HYBRID INSTRUCTIONS

HP290 MONOBLOC HEAT PUMP SYSTEM

SCAN for Installation & Maintenance Guide

SCAN for Schematics Guide

SCAN for Halo Lite RF Installation Manual

SCAN for Hybrid Instructions Manual

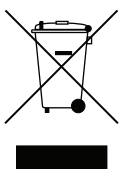
When replacing any part on this appliance, use only spare parts that you can be assured conform to the safety and performance specification that we require. Do not use reconditioned or copy parts that have not been clearly authorised by Ideal Heating.

For the very latest copy of literature for specification and maintenance practices visit our website idealheating.com where you can download the relevant information in PDF format.

May 2024
UIN 241526 A02

NOTES FOR THE INSTALLER

For any technical queries please contact the Ideal installer helpline : 01482 498663



WEEE DIRECTIVE 2012/19/EU
Waste Electrical and Electronic Equipment Directive

- At the end of the product life, dispose of the packaging and product in a corresponding recycle centre.
- Do not dispose of the unit with the usual domestic refuse.
- Do not burn the product.
- Remove the batteries.
- Dispose of the batteries according to the local statutory requirements and not with the usual domestic refuse.

benchmark
COLLECTIVE MARK
THE MARK OF QUALITY FOR THE INSTALLATION, COMMISSIONING AND SERVICING OF DOMESTIC HEATING AND HOT WATER SYSTEMS

The code of practice for the installation, commissioning& servicing of central heating systems

UK CA

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NOTE TO INSTALLER: LEAVE THESE INSTRUCTIONS WITH APPLIANCE

Ideal Heating reserve the right to vary specification without notice

CONTENTS

Glosssary of Terms

AHS	Additional Heat Source
T1	Common Flow Thermistor
T4HMIN	Outdoor temperature at which the heat pump will turn off in heating mode.
T4_AHS_ON	Outdoor temperature at which the boiler will activate in heating mode.
T4DHWMIN	Outdoor temperature which the heat pump will turn off in DHW mode.

1.1 INTRODUCTION

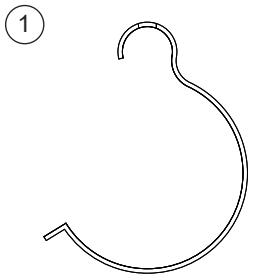
This kit is required for all hybrid installations consisting of the HP290 monobloc heat pump. The HP290 monobloc heat pump is compatible with heat only, system and combination boilers in hybrid installations.

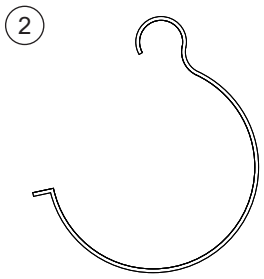
Full schematics can be found in Appendix 1.1 at the end of this document.

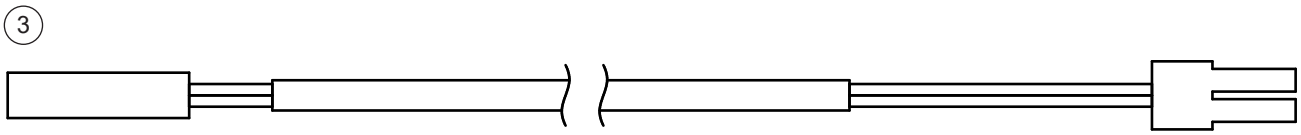
All settings relating to hybrid installations should be set up and altered by a competent person. For full installation instructions, refer to the HP290 Installation & Maintenance manual.

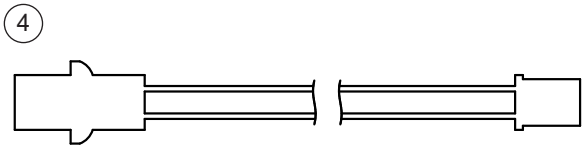
1.2 KIT CONTENTS

1. Thermistor Clip 22 mm x1
2. Thermistor Clip 28 mm x1
3. Thermistor (T1) 10 mm x1
4. Thermistor Extension Wire 400 mm x1









1.3 INSTALLING THE HP290 HYBRID KIT

Install the HP290 Hybrid kit as follows (Refer to Figure 1):

1. Make sure that the appliance ON/OFF switch is set to OFF.
2. Make sure that the electrical power to the outdoor unit is isolated.
3. Remove the HP290 Monobloc top and side panels. Refer to the HP290 Installation & Maintenance manual 4.1.7 Accessing the Casing.
4. **On the Outdoor PCB (Figure 2), set dip-switch S1 (switch3) to ON.** (Refer to the HP290 Installation & Maintenance manual Section 5.5).
5. Attach the T1 Common Flow Thermistor (supplied with the Hybrid Kit) to connector CN39 (Figure 2).

Note. If it is preferred to connect the T1 Common Flow Thermistor to the indoor PCB, then connect the provided transfer wire to the T1 Thermistor. Make sure that power to the indoor control box is isolated, remove the cover and connect the transfer wire to CN6 on the indoor PCB (Figure 3).

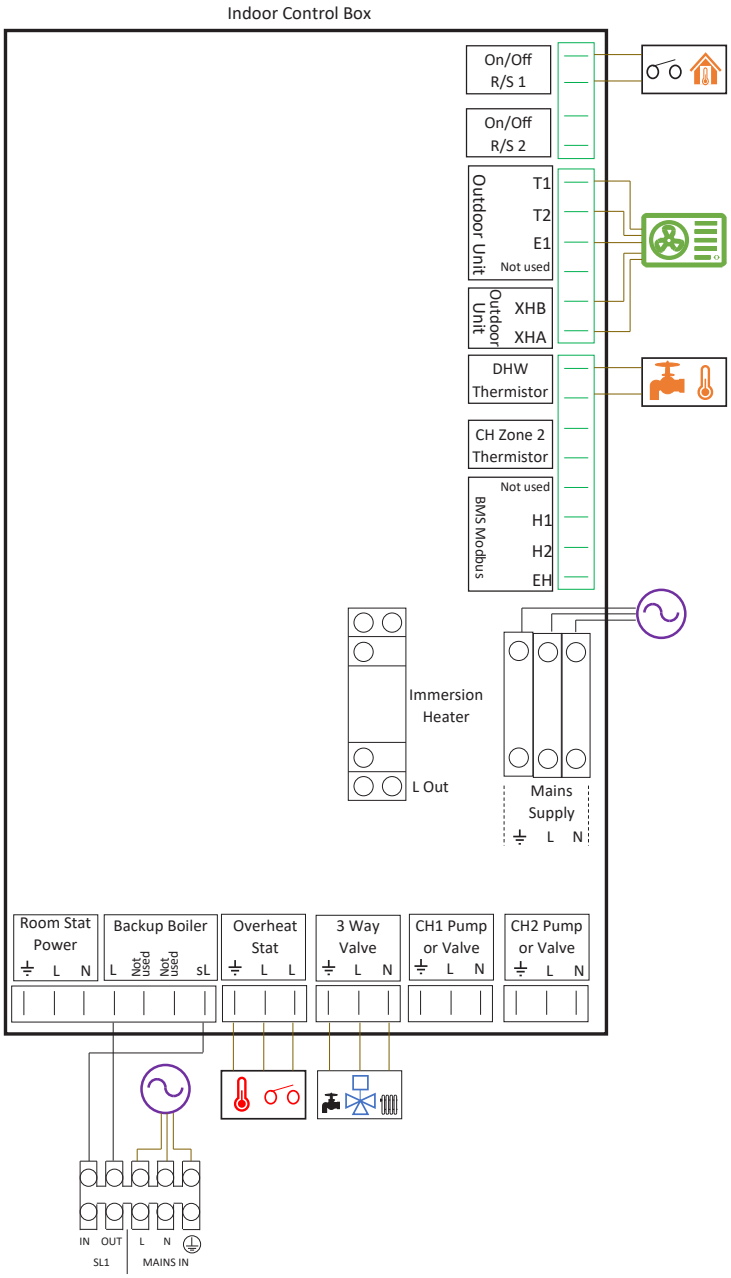


Figure 1. HP290 Hybrid Wiring Diagram

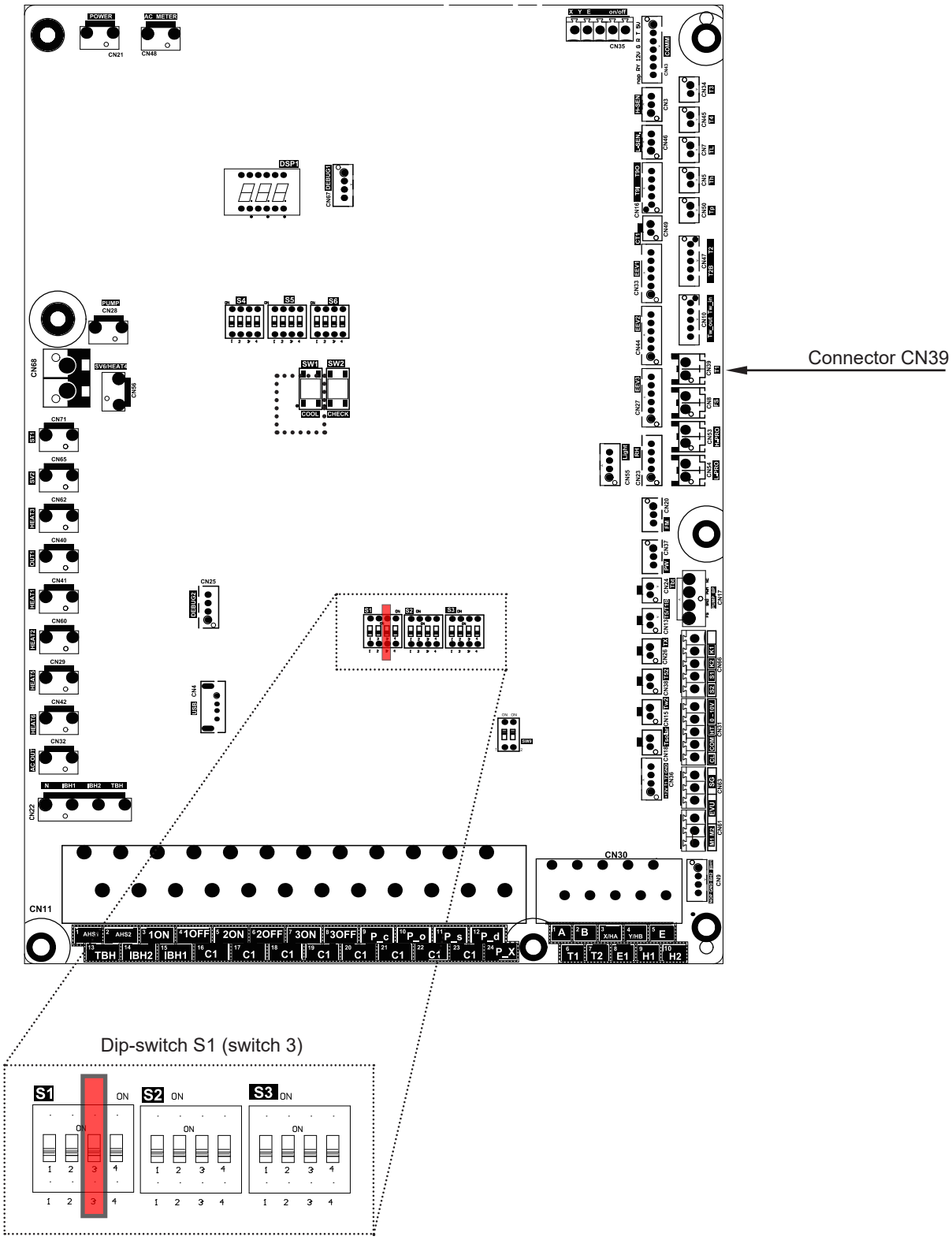


Figure 2. HP290 Outdoor PCB

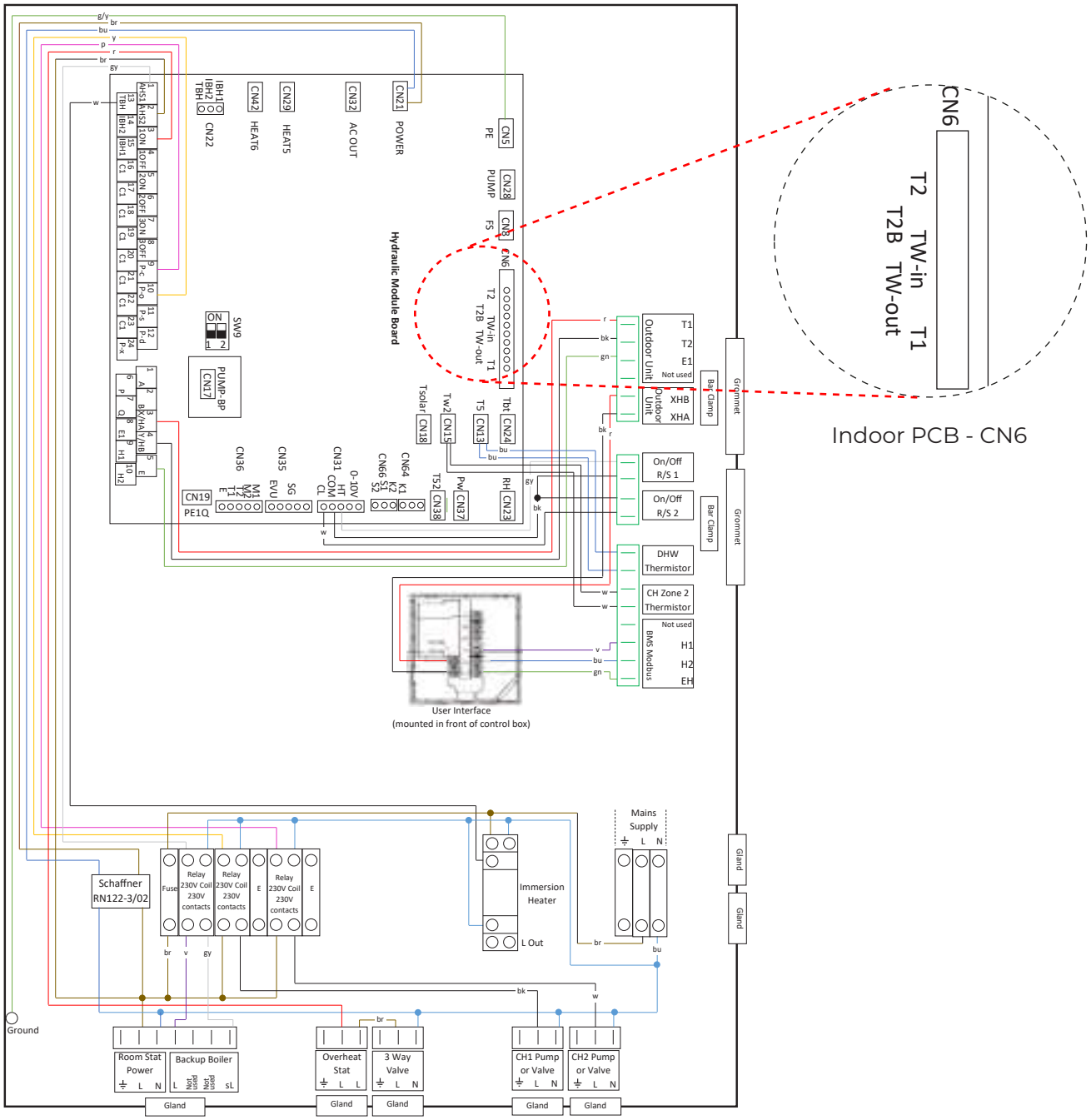


Figure 3. HP290 Control Box - Internal Wiring

1.4 HP290 INTERFACE LAYOUT

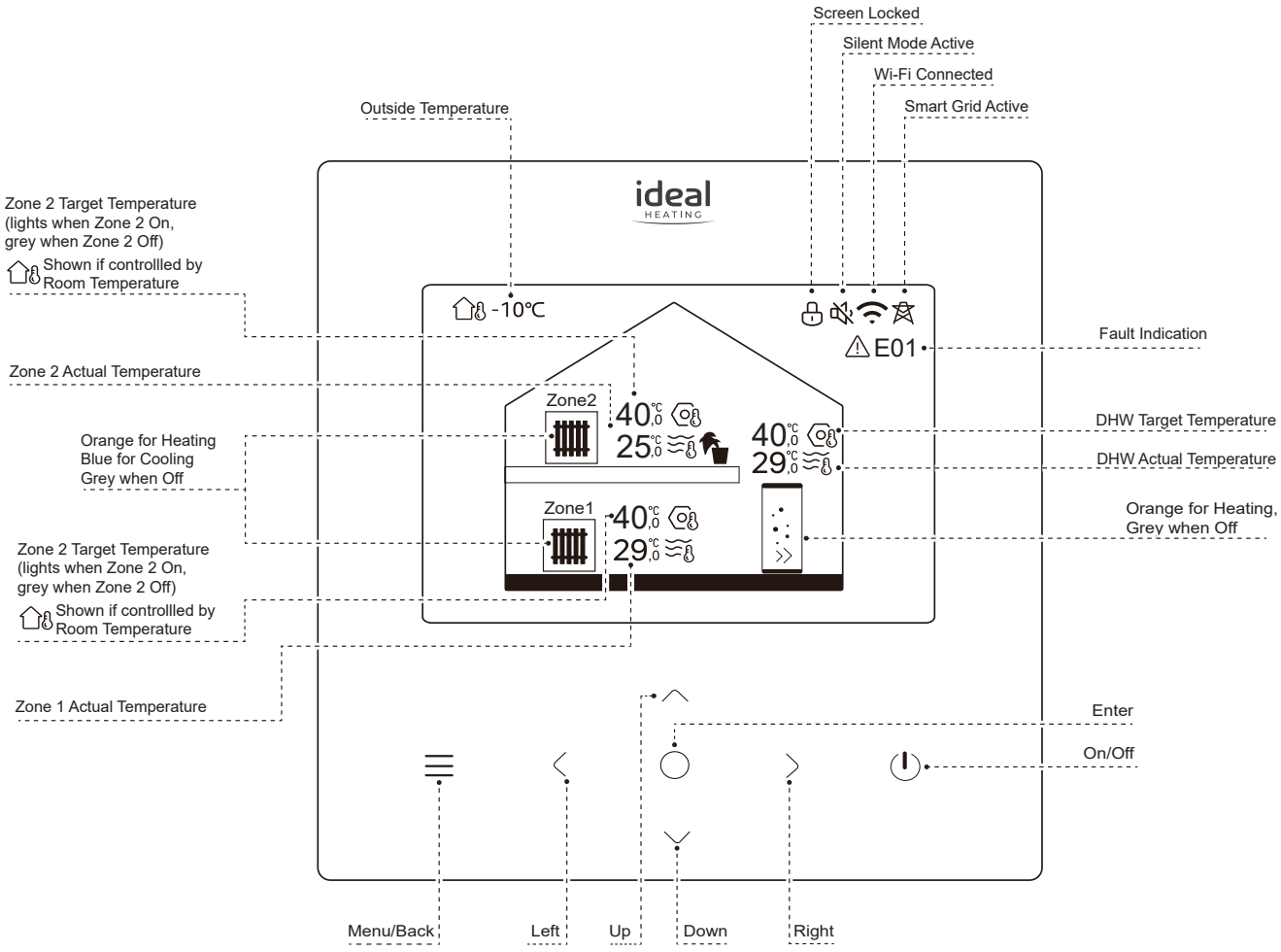


Figure 4. Control Box Homepage display

For Operating Status press O

For Menu press ☰

If no touch-buttons are pressed for 30 seconds the screen dims, switching off after a further 10 seconds.

Press any touch-button to re-activate the screen.

1.4.1 Hybrid Mode Settings

The settings in Table 1 must be inputted into the controller depending on the type of system. See sections 1.4.2 to 1.4.5 for setting instructions.

Table 1 Hybrid Mode Controller Settings

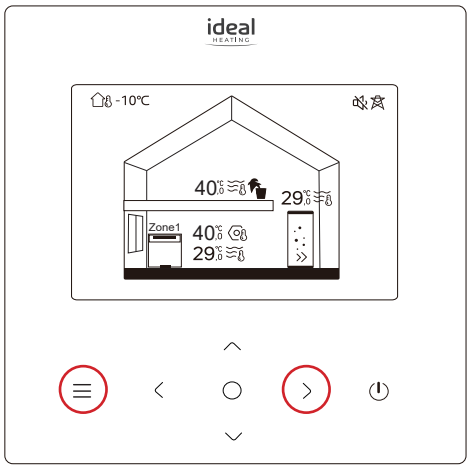
Hybrid System Type			Controller Settings				
Boiler Function	**Heat Pump Function**	**Schematic**	**AHS Function Setting (See 1.4.2)**	**T4HMIN (See 1.4.3)**	**T4_AHS_ON (See 1.4.4)**	**t_AHS_Delay (See 1.4.4)**	**T4DHWMIN (See 1.4.5)**
Combination Boiler Providing Heating & Hot Water	Heat Pump Providing Heating Only	Appendix 1.1	Heating	Bivalent*	Bivalent*	5 minutes	- 10°C
System Boiler Providing Heating Only	Heat Pump Providing Heating Only	Appendix 1.2	Heating	Bivalent*	Bivalent*	5 minutes	- 10°C
System Boiler Providing Heating Only	Heat Pump Providing Heating & Hot Water	Appendix 1.3	Heating	Bivalent*	Bivalent*	5 minutes	- 10°C
System Boiler Providing Heating & Hot Water	Heat Pump Providing Heating & Hot Water	Appendix 1.3	Heating and DHW	Bivalent*	Bivalent*	5 minutes	Bivalent*

* Set to the bivalent temperature based on heat loss calculations for the property.

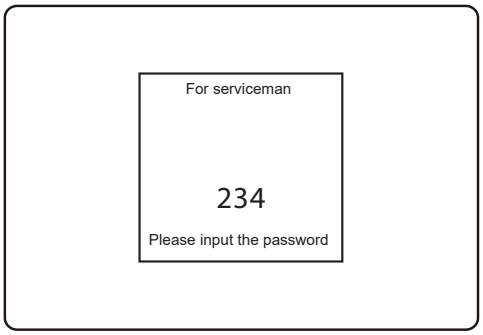
ⓘ IMPORTANT! T4HMIN AND T4_AHS_ON MUST BE SET TO THE SAME VALUE TO PREVENT IMPROPER OPERATION.

1.4.2 Configuring Hybrid Mode

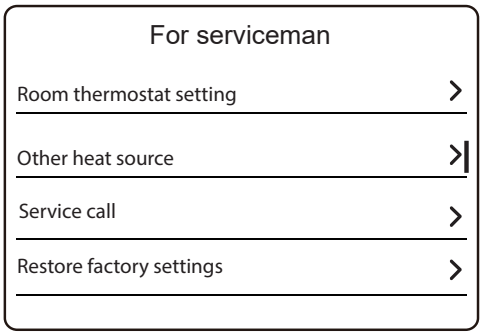
From the Indoor Control Box Homepage display (Figure 4), set the Additional Heat Source (AHS) function as follows:



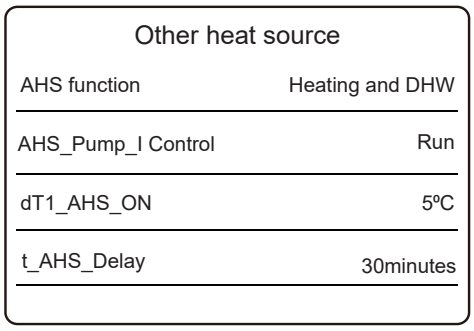
Press ☰ and > together for 3S. Then the next screen will be shown.



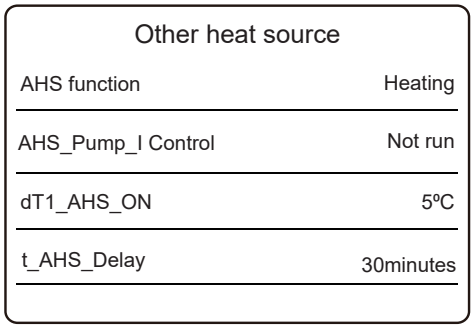
Enter the password (234).



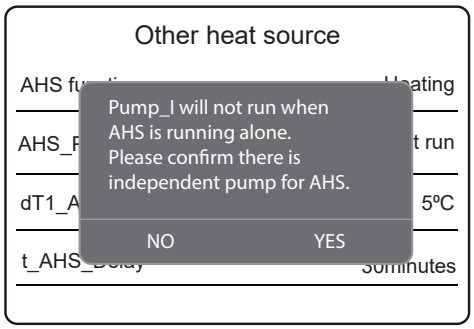
Select Other heat source



In AHS function select either Heating and DHW or Heating in accordance with Table 1.



In AHS_Pump_I Control select Not run

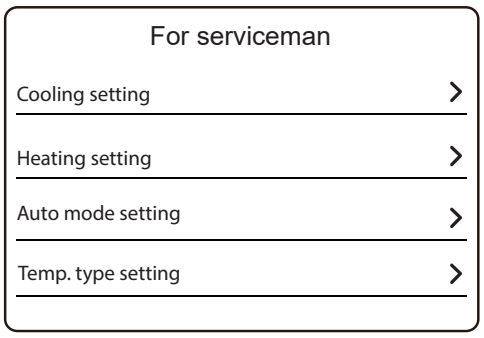


Select YES

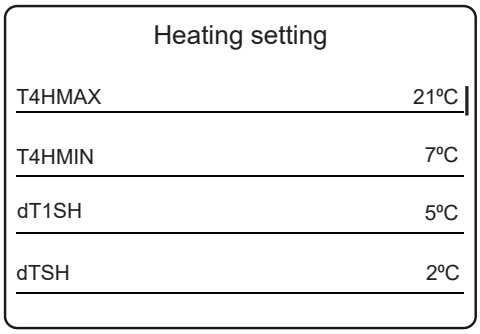
1.4.3 Setting the Heating Bivalent Point (T4HMIN)

Note: T4HMIN is the outdoor temperature below which the heat pump will not operate in heating mode.

From the For Servicman menu, set the T4HMIN as follows:



Select Heating setting then the next screen will be shown.



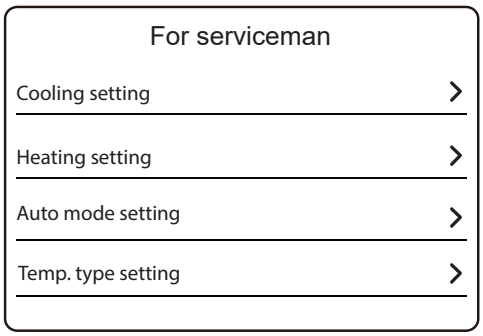
Select T4HMIN and set to the bivalent temperature based on heat loss calculations for the property.

1.4.4 Setting the boiler heating mode activation temperature (T4_AHS_ON)

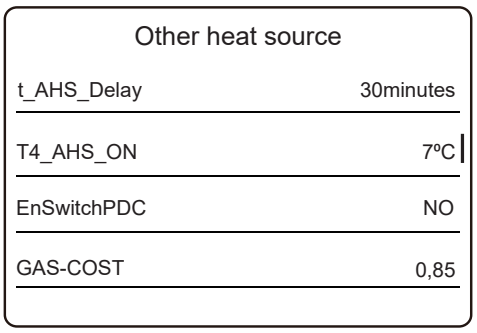
Note: T4_AHS_ON is the outdoor temperature below which the additional heating source is on.

From the For Servicman menu, set the T4_AHS_ON as follows:

ⓘ **IMPORTANT: When setting the T4_AHS_ON make sure that the temperature is the same as T4HMIN, this is the** outdoor **temp at which the back-up boiler comes on.**



Select Other heat source then the next screen will be shown.



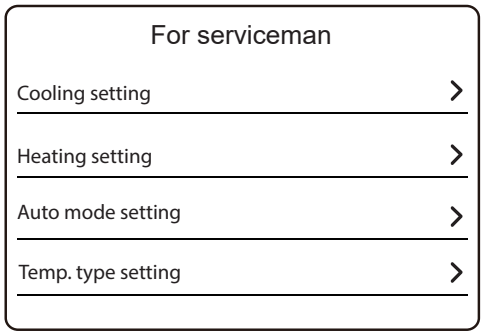
Select t_AHS_Delay and set to 5minutes.

Select T4_AHS_ON and set to the bivalent temperature based on heat loss calculations for the property.

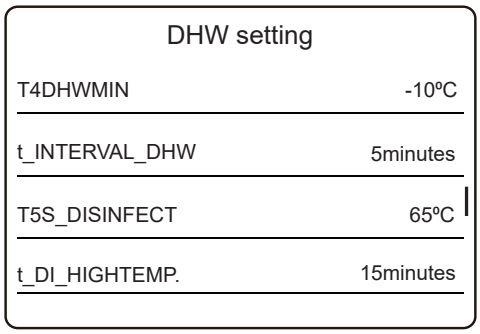
1.4.5 Setting domestic hot water bivalent point (T4DHWMIN)

Note: T4DHWMIN is the outdoor temperature below which the heat pump will not operate in domestic hot water mode.

From the service menu set the T4DHWMIN as follows:



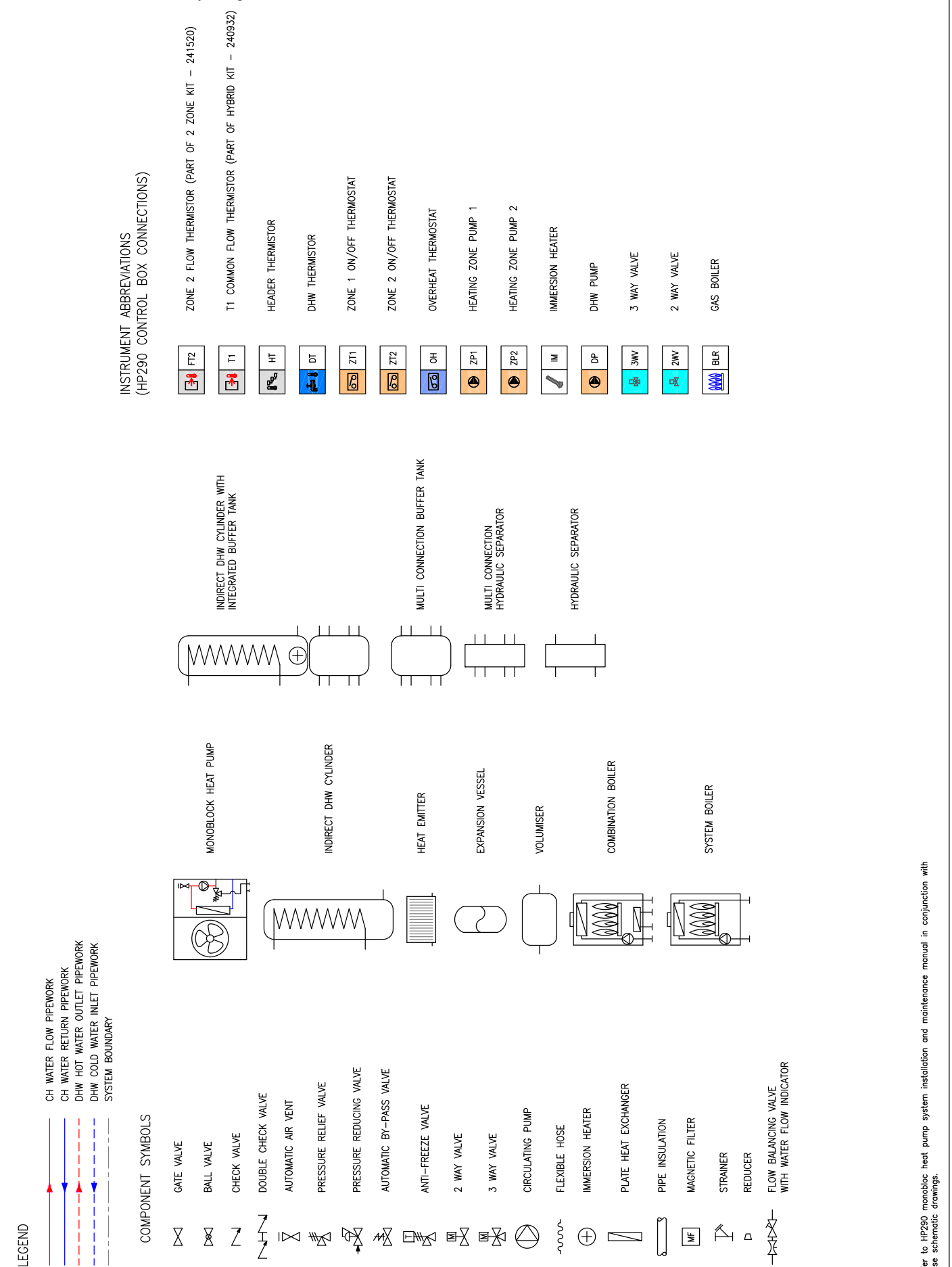
Select DHW setting then the next screen will be shown.



Select T4DHWMIN and set to the desired outdoor temperature at which the heat pump will turn OFF in Domestic Hot Water mode. At this selected outdoor temperature the AHS will turn ON to satisfy a Domestic Hot Water demand.

1.1 SYSTEM SCHEMATICS

1.1.1 Schematics Key/Legend

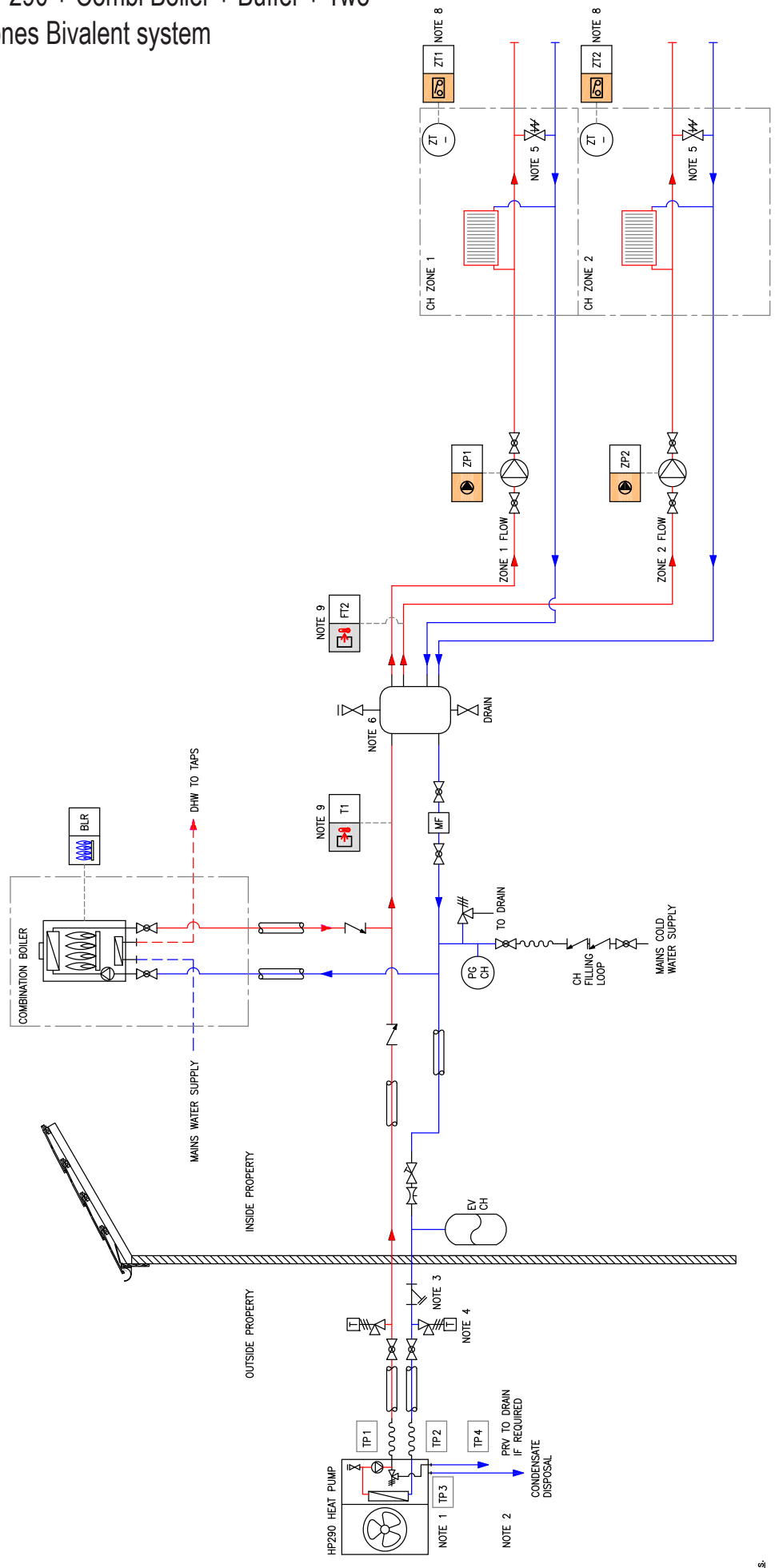


Refer to HP290 monobloc heat pump system installation and maintenance manual in conjunction with these schematic drawings.

1.1.2 HP290 + Combi Boiler + Buffer + Two zones Bivalent system

HP290 + Combi Boiler + Buffer + Two zones (Bivalent system).

CONNECTION POINT LIST				
TP No	DESCRIPTION	SIZE 4.5~6kW	SIZE 8~14kW	MATERIAL	TYPE
1	HEAT PUMP FLOW	1" BSP	1. 1/4" BSP	BRASS	BSP MALE
2	HEAT PUMP RETURN	1" BSP	1. 1/4" BSP	BRASS	BSP MALE
3	HEAT PUMP CONDENSATE DISPOSAL	32MM OD	32MM OD	PLASTIC	BARBED SPIGOT
4	PRESSURE RELIEF VALVE (PRV)	9MM ID	9MM ID	PVC	HOSE



Notes:

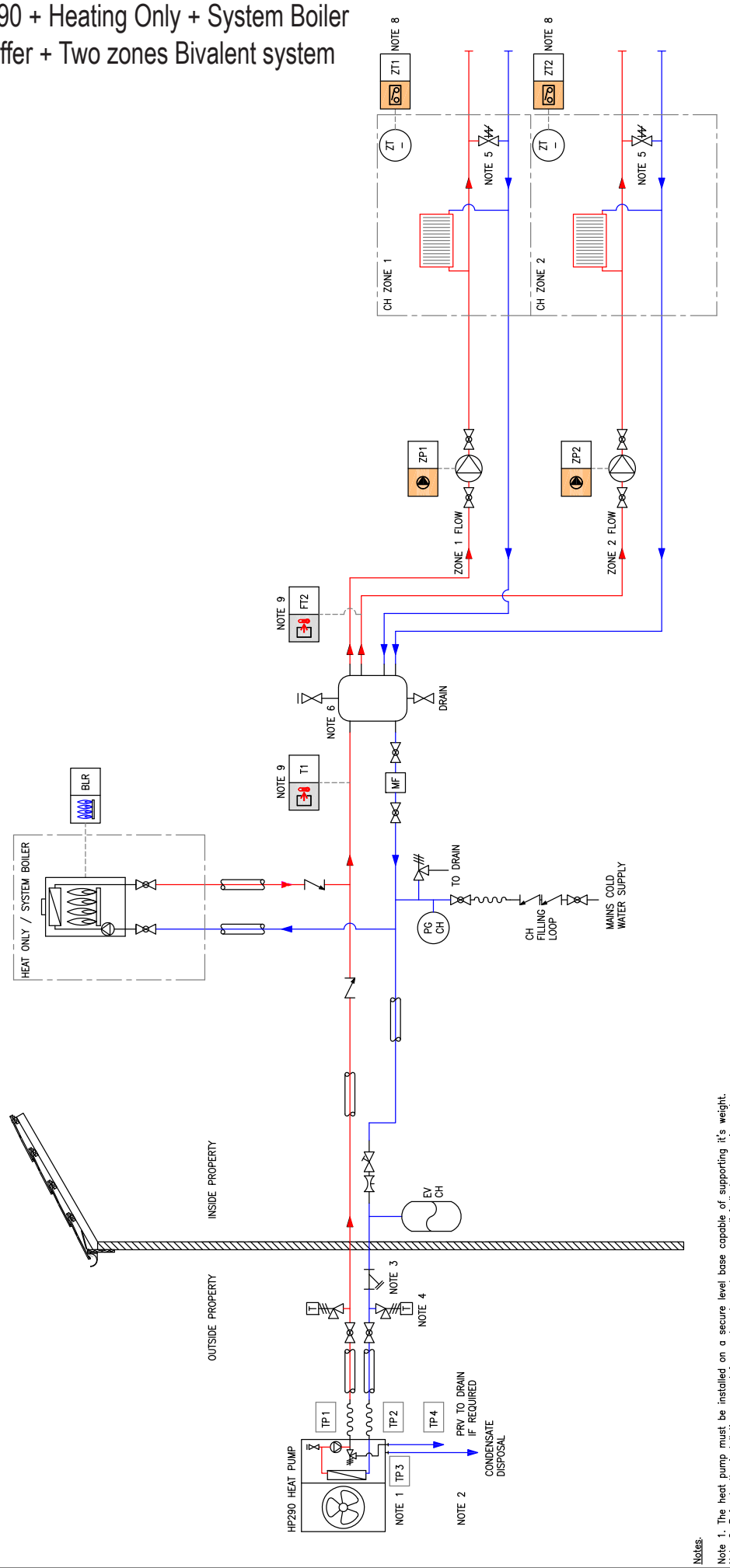
Note 1. The heat pump must be installed on a secure level base capable of supporting it's weight.
Note 2. Refer to the installation manual for condensate and pressure relief discharge requirements.
Note 3. A particle filter is required and can be supplied as an option. It's recommended that a magnetic filter is installed.
Note 4. Anti-freeze valves are required if glycol is not used in the system.
Note 5. Install an auto-bypass if no permanent open circuit is available to allow secondary side pump overrun and normal operation.
Note 6. Boiler flow temperature must be set to the heat pump design setpoint temperature.
Note 7. Flow, return and outdoor sensors are integrated within the outdoor unit.
Note 8. Refer to the installation manual for thermostat connection.
Note 9. Two zone kit and T1 common flow thermistor required.
Note 10. Boiler must be complete with its own integral pump positioned on the return.
Note 11. Single zone arrangement is an option.
Note 12. Ensure the correct pipe size is installed. Refer to the HP290 heat pump and boiler installation manuals.

This drawing is for information and guidance only. It is the heating designer/ installers responsibility to adhere to the latest relevant standards.

Refer to HP290 heat pump system installation and maintenance manual in conjunction with these schematic drawings.

1.1.3 HP290 + Heating Only + System Boiler + Buffer + Two zones Bivalent system

HP290 + Heating Only + System Boiler + Buffer + Two zones (Bivalent system).



CONNECTION POINT LIST					
TP No	DESCRIPTION	SIZE 4.5-6kW	SIZE 8-14kW	MATERIAL	TYPE
1	HEAT PUMP FLOW	1" BSP	1. 1/4" BSP	BRASS	BSP MALE
2	HEAT PUMP RETURN	1" BSP	1. 1/4" BSP	BRASS	BSP MALE
3	HEAT PUMP CONDENSATE DISPOSAL	32MM OD	32MM OD	PLASTIC	BARBED SPIGOT
4	PRESSURE RELIEF VALVE (PRV)	9MM ID	9MM ID	PVC	HOSE

Notes:

Note 1. The heat pump must be installed on a secure level base capable of supporting it's weight.
Note 2. Refer to the installation manual for condensate and pressure relief discharge requirements.
Note 3. A particle filter is required and can be supplied as an option. It's recommended that a magnetic filter is installed.
Note 4. Anti-freeze valves are required if glycol is not used in the system.
Note 5. Install an auto-bypass if no permanent open circuit is available to allow secondary side pump overrun and normal operation.
Note 6. Boiler flow temperature must be set to the heat pump design setpoint temperature.
Note 7. Flow, return and outdoor sensors are integrated within the outdoor unit.
Note 8. Refer to the installation manual for thermostat connection.
Note 9. Two zone kit and T1 common flow thermistor required.
Note 10. Boiler pump must be positioned on the return or in the case of a heat only boiler, an additional pump must be fitted to the boiler return.
Note 11. Single zone arrangement is an option.
Note 12. Ensure the correct pipe size is installed. Refer to the HP290 heat pump and boiler installation manuals.

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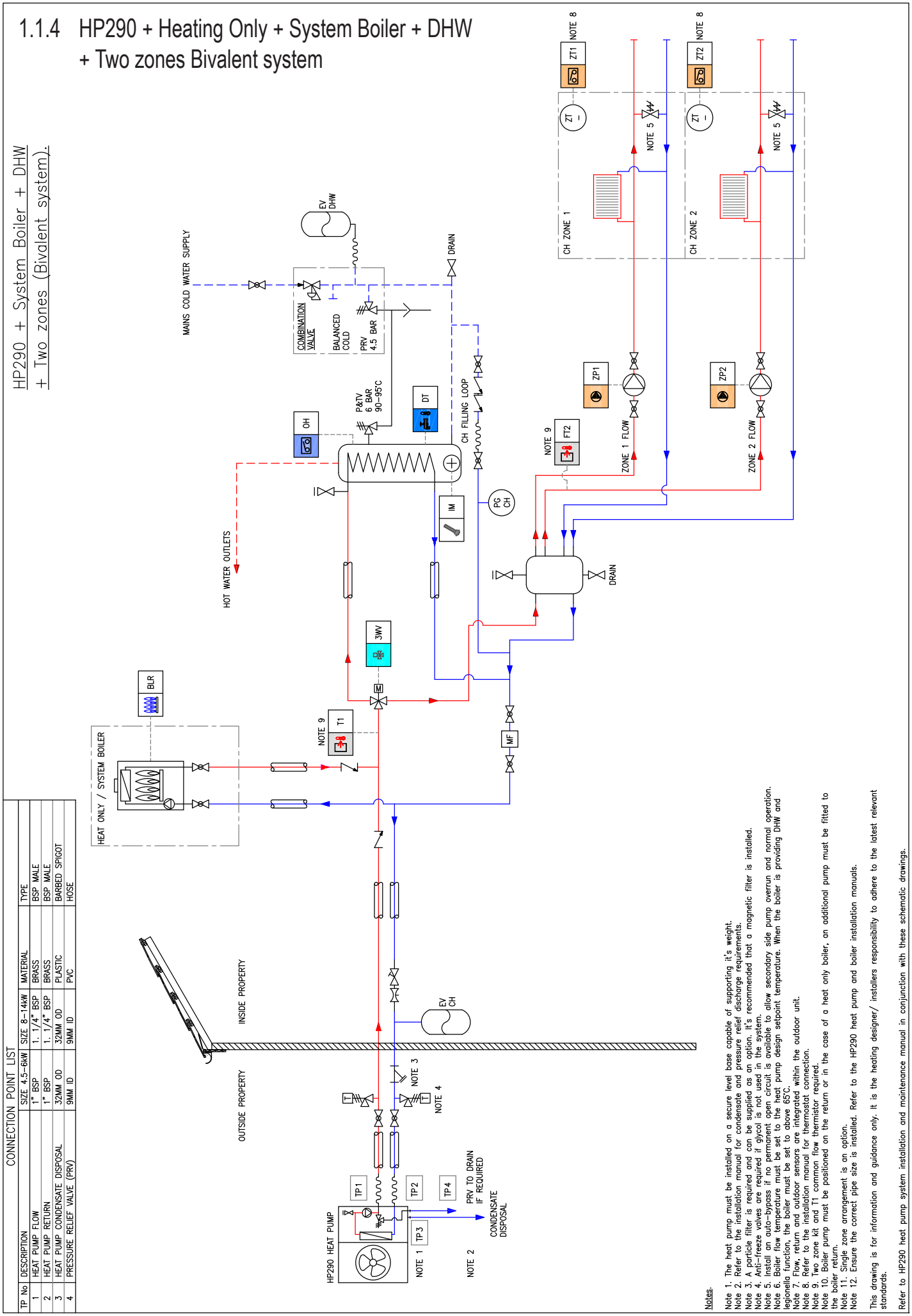
Refer to HP290 heat pump system installation and maintenance manual in conjunction with these schematic drawings.

1.1.4 HP290 + Heating Only + System Boiler + DHW + Two zones Bivalent system

HP290 + System Boiler + DHW + Two zones (Bivalent system).



CONNECTION POINT LIST

TP No	DESCRIPTION	SIZE 4.5–6kW	SIZE 8–14kW	MATERIAL	TYPE
1	HEAT PUMP FLOW	1" BSP	1. 1/4" BSP	BRASS	BSP MALE
2	HEAT PUMP RETURN	1" BSP	1. 1/4" BSP	BRASS	BSP MALE
3	HEAT PUMP CONDENSATE DISPOSAL	32MM OD	32MM OD	PLASTIC	BARBED SPIGOT
4	PRESSURE RELIEF VALVE (PRV)	9MM ID	9MM ID	PVC	HOSE

Notes.

Note 1. The heat pump must be installed on a secure level base capable of supporting it's weight.
Note 2. Refer to the installation manual for condensate and pressure relief discharge requirements.
Note 3. A particle filter is required and can be supplied as an option. It's recommended that a magnetic filter is installed.
Note 4. Anti-freeze valves are required if glycol is not used in the system.
Note 5. Install an auto-bypass if no permanent open circuit is available to allow secondary side pump overrun and normal operation.
Note 6. Boiler flow temperature must be set to the heat pump design setpoint temperature. When the boiler is providing DHW and legionella function, the boiler must be set to above 65°C.
Note 7. Flow, return and outdoor sensors are integrated within the outdoor unit.
Note 8. Refer to the installation manual for thermostat connection.
Note 9. Two zone kit and T1 common flow thermistor required.
Note 10. Boiler pump must be positioned on the return or in the case of a heat only boiler, an additional pump must be fitted to the boiler return.
Note 11. Single zone arrangement is an option.
Note 12. Ensure the correct pipe size is installed. Refer to the HP290 heat pump and boiler installation manuals.

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Refer to HP290 heat pump system installation and maintenance manual in conjunction with these schematic drawings.

Notes

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At Ideal Heating we take our environmental impact seriously, therefore when installing any Ideal Heating product please make sure to dispose of any previous appliance in an environmentally conscious manner. Households can contact their local authority to find out how.
See https://www.gov.uk/managing-your-waste-an-overview for guidance on how to efficiently recycle your business waste.

Technical Training

Our Expert Academy offer a range of training options designed and delivered by our experts in heating.
For details please visit: expert-academy.co.uk

Ideal Boilers Ltd., pursues a policy of continuing improvement in the design and performance of its products.
The right is therefore reserved to vary specification without notice.

Hereby, Ideal Boilers Ltd declares that the radio equpment type (model HP290 Heat Pump System) is in compliance with: Directve 2014/53/EU.
The full text of the EU declaration of conformity is available at the following internet address
idealheating.com/declaration-of-conformity

RF frequency is 2.4000GHz to 2.4835Ghz
Max RF output power is less than or equal to 20dBm

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