalone with 3 low heating temperature zones (30-40°C) or 3 middle heating temperature zones (< 60°C)**

Key	Description	Cable min.
230V~	Control unit electrical supply	3 x 0.75 mm <sup>2</sup>
REL1	Domestic hot water cylinder 3-way valve	3 x 0.75 mm <sup>2</sup>
REL2	16A power relay for the domestic hot water cylinder electric heater (not supplied)	3 x 0.75 mm <sup>2</sup>
REL3	Heating circuit 2 port valve "area 3"	3 x 0.75 mm <sup>2</sup>
REL4	Heating circuit 2 port valve "area 2"	3 x 0.75 mm <sup>2</sup>
REL5	Heating circuit 2 port valve "area 1"	3 x 0.75 mm <sup>2</sup>
NTC2	DHW cylinder thermistor (*)	2 x 0.75 mm <sup>2</sup>
EBUS	EBUS connection of the heat pump	2 x 0.75 mm <sup>2</sup>
EBUS	EBUS connection of the hydraulic module	2 x 0.75 mm <sup>2</sup>

## 6.4.4 Connection of the 2 port valve



### When the 2 port valve is connected to REL3:

- Connect the neutral wire (blue) of the valve to the “N” of the REL3 connector.
- Connect the live wire (brown) of the valve to the “L” of the REL3 connector.
- Connect the earth wire (yellow/green) of the valve to the earth of the REL3 connector.
- Electrically insulate the red and grey wires of the valve as they are not used.

### When the 2 port valve is connected to REL4 or 5:

- Connect the neutral wire (blue) of the valve to the “N” and the live wire (brown) of the valve to the “L” of the REL4 or 5 connector.
- Connect the earth wire (yellow/green) of the valve to the earth of the REL3 connector.
- Electrically insulate the red and grey wires of the valve as they are not used.

## Commissioning

- Open all the hydraulic circuits' valves.

## 7 Filling the glycol circuit

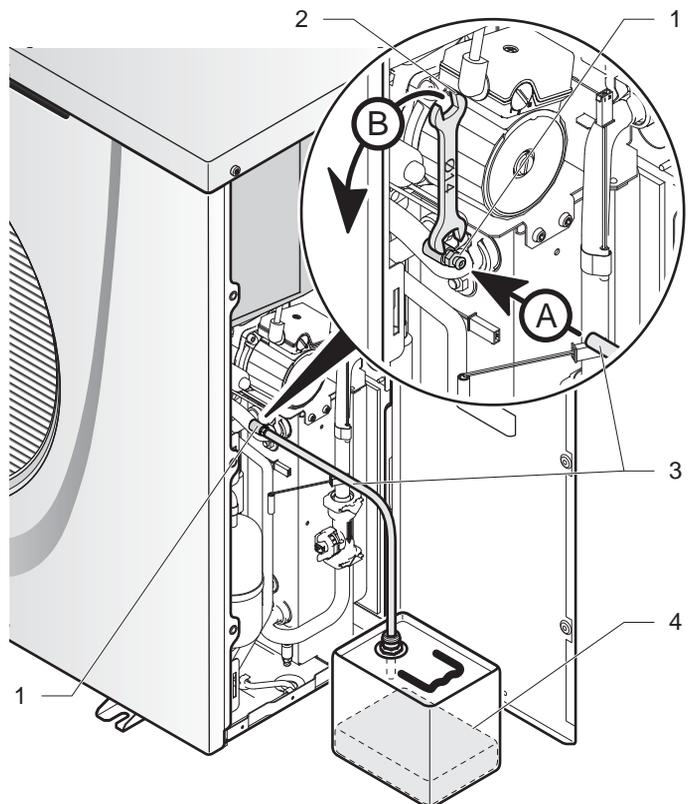


**Warning! Do not dispose of glycol into drains and the environment.**



**We recommend that you use propylene glycol enriched with corrosive inhibitors.**

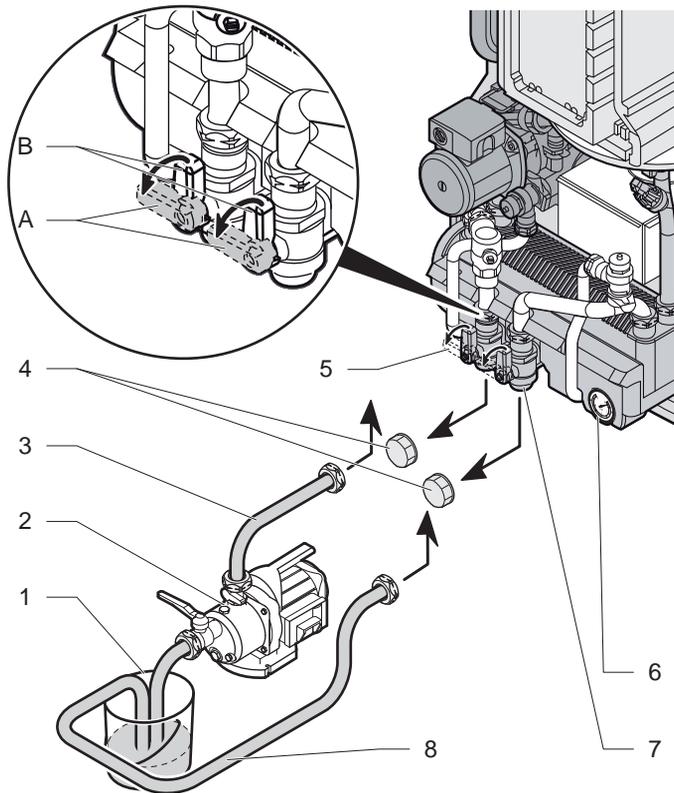
- Mix 1 part propylene glycol with 2 parts water. This mixture ensures antifreeze protection down to an exterior temperature of -15 °C.
- Use an antifreeze test kit to ensure accurate dosing.



### Key

- 1 Air trap
- 2 Ø 14 mm flat wrench (\*)
- 3 Hose
- 4 Deposit (\*)
- (\*) Not included

- Connect one end of the hose (3) to the trap (1).
- Insert the other end of the hose (3) into the container (4) in order to recover any residual brine during the filling of the circuit.
- Using a flat wrench (2), open the trap (1) a ¼ turn.



- Key**
- 1 Glycol container (\*)
  - 2 Filling pump (\*)
  - 3 Hose leading to the filling pump output (\*)
  - 4 Cap
  - 5 3-way valve with shut-off valve for filling
  - 6 Manometer
  - 7 3-way valve with shut-off valve for filling
  - 8 Hose leading to the filling pump return (\*)
- (\*) Not supplied with the appliance

- A Valve in filling mode
- B Valve in normal operating mode



*If the domestic hot water cylinder option is installed on the system, position the kit 3-way valve to the MAN position to ensure complete filling of the heat pump circuit.*

- In order to drain the glycol circuit after filling, use a fill pump (2).
- Remove the caps (4) from the valves (5) and (7).
- Connect the filling pump hose (3) to the valve (5).
- Insert the hose (8) into the container and (1) and connect it to the valve (7).
- Open valves (5) and (7) in (A) position as shown in the illustration above.
- Start the fill pump (2) and fill the glycol circuit.
- Continue running the filling pump until completely purged of air (8).
- Close the air trap located on the heat pump.
- Close the valve (7) in (B) position and ensure the glycol circuit is left with a pressure of between 1.5 and 2 bars with the aid of the manometer (6).

- Close the valve (5) in (B) position and stop the filling pump.



*If the domestic hot water cylinder option is installed on the system, reposition the kit 3-way valve to the AUTO position*

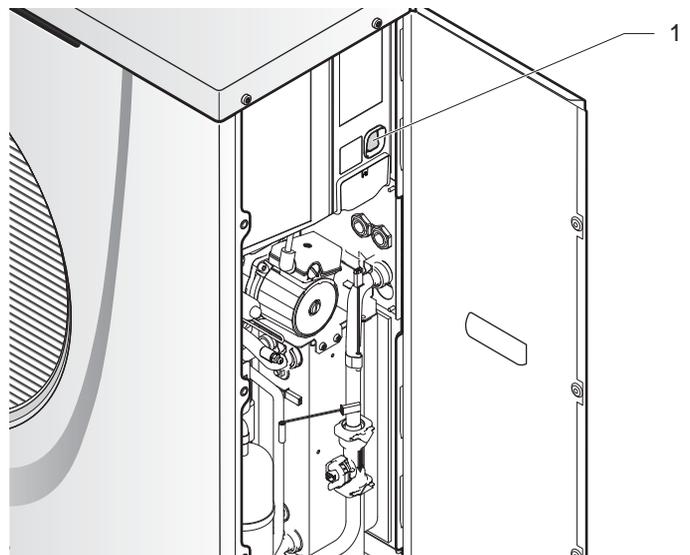


*The level of glycol may decrease during the first month following the commissioning of the installation. It may also vary in accordance with the outdoor temperature.*

Any residue of glycol solution should be kept in an appropriate container to be re-used for the next filling.

- Ensure any leftover glycol solution is left with the end user and retained in a safe place.

## 8 Activating the heat pump



**Key**

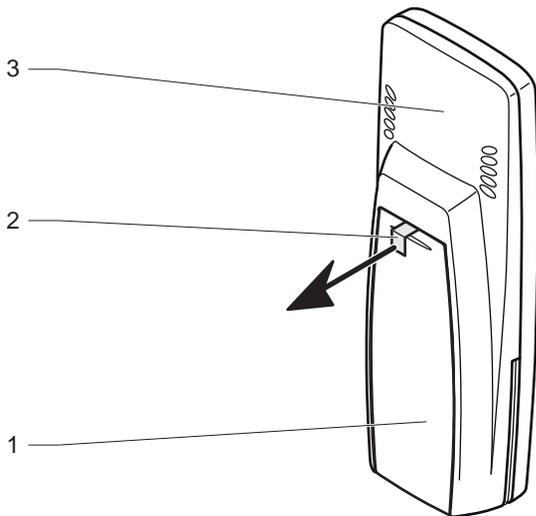
- 1 ON/OFF button

- Switch ON the circuit breaker which is located on the electrical panel and connected to the heat pump.
- Switch ON the heat pump button (1). Check that the green LED located on the heat pump's motherboard is on.



*To locate the LEDs on the PCB, see the "Wiring diagram" chapter in the heat pump instructions.*

## 9 Activating the room thermostat



- Key**
- 1 Battery cover
  - 2 Protective cover
  - 3 Room thermostat

- Remove the protective cover (2) located in the battery compartment following the order (A) to (C).
- The main screen of the room thermostat is displayed.

## 10 Activating the control unit

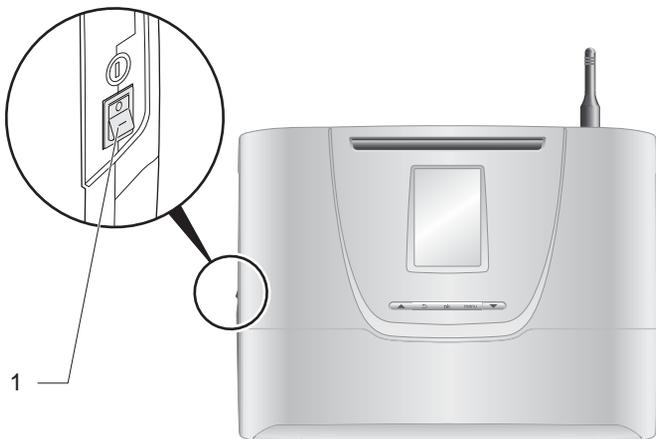


**Ensure that the heat pump and heating circuits have been filled.**



**Ensure that all the electrical connections have been made.**

- Switch ON the circuit breaker which is located on the electrical panel and connected to the control unit.

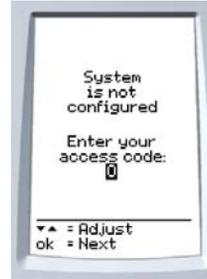


- Key**
- 1 Switch On (I) / Off (O)

- Turn on the control unit (1) with the switch (2) in position (I). When connected for the first time, the installation menu is displayed.



- Use the buttons   to select a language.
- Press the button  to confirm.

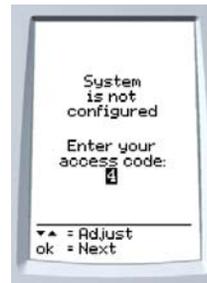


- Enter the installer access code 96 with the buttons  .
- Press the button  to confirm.

## 10.1 Configuring the installation



- Follow and confirm the steps prompted by the initial installation aid.
- Press the button  to confirm.



- Your system corresponds to diagram number "4" in the control unit.
- Choose diagram number "4" with the buttons  .
  - Press the button  to confirm.



- Multizone kit refers to zone valves for more than one heating zone.
- If so, choose "YES".
  - Use the button  to confirm and follow the control unit instructions.
  - If this is not the case and the installation has only one zone, choose "NO" with the buttons  .
  - Press the button  to confirm.

This screen is only displayed if you answered "YES" to the previous question.



- Select number of heating zones present on the system using the buttons  .

- Z20 kit = 2 heating zones
- Z11 kit = not available
- Z30 kit = 3 heating zones

- Press the button  to confirm.



- Using the buttons  , select **DHW cylinder** on the screen, if the option is installed.

- Press the button  to confirm.



The control unit summarizes your installation.

- If this is correct, confirm with the button .
- If it is not correct, press the button  and change the data you introduced.



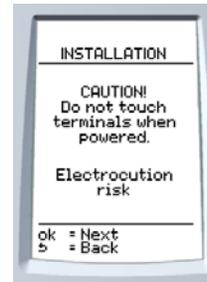
- Press the button .

## 10.2 Wiring summary



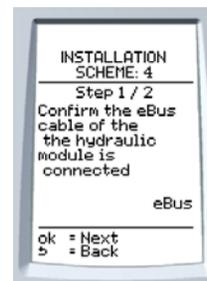
**To check or modify a connection:**

- **Set the control box switch to the Off (O) position.**
- **Set the circuit breaker located on the electrical panel and connected to the control box to the Off position.**



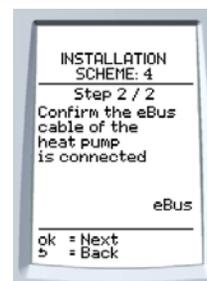
- Press the button .

Via the screen, you will be asked to verify, step by step, the connections you made to the control unit.



- If the connections are correct, confirm with the button .
- If they are not correct, disconnect the control unit's power supply and complete the necessary wiring as indicated.
- Once completed, connect on the control unit's power supply and confirm with the button .

Once the control unit has been reconnected, it returns to the current control function.



- Press the button .

## 10.3 "Thermostat / sensor" menu



- Using the buttons  , select **Rmstat/sensor** on the screen.
- Press the button  to confirm.

## 10.4 Thermostat(s)



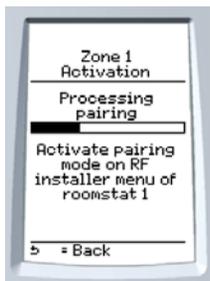
- Using the buttons , select **Roomstat(s)** on the screen.
- Press the button to confirm.



- Using the buttons , select the area controlled by the room thermostat.
- Press the button to confirm.

On the room thermostat:

- Press the button for 7 seconds.
- Enter the professional access code (96).
- Via the installer menu > select > RF > pairing.
- Press the room thermostat button .



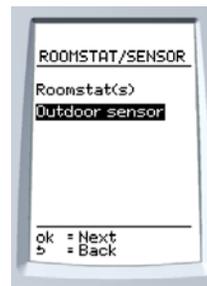
The control unit and the room thermostat display "Connection finished" on the respective screen.

If the message "Connection failed" is displayed, press the button and repeat the operation.

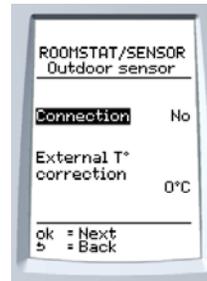
- Repeat these operations for each room thermostat (the zone number is displayed on the thermostat at the end of pairing).

- Press the button twice.

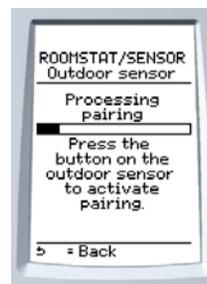
## 10.5 Outdoor sensor



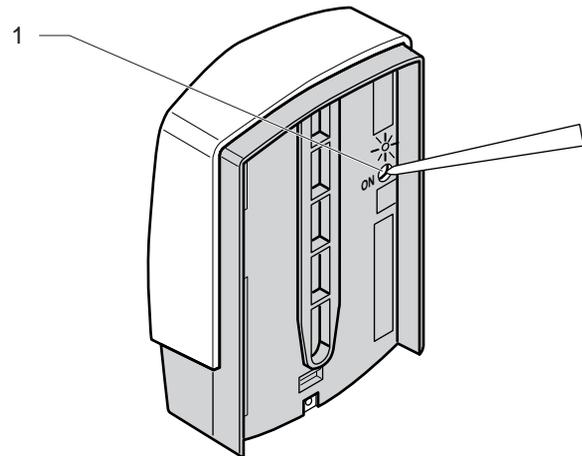
- Using the buttons , select **Outdoor sensor** on the screen.
- Press the button to confirm.



- Using the buttons , select **Connection** on the screen.
- Press the button to confirm.



- Press the button on the outdoor sensor to connect.



Key

1 Outdoor sensor button

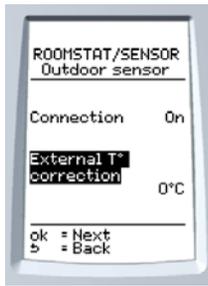


Once the sensor is detected, the message «Connection completed» is displayed. If unsuccessful, the message "Connection failure" is displayed. Press the button and repeat the operation.

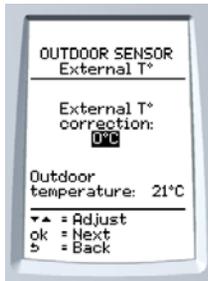
- Press the button .



The External T°C Correction allows you to correct the temperature measured by the outdoor sensor (+/- 5 °C, at intervals of 1 °C - factory setting: 0).



- Using the buttons , select **External T °C correction** on the screen.
- Press the button to confirm.



This setting is automatically modified in the installer room thermostat menu.

- Increase or decrease with the buttons to display the desired correction.
- Press the button to confirm.

- Press the button twice.

## 10.6 Self check



**Do not modify the cables when connected to the mains.**

The automatic test allows you to check:

- EBUS inputs,
- NTC inputs,
- the RF connection with the room thermostat,
- the outdoor sensor radio connection.



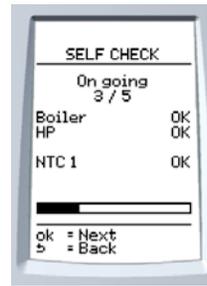
*The other connections are not tested and should be visually inspected during installation or configuration modifications.*



- Using the buttons , select **Self check** on the screen.
- Press the button to confirm.

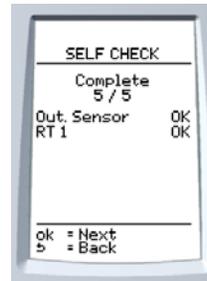


- Check that all installation's components are switched on.
- Confirm the start of the test with the button .



The automatic test will start.

The results appear in seconds, indicating the status of each component.



- If the connection is correct, the message "OK" appears opposite the component.
- If the connection is not correct, the message "Not OK" appears opposite the component. In this case, check the connections.

## 10.7 Settings

This menu allows you to adjust different functions in accordance with the connected appliances and to reset all the parameters.

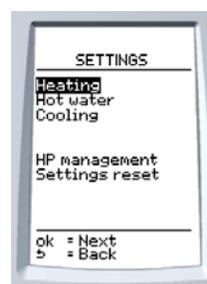


- Using the buttons , select **Settings** on the screen.
- Press the button to confirm.

### 10.7.1 Heating



**The maximum heating output temperature must be adjusted in accordance with the characteristics of your installation.**



- Using the buttons , select **Heating** on the screen.
- Press the button to confirm.



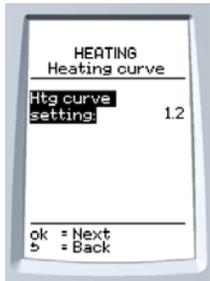
This menu allows you to adjust the installation's maximum heating output temperature (value adjustable between 30 °C and 80 °C - factory setting: 73°C).

- Press the button .



- Press the button .
- Increase or decrease with the buttons   to display the desired value.
- Press the button  to confirm.
- Press the button .

This menu allows you to select the heating curve (value adjustable between 0.2 and 4 - factory setting: 1.2), which allows you to obtain the maximum heating demand for the usual minimum outdoor temperature for the region in which the sensor is installed.

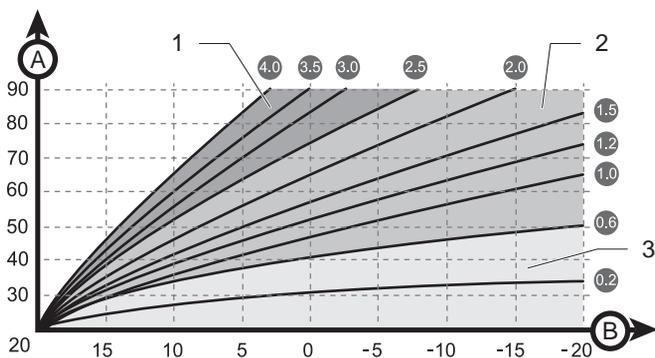


- Using the buttons  , select **Heating curve** adjustment on the screen.
- Press the button  twice.
- Increase or decrease with the buttons   to display the desired value(s).
- Press the button  to confirm.



**Ensure that the heating curve setting is compatible with the installation.**

**Heating curve**



Key

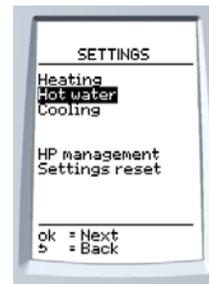
- 1 Older properties with radiators
  - 2 Standard/modern house with radiators
  - 3 Highly insulated modern house with low temperature radiators or underfloor heating
- A Heating flow temperature (°C)  
B External temperature

- Press the button  twice.

## 10.7.2 Domestic hot water

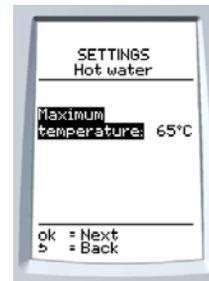


*The lower the temperature of the hot water, the more economical the heat pump.*



This menu allows you to adjust the maximum hot water temperature (value adjustable between 35 °C and 65 °C - factory setting: 65°C).

- Using the buttons  , select **Hot water** on the screen.
- Press the button  to confirm.

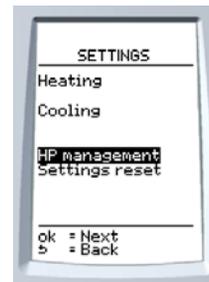


- Press the button .
- Increase or decrease with the buttons   to display the desired value.
- Press the button  to confirm.
- Press the button .

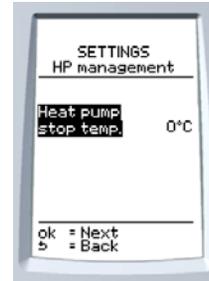
## 10.7.3 Cooling (\*)

(\*) Function not active for the UK

## 10.7.4 HP Management

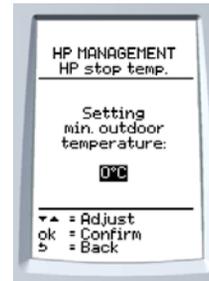


- Select **HP Management** on the screen using the buttons  .
- Press the button .



This menu is used to set the outside temperature from which the heat pump must turn off (value adjustable from -10°C to 20°C, factory setting: 0°C).

- Press the button .



- Increase or decrease with the buttons   to display the desired value.
- Press the button .

### 10.7.5 Resetting parameters

This feature allows you to reset the parameters of the control unit (factory setting).



**The resetting of factory settings is irreversible. Any customised configuration of the control unit will be lost.**



- Using the buttons , select **Settings reset** on the screen.
- Press the button to confirm.



- Increase or decrease with the buttons to display the desired value.
- Press the button to confirm.
- Press the button .

### 10.8 Commissioning

This menu allows you to carry out the necessary operations on the appliances following installation.

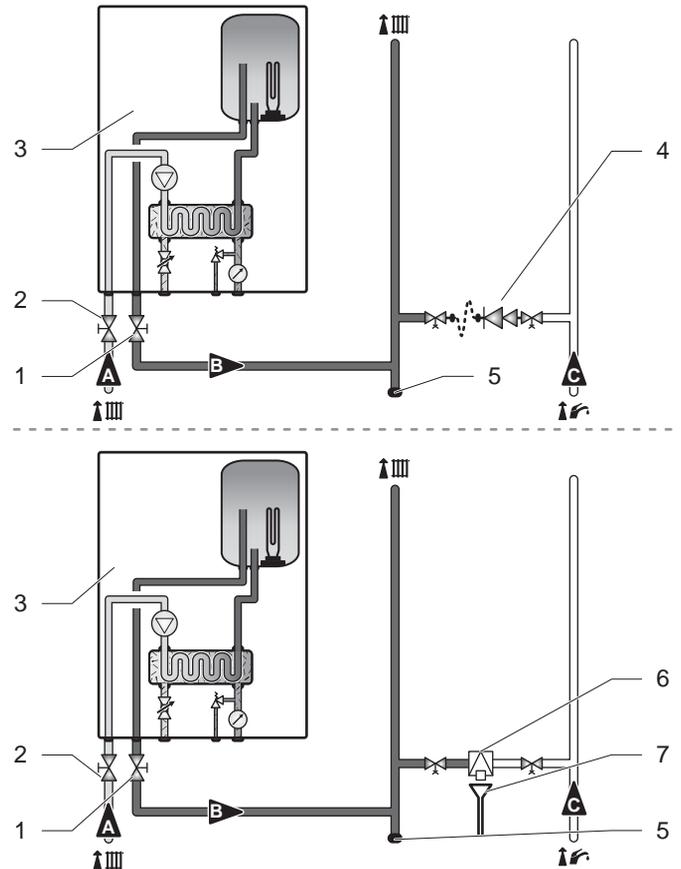


- Using the buttons , select **Commissioning** on the screen.
- Press the button to confirm.

### 10.8.1 Filling and venting the heating circuit

Venting the heating circuit purges the air present in the heating circuit.

Suitable external filling systems are shown diagrammatically, see diagram below.



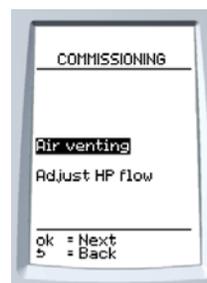
Key

- 1 Heating flow isolating valve
- 2 Heating return isolating valve
- 3 Hydraulic module
- 4 Temporary filling loop (remove immediately after filling)
- 5 Drain point
- 6 Back flow prevention device
- 7 Tundish

- A Heating return circuit
- B Heating flow circuit
- C Domestic cold water supply in

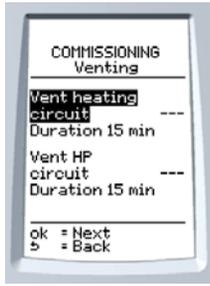
- Assurez-vous que le robinet d'arrivée d'eau froide de l'installation est ouvert.

#### A - Case of a mono-zone installation :



- Using the buttons , select **Air venting** on the screen.
- Press the button to confirm.

- Open the different heating circuit air vent (on the pump and the hydraulic module tank...).



- Using the buttons  , select **Vent heating circuit** on the screen.
- Press the button  to confirm.



The screen shows the pressure measured in the system.

- Open the taps on the module hydraulic jig and the installation domestic cold water inlet tap.
- Activate filling mode by pressing the button .

- Open the taps on the module hydraulic jig and the installation domestic cold water inlet tap.

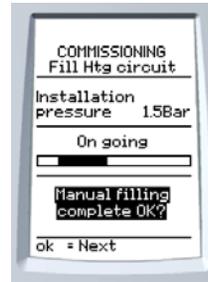
- Fill the installation until the control unit shows 0.8 bar of pressure.
- Close the cold water inlet shutoff tap.
- Vent each radiator until normal water flow then close the venting valves.



- Vent the hydraulic module tank.
- Repeat the operation until all the radiators and the module tank are vented.
- Confirm with the button  in order to begin the venting process.

The venting process is carried out for 15 minutes. You can simultaneously run the venting of the HP circuit.

- Press the button .
- Check that the pressure has not reduced. If it has, repeat the previous operations.



The screen displays the pressure measured in the system and that installation filling is in progress.

- To stop filling press the button .
- Close the filling loop.
- Vent each radiator until normal water flow then close the venting valves.
- Vent the hydraulic module tank.
- Repeat the operation until all the radiators and the module tank are vented.
- Press the button  to confirm.



**When venting is complete, close the different heating circuit air vent.**



- Using the buttons  , select **Air venting** on the screen.
- Press the button  to confirm.

- Open the different heating circuit air vent (on the pump and the hydraulic module tank...).

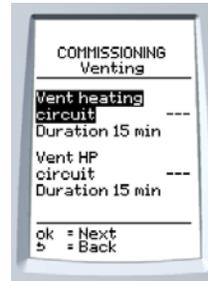
## B - Case of a multi-zone installation :



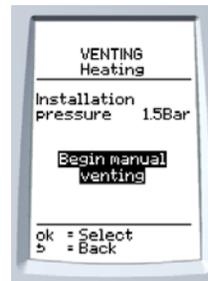
*The heating circuit can only be filled via the control unit if you have chosen the multi-zone kit option. It is used to open the valves of each zone.*



- Select **Fill htg circuit** on the screen using the buttons  .
- Press the button  to confirm.



- Using the buttons  , select **Vent heating circuit** on the screen.
- Press the button  to confirm.



- Confirm with the button  in order to begin the venting process.

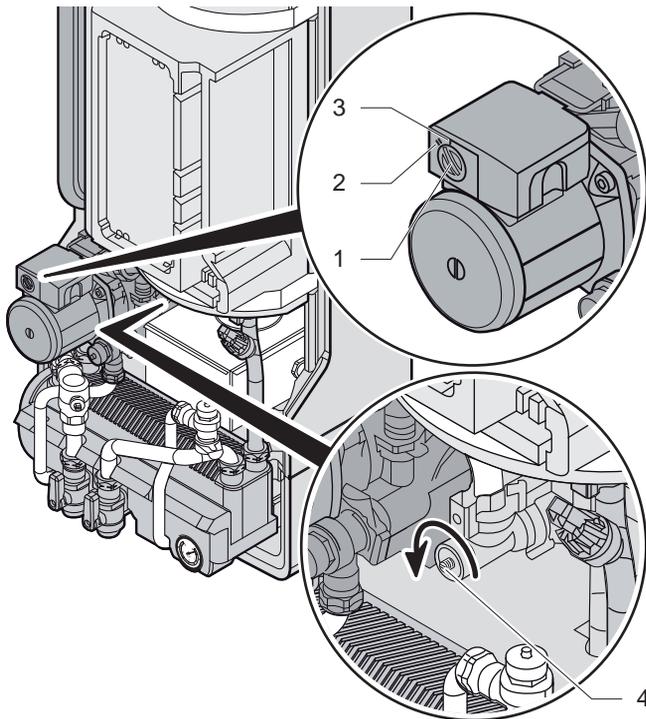
The venting process is carried out for 15 minutes. You can simultaneously run the venting of the HP circuit.

- Press the button .
- Check that the pressure has not reduced. If it has, repeat the previous operations.



**When venting is complete, close the different heating circuit air vent.**

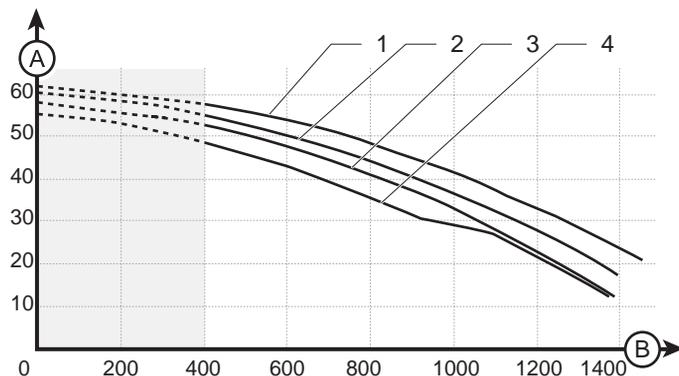
### 10.8.2 Heating circuit adjustment



- Key**
- 1 Speed control
  - 2 Speed II (factory setting)
  - 3 Speed I
  - 4 By-pass screw

- Turn the control (1) to select pump speed I or II, in accordance with the flow / pressure curve below.
- Depending on the design of the system the by-pass may need further adjustment. It is adjusted clockwise to close and anti-clockwise to open. This should be balanced to ensure that it operates if the pump output is adjusted.

**Hydraulic module pump flow / pressure curve**



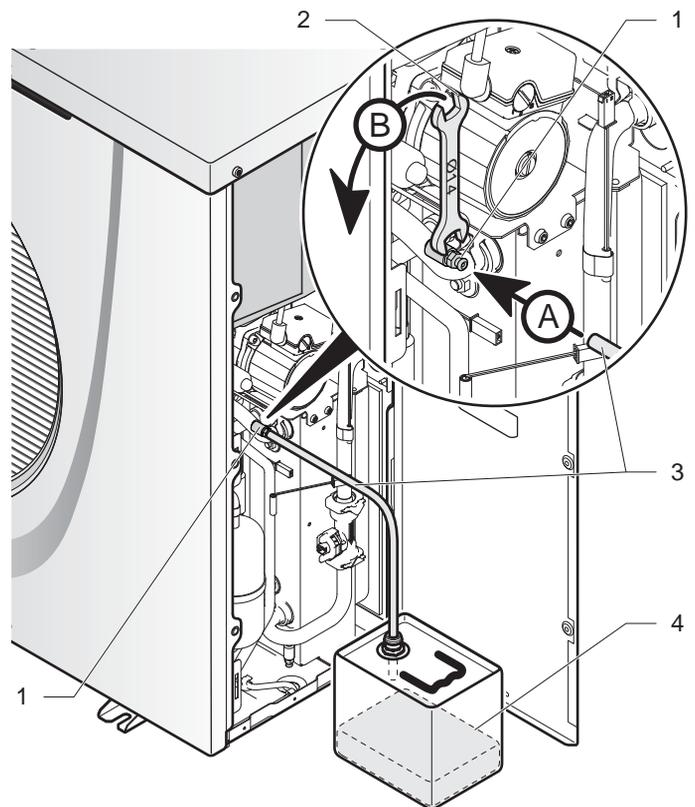
- Key**
- 1 Speed 2, bypass closed
  - 2 Speed 2, bypass opened
  - 3 Speed 1, bypass closed
  - 4 Speed 1, bypass opened
  - A Available pressure (kPa)
  - B Flow within the circuit (l/h)

### 10.8.3 Venting the HP circuit

The venting of the HP circuit allows you to purge any air in the HP circuit.

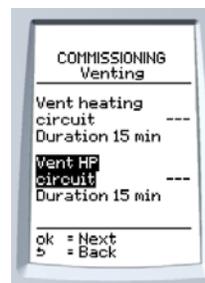


*If the domestic hot water cylinder option is installed on the system, reposition the kit 3-way valve to the AUTO position.*

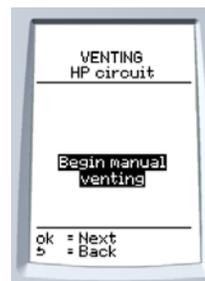


- Key**
- 1 Air trap
  - 2 Ø 14 mm flat wrench (Not included)
  - 3 Hose
  - 4 Container (Not included)

- Connect one end of the hose (3) to the trap (1).
- Insert the other end of the hose (3) into the container (4) in order to recover any residual glycol during the venting of the circuit.



- Using the buttons , select **Vent HP circuit** on the screen.
- Press the button to confirm.



- Confirm with the button in order to begin the venting process.
- You can start the heating circuit bleed at the same time.

# INSTALLATION

- Using a flat wrench (2), open the trap (1) a ¼ turn in order to remove the air present in the glycol circuit, then close it quickly (in order to avoid emptying the circuit).

The venting process is carried out for 15 minutes.

- Repeat this last operation at the end of the venting procedure.
- Press the button .



**The venting may result in a drop in the glycol circuit pressure.**

- Ensure that the glycol circuit pressure is between 1.5 and 2bars. If it not, top up the glycol circuit.



**When venting is complete, make sure that the various heating circuit air vent are open.**

## 10.8.4 Adjustment of HP circuit flow

The heat pump is designed to operate with a minimum flow of 750 l / h. If the flow is less than 500 l / h, the heat pump will stop and the heater resistance will begin to function. Heating comfort will always be guaranteed, but energy saving will be compromised.

The heat pump is equipped with a flow sensor and it is possible to read the water flow directly via the control unit.



The HP circuit flow should be between 750 and 850 l / h.



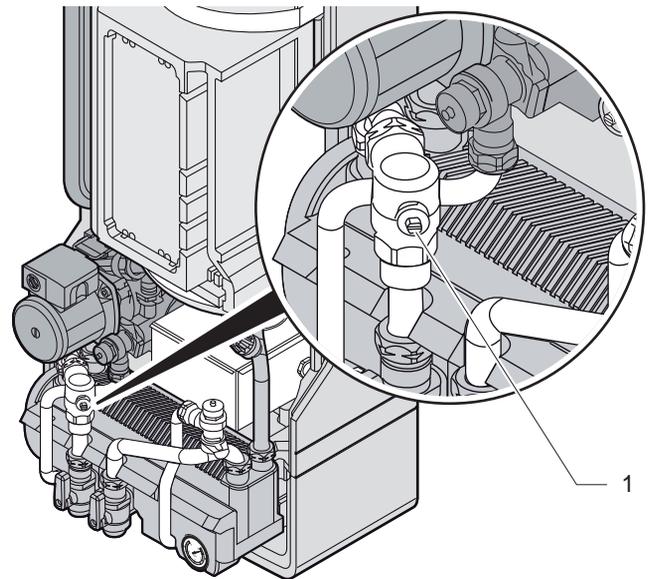
Incorrect venting of the installation may lead to variations in flow.



- Using the buttons  , select **HP circuit flow** on the screen.
- Press the button  to confirm.



- Using the button , launch the reading of the heat pump circuit flow.



Key

1 Flow control valve

- Use the control valve (1) to adjust the flow of the HP circuit to between 750 and 850 l/h.



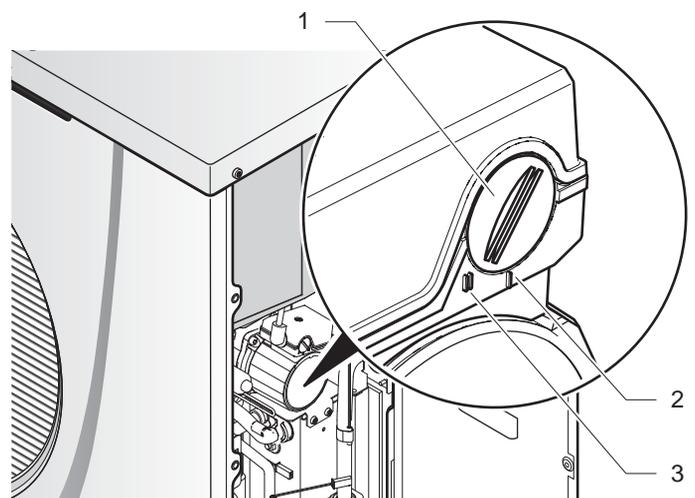
If the domestic hot water cylinder option is installed on the system:

- Refer to the chapter "Maintenance ► Control Unit maintenance menu ► Domestic hot water cylinder test" to demand a cylinder heating.
- Check the PAC circuit flow rate on the control unit screen (see chapter: "Component information ► Heat pump ► Water exchanger ► Read PAC flow rate") and check that it is above 750 l/h.



If you are unable to obtain a flow of between 750 and 850l/h using the flow control valve (1), change the speed of the hydraulic pump module.

- Press the button  to stop the flow reading via the control unit.
- Press the button .



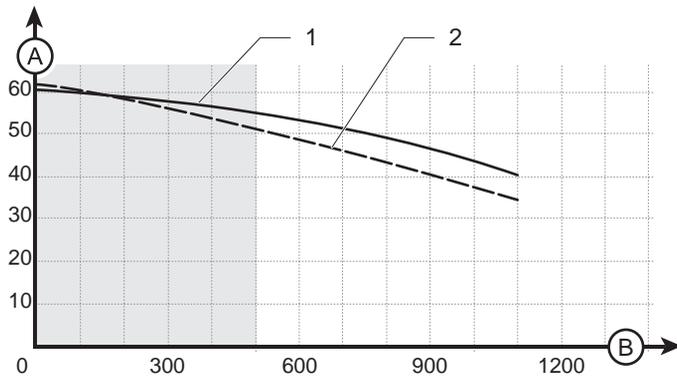
Key

1 Speed control

2 Speed I

3 Speed II (not applicable to this system)

**"Heat pump" flow / pressure curve**



- Key**
- 1 With water 20°C
  - 2 With glycol solution (mix at 30%) at 20°C
  - A Available pressure (kPa)
  - B Flow within the circuit (l/h)

**10.9 Status reports**

This menu enables real-time access to:

- the status of the appliances responding to a request (ON/OFF)
- the information available from the appliances (temperature, pressure, flow, ...),
- register of last 5 faults recorded for each appliance (failure code and description)



Refer to the "Troubleshooting > fault codes" chapter for a description of the fault code displayed on the screen.

- to reset the report for each appliance.

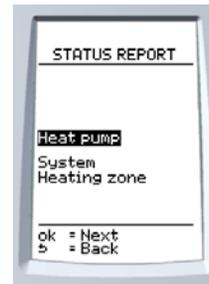


- Using the buttons , select **Status reports** on the screen.
- Press the button to confirm.

**10.9.1 Information on the heat pump**



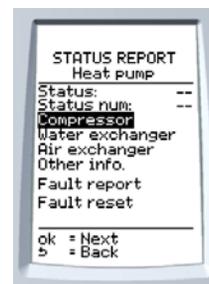
Refer to "Troubleshooting > Heat pump status" for a description of the status report displayed on the screen.



- Using the buttons , select **Heat pump** on the screen.
- Press the button to confirm.

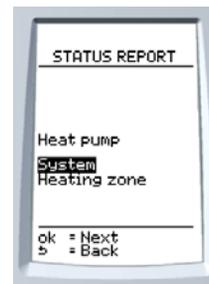
This screen indicates:

- whether the heat pump responds to a request (ON or OFF)
- the heat pump status report (ON or OFF).



- To access the information relative to the components, press and confirm with the button .
- Press the button to consult a fault report.
- To reset the fault report press and confirm with the button .

**10.9.2 System information**



- Using the buttons , select **System** on the screen.
- Press the button to confirm.

This screen indicates:

- the external temperature,
- the heating circuit pressure.

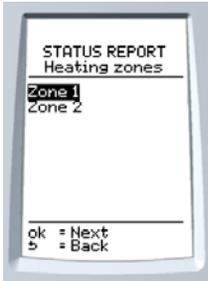


- To access the information relative to the components, press and confirm with the button .
- Press the button to consult the fault report.
- Refer to the control unit installation manual for the fault code descriptions.
- To reset the fault report, press and confirm with the button .

## 10.9.3 Information on heating zone

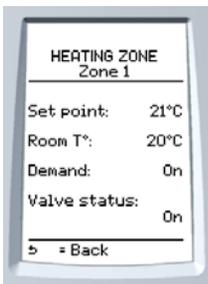


- Using the buttons , select **Heating zone** on the screen.
- Press the button to confirm.



This screen is only displayed if you have installed more than one heating zone.

- Select the zone you want to consult using the buttons .
- Press the button to confirm.



This screen indicates:

- the heating circuit temperature setting,
- the temperature of the room in which the room thermostat is located,
- whether the heating zones respond to a demand (ON or OFF),
- the status of the 2-way valve (ON or OFF).

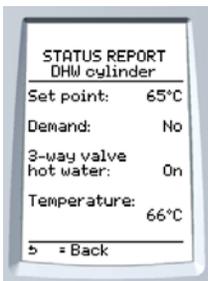
## 10.9.4 Information about the domestic hot water cylinder option



*This menu is only available if you have chosen the domestic hot water tank option.*



- Using the buttons , select **DHW cylinder** on the screen.
- Press the button to confirm.



This screen indicates:

- The set point of the DHW cylinder.
- whether the DHW cylinder respond to a demand (ON or OFF),
- The status of the domestic hot water tank valve (ON or OFF),
- The temperature of the hot water measured by the tank sensor.

## 10.10 Options



- Using the buttons , select **Parameters** on the screen.
- Press the button to confirm.



This menu allows you to:

- change the language of the control unit menus
- adjust the brightness and contrast of the screen
- to display the versions of system's software.

## 10.11 Heating system test

- Ensure that there is a heating demand to the control unit. In the case of a multi-zone configuration, perform the test zone by zone and ensure that the appropriate zone gets warmer.
- Ensure that all the heating circuit's thermostatic valves are open.
- Balance the heat emitters, if necessary.

## 10.12 Finishing

### 10.12.1 Radio signal test

- Put the room thermostats in place and ensure that the quality of their radio signal is optimal.



*Wait about fifteen minutes after commissioning the thermostat(s) and the outdoor sensor before performing the test.*

- Hold down the room thermostat button for 7 seconds.
- Enter the installer code "96" and confirm with the button .
- Select on the screen > radio > test using the buttons and confirm with the button .

The room thermostat will show the signal quality for the room thermostat and the outside sensor.

Signal quality	Comments
Excellent	Normal operation
Good	
Low	Operational limit
None	Will not operate

- If the signal quality is none or bad, check that:
  - the room thermostat batteries are properly installed in their compartment,
  - the polarity of the batteries is not reversed,

- the batteries are not exhausted. If so, replace them with fresh batteries.



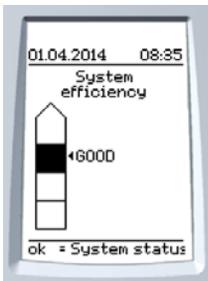
*If the signal quality does not improve, move the thermostat to limit distances and obstacles.*

- Repeat these operations for each room thermostat.

### 10.12.2 Reinitialisation of fault log

- Reset the fault reports of all system appliances (see chapter "Activation of control unit > Component Info").
- Press the control unit button  for more than 3 seconds to display the main screen.

### 10.12.3 Description of the main screen



This screen indicates:  
 - the overall system efficiency,  
 - the current date,  
 - the time.

The date and time settings are configured via the room thermostat.

- Consult the room thermostat instructions in order to adjust settings.

### 10.12.4 System Performance Display

The performance indicator is based on the effectiveness of the appliances during the past 24 hours.



	Comment
	Excellent
	Good
	OK
	Standard

### 10.12.5 Status of appliances and system

The status of each of the installation's components is checked continuously. The result is displayed automatically every minute.



- Press the button  to immediately obtain the status of the installation.

After checking the installation, the control unit displays the result for each component and for the heating system pressure.

The result can be:

- OK,
- NOT OK,
- \_\_ (component not connected).

If the control unit displays "OK" for all appliances, no particular action is required.

- If the control unit indicates <FAULT>, press the button .
- If the control unit shows "\_\_", check that the appliances are switched on and connected to the control unit.
- Follow the indications on the control unit screen and consult the "Troubleshooting" chapter for the corresponding failure code.

## 11 Re-check and restart

- Once the system is installed, check the operation of each appliance.
- Start the system to ensure that any adjustments operate correctly and check that the appliances operate safely.
- Reset the fault reports for all appliances. To do this, see chapter "Activation > Components Info".
- Check the water-tightness of the appliances and eliminate any leaks.
- Check the entire control and safety system, settings and operation.
- Start the "Self check" procedure to test the system connections (refer to the chapter "Commissioning the control unit > Self check").

## 12 User information

At the end of the installation, the installer must:

- explain the operation of the appliances and its safety devices to the user, if necessary provide a demonstration and answer any questions;
- hand over to the user all the required documentation,
- fill in the documents where necessary;
- advise the user of the precautions necessary to prevent damage to the system, appliances and the building;
- remind the user to service the appliances annually.
- The user shall not interfere with or adjust sealed components.
- Any servicing must be carried out by a competent person approved at the time by the Health and Safety Executive.

**MAINTENANCE**

**13 Trouble-shooting**

**13.1 Fault diagnosis**

The following checks should be performed before proceeding onto specific diagnostics:

- Make sure that the electricity supply has not been interrupted and that the appliance is connected correctly.
- Ensure that the isolating valves are open.
- Check that all external controls are connected correctly.

**13.2 Fault codes**



*The faults described in this chapter should be carried out by a qualified engineer and if needed by the After Sales Service.*

**13.2.1 System fault codes**

Fault codes	Description	Cause	Solution
002	Failure in Ebus communication between with the heat pump	The heat pump is not connected to the control unit. The heat pump is off.	Make sure the heat pump is connected to the control unit. Ensure that there is no interruption to the electricity network and that the heat pump is properly connected and turned on.
003	Failure in Ebus communication between with the hydraulic module	The hydraulic module is not connected to the control unit. The hydraulic module is off.	Make sure that the hydraulic module is connected to the control unit. Ensure that there is no interruption to the electricity network and that the hydraulic module is properly connected and turned on.
010	Heating circuit flow temperature sensor failure (open circuit)	The sensor is defective or not properly connected to the control unit management or hydraulic module.	Check the sensor's connections. Verify that the position and the operation of the sensor are correct. Check the sensor's resistance.
011	Heating circuit flow temperature sensor failure (short circuit)	The sensor is shorted.	
012	Heating circuit flow temperature sensor failure low temperature (open circuit)	The sensor is defective or not properly connected to the control unit.	Check the sensor's connections. Verify that the position and the operation of the sensor are correct. Check the sensor's resistance.
013	Heating circuit flow temperature sensor failure low temperature (short circuit)	The sensor is shorted.	
014	Domestic water tank temperature sensor failure (open circuit)	The sensor is defective or not properly connected to the control unit.	Check the sensor's connections. Verify that the position and the operation of the sensor are correct. Check the sensor's resistance.
015	Domestic water tank temperature sensor failure (short circuit)	The sensor is shorted.	
021	Pressure too low <0.5 bar	There is a leak in the heating circuit. The venting was not carried out correctly.	Check that there are no leaks. Drain the heating circuit. Remove air. Fill the installation.
030	Failure in communication with the zone 1 wireless room thermostat.	The room thermostat is too far from the control unit. There is a problem with the batteries in room thermostat.	Check the RF signal quality via the Climapro2 RF installer menu. Check the location of the thermostat. Check that the thermostat's batteries are installed in their compartment. Make sure the battery polarity is not reversed. Make sure the batteries are not dead. If so, replace them with new batteries
031	Failure in communication with the zone 2 wireless room thermostat.		
032	Failure in communication with the zone 3 wireless room thermostat.		
033	Failure in communication with the zone 4 wireless room thermostat.		
034	Failure in communication with the zone 5 wireless room thermostat.		
035	Failure in communication with the zone 6 wireless room thermostat.		
036	Failure in communication with the wireless outdoor sensor	The wireless outdoor sensor is too far from the control unit.	Check the location of the outdoor sensor. Check that the sensor's power supply is correctly provided by a photovoltaic cell.

### 13.2.2 Heat pump fault codes

- Consult the heat pump installation manual for information about the fault codes.

### 13.3 Heat pump status

- Consult the heat pump installation manual for information about the status codes.

## 14 Servicing

### 14.1 Annual Maintenance

- Consult each of the system component's instructions for more information about the corresponding maintenance operations.

### 14.2 Control unit maintenance menu

The maintenance menu includes the installation menu function, plus 2 additional functions.



- Press the button  for 7 seconds.
- Enter the installer maintenance access code (35).
- Press the button  to confirm.

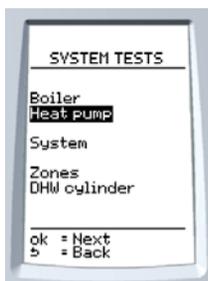
#### 14.2.1 Test menu

This menu allows you to test the operation of all appliances and the system (boiler, HP, zone valves,) present in the installation.



- Using the buttons  , select **System tests** on the screen.
- Press the button  to confirm.

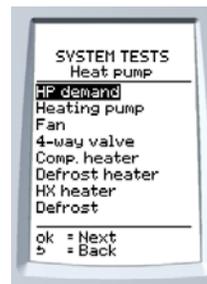
#### Heat pump test



- Using the buttons  , select **Heat pump** on the screen.
- Press the button  to confirm.

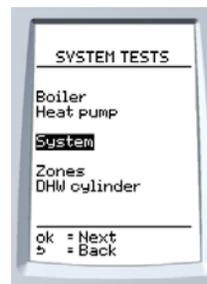
This menu allows you to:

- issue a heating demand to the heat pump,
- activate the pump
- activate the fan
- activate the 4-way valve
- activate the crankcase heater
- activate the electrical resistance heater
- activate the heat exchanger's resistance heater
- activate the defrosting

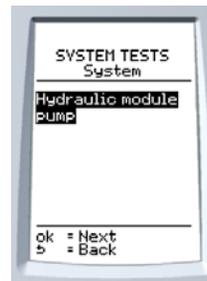


- Using the buttons  , make your selection on the screen.
- Confirm with the button  to start the test.
- To stop the test, press the button .
- Press the button .

#### System test



- Using the buttons  , select **System** on the screen.
- Press the button  to confirm.



- This menu allows to activate the hydraulic module pump.
- Press the button  to activate the test.
  - To disable the test, press the button .
  - Press the button .



- This menu is used to activate the electric heater in the hydraulic module.
- Appuyez sur la touche  pour activer le test.
  - Pour désactiver le test, appuyez sur la touche .
  - Appuyez sur la touche .

**Heating zones test**



The heating zones can only be tested if you have installed multiple zone valves.



- Using the buttons , select **Zones** on the screen.
- Press the button to confirm.

This menu is used to activate the 2 port valve for each zone.

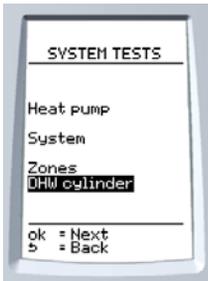


- Select the zone you want to test using the buttons .
- Press the button to activate the test.
- To disable the test, press the button .
- Press the button to confirm.

**DHW cylinder test**



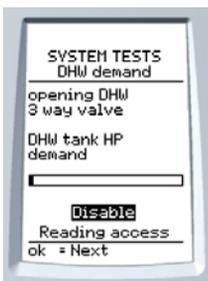
The domestic hot water cylinder test is only possible if you have selected the domestic hot water cylinder option.



- Using the buttons , select **DHW cylinder** on the screen.
- Press the button to confirm.

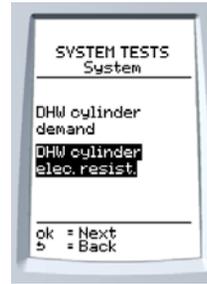


- Using the buttons , select **DHW cylinder demand** on the screen.
- Press the button to confirm.
- Press the button to activate the test.



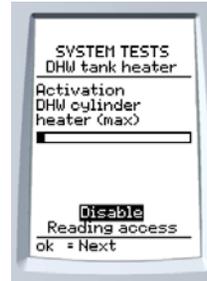
The domestic hot water cylinder 2 port valve opens and the heat pump heats the domestic hot water cylinder circuit.

- To disable the test, press the button .



This menu is used to activate the domestic hot water tank electric heater.

- Using the buttons , select **DHW cylinder elec. resist.** on the screen.
- Press the button to confirm.



The domestic hot water tank electric heater starts.

- To disable the test, press the button .

**14.2.2 Aftersales information**

This menu provides access to Aftersales Service information.



- Using the buttons , select **Parameters** on the screen.
- Press the button to confirm.



- Using the buttons , select **After sales info** on the screen.
- Press the button to confirm.

You can view or edit the following information:



- date of last access to installer menus,
- the name of the company which provides the after sales service if entered,
- the telephone number of the company which provides the after sales service if entered.









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*Because of our constant endeavour for improvement, details may vary slightly from those shown in these instructions.*

**Glow-worm**, Nottingham Road, Belper, Derbyshire. DE56 1JT