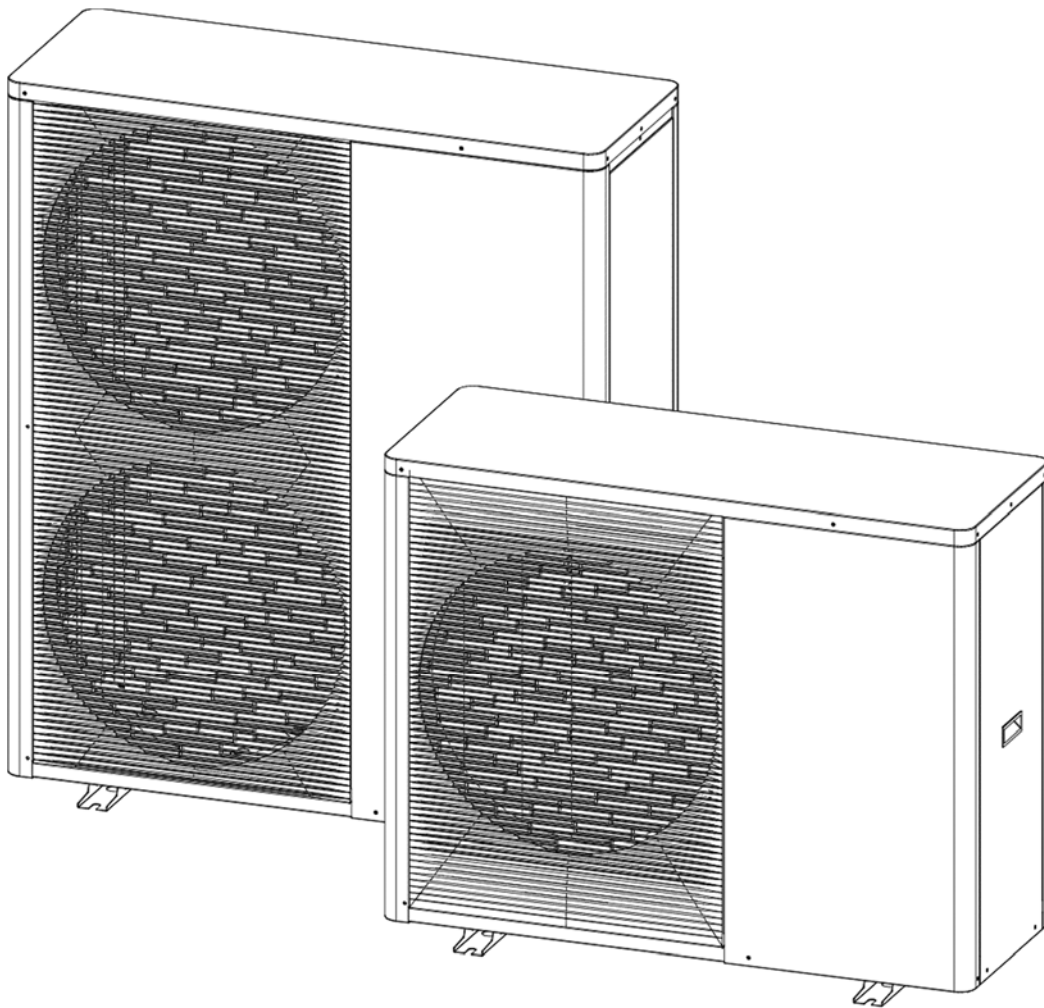

DUAL CLIMA HT

Air/water heat pump



Thank you for choosing a **DOMUSA TEKNIK** heat pump. From the range of **DOMUSA TEKNIK** products you have chosen the **DUAL CLIMA HT** model. With a suitable hydraulic installation, this heat pump will provide the ideal level of comfort for your home.










This document constitutes an essential part of the product and must be delivered to the end user. Read the warnings and recommendations in the manual carefully, as they contain important information on the safety, use and maintenance of the installation.

This heat pump must be installed by qualified personnel only, in accordance with the legislation in force and following the manufacturer's instructions.

Start-up of this heat pump and any maintenance operations must only be carried out by **DOMUSA TEKNIK's** Authorised Technical Assistance Services.

Incorrect installation of this heat pump could result in damage to people, animals or property, for which the manufacturer will hold no liability.

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1 SAFETY WARNINGS

1.1 Use and installation warnings

The **DUAL CLIMA HT** heat pump must be installed by personnel authorised by the Ministry of Industry, in compliance with the applicable laws and regulations. The precautions detailed here cover very important issues. Please be sure to follow them carefully.

Please carefully read this instruction manual and keep it in a safe, easily-accessible place. **DOMUSA TEKNIK** will not be liable for any damages caused by failure to follow these instructions.

This heat pump is suitable for use in both heating and cooling installations and can be combined with fan coils, underfloor heating/cooling, low-temperature radiators, and domestic hot water tanks (optional). It must be connected to a heating/air conditioning installation and/or a domestic hot water distribution network and 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 heat pump and contact your supplier. The packaging components must be kept out of the reach of children, as they constitute potential sources of danger.

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 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 you no longer wish to use the heat pump, disable the parts that could represent a potential hazard.

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 switches with wet hands. Touching a switch with wet hands may cause electric shock. Before accessing the electrical components of the heat pump, disconnect the power supply completely.

Disconnect all electricity sources before dismantling the service panel from the electric panel or before making any connections or accessing electrical parts.

To avoid electrocution, ensure the power is turned off for at least 1 minute before servicing the electrical parts. Even after 1 minute has elapsed, always measure the voltage at the terminals of the main circuit capacitors and other electrical parts before touching them, and make sure the voltage is 50 VDC or less.

When the service panels are disassembled, the live parts can be easily accessed. Never leave the unit unattended during installation or during maintenance work when the service panel is removed.

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

The heat or cold could burn your hands if you touch the pipes or internal parts in these conditions. To avoid injury, wait until the pipes and internal parts return to their normal temperature. Alternatively, if you need to access them, be sure to wear appropriate safety gloves.

1.3 Transport, storage and handling warnings

The **DUAL CLIMA HT** heat pump must be transported, handled and stored in vertical position. Placing the appliance on its side can cause the oil inside the compressor to spill out, causing premature compressor breakage on start-up.



Do not twist, loosen or pull the external electric cables of the heat pump. Do not insert any sharp objects through the fan grille or into the fan itself.

Do not clean the interior of the heat pump with water as this may result in electric shock or fire. For any cleaning and/or maintenance operations, disconnect the main power supply.

1.4 Freeze protection warnings

The **DUAL CLIMA HT** is an appliance for installation on the outside of the building and it will consequently be exposed to frost during periods of extremely cold weather. Frost protection is therefore very important for this type of appliance. If the water inside the heat pump freezes it can cause the pump to break, stopping its functioning and making costly repairs necessary.

It is **compulsory** to use an anti-freeze system in the installation to prevent the water in the units from freezing. **DOMUSA TEKNIK** recommends using anti-freeze liquid in the pump water circuit or an anti-freeze release valve system for draining the installation at very low temperatures. Please read the "Freeze Protection" section in this manual carefully for more detailed information on these systems. **DOMUSA TEKNIK's guarantee does not cover any damage caused by failing to use a freeze protection system.**

The **DUAL CLIMA** heat pump's electronic control has a function for protecting the water inside it from freezing during periods of frost. **For this function to remain enabled and on standby, the heat pump must be connected to the mains and have a power supply, even when it is switched off or not in use.**

A water filter must be installed in the installation in order to avoid obstructions in the heat pump water circuit. It must be installed on the heat pump's return circuit, and it **MUST** be installed before filling and circulating the water through the installation. The water filter must be checked at least once a year and cleaned if necessary, although in new installations it is recommended to check it a few months after start-up.

1.5 Heat pump refrigerant warnings

The **Dual Clima HT** contains **R290** refrigerant gas, which is highly flammable. In normal conditions of use, there is no risk of explosion and the refrigerant is non-toxic. However, in case of leakage, some aspects that could cause damages to third-parties must be taken into account, as the refrigerant could create a flammable atmosphere and give rise to fire or explosion.

All maintenance work must be carried out by qualified staff aware of the dangers of handling refrigerant gases.

IMPORTANT: The refrigerant gas contained in the heat pump is highly flammable and can cause damage to persons or property.

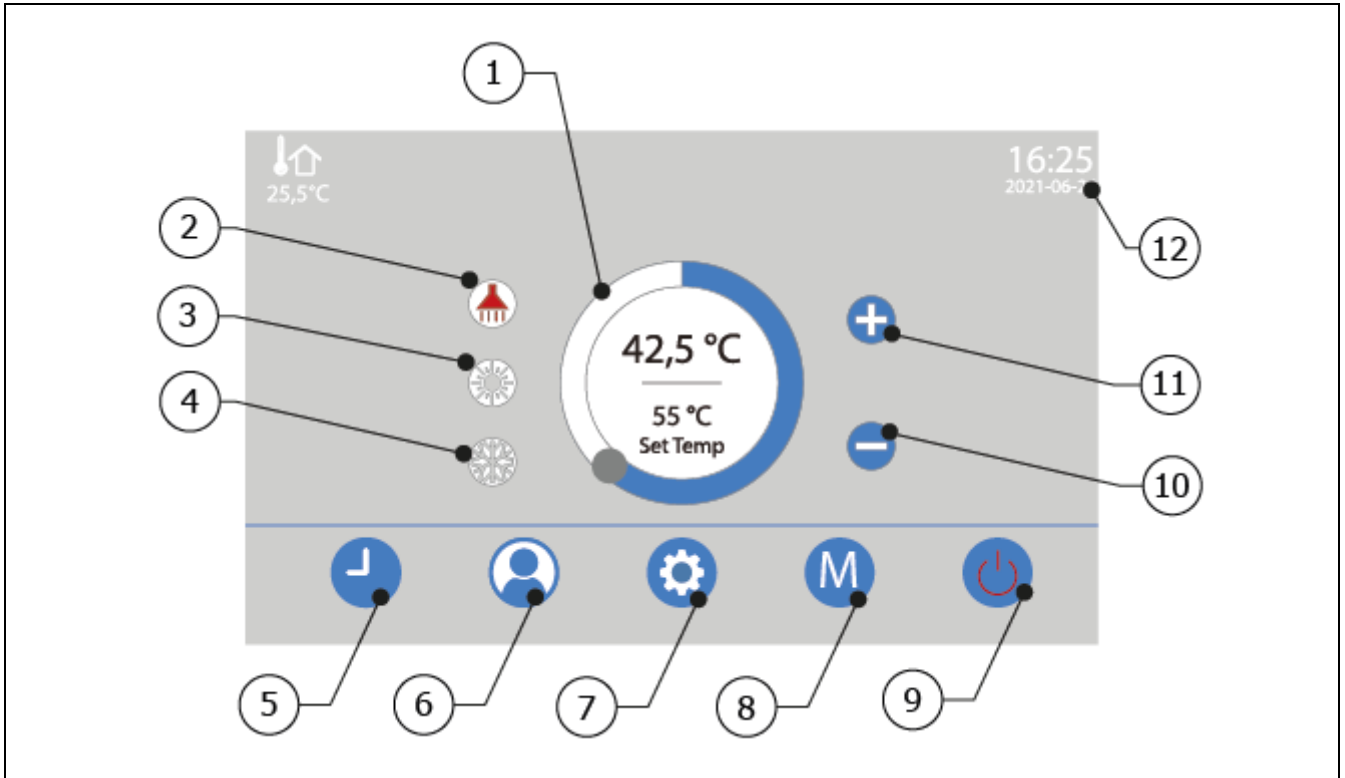
The main considerations to be taken into account are as follows:

- The heat pump refrigerant must be recovered for recycling or disposal in accordance with the current legislation.
- In case of leakage, any contact with the refrigerant gas could cause burns. To prevent injury, use the necessary safety protection and avoid contact with the refrigerant gas.
- Leakage could create a flammable atmosphere, giving rise to fire or explosion. As soon as any leakage is detected you must therefore ventilate the area and stay away from the appliance until all the gas has been correctly ventilated.
- The refrigerant must not come into contact with any sparks or sources of ignition. Refrigerant leaks must be detected using suitable devices for R290 refrigerant gas.
- It is **compulsory** to use a safety system in the installation for the case of refrigerant leaks. **DOMUSA TEKNIK** advises installing a degasifier in the pump water circuit. Please read the section "*Installing a degasifier*" in this manual carefully for more detailed information on this system. **DOMUSA TEKNIK will not be liable for any damages caused by failing to have a safety system in place for refrigerant leakage.**

2 ELECTRONIC CONTROL UNIT

2.1 Control unit

The electronic control unit of the **DUAL CLIMA HT** heat pump has a touchscreen for controlling all the adjustable functions and settings.



1. Temperature selection:

Press this button to change the temperature for the different operating modes.

2. DHW setpoint temperature:

This selects and displays the DHW setpoint temperature. See "*Temperature selection*".

3. Heating setpoint temperature:

This selects and displays the heating setpoint temperature. See "*Temperature selection*".

4. Cooling setpoint temperature:

This selects and displays the cooling setpoint temperature. See "*Temperature selection*".

5. Programming Menu touch button:

Press this button to access the heat pump programming menu. See "*Time programming*".

6. User Menu touch button:

Press this button to access the heat pump user menu. See "*User Menu*".

7. Settings Menu touch button:

Press this button to access the heat pump configuration menu. See "*Settings Menu*".

8. Operating Mode Menu touch button:

Press this button to access the different operating modes. See "*Selecting the operating modes*".

9. On/Off button:

This button switches the heat pump on and off.

10. "+" touch button:

Press this button to increase the setpoint temperature for the different operating modes.

11. "-" touch button:















Press this button to reduce the setpoint temperature for the different operating modes.

12. Date and time:

This selects and displays the date and time.

2.2 Icons on the control unit

The display has different display areas and sets of icons and numbers indicating the different statuses of the heat pump.



Operating modes:	
OTC	OTC mode enabled.
	Cooling Mode enabled.
	Heating Mode enabled.
	DHW Mode enabled.
Additional functions:	
	Anti-legionella Function enabled.
	Antifreeze Function enabled.
	Defrost Function activated.
	Time programming activated.
	Night mode enabled.
	SG Ready function enabled in On mode.
	SG Ready function enabled in Off mode.
	Compressor indicator enabled.
	External temperature indicator.
	Heat pump alarm indicator.
	Communication failure indicator.

2.3 Date and time settings

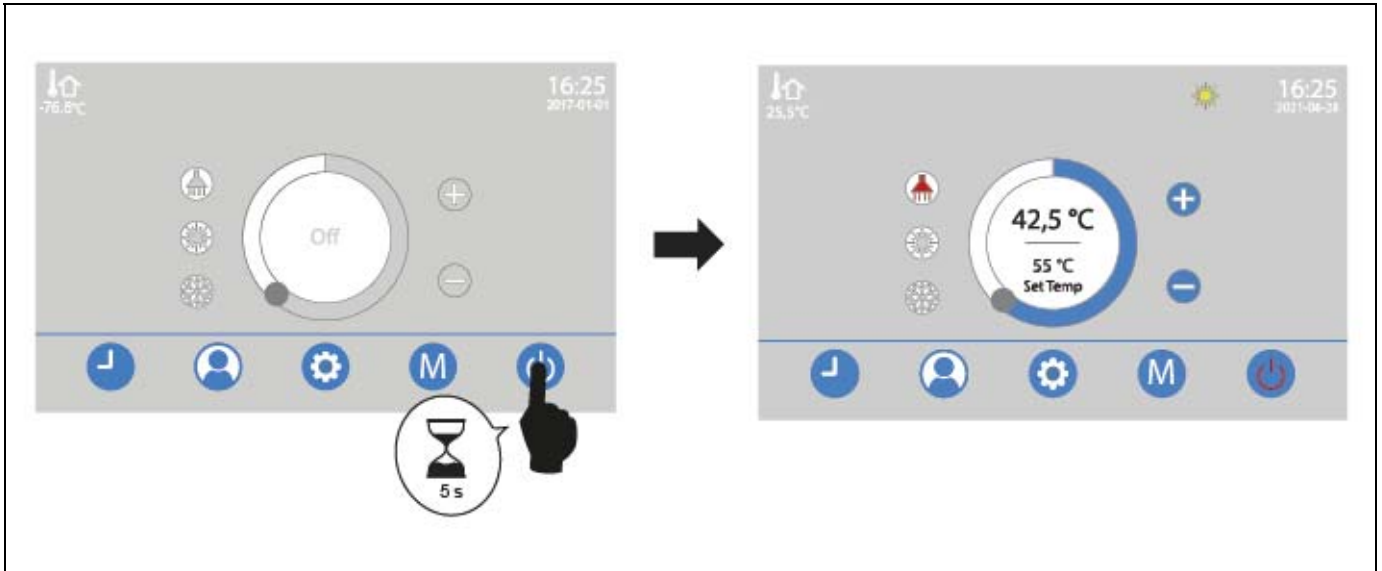
The **DUAL CLIMA HT** heat pump has a date and time indicator (**12**), for managing some of its functions. It is therefore vital to set the correct date and time on starting up the heat pump.


NOTE: An incorrect date and time setting may cause some features to malfunction.

3 SWITCHING THE HEAT PUMP ON AND OFF

To switch on the heat pump, press the On button (9) for 5 seconds . The heat pump will switch on in the last previously selected operating mode and the On button will light up in red .

Different operating mode icons will light up on the digital display depending on the operating mode selected.

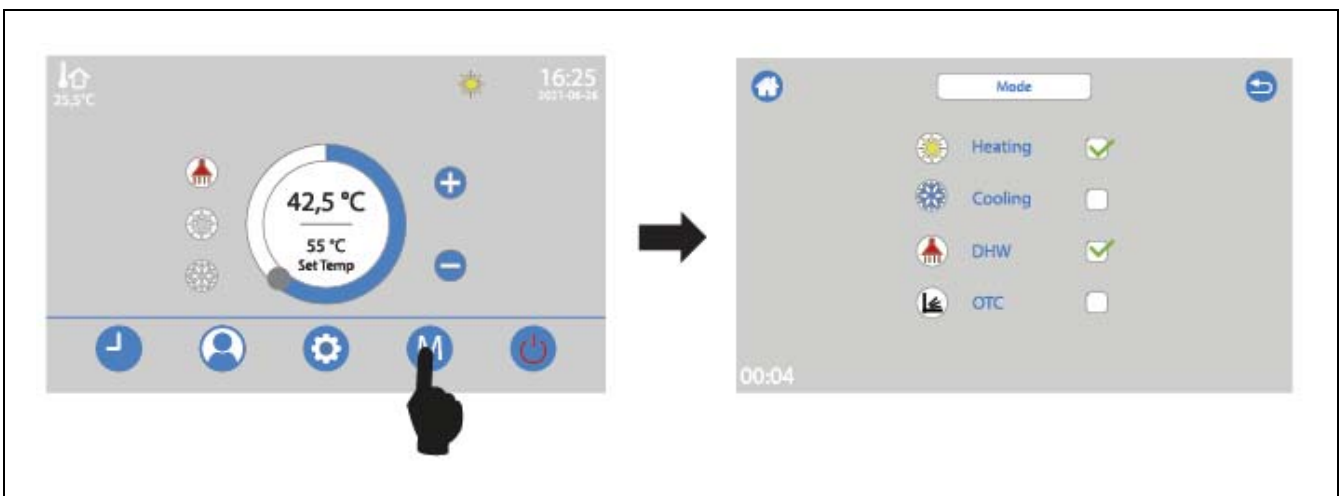


To switch off the heat pump, press the Off button (9) hold it down for 5 seconds . The heat pump will run through its switch-off sequence.








4 OPERATION

4.1 Selecting manual operating modes

Depending on the configuration of your installation, the **DUAL CLIMA HT** heat pump can manage up to 5 operating modes manually. To select these operating modes, press the Operating modes touch button (8) on the start screen. The following modes will appear on the display:



The selectable operating modes are as follows:

-  Heating Mode.
-  Cooling Mode.
-  Domestic Hot Water (DHW) Mode.
-  +  Heating and DHW mode
-  +  Cooling and DHW mode

When the heat pump is configured and installed for "AUTO" mode functioning, the Heating and Cooling modes cannot be selected manually, as the heat pump will enable and disable them via a signal from the remote room thermostat connected to it (see "*Functioning in Heating/Cooling "AUTO" mode*").

Depending on the configuration of your installation, some of the operating modes listed may not be selectable. Please read the following sections carefully as they describe the functioning of these modes in detail.

4.2 Cooling mode

This mode can only be selected if the heating/cooling installation is designed to function in Cooling mode (underfloor cooling, fan coils, etc.) and the heat pump is configured accordingly.

In this operating mode, the **DUAL CLIMA HT** heat pump will cool the water in the heating/cooling installation and maintain it at the desired temperature. To do this, select the desired cooling setpoint temperature (see "*Temperature selection*") and the room thermostat temperature (if the unit has a thermostat) (see "*Functioning in Heating/Cooling "AUTO" mode*").

This mode will **only** affect the heating/cooling installation, and if the unit has DHW production it will be disabled.

4.3 Heating mode

In this operating mode, the **DUAL CLIMA HT** heat pump will heat the water in the heating/cooling installation and maintain it at the desired temperature. To do this, select the desired heating setpoint temperature (see "*Temperature selection*") and the room thermostat temperature (if the unit has a thermostat) (see "*Functioning in Heating/Cooling "AUTO" mode*").

This mode will **only** affect the heating/cooling installation, and if the unit has DHW production it will be disabled.

4.4 DHW mode

This mode will only be selectable if the installation has a Domestic Hot Water storage tank connected and the heat pump is configured accordingly.

In this operating mode, the **DUAL CLIMA HT** heat pump will heat the water in the domestic hot water storage tank to the desired temperature, to provide DHW to the home. To do this, select the desired DHW setpoint temperature (see "*Temperature Selection*"). When the desired temperature is reached the heat pump will stop and will remain on standby until it receives a DHW request.

This mode will **only** affect the DHW storage tank installation, and the heating and/or cooling function of the heating/cooling installation will be disabled.

4.5 Cooling and DHW mode +

This mode will only be selectable only if the heating/air conditioning system is designed to operate in Cooling mode (underfloor cooling system, fan coils, etc.); the installation has a connected domestic hot water storage tank and the heat pump is configured accordingly.

This operating mode is the combination of the Cooling and DHW simultaneously. When a DHW request is activated, the heat pump will disable Cooling mode and enable Domestic Hot Water mode, giving priority to DHW production over the cooling function of the heating/air conditioning installation. Once the desired DHW temperature is reached, the heat pump will enable Cooling mode again.






4.6 Heating and DHW mode +

This mode will only be selectable if the installation has a Domestic Hot Water storage tank connected and the heat pump is configured accordingly.

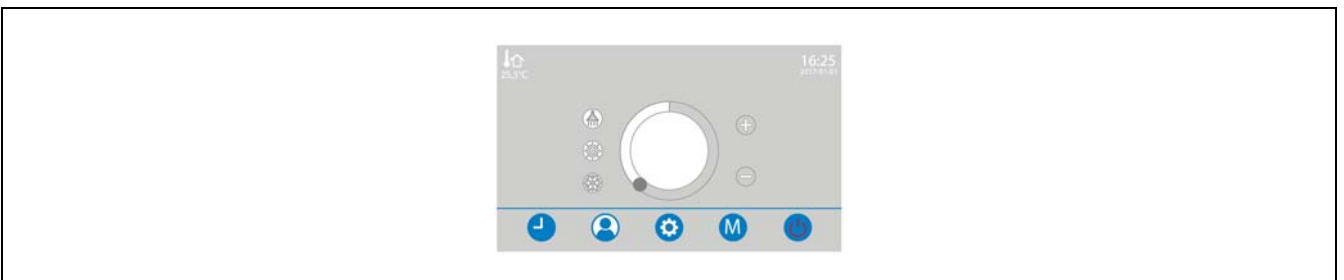
This operating mode is a simultaneous combination of the Heating and DHW modes. When a DHW request is activated, the heat pump will disable Heating mode and enable Domestic Hot Water mode, giving priority to DHW production over the heating function of the heating/air conditioning installation. Once the desired DHW temperature is reached, the heat pump will enable Heating mode again.

4.7 Functioning in Heating/Cooling "AUTO" mode


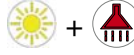



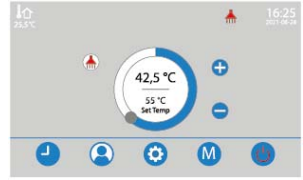
In "AUTO" mode, the **DUAL CLIMA HT** heat pump can enable Heating or Cooling mode "automatically". To enable this operating mode, the electronic control has 2 connections (one for enabling Heating mode and the other for enabling Cooling mode). A **heating/cooling switching (3-wire) room thermostat** can be connected so that the heat pump will enable one of the two operating modes automatically and remotely from wherever this room thermostat is located in the home. To correctly install this thermostat, carefully follow the instructions provided in the section *"Connecting a Room Thermostat"*.

When a hot/cold room thermostat or chronothermostat has been connected, the heat pump will automatically enable Heating or Cooling operating mode according to the selection made on the thermostat and depending on the temperature inside the home. When DHW production is selected on the heat pump control panel (), the electronic control will enable Heating and Cooling modes in combined DHW production mode, as described in the sections *"Cooling and DHW Mode  + * and *"Heating and DHW Mode  + *, so that the automatic selection of an operating mode will not affect DHW production.

Once the thermostat has been installed in the home, select the desired temperature, the operating mode (Heating or Cooling) and the operating times, if it is a chronothermostat (see the Thermostat Manual). The heat pump will switch on and enable the operating mode selected on the thermostat (Heating or Cooling), until the set temperature is reached. When the desired temperature is reached in the home, the heating or cooling function of the heating/air conditioning installation will be disabled, turning off the operation of the heat pump. The information shown below will appear on the electronic control panel to indicate that the heat pump has been switched off by the room thermostat (standby).



The table below shows the functioning of the **Dual Clima HT** heat pump in **"AUTO"**, mode, depending on the remote mode selection made on the Hot/Cold thermostat:

Thermostat Selection	Dual Clima HT	Control panel
Heating	Heating Mode: The heat pump enables Heating mode.	
	Combined Heating + DHW mode: The heat pump enables Heating mode, providing the desired setpoint temperature has already been reached in the DHW storage tank.	
Cooling	Cooling Mode: The heat pump enables Cooling mode.	
	Combined Cooling + DHW mode: The heat pump enables Cooling mode, providing the desired setpoint temperature has already been reached in the DHW storage tank	
OFF (Stand By)	Heating or Cooling Modes: When the desired temperature is reached in the home, or when the room thermostat is disabled (if it equipped with this function), the heating or cooling function will be disabled.	
	Combined Heating or Cooling + DHW modes: When the desired temperature is reached in the home, or when the room thermostat is disabled (if it equipped with this function), the heating or cooling function will be disabled and DHW mode will remain enabled.	

4.8 Operation with room thermostat

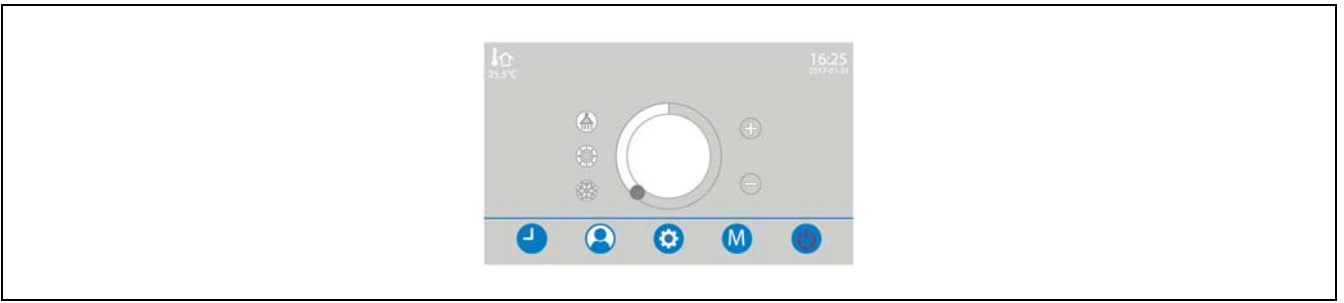
The **DUAL CLIMA HT** heat pump includes 2 connections for installing a room chronothermostat or room thermostat (see *"Room Thermostat Connection"*), enabling control of heat pump operation according to the temperature inside the home. One of the connections is for controlling Heating mode and the other for Cooling mode. Optionally, **DOMUSA TEKNİK** offers a wide range of these devices in its product catalogue.

Operation with a room thermostat will not affect DHW production (if the unit is equipped with this), which will continued to be enabled regardless of the status of the thermostat.

The installation of a room thermostat will optimise the installation's performance, adapting the heating and/or air conditioning to the requirements of your home and obtaining enhanced comfort. Additionally, if the thermostat allows the operating hours to be programmed (chronothermostat), it can adapt the system to the hours of use of the installation.

Operation with 2 room thermostats

If two thermostats are used simultaneously (one for Heating and one for Cooling) (see *"Connecting a Room Thermostat"*), when they have been installed select the desired temperatures and the operating times if a chronothermostat is used (see the Thermostat Manual). The heat pump will switch on and enable the operating mode for which the thermostat has been installed (Heating or Cooling), until the temperature set on the room thermostat is reached. When the desired temperature is reached in the home, the heating or cooling function of the heating/air conditioning installation will be disabled, turning off the operation of the heat pump. The information shown below will appear on the electronic control panel to indicate that the heat pump has been switched off by the room thermostat (standby).



If 2 room thermostats are installed simultaneously (one for Heating and the other for Cooling), ensure the correct temperatures are selected on each one to prevent crossover, with both thermostats being enabled at the same time.

Operation with the heating/cooling switching (2-wire) thermostat

If a **heating/cooling switching (2-wire)room thermostat** is installed, the same operating mode (Heating or Cooling) will need to be selected on the heat pump as the mode it is to work in. Once the thermostat is installed in the home, select the desired temperature and operating times, if it is a chronothermostat (see the Thermostat Manual). The heat pump will switch on and activate the selected operating mode (Heating or Cooling) until the temperature set on the room thermostat is reached. When the desired temperature is reached in the home, the heating or cooling function of the heating/air conditioning installation will be disabled, turning off the operation of the heat pump. The information shown below will appear on the electronic control panel to indicate that the heat pump has been switched off by the room thermostat (standby).



On installing a 2-wire heating/cooling switching thermostat (Heating or Cooling), you must ensure the operating mode is correctly selected on the heat pump, so that both of them work in the same mode. **If the operating mode selected on the thermostat is heating, the heat pump must also work in this mode.**

4.9 Functioning according to outdoor temperature conditions (OTC)

This mode enables the electronic control of the **DUAL CLIMA HT** heat pump to calculate the working temperature of the Heating mode according to the outside weather conditions at each particular time, with optimum adjustment of the heating installation conditions for improved comfort in the home and energy savings. The **Dual Clima HT** heat pump is already pre-set to work in the best operating mode for the external weather conditions (OTC) with an automatic setpoint temperature.

To disable this operating mode, press the Operating Modes touch button **(8)** on the start screen and select the desired operating mode:



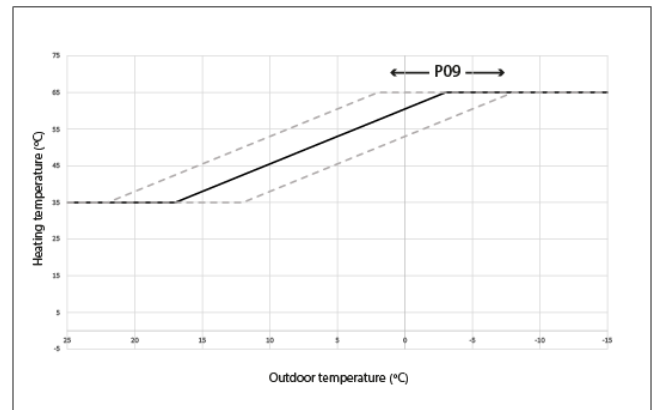
Operating mode according to outdoor temperature conditions (OTC).

In this operating mode, the Heating setpoint temperature will be calculated automatically by the electronic control according to the temperature measured outside the home, in accordance with the

following operating curves. The selection of the operating curve must be made by technically qualified personnel. To configure the desired curve, set the parameters **P08** and **P09** on the System Parameters (see *Settings Menu*).

Parameter P09

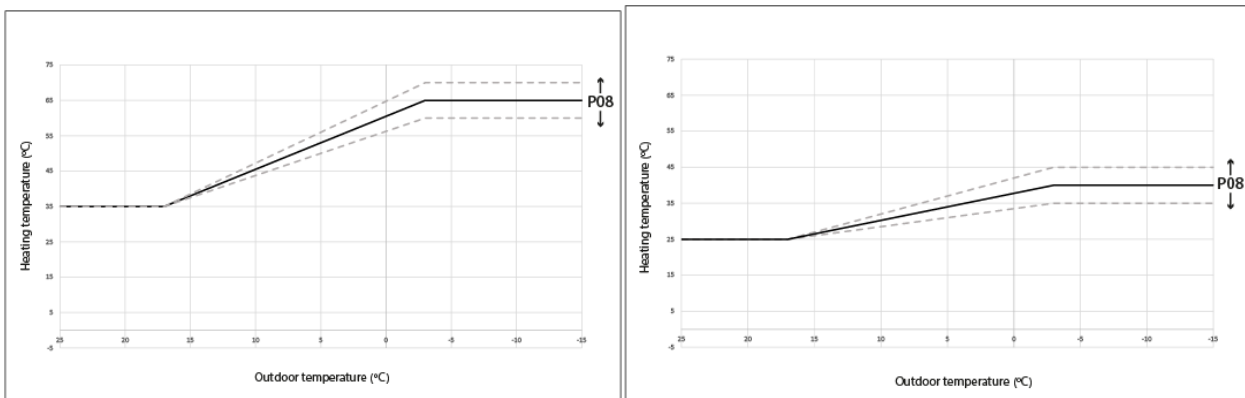
The parameter **P9** is used to adjust the offset, moving the curve horizontally on the graph. The selectable range of values is -10~+10 °C. The pre-set default value is 0°C. This setting can be increased or decreased by entering the desired value on the drop-down sub-menu.



Parameter P08

Parameter **P08** is used to set the maximum temperature in Heating mode. The selectable range of values is 35~75 °C. The pre-set default value is 65°C. This setting can be increased or decreased by entering the desired value on the drop-down sub-menu.

The operating curve will change depending on the value selected for parameter **P08**. If the value selected for parameter P08 is 50°C or over, the minimum operating temperature will be 35°C. However, if the value selected for parameter P08 is below 50°C, the minimum operating temperature will be 25°C.



NOTE: Incorrectly setting the operating curves could mean the heating installation may not generate the desired thermal comfort in the home, as it will provide insufficient heat when the outdoor temperature is extremely cold and/or excessive heat in hot weather.

4.10 Night Mode ☾

In order to reduce the number of switch-ons and noise caused at antisocial times (at night), the **DUAL CLIMA HT** heat pump can be activated in Night Mode. On operating in Night Mode, in DHW mode the setpoint temperature that has been set will automatically be increased by 3°C, in Heating mode it will automatically be reduced by 2°C, and in Cooling mode it will automatically be increased by 2°C.

To enable and configure this operating mode, you must adjust parameters **P15**, **P16** and **P17** in the System Parameters (see *Settings Menu*). By default, the heat pump is supplied with Night Mode disabled. To enable it, set parameter **P17** to 1. Also, parameter **P15** is used to select Night Mode start time and parameter **P16** to select Night Mode end time. The default times are from 10.00 p.m. to 6.00 a.m.

4.11 Anti-legionella function

This function prevents the proliferation of Legionella bacteria in the domestic hot water accumulated in the tank, so it will only be available if the installation has a connected Domestic Hot Water storage tank and the heat pump is configured accordingly.

To enable this function, adjust parameter **P14** in the System Parameters (see *Settings Menu*). The heat pump has the anti-legionella function disabled by default. To enable it, set parameter **P14** to **0**.

The function will regularly increase the temperature of the domestic hot water in the tank to 50~70 °C. The desired temperature and frequency can be selected for this purpose (see *"Temperature selection"*). This function will be activated regardless of the operating modes that enabled at the time of start-up, even when the heat pump is in standby mode.

Also, providing the function is enabled (**P14=0**), this function can be activated manually at any time using the parameter **P14** in the System Parameters (see *Settings Menu*). Setting parameter **P14** to **1** will enable the anti-legionella function once. When the function is activated it cannot be stopped and you must wait until the cycle is complete for the appliance to resume its normal functioning.

4.12 SG Ready function

The **DUAL CLIMA HT** heat pump includes the SG Ready (Smart Grid) function. This function allows the power company to communicate with the heat pump and adapt it optimally to the mains network demand via a smart control. Its consumption can therefore be adapted to the grid requirements, helping accumulate energy at the most profitable times and avoiding consumption when the grid demand is highest.

By default, the heat pump is supplied with the SG Ready function disabled. To activate it, set parameter **P201** to 1. Also, to accumulate energy at the times determined by the power company and to adapt your consumption to grid demand, new heating, cooling and/or domestic hot water setpoints will need to be selected for each operating mode.

NOTE: To ensure energy storage with the SG Ready function, it is necessary to have a DHW storage tank and buffer tank for heating and/or cooling installed.

This function will accumulate energy and reach the newly defined setpoints using both the compressor and the back-up energy sources for DHW (E1) and heating (E2). To set the working mode of the heat pump to SG Ready, adjust parameter **P208** of the System Parameters (see *Settings Menu*). If only the heat pump is to be worked with, bear in mind that the backup energy sources for DHW (E1) and heating (E2) will not work to reach the newly defined setpoints, regardless of the auxiliary or backup energy sources (**P81**) selected.

The **Dual Clima HT** heat pump incorporates two terminal strip inputs (see *"Connection Diagram"*). In combination with the different options, these inputs define 4 SG Ready operating modes:

	MODE OFF	MODE STANDARD	RECOMMENDED START-UP MODE	MODE ON
SG1	ON (Closed)	OFF (Open)	OFF (Open)	ON (Closed)
SG2	OFF (Open)	OFF (Open)	ON (Closed)	ON (Closed)
CONNECTION DIAGRAM				
REMOTE CONTROL		-		

Off mode

In off mode, when there is an excessive power consumption demand in the grid, the power company instructs the heat pump not to switch on at all (standby mode). The heat pump will not switch on in heating, cooling and/or domestic hot water mode. None of the safety functions (anti-freeze, defrost, etc.) will be affected in this operating mode. Off mode will last for a **maximum of 2 hours**.

While off mode is operational, the icon SG Function Ready in off mode will be displayed on the start screen. .

Standard mode

In standard mode, the power company cannot alter the functioning of the heat pump. The heat pump will operate normally and no icon will be displayed on the start screen.

Recommended start-up mode

In recommended start-up mode, the power company recommends switching on the heat pump in order to adapt consumption to the mains demand. This will require the selection of new heating, cooling and/or domestic hot water setpoints depending on the installation. The new setpoints must be selected by technically qualified personnel. To do this, parameters **P202**, **P204** and **P206** of the System Parameters must be adjusted (see *Settings Menu*).

While recommended start-up mode is enabled, the function will increase the temperature in the DHW tank and/or buffer tank installed to the temperature selected.

While recommended start-up mode is enabled, the icon SG Function Ready in on mode will be displayed on the start screen. .

NOTE: **Incorrect setting of the parameters may result in the heating system not providing the desired comfort in the house.**

Start-up mode

In start-up mode, the power company forces heat pump switch-on in order to adapt the consumption to the grid demand. This will require the selection of new heating, cooling and/or domestic hot water setpoints depending on the installation. The new setpoints must be selected by technically qualified personnel. To do this, parameters **P203**, **P205** and **P207** of the System Parameters must be adjusted (see *Settings Menu*).

As long as the start-up recommendation mode is enabled, the function will raise the temperature of the installed DHW storage tank and/or buffer tank to the selected temperature.

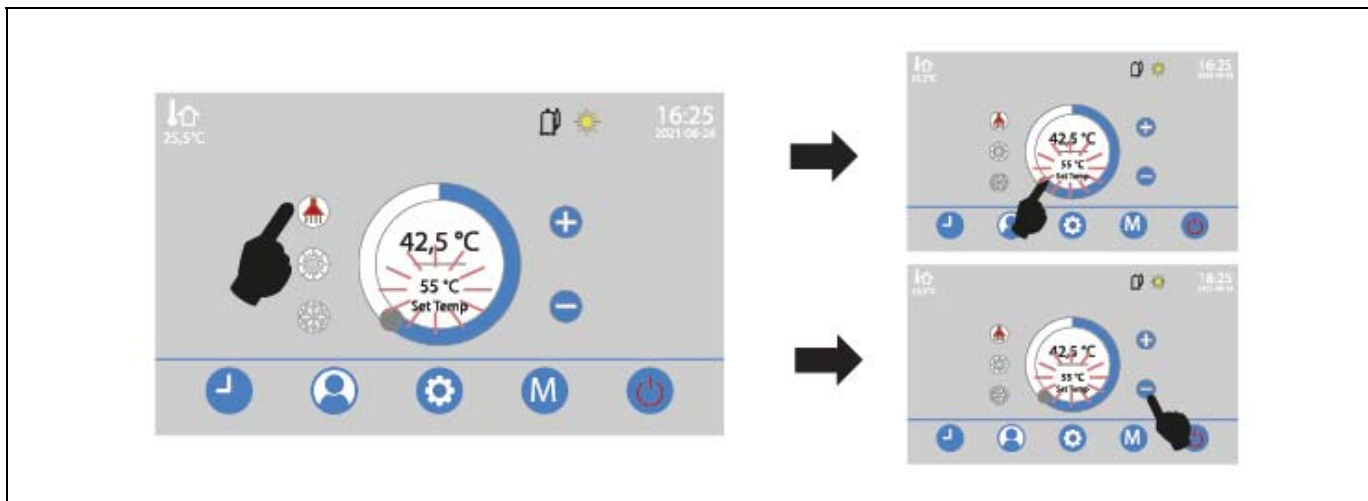
While On mode is enabled, the icon SG Function Ready in on mode will be displayed on the start screen.



NOTE: Incorrect setting of the parameters may result in the heating system not providing the desired comfort in the house.

5 TEMPERATURE SELECTION

The desired setpoint temperatures for each operating mode can be set using the digital display. To access them, select the operating mode you wish to display or change using buttons (2), (3) or (4) and select the required temperature using buttons (1), (10) or (11). The selected temperature will be displayed in the centre of the screen.



The following sections detail the process for setting the setpoint temperature for each mode.

5.1 Setting the Cooling Mode setpoint temperature

The selectable range of values for Cooling operating mode is 7~25 °C. The pre-set default value is 12°C. This setting can be increased or decreased by selecting the desired value on the drop-down sub-menu. When you have selected the desired value, press the **Enter** button to save the setting.

To correctly set suitable values for this operating mode, follow the recommendations given by the installer or the **DOMUSA TEKNIK** Official Technical Service. Depending on the type of installation, the location (climatic zone) and the relative humidity of the home, excessively low temperatures of the Cooling mode setpoint may create "undesired" condensation in the heating/air conditioning system, causing deterioration and damage in the home.

IMPORTANT: DOMUSA TEKNIK will not be held liable for any damages and/or breakdowns in either the installation or the home caused by inadequate selection of the Cooling Mode setpoint temperature.

5.2 Setting the Heating Mode setpoint temperature

The selectable range of values for Heating operating mode is 10~75 °C. The pre-set default value is 45°C. This setting can be increased or decreased by selecting the desired value on the drop-down sub-menu. When you have selected the desired value, press the **Enter** button to save the setting.

Notwithstanding the temperature settings, the **Dual Clima HT** heat pump is already supplied pre-set to work in the best operating mode for the external weather conditions (OTC) with an automatic setpoint temperature.

OTC will be displayed on the start screen, indicating activation of the correct operating mode for the outdoor temperature conditions. The setpoint temperature will be automatically adjusted by the electronic control depending on the temperature measured outside the home, according to a series of operating curves pre-set by the installer or the Official Technical Assistance Service (see "*Functioning according to outdoor temperature conditions*").

NOTE: If automatic operating according to the outdoor temperature conditions ("OTC") is selected, incorrectly setting the operating curves could mean the heating installation may not generate the desired thermal comfort in the home, as it will provide insufficient heat when the outdoor temperature is extremely cold and/or excessive heat in hot weather.

5.3 Setting the DHW Mode setpoint temperature

The selectable range of values for DHW operating mode is 10~70 °C. The pre-set default value is 45°C. This setting can be increased or decreased by selecting the desired value on the drop-down sub-menu. When you have selected the desired value, press the **Enter** button to save the setting.

If the desired temperature in the tank is higher than the value selected for parameter **P35** of the System Parameters (see *Settings Menu*), an auxiliary heat source must be installed on the tank as a backup (electric heating element, backup boiler, etc.). The **DUAL CLIMA HT** heat pump will heat up the water in the tank to the value selected for parameter **P35**. After this, it will activate the auxiliary heat source to reach the highest desired temperature.

The selectable range of values is 0~70 °C. The pre-set default value for **P35** is 70°C, and this setting can be increased or decreased by selecting the desired value on the drop-down sub-menu. When you have selected the desired value, press the **Enter** button to save the setting.

5.4 Adjusting the Anti-Legionella function settings

To set and activate the anti-legionella function, you must adjust parameters **P10**, **P11**, **P12** **P13** and **P14** of the System Parameters (see *Settings Menu*).

Activating the Anti-legionella function

To activate the anti-legionella function, you must adjust parameter **P14** of the System Parameters (see *Settings Menu*). The selectable range of values is 0~2.

- P14=0; automatic operation of anti-legionella function.
- P14=1; manual operation of anti-legionella function. The anti-legionella function will be activated once when manual mode is selected. The function will not be run again until its next manual enablement.
- P14=2; anti-legionella function switch-off.

Anti-Legionella Temperature

To select the anti-legionella setpoint temperature, you must adjust parameter **P13** of the System Parameters (see *Settings Menu*). The selectable range of values for the anti-legionella function is 50~70 °C. The pre-set default value is 70°C. This setting can be increased or decreased by selecting the desired value on the drop-down sub-menu. When you have selected the desired value, press the **Enter** button to save the setting.

Frequency

To adjust the activation frequency of the anti-legionella function (in days), you must adjust parameter **P10** of the System Parameters (see *Settings Menu*). The selectable range of values is 1~99 days. The pre-set default value is 7 days. This setting can be increased or decreased by entering the desired value on the drop-down sub-menu.

Start Time

To adjust the time at which the anti-legionella function is activated, you must adjust parameter **P11** of the System Parameters (see *Settings Menu*). The selectable range of values is 0-23 hours. The pre-set default value is 23 hours (23.00h). This setting can be increased or decreased by entering the desired value on the drop-down sub-menu. When you have selected the desired value, press the **Enter** button to save the setting.

Maintenance minutes

To adjust the length of time the function will remain active once the selected temperature has been reached, you must adjust parameter **P12** of the System Parameters (see *Settings Menu*). The selectable range of values is 5~99 minutes. The pre-set default value is 10. This setting can be increased or decreased by entering the desired value on the drop-down sub-menu. When you have selected the desired value, press the **Enter** button to save the setting.

5.5 Setting the SG Ready function setpoints

For configuring and operating the SG Ready function, in "Recommended Start-up" and "On" modes, new for heating, cooling and/or domestic hot water setpoints need to be selected for each operating mode. See "*SG Ready function*".

To select new heating setpoints, parameters **P202**, for Recommended start-up mode, and **P203**, for On mode, must be adjusted. The selectable range of values is 0~75 °C. The preset default value for **P202 and P203** is **OFF** and this value can be activated by selecting the desired value on the sub-menu displayed. Once the desired value has been selected, press the **Enter** button to save the setting. If the **OFF** default value is kept, no new temperature setpoints will be applied for the operating modes.

To select new cooling setpoints, parameters **P204**, for Recommended start-up mode, and **P205**, for Start-up mode, must be selected. The selectable range of values is 10~30 °C. The pre-set default value for **P204 and P205** is **OFF**. This setting can be activated by selecting the desired value on the drop-down sub-menu. Once the desired value has been selected, press the **Enter** button to save the setting. If the **OFF** default value is kept, no new temperature setpoints will be applied for the operating modes.

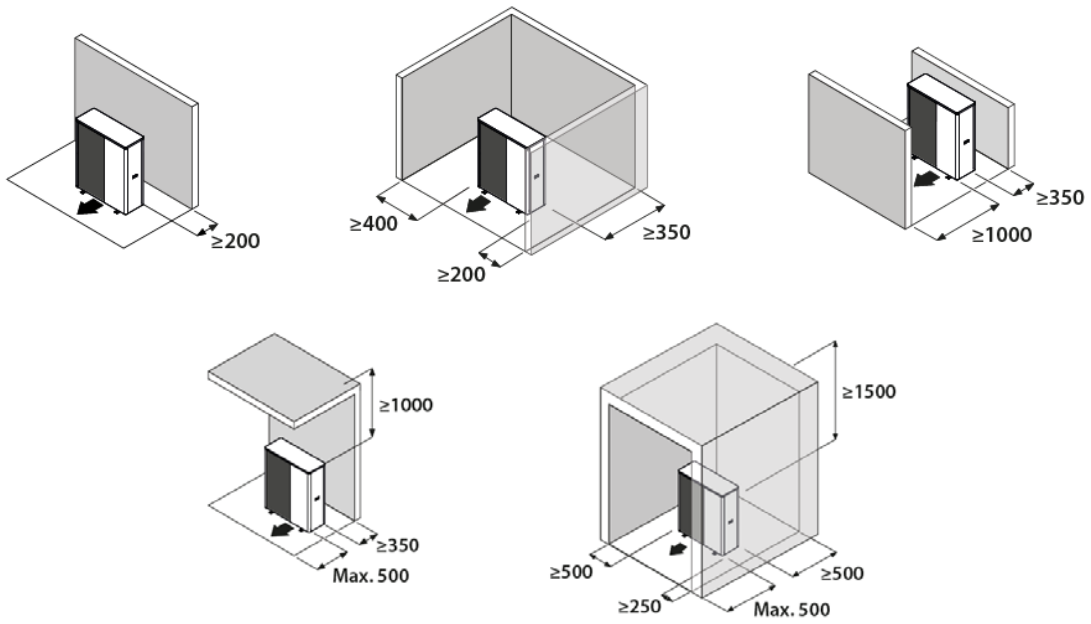
To select new domestic hot water setpoints, parameters **P206**, for Recommended start-up mode, and **P207**, for On mode, must be adjusted. The selectable range of values is 0~70 °C. The pre-set default value for **P206 and P207** is **OFF**. This setting can be activated by selecting the desired value on the drop-down sub-menu. Once the desired value has been selected, press the **Enter** button to save the setting. If the **OFF** default value is kept, no new temperature setpoints will be applied for the operating modes.

NOTE: Incorrectly setting of the parameters could mean the heating installation may not generate the desired thermal comfort in the home.

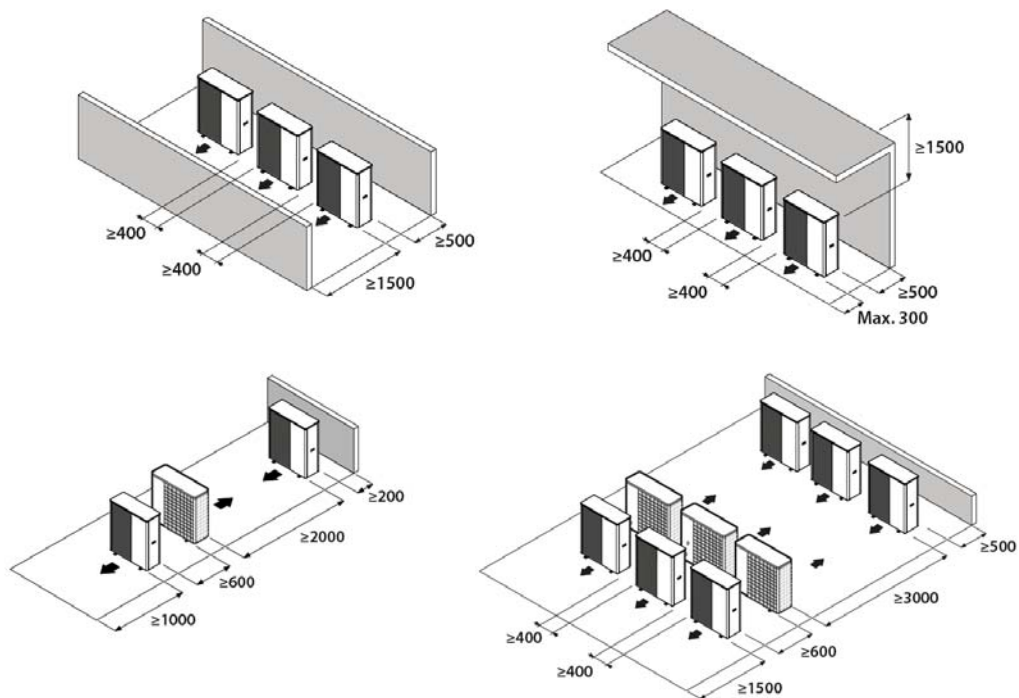
6 INSTALLATION INSTRUCTIONS

6.1 Location

The heat pump must be installed exclusively outside the home and, where possible, in an area free from obstructions. If a guard around the appliance is required, it must have spacious openings on all four sides, leaving the minimum required spaces for installation as indicated in the figure below. There must be no obstacles preventing air circulation through the evaporator and at the fan outlet.



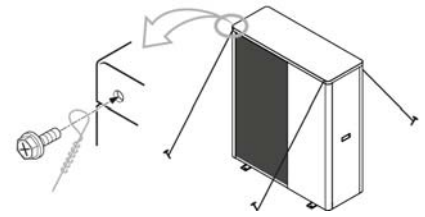
Minimum separations for installation of a unit (mm).



Minimum separations for installation of multiple units in the same location (mm).

Consult the user before choosing the location of the appliance. Do not install it beside walls where it could create noise problems, e.g. a wall next to a bedroom. Make sure that the location of the heat pump is not disruptive to neighbours (noise level, draughts, cold air outlet creating risk of freezing for plants in its path, etc.).

A location with sunlight and protected from strong cold winds (mistral, tramontane, etc.) is preferable. If the heat pump is exposed to gusts of wind that could overturn it, it should be supported by suitable anchoring devices, as shown in the figure.



The device must be sufficiently accessible for subsequent installation and maintenance work. Ensure that there is sufficient room available to make the hydraulic and electrical connections into the home. The separation measurements shown in the figure above are those strictly necessary to ensure correct operation of the appliance. However, it will sometimes be essential to provide more space for maintenance work.

The **DUAL CLIMA HT** heat pump is an appliance specially designed for outdoor installation, but it should not be installed in locations where it could be exposed to major water spills or splashes (below a damaged gutter, near a gas outlet, etc.). Keep the appliance away from heat sources and flammable products.

In areas where heavy snowfall occurs, special care must be taken to protect the heat pump from any obstruction around it due to snow accumulation. The obstruction of the appliance's air inlet and/or outlet by snowdrifts could malfunctioning of the unit and possible breakdowns. The heat pump must be installed at least 100 millimetres above the maximum expected snow level. The roof must also be protected from snow accumulation by a roof overhang on the building or a similar structure.

In addition, for the installation of the heat pump, all current regulations and restrictions must be considered. Among others, considering the flammability of the refrigerant gas, heat pumps must respect the safety distances detailed in the following table:

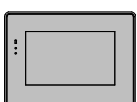
Element	Minimum distance (m)
Possible sources of ignition	1,5
Electrical switches and plugs	0,5
Electric conductors	0,3
Combustion engines	1,5
Registration of sewers, drains, etc.	1,5
Basement openings	1,5

6.2 Accessories Supplied

The following accessories are supplied inside the **DUAL CLIMA HT** heat pump. Before installing the appliance, make sure none of these accessories are missing or damaged.



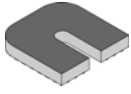
Documentation: You will find the documentation bag inside the appliance, on opening the front panel. It includes all the necessary manuals and documents for using and installing the heat pump.



Control panel: You will find the control panel inside the appliance, on removing the electronic card cover. The control panel must be installed inside the home before connecting the power supply to the appliance.



Blow-off valve: This is supplied inside the appliance, fastened with a cable tie to one of the compressor feet. The valve must be fitted to the drain socket on the rear of the heat pump before filling the heating/air conditioning circuit with water (see "*Diagrams and measurements*").



4x Anti-vibration supports: Four supports are supplied in a bag taped to the rear of the appliance, beside the hydraulic connections.



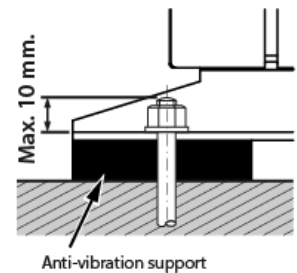
Condensate drain valve: This is supplied inside the appliance, fastened with a cable tie to one of the compressor feet. This valve must be fitted to the condensate drain socket at the bottom of the rear side of the heat pump.

6.3 Fixing the Heat Pump

The heat pump should be firmly fixed to a base, preferably a concrete base. Fix it firmly using 4 sets of M12 bolts suitable for the base material, with nuts and washers (available on the market). Make sure that the protruding distance of the bolt inside the metallic support of the appliance (leg) does not exceed 10 mm.

The receiving surface of the appliance must:

- Allow solid fixing (preferably concrete).
- Withstand a weight exceeding that of the appliance.
- Have a permeable area below the condensate drain hole (soil, gravel bed, sand, etc.).
- Not transmit any vibrations to the home. It is advisable to install the anti-vibration supports supplied with the heat pump.

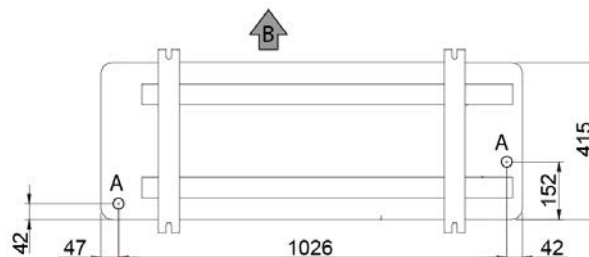


If the appliance is installed on wall mounts it will be particularly important to insulate it against transmission of vibration and noise to the inside of the home, and anti-vibration supports better suited to the wall mount may need to be installed in addition to those supplied with the heat pump. However, installation on the ground is the most advisable.

Correctly level the heat pump to ensure the condensation water cannot run out of any area except the drain hole envisaged for this purpose.

6.4 Condensate Drainage

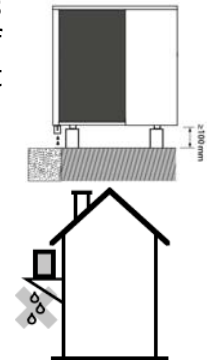
During normal functioning, large amounts of water may run off from the heat pump, and the **DUAL CLIMA HT** heat pump is therefore equipped with two drain holes on the underside of the appliance. Ensure these holes are not obstructed on installation of the appliance.



- A:** Condensate drain hole (view of underside of appliance).
B: Indication of front of appliance (discharge side).

The appliance should preferably be installed in a well-drained place. To do this, it is advisable to provide a bed of gravel, sand or similar materials below the drain hole. If the heat pump drain hole is covered by a mounting base or by the floor, raise the unit to leave a free space of at least 100 mm below it.

If it is installed on a terrace or façade, the condensate outlet must lead to a drain to avoid inconvenience and/or damage caused by dripping condensate water. If the installation is made in a region with long periods of sub-zero temperatures, check that there is no danger from frost.



6.5 Hydraulic installation

The hydraulic installation must be made by qualified personnel. The applicable installation legislation (RITE) is to be complied with, and the following recommendations should also be taken into account:

- It is advisable to use suitable piping for the installation, so that the minimum flow in the hydraulic circuit is reached. The inside of the installation piping should be thoroughly cleaned before switching on the heat pump.
- All the water circuit pipes **MUST** be insulated to prevent condensation from forming during cooling mode functioning and the subsequent reduction of cooling and heating capacity, and to prevent the external pipes from freezing in winter. The minimum insulation thickness of the pipes must be 19 mm (0.039 W/mK), preferably comprising closed cell insulation or a vapour barrier. In outdoor areas exposed to the sun, the insulation must be protected from the effects of its degradation.
- We recommend inserting cut-off valves between the installation piping and the heat pump to simplify maintenance tasks.
- Leave a free space around the heat pump for carrying out any maintenance and repair operations (see "*Location*").
- Drain valves and suitable devices for correctly bleeding the air from the circuit during the water filling stage should be fitted.
- Install all the necessary safety elements in the installation (expansion tank, safety valve, etc.) to comply with the required installation standards.
- A **water filter** must be installed in the heat pump water circuit to prevent obstruction or narrowing of the pipes due to dirt in the installation. The filter **MUST** be installed before filling the installation with water, on the appliance's return line, to prevent dirty water from entering the heat exchanger (capacitor). 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, water volume of the installation, etc.). The water filter must be checked at least once a year and cleaned if necessary, although in new installations it is recommended to check it a few months after start-up.
- For correct functioning of the heat pump, a minimum volume of water in the installation and a minimum flow in the appliance's hydraulic circuit must be ensured. If the minimum flow in the heat pump is not reached it could have operating problems and trigger different alarms and stoppages. These values are as follows, depending on the **DUAL CLIMA HT** model installed:

DUAL CLIMA	6HT	9HT	12HT	16HT	16HTT
Minimum volume (l)	36	45	48	60	60
Minimum flow rate (l/min)	12	15	16	20	20

If the water volume in the installation is lower than this value, install a buffer tank in the heating/air conditioning circuit. To prevent condensation from forming and premature deterioration of the buffer tank, make sure all the hydraulic sockets and connections are correctly insulated, particularly when it is to be used in Cooling mode.

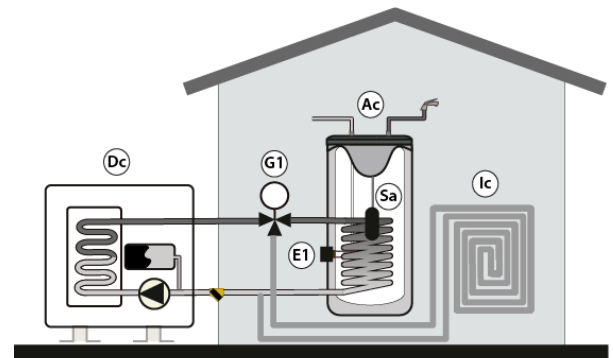
- In multi-zone installations managed by thermostatic shut-off valves or similar, a system for maintaining the aforementioned minimum flows even when all the zones are closed must be provided (bypass valve, etc.).

6.5.1 Installing a DHW tank

The **DUAL CLIMA HT** heat pump may (optionally) be installed together with a tank for Domestic Hot Water production. Among its aerothermics accessories, **DOMUSA TEKNIK** offers a full range of hot water tanks specially designed for use in combination with **DUAL CLIMA HT** (the **Sanit HE**, **BT-Trio** and **BT-Duo HE** ranges). The hydraulic installation of the hot water tank must be made by qualified personnel, in accordance with the applicable installation legislation (RITE) and the attached tank instructions.

To combine a DHW tank with the heat pump, insert the DHW temperature sensor supplied with the heat pump inside the appliance into the hot water tank bulb-holder. Also, a 3-way deflector valve (**G1**) must be installed between the external appliance and the DHW + Heating/Air Conditioning installation, so that the electronic control can divert the water in the installation to either DHW production or the Heating/Air Conditioning installation, depending on whether there is DHW demand.

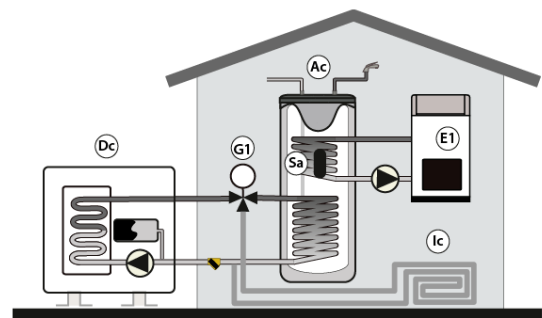
- Dc:** Dual Clima HT heat pump.
- Ac:** Sanit HE hot water tank.
- Sa:** DHW tank sensor.
- G1:** 3-way diverter valve.
- E1:** Backup DHW element.
- Ic:** Heating/Air Conditioning installation.



A backup element may also optionally be installed (**E1**).

Likewise, as an alternative to the backup heating element, a conventional energy source (such as a gas or oil-fired boiler) can optionally be connected to the **Dual Clima HT** heat pump to back up DHW production, via the same electrical connection (**E1**). The DHW tank must therefore be equipped with an auxiliary pipe and/or an intermediate heat exchange system allowing hydraulic connection of this backup energy source. Among its aerothermics accessories, **DOMUSA TEKNIK** offers the range of **Sanit HE DS**, hot water tanks, which include an auxiliary pipe on their upper part and are specially designed for use in combination with **DUAL CLIMA**.

- Dc:** Dual Clima HT heat pump.
- Ac:** Sanit HE DS hot water tank.
- Sa:** DHW tank sensor.
- G1:** 3-way diverter valve.
- E1:** DOMUSA TEKNIK backup boiler.
- Ic:** Heating/Air Conditioning installation.

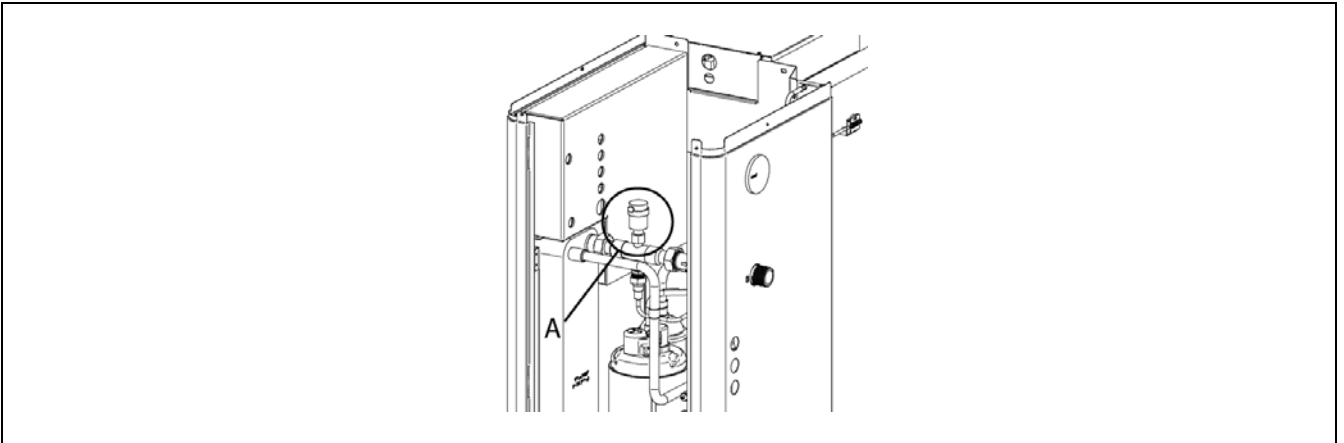


To correctly make the electrical installation for the DHW sensor, the 3-way valve (**G1**), and the backup element (**E1**), please read the *"Electrical Connections"* section of this manual carefully.

6.5.2 Filling the installation

The hydraulic installation must include a fill valve, drain valves and the necessary hydraulic components for correctly filling it.

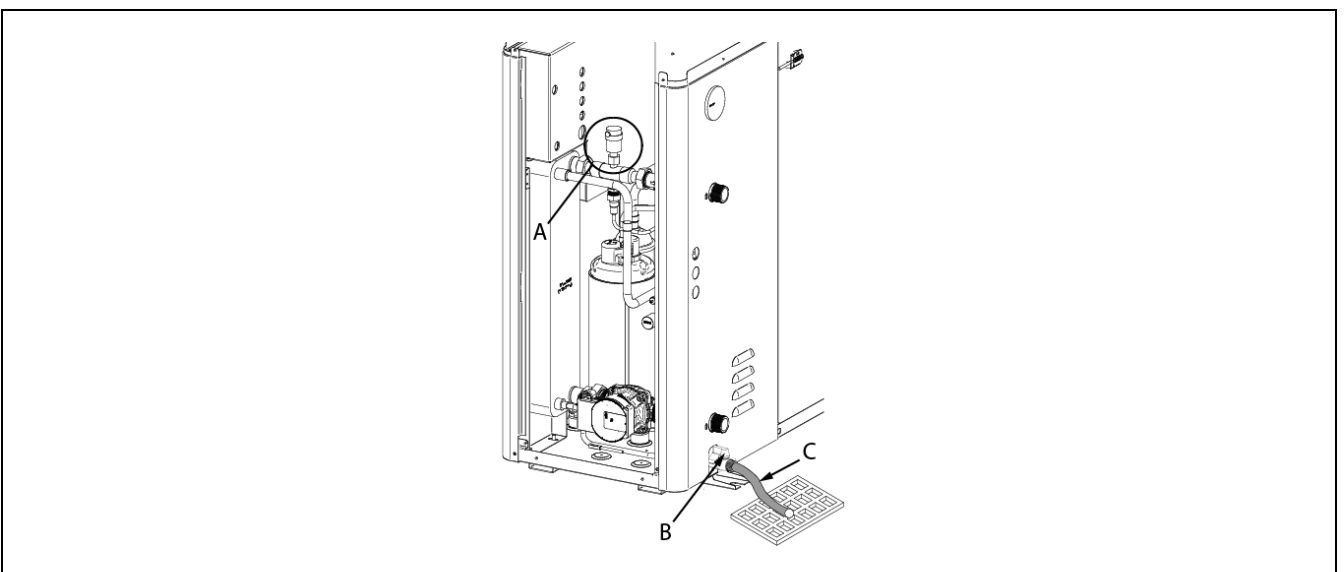
To fill the heat pump, open the fill valve until the manometer on the rear of the appliance shows a pressure of 1 - 1.5 bars. The heat pump has an automatic drain valve (A) incorporated to the upper part of the flow pipe of the heat exchanger (capacitor), which must be opened during the filling process. The air should also be bled from the rest of the installation using the air bleed valves provided. The installation must be filled slowly to facilitate air evacuation from the water circuit. Close the fill valve after filling. To comfortably access the heat pump drain valve, open side and top panels of the heat pump.



IMPORTANT: Switching on the heat pump with no water inside could result in serious damage.

6.5.3 Draining the heat pump

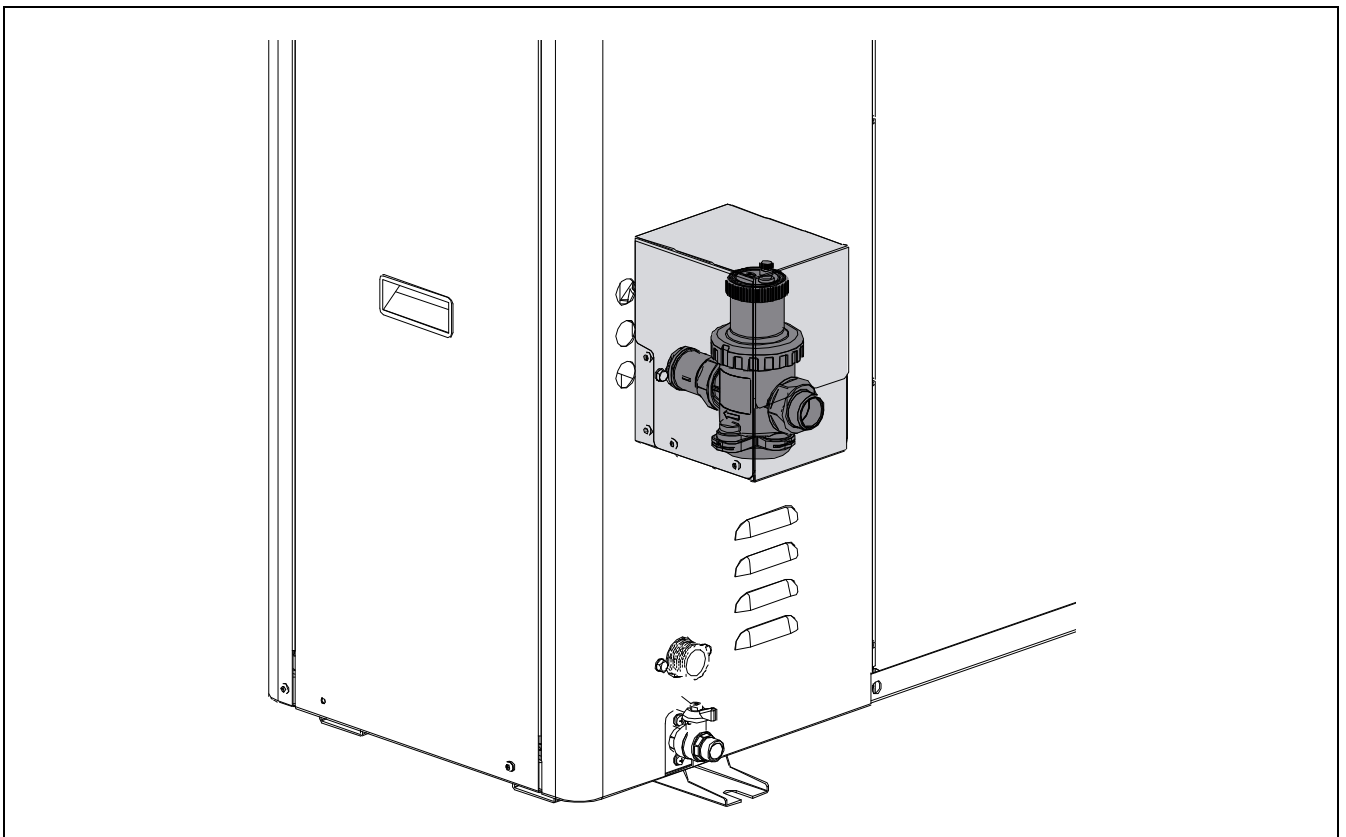
A blow-off valve is supplied with the **DUAL CLIMA HT** heat pump, which must be fitted to the drain socket (B) provided in the lower part of the rear of the appliance. This valve is opened to drain the water from heat pump. To do this, connect a flexible tube (C) to the valve and run it to a drain. To ensure the heat pump is completely drained we recommend opening the automatic drain valve (A) inside the heat pump, so that air enters the circuit. After draining the boiler, close the valve again and remove the flexible tube.



6.5.4 Installing a degasifier

The **DUAL CLIMA HT** heat pump contains R290 refrigerant gas. In case of leakage, this gas can be highly flammable and safety precautions must therefore be taken. An additional safety system must be installed to prevent the gas from entering the installation in case of leakage. **DOMUSA TEKNIK will not be liable for any damages caused by failing to have a safety system in place for refrigerant leakage.**

DOMUSA TEKNIK advises installing a degasifier in the heat pump water circuit. If leakage occurred in the plate heat exchanger, the gas in the refrigerant circuit would be removed by the degasifier, avoiding gas accumulation in the water circuit. This degasifier must be installed in the Heating/Air Conditioning flow circuit (**IC**) (See *Diagrams and Measurements*). For further details, please carefully read the instructions supplied with the kit.



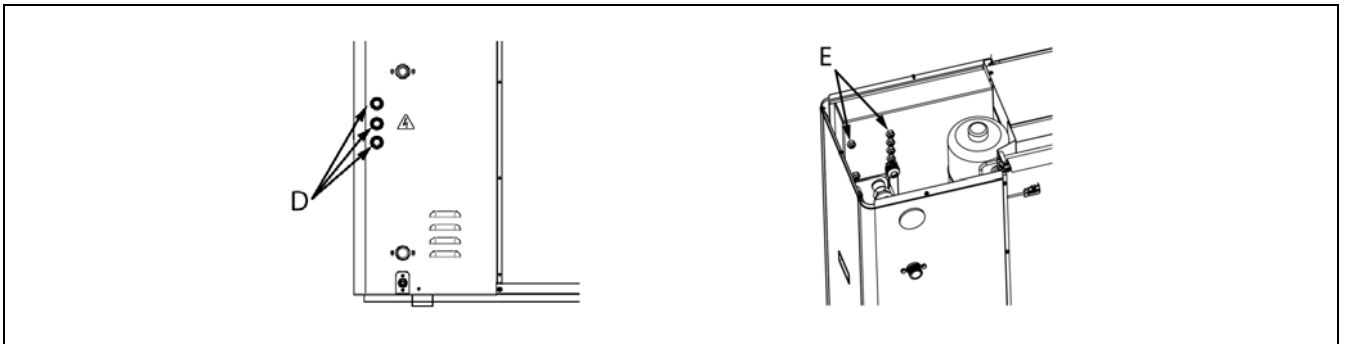
6.6 Electrical connections

The electrical installation of the **DUAL CLIMA HT** heat pump and its electrical accessories must be made by qualified personnel, in accordance with the applicable installation legislation. The electrical installation must be connected so that the heat pump can be fully isolated and disconnected for the safe execution of any maintenance operations.

There are cable holes (D) on the rear of the appliance for threading the connector hoses to the inside. Cables exposed to external weather conditions should be protected by cable ducts or protective tubes or should be of a suitable category for use outdoors (H07RN-F hoses or higher). It is also advisable to keep the high-voltage cables (mains network cables, diverter valves, backup elements, circulation pumps, etc.) at a minimum distance of 25 mm from the low-voltage cables (control panel cable, temperature sensors, room temperature sensors, etc.), by running them through separate tubes.

Also, to insert the cables in the junction box, the cable ducts (E) incorporated to the rear of the box must be used.

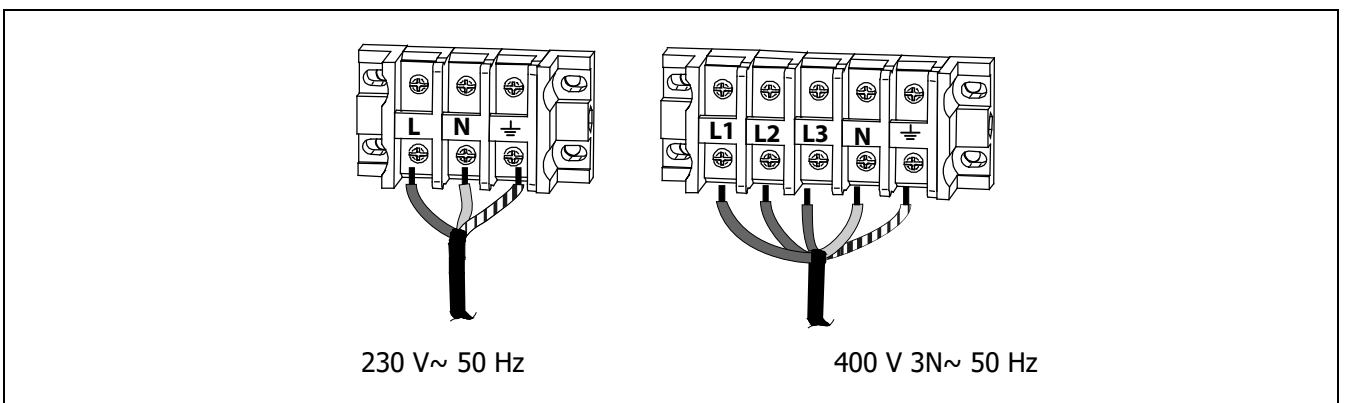
IMPORTANT: Ensure that the junction box is totally sealed after making all the electrical connections.



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.6.1 Connection to the mains network

The **DUAL CLIMA HT** heat pump is designed to be connected at 230 V~ 50 Hz o 400 V ~ 50 Hz (depending on the model) at the terminals shown in the figure (see "Electrical Diagrams"). The power supply terminals are located inside the appliance. To access them, open the front panel and access the front electronic cards. **Remember to earth the appliance.**



The cable dimensions must comply with the applicable laws and regulations at all times. However, the table below shows some recommended characteristics and dimensions, for guidance:

		Maximum consumption (A)	Minimum cable diameter (mm ²)	Recommended fuse	Recommended hose
DUAL CLIMA 6HT	230 V~ 50 Hz	12	1.5	16A	H05VV-U3G (in protective tube)
DUAL CLIMA 9HT		14	1.5	16A	
DUAL CLIMA 12HT		17	2.5	25A	
DUAL CLIMA 16HT		27	4	32A	
DUAL CLIMA 16HTT	400 V 3N~ 50 Hz	9	1.5	16A	

On selecting the cable type and diameter for the mains connection of the appliance **the power consumption deriving from the connection of optional heat pump accessories** (backup elements, circulation pumps, etc.) must be taken into account. (see "Electrical Diagrams").

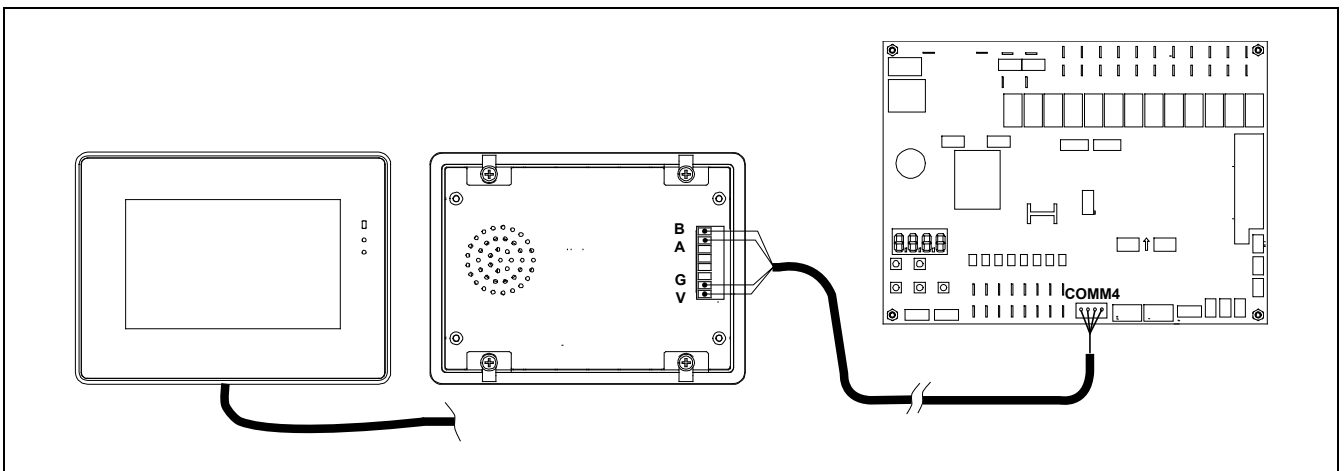
The electrical connection of the heat pump must be protected by an earth leakage circuit breaker (a high-speed switch of 30 mA (<0.1 s)).

IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

IMPORTANT: The cable diameter indicated in the table above is for guidance purposes only, as it depends on the type of cable and installation. In any case, ensure the local regulations are complied with.

6.6.2 Control panel connection

The control panel is supplied inside the heat pump and must be connected to the appliance before start-up. To do this, first install the control panel inside the home and then run the cable supplied to this location. Finally, connect the ends of the connectors incorporated to the cable and the control panel.



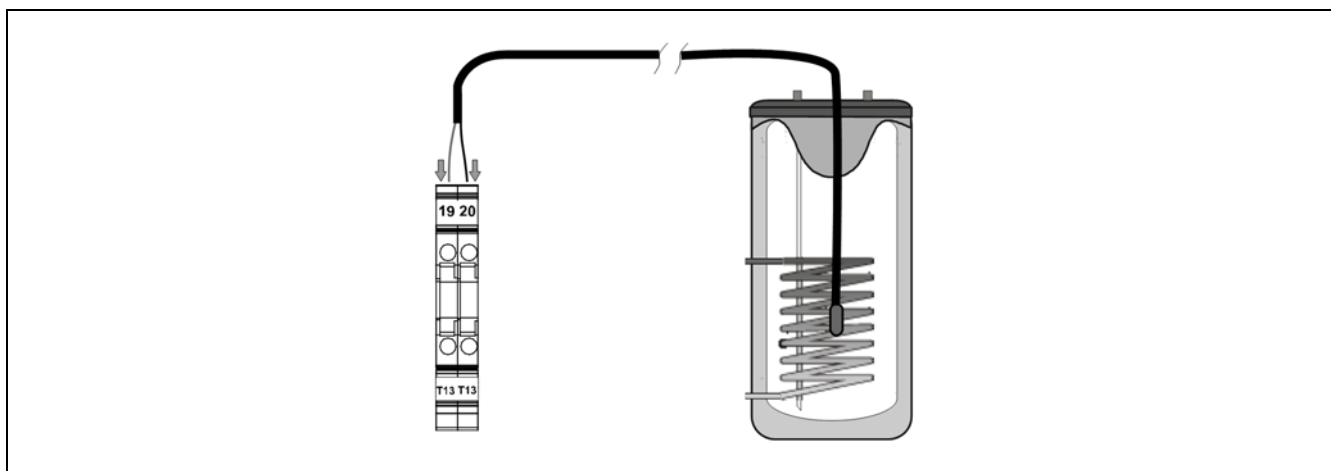
The cable supplied with the heat pump is 5 metres long. If necessary, it can be extended to a maximum distance of 30 metres (diameter between 0.25 and 1.25 mm²).

IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.6.3 Connecting the DHW sensor

When installing an DHW tank in combination with the heat pump, a temperature sensor must be installed in the hot water tank. This sensor carries out the electronic control of the heat pump, managing the domestic hot water temperature by activating DHW mode when the water in the tank falls below the desired temperature.

A DHW sensor is supplied with the **DUAL CLIMA HT** heat pump. This sensor is in the documentation bag inside the appliance. The sensor is connected to the electrical terminals **T13 (19 and 20)** on the heat pump input terminal strip. Before connecting it, firstly remove the resistor connected to this terminal strip when the heat pump is supplied. For its installation, run the sensor to the location of the DHW tank and insert it in the bulb-holder supplied for this purpose on the tank.



The sensor supplied with the heat pump is 5 meters long. If necessary, it can be extended to a maximum distance of 20 metres (diameter between 0.25 and 1.25 mm²).

IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

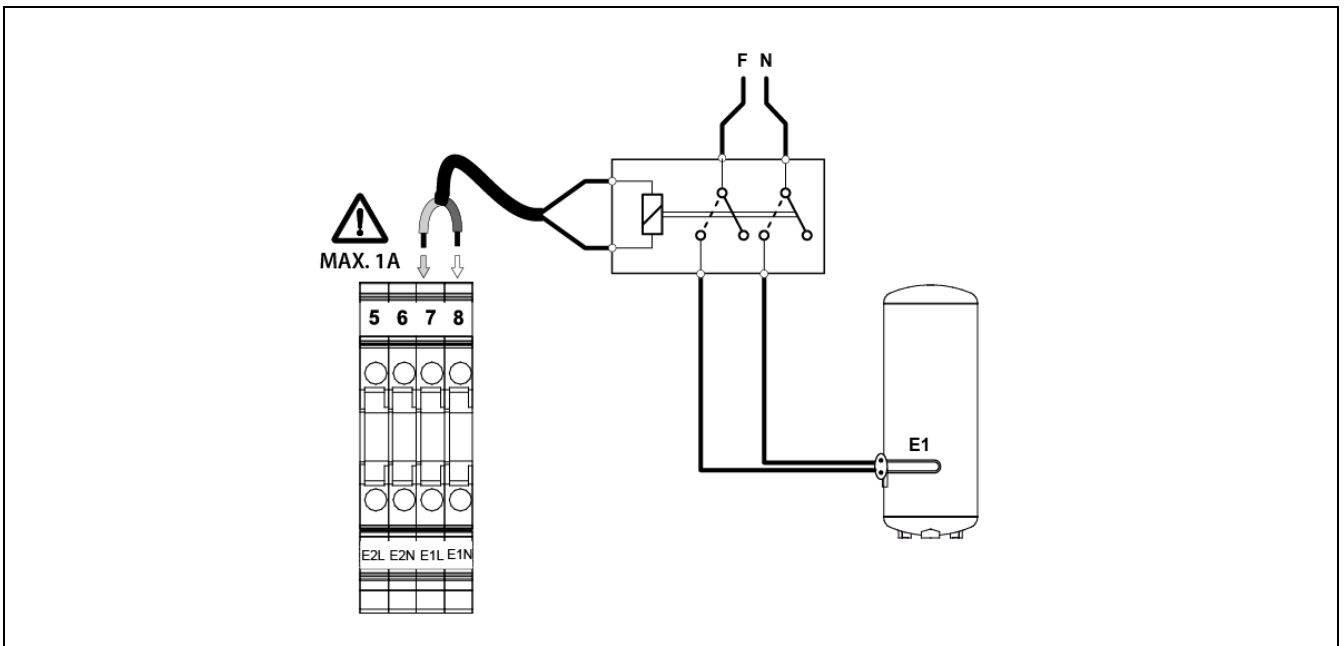
6.6.4 Connecting a backup energy source for ACS (E1)

A backup heating element for DHW (optional) can be connected to the **DUAL CLIMA HT** heat pump. The element must be connected to the socket provided for this purpose on the tank.

The element is connected between electrical terminals **E1L(7)** and **E1N (8)** (Neutral) on the heat pump component terminal strip.

IMPORTANT: The output relay E1 activating the element has a maximum consumption capacity of 1A, so to connect an element a relay must be run between the terminals of the terminal strip and the element.

DOMUSA TEKNİK offers the option of a kit consisting of an element with a relay included, specially designed for installation on the **DUAL CLIMA HT** heat pump.



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

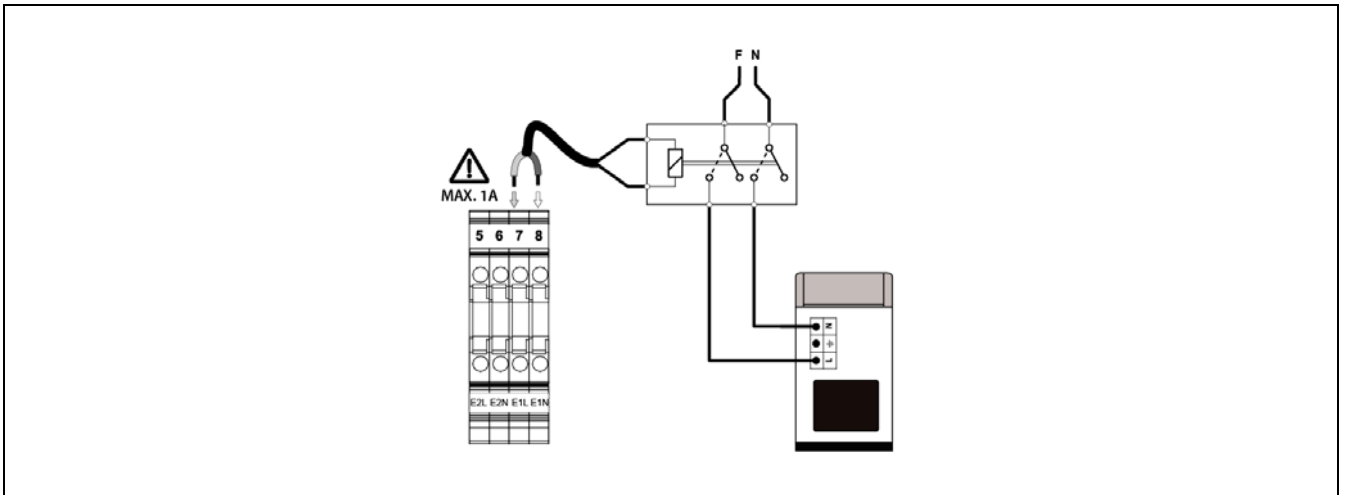
As an alternative to the heating element, a conventional energy source such as an oil-fired, gas-fired, electrical or biomass boiler can be connected to the **DUAL CLIMA HT** heat pump. The hot water tank must therefore be equipped with an auxiliary pipe and/or an intermediate heat exchange system allowing hydraulic connection of this backup energy source.

To make the electrical connection between the backup energy source and the heat pump, use the same terminals as previously described, i.e. **E1L(7)** and **E1N (8)** (Neutral). Depending on the characteristics of the installation and the type of backup boiler, the electrical connection may be made in at least two different ways:

Voltage connection

This type of connection takes advantage of relay output **E1** to directly activate the energy source (switch on the boiler, activate a backup circulation pump, etc.). To make this connection, connect the heat pump terminals **E1L(7)** and **E1N (8)** to the power supply input of the boiler and/or backup installation components you wish to activate. To make the connection correctly, carefully follow the diagram below:

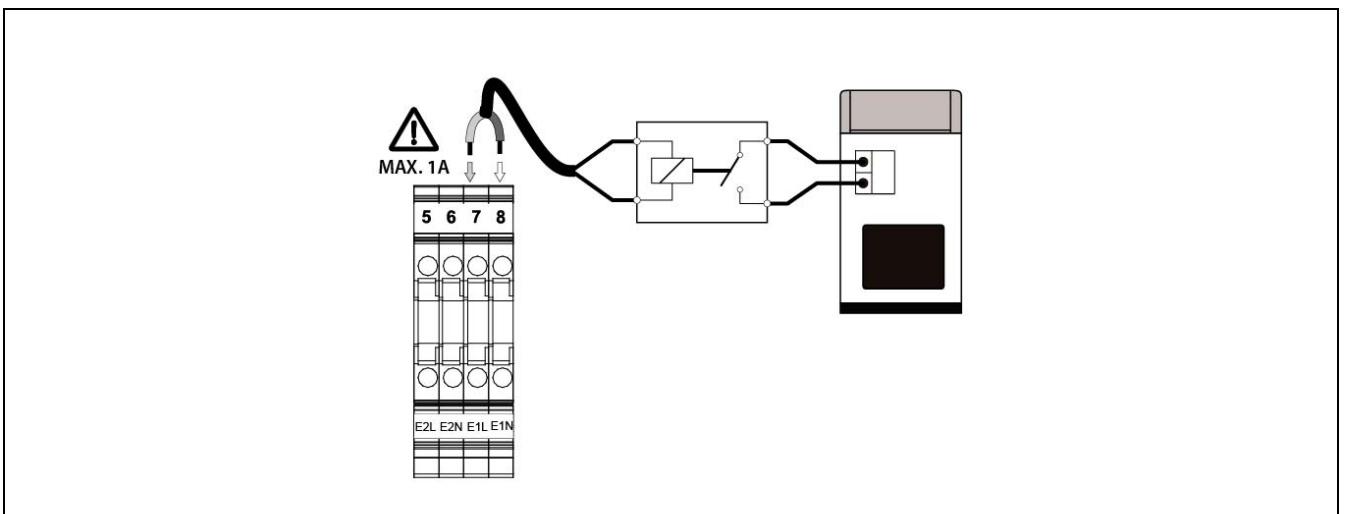
IMPORTANT: The output relay E1 has a maximum consumption capacity of 1A, so a relay must be inserted on connecting a boiler and/or backup installation components.



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

Voltage-free connection

If the control input for activating and deactivating the backup energy source is voltage-free (a room thermostat input or telephone relay input, for example), you must insulate the energised output of the heat pump from the voltage-free input of the auxiliary energy source. To do this, run a relay between the heat pump output **E1** and the boiler control input. To make the connection correctly, carefully follow the diagram below:

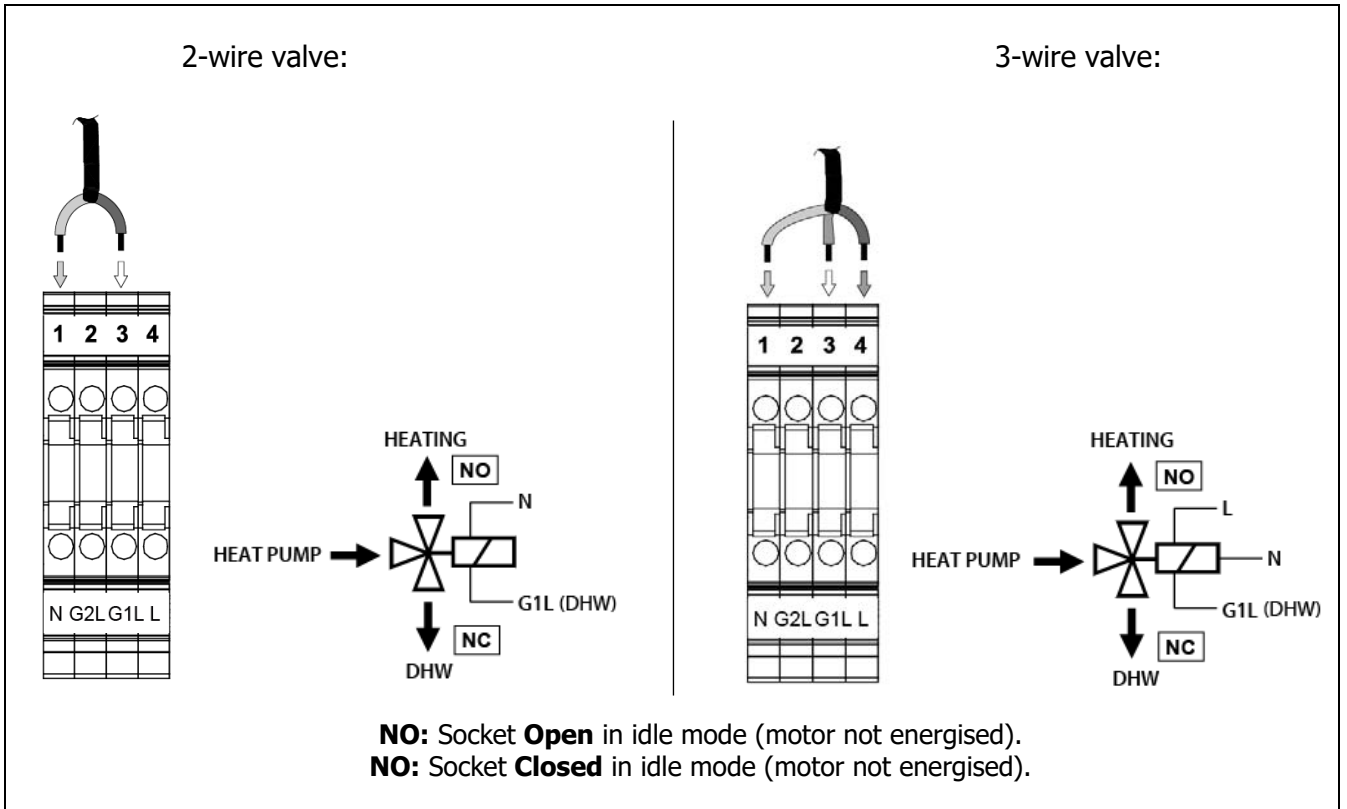


IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.6.5 Connecting the DHW diverter valve (G1)

When installing an DHW tank in combination with the heat pump, a motorised 3-way diverter valve must be installed between the appliance and the installation. This valve enables the heat pump electronic control to divert the water to either the DHW tank (in DHW mode) or to the Heating/Air Conditioning circuit (in Heating or Cooling mode).

The valve is connected at electrical terminals **G1L(3)** and **N(1)** (Neutral) on the heat pump component terminal strip. The motorised diverter valve must be either a 2-wire valve (with return spring) or a 3-wire valve with phase return. In the latter case, the phase wire supplying the valve (line) must be connected to terminal **L(4)** of the terminal strip. The figures below show how the motorised valve is connected:



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

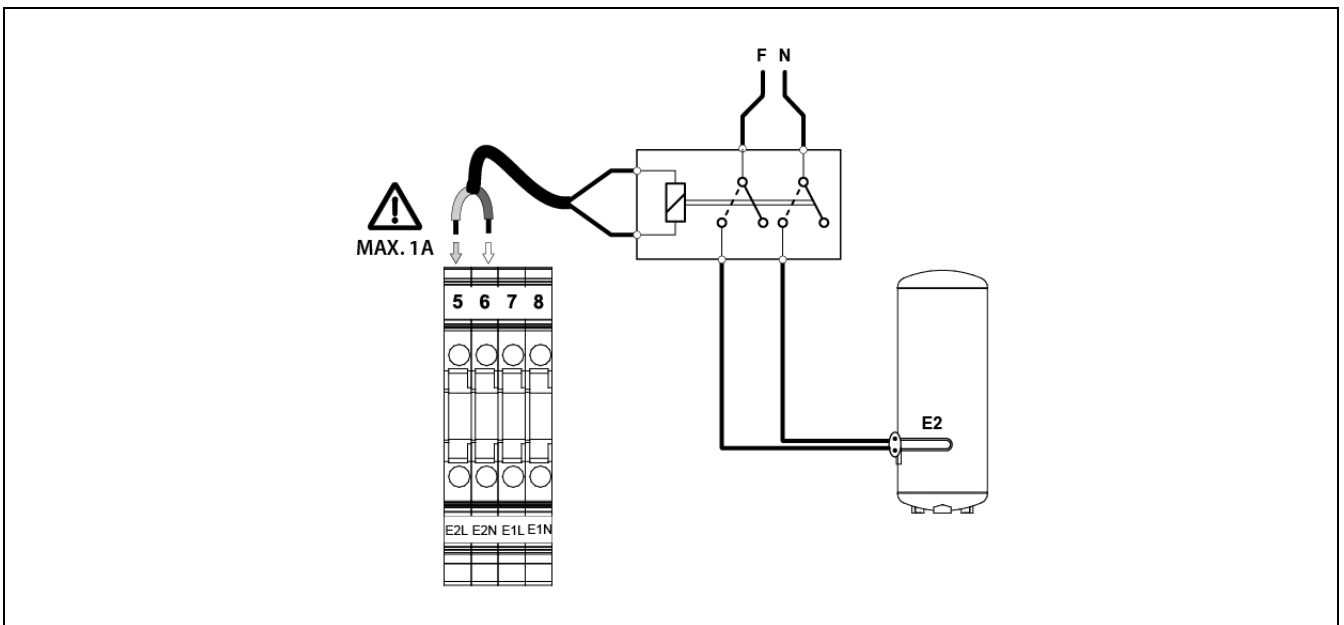
6.6.6 Connecting a backup energy source for Heating (E2)

A backup heating element (optional) for Heating can be connected to the **DUAL CLIMA HT** heat pump. The element must be connected to the socket provided for this purpose on the tank.

The element is connected between electrical terminals **E2L (5)** and **E2N (6)** (Neutral) on the heat pump component terminal strip.

IMPORTANT: The output relay **E2** activating the element has a maximum consumption capacity of **1A**, so to connect an element a relay must be run between the terminals of the terminal strip and the element.

DOMUSA TEKNIK offers the option of a kit consisting of an element with a relay included, specially designed for installation on the **DUAL CLIMA HT** heat pump.



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

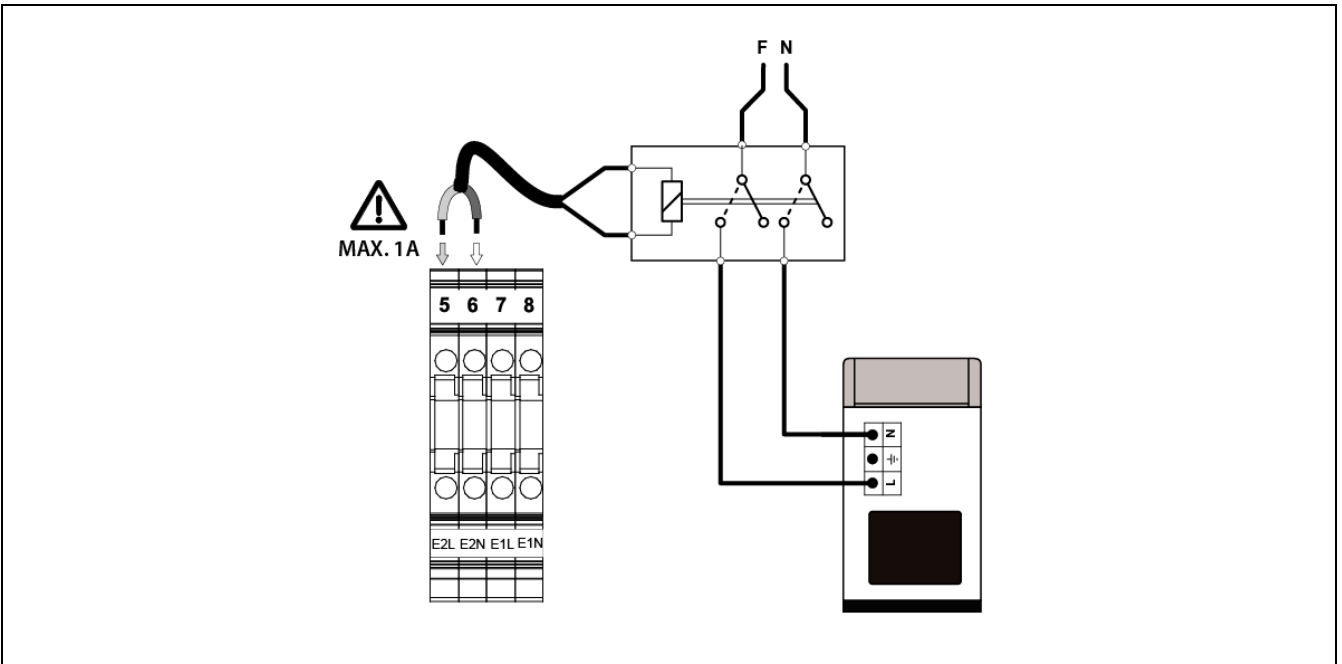
As an alternative to the heating element, a conventional energy source such as an oil-fired, gas-fired, electrical or biomass boiler can be connected to the **DUAL CLIMA HT** heat pump. In this case the heating installation must be equipped with an intermediate heat exchange system allowing hydraulic connection of this backup energy source, preferably separate from the heat pump water circuit.

To make the electrical connection between the backup energy source and the heat pump, use the same terminals as previously described, i.e. **E2L (5)** and **E2N (6)** (Neutral). Depending on the characteristics of the installation and the type of backup boiler, the electrical connection may be made in at least two different ways:

Voltage connection

This type of connection takes advantage of relay output **E2** to directly activate the energy source (switch on the boiler, activate a backup circulation pump, etc.). To make this connection, connect the heat pump terminals **E2L (5)** and **E2N (6)** to the power supply input of the boiler and/or backup installation components you wish to activate. To make the connection correctly, carefully follow the diagram below:

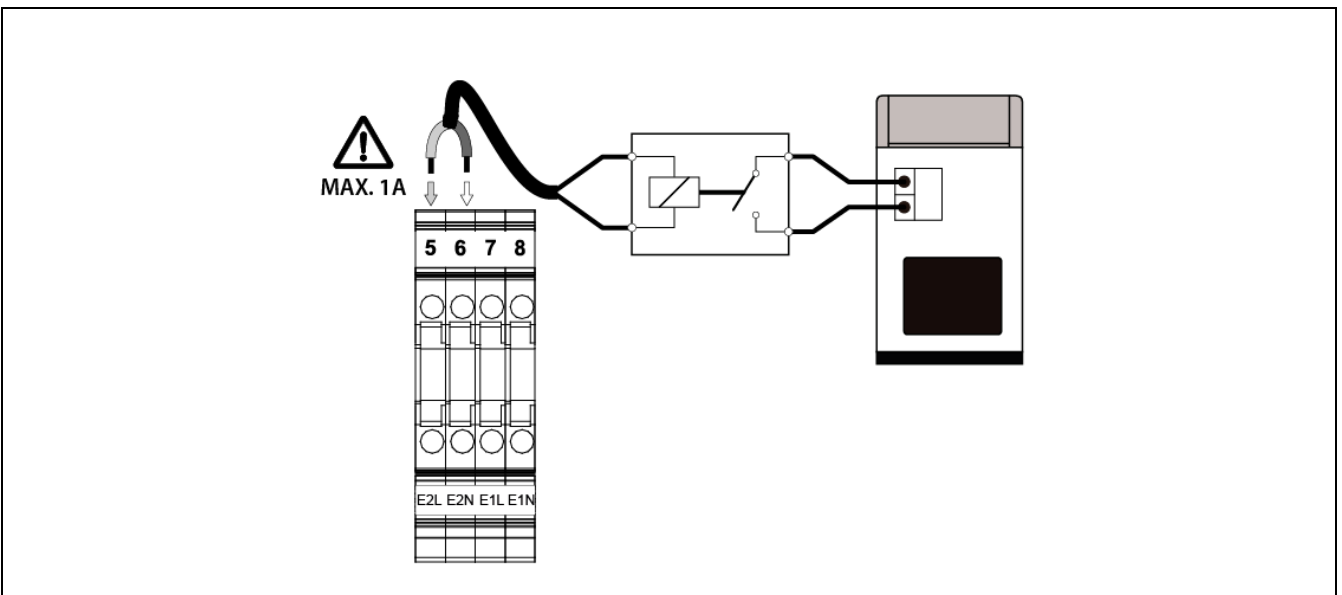
IMPORTANT: The output relay E2 has a maximum consumption capacity of 1A, so a relay must be inserted on connecting a boiler and/or backup installation components.



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

Voltage-free connection

If the control input for activating and deactivating the backup energy source is voltage-free (a room thermostat input or telephone relay input, for example), you must insulate the energised output of the heat pump from the voltage-free input of the auxiliary energy source. To do this, run a relay between the heat pump output **E2** and the boiler control input. To make the connection correctly, carefully follow the diagram below:

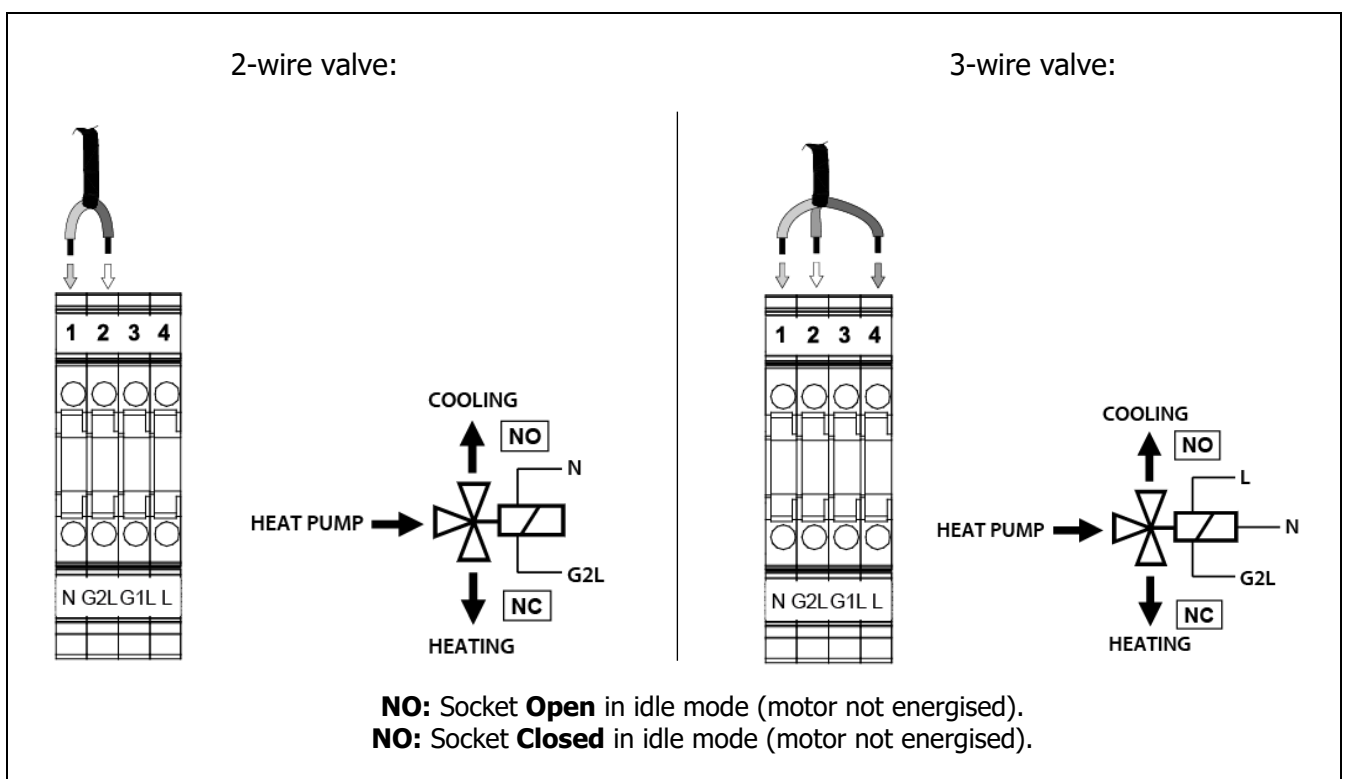


IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.6.7 Connecting the Heating/Cooling diverter valve (G2)

If the water is to be diverted to different circuits according to whether the appliance is in Heating or Cooling mode (for radiator heating and fancoil cooling, for example), a motorised 3-way diverter valve must be installed between the appliance and the installation. This valve enables the heat pump electronic control to divert the water to either the heating circuit in Heating mode or the Air Conditioning circuit in Cooling mode.

The valve is connected at electrical terminals **G2L (2)** and **N (1)** (Neutral) on the heat pump component terminal strip. The motorised diverter valve must be either a 2-wire valve (with return spring) or a 3-wire valve with phase return. In the latter case, the phase wire supplying the valve (line) must be connected to terminal **L(4)** of the terminal strip. The figures below show how the motorised valve is connected:



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.6.8 Connecting the backup pump (C2 and C3)

Two circulation pumps (**C2 and C3**) can be connected to the **DUAL CLIMA HT** heat pump to increase the water flow in the appliance if necessary, in addition to the flow obtained from its own internal pump (**C1**).

Backup pump connection for heating and/or cooling (C2)

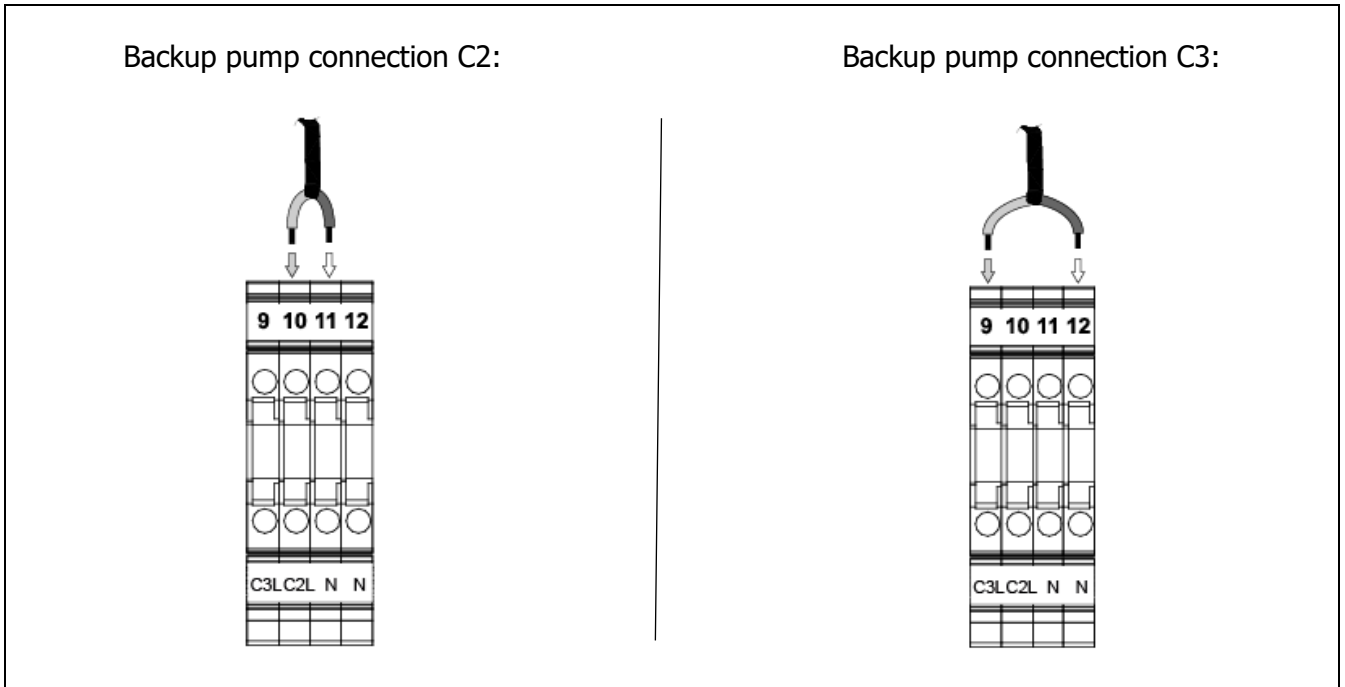
This circulation pump (**C2**) will run in parallel with the appliance's internal pump (**C1**), but only when the appliance is running in Heating or Cooling mode.

The element is connected between electrical terminals **C2L (10)** and **N (11)** (Neutral) on the heat pump component terminal strip.

Connecting a backup pump for DHW production mode (C3)

This circulation pump (**C3**) will run in parallel with the appliance's internal pump (**C1**), but only when the appliance is running in DHW production mode.

The element is connected between electrical terminals **C3L (9)** and **N (12)** (Neutral) on the heat pump component terminal strip.

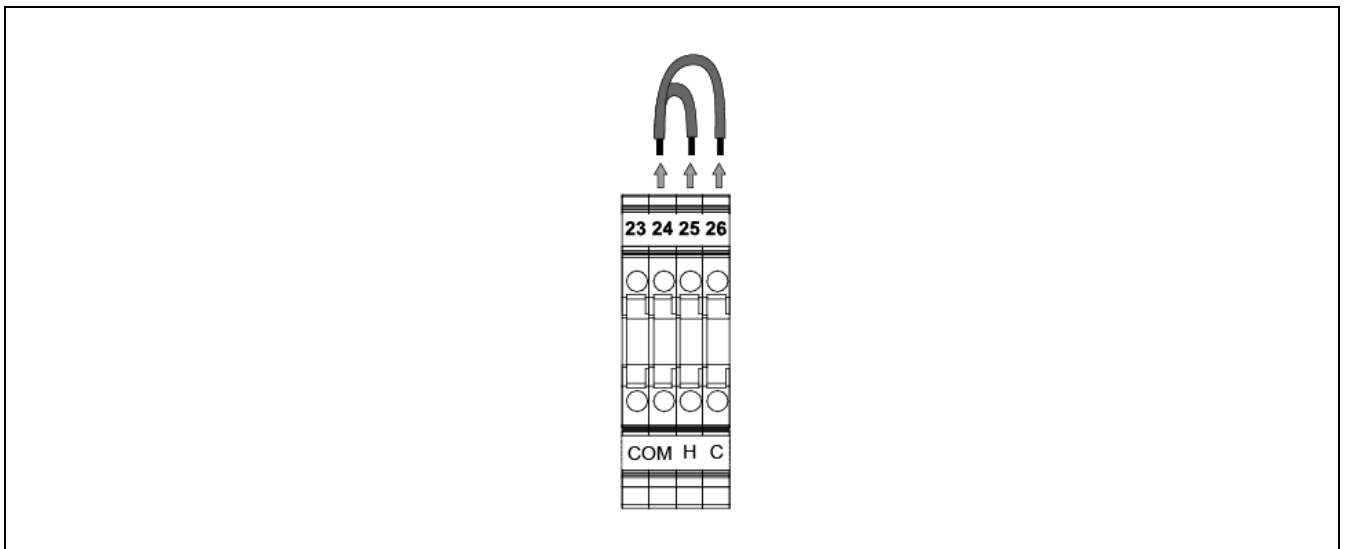


IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.6.9 Connecting room thermostats

The **DUAL CLIMA HT** heat pump has two connections on the component terminal strip for connecting up to 2 room chronothermostats or room thermostats (see "*Connection Diagram*"), enabling the heating and/or cooling modes of the heating/air conditioning installation to start up or stop, switching off the heat pump when the desired room temperature is reached and switching it on when the temperature in the home falls below this value. The input **C-COM (26-24)** activates and deactivates Cooling mode and the input **H-COM (25-24)** activates and deactivates Heating mode, and the operating modes of the heating/air conditioning installation are therefore managed automatically and remotely ("**AUTO**" mode) from the location of the room thermostat(s) installed.

Terminals **C (26)**, **H (25)** and **COM (24)** are supplied by default with a bridge connected to each one, so **both** bridges will have to be removed before connecting the room thermostat(s), regardless of the configuration of the thermostats to be installed.



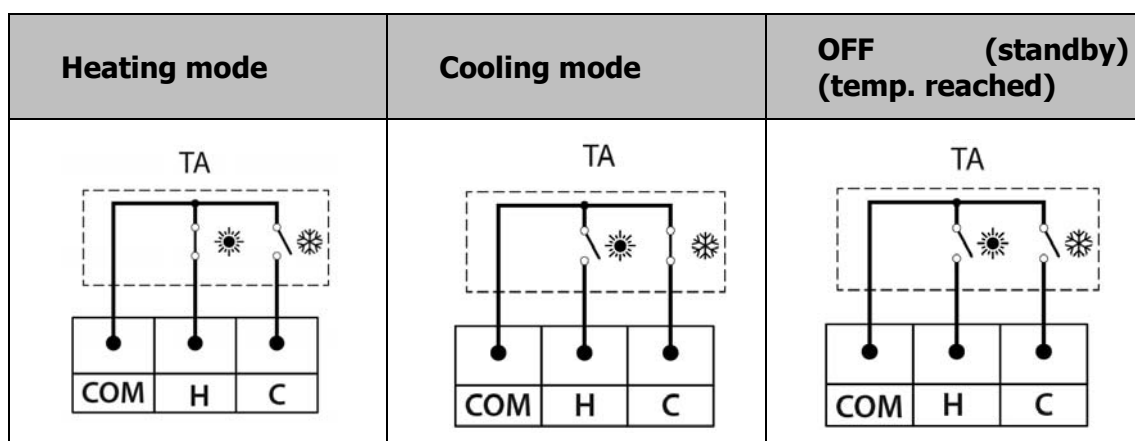
Up to 4 different room thermostat configurations may be installed, depending on the type of thermostat or combination of thermostats used. The following sections provide a detailed description of the functioning and installation of each of these configurations.

IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

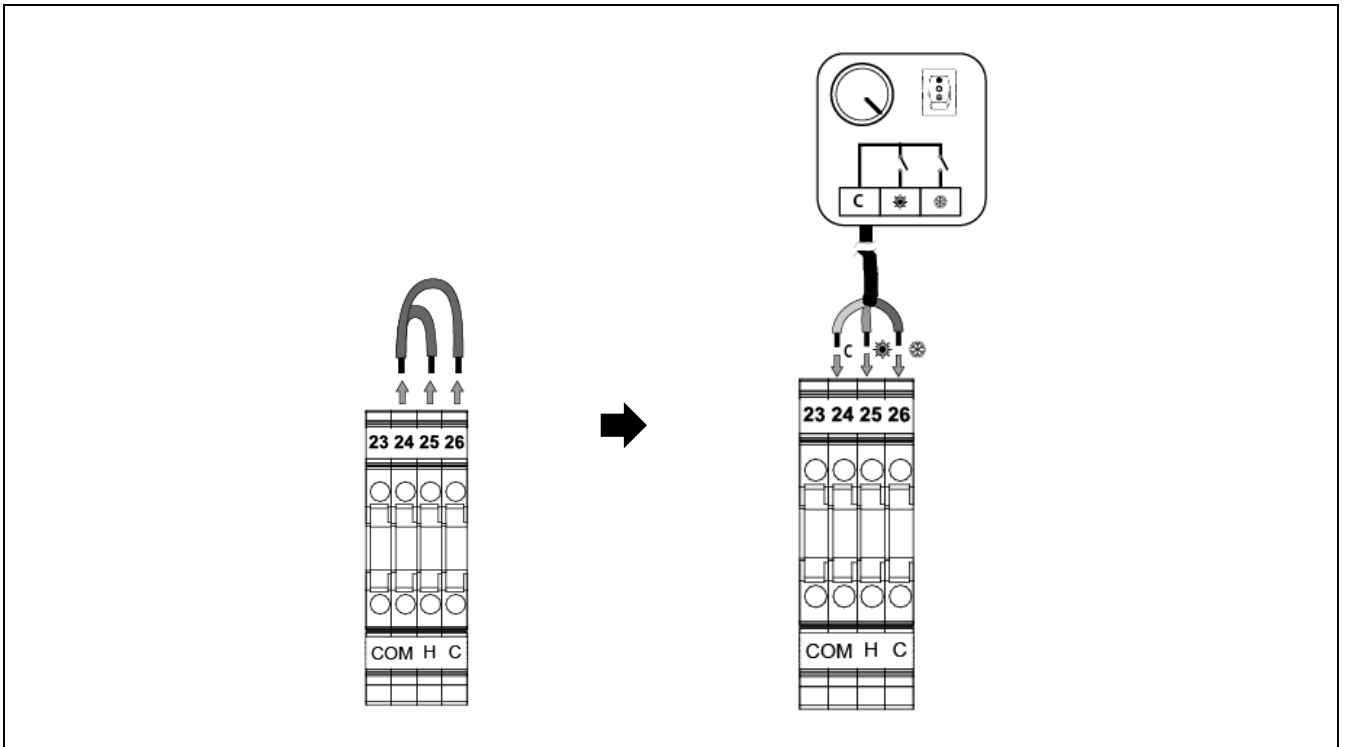
Connecting a switched 3-wire Hot/Cold thermostat ("AUTO" mode)

As well as selecting the desired temperature and operating times, if the type of thermostat used is a chronothermostat the user can select the operating mode (Heating ☀/Cooling ❄) on the thermostat itself.

This type of thermostat uses 3 communication wires to function: one for the Heating mode activation signal, one for the Cooling mode activation signal and the other for the common signal. According to the status of each signal, the **DUAL CLIMA HT** heat pump manages the Heating/Cooling operating modes as follows:



Terminals **C (26)**, **H (25)** and **COM (24)** are supplied by default with a bridge connected to each one, so on installing this type of thermostat **both** bridges will have to be removed and the thermostat connected as shown in the figure below:

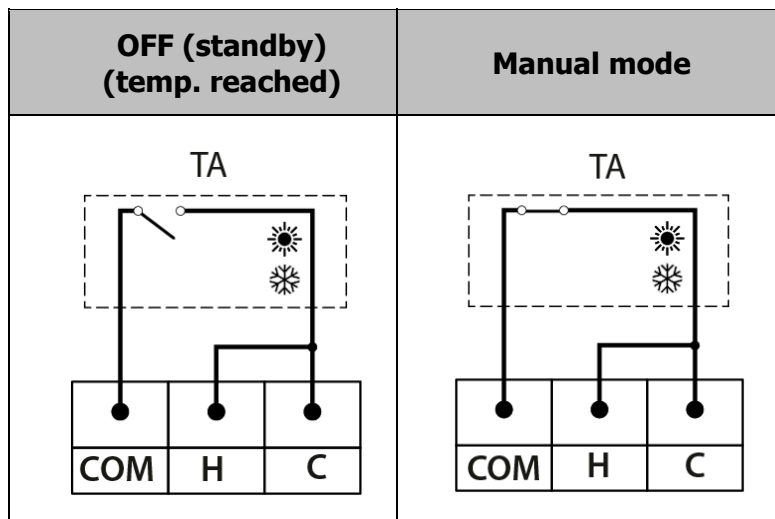


IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

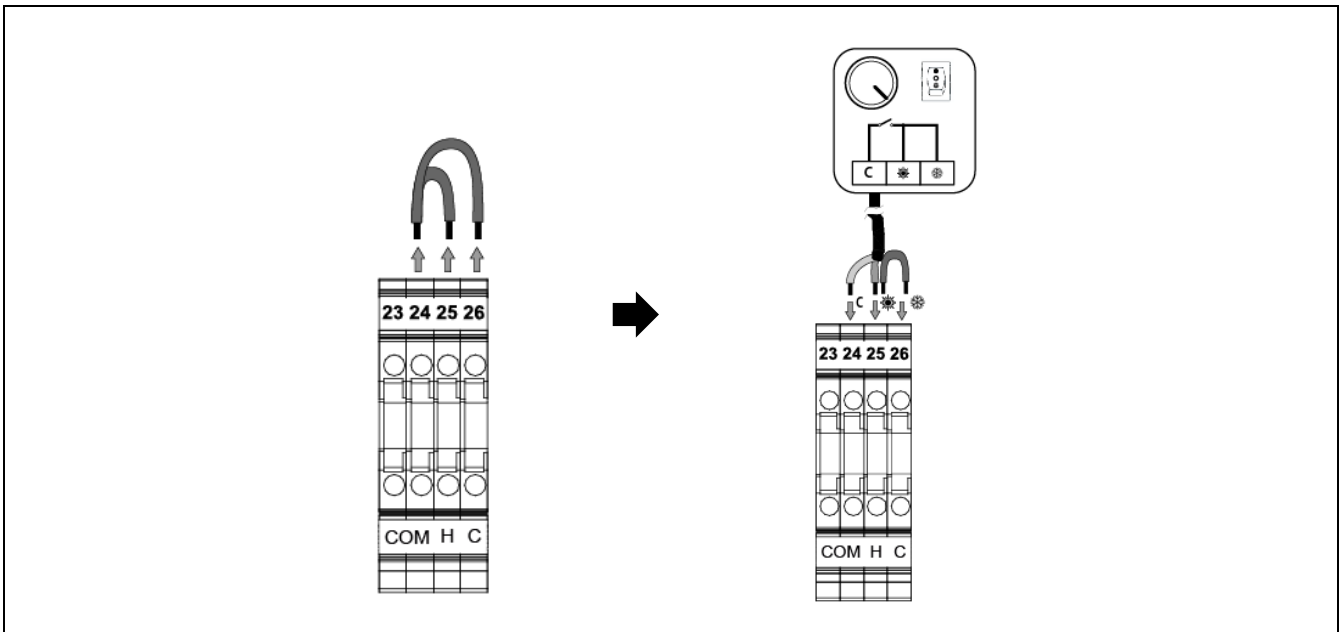
Connecting a 2-wire Hot/Cold switching thermostat

With this type of thermostat, the desired temperature and the operating times can be selected, if it is a chronothermostat. Unlike a 3-wire hot/cold switching thermostat, a 2-wire thermostat does not allow operating mode selection (Heating☀/Cooling❄) on the thermostat alone: the operating mode has to be selected on both the thermostat and the heat pump. For this room thermostat selection process to function correctly, the heat pump and the thermostat must both be configured **for the same single operating mode**, either Heating or Cooling.

As indicated in the figure, the heat pump electronic control will begin to work in “Manual” mode if this is required by the thermostat, i.e. the Heating/Cooling operating modes must be selected manually on the heat pump control panel.



Terminals **C (26)**, **H (25)** and **COM (24)** are supplied by default with a bridge connected to each one, so on installing this type of thermostat **both** bridges will have to be removed and the thermostat connected as shown in the figure below, and a bridge between inputs **C (26)** and **H (25)** will be required:



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

Connecting two room thermostats

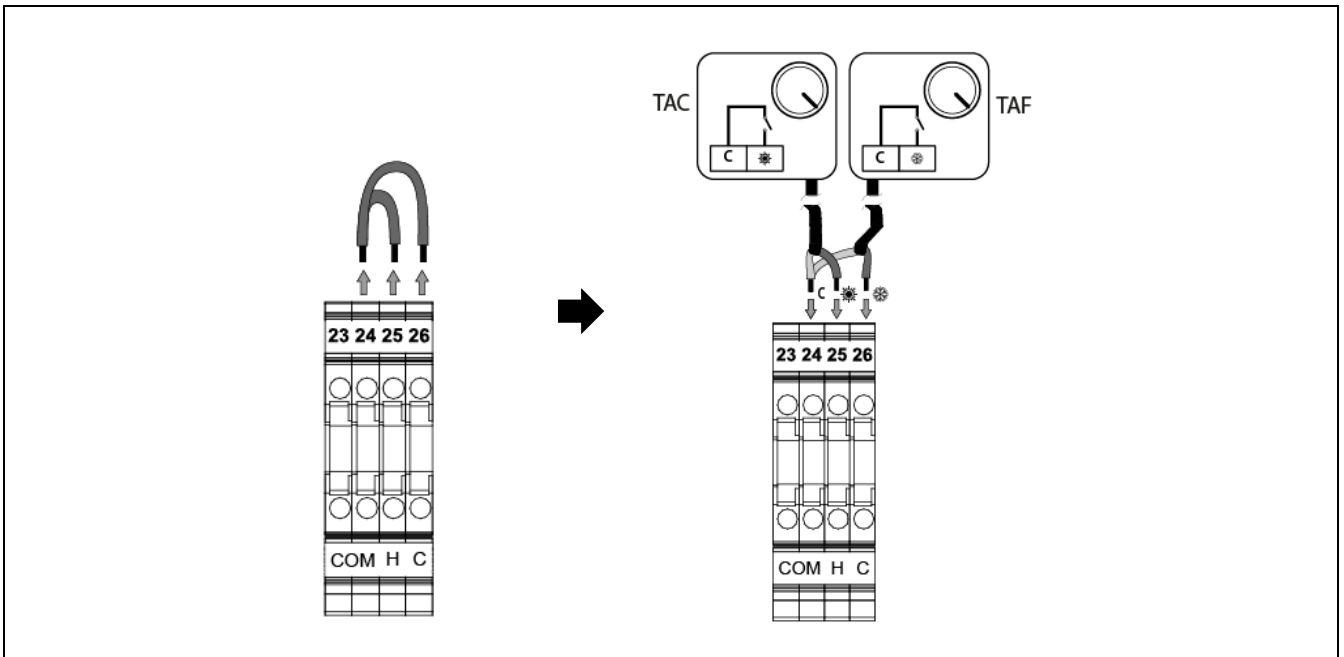
In this type of configuration 2 single room thermostats are connected, one to terminals **C (26)** and **COM (24)** (thermostat for Cold, **TAF**) and the other to terminals **H (25)** and **COM (24)** (thermostat for Heat, **TAC**). Each one will manage a different operating mode, and each thermostat must therefore be of a type compatible with the operating for which it has been installed. The thermostat connected to the cold input (**TAF**) must send a request (closed circuit signal) when the room temperature is higher than the desired temperature (setpoint temperature), and the thermostat connected to the heat input (**TAC**) must send a request (closed circuit signal) when the room temperature is lower than the desired temperature (setpoint temperature).

The **DUAL CLIMA HT** heat pump will activate the Heating/Cooling operating modes according to the status of the signal received from each thermostat, as follows:

Heating mode	Cooling mode	OFF (standby) (temp. reached)	Manual mode

As indicated in the figure, the heat pump electronic control will begin to work in "Manual" mode if the room thermostat setpoint temperatures are selected so that both of them send an operating request at the same time, i.e. the Heating/Cooling operating modes must be selected manually on the heat pump control panel. To avoid this situation, it is essential to **ensure that the correct temperatures are selected on each one, in order to prevent crossover, with both thermostats being activated at the same time.**

Terminals **C (26)**, **H (25)** and **COM (24)** are supplied by default with a bridge connected to each one, so to install the thermostats **both** bridges will have to be removed and the thermostats connected as shown in the figure below:

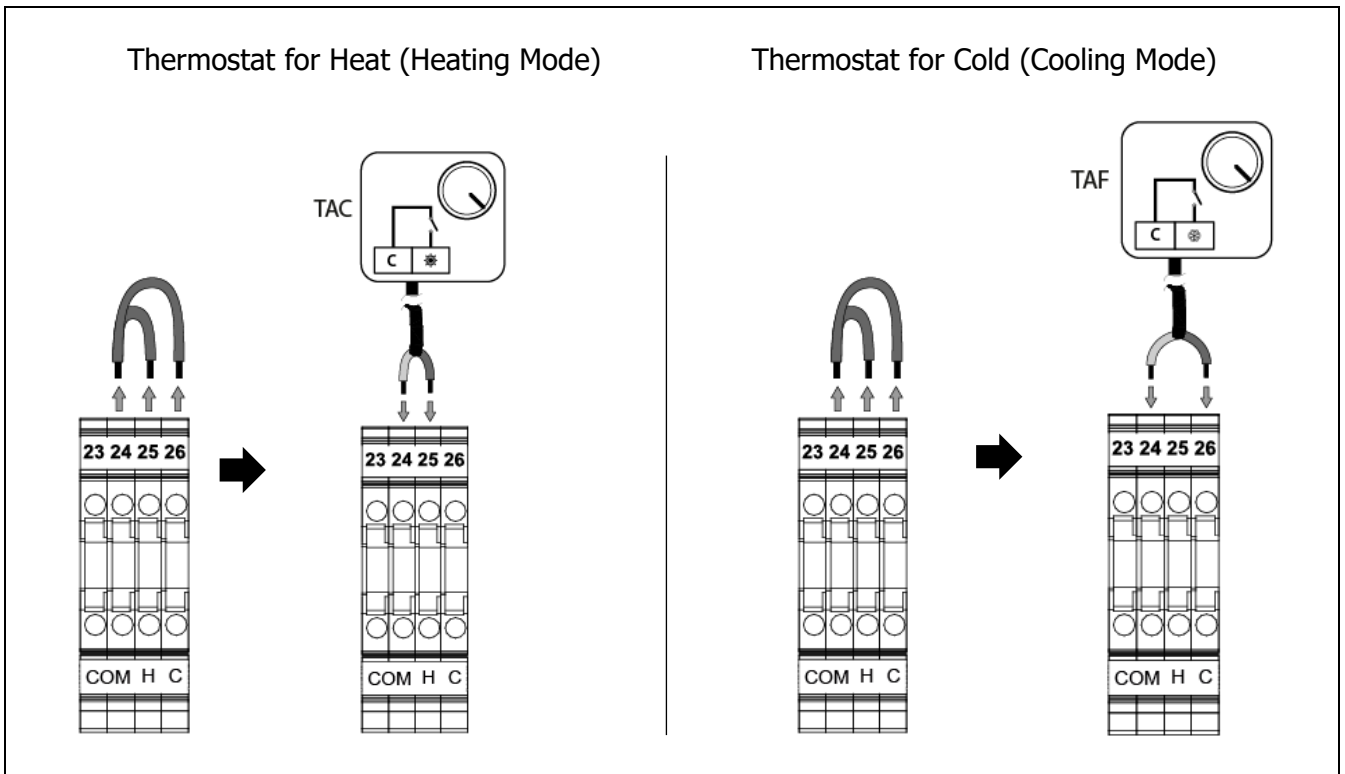


IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

Connecting one room thermostat

In this type of configuration one single thermostat is connected, either to the input **C (26)** and **COM (24)** (thermostat for Cold, **TAF**), or to the input **H (25)** and **COM (24)** (thermostat for Heat, **TAC**). For this room thermostat management setting to function correctly, the heat pump must be configured for **one single** operating mode, either Heating or Cooling (see "Heat pump configuration"). Depending on which input the thermostat is connected to, it will manage the corresponding operating mode and the type of room thermostat must be able to do this. The thermostat connected to the cold input (**TAF**) must send a request (closed circuit signal) when the room temperature is higher than the desired temperature (setpoint temperature), and the thermostat connected to the heat input (**TAC**) must send a request (closed circuit signal) when the room temperature is lower than the desired temperature (setpoint temperature).

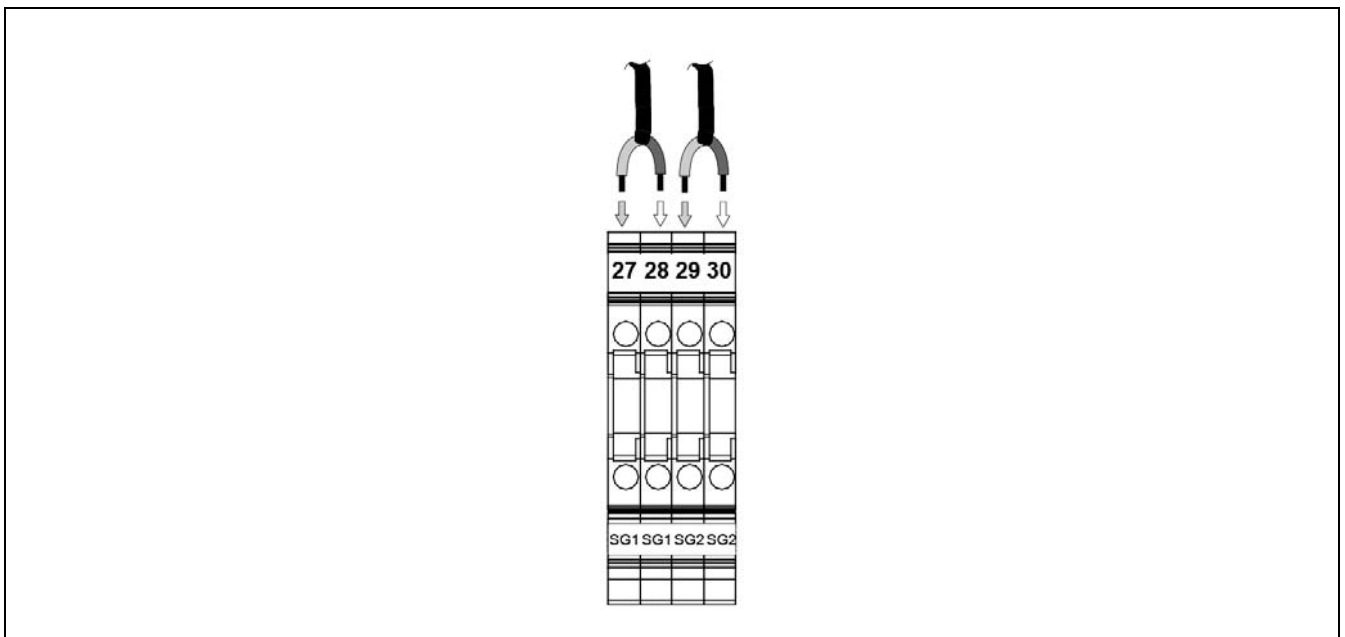
Terminals **C (26)**, **H (25)** and **COM (24)** are supplied by default with a bridge connected to each one, so on installing the thermostat **both** bridges will have to be removed and the thermostat connected as shown in the figure below, according to the mode to be managed:



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.6.10 SG Ready connection

The **DUAL CLIMA HT** heat pump has two connections on the component terminal strip for connecting 2 inputs for the SG Ready function (see "Connection Diagram"), enabling management of the SG function. The input **SG1 (27-28)** activates and deactivates the SG1 connection and the input **SG2 (29-30)** activates and deactivates the SG2 connection, for remote automatic management of the operating modes of the SG Ready function. (see *Operation*).



IMPORTANT: Before carrying out any work on the heat pump electrical installation, ensure it is disconnected from the mains.

6.7 Freeze Protection

The **DUAL CLIMA HT** is an appliance for installation on the outside of the building and it will consequently be exposed to frost during periods of extremely cold weather. Freeze protection is therefore of the utmost importance for this type of appliance, as its internal construction and the amount of water contained in it make it even more prone to freezing. If the water inside the heat pump freezes it can cause the heat exchanger to break, stopping its functioning and making costly repairs necessary.

It is therefore **compulsory** to use an anti-freeze system in the installation to prevent the water in the units from freezing. **DOMUSA TEKNIK** recommends using one of the following systems:

- **Anti-freeze liquid (Glycol):** The antifreeze liquid must be diluted with the water inside the heat pump. The concentration of glycol in the mixture must be calculated taking into account the historical minimum temperature of the climatic zone where the machine is located and the concentrations indicated by the glycol manufacturer for this minimum temperature. It is also essential to regularly check the water-glycol mixture to ensure its properties and correct mixture percentage are maintained over time (at least once a year).
- **Outdoor anti-freeze valve:** The anti-freeze valve(s) must be installed on the heat pump water circuit, preferably inside the heat pump. You **must ensure** that when they are activated they drain all the water from inside the appliance. The **DUAL CLIMA HT** heat pump has two sockets for connecting two anti-freeze valves. **DOMUSA TEKNIK** offers the option of an anti-freeze valve kit, specially designed for installation on the **DUAL CLIMA HT** heat pump.

In addition to these active anti-freeze safety systems, a water filter must be installed in the heat pump water circuit to prevent obstruction or narrowing of the pipes due to dirt in the installation, which would speed up the freezing process or cause the water drainage devices to malfunction. The filter **MUST** be installed before filling the installation with water, on the appliance's return line, to prevent dirty water from entering the heat exchanger. 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, water volume of the installation, etc.). The water filter must be checked at least once a year and cleaned if necessary, although in new installations it is recommended to check it a few months after start-up.

DOMUSA TEKNIK's guarantee does not cover any damage caused by failing to use any of the freeze protection systems described above.

In installations where glycol has not been added, in case of prolonged periods of absence the water must be drained from the appliance in order to prevent accidental power failures and/or heat pump failure. During periods of frost, a power outage of 30 minutes or more may cause the water to freeze.

The **DUAL CLIMA HT** heat pump's electronic control has a function for protecting the water inside it from freezing during periods of frost. **For this function to remain enabled and on standby, the heat pump must be connected to the mains and have a power supply, even when it is switched off or not in use.**

The anti-freeze function will start up the circulation pumps, the compressor and other system components according to the temperature conditions it detects, both of the water and outside the home. The following sections describe the functioning of the **DUAL CLIMA HT** heat pump's anti-freeze process.

6.7.1 DHW mode anti-freeze process

When the temperature of the Domestic Hot Water tank falls below +5°C, the system starts up the anti-freeze function, enabling DHW mode and activating the compressor and backup output E1. When the water temperature in the tank reaches 15°C, the function stops. If the heat pump stays on for more than 30 minutes without reaching the indicated temperature, the DHW anti-freeze function will stop.

If the DHW temperature continues to be lower than 5°C when the anti-freeze process is complete, the heat pump will stop and an error code will appear on the display.

6.7.2 Heating/Cooling mode anti-freeze process

When the heat pump water temperature falls below **P25** (3°C by default) in the System Parameters (see *Settings Menu*), detected on either flow or return, the system starts up the anti-freeze function, activating the water circulation pumps (**C1** and **C2**). If the external temperature is below 15°C, the heat pump will also be started up. When the water temperature reaches 10°C or the heat pump has been running for more than 30 minutes without having reached this temperature, the anti-freeze function will stop.

If the flow or return temperature continues to be lower than **P25** when the anti-freeze process is complete, the heat pump will stop and an error code will appear on the display.

Also, if the external temperature falls below 0°C at any time, the water circulation pumps (**C1** and **C2**) will start up within a time interval defined in **P21** for one minute.

IMPORTANT: It is compulsory to use an anti-freeze system in the installation to prevent the water in the units from freezing.

IMPORTANT: We do not recommend changing parameters P25 and P21. Incorrectly setting these parameters could cause failure or breakdown of the appliance.

NOTE: For the anti-freeze function to remain enabled and on standby, the heat pump must be connected to the mains and have a power supply.

DOMUSA TEKNİK's guarantee does not cover any damage caused by failing to use a freeze protection system in the installation.

7 HEAT PUMP CONFIGURATION

The default configuration of the **DUAL CLIMA HT** heat pump is Heating, Cooling and DHW production. If the installation lacks any of these services they **MUST** be disabled, by adjusting the system parameters on the control unit (see *"Settings Menu"*). If any of them is disabled, the operating modes (**8**) for the service in question cannot be selected.

Disabling DHW production

If the installation does not have a storage tank for DHW production, this mode must be disabled. To disable this function, adjust parameter **P63** of the System Parameters (see *Settings Menu*). By default, the heat pump is supplied with DHW production enabled. To disable it, set parameter **P63** to **0**. You must also disconnect the heat pump from the mains and connect it again to validate this change.

Disabling the Heating or Cooling function

If the installation does not have a water circuit designed to work in heating mode (underfloor heating, radiators, etc.) or cooling mode (underfloor cooling, fan coils, etc.), these modes must be disabled. To disable these functions, adjust parameter **P62** of the System Parameters (see *Settings Menu*). By default, the heat pump is supplied with the heating and cooling functions enabled.

To disable heating mode, set parameter **P62** to **1**. The heat pump will automatically enable cooling mode. You must also disconnect the heat pump from the mains and connect it again to validate this change.

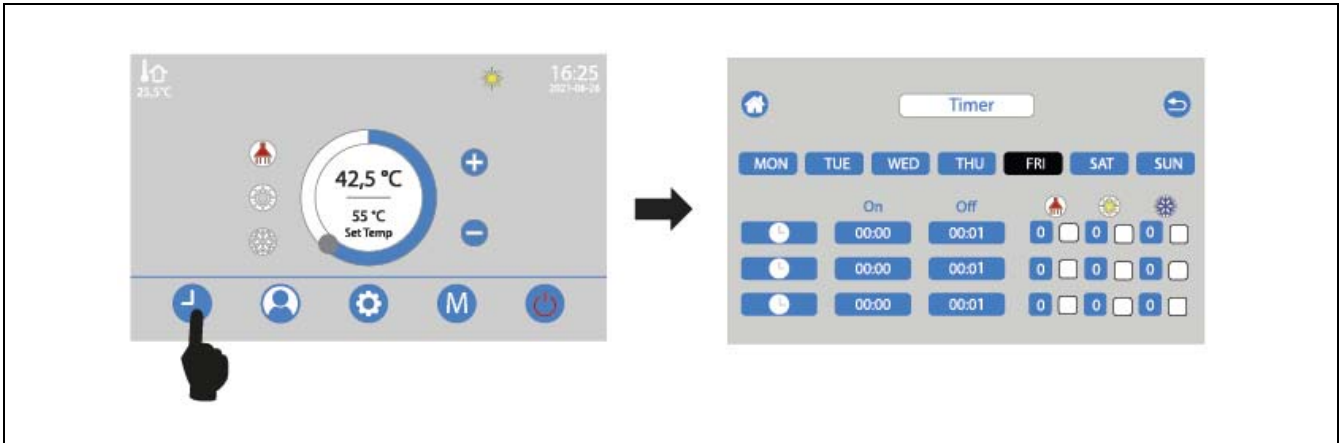
To disable cooling mode, set parameter **P62** to **2**. The heat pump will automatically enable heating mode. You must also disconnect the heat pump from the mains and connect it again to validate this change.

IMPORTANT: Leaving a function enabled if the installation is not designed to work with it can cause malfunctioning of the heat pump and **SERIOUS** damage to the installation.

8 TIME PROGRAMMING



The electronic control of the **DUAL CLIMA HT** pump includes a time programmer (5) for programming its switch-on and switch-off times and the desired operating modes for each one (weekly programming).

To exit the menu and return to the start screen, press the touch button .





There are 3 programmes available for each day of the week. Heat pump switch-on times, switch-off times and operating modes can be set for each programme. Up to 3 different programmes can be set for one single day, or 3 different operating programmes on different days of the week. You do not need to use all the programmes: the heat pump will only run according to the active programmes.

To enable a programme, proceed as follows:

- Enter the programme activation time.
- Enter the programme deactivation time.
- Select the heat pump operating mode within the time interval defined and the operating setpoint (*Selecting manual operating modes*).
- Activate the programming defined.
 -  Programming activated.
 -  Programming deactivated.

To repeat the same programming for different days of the week, repeat the above steps for each day you wish to programme these times for.

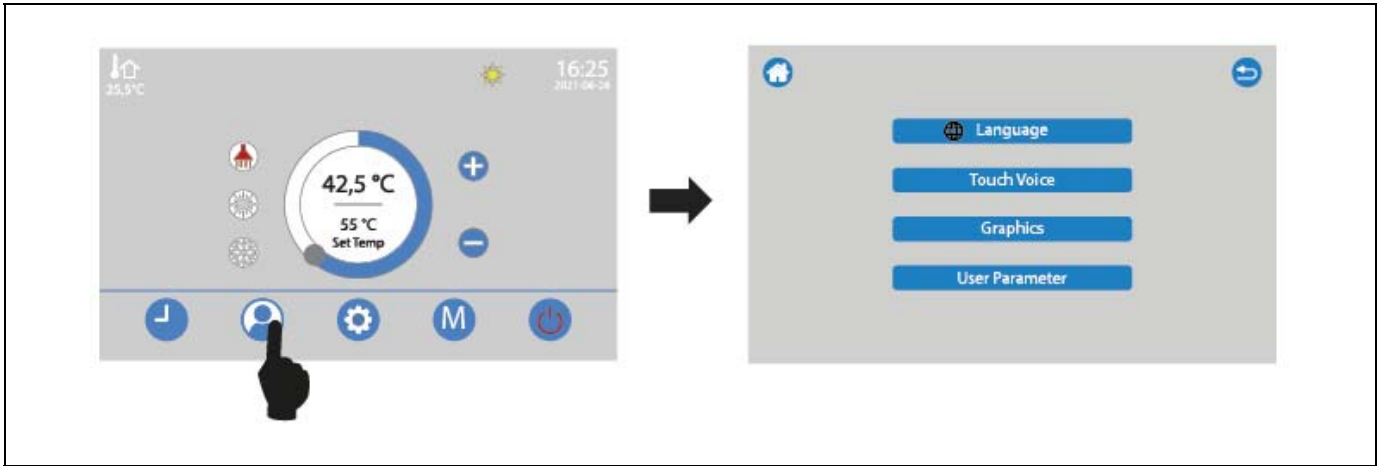
NOTE: To ensure correct functioning of both the time programming and the heat pump, make sure you do not set different programmes within the same time interval.

Also, when the time programmer has been set and is functioning, the programming symbol () will be permanently lit up on the electronic control start screen display, indicating that the time programming is activated. To restore manual functioning, go back to the time programming menu and disable **all the programmes enabled** using the programme deactivation button ()

9 USER MENU

The **DUAL CLIMA HT** heat pump electronic control has a User Menu (6) for the user to configure, manage and view different functions.

To exit the menu and return to the start screen, press the touch button .



Language settings

Several languages are available on the **DUAL CLIMA HT** heat pump electronic control unit, and the preferred language can therefore be set. When a language is selected, it will be used on all the displays, menus and descriptions.

Sound adjustment

This option can be used to adjust or mute the touch screen sound volume.

Graphics

The **DUAL CLIMA HT** heat pump has an option for measuring the renewable energy generated in the installation. This option can be used to consult the renewable energy generated by the heat pump each day, month or year.

User settings

This option is for accessing the user settings. Only the user-adjustable settings that do not affect the heat pump's functioning are available on this sub-menu. All the other system parameters must only be changed by authorised staff of **DOMUSA TEKNIK**. See "*System parameters*".

There follows a list of the settings that can be adjusted by the user.

Code	Definition	Range	Default value
P15	Night mode start time.	0-23 (time)	22
P16	Night mode switch-off time.	0-23 (time)	6
P17	Night mode activation	0 (Disabled) 1 (Enabled)	0



10 SETTINGS MENU

The **DUAL CLIMA HT** heat pump electronic control has a Settings Menu (7) for the user to configure, manage and view its different functions and statuses.

10.1 System Parameters

On the Settings Menu (7), the **DUAL CLIMA HT** heat pump electronic control has a System Parameters sub-menu for managing the operation of its gas and water circuits. Any incorrect adjustment of the settings in this sub-menu could cause failure and/or breakdown of the appliance, and most of the system parameters must therefore only be adjusted by authorised **DOMUSA TEKNIK** staff. However, some technical parameters (described in previous sections) will be of use to installers and should therefore be adjusted by them, according to the thermal and operating characteristics required in the home.

To exit the menu and return to the start screen, press the touch button .

To validate access to the System Parameters, enter the password "99". The  and  buttons can be used to browse the technical settings to reach the desired parameter. Press the current parameter value to access the display from which its value can be changed, and validate by pressing "Enter".

NOTE: Any settings not shown in the table are technical parameters set by default and must not be changed under any circumstances. Changing any of these settings could cause malfunction and/or breakage of the heat pump.


There follows a list of the settings that can be adjusted by the installer. Any adjustment of settings not on this list could cause serious failure and/or breakdown of the heat pump and **DOMUSA TEKNIK** will not be held liable for any damage caused by their incorrect modification by unauthorised persons.



Code	Definition	Range	Default value
P02	Heating temperature setpoint	10~75°C	45°C
P03	Cooling temperature setpoint	7~25°C	12°C
P04	DHW setpoint temperature	10~75°C	45°C
P08	Maximum OTC curve value. (Only with OTC mode selected)	35~75°C	65°C
P09	OTC curve compensation value. (Only with OTC mode selected)	-10~10°C	0°C
P10	Interval of days for anti-legionella	7~ 99 days	7
P11	Anti-legionella function start time	0~23	23
P12	Anti-legionella duration	5~99 minutes	10
P13	Anti-legionella setpoint	50 ~ 70 °C	70°C
P14	Anti-legionella function	0 (Auto Mode) 1 (Manual Mode) 2 (Disabled)	2
P19	OTC Mode	0 (Disabled) 1 (Enabled)	1
P20	Circulation pump operating mode (C1)	0: Always running 1: Stop on reaching setpoint 2: Start-up every 15 minutes	0
P21	Anti-freeze interval	5~50min	30
P22	External temp. activating backup heating (E2)	-30~20°C	0°C
P23	External temp. activating backup DHW (E1)	-30~20°C	0°C
P24	Hysteresis activating E1 and E2	1~15°C	5°C
P25	Anti-freeze activation temperature	-15~5°C	3°C

P35	Maximum DHW temperature with compressor	0~70°C	70°C
P36	E1 and E2 activation time interval	0~999 min	5
P59	Minimum C1 circulation pump speed	2~8 (20% - 80%)	8
P62	Heating/cooling mode activation	0: Heating + cooling 1: Cooling only 2: Heating only	0
P63	DHW mode activation	0: Disable, 1: Enable	1
P81	E1 and E2 operating mode	0: Backup source mode 1: Auxiliary source mode 2: Passive combined mode 3: Active combined mode	0
P82	External temp. activating auxiliary source	-30~20°C	-15
P201	SG Ready function activation	0: disable, 1: enable	OFF
P202	Recommended heating switch-on setpoint	OFF, 10°C~75°C	OFF
P203	Heating switch-on setpoint	OFF, 10°C~75°C	OFF
P204	Recommended cooling switch-on setpoint	OFF, 10°C~30°C	OFF
P205	Cooling switch-on setpoint	OFF, 10°C~30°C	OFF
P206	Recommended DHW switch-on setpoint	OFF, 10°C~70°C	OFF
P207	DHW switch-on setpoint	OFF, 10°C~70°C	OFF
P208	SG Ready function heating devices	0: Heat pump + E1/E2 1: E1/E2 2: Heat pump only	OFF

10.2 Operating Status

On the Settings Menu (7), the **DUAL CLIMA HT** heat pump electronic control has an Operating status sub-menu. On this menu, the status of all the heat pump's control and safety components and the values of some of the operating parameters can be **viewed** and checked at any time, via a descriptive diagram of the heat pump.

Also, on the main Operating Status display, you can press the  to access the heat pump's **C** parameters or Status parameters. The **C** parameters are display parameters. They are therefore not adjustable and their purpose is to diagnose the functioning of the appliance during maintenance and repair operations.

The  and  buttons can be used to browse all the **C** parameters and their value will appear on the display at each time.

To exit the **C** parameter display and return to the start screen, press the touch button .

NOTE: The parameters labelled "Reserved" on the table do not apply to these heat pump models and are therefore not relevant.

Code.	Definition	Unit	Range
C00	Evaporator temperature sensor	°C	
C01	Discharge temperature sensor	°C	
C02	Outdoor temperature sensor	°C	
C03	Suction temperature	°C	
C04	Reserved		
C05	Reserved		
C06	Heat exchanger sensor temperature	°C	
C07	Return water temperature sensor	°C	
C08	Flow water temperature sensor	°C	
C09	DHW temperature sensor	°C	
C10	Water flow	l/min	
C11	Main temperature difference	°C	
C12	Reserved		

Code.	Definition	Unit	Range
C13	High pressure	Mpa	
C14	Low pressure	Mpa	
C15	Compressor operating frequency	Hz	
C16	Fan 1 speed	rpm	
C17	Fan 2 speed	rpm	
C18	Expansion valve opening degrees	°	
C19	Reserved		
C20	Target compressor frequency	Hz	
C21	Compressor operating current	A	
C22	IPM module temperature	°C	
C23	Input voltage (AC)	V	
C24	Input voltage (DC)	V	
C25	Reserved		
C26	Reserved		
C27	Evaporation temperature	°C	
C28	Condensation temperature	°C	
C29	TAF enabled	0/1	off: Connected, on: Disconnected
C30	TAF enabled	0/1	off: Connected, on: Disconnected
C31	Anti-legionella function	0/1	off, on
C32	Compressor overcurrent protection	0/1	off, on
C33	Defrost	0/1	off, on
C34	Heating anti-freeze	0/1	off, on
C35	DHW anti-freeze	0/1	off, on
C36	Compressor heating element	0/1	off, on
C37	4-way valve	0/1	off: Cold, on: Heat
C38	3-way valve G1	0/1	off: Heat/Cold, on: DHW
C39	3-way valve G2	0/1	off: Cold, on: Heat
C40	Backup energy for DHW E1	0/1	off, on
C41	Heating backup energy E2	0/1	off, on
C42	Main circulation pump C1	0/1	off, on
C43	Circulation pump C2	0/1	off, on
C44	Backup pump C3	0/1	off, on
C45	Heating temperature setpoint	°C	
C46	Cooling temperature setpoint	°C	
C47	DHW setpoint temperature	°C	
C48	Anti-legionella temperature setpoint	°C	
C49	Lubricant return process	0/1	0: off, 1: on
C50	Compressor run time	hours	
C51	Circulation pump C1 speed	0~100%	
C52	Heat pump operating mode	0/4	0: Standby, 1: DHW, 2: Heating, 4: Cooling
C53	Reserved		
C54	Selected operating mode	0/5	0: Standby, 1: DHW, 2: Heating, 3: DHW+Heating, 4: Cooling, 5: DHW + Cooling
C55	PCB software version	/	
C56	Software display version	/	

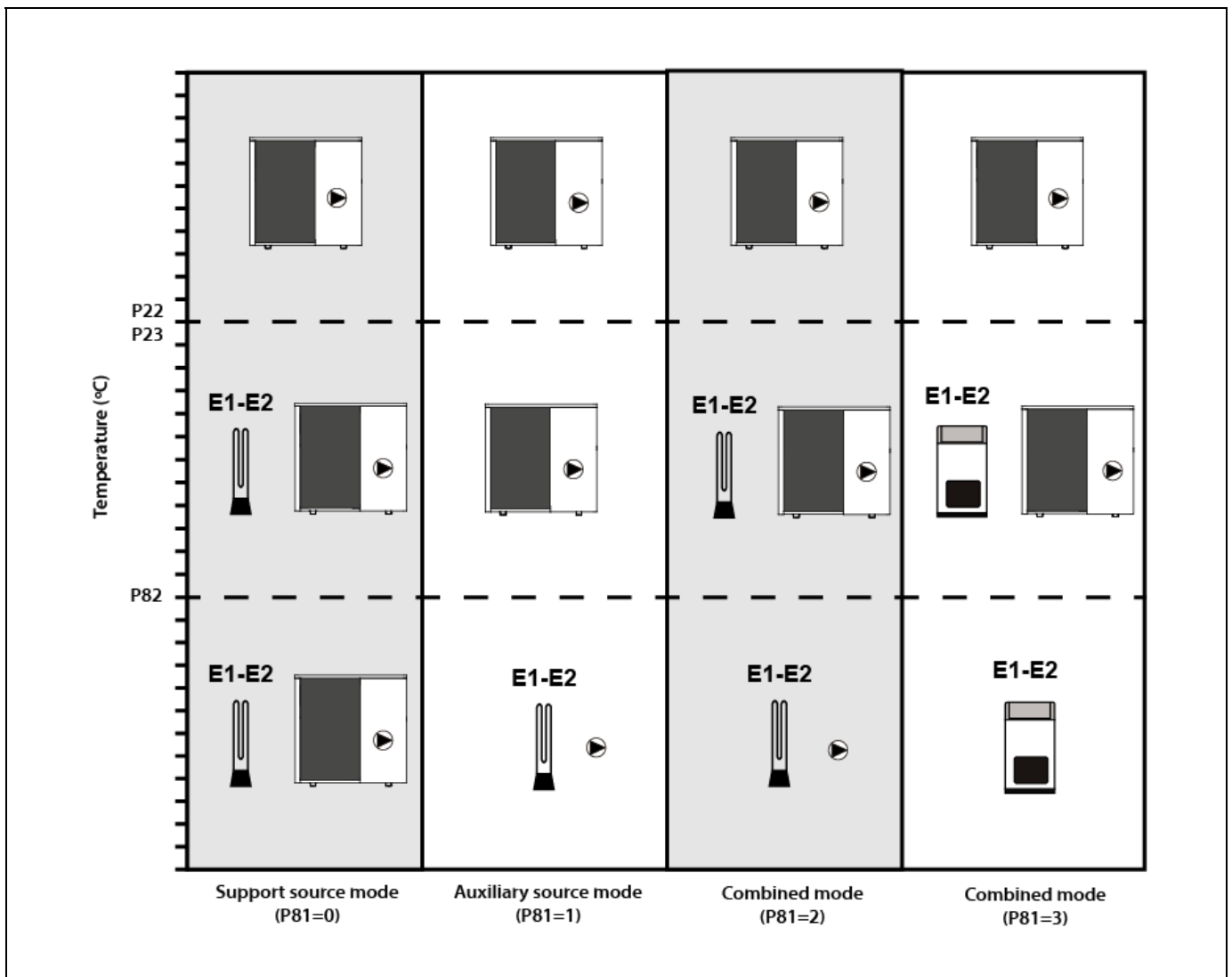
11 CONFIGURING THE AUXILIARY OR BACKUP ENERGY SOURCES (E1, E2)

The operating principle of **DUAL CLIMA HT** heat pumps is to extract energy from the air outside the building and transmit it to the interior to heat or cool a water circuit for either heating/air conditioning and/or DHW production. The heating capacity of the heat pump will therefore directly depend on the amount of energy available in the air outside the building and consequently on the weather conditions (temperature and humidity) in the exterior environment.

As a result, in extremely cold weather conditions and/or if the heat pump is located in a geographical area with high humidity, it may require the aid of a backup or auxiliary energy source to achieve the desired comfort conditions. The **DUAL CLIMA HT** heat pump is therefore equipped with 2 relay outputs (**E1**, **E2**) for connecting these auxiliary energy sources, which may be heating elements, a gas boiler, an oil-fired boiler, etc. or any combination of these. One of the two outputs is for backing up DHW production (**E1**), and the other is for backup in heating mode (**E2**).

The operating mode of these outputs, according to the external temperature conditions, can be configured via parameter **P81** of the System Parameters. There are 4 different operating modes to choose from.

The diagram below shows the energy sources available according to the external temperature and the operating mode selected for parameter **P81** of the System Parameters.



11.1 Backup source mode (P81 = 0)

In this operating mode, the auxiliary energy sources are activated when the external temperature falls below a value selected for parameters **P22** and **P23** of the System Parameters (see *Settings Menu*), to aid and complete the performance of the heat pump. The heat pump will continue running at the same time as the backup sources. This is the pre-set default operating mode.

The backup energy source for DHW (**E1**) is activated when the heat pump is running in DHW mode and the backup energy source for heating (**E2**) is activated when the heat pump is running in Heating mode.

Configuring the backup source for DHW (E1)

When the heat pump is running in DHW mode, the energy source connected to output **E1** will be enabled if the external temperature falls below the value selected for parameter **P23** and the heat pump is not able to reach the set DHW production conditions. When the backup energy source is activated, both the heat pump and the backup source will run simultaneously to achieve the desired performance.

The selectable range of values for parameter **P23** is $-30 \sim +20$ °C. The pre-set default value is 0°C. This setting can be increased or decreased by entering the desired value on the drop-down sub-menu.

Configuring the backup source for Heating (E2)

When the heat pump is running in Heating mode, the energy source connected to output **E2** will be enabled if the external temperature falls below the value selected for parameter **P22** and the heat pump is not able to reach the set heating conditions. When the backup energy source is activated, both the heat pump and the backup source will run simultaneously to achieve the desired performance.

The selectable range of values for parameter **P22** is $-30 \sim +20$ °C. The pre-set default value is 0°C. This setting can be increased or decreased by entering the desired value on the drop-down sub-menu.

11.2 Auxiliary source mode (P81 = 1)

In this operating mode, the backup energy source for Heating (**E2**) becomes an alternative source to the heat pump ("auxiliary source"). It is activated when the external temperature falls below the value selected for parameter **P82** of the System Parameters (see *Settings Menu*). The heat pump will switch off (Standby), leaving the auxiliary source **E2** running as the installation's only heat source for both Heating and DHW production.

In this operating mode, the backup energy source for DHW (**E1**) will only be activated when a temperature in the hot water tank exceeding that of **P35** of the System Parameters (see *Settings Menu*) needs to be reached.

The selectable range of values for parameter **P82** is $-30 \sim +20$ °C. The pre-set default value is -15°C. This setting can be increased or decreased by entering the desired value on the drop-down sub-menu.

11.3 Passive combined mode (P81 = 2)

This operating mode is optimised for installations that combine the "Backup source mode" and the "Auxiliary source mode", using passive auxiliary energy sources that do not generate primary water circulation such as an electric element, a heat exchanger, etc.

When the external temperature falls below the value selected for parameters **P22** and **P23** of the System Parameters, the auxiliary energy sources are activated in combination with the heat pump, as described in the section "*Backup source mode*".

If the external temperature falls below the value selected for parameter **P82** of the System Parameters, the heat pump will switch off (Standby), leaving the auxiliary sources **E2** and **E1** as the only heat source in the installation, as described in the section "*Auxiliary source mode*".

NOTE: Whenever a backup or auxiliary energy source (E1 or E2) is activated, the heat pump's circulation pump (C1) is also activated.

11.4 Active combined mode (P82 = 3)

This operating mode is optimised for installations that combine the "Backup source mode" and the "Auxiliary source mode", using active auxiliary energy sources that do not generate primary water circulation, such as a boiler.

When the external temperature falls below the value selected for parameters **P22** and **P23** of the System Parameters, the auxiliary energy sources are activated in combination with the heat pump, as described in the section "*Backup source mode*".

If the external temperature falls below the value selected for parameter **P82** of the System Parameters, the heat pump will switch off (Standby), leaving the auxiliary source **E2** and **E1** as the only heat source in the installation, as described in the section "*Auxiliary source mode*".

NOTE: The heat pump's CIRCULATION PUMP (C1) WILL NOT BE ACTIVATED in "Auxiliary source mode", and it is therefore essential for the auxiliary energy source to have its own circulation pump.

12 START-UP

12.1 Prior warnings

Repair and maintenance of the heat pump must be carried out by a qualified professional authorised by **DOMUSA TEKNIK**. For optimum functioning and conservation of the heat pump, it should be serviced annually.

Please carefully read this instruction manual and keep it in a safe, easily-accessible place. **DOMUSA TEKNIK** will not be liable for any damages caused by failure to follow these instructions.

Before any servicing, **disconnect the heat pump from the mains.**

12.2 Start-up

In order for the **guarantee to be valid**, the heat pump must be started up by **personnel authorised by DOMUSA TEKNIK**. Before beginning the start-up process, the following must be complied with:

- The heat pump must be plugged in to the mains and the correct electrical supply must be used.
- The installation must be filled with water (the pressure must be between 1 and 1.5 bar) and correctly air bled.
- If the installation has flow and return valves, check they are open.

The start-up process must include the following steps, at least:

- Check that the heat pump configuration is correct and corresponds to the Heating, Cooling and/or DHW modes permitted for the installation.
- Check that all the technical parameters on the Settings Menu have been correctly set, and adjust them if necessary.
- Check that the heat pump and internal piping system have not been damaged during transport.
- Check that the fan can move freely.
- Check that all the pipes are correctly insulated, particularly in the case of installations that can be used in Cooling mode.

12.3 Installation handover

After the initial start-up, the Technical Assistance Service will explain to the user how the heat pump functions, making any observations they consider relevant.

The installer is responsible for clearly explaining to the user the functioning of any control or regulation device forming part of the installation but not supplied with the heat pump.

13 MAINTENANCE

To maintain the heat pump in perfect working order, a yearly overhaul should be performed by **DOMUSA TEKNIK**'s authorised personnel. Among other maintenance work, the following must be carried out at least once a year:

- Check that the supply, consumption and electrical system are all correct.
- Check that the water installation, the safety valves and the installation control devices are all working correctly.
- Check that the water circulation pump is working correctly. Make sure there are no leaks or obstructions in the water pipes and pipe accessories.
- Clean any dirt from the evaporator.
- Check that the various components of the gas circuit are functioning correctly. Inspect the pipe joints and make sure the valves are correctly oiled.
- Chemically clean the plate heat exchanger every 3 years.
- Check that the refrigerant gas content is correct.
- Check that the refrigerant gas leak safety systems are functioning correctly and are not obstructed.

14 RECYCLING AND DISPOSAL

Removal

This product must be removed by personnel authorised to handle fluorinated gases.

The heat pump contains R290 refrigerant. Any leakage of refrigerant into the atmosphere must be avoided.

Recycling

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

Disposal

Do not attempt to remove this product on your own.

Its removal and the treatment of the refrigerant, oil and other components must be carried out in accordance with local and national legislation. The entire unit, including the refrigerant gas, the compressor and the oil it contains, must be taken to a waste collection point as it could contain refrigerant residue.

All the refrigerant must be removed and returned to the manufacturer for recycling or disposal.

IMPORTANT: The refrigerant gas contained in the heat pump is highly flammable and can cause damage to persons or property.

15 ELECTRICAL DIAGRAMS

15.1 Nomenclature

Gas circuit components:

MC: Compressor motor.	T2: 5K Ω element.
RC: Compressor heating element.	T3: Evaporator temperature sensor.
I: Inductance.	T4: External temperature sensor.
MV: Fan motor.	T5: Suction temperature sensor.
EEV: Electronic expansion valve.	T6: 5K Ω element.
V4V: 4-way valve.	T11: Return temperature sensor.
LS: Low pressure sensor.	T12: Flow temperature sensor.
HS: High pressure sensor.	T13: DHW temperature sensor.
T1: Discharge temperature sensor.	T16: Internal heat exchanger temperature sensor.

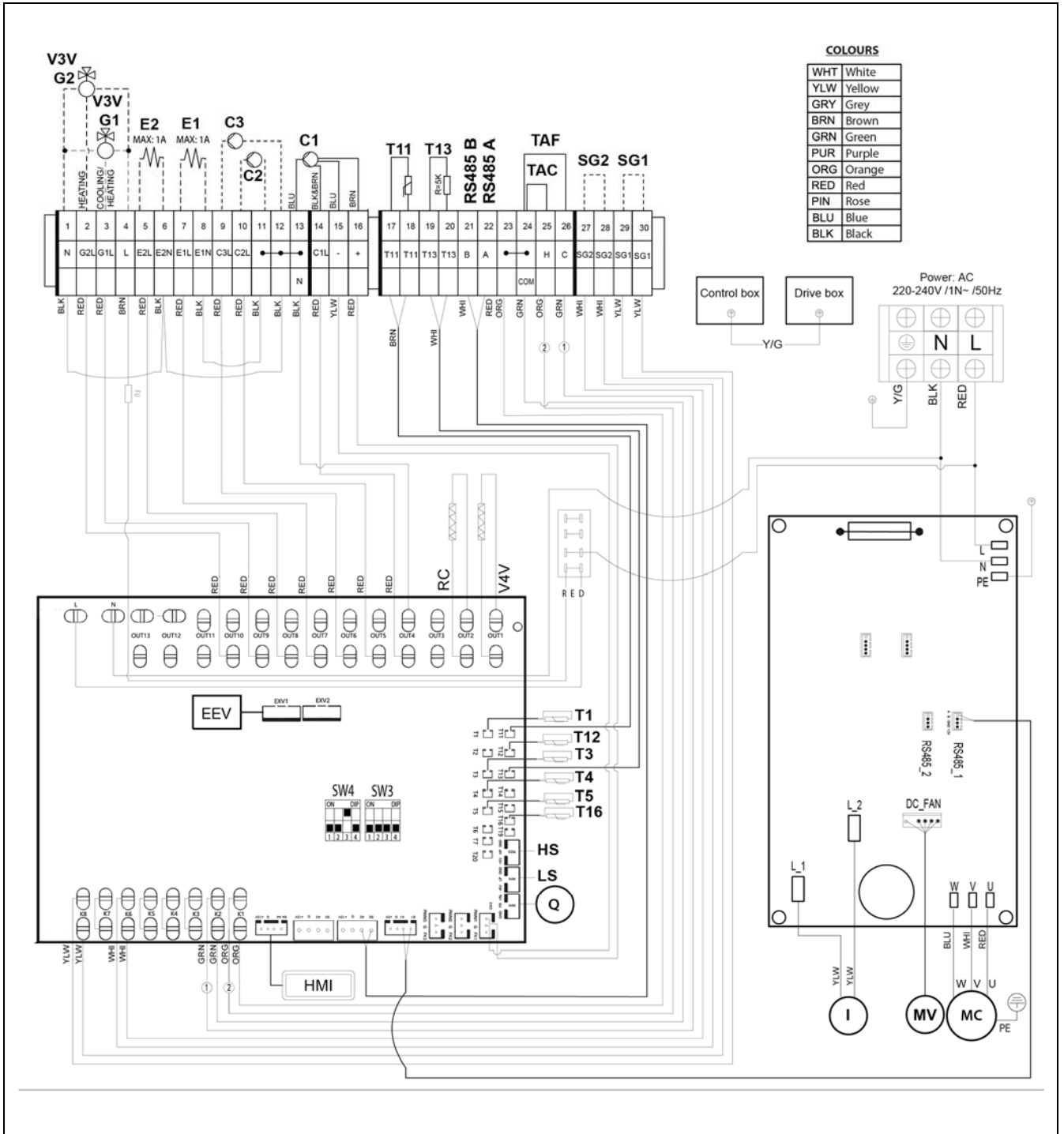
Water circuit power supply and components:

L: Phase.	SW4: DIP-Switch 4.
N: Neutral.	SW3: DIP-Switch 3.
Q: Flow meter.	HMI: Control panel.

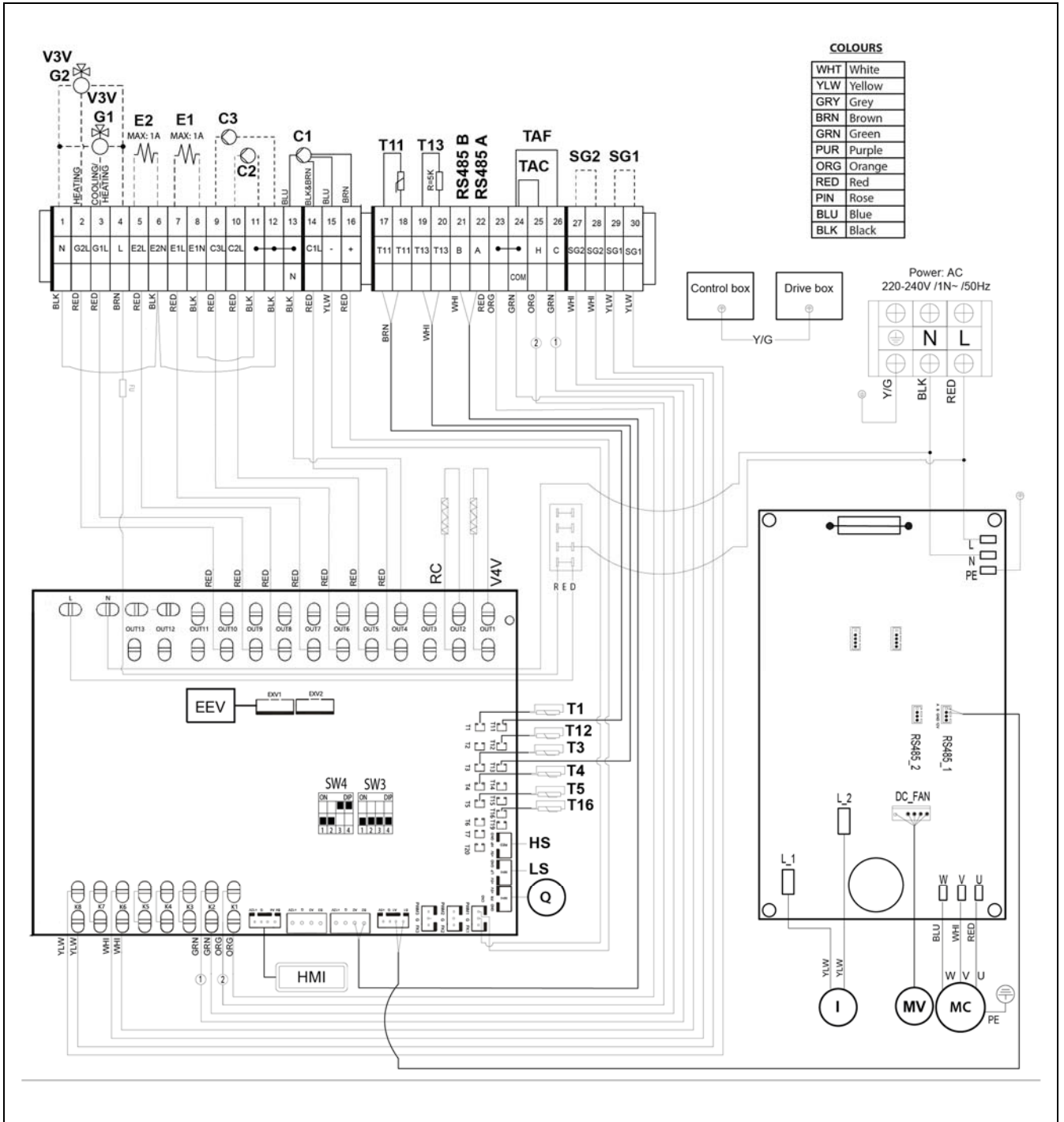
Component terminal strip:

E1: DHW backup element.	TAC: Heating room thermostat.
E2: Heating backup element.	G1: 3-way Heating/DHW valve.
C1: Heat pump circulation pump.	G2: 3-way Heat/Cold valve.
C2: Heating/cooling backup circulation pump.	SG1: Contact 1 for SG Ready function.
C3: DHW backup circulation pump.	SG2: Contact 2 for SG Ready function.
TAF: Cooling room thermostat.	

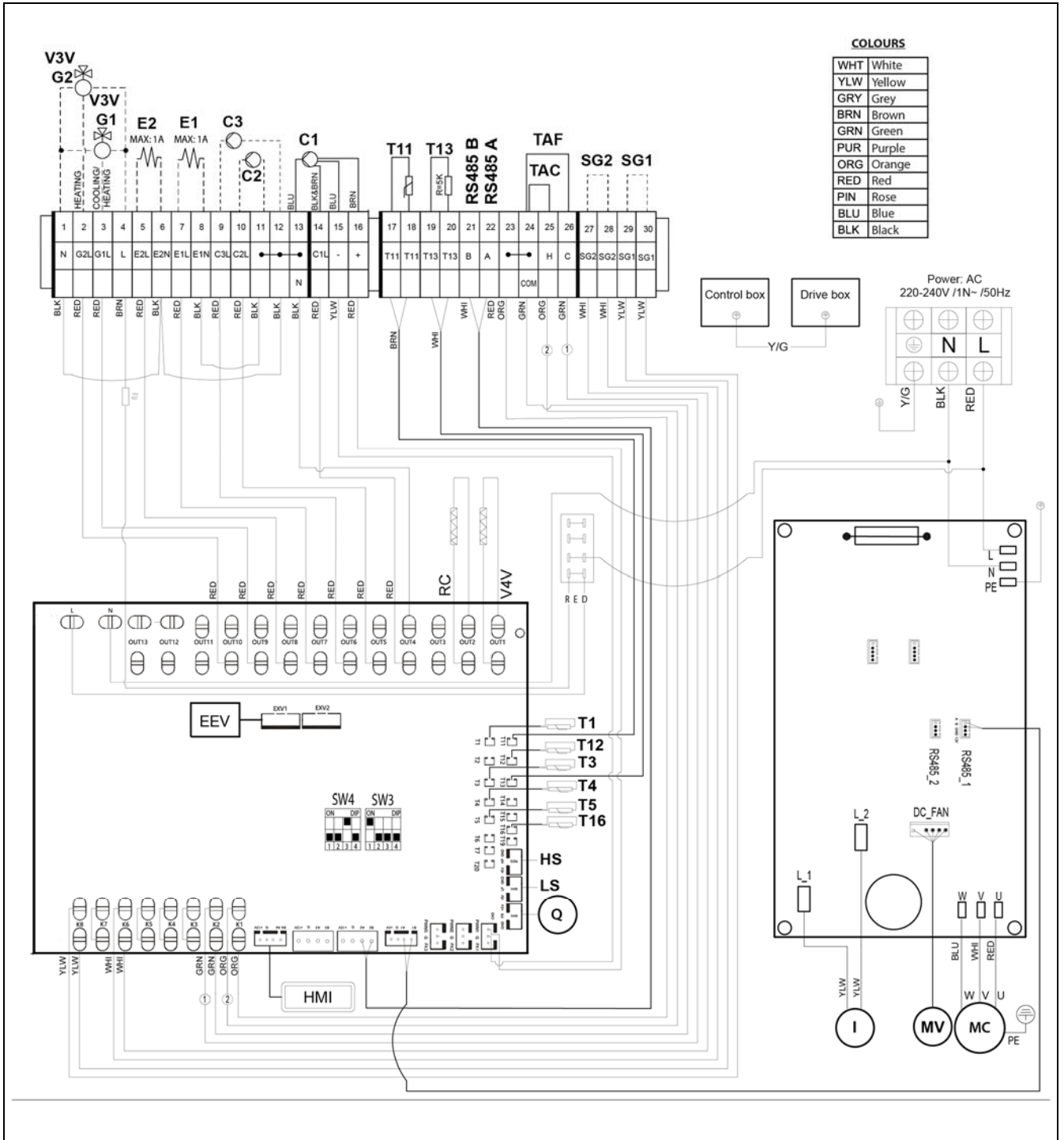
15.2 Dual Clima 6HT



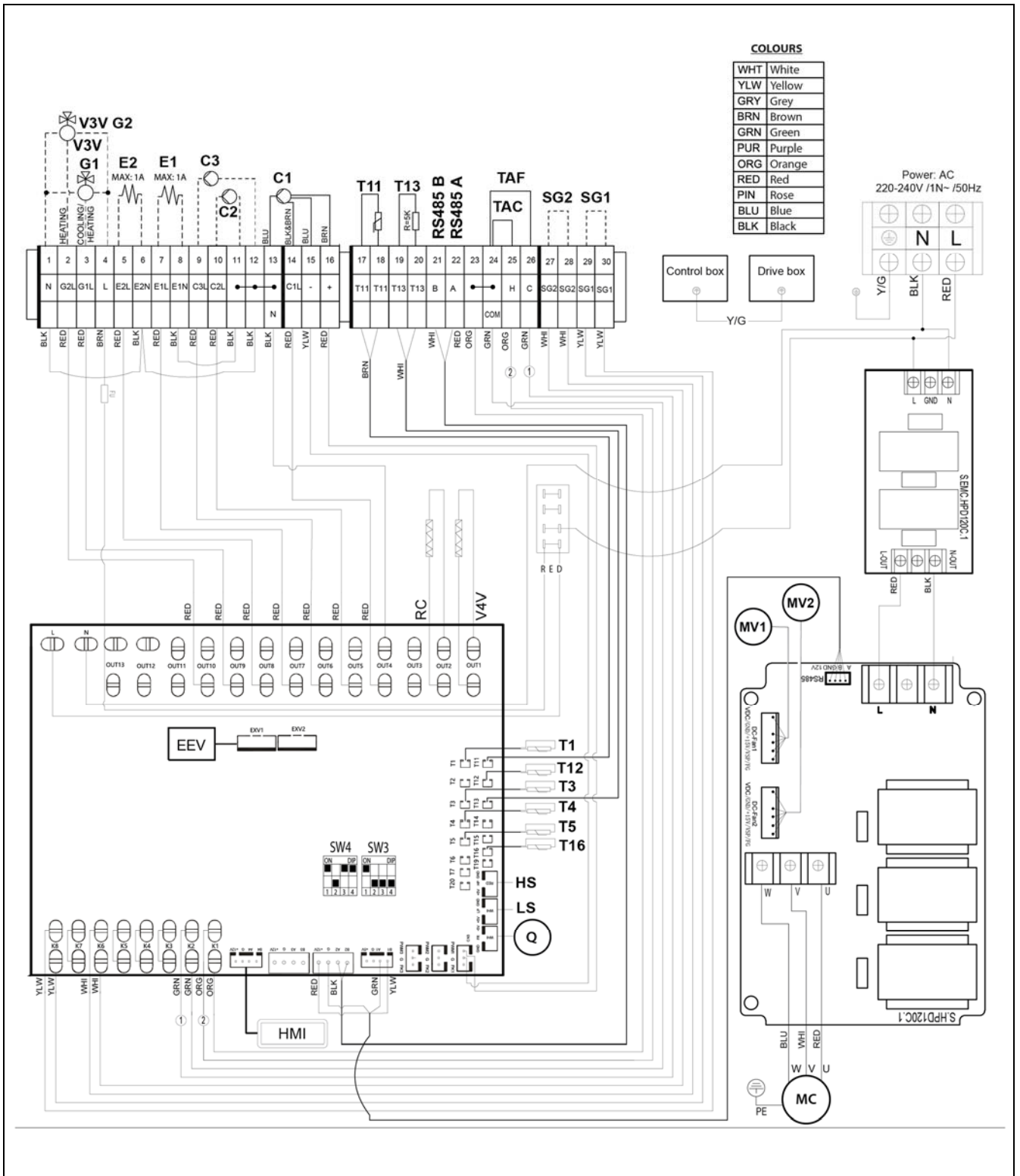
15.3 Dual Clima 9HT



15.4 Dual Clima 12HT



15.5 Dual Clima 16HT

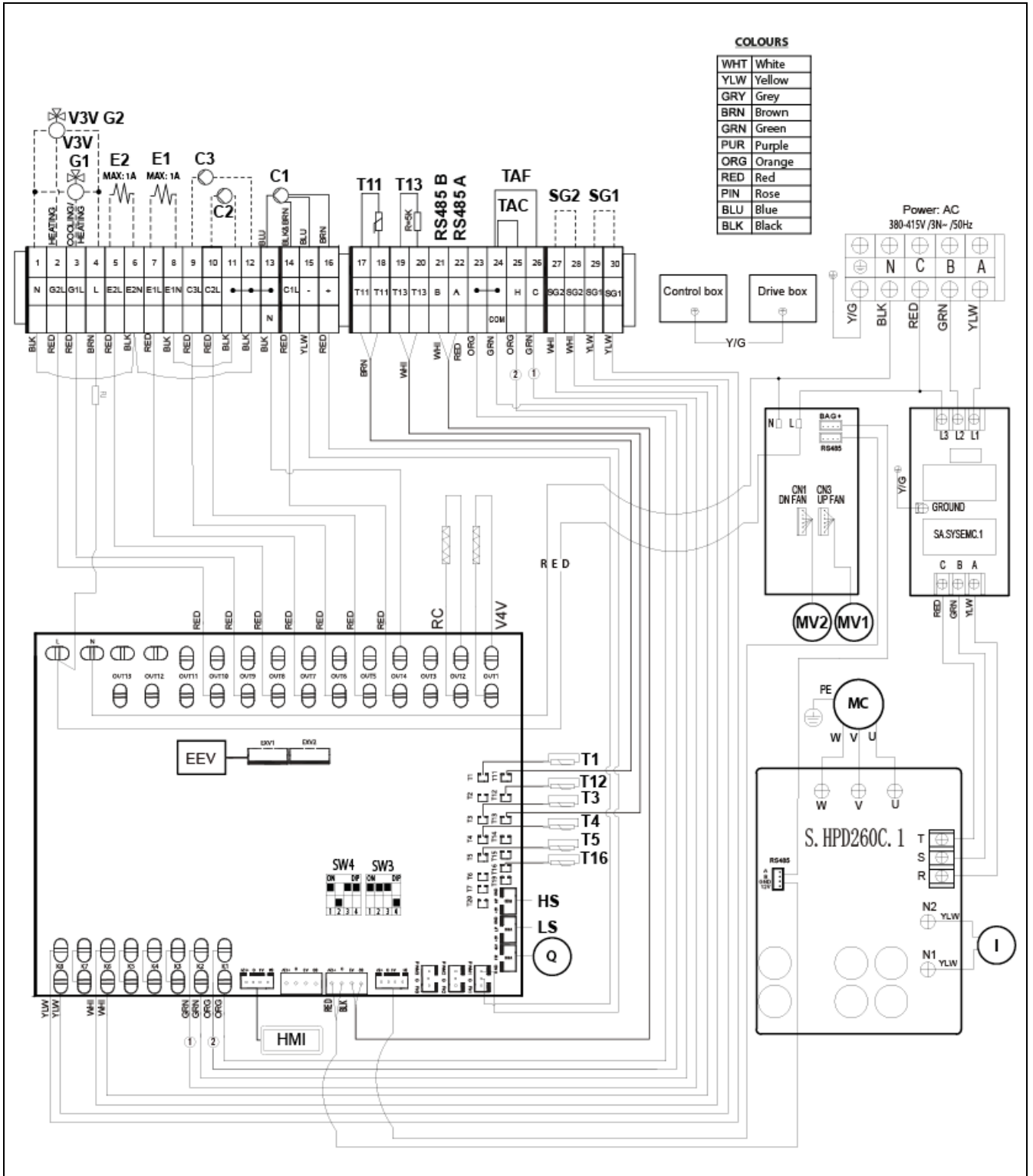


COLOURS

WHT	White
YLW	Yellow
GRY	Grey
BRN	Brown
GRN	Green
PUR	Purple
ORG	Orange
RED	Red
PIN	Rose
BLU	Blue
BLK	Black

Power: AC
220-240V /1N- /50Hz

15.6 Dual Clima 16HTT



16 TECHNICAL CHARACTERISTICS

MODEL		DUAL CLIMA 6HT	DUAL CLIMA 9HT	DUAL CLIMA 12HT	DUAL CLIMA 16HT	DUAL CLIMA 16HTT
Type	-	Air/water				
Rated heating capacity	kW	6.40	9.15	12.20	16.00	16.00
Rated heating consumption	kW	1.33	2.03	2.72	3.41	3.41
Rated heating current	A	5.78	8.83	11.83	14.83	5.18
COP (Air +7°C, Water 35°C)	-	4.81	4.50	4.48	4.69	4.69
Rated cooling capacity	kW	6.25	8.85	10.80	14.85	14.85
Rated cooling consumption	kW	1.42	2.28	2.88	3.97	3.97
Rated cooling current	A	6.17	9.91	12.52	21.39	6.03
EER (Air +35 °C, Water 18 °C)	-	4.40	3.88	3.75	3.74	3.74
Maximum consumption	kW	2.76	3.15	3.75	6.21	6.21
Maximum current	A	12.0	13.7	17.0	27.0	9.4
Electrical supply	-	230 V~ / 50 Hz				400 V 3N~ / 50 Hz
Max. working pressure: (water circuit)	MPa (bar)	0,3 (3)				
Max. water temperature	°C	75				
Nominal water flow	m ³ /h	1.10	1.57	2.10	2.75	2.75
Max. working pressure: (refrigerant circuit)	MPa	3.2				
Min. working pressure: (refrigerant circuit)	MPa	0.1				
Refrigerant	-	R290				
Refrigerant amount	kg	1.0	1.05	1.2	1.45	1.45
Protection degree	-	IPX4				
Working temperature range (Heating)	°C	-25/45				
Working temperature range (Cooling)	°C	10/45				
Sound pressure level (1m)	dB(A)	42	47	44	48	48
Dimensions: (Height/Width/Depth)	mm	898/1115/415			1320/1115/415	
Net weight	Kg	80	82	125	175	175

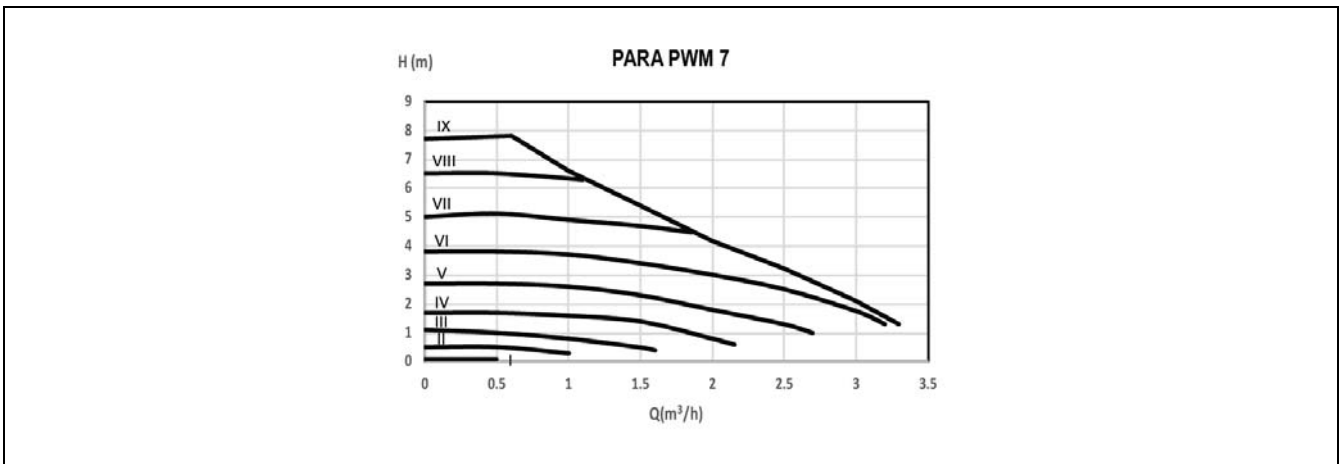
17 CIRCULATION PUMP CHARACTERISTICS

The graphs below can be used to calculate the hydromotive pressure available in the installation at the heat pump output, taking into account the pump operating curve and the pressure drop of each **Dual Clima HT** heat pump model.

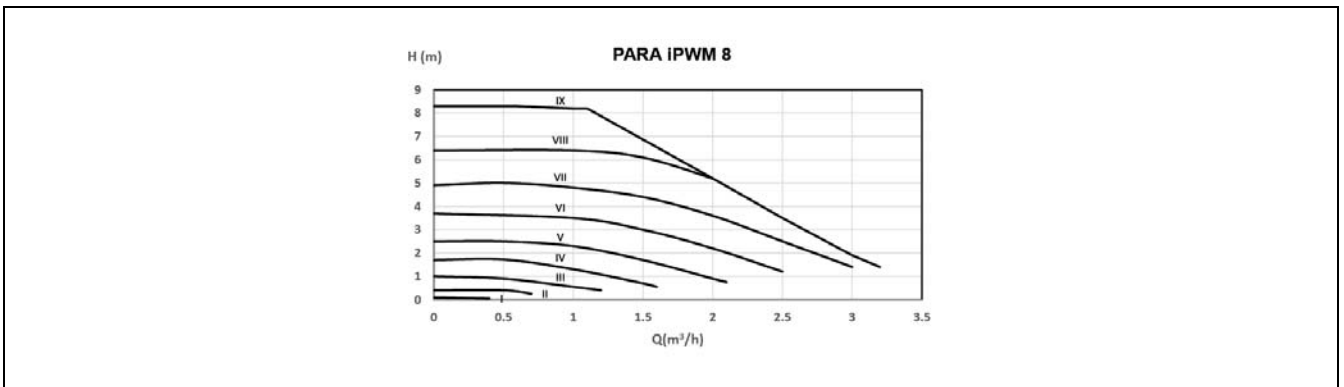
17.1 Circulation pump flow curves

The graphs below show the hydromotive pressure that can be reached by each **Dual Clima HT** model water circulation pump, according to the installation flow:

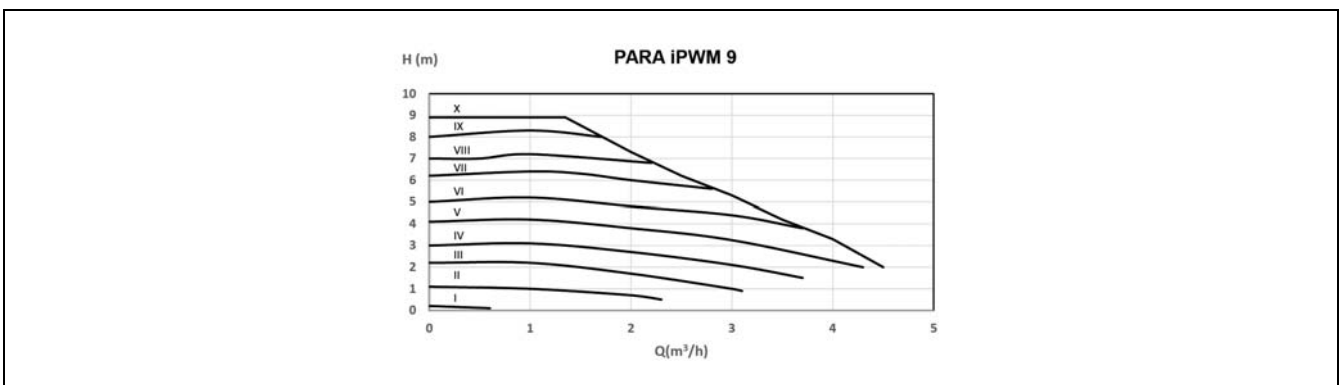
Dual Clima 6HT and Dual Clima 9HT



Dual Clima 12HT

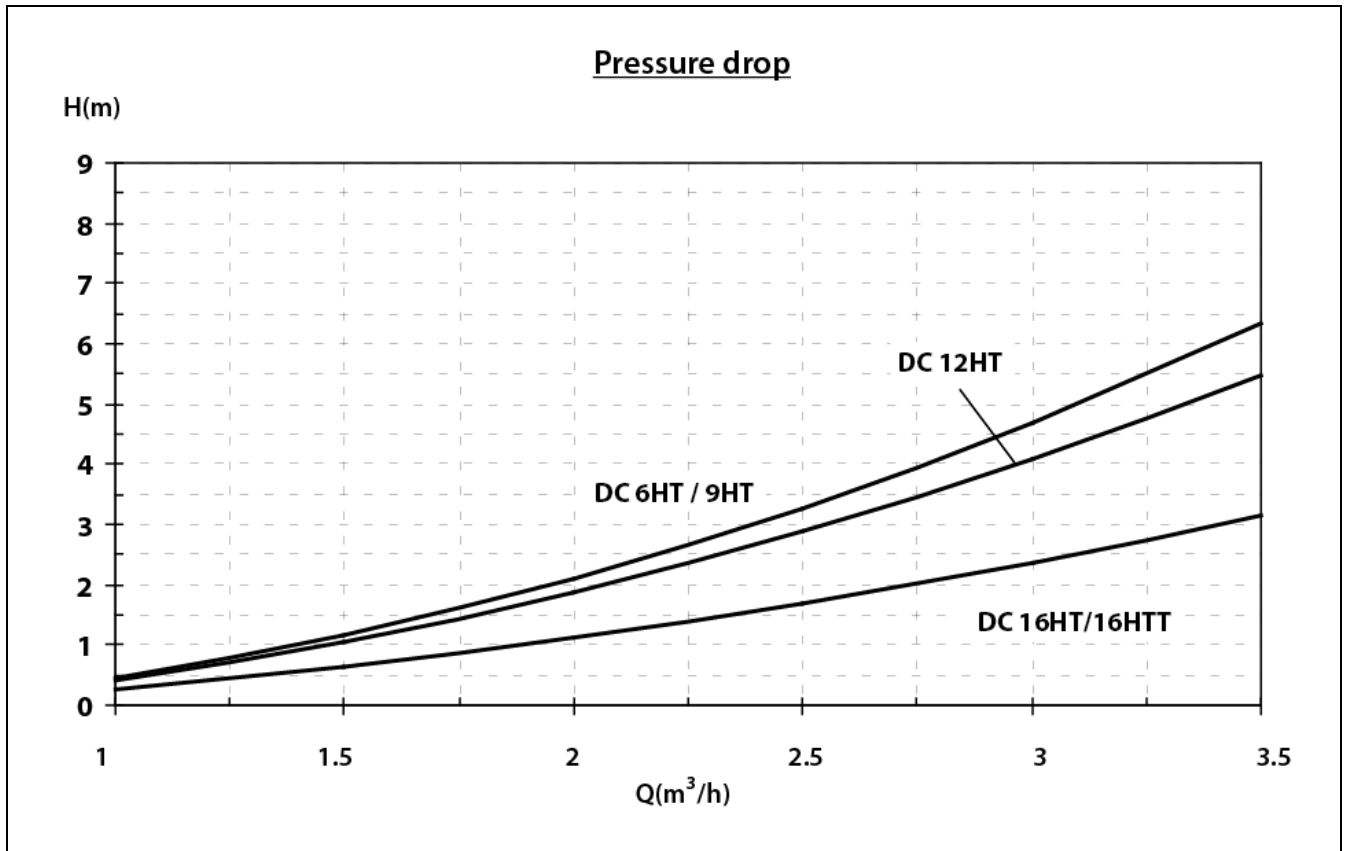


Dual Clima 16HT and Dual Clima 16HTT



17.2 Heat pump pressure drop

The graph below shows the pressure drop generated by the internal hydraulic circuit of each **Dual Clima HT**, model, according to the installation flow:



17.3 Circulation pump adjustment

The **Dual Clima HT** circulation pump (**C1**) can be speed-adjusted. This is done by adjusting parameters **P59** of the System Parameters (see *Settings Menu*). By default, the heat pump parameter **P59** is set to 8 (80%), and the circulation pump speed can therefore be adjusted between 80% and 100% of its capacity. To change this operating range, adjust parameter **P59** which determines the minimum speed the circulation pump can run at (**C1**).

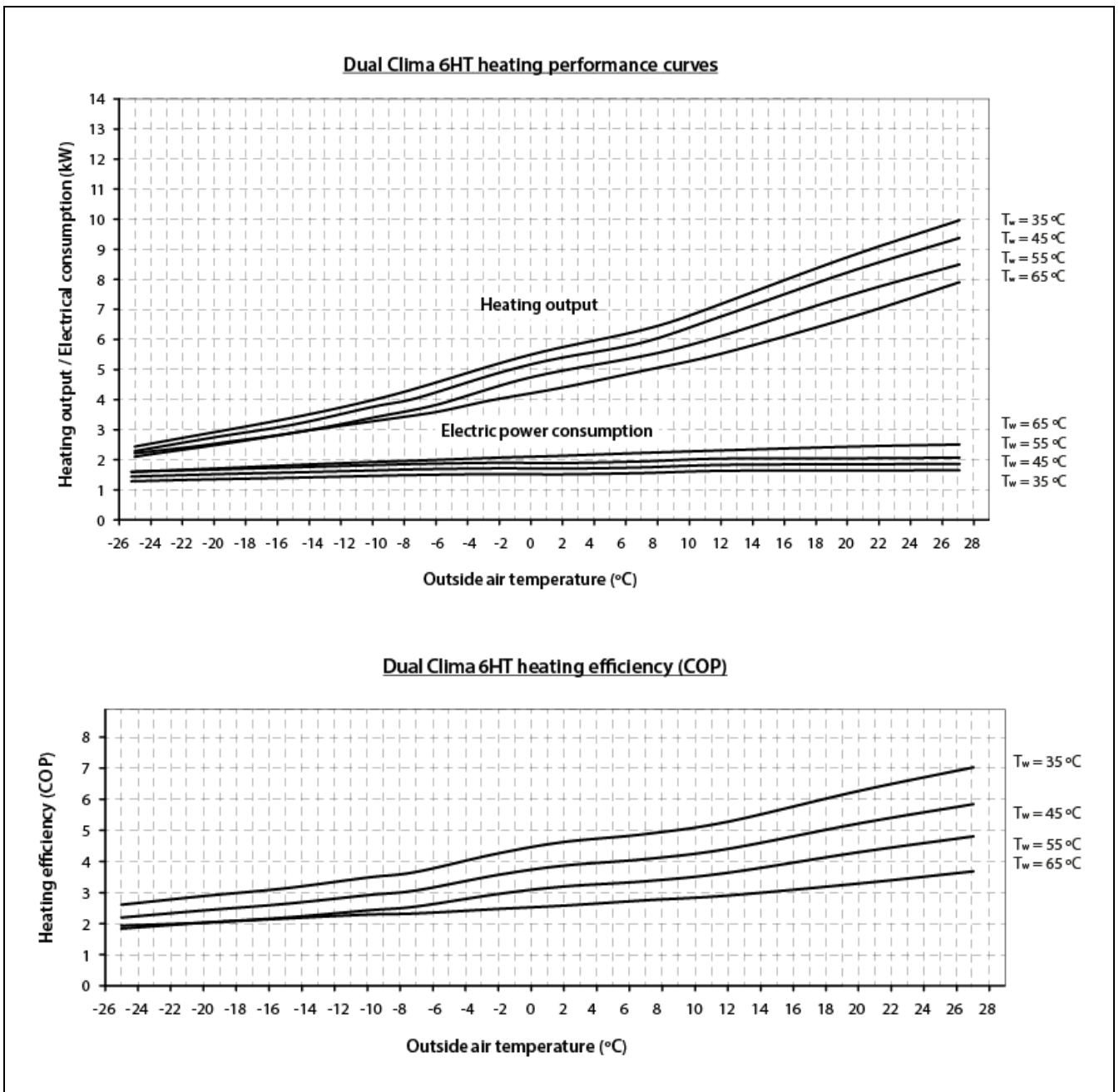
18 PERFORMANCE AND EFFICIENCY CURVES

The operating principle of **DUAL CLIMA HT** heat pumps is to extract energy from the air outside the building and transmit it to the interior to heat or cool a water circuit for either heating/air conditioning and/or DHW production. The heating capacity and efficiency of the heat pump will therefore directly depend on the amount of energy available in the air outside the building and consequently on its temperature.

18.1. Heating performance and efficiency curves

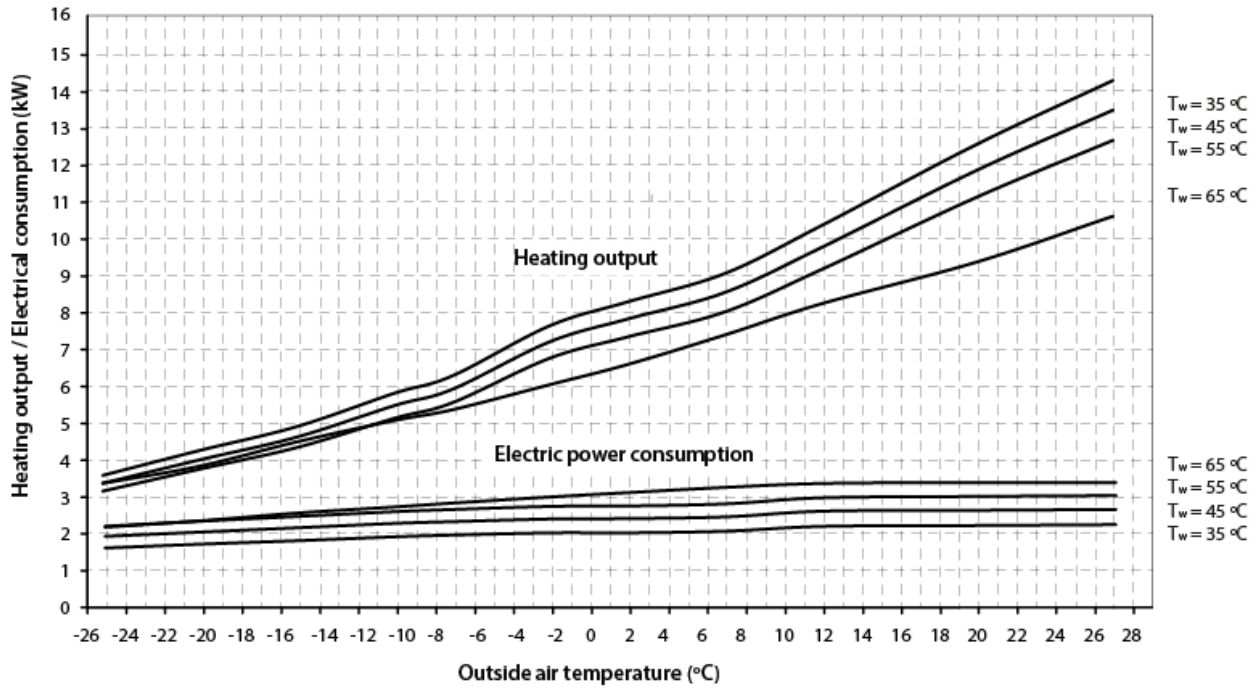
The graphs below show the heating capacity (power) and efficiency (COP) of each **Dual Clima HT** model, according to the external temperature.

Dual Clima 6HT

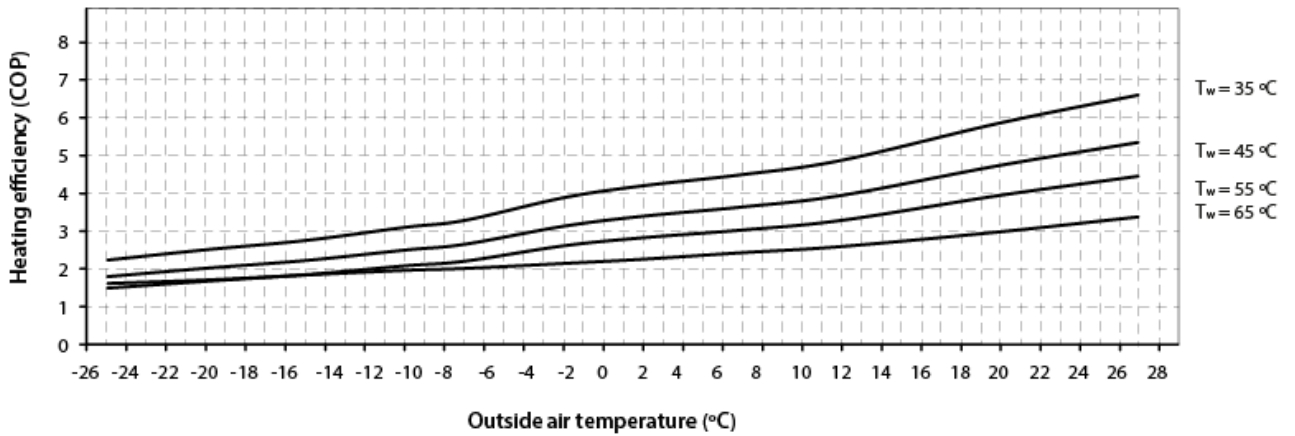


Dual Clima 9HT

Dual Clima 9HT heating performance curves

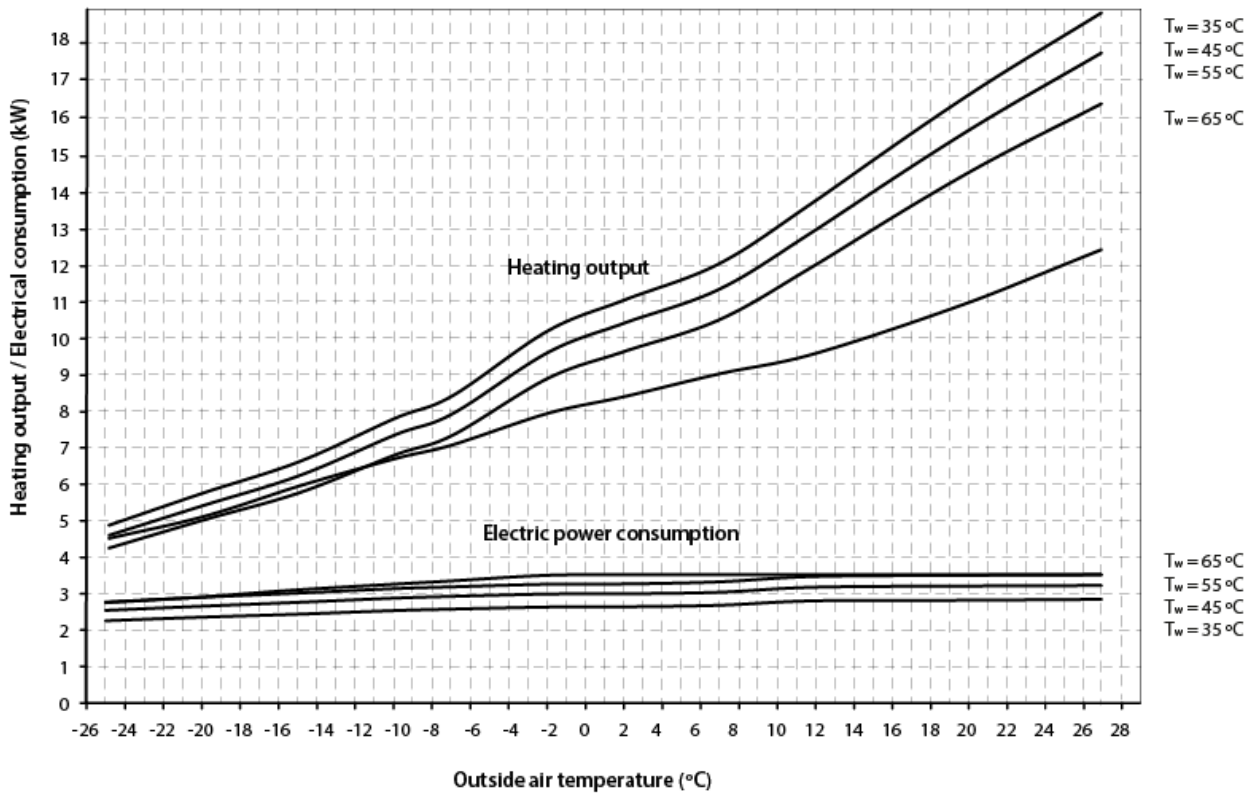


Dual Clima 9HT heating efficiency (COP)

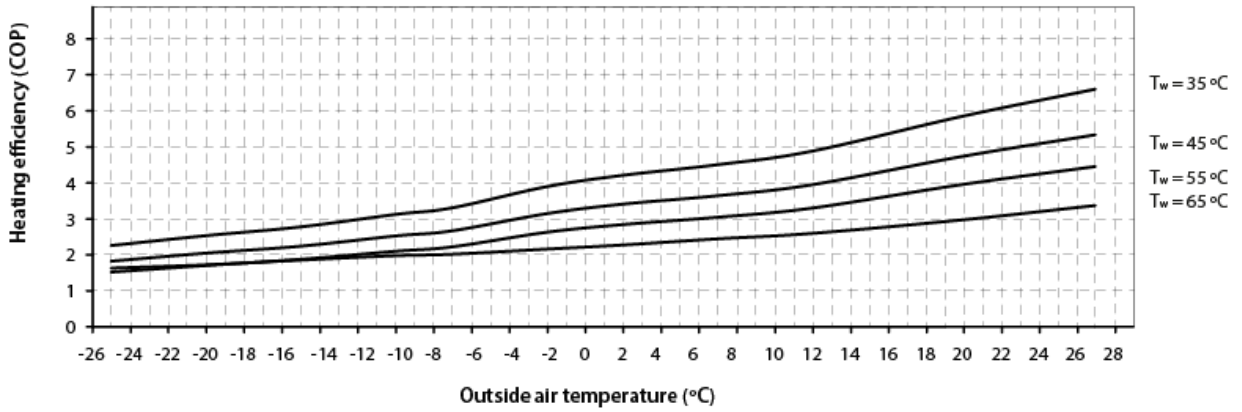


Dual Clima 12HT

Dual Clima 12HT heating performance curves

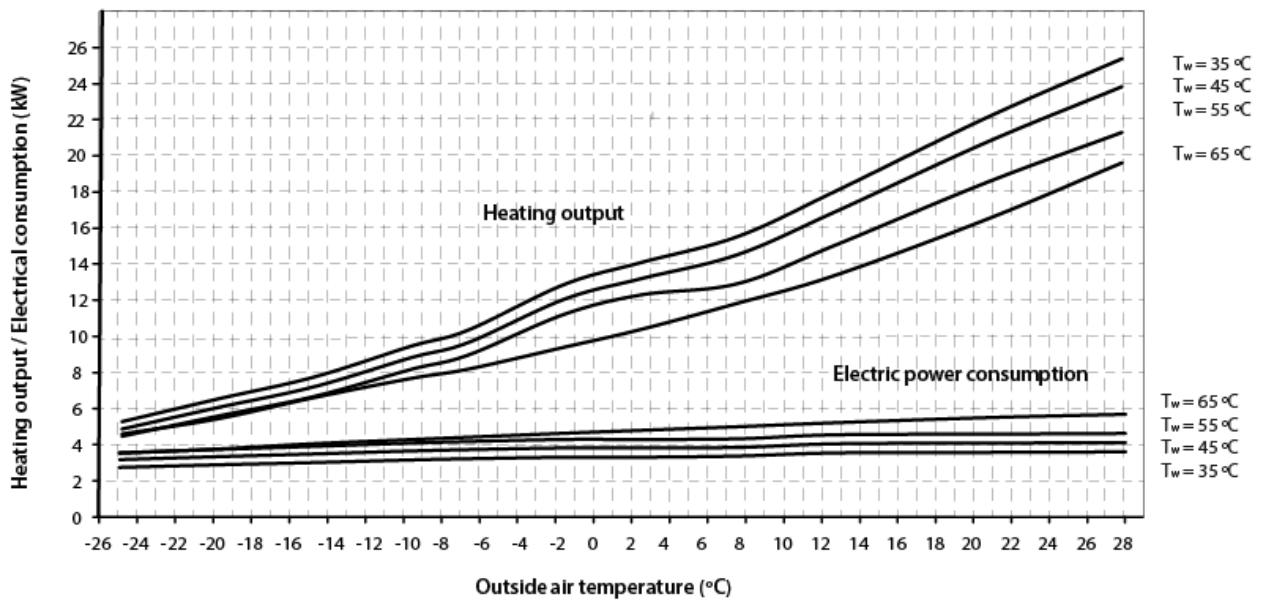


Dual Clima 12HT heating efficiency (COP)

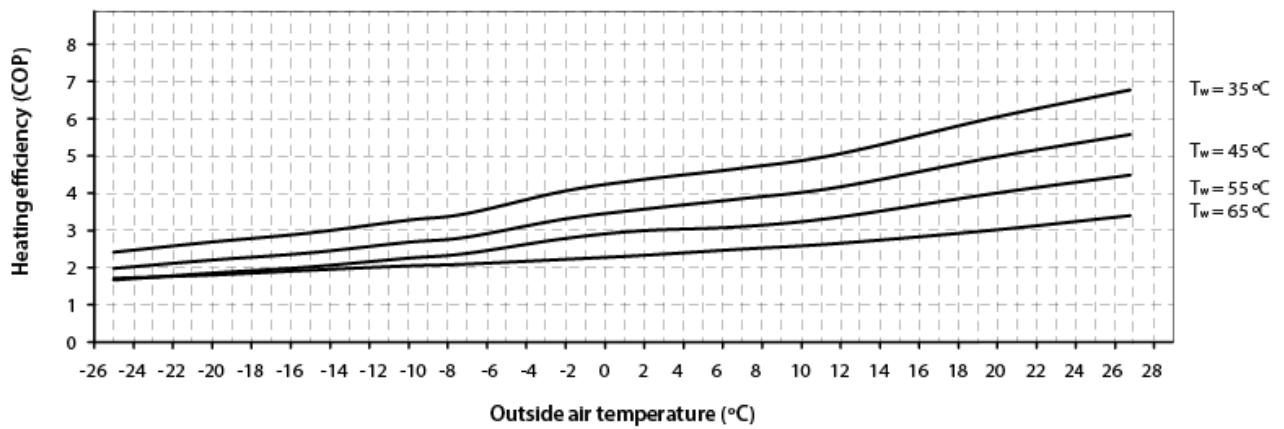


Dual Clima 16HT/16HTT

Dual Clima 16HT heating performance curves



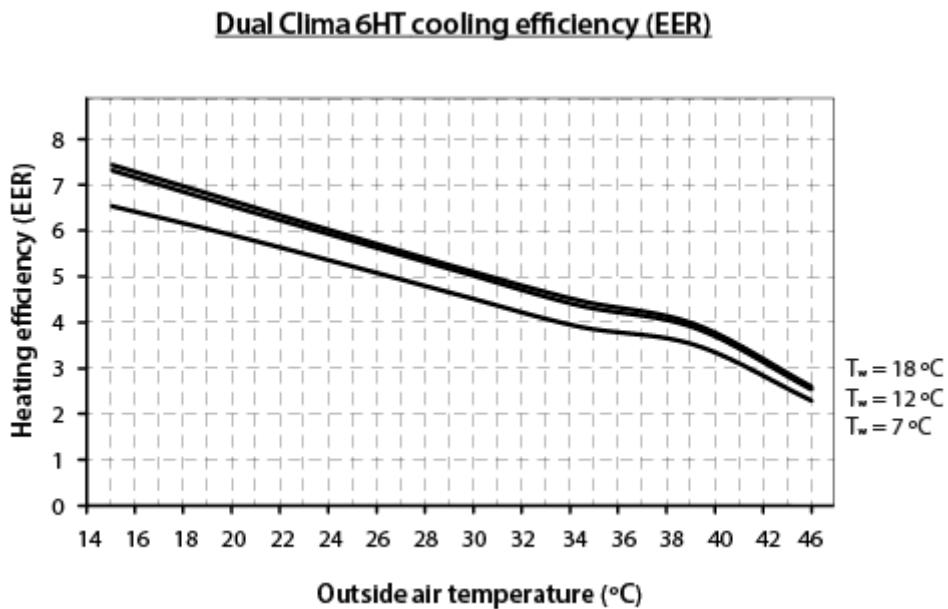
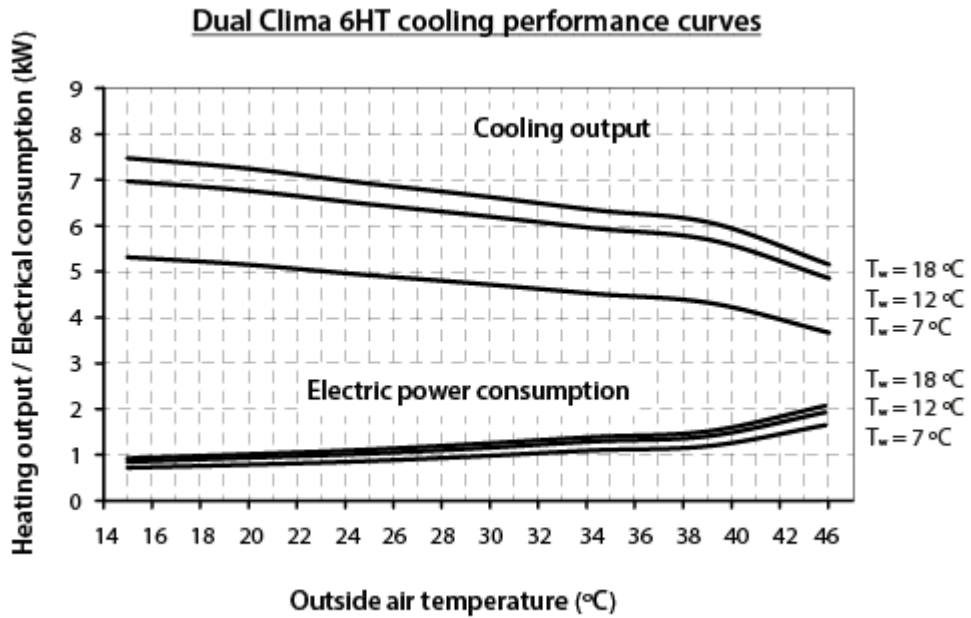
Dual Clima 16HT heating efficiency (COP)



18.2. Cooling performance and efficiency curves

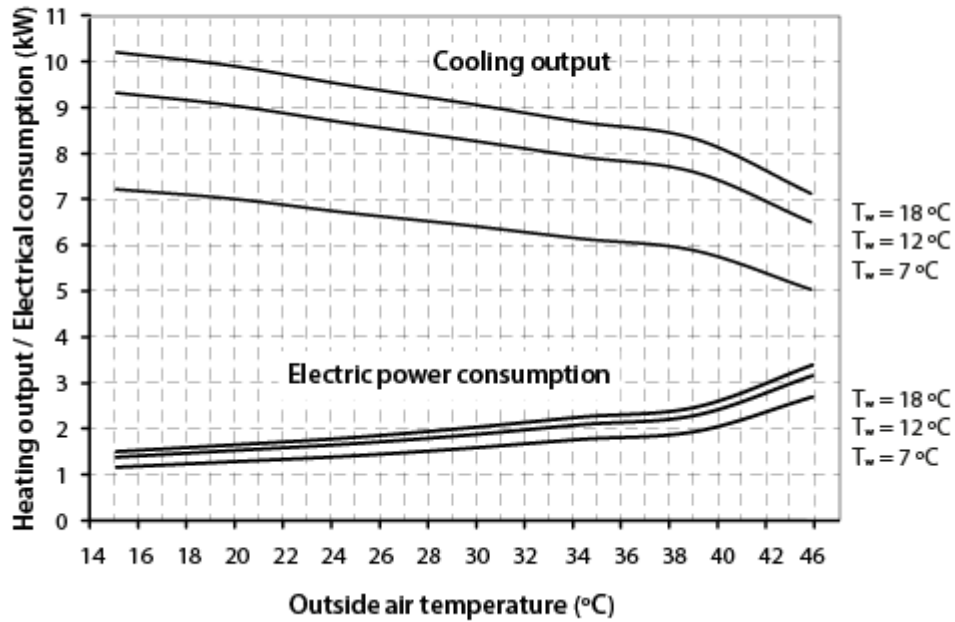
The graphs below show the cooling capacity (power) and efficiency (COP) of each **Dual Clima HT** model, according to the external temperature.

Dual Clima 6HT

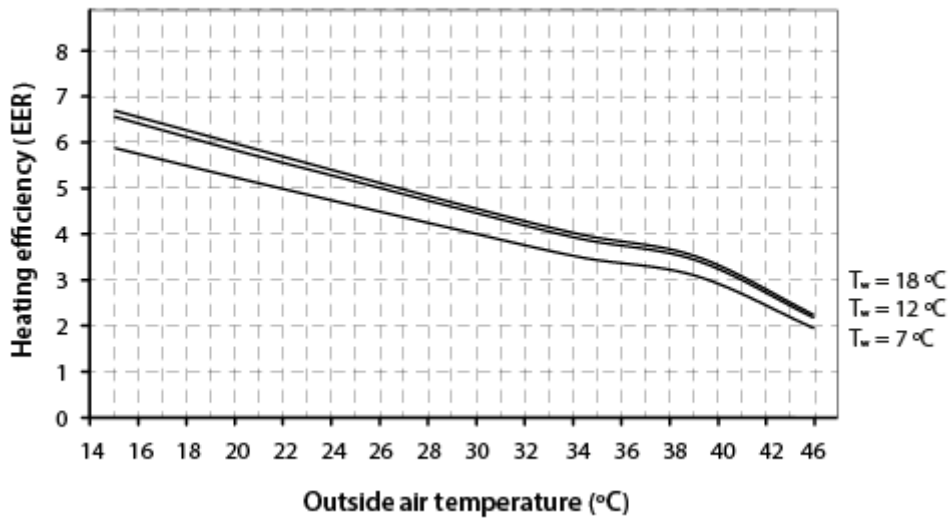


Dual Clima 9HT

Dual Clima 9HT cooling performance curves

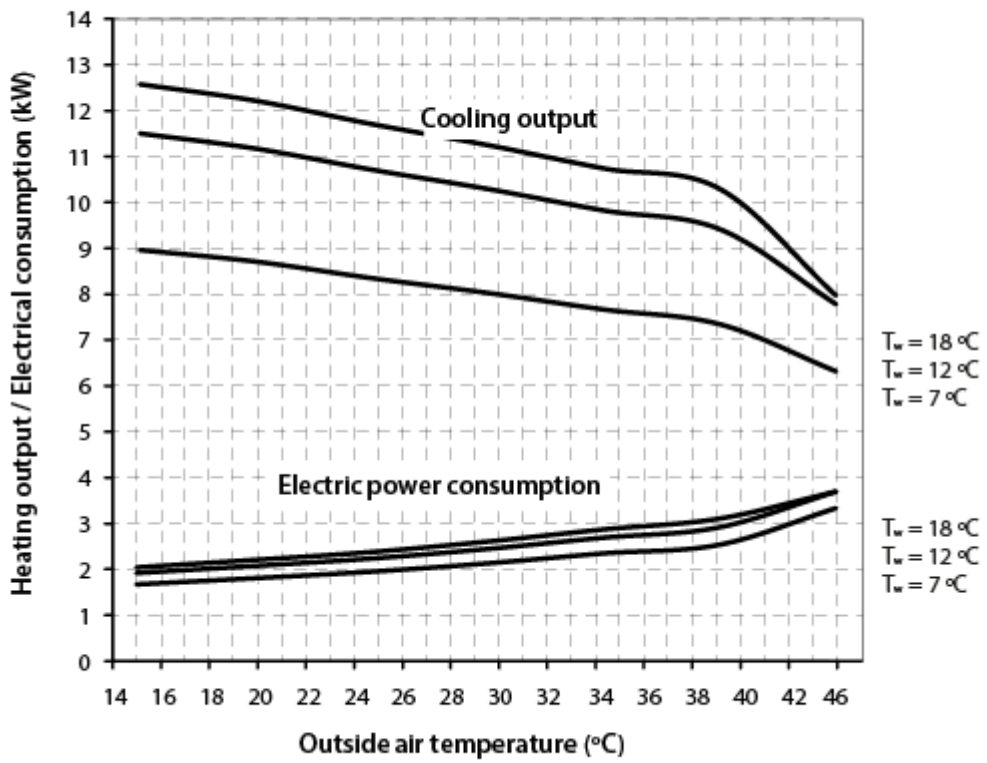


Dual Clima 9HT cooling efficiency (EER)

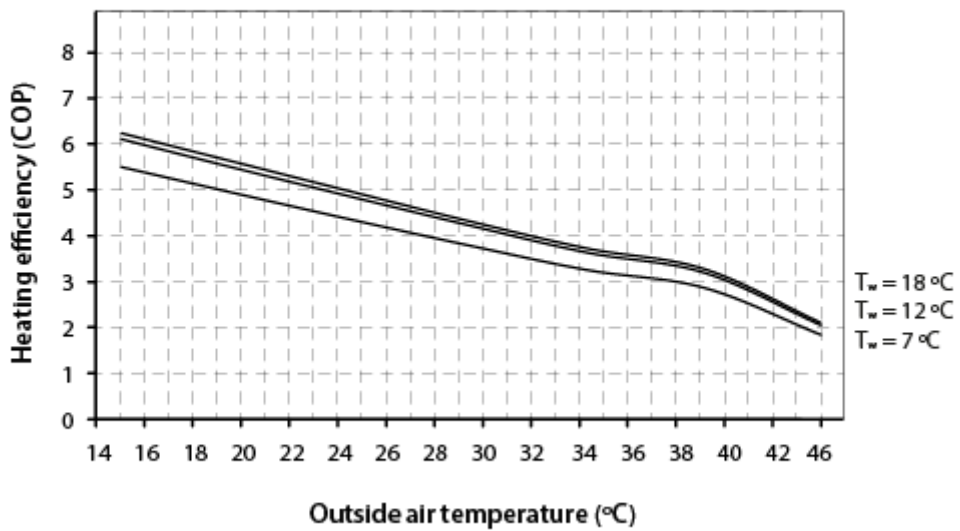


Dual Clima 12HT

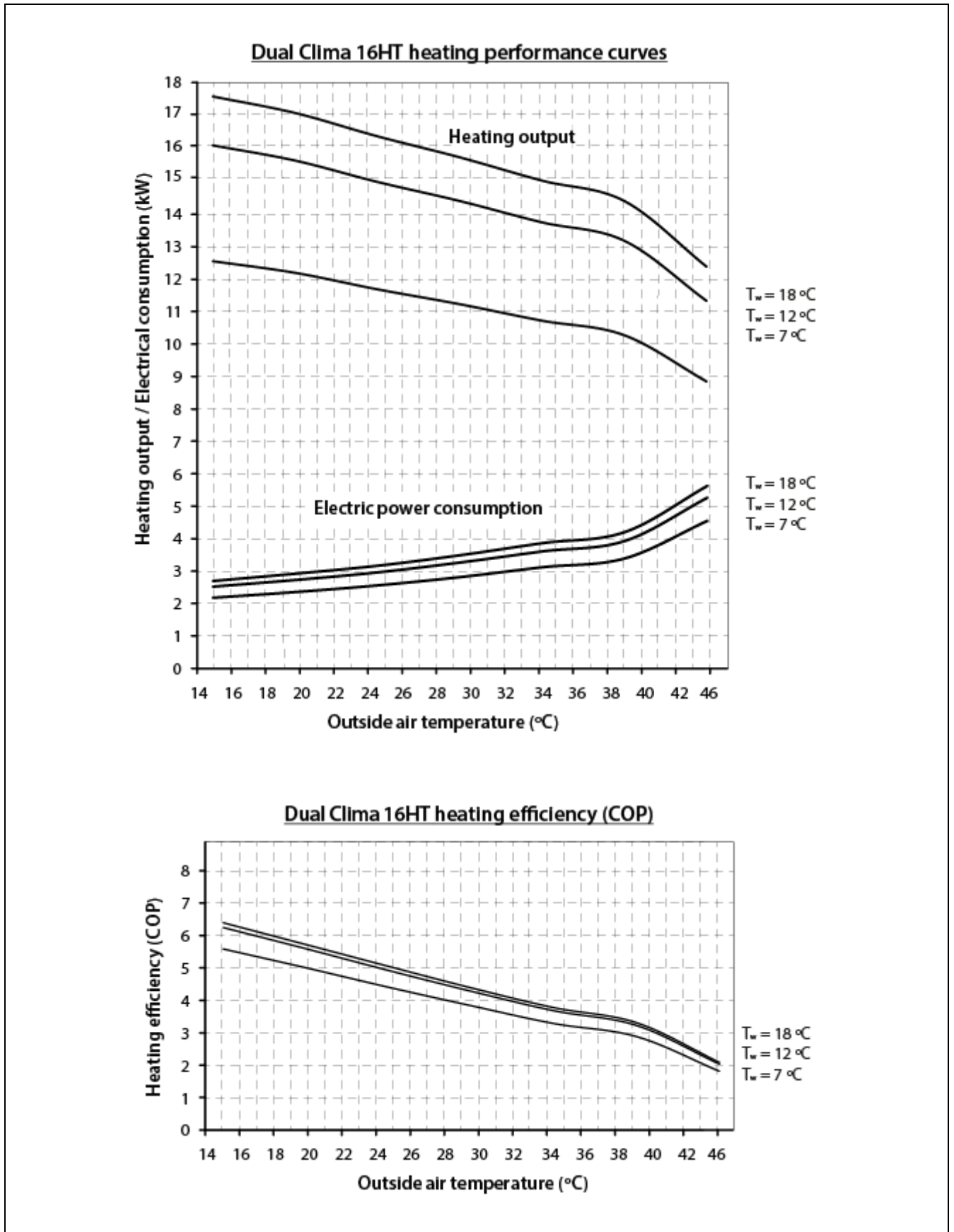
Dual Clima 12HT cooling performance curves



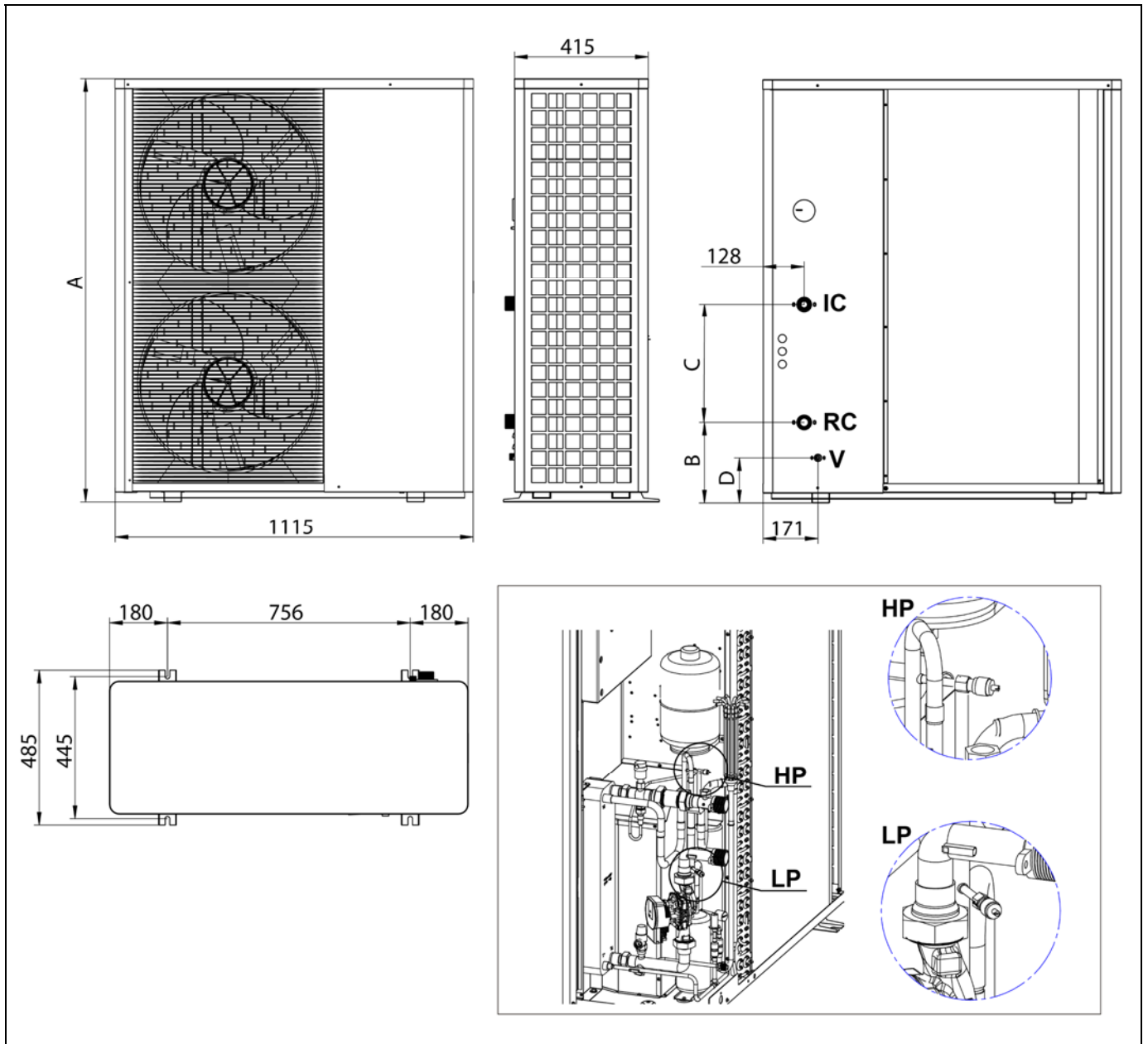
Dual Clima 12HT heating efficiency (COP)



Dual Clima 16HT/16HTT





19 DIAGRAMS AND MEASUREMENTS



	DUAL CLIMA 6HT	DUAL CLIMA 9HT	DUAL CLIMA 12HT	DUAL CLIMA 16HT	DUAL CLIMA 16HTT
A (mm)	898	898	898	1320	1320
B (mm)	141	141	140	466	466
C (mm)	279	279	476	150	150
D (mm)	62	62	62	140	140
IC: Heating/Air Conditioning Flow	1"			1-1/4"	
RC: Heating/Air Conditioning Return	1"			1-1/4"	
V: Water circuit draining	1/2"				
HP: Gas circuit High Pressure port	1/4" SAE				
LP: Gas circuit Low Pressure port	1/4" SAE				

20 ALARM CODES

The **DUAL CLIMA HT** boiler is equipped with an electronic control that performs continuous self-testing to detect any pump malfunctioning. When the electronic control detects an operating error, this is indicated by an alarm code and an alarm indicator light () on the main control panel display.

On the Settings Menu (**7**), on the Operating Status sub-menu, press the touch button  to access the alarm code menu displaying all operating failures detected by the heat pump.

To exit the menu and return to the start screen, press the touch button .

This menu displays the time and date of each alarm code detected, enabling the appliance's operating to be diagnosed and repairs carried out if necessary. The table below lists the possible alarm codes:

Code	Alarm	Description
E01	External temperature sensor failure.	Open circuit or short circuit in the external temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E02	External heat exchanger temperature sensor failure.	Open circuit or short circuit in the external heat exchanger temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E03	Suction temperature sensor failure.	Open circuit or short circuit in the suction temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E04	Heat pump settings incorrect.	Check the control card SW1's and all the Settings Menu parameters. Contact your nearest official Technical Assistance Service to have it replaced.
E05	Heat pump settings incorrect.	Check the control card SW1's and all the Settings Menu parameters. Contact your nearest official Technical Assistance Service to have it replaced.
E06	Discharge temperature sensor failure.	Open circuit or short circuit in the discharge temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E07	DHW temperature sensor failure.	Open circuit or short circuit in the DHW temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E08	Flow temperature sensor failure.	Open circuit or short circuit in the flow temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E09	Return temperature sensor failure.	Open circuit or short circuit in the return temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E10	Internal heat exchanger temperature sensor failure.	Open circuit or short circuit in the internal heat exchanger temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E11	High pressure sensor failure.	Open circuit or short circuit in the flow temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.
E12	Low pressure sensor failure.	Open circuit or short circuit in the low pressure temperature sensor. Contact your nearest official Technical Assistance Service to have it replaced.

Code	Alarm	Description
E13	High pressure protection.	High pressure safety device triggered. Disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E14	Low pressure protection.	Low pressure safety device triggered. Disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E15	Insufficient water flow.	The appliance flow meter is detecting a water flow lower than the minimum permitted for each heat pump model (see " <i>Hydraulic installation</i> "). Disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E16	Communication error.	Communication error between the PCB card and the display. Check the electrical connections. Disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E17	Compressor gas discharge temperature too high.	The compressor discharge temperature safety device has been triggered. Contact your nearest official technical assistance service.
E18	Heat pump settings incorrect.	Check the control card SW1's and all the Settings Menu parameters. Contact your nearest official Technical Assistance Service to have it replaced.
E20	IPM or compressor error.	The compressor or IPM has an operational problem. See E20 alarm code details. Check the installation then disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E22	Large temperature difference between flow and return.	Very large temperature difference between the values measured by the flow and return temperature sensors. Check the installation then disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E23	DHW mode anti-freeze function.	The DHW mode anti-freeze function has been triggered twice in the last 60 minutes. Disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E24	Heating/Cooling mode anti-freeze function.	The heating/cooling mode anti-freeze function has been triggered twice in the last 90 minutes. Disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E26	Heat pump settings incorrect.	Check the electrical diagram and the connector at sensor T6. Check the control card SW1's and all the Service Menu parameters. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.

Code	Alarm	Description
E27	Room temperature exceeds limit.	The room temperature has exceeded the upper limit permitted (45°C).
E28	High return temperature (cooling mode).	The temperature measured by the return temperature sensor in cooling mode is too high. Check the installation then disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E29	Room temperature sensor failure.	Check the electrical diagram and the connector at sensor T2. Check the control card SW1's and all the Service Menu parameters. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E32	High flow temperature (Heating and DHW mode).	The temperature measured by the flow temperature sensor in heating or DHW mode is too high. Check the installation then disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E36	Fan motor failure (three-phase models).	Fan motor failure. Contact your nearest Official Technical Assistance Service to have it repaired.
E40	Low return temperature (cooling mode).	The temperature measured by the flow temperature sensor in cooling mode is too low. Check the installation then disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E44	Fan motor failure.	Fan motor failure. Contact your nearest Official Technical Assistance Service to have it repaired.
E50	External heat exchanger sensor too high.	The external heat exchanger temperature safety device has been triggered. Contact your nearest official Technical Assistance Service.
E58	Room temperature below limit.	The room temperature has fallen below the lower limit permitted (-25°C).
E59	Flow and return sensors reversed or 4-way valve failure.	Flow and return temperature sensors reversed or 4-way valve failure. Check the installation then disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E99	Communication failure.	Communication failure between the power card and the IPM. Check the wiring. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E20-1	Overcurrent in IPM.	The electric current in the IPM is too high. Contact your nearest official Technical Assistance Service.
E20-5	Compressor failure.	The compressor is not working correctly. Check the wiring. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E20-320	Compressor overcurrent protection	The compressor electric current is too high. Contact your nearest Official Technical Assistance Service.

Code	Alarm	Description
E20-288	Excessive temperature in IPM.	The temperature in the IPM is too high. Contact your nearest official Technical Assistance Service.
E20-384	PFC module failure in IPM.	IPM error or incorrect wiring. Disconnect the heat pump from the mains and connect it again. If this alarm persists or occurs repeatedly, contact the nearest Official Technical Assistance service.
E20-32	High voltage in IPM.	High voltage in IPM. Contact your nearest official Technical Assistance Service to have it repaired.
E20-16	Low voltage in IPM.	Low voltage in IPM. Contact your nearest official Technical Assistance Service to have it repaired.
E20-264	AC voltage protection (three-phase models).	The power supply voltage is too high, too low or unstable.
E20-260	AC current protection.	The power supply current is too high. The heat pump will recover when the current returns to the permitted range of values.
E20-257	IPM communication failure.	Deficient communication in the IPM. Contact your nearest official Technical Assistance Service to have it repaired.
E20-258	Phase loss.	Power source error. Contact your nearest official Technical Assistance Service to have it repaired.
E20-298	IPM protection.	Error in the IPM module. Contact your nearest official Technical Assistance Service to have it repaired.
E20-299	Current sensor failure.	Failure of the appliance's internal ammeter, or the power wire is not crossing it. Contact your nearest official Technical Assistance Service to have it repaired.

21 GUARANTEE CONDITIONS

DOMUS TEKNIK's commercial guarantee^(*) covers the standard functioning of the products manufactured by **Domusa Calefacción S.Coop.**, in accordance with the following conditions and time periods:

1. This **commercial guarantee^(*)** is valid for the following periods, as from the **start-up date**:

3 Years for the electric and hydraulic elements: pumps, valves, etc.

5 Years for the heat pump compressors.

10 Years for the stainless steel tank unit on FUSION models.

During the 3-year period following the start-up date, **DOMUSA TEKNIK** will carry out any repairs of original flaws or defects totally free of charge.

After these 3 years have elapsed and until the end of the guarantee period, labour costs and call-out charges will be payable by the user.

2. The annual overhaul is not included in the terms of this guarantee.

3. Sufficient access must be provided for the maintenance and repair of the heat pumps. Costs arising from defective access will not be included in the terms of this guarantee.

4. The **start-up** must be made by personnel authorised by **DOMUSA TEKNIK**.

5. The **commercial guarantee^(*)** will be null and void in the following cases:

- If the mandatory annual overhaul has not been carried out as specified in the Regulation for Heating Installations in Buildings (RITE).
- If the heat pump has not been installed in accordance with the applicable laws and regulations for this type of appliance.
- If the heat pump has not been started up immediately after its installation, by personnel authorised by **DOMUSA TEKNIK**.

Failures due to misuse or incorrect installation, use of non-suitable power or fuel, supply with water with physical or chemical properties causing incrustation or corrosion, incorrect handling of the appliance and, in general, for any reason beyond **DOMUSA TEKNIK's** control, are excluded from this guarantee..

This guarantee does not affect the consumer's rights as stipulated by law.

(*) Guarantee conditions valid for Spain only.

DOMUSA

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CDOC002751 22/11/22

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