

# Dual Clima HT Commissioning Guide

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# 1.0 Pre-Commissioning

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## 1.1 Pre-Commissioning Checks

### Pre commissioning

1. Ensure the heat pump is installed in accordance with the installation manual.
2. Ensure power is isolated.
3. Remove the side and front panels as well as the isolation panel of the electrical enclosure.
4. Check the pre-charge of the expansion vessel(s) is set to 1 Bar.
5. Ensure condensate drain is not covered during installation and has adequate drainage.
6. Ensure all electrical connections are made as per manufacturers or CHNZ wiring diagrams.
7. Ensure hydronic connections of the heat pump and all accessories are correct and as per design.
8. Ensure deaerator is installed correctly in accordance with the installation manual and bleed cap is left open.
9. Ensure the heat pump electrical enclosure is completely sealed after making electrical connections.

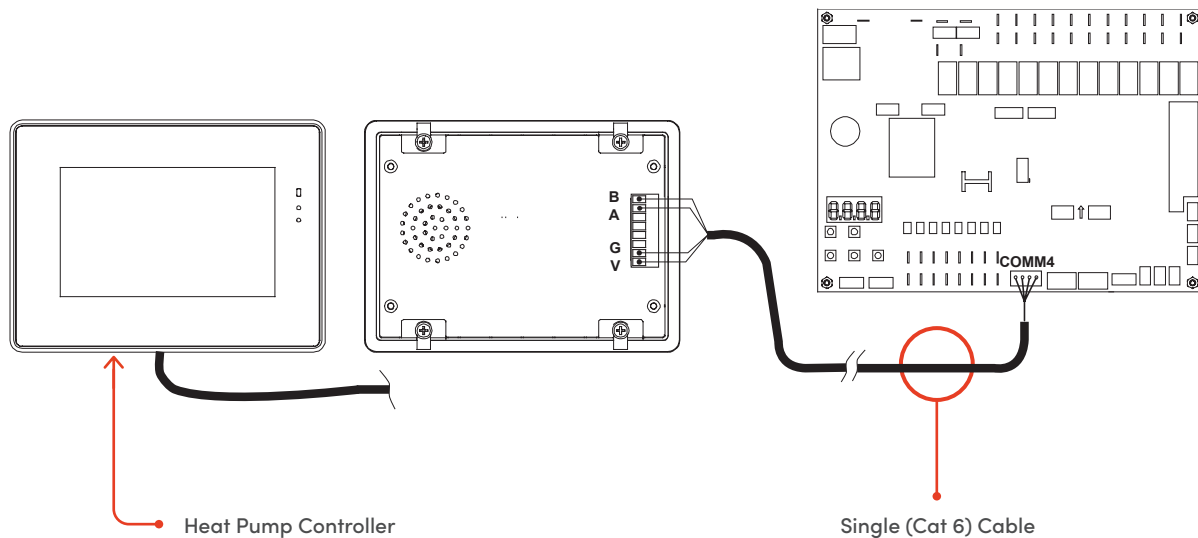
## 1.2 Filling the System with Water

Fill and thoroughly flush the system with a flushing cart or suitable mains pressure, until there is no sign of air returning through the primary feed pipes. This will remove most of the air from the system. Now pressurise the system to 0.1 mPa on the heat pump's pressure gauge. Ensure the automatic air vents in the system and heat pump are open.

Ensure all system water joints and connections are leak tight. Once all necessary components are installed, the system can be run.

# 2.0 Heat Pump Electrical Connections

## 2.1 Controller Connection



The heat pump touch screen controller must be connected as per the diagram above. Connection between Power Card PCB and Controller must be made from COMM4 to BAGV. This connection is **LOW VOLTAGE ONLY**. A maximum distance of 30 metres and cable diameter of  $0.25\text{mm}^2$  -  $1.25\text{mm}^2$  should be observed. Care must be taken to avoid running the interconnecting cable in close proximity to any 230V mains cables.

Installation of the heat pump controller is required for heat pump operation.

The heat pump controller must be installed indoors ie. in the garage or HWC cupboard and be accessible for service and maintenance.

## 2.2 Room Thermostat Connection

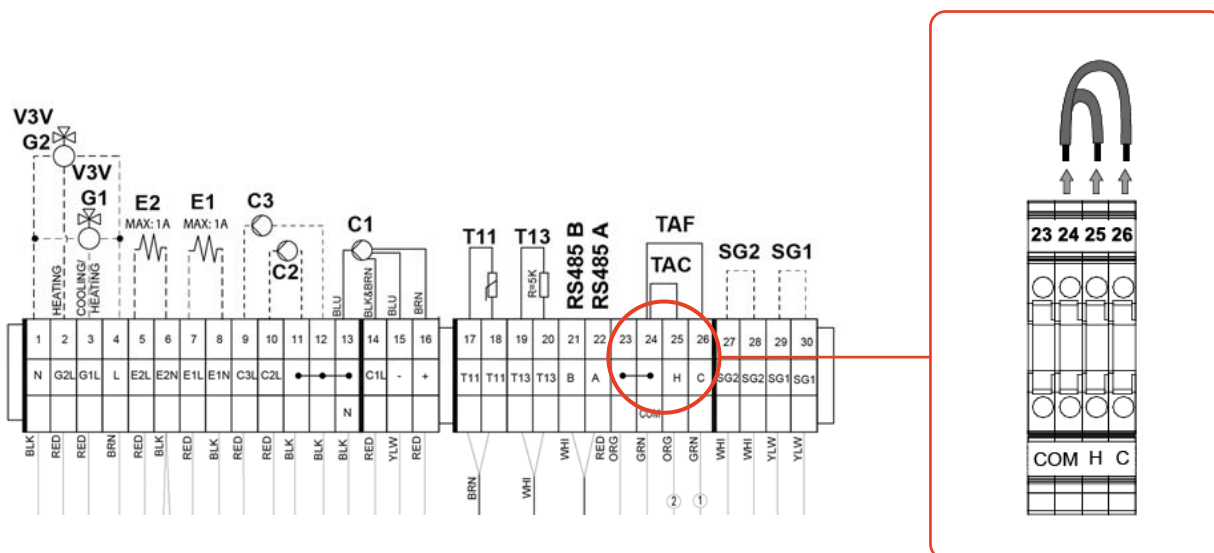
Connection of room thermostat(s) to the heat pump for **HEATING** must be made using terminals (24-25). When these contacts are closed the heat pump will receive a run signal to operate in heating mode only.

Connection of room thermostat(s) to the heat pump for **COOLING** must be made using terminals (24-26) for cooling. When these contacts are closed the heat pump will receive a run signal to operate in cooling mode only.

Terminals 24 (common), 25 and 26 come from factory with bridge connectors installed. This allows Heating/Cooling, On/Off control from the heat pump controller. This control will be based of water flow temp only.

**BOTH factory bridges must be removed (24-25 and 24-26) if a room thermostat is being connected. Even if the system is heating only.**

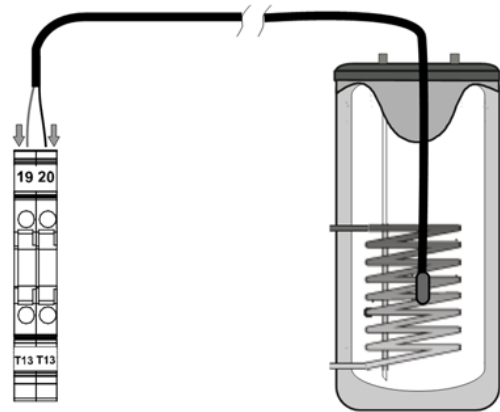
**VOLT FREE CONTACTS ONLY – DO NOT CONNECT 230V**



## 2.3 DHW Connection

### DHW Sensor

Connection of the DHW sensor must be made into terminals 19 and 20. The 5m long sensor supplied with the heat pump is a 5K NTC type. A maximum distance of 20 metres and cable diameter of 0.25mm<sup>2</sup> - 1.25 mm<sup>2</sup> should be observed. **Before sensor connection ensure the resistor connected to terminals 19 and 20 is removed.**



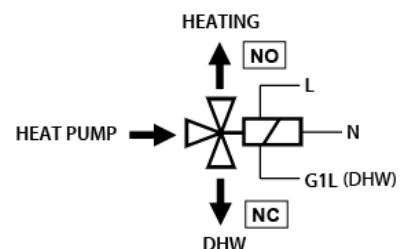
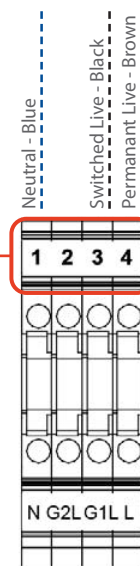
### DHW 3-Way Valve or Diverter Valve (motor return)

Connection of a DHW motor return 3-way valve or Diverter Valve must be made into terminals 1 (NEUTRAL), 3 (SWITCH LIVE) and 4 (PERMANENT LIVE).

**THESE TERMINALS ARE 230V MAINS VOLTAGE ONLY**

From factory, DHW is enabled in the Domusa heat pump controller. Set the DHW set point from the main screen to the desired temperature. Ensure 3-way valve actuator is operating in the correct orientation.

FAR 3-Way Valve

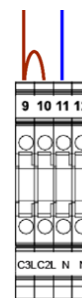


## 2.4 Connection of Additional Circulating Pumps

### Connecting a single backup pump for use in both Heating/Cooling and DHW mode

This circulation pump will run in parallel with the appliance's internal pump (C1) and will be active when the appliance is running in either Heating, Cooling or DHW production mode.

The pump is connected between electrical terminals 9 (Live) and 11 (Neutral). A jumper must be installed between terminals 9 and 10. (Live)

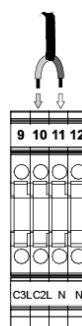


Max current rating for  
C1 output is 1A

### 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 pump is connected between electrical terminals 10 (Live) and 11 (Neutral).

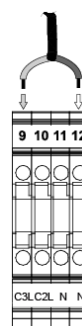


Max current rating for  
C1 output is 1A

### 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 pump is connected between electrical terminals 9 (Live) and 12 (Neutral).

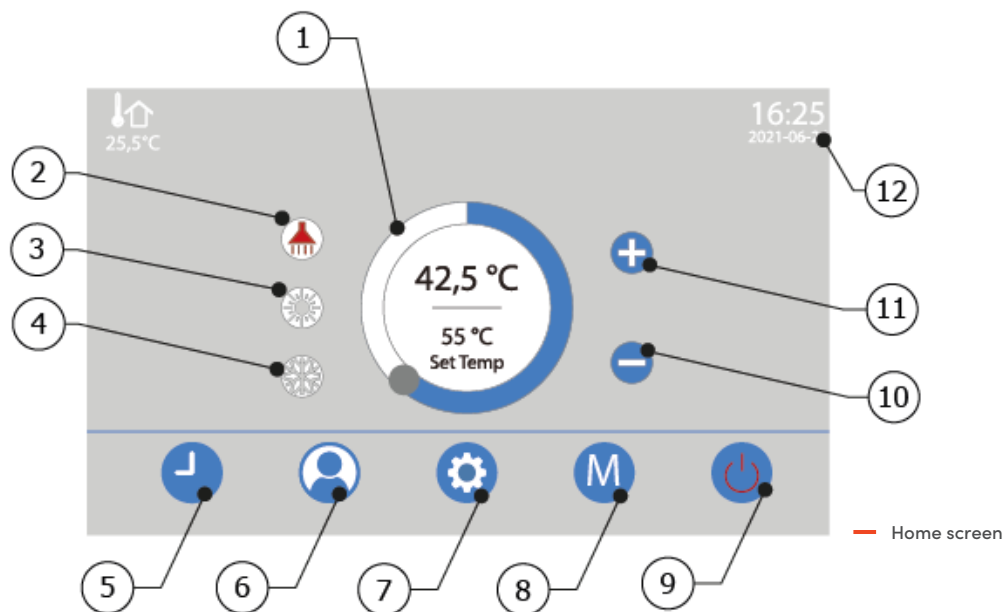


Max current rating for  
C2 output is 1A

# 3.0 Heat Pump Controller and Settings

## Switching the heat pump ON and OFF

To switch on the heat pump, press and hold 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.



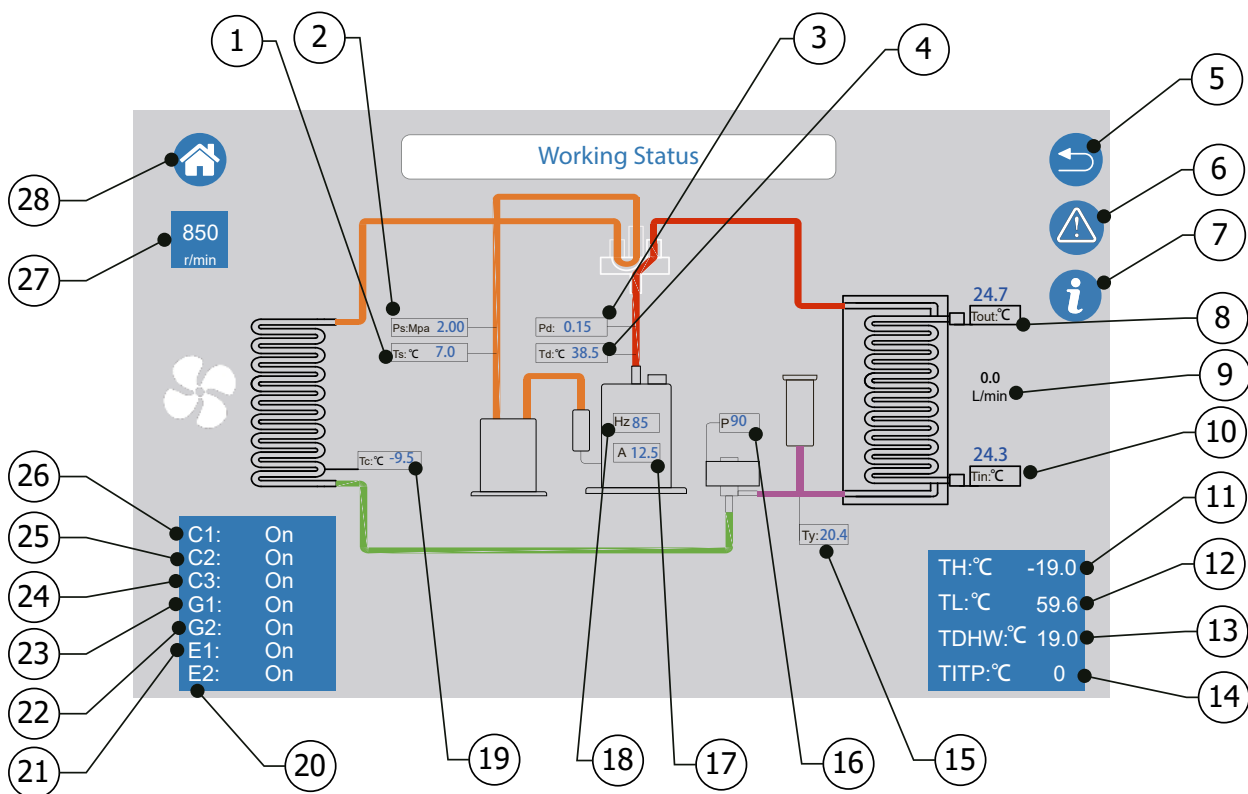
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|--|--|---|
| <p><b>1. Temperature selection:</b><br/>Drag the slider to change the temperature for the different operating modes</p> <p><b>2. DHW setpoint temperature:</b><br/>This selects and displays the DHW setpoint temperature.</p> <p><b>3. Heating setpoint temperature:</b><br/>This selects and displays the heating setpoint temperature.</p> <p><b>4. Cooling setpoint temperature:</b><br/>This selects and displays the cooling setpoint temperature.</p> | <p><b>5. Programming Menu touch button:</b><br/>Press this button to access the heat pump programming menu.</p> <p><b>6. User Menu touch button:</b><br/>Press this button to access the heat pump user menu.</p> <p><b>7. Settings Menu touch button:</b><br/>Press this button to access the heat pump configuration menu.</p> <p><b>8. Operating Mode Menu touch button:</b><br/>Press this button to access the different operating modes.</p> | <p><b>9. On/Off button:</b><br/>This button switches the heat pump on and off.</p> <p><b>10. "+" touch button:</b><br/>Press this button to increase the setpoint temperature for the different operating modes.</p> <p><b>11. "-" touch button:</b><br/>Press this button to reduce the setpoint temperature for the different operating modes.</p> <p><b>12. Date and time:</b><br/>This selects and displays the date and time. Hold down to change.</p> |
|--|--|---|



## Working Status Screen

To access the Working Status screen, press setting menu button (7) and then Working Status.

This is used to live view all vital heat pump operations.



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| 1. Suction temperature.                    | 11. Saturated Discharge Temperature          | 21. E1 DHW back-up outlet state.                                     |
| 2. Suction Pressure                        | 12. Saturated Suction Temperature            | 22. G2 heating/cooling 3WV position (ON-Heating / OFF-Cooling)       |
| 3. Discharge Pressure                      | 13. DHW Temperature                          | 23. DHW/heating-cooling 3WV position (ON-DHW / OFF- heating-cooling) |
| 4. Discharge Temperature                   | 14. Inverter Power Module (IPM) temperature. | 24. DHW back-up pump outlet state.                                   |
| 5. Return Button                           | 15. Liquid line temperature                  | 25. C2 Heating back-up outlet state.                                 |
| 6. Errors display access button.           | 16. EEV position                             | 26. C1 Heat pump circulation back-up state.                          |
| 7. Information C parameters access button. | 17. Compressor current draw                  | 27. Fan Speed RPM  |
| 8. Water Outlet Temperature                | 18. Compressor frequency                     | 28. Home button (return to main display).                            |
| 9. Current water circuit flow.             | 19. Coil outlet temperature.                 |  |
| 10. Water Inlet Temperature                | 20. E2 heating back-up outlet state.         |  |

# 4.0 System Configuration

To Access parameters, press setting menu button (7) and then System Parameters, Enter the password 99.

Below is a list of parameters relevant to different system types. Work through each parameter and change to suit your system type, emitters and DHW requirements. For a full list of parameters see Installation Manual.

## Temperature Set Points

Parameter	Description	Default	Set To
<b>P02</b> or changed from main screen	Heating Temperature Setpoint	45°C	<b>Radiators</b> = 50°C – 65°C <b>Underfloor</b> = 35 °C – 50°C
<b>P03</b> or changed from main screen	Cooling temperature Setpoint	12°C	<b>Fan Coil</b> = 7°C – 12°C <b>Underfloor or Module panel</b> = 10°C (Dew Point control must be used)

## OTC Mode Set Points – Outdoor Temperature Conditions (Weather Compensation)

Parameter	Description	Default	Set To
<b>P08</b>	Used to adjust the maximum temperature of the OTC operating curve according to the outdoor temperature. Heating mode only.	65°C	<b>Radiators</b> = 65°C <b>Underfloor</b> = 45°C
<b>P09</b> or changed from main screen	Used to adjust the offset of the OTC operating curve according to the outdoor temperature. Heating mode only.	0°C	<b>Climate zone specific</b> <b>+3°C</b> = Upper North Island <b>0°C</b> = Lower North & Upper South Island <b>-3°C</b> = Lower South Island
<b>P19</b> or change from the main screen - Operating Modes	OTC mode activation	1	<b>0</b> = Disable if OTC (weather compensation) not required <b>1</b> = Enable if OTC (weather compensation) is required

If installation is a **heating only** or **cooling only** system, please set appropriately.

Parameter	Description	Default	Set To
<b>P62</b>	This parameter can be used to activate and deactivate the heating and/or cooling operating modes.	0	0 - Heating + Cooling 1 – Cooling Only 2 – Heating Only

## 5.0 Domestic Hot Water

If not using DHW, change parameter P63 to 0 and disregard the following

To meet requirements set in MBIE NZBC, clause G12 stored DHW must be heated to 60°C once a day, or 60°C for the period of one hour once a week, for protection against Legionella. CHNZ recommend using a setpoint for DHW of 60°C which will meet this requirement.

If using a setpoint lower than 60°C it is recommended to enable the anti-legionella mode and its associated functions as seen below.

Parameter	Description	Default	Range	Set To
<b>P04</b> or changed from main screen	DHW temperature Setpoint	45°C	10°C-75°C	60°C
<b>P10</b>	Interval between days for anti-legionella activation	7 (day)	7-9 days	7
<b>P11</b>	Hour at which the anti-legionella function will be activated	23 (hour)	0-23 hours	23
<b>P12</b>	Duration of anti-legionella function	10 (min)	5-99 minutes	60 mins
<b>P13</b>	Anti-legionella function setpoint	70°C	50°C-70°C	60°C
<b>P14</b>	Anti-legionella function mode	2	0: Auto Mode 1: Manual Mode 2: Disabled	2 – if P13 set to 60°C or greater 0 – if P13 set below 60°C
<b>P63</b>	DHW mode activation	1	0: Disable 1: Enable	0 – if not using DHW 1 – if using DHW

It's recommended that a suitably sized electric element is installed in the HWC and left OFF as a redundancy only.

## 6.0 High Flow Temperatures and Underfloor

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With underfloor installations it is important that high flow temperature ie.  $>50^{\circ}\text{C}$  are not introduced to the floor. High temperatures can cause damage to certain construction materials as well as being uncomfortable.

Please fit the supplied sticker to the bezel/surround of the heat pump controller to advise users of hazards when increasing the setpoint.

Sticker can be found with the Commissioning Guide QR code, fixed to the outside of the heatpump box.



### WARNING

Your system is designed to operate with low water temperatures. Don't turn the heating set point up before talking to your installer or CHNZ Aftersales

## 7.0 Resetting Errors

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To reset errors, the heat pump power supply must be cycled off and on at the isolation switch.

At the point of commissioning a common error is E15 (Insufficient water flow) this is likely caused by air still being present in the system or installation debris blocking the filter ball valve. Check and clean the filter ball valve installed at the heat pump and reset. For all other faults please refer to the manufacturer's instruction manual.

## 8.0 Troubleshooting

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For all trouble shooting please refer to page 120-157 of the [Domusa Service Manual](#). If any error persists, please contact our technical aftersales team for assistance with the fault.

### Contact

Email: [aftersales@centralheating.co.nz](mailto:aftersales@centralheating.co.nz)

Phone: 0800 357 1233

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T E K N I K