Central Heating
TRADE
by Rinnai

Domusa Dual Clima HT PRO Commissioning Guide

DOMUSA
TEKNIK

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Attention Installers: The heat pump controller is packaged inside the unit. A bag with the required accessories is also supplied and can be found in the bottom of the unit.

1.0 Pre-Commissioning

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.

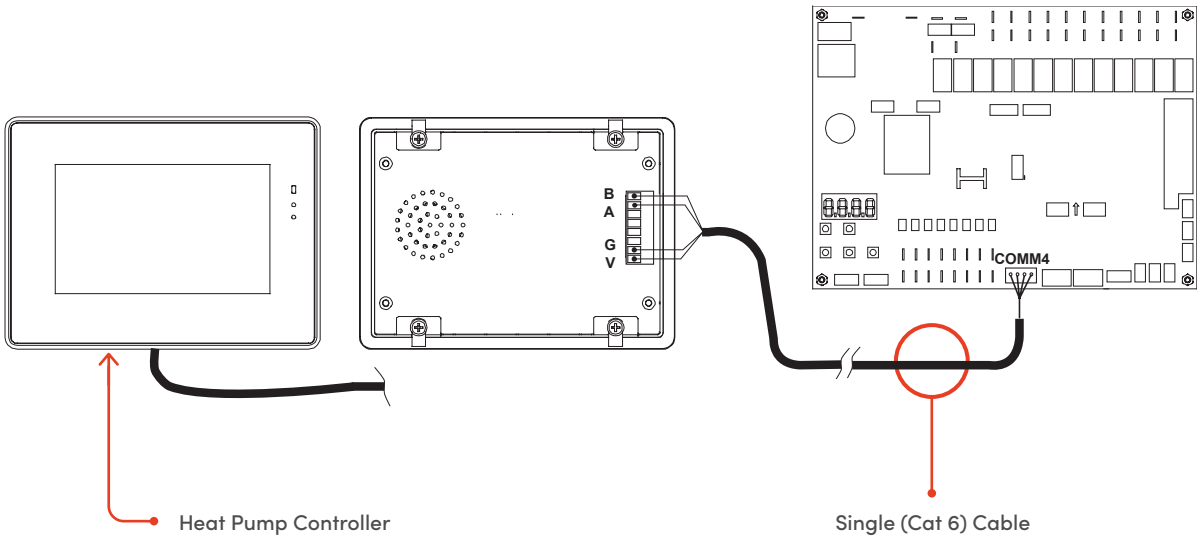
1.2 Filling the System with Water

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 0.25mm^2 - 1.25mm^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 i.e. In the garage or HWC cupboard and be accessible for service and maintenance.

2.2 Room Thermostat Connection

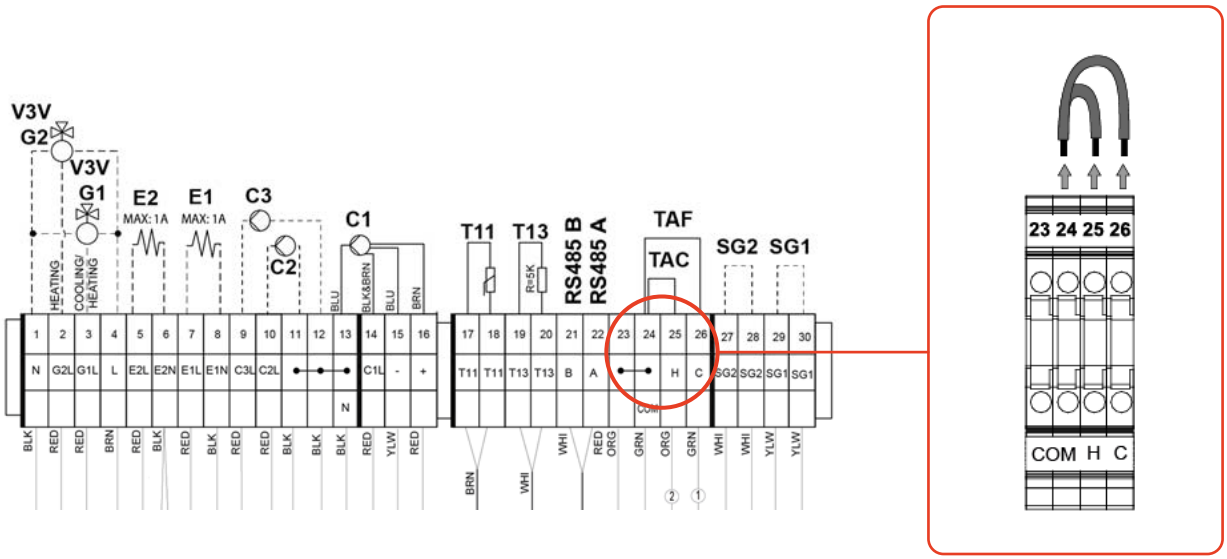
Connection of room thermostat(s) to the heat pump for **HEATING** must be made using terminals (24-25). When these contacts are closed the heat pump will receive a run signal to operate in heating mode only.

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.

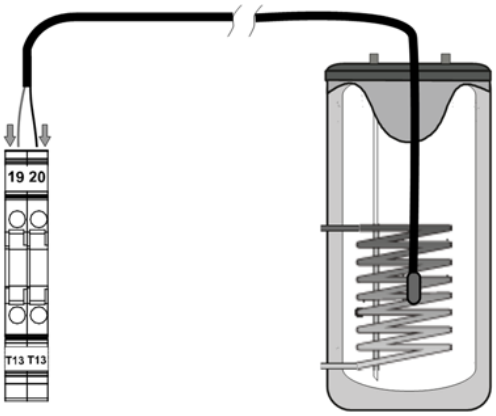
VOLT FREE CONTACTS ONLY – DO NOT CONNECT 230V



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^2 - 1.25 mm^2 should be observed. **Before sensor connection ensure the resistor connected to terminals 19 and 20 is removed.**

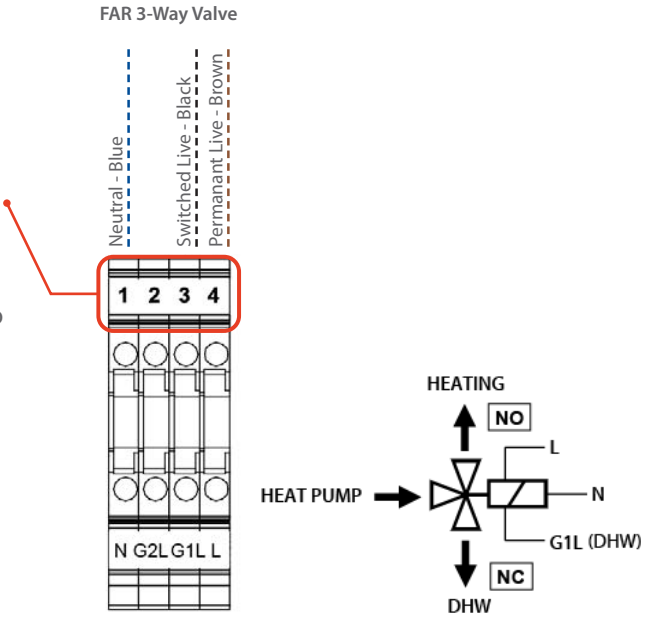


DHW 3-Way Valve or Diverter Valve (motor return)

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.



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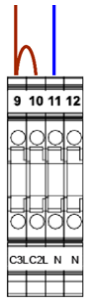
2.4 Connection of Additional Circulating Pumps

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)

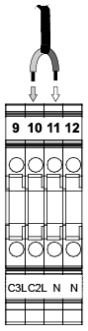


Max current rating for C1 output is 1A

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).

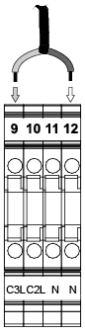


Max current rating for C1 output is 1A

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).

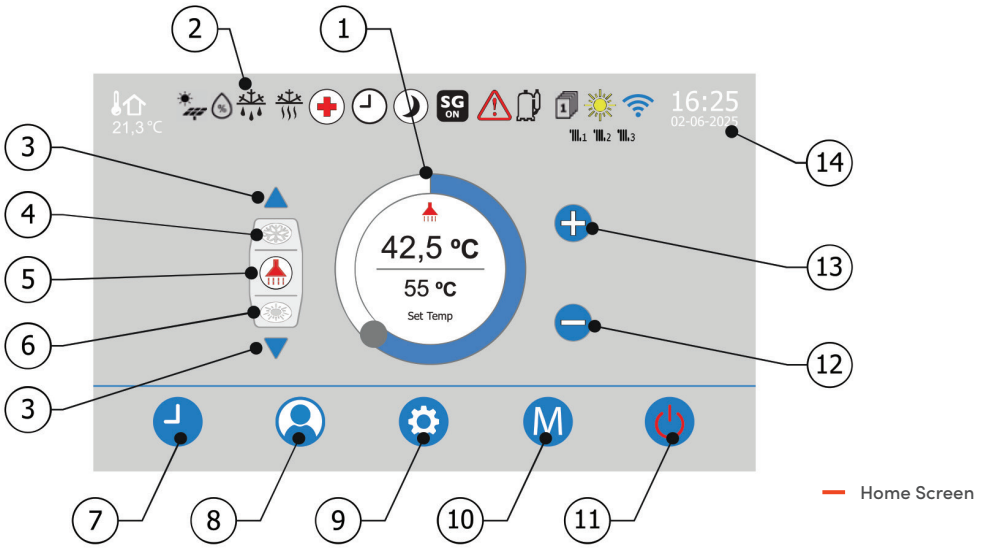


Max current rating for C2 output is 1A

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 (11) 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.

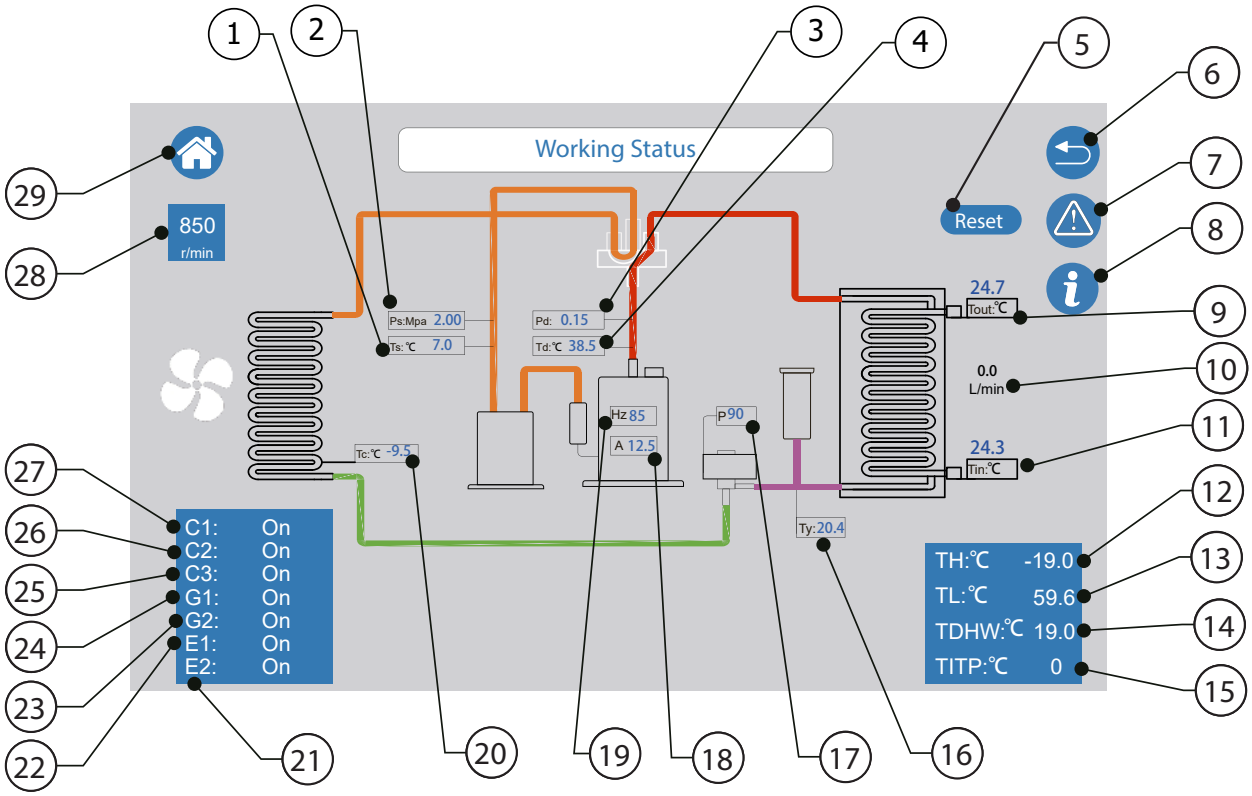


1. **Temperature Control Selection:** Press this button to change the temperature for the different operating modes.
2. **Status Indicator:** Display of heat pump running status indicator icons every moment. *(See "Icons on the control unit ").*
3. **Navigating Arrows:** Click on these arrows to browse through the temperature display and set point selection screens.
4. **Previous Screen Indicator:** This icon indicates the previous screen, which is accessed by pressing the bottom arrow.
5. **Current Screen Indicator:** This icon indicates the current screen selection.
6. **Next Screen Indicator:** This icon indicates the next screen, which is accessed by pressing the top arrow.
7. **Programming Menu Touch Button:** Press this button to access the heat pump programming menu. *(See "Time programming").*
8. **User Menu Touch Button:** Press this button to access the heat pump user menu. *(See "User Menu ").*
9. **Settings Menu Touch Button:** Press this button to access the heat pump configuration menu. *(See "Settings Menu ").*
10. **Operating Mode Menu Touch Button:** Press this button to access the different operating modes. *(See "Selecting the operating modes").*
11. **On/Off Button:** This button switches the heat pump on and off.
12. **"-" Touch Button:** Press this button to reduce the set point temperature for the different operating modes.
13. **"+" Touch Button:** Press this button to increase the set point temperature for the different operating modes.
14. **Date and Time:** This selects and displays the date and time.

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.



1. Suction Temperature
2. Suction Pressure
3. Discharge Pressure
4. Discharge Temperature
5. Reset Button
6. Return Button
7. Errors Display Access Button
8. Information C Parameters Access Button
9. Water Outlet Temperature
10. Current Water Circuit Flow
11. Water Inlet Temperature
12. Saturated Discharge Temperature
13. Saturated Suction Temperature
14. DHW Temperature
15. Inverter Power Module (Ipm) Temperature
16. Liquid Line Temperature
17. EEV Position
18. Compressor Current Draw
19. Compressor Frequency
20. Coil Outlet Temperature
21. E2 Heating Back-Up Outlet State
22. E1 DHW Back-Up Outlet State
23. G2 Heating/Cooling 3WV Position (On-Heating/Off-Cooling)
24. DHW/Heating-Cooling 3WV Position (On-DHW/Off- Heating-Cooling)
25. DHW Back-Up Pump Outlet State
26. C2 Heating Back-Up Outlet State
27. C1 Heat Pump Circulation Back-Up State
28. Fan Speed RPM
29. Home Button (Return To Main Display)

4.0 System Configuration

To access parameters, press setting menu button (9) 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
P02 or changed from main screen	Heating Temperature Set point	45°C	**Radiators** = 50°C – 65°C **Underfloor** = 35 °C – 50°C
P03 or changed from main screen	Cooling temperature Set point	12°C	**Fan Coil** = 7°C – 12°C **Underfloor** or **Module panel** = 10°C (Dew Point control must be used)

OTC Mode Set Points - Outdoor Temperature Conditions (Weather Compensation)

If OTC mode is being used the below parameter requires modification. Once the desired value is selected OTC mode must be selected in the "Operating Modes" menu.

Parameter	Description	Default	Set To
P154	Used to enable and set the K-Factor curve profile	0	**Radiators** = 2 **Underfloor** = 0.9

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

Parameter	Description	Default	Set To
P62	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

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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 set point for DHW of 60°C which will meet this requirement.

If using a set point 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
P04 or changed from main screen	DHW temperature Set point	45°C	10°C-75°C	60°C
P10	Interval between days for anti-legionella activation	7 (day)	7-9 days	7
P11	Hour at which the anti-legionella function will be activated	23 (hour)	0-23 hours	23
P12	Duration of anti-legionella function	10 (min)	5-99 minutes	60 mins
P13	Anti-legionella function set point	70°C	50°C-70°C	60°C
P14	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
P63	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

With underfloor installations it is important that high flow temperature i.e. >50°C are not introduce 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 set point.

Sticker can be found with the Commissioning Guide QR code, fixed to the outside of the heat pump 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

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

For all trouble shooting please refer to page 84-89 of the Installation and Operating Instructions. If any error persists, please contact our technical aftersales team for assistance with the fault.

Contact

Email: aftersales@centralheating.co.nz
Phone: 0800 357 1233

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New Zealand's Experts

The combination of our skills, products, experience and people, make us New Zealand's experts in the central heating industry. We take pride in supplying the right heating system or products for our customers' specific functionality and budget requirements so that at the end of every project, both our customers and their clients are delighted—and warm.

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