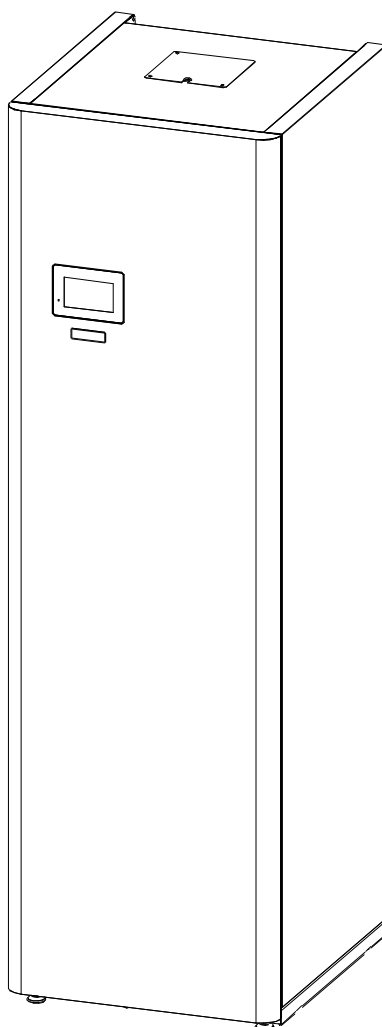


---

# FUSION TRIO

## HYDRAULIC MODULE



Thank you for choosing a **DOMUSA TEKNIK** heat pump accessory. You have chosen the **FUSION TRIO** model from the **DOMUSA TEKNIK** product line. This is an all-in-one hydraulic accumulation module, which in combination with a **DUAL CLIMA** heat pump and provide the adequate level of comfort for your home, provided that the hydraulic installation is correctly performed.

This document constitutes an essential part of the product and must be delivered to the end user. Please carefully read the warnings and advice contained in this manual, as they provide important information regarding the safety of the installation, as well as use and maintenance.

The installation of this appliance should be carried out only by qualified personnel, in accordance with the regulations in force and following the manufacturer's instructions.

Both the start-up and any maintenance operation of this appliance should be carried out only by the Official Technical Assistance Services of **DOMUSA TEKNIK**.

Incorrect installation of this product may cause damage to people, animals and objects, for which the manufacturer shall not be held liable.

# CONTENTS

|                                                                                   |           |
|-----------------------------------------------------------------------------------|-----------|
| <b>1 SAFETY WARNINGS</b>                                                          | <b>4</b>  |
| 1.1 USAGE AND INSTALLATION WARNINGS                                               | 4         |
| 1.2 PERSONAL SAFETY WARNINGS                                                      | 4         |
| 1.3 WATER CHARACTERISTICS                                                         | 5         |
| <b>2 LIST OF COMPONENTS</b>                                                       | <b>6</b>  |
| <b>3 INSTALLATION INSTRUCTIONS</b>                                                | <b>7</b>  |
| 3.1 ACCESSORIES SUPPLIED                                                          | 7         |
| 3.2 HYDRAULIC INSTALLATION                                                        | 7         |
| 3.3 ASSEMBLY OF THE DHW PROBE                                                     | 8         |
| 3.4 ASSEMBLY AND CONNECTION OF THE CONTROL PANEL                                  | 10        |
| 3.5 CONNECTING THE DHW DIVERTER VALVE (G1)                                        | 12        |
| 3.6 ELECTRICAL CONNECTION                                                         | 13        |
| 3.6.1 Connecting the circulation pumps of the installation (BC, BF)               | 13        |
| 3.7 CONNECTING ROOM THERMOSTATS                                                   | 14        |
| 3.7.1 Connecting the DUAL CLIMA heat pump                                         | 15        |
| 3.7.2 Connecting a 3-wired switched room thermostat for Heating/Cooling           | 16        |
| 3.7.3 Connecting two room thermostats                                             | 16        |
| 3.7.4 Connecting one room thermostat                                              | 17        |
| 3.8 FILLING THE INSTALLATION                                                      | 19        |
| 3.9 DRAINAGE                                                                      | 19        |
| <b>4 RECYCLING AND DISPOSAL</b>                                                   | <b>20</b> |
| <b>5 OPERATION</b>                                                                | <b>21</b> |
| 5.1 MANAGING THE CIRCULATION PUMPS OF THE SYSTEM                                  | 21        |
| <b>6 OPTIONAL ACCESSORIES</b>                                                     | <b>22</b> |
| 6.1 ASSEMBLY AND CONNECTION OF A BACKUP HEATER FOR DWH (E1)                       | 22        |
| 6.2 ASSEMBLY AND CONNECTION OF A BACKUP HEATER FOR HEATING (E2)                   | 22        |
| 6.3 INSTALLATION AND CONNECTION OF A BACKUP ENERGY SOURCE IN HEATING CIRCUIT (E2) | 23        |
| 6.4 ASSEMBLY AND CONNECTION OF A BACKUP PUMP (C2)                                 | 24        |
| <b>7 ELECTRIC SCHEME</b>                                                          | <b>26</b> |
| <b>8 DIAGRAMS AND MEASUREMENTS</b>                                                | <b>27</b> |

## 1 SAFETY WARNINGS

---

### 1.1 Usage and installation warnings

The **FUSION TRIO** module should be installed by personnel authorised, in compliance with the laws and regulations in force in the matter. The precautions detailed here cover very important issues, so please be sure to follow them accordingly.

Please carefully read this instruction manual and keep it in a safe, easily accessible place. **DOMUSA TEKNIK** shall not be held liable for any damage that may occur due to failure to follow these instructions.

The **FUSION TRIO** storage module can only be installed in combination with a heat pump from the **DUAL CLIMA** line from **DOMUSA TEKNIK**. The **FUSION TRIO** module, in combination with a **DUAL CLIMA** heat pump, is suitable for use in both heating and cooling installations, and can be combined with fan coils, underfloor heating/cooling and low-temperature radiators. It should be connected to a heating/cooling system and to a hot water distribution network that is compatible with its performance and power.

This appliance should only be used for the purpose for which it has been expressly designed. Any other use is considered unsuitable and therefore hazardous. The manufacturer shall not be considered liable under any circumstances for damage caused by unsuitable, erroneous or improper use.

Remove all the packaging and check that the contents are complete. In case of doubt, do not use the appliance and refer to the supplier. Keep the packaging elements out of reach of children, as they can be dangerous.

Improper installation or placement of equipment or accessories may cause electrocution, short circuit, leakage, fire, or other damage to the equipment. Use only accessories or optional equipment manufactured by **DOMUSA TEKNIK** and specifically designed to work with the products presented in this manual. Do not modify, replace or disconnect any safety or control device without first consulting the manufacturer or the Official Technical Assistance Service of **DOMUSA TEKNIK**.

When it is decided not to use the equipment anymore, the parts likely to constitute potential sources of danger should be properly decommissioned.

### 1.2 Personal safety warnings

Always wear suitable personal protection equipment (protective gloves, safety glasses, etc.) when carrying out installation and/or maintenance operations in the unit.

Do not touch any switch with wet fingers. Touching a switch with wet fingers may cause electric shock. Before accessing the electrical components, fully disconnect the power supply.

Do not touch water pipes or internal parts during and immediately after operation. Pipes and internal parts may be excessively hot or cold, depending on the use of the unit.

The hands may be burned by cold or heat in case of improperly touching pipes or internal parts. To avoid injury, wait until the pipes and internal parts return to their normal temperature. Alternatively, if access is required, be sure to wear appropriate safety gloves.

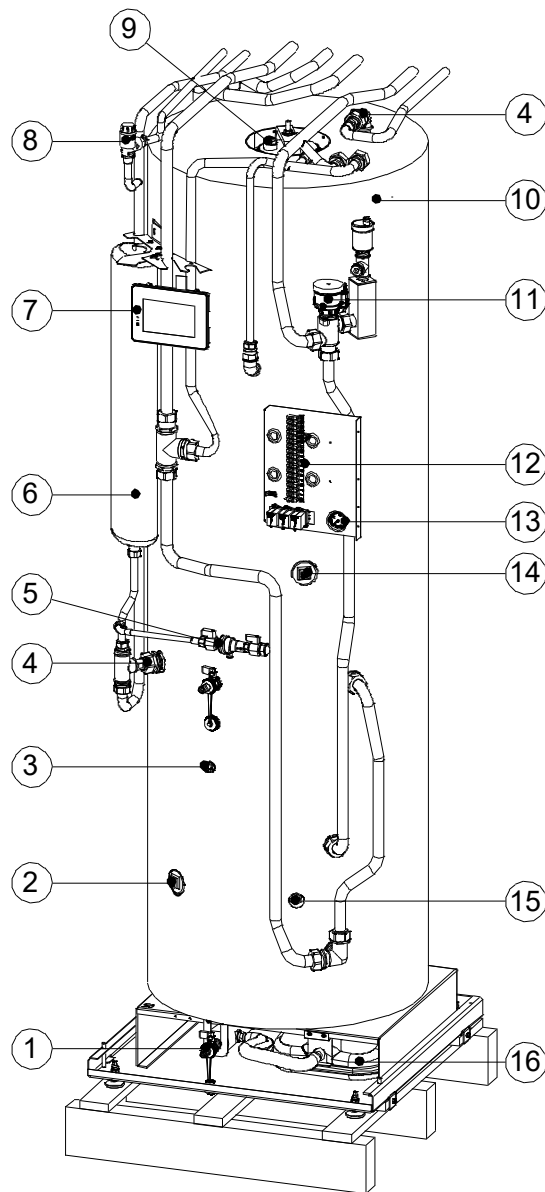
### 1.3 Water characteristics

The water must be in accordance with Directive EU 2020/2184 on the quality of water intended for human consumption. Special attention must be paid to the following parameters:

- Maximum chloride concentration: 250 mg / l.
- Maximum sulphate concentration: 250 mg / l.
- Maximum concentration of chlorides and sulphates: 300 mg / l.
- Maximum conductivity: 600  $\mu$ S / cm.

When the chlorine concentration in the Domestic Water exceeds 250 mg/l, it is recommended that anti-corrosion protection should be applied to the inside of the inter-accumulator so as to avoid its premature deterioration. As an option **DOMUSA TEKNIK** supplies electronic cathodic protection that is suitable for the **FUSION TRIO** range. To install it, read carefully the assembly instructions that are provided with the same.

## 2 LIST OF COMPONENTS



- |                                                             |                                                                  |
|-------------------------------------------------------------|------------------------------------------------------------------|
| 1. Installation drain valve.                                | 9. Bulb holder for DHW probe                                     |
| 2. Backup heating element for heating <b>E2</b> (Optional). | 10. TRIO accumulator.                                            |
| 3. Manual drain.                                            | 11. 3-way motorized diverter valve.                              |
| 4. Dielectric sleeve.                                       | 12. Terminal strip.                                              |
| 5. Fill disconnect.                                         | 13. Pressure gauge.                                              |
| 6. DHW expansion valve.                                     | 14. <b>E1</b> DHW backup heating element for heating (Optional). |
| 7. Control panel.                                           | 15. Buffer probe bulb holder.                                    |
| 8. DHW safety valve.                                        | 16. Heating expansion valve                                      |

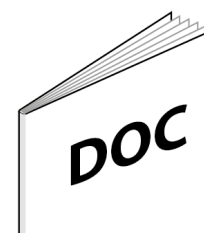
## 3 INSTALLATION INSTRUCTIONS

The **FUSION TRIO** hydraulic module can only be installed in combination with a heat pump from the **DUAL CLIMA** line supplied by **DOMUSA TEKNIK**. Therefore, for their operation, these devices should be connected to each other, both hydraulically and electrically. In this section, the necessary operations for said connection are described in detail.

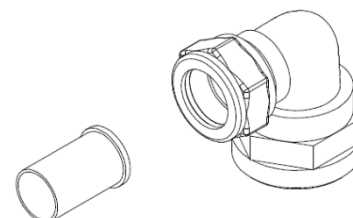
### 3.1 Accessories Supplied

The following accessories are supplied inside the **FUSION TRIO** hydraulic module inside a documentation bag. Before proceeding with the installation of the machine, make sure you receive them and that they are in good condition:

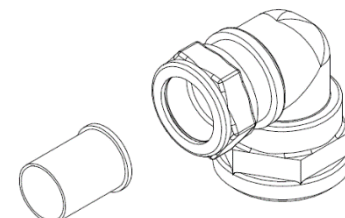
**Documentation:** Inside the machine, by opening the front, the documentation bag can be located, including all the manuals and documents necessary for the use and installation of the equipment.



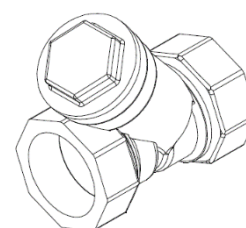
**2 x Connection fitting Ø18x3/4" and inner sleeve:** Special fitting for the connection of the DHW Domestic Cold Water inlet pipe (see "*Sketch and measurements*"). For its correct use, please read carefully the section "*Hydraulic installation*".



**4 x Connection fitting Ø22x1" and inner sleeve:** Special fitting for the connection of the pipes with the Dual clima heat pump and the Heating/Cooling Installation (see "*Diagrams and Measurements*"). For its correct use, please read carefully the section "*Hydraulic installation*".



**Filter:** Water filter for installation. For correct installation, carefully read the following section "*Hydraulic installation*".



### 3.2 Hydraulic installation

The hydraulic installation should be carried out by qualified personnel, in compliance with the current installation regulation and considering the following recommendations:

- For the hydraulic connection between the **FUSION TRIO** module and the **DUAL CLIMA** heat pump, use two conveniently insulated tubes to connect the **IBC** and **RBC** sockets of the module (see "*Diagrams and Measurements*") with the flow and return sockets of the heat pump, respectively.
- All water circuit piping **MUST** be insulated to prevent condensation during operation in cooling mode and reduction of cooling and heating capacity, as well as to prevent freezing of outside pipes during winter. The minimum insulation thickness of the pipes should be 19 mm (0.039 W/mK), preferably comprising a closed cell insulation or a vapor barrier. In

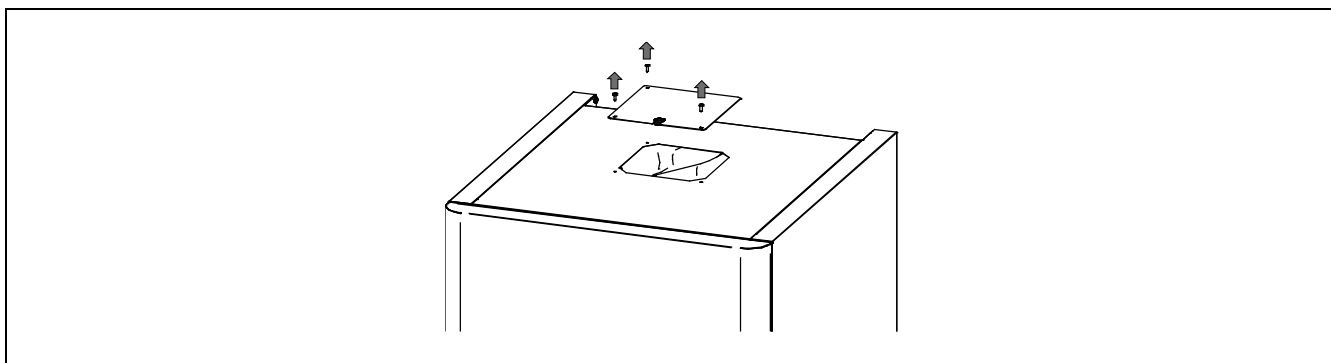
outdoor areas exposed to the sun, the insulation must be protected from the effects of degradation.

- A **water filter** must be installed in the water circuit of the heat pump, in order to avoid obstructions or narrowing caused by dirt in the installation. The filter **MUST** be installed before the installation is filled with water and in the return branch of the machine, to avoid the entry of dirty water into the heat exchanger (condenser). **It is recommended to insert this filter between two cut-off valves, in order to be able to clean it without emptying the installation.** The type of filter installed must be adapted to the particular characteristics of each installation (type and material of the water pipes, type of water used, volume of water in the installation, ...). The water filter should be checked, and cleaned if necessary, at least once a year, although in new installations it is recommended to check it in the first months after commissioning.
- It is advisable to insert shut-off valves between the installation and the hydraulic module, in order to simplify maintenance work.
- Drain valves and suitable devices should be fitted for the correct removal of air from the circuit during the filling stage.
- The **FUSION TRIO** hydraulic module is an accessory that should be installed in combination with a **DUAL CLIMA** heat pump for its correct operation. Therefore, in addition to the recommendations described above, it must comply with those indicated in the heat pump installation manual.

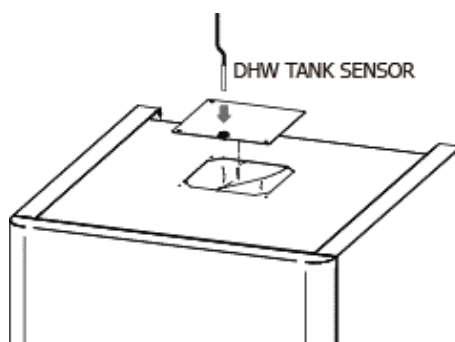
### 3.3 Assembly of the DHW probe

For the correct functioning of the **FUSION TRIO** hydraulic module, the DHW probe, supplied in the **DUAL CLIMA** heat pump, must be inserted in the bulb sheath provided in the module tank. This probe is located inside the machine and is identified as "**DHW TANK SENSOR**". For correct assembly, the probe must be guided to where the **FUSION TRIO** module has been placed and inserted into the bulb sheath provided for it in the same, following the steps indicated below:

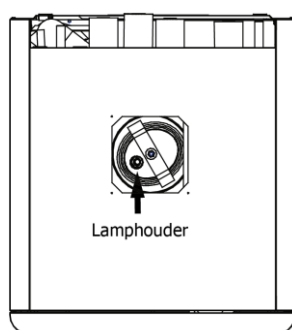
1. Remove the access cover to the tank, located on the roof of the module, by unscrewing the 4 fixing screws and the fastening nut of the tank.



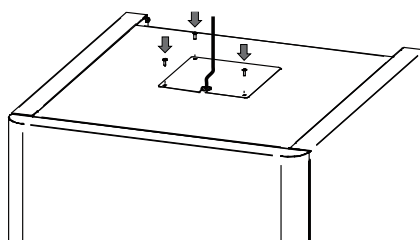
2. Pass the bulb of the DHW temperature sensor ("DHW TANK SENSOR") through the rubber cable duct provided in the cover.



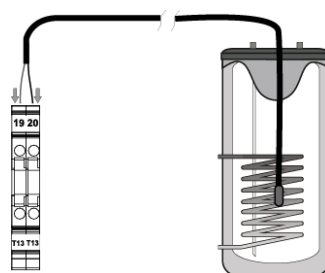
3. Insert the sensor inside the bulb sheath provided in the tank. Be sure to insert the sensor bulb until it stops against the bottom of the bulb sheath.



4. Reassemble the access cover to the tank on the roof of the module, tightening the 4 screws and the fastening nut.



5. For the electrical connection of the probe, remove the resistor that is sent connected to terminals **T13 (19 and 20)** of the heat pump input strip and connect the DHW probe in its place.



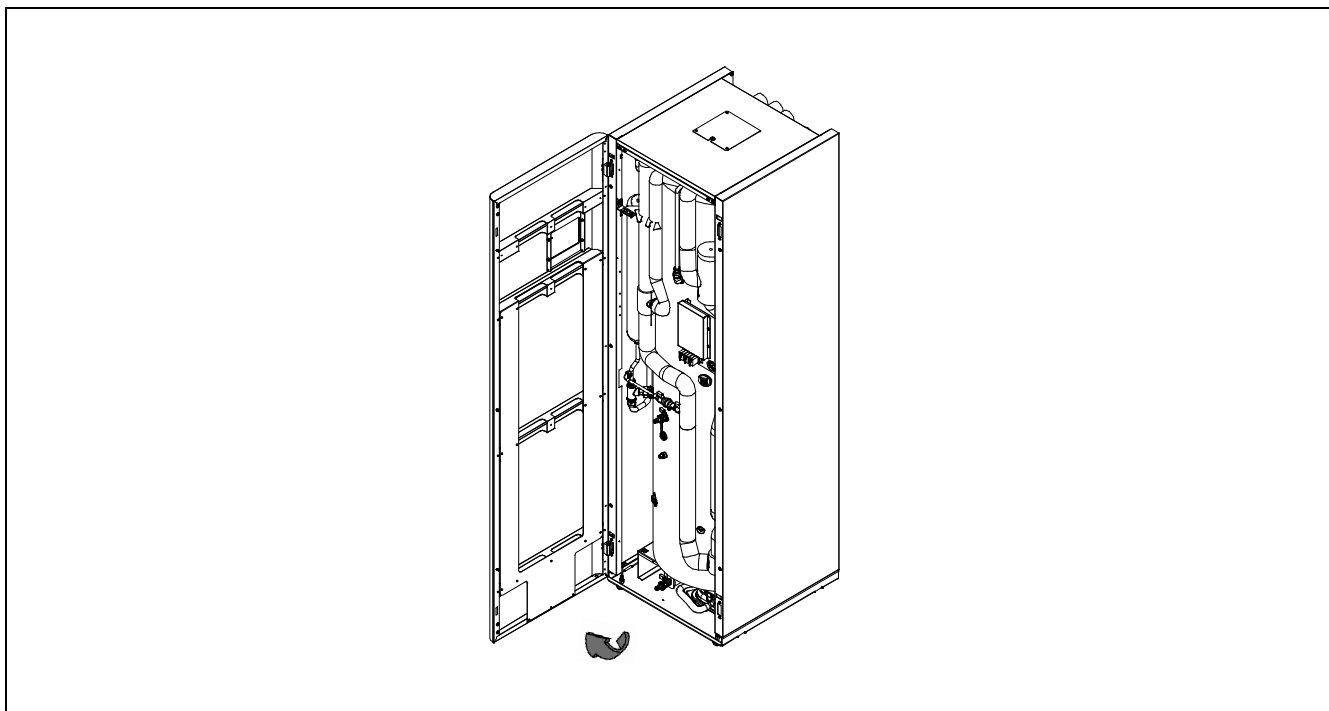
The probe supplied with the heat pump is 5 metres long. Where necessary, it can be extended up to a maximum distance of 20 metres (section between 0,25÷1,25 mm<sup>2</sup>).

**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

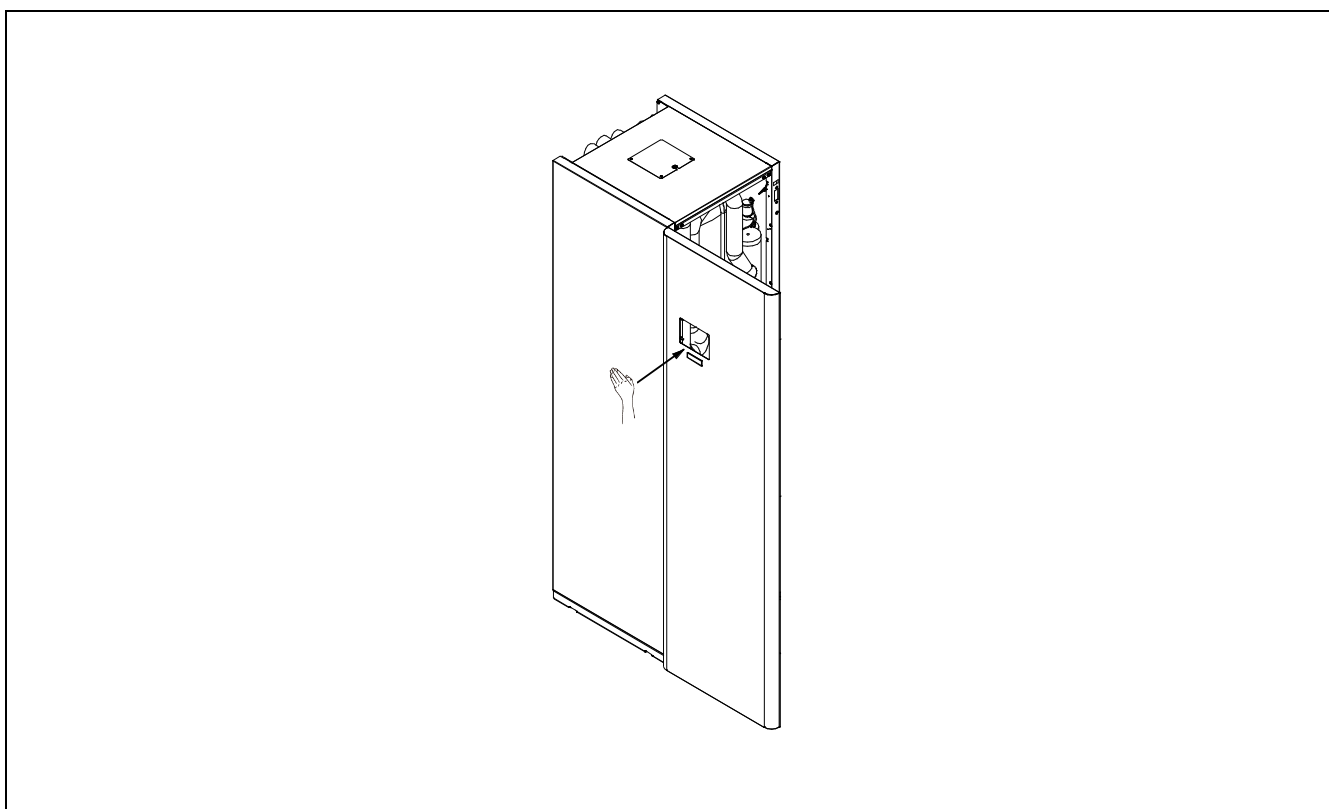
### 3.4 Assembly and connection of the control panel

The control panel is supplied inside the heat pump and must be mounted on the front of the **FUSION TRIO** hydraulic module. To do this, remove the front and access the electrical cabinet located at the back. For its correct assembly, please carefully follow the following steps:

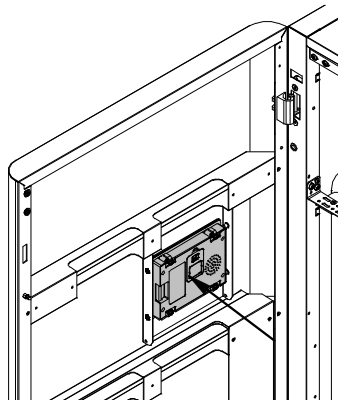
1. Open the door of the **FUSION TRIO** module.



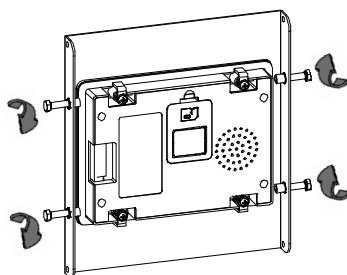
2. Support the outside of the door of the **FUSION TRIO** module with your hand.



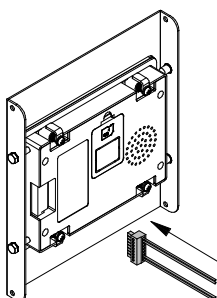
3. Keeping your hand on the outside of the door, attach the control panel removed from the **DUAL CLIMA** heat pump, at the rear of the front, into the hole in the control-holder support and press lightly until it is flush with the surface of the door.



4. Tighten the 4 screws by hand tightening, until the control panel is fixed. It is not necessary to use a wrench, it is sufficient to adjust by hand.



5. Insert the connector, which incorporates the cable for the heat pump control panel, at its end with the connector on the back of the control panel. **A sufficiently long cable length must be provided inside the module**, in such a way that it is possible to open the front of the equipment without having to disconnect said cable and facilitate any maintenance operation inside.



Before switching on the heat pump, the control panel must be connected to the external machine. To do this, pass the cable that is supplied inside the heat pump (located alongside the probe harness) to the interior of the **FUSION TRIO** module. The hydraulic module has a series of cable ducts in its roof, through one of which it will be possible to introduce the cable inside the equipment.

The cable supplied with the heat pump is 5 metres long. Where necessary, it can be extended up to a maximum distance of 30 metres (section between 0,25÷1,25 mm<sup>2</sup>).

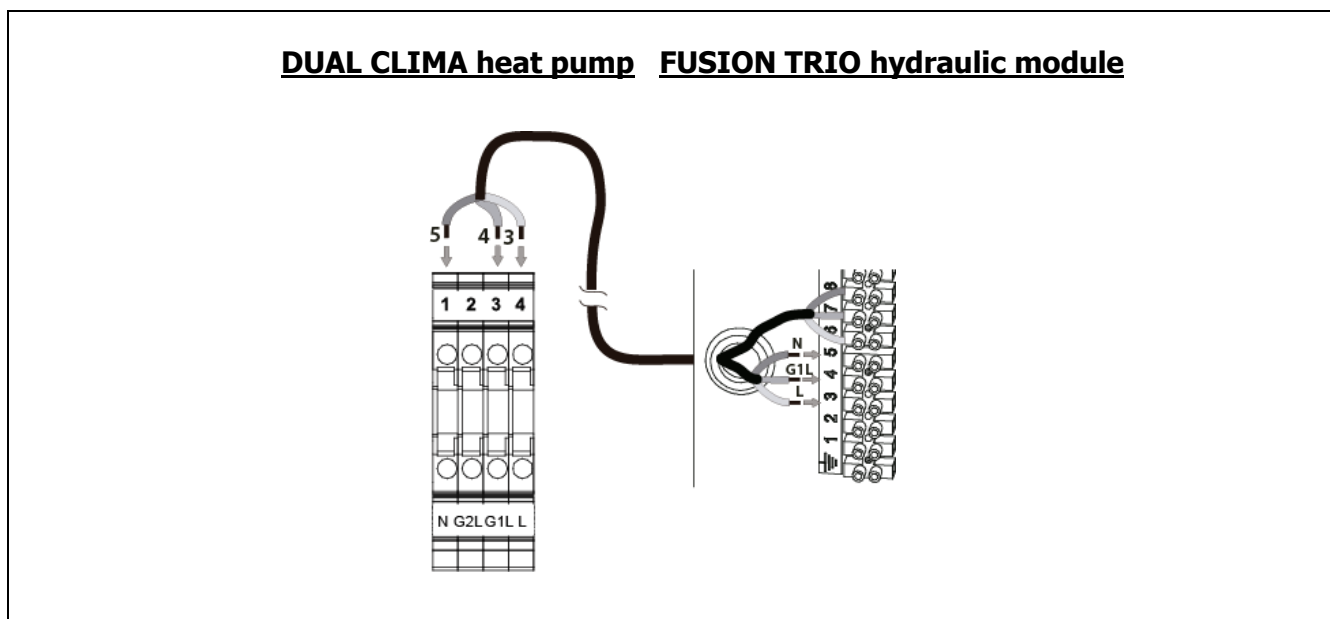
**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

**IMPORTANT:** Provide enough length of cable inside the module in order to facilitate the opening of the front cover.

### 3.5 Connecting the DHW diverter valve (G1)

The **FUSION TRIO** hydraulic module includes a motorised 3-way diverter valve, which is responsible for directing the flow of water from the heat pump to the DHW heat exchanger or to the heating/cooling system, according to the command signal received from it. To do this, a 3-wire electrical hose must be routed from the terminal strip of the **DUAL CLIMA** heat pump to the inside of the **FUSION TRIO** module. The hydraulic module has a series of cable ducts in its roof, through one of which it will be possible to introduce the cable inside the equipment.

The electrical connection of the valve will be made between the general connection terminal of the heat pump and the terminal strip of the **FUSION TRIO** module, by removing the cover to access it. The following figures describe the form of connection of the motorised valve according to the heat pump version available:



**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

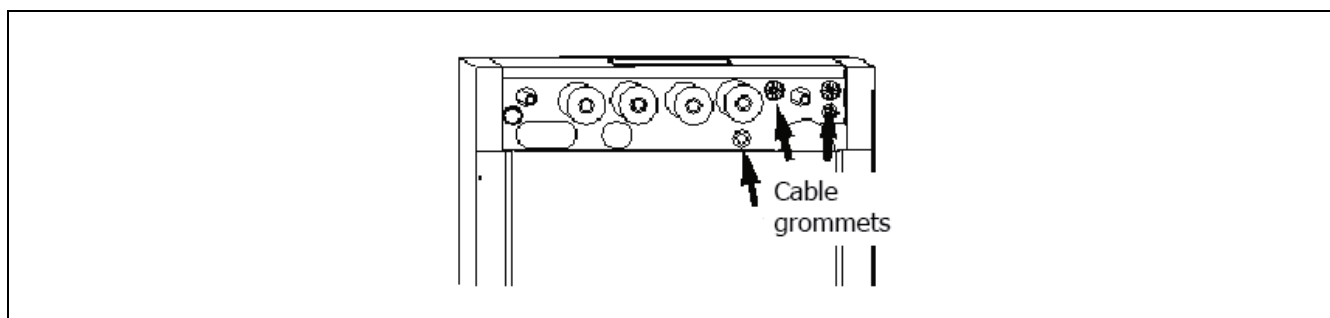
### 3.6 Electrical connection

In order to manage the operation of the water circulation pumps of the Heating/Cooling system by means of thermostats or programmable thermostats installed in the home, the **FUSION TRIO** all-in-one hydraulic module should be connected to the general electricity supply network, for which purpose a terminal strip is available. In turn, all the electrical components of the installation (circulation pumps, thermostat, and DUAL CLIMA heat pump) should also be connected to this strip.

The hydraulic installation of the **FUSION TRIO** module should be carried out by qualified personnel, in compliance with the current installation regulations on the matter. The electrical installation should be connected in a way that facilitates the complete insulation and disconnection of the module to carry out maintenance operations in a safe manner.

The **FUSION TRIO** hydraulic module is prepared for connection to 230 V ~ 50 Hz in terminals **1, 2** and **ground** of the terminal strip (see "Electrical diagram"). The power supply terminals are located inside the machine, by opening its front door.

The hydraulic module has a series of cable ducts in its roof, through which the cables can be inserted inside the equipment. Cables exposed to external weather conditions should be protected by chutes or protective pipes or should be of a suitable category for use outdoors (H07RN-F hoses or higher). In turn, it is advisable to keep the high-voltage cables at a minimum distance of 25 mm (general supply, diverter valves, support resistors, circulation pumps, etc.) from the low-voltage cables (control panel cable, temperature probes, room probes, etc.), driving them through independent pipes.



**IMPORTANT:** When working on the electrical installation of the module, make sure that it is disconnected from the electrical network.

#### 3.6.1 Connecting the circulation pumps of the installation (BC, BF)

The **FUSION TRIO** hydraulic module can manage the operation of up to 2 circulating pumps installed in the heating and cooling circuits of the Heating and Cooling system, respectively. To do so, these pumps should be electrically connected to the terminal strip located inside the module. The activation and deactivation of the pumps will be carried out through the signals received from the thermostats connected to the module strip.

The circulating pump of the **BC** heating circuit should be connected to terminals **16-17** of the terminal strip of the module, and the circulation pump of the **BF** cooling circuit should be connected to terminals **15-17** (see "Electrical Diagram"). In the case of installing the same pump for the two hydraulic Heating and Cooling circuits, one of the cables of the pump should be connected to terminal **17**, and the other should be connected to both terminals **15** and **16** by adding a jumper wire between them. Remember to connect the ground cable of the pumps to the **ground** terminal of the terminal strip. The hydraulic module has a series of cable ducts in its roof, through which the pump cables can be inserted inside the equipment.

**IMPORTANT:** When working on the electrical installation of the module, make sure that it is disconnected from the electrical network.

### 3.7 Connecting room thermostats

The **FUSION TRIO** hydraulic module includes two connections in the terminal strip prepared for the installation of up to 2 room thermostats or programmable room thermostats (see "*Electrical Diagram*"), which allow managing up to 2 water circulation pumps to activate or stop the heating (**BC**) and/or cooling (**BF**) service of the heating/cooling system, turning them off when the desired temperature in the home is reached and turning them on again when it deviates from it. The **BF** Cooling pump is activated and deactivated in the Cooling mode by means of input **12-14**, while the **BC** Heating pump is activated and deactivated by means of input **13-14**.

Terminals **12**, **13** and **14** are supplied from the factory with a jumper wire connected to each of them, so, irrespective of the configuration of thermostats to be installed, it will be necessary to remove **both** jumper wires before connecting the room thermostats.

Depending on the types of thermostats used or their combination, up to 3 types of room thermostat configurations can be installed. The following sections describe in detail the operation and installation of each of these configurations.

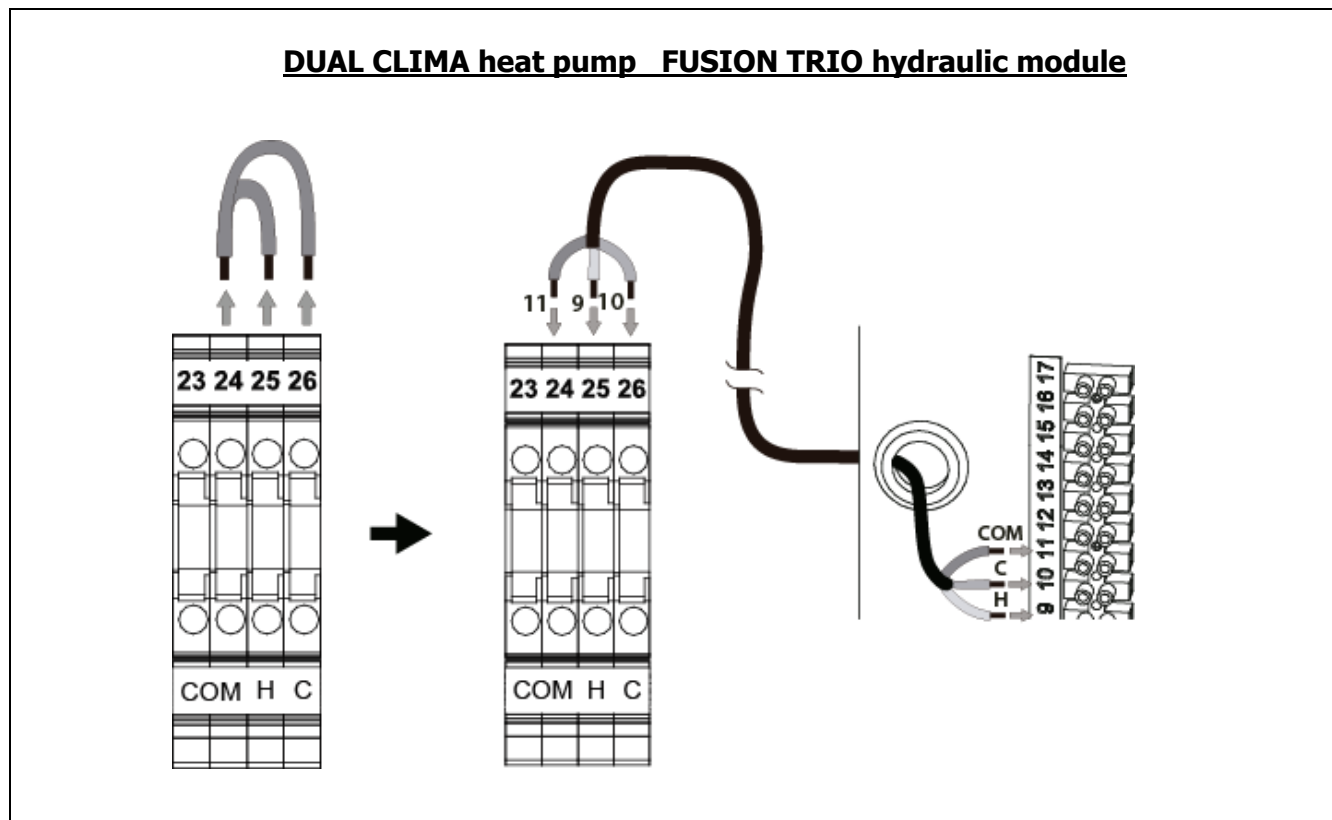
In turn, the signals from the thermostats can be connected to the **DUAL CLIMA** external unit through terminals **9**, **10** and **11** in the terminal strip. Thus, the modes of operation of the heat pump can be managed remotely and automatically, from the place where the room thermostats installed are located. The Cooling mode is activated and deactivated through terminals 10-11, and the Heating mode is activated and deactivated through input **9-11**.

**IMPORTANT:** When working on the electrical installation of the hydraulic module, make sure that it is disconnected from the electrical network.

### 3.7.1 Connecting the DUAL CLIMA heat pump

To perform the electrical connection of terminals **9**, **10** and **11** in the hydraulic module with the heat pump, pass a 3-wire electrical hose from the **DUAL CLIMA** heat pump terminal strip to the interior of the **FUSION TRIO** module. The hydraulic module has a series of cable ducts in its roof, through one of which it will be possible to introduce the cable inside the equipment.

The thermostat connection terminals of the heat pump are supplied from the factory with a jumper connected to each of them, so in order to connect the hydraulic module hose, it will be necessary to remove **both** jumper wires. The following figures describe the form of connection between the two devices based on the heat pump version available:

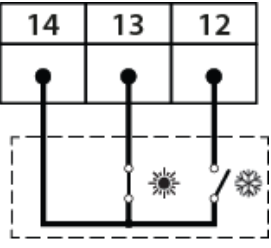
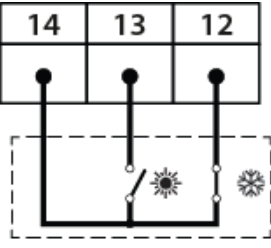
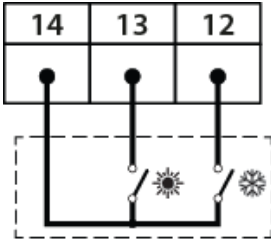


**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

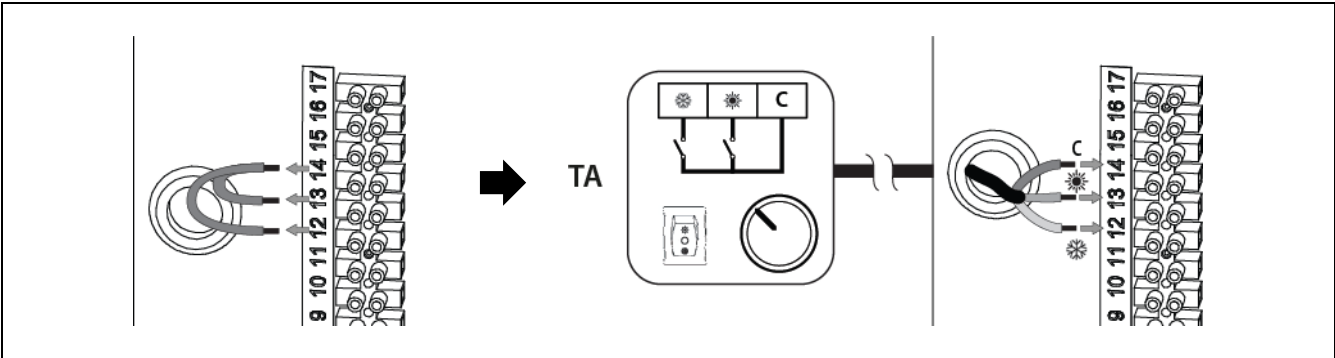
3.7.2 Connecting a 3-wired switched room thermostat for Heating/Cooling

In addition to selecting the desired temperature and periods of operation, this type of thermostat, if it is of the programmable thermostat type, offers users the possibility of selecting the mode of operation in the thermostat itself (Heating ☀/Cooling ❄ ).

For its operation, this type of thermostat has 3 communication wires: one for the activation signal of the Heating mode, one for the activation signal of the Cooling mode, and one for the common signal. Depending on the status of each signal, the **FUSION TRIO** module will manage the activation of each circulation pump (**BC** or **BF**), corresponding to each Heating or Cooling mode, as follows:

| Heating mode                                                                                                         | Cooling mode                                                                                                         | OFF (Stand By)<br>(temp. reached)                                                                                       |
|----------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------|
| <br>TA<br><b>BC ➔ ON / BF ➔ OFF</b> | <br>TA<br><b>BC ➔ OFF / BF ➔ ON</b> | <br>TA<br><b>BC ➔ OFF / BF ➔ OFF</b> |

Terminals **12**, **13** and **14** are supplied from the factory with a jumper wire connected to each of them, so in order to install this type of thermostat, it will be necessary to remove **both** jumper wires and connect the thermostat as described in the following figure:

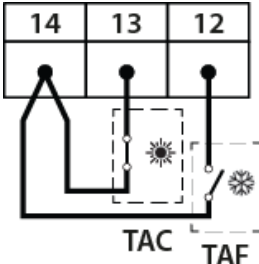
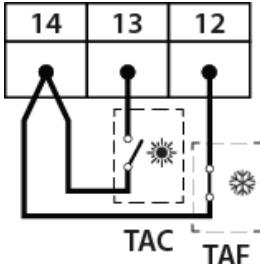
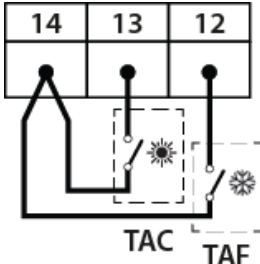
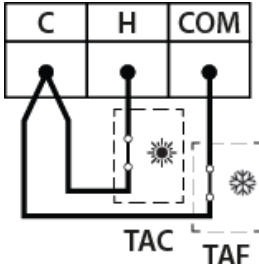


**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

3.7.3 Connecting two room thermostats

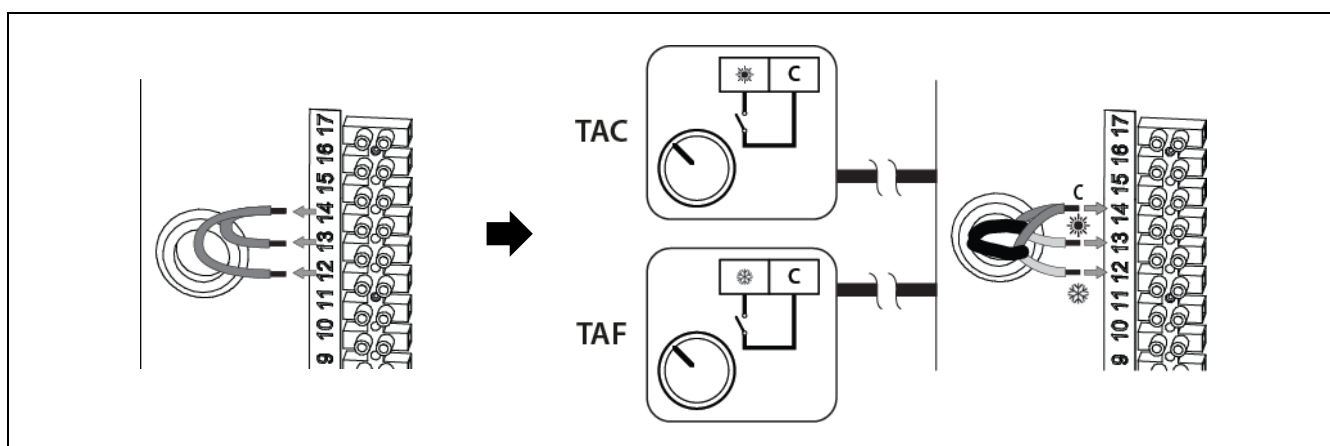
In this type of configuration, two single room thermostats will be connected, one in terminals **12** and **14** (**TAF** Cooling thermostat) and one in terminals **13** and **14** (**TAC** Heating thermostat). Each of them manages the operation of a different circulation pump (**BC** for Heating and **BF** Cooling). Therefore, each thermostat should be of the type compatible with the operation for which it was installed. The thermostat connected to the cooling input (**TAF**) should demand (closed circuit signal) when the room temperature is higher than the desired temperature (setpoint temperature), and in turn, the thermostat connected to the heating input (**TAC**) should demand (closed circuit signal) when the room temperature is lower than the desired temperature (setpoint temperature).

The **FUSION TRIO** module will manage the activation of each circulation pump (**BC** or **BF**), corresponding to each Heating or Cooling mode, as follows:

| Heating mode                                                                                                | Cooling mode                                                                                                | OFF (Stand By)<br>(temp. reached)                                                                             | Manual mode                                                                                                  |
|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
|  <p>BC → ON / BF → OFF</p> |  <p>BC → ON / BF → OFF</p> |  <p>BC → OFF / BF → OFF</p> |  <p>BC → ON / BF → ON</p> |

As indicated in the figure, in case of selecting the setpoint temperatures of the room thermostats in such a way that both demand operation simultaneously, the control of the hydraulic module will start operation in the "Manual" mode, that is, both circulation pumps will be activated simultaneously. To avoid this situation, it is essential to **make sure to correctly select the temperatures of each of them, in such a way that they do not cross and to avoid that both thermostats are activated at the same time.**

Terminals **12**, **13** and **14** are supplied from the factory with a jumper wire connected to each of them, so in order to install the thermostats, it will be necessary to remove **both** jumper wires and connect the thermostats as described in the following figure:

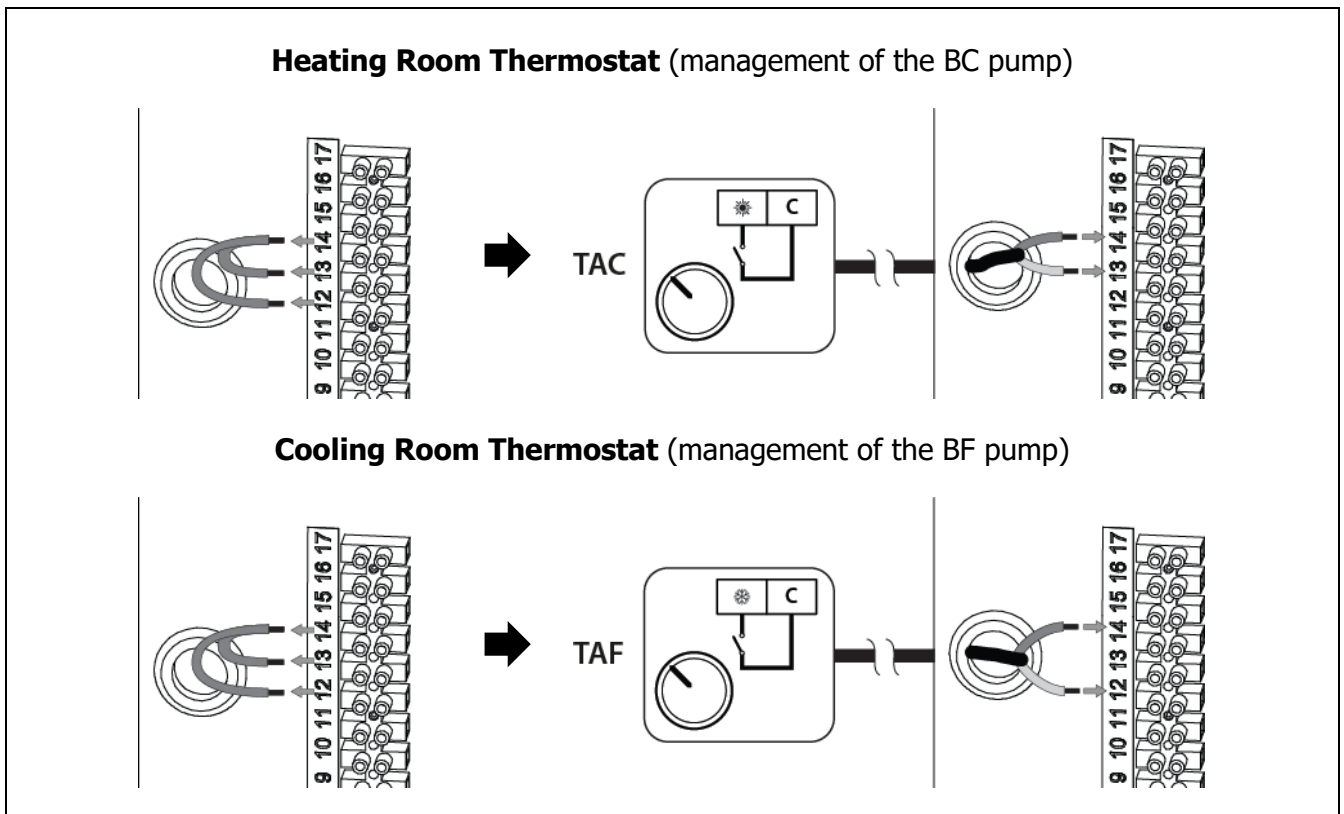


**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

### 3.7.4 Connecting one room thermostat

In this type of configuration, a single room thermostat will be connected in inputs **12** and **14** (**TAF** Cooling thermostat) or in inputs **13** and **14** (**TAC** Heating thermostat). For this room thermostat management configuration to work correctly, the heat pump should be configured for a **single** operating mode, that is, Heating or Cooling (see the instruction manual supplied with the **DUAL CLIMA** heat pump). Depending on the thermostat to which the input is connected, it will manage the activation of the corresponding circulation pump (**BC** for Heating or **BF** for Cooling) and the type of room thermostat should be prepared for this purpose. The thermostat connected to the cooling input (**TAF**) should demand (closed circuit signal) when the room temperature is higher than the desired temperature (setpoint temperature), and in turn, the thermostat connected to the heating input (**TAC**) should demand (closed circuit signal) when the room temperature is lower than the desired temperature (setpoint temperature).

Terminals **12**, **13** and **14** are supplied from the factory with a jumper wire connected to each of them, so in order to install this type of thermostat, it will be necessary to remove **both** jumper wires and connect the thermostat as described in the following figure, depending on the mode to be managed:

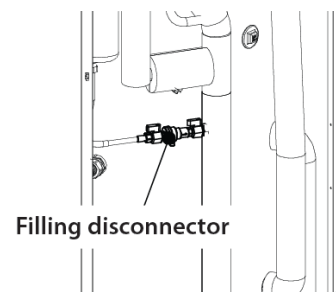


**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

### 3.8 Filling the installation

The **FUSION TRIO** hydraulic module has a filling disconnecter and a manometer, by means of which the water filling of the complete Heating/Cooling system can be carried out, including the external unit and the exchanger of the DHW cylinder. In turn, the hydraulic installation should incorporate the drain valves and hydraulic components necessary for its correct filling.

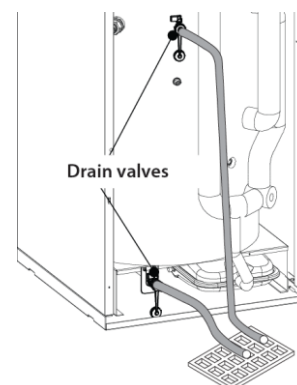
To carry out the filling, open the disconnecter valves until the manometer indicates a pressure between 1 and 1.5 bar. The heat pump (external unit) includes a manual drain valve on the upper part of the heat exchanger flow tube (condenser). Open it during the filling process and wait for the water to start running (please refer to the operations manual of the **DUAL CLIMA** heat pump). The air should also be bled from the rest of the installation using the air bleed valves provided. The filling must be carried out slowly, thereby facilitating air evacuation from the water circuit. Once the installation is full, close the disconnecter valves.



**IMPORTANT: Starting the heat pump without water may cause serious damage to it.**

### 3.9 Drainage

The **FUSION TRIO** hydraulic module has 2 drain valves: one to drain the water from the primary installation and the other to drain the Domestic Water from the inside of the tank. For the correct drainage of any of the two circuits, a flexible tube should be connected to the corresponding tube and led to a drain. In the case of the drainage of the primary installation, it is advisable to open the steam traps present in the heating/air conditioning system so that air enters the circuit once the pressure in the circuit has been lost. After draining the boiler, close the valve again and remove the flexible tube.



## 4 RECYCLING AND DISPOSAL

---

### **Uninstallation**

This product should be uninstalled by authorised personnel for the handling of fluorinated gases. The heat pump contains R32 refrigerant. Any leakage of refrigerant into the atmosphere should be avoided.

### **Recycling**

For recycling or disposal, the heat pump must be taken to a waste collection point. Contact qualified personnel for the handling of fluorinated gases. Contact the installer or the local authority for more information.

### **Disposal**

**Do not attempt to uninstall this product on your own.** The uninstallation and treatment of the refrigerant, oil and other components should be carried out in accordance with the local and national legislation. The complete equipment, including the compressor and the oil contained, should be disposed of at a waste collection point, as it may contain refrigerant waste.

## 5 OPERATION

---

The **FUSION TRIO** hydraulic module is a passive accessory. Therefore, its operation will be fully managed by the **DUAL CLIMA** heat pump controllers connected to it, which should be mounted on the front of the module (see "*Assembly and connection of the control panel*"). To properly configure and manage its operation, please carefully read the "Installation and Operating Instructions Manual" supplied alongside the heat pump.

However, to obtain all the features for which the "all-in-one" hydraulic module has been provided, at least it must be ensured that the DHW service and the Heating and / or Cooling service are activated. The **DUAL CLIMA** heat pump is supplied from the factory configured to provide Heating, Cooling and DHW services. If the installation does not have any of these services, they **MUST** be disabled by adjusting the parameters in the control unit. When a service is disabled, all operating modes related to that service will disappear from the control panel.

### 5.1 Managing the circulation pumps of the system

The **FUSION TRIO** hydraulic module can manage the operation of up to 2 circulating pumps installed in the heating and cooling circuits of the Heating and Cooling system, respectively. The activation and deactivation of said pumps is performed the signals received from the thermostats installed in the home and connected in the module (see "*Connecting Room Thermostats*"). In turn, by connecting these signals of the module with the **DUAL CLIMA** heat pump (see "*Connecting the **DUAL CLIMA** heat pump*"), the room thermostats will manage the operating modes of the external unit by switching to Heating mode or Cooling mode depending of the temperature conditions inside the home.

When a closed-circuit signal is detected in the Heating room thermostat (**TAC**) input, the Heating circulation pump (**BC**) and the heating mode of the **DUAL CLIMA** external unit will be activated. When a closed-circuit signal is detected in the Cooling room thermostat (**TAF**) input, the operation of the Cooling circulation pump (**BF**) and the Cooling mode of the **DUAL CLIMA** external unit will be activated. When an open-circuit signal is detected in the 2 **TAC** and **TAF** inputs, the 2 circulation pumps will remain deactivated, and the operation of the outdoor **DUAL CLIMA** unit will be deactivated, activating its "**Stand-By**" mode.

The operation described above may vary depending on the type of thermostat installed in the home. The sections "*Connecting room thermostats*" in this manual describe in detail the operation and management of the circulation pumps for each type of installation possible.

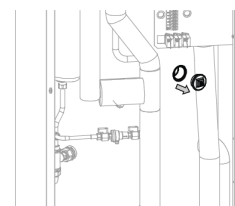
## 6 OPTIONAL ACCESSORIES

In order to complete the features offered by the **FUSION TRIO** hydraulic tank module, **DOMUSA TEKNIK** offers a wide range of optional accessories that can be integrated **inside** it. The following sections describe the correct assembly and connection of these accessories.

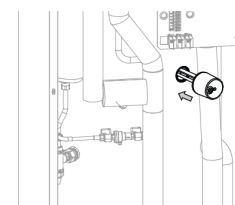
### 6.1 Assembly and connection of a backup heater for DWH (E1)

The **FUSION TRIO** hydraulic module allows the assembly of a heating heater for DHW in the outlet provided for this in the storage tank. For the assembly, remove the socket cap and seal the heater on it:

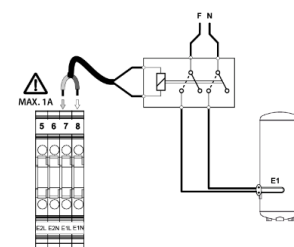
1. Disassemble and remove the plug from the socket indicated in the figure.



2. Assemble the heater supplied with the kit in its place, making sure to seal it correctly.



3. Make electrical connections at the **DUAL CLIMA** heat pump..



The electrical connection of the resistor is to be made between the terminals **E1L(7)** and **E1N (8)** (Neutral) of the **DUAL CLIMA** heat pump component terminal strip. For this purpose, an electric hose (supplied in the **DOMUSA TEKNIK** resistor kit) from the **FUSION TRIO** module to the heat pump, which is located outside. The hydraulic module has a series of cable ducts in the roof, through one of which the hose can be removed from inside the unit.

**IMPORTANT:** The relay of the E1 output that activates the resistor has a maximum capacity of 1A consumption, therefore, to connect a resistor, a relay (supplied in the **DOMUSA TEKNIK** resistor kit) must be placed between the terminals of the terminal strip and the resistor.

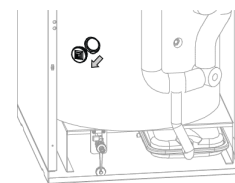
**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the mains..

### 6.2 Assembly and connection of a backup heater for Heating (E2)

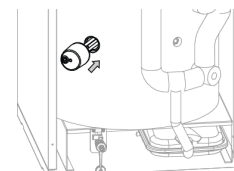
The **FUSION TRIO** hydraulic module allows the assembly of a heating element in the socket provided for this purpose in the buffer cylinder inside the module. With this heater, the required comfort features will be increased as required by external weather conditions.

For assembly, first cut the insulating shell that covers the socket cap, remove the plug, seal the heater in place and, finally, cover the heater cover with the previous shell:

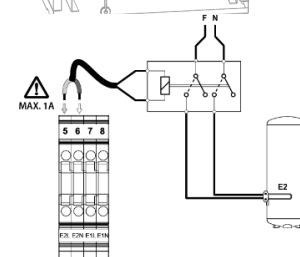
1. Disassemble and remove the plug from the socket indicated in the figure.



2. Assemble the heater supplied with the kit in its place, making sure to seal it correctly.



3. Make electrical connections at the **DUAL CLIMA** heat pump..



The electrical connection of the resistor is to be made between the terminals **E2L (5)** and **E2N (6)** (Neutral) of the **DUAL CLIMA** heat pump component terminal strip. For this purpose, an electric hose (supplied in the **DOMUSA TEKNIK** resistor kit) from the **FUSION TRIO** module to the heat pump, which is located outside. The hydraulic module has a series of cable ducts in the roof, through one of which the hose can be removed from inside the unit.

**IMPORTANT:** The relay of the **E2** output that activates the resistor has a maximum capacity of 1A consumption, therefore, to connect a resistor, a relay (supplied in the **DOMUSA TEKNIK** resistor kit) must be placed between the terminals of the terminal strip and the resistor.

**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the mains..

### 6.3 Installation and connection of a backup energy source in Heating circuit (E2)

As an alternative to an electrical backup heater in Heating circuit (**E2**), the **FUSION TRIO** hydraulic module allows the installation of a conventional energy source, such as an oil boiler, gas boiler, electric boiler, biomass boiler, etc. To do this, the module has 2 **IAC** and **RAC** sockets (see "*Diagrams and Measurements*"), to which the heating flow and return of a 2nd heating source should be connected, respectively. The **IAC** and **RAC** plugs are supplied plugged from the factory, so these plugs should be removed before performing the connection to the module.

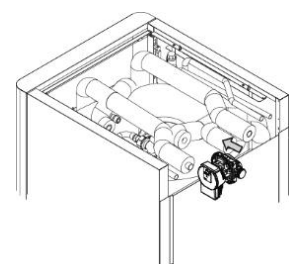
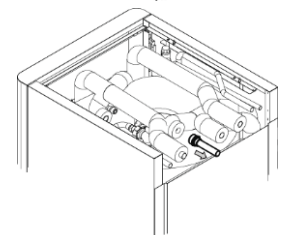
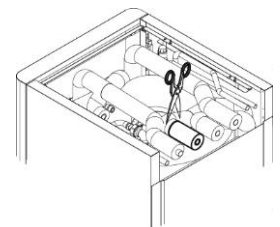
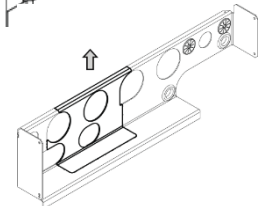
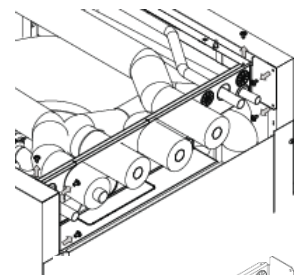
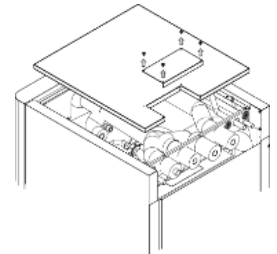
The management of the operation of the backup heating source should be carried out from the **DUAL CLIMA** heat pump. Therefore, the conventional heating source should be electrically connected to the **DUAL CLIMA** outdoor unit. In order to correctly perform this electrical connection, as well as the operating configuration of the conventional energy source, please follow carefully the instructions indicated in the "*Installation and operating instructions manual*" supplied with the heat pump.

## 6.4 Assembly and connection of a backup pump (C2)

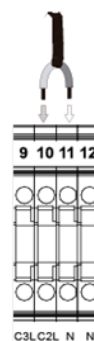
The **FUSION TRIO** hydraulic module is prepared for the assembly of a (BF/BC) circulation pump to increase the water flow in the Heating/Cooling installation if necessary.

For installation, a spool is installed in the return pipe of the heating/cooling system inside the **FUSION TRIO** module for assembly of the optional pump offered by **DOMUSA TEKNIK**. To do this, first cut the insulating shell that covers the spool, disassemble it and seal the pump in place:

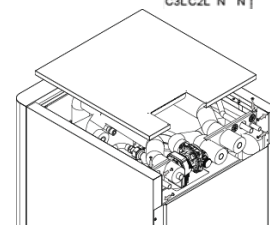
1. Loosen the cover by unscrewing the 4 fixing screws and remove the roof.
2. Remove the pipe clamp by unscrewing the 6 fixing screws.
3. Remove the pre-cut part of the pipe clamp.
4. Cut the insulating shell covering the spool and remove it, as indicated in the figure.
5. Disassemble the spool and remove it.
6. Assemble the circulation pump in place, taking into account the direction of flow indicated in the figure and making sure that the connections are sealed.



7. Connect the power cable, supplied with the kit, to the **DUAL CLIMA** heat pump.



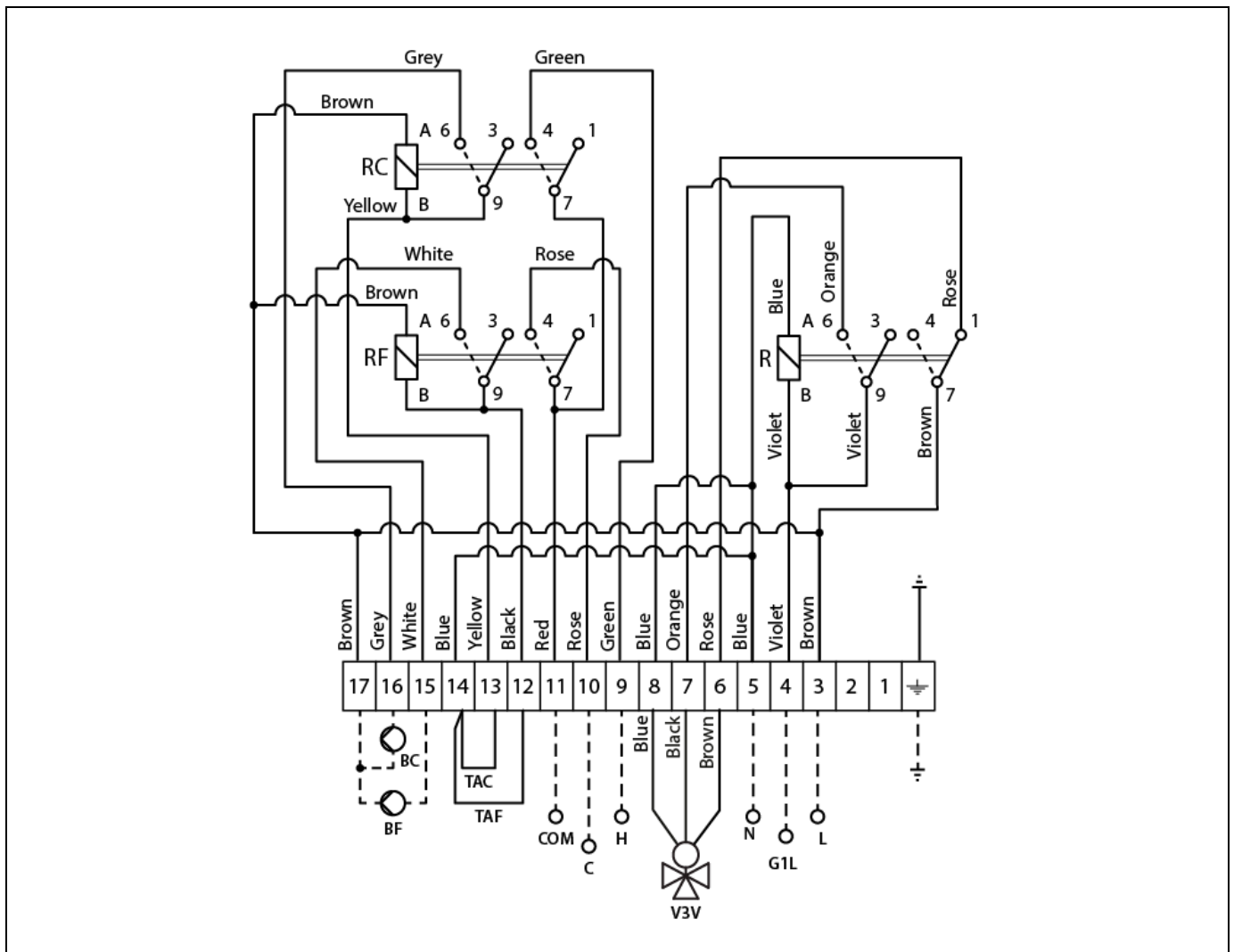
8. Once finished, reassemble the pipe support and the roof.



The electrical connection of the pump will be made between terminals **C2L** and **N/N** (neutral) of the heat pump components. To do this, an electrical hose (supplied in the **DOMUSA TEKNIK** pump kit) should be carried from the **FUSION TRIO** module to the heat pump, located on the outside. The hydraulic module has a series of cable ducts in its roof, through one of which it will be possible to remove the hose from inside the equipment.

**IMPORTANT:** When working on the electrical installation of the heat pump, make sure that it is disconnected from the electrical network.

## 7 ELECTRIC SCHEME



**BC:** Heating mode circulating pump.

**BF:** Cooling mode circulating pump.

**TAC:** Heating mode room thermostat.

**TAF:** Cooling mode room thermostat.

**COM:** Heating pump input for thermostat Common connexion.

**C:** Heating pump input for Cooling thermostat connexion.

**H:** Heating pump input for Heating thermostat connexion.

**V3V:** Motorised 3-way diverter valve.

**R:** DHW 3-way valve relay.

**RC:** Heating mode relay.

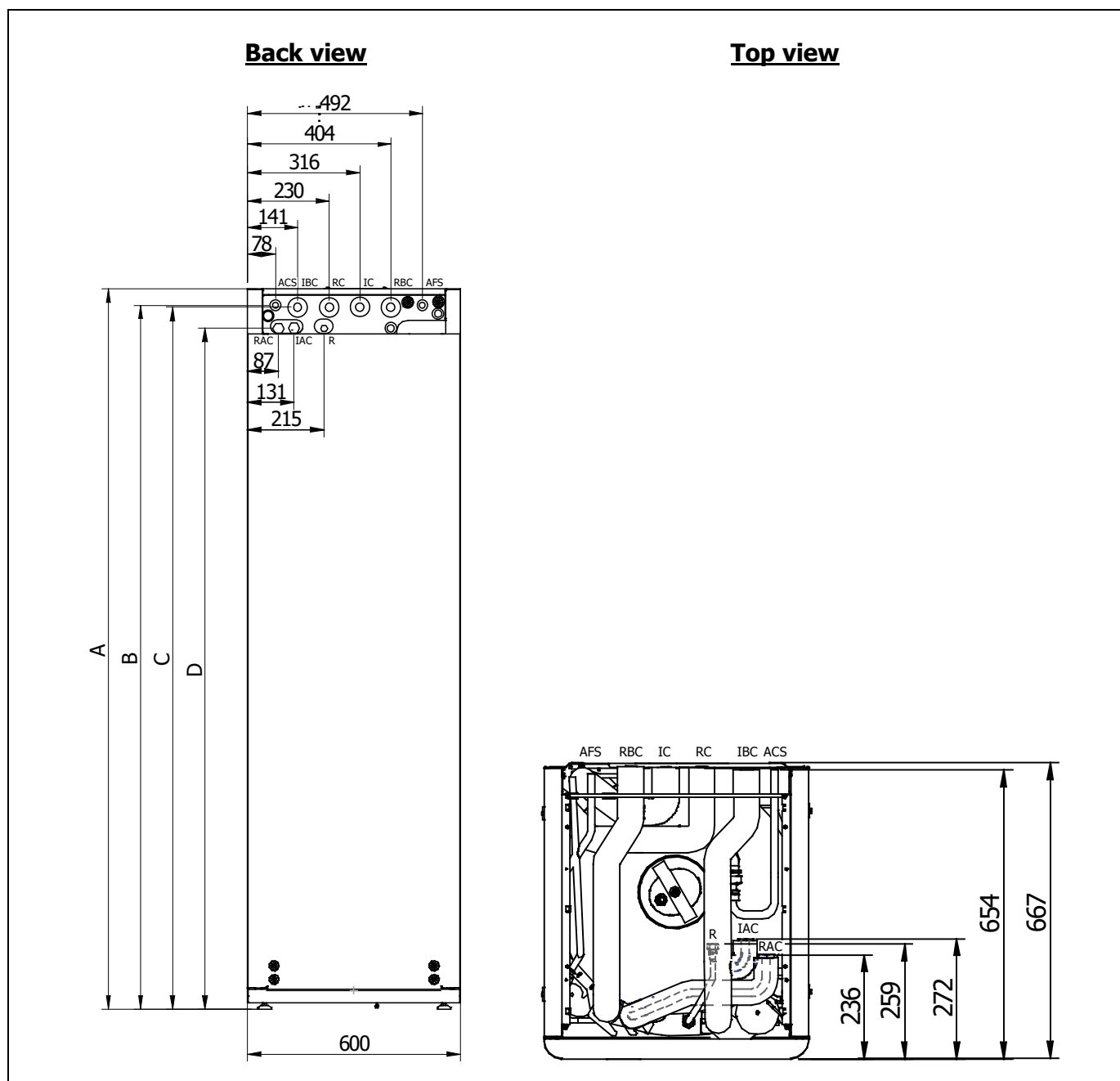
**RF:** Cooling mode relay.

**G1L:** Heat Pump DHW signal (NC).

**L:** Heat Pump Heating signal (NO).

**N:** Heat Pump common signal (Neutral).

## 8 DIAGRAMS AND MEASUREMENTS



|                                    | FUSION TRIO<br>200/50<br>(mm) | FUSION TRIO 200/80<br>(mm) |
|------------------------------------|-------------------------------|----------------------------|
| <b>Total height A</b>              | 2028                          | 2098                       |
| <b>Rack height ACS/AFS B</b>       | 1980                          | 2050                       |
| <b>Rack height IBC/RC/IC/RBC C</b> | 1975                          | 2045                       |
| <b>Rack height RAC/IAC/R D</b>     | 1917                          | 1987                       |

|             |                                                  |
|-------------|--------------------------------------------------|
| <b>IC:</b>  | Heating/Cooling Flow, Ø22 (fitting 1" M).        |
| <b>RC:</b>  | Heating/Cooling Return, Ø22 (fitting 1" M).      |
| <b>IBC:</b> | Heat Pump Flow, Ø22 (fitting 1" M).              |
| <b>RBC:</b> | Heat Pump Return, Ø22 (fitting 1" M).            |
| <b>ACS:</b> | Domestic Hot Water Outlet, 1/2" M.               |
| <b>AFS:</b> | Domestic Cold Water Inlet, Ø18 (fitting 3/4" M). |
| <b>R:</b>   | DHW Recirculation Return, 1/2" M.                |
| <b>IAC:</b> | Backup heating boiler Flow, 3/4" M.              |
| <b>RAC:</b> | Backup heating boiler Return, 3/4" M.            |

## NOTES:

A series of horizontal dotted lines spanning the width of the page.

## NOTES:

[illegible]

## NOTES:

[illegible]

---

# DOMUSA

## T E K N I K

**POSTAL ADDRESS**

Apartado 95  
20730 AZPEITIA  
Spain

**FACTORY & OFFICES**

Bº San Esteban s/n  
20737 ERREZIL (Gipuzkoa)  
Spain

Phone: (+34) 943 813 899



CDOC002799 03/03/26

**[www.domusateknik.com](http://www.domusateknik.com)**

**DOMUSA TEKNIK** reserves the right to make modifications of any kind to its product characteristics without prior notice.