

## Fitting & Commissioning Instructions

Outdoor Sensor Kit

### EcoBlue Combi and System Range

Kit Part No. 7214286 (System)

Kit Part No. 7213356 (Combi)

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### 1.0 Legislation

**NOTES:** This kit is suitable only for installation in GB and IE and should be installed in accordance with the rules in force.

In GB, the installation must be carried out by a Gas Safe Registered Installer. It must be carried out in accordance with the relevant requirements of the:

- Gas Safety (Installation & Use) Regulations.
- The appropriate Building Regulations either The Building Regulations, The Building Regulations (Scotland), Building Regulations (Northern Ireland).
- The Water Fittings Regulations or Water Byelaws in Scotland.
- The Current I.E.E. Wiring Regulations.

Where no specific instructions are given, reference should be made to the relevant British Standard Code of Practice.

In IE, the installation must be carried out by a competent Person and installed in accordance with the current edition of I.S. 813 'Domestic Gas Installations', the current Building Regulations and reference should be made to the current ETCI rules for electrical installation.

2.0 Introduction

The installation of this kit permits the customer to gain the efficiency benefits of outdoor weather temperature compensation control.

- The addition of anything that may interfere with the normal operation of the appliance without the express written permission from the manufacture could invalidate this kit and the appliance warranty. In GB this could also infringe the Gas Safety (Installation and use) Regulations.
- This kit is only suitable for use with the Baxi EcoBlue Range ONLY.
- This kit is suitable for use with S-Plan heating systems ONLY.

3.0 Contents of Pack

Description	Quantity
Instructions (this document)	1
Outdoor sensor	1
Relay box (Only required for System Boilers)	1

4.0 Positioning the Outdoor Sensor

1. The Sensor must be fixed to an external wall surface of the property it is serving. The wall must face towards the north or west.

**NOTE:** DO NOT position it on a south facing wall in direct sunlight!

2. The Sensor should be approximately half the height of the living space of the property, and a minimum of 2.5m above ground level.

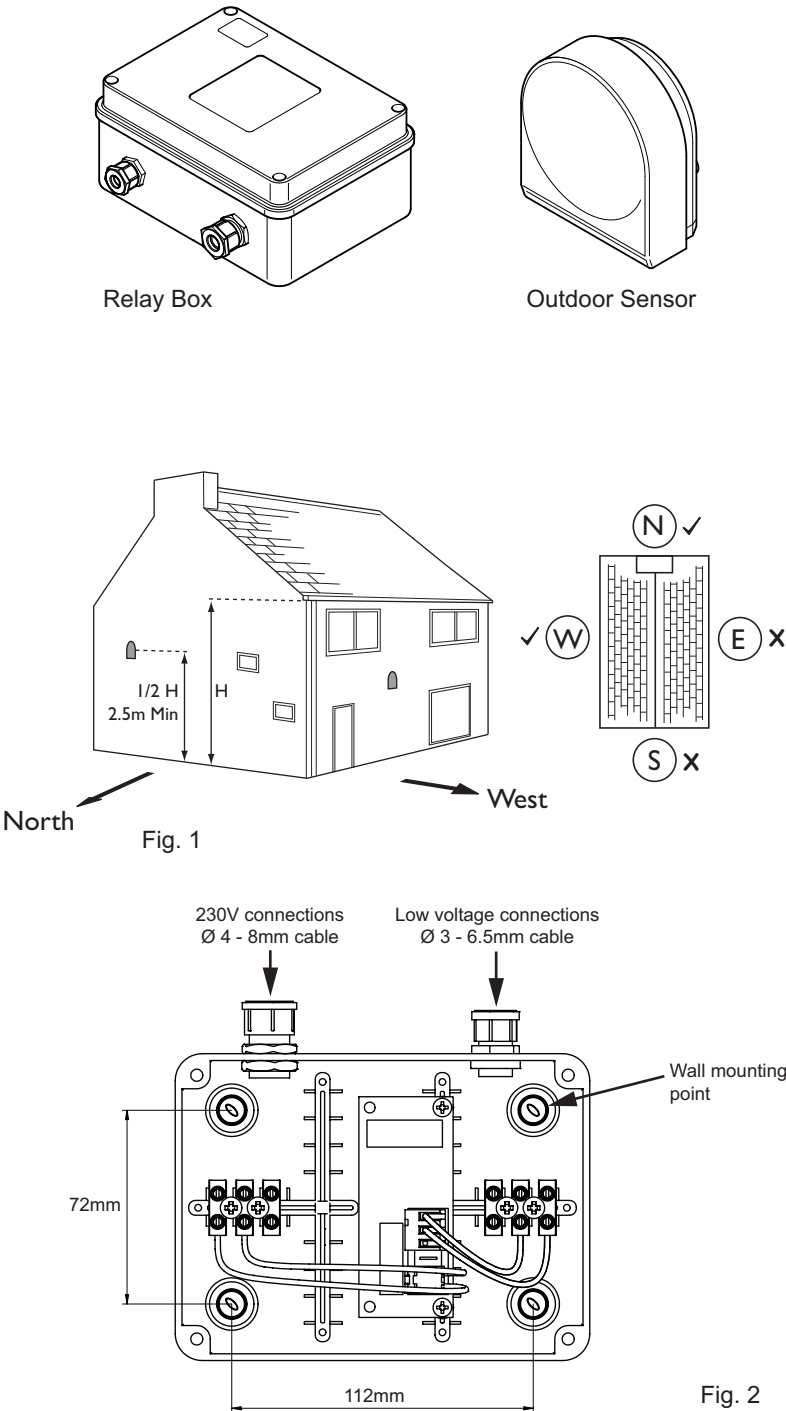
3. It must be positioned away from any sources of heat or cooling (e.g. flue terminal) to ensure accurate operation. Siting the Sensor above doors and windows, adjacent to vents and close to eaves should be avoided.

4. Consider also how to route the cable from the sensor to the boiler.

5.0 Positioning the Relay Box  
(only required for system boiler)

1. Mount the Relay Box in a convenient location between the S-Plan wiring centre and the boiler, using the mounting points shown in Fig. 2.

**NOTE:** When fitted in a bathroom, the relay box should not be fitted in Zones 0 or 1 as indicated in the current IEE Wiring Regulations.



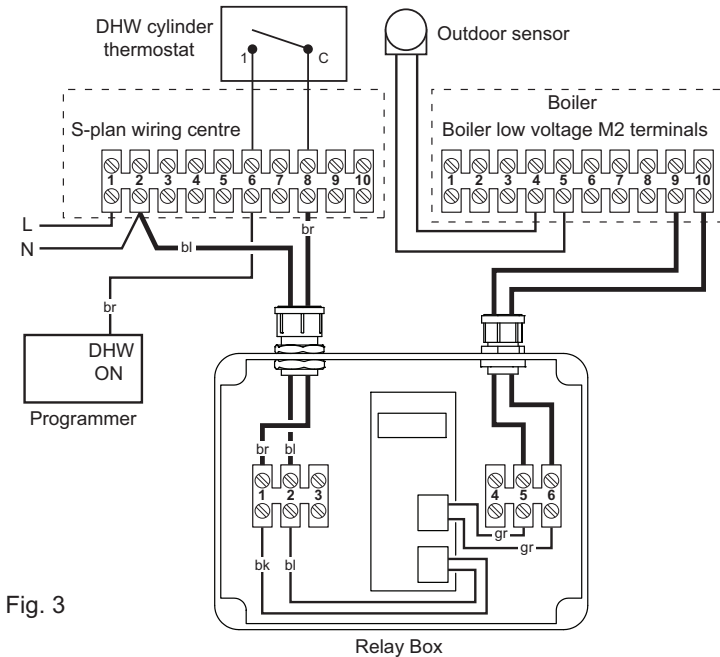


Fig. 3

(Note: For clarity only, the connections relevant to the application are shown for the system wiring)

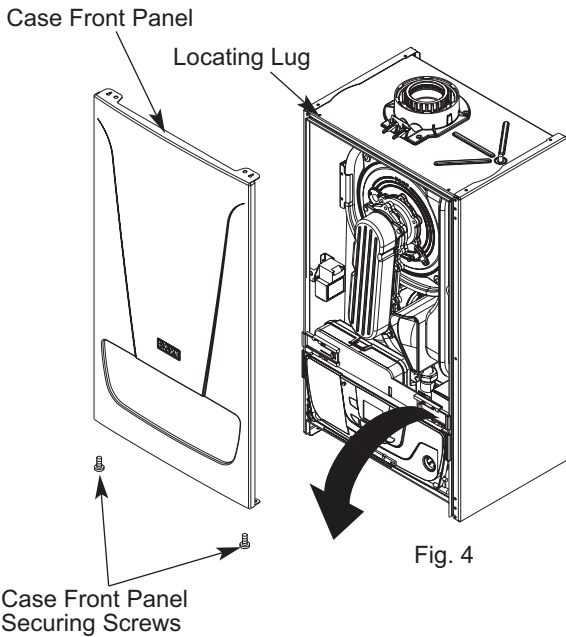


Fig. 4

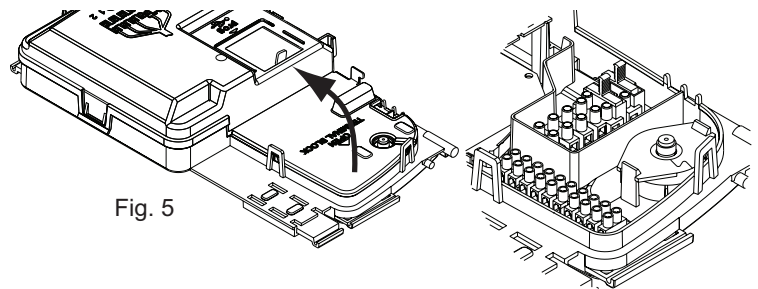


Fig. 5

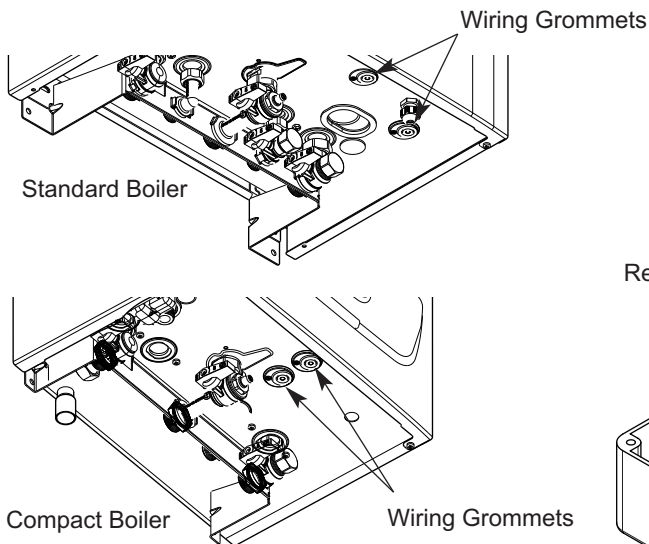


Fig. 6

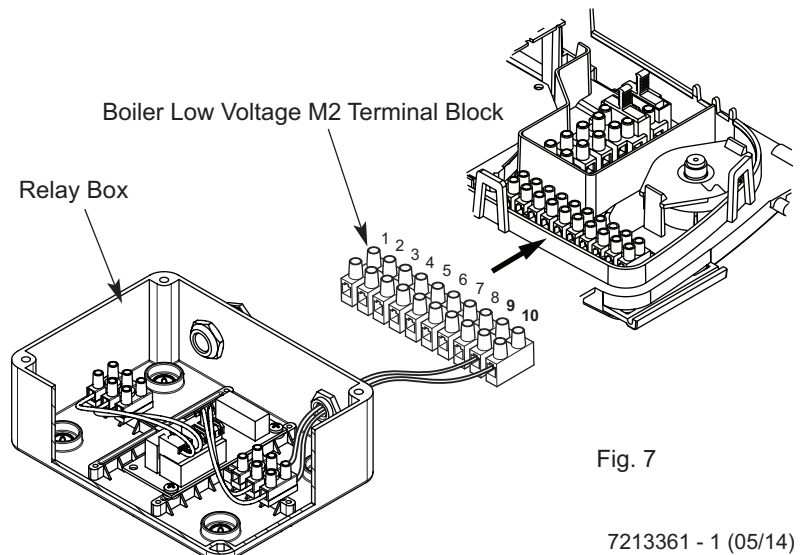


Fig. 7

## 6.0 Connecting the Relay Box (only required for system boiler)

**⚠** Ensure the boiler and system wiring is isolated from the mains electrical supply.

1. Using a cable of 4 - 8mm overall diameter, connect the 230V connections between the S-Plan wiring centre and the Outdoor Sensor Relay Box via the large cable retaining gland. See Fig. 3.
2. Connect the thermostat output of the DHW cylinder on the wiring centre to terminal 1 of the Outdoor Sensor Relay Box.
3. Connect the neutral connector on the S-Plan wiring centre to terminal 2 of the Outdoor Sensor Relay Box.
4. Using a cable of 3 - 6.5mm overall diameter, connect the low voltage connections 5 & 6 in the relay box via the small gland. See Fig. 3. and route this cable to the boiler.  
**NOTE:** Do not route both the low voltage and mains voltage cables through the same gland.
5. Undo the securing screws and lift the case front panel off the boiler and hinge the control box downwards, Fig. 4.
6. Disengage the securing tabs and open the boiler terminal block cover, Fig. 5.
7. Remove one of the appliance blanking grommets at the base of the boiler (Fig. 6), pierce the diaphragm and insert the wires from the relay box, leaving sufficient slack in the wires to allow the control box to be hinged fully open. Refit the grommet.
8. Connect the cable from the relay box to terminals 9 & 10 of the M2 terminal block, See Figs. 6 & 7.
9. Ensure that the relay box cable grommets are tightened to ensure the cables are securely retained.
10. Refit the lid onto the relay box.

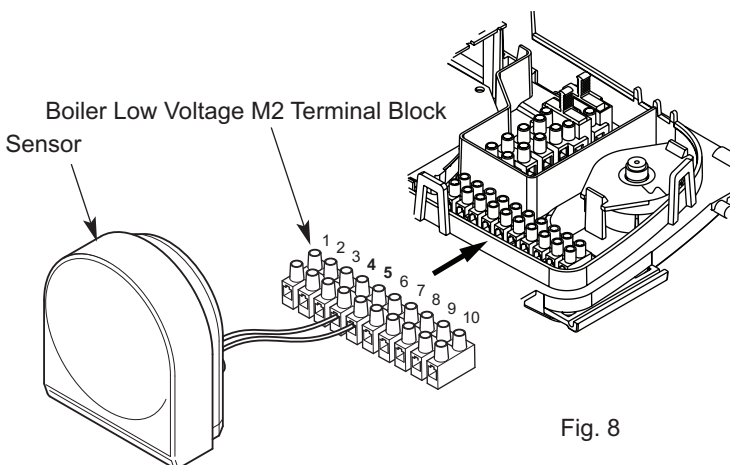


Fig. 8

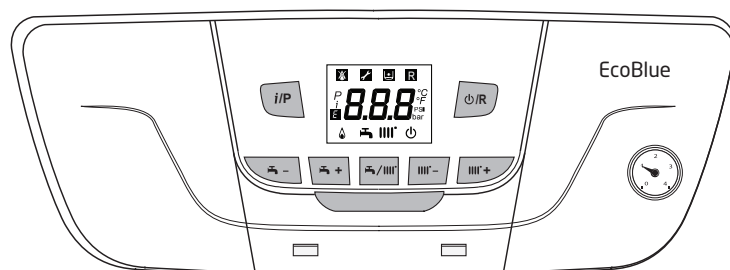


Fig. 9

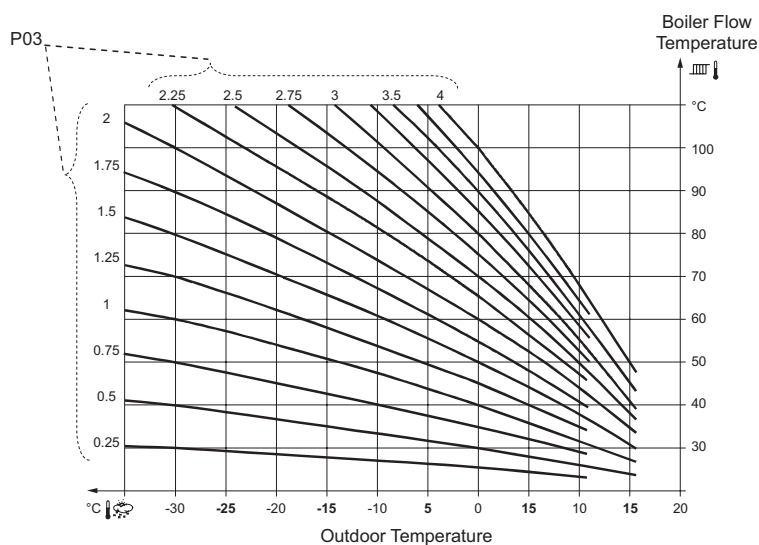


Fig. 10

## 7.0 Connecting the Outdoor Sensor

1. Remove one of the appliance blanking grommets at the base of the boiler (Fig. 6), pierce the diaphragm and insert the wires from the Outdoor Sensor.
2. Leave sufficient slack in the wires to allow the Control Box to be hinged fully open. Refit the grommet.
3. Connect the wires from the Outdoor Sensor to the installer side of M2 terminals 4 and 5 (Fig. 8).
4. Refit the boiler terminal block cover, hinge back the control box and replace the boiler case.

## 8.0 Setting the parameters for the outdoor sensor

With the outdoor sensor fitted, the boiler central heating flow temperature is adjusted automatically to accommodate the change in heat required to optimise the efficient performance of the boiler whilst maintaining a comfortable room temperature. The central heating buttons on the boiler adjust a “simulated room temperature” used for this optimisation.

This functionality requires the setting of three parameters on the boiler, to suit the heating system and the optimisation can be adjusted by the user with the central heating control buttons on the boiler control panel.

### The parameters which must be set are:

P06 = Minimum CH Flow temperature. This should be set to the lowest temperature at which the heat emitters are effective.

P07 = Maximum CH Flow temperature. This should be set to the highest flow temperature which can be permitted in the CH circuit.

P03 = Heating curve (Fig.10). This should be calculated using the following formula:

$$P03 = \frac{P07 - T_{room}}{T_{room} - T_{outmin}}$$

where:

$T_{room}$  = The normal room thermostat setting used by the customer (if this is in doubt or unknown use 20°C), and the temperature to be set on the boiler.

$T_{outmin}$  = The minimum expected outdoor temperature, as used for sizing the heating system (recommended value -5°C)

**NOTE:** parameter P03 can be set to a value in the range 0 - 4 in increments of 0.02.

### Radiator Example

$$P03 = \frac{P07 - T_{room}}{T_{room} - T_{outmin}} = \frac{80 - 20}{20 - (-5)} = 2.4$$

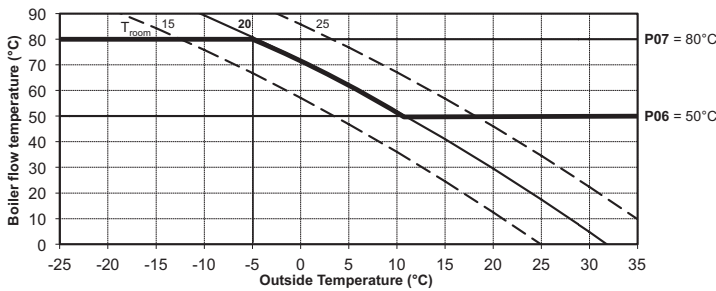


Fig. 11

### Low Temperature Example

$$P03 = \frac{P07 - T_{room}}{T_{room} - T_{outmin}} = \frac{55 - 20}{20 - (-5)} = 1.4$$

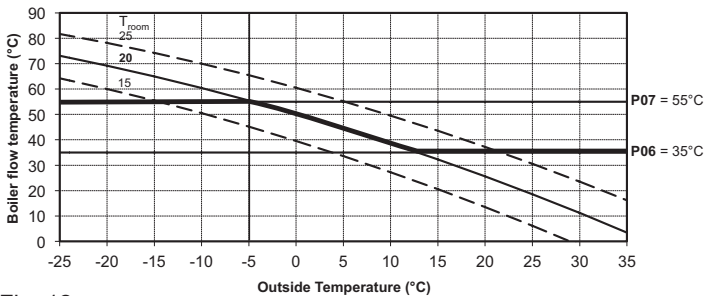


Fig. 12

### Underfloor Example

$$P03 = \frac{P07 - T_{room}}{T_{room} - T_{outmin}} = \frac{45 - 20}{20 - (-5)} = 1$$

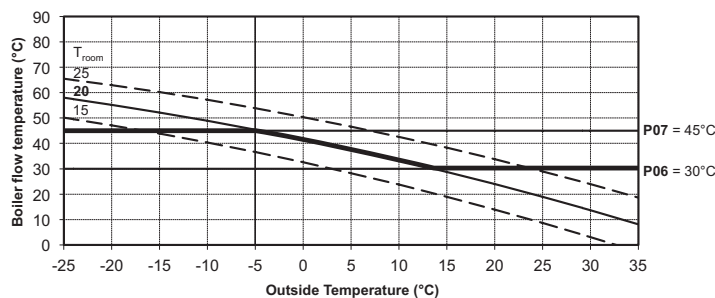


Fig. 13

## 8.0 Setting the parameters for the outdoor sensor

Figs. 11 through to 13 show three worked examples for different types of heating system. These can be used as a basis for correct system configuration.

### Example Parameter Recommendations:

Radiator systems (Fig 11):

**P03** = 2.4  
**P06** = 50°C  
**P07** = 80°C

Low Temperature Radiator systems (Fig 12):

**P03** = 1.4  
**P06** = 35°C  
**P07** = 55°C

Underfloor systems (Fig 13):

**P03** = 1  
**P06** = 30°C  
**P07** = 45°C

**IMPORTANT:** Do not change any other parameters other than those described in these instructions otherwise the warranty of this kit and the boiler could be invalidated.

### The parameters are set as follows (See Fig. 9):

1. Ensure that there is power to the boiler.
2. Press and hold **||||-** and **||||+** until P02 is displayed on screen.
3. Press and hold **i/P** until On is displayed.
4. Press **||||-** or **||||+** to scroll until the required parameter is displayed.
5. Press **i/P** to edit the program.  
 Press **||||-** or **||||+** to change the setting to the desired value.  
 Press **i/P** to confirm selection.
6. Repeat steps 4 and 5 as required for each parameter.
7. When parameter changes are complete press **⏻/R** to return to the normal operating screen.

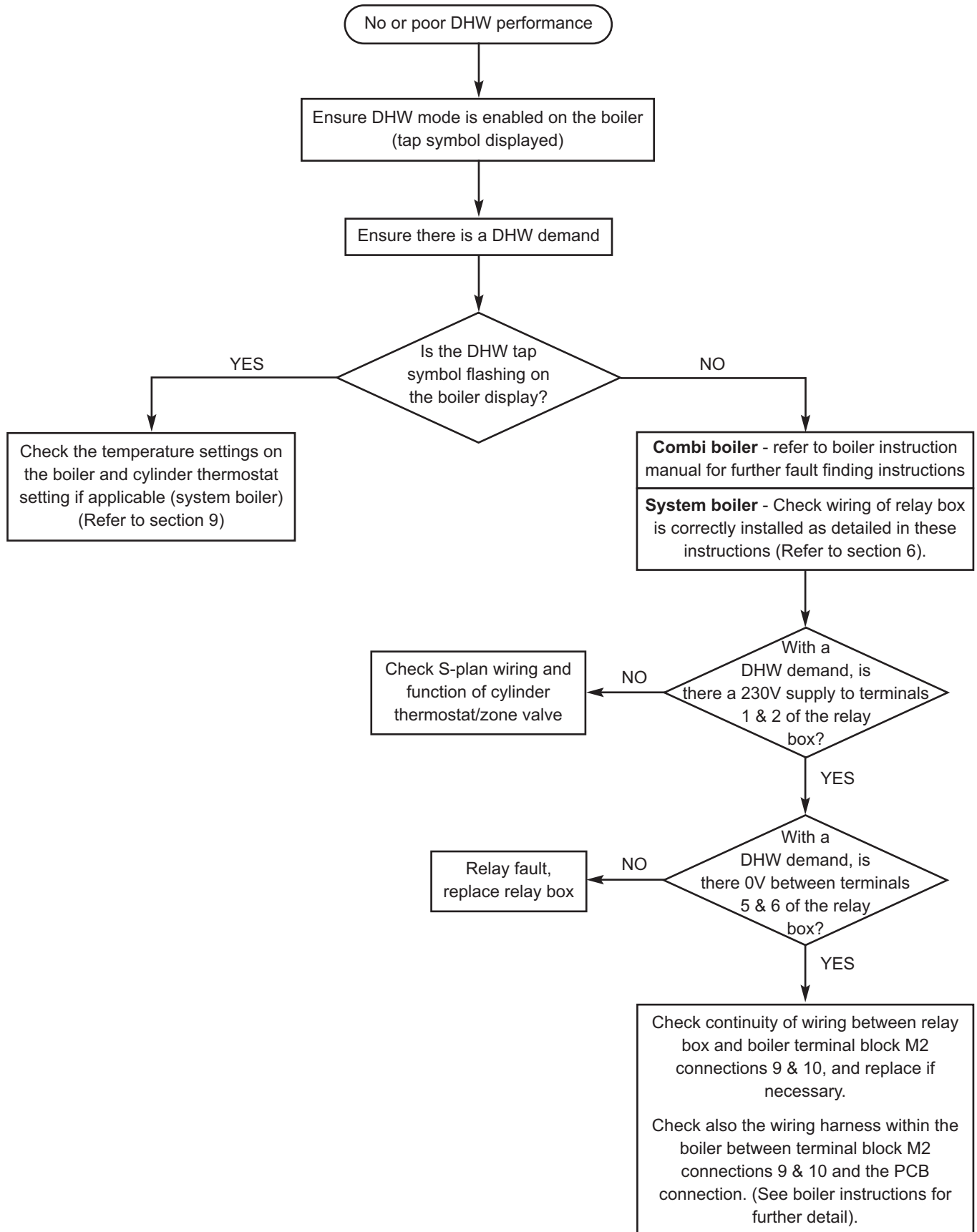
## 9.0 Operating instructions with outdoor sensor

1. While there is no DHW demand the boiler flow temperature is limited according to the heating curve setting
2. If the **||||+** or **||||-** are pressed while CH is enabled, the display shows a simulated room temperature set point. Ensure that this set point is the same as the room thermostat to ensure optimal outdoor weather temperature compensation operation. The user can adjust this temperature should the optimisation not suit their requirements.
3. While DHW is enabled, if the **🔥+** or **🔥-** buttons are pressed, the display will show the DHW temperature set point. For system boilers ensure that this value is set to at least the same temperature as that set at the DHW cylinder thermostat. This will ensure the desired DHW temperature is achieved.

**IMPORTANT:** Installer should explain to the user how to alter the heating curve using the room temperature set point.

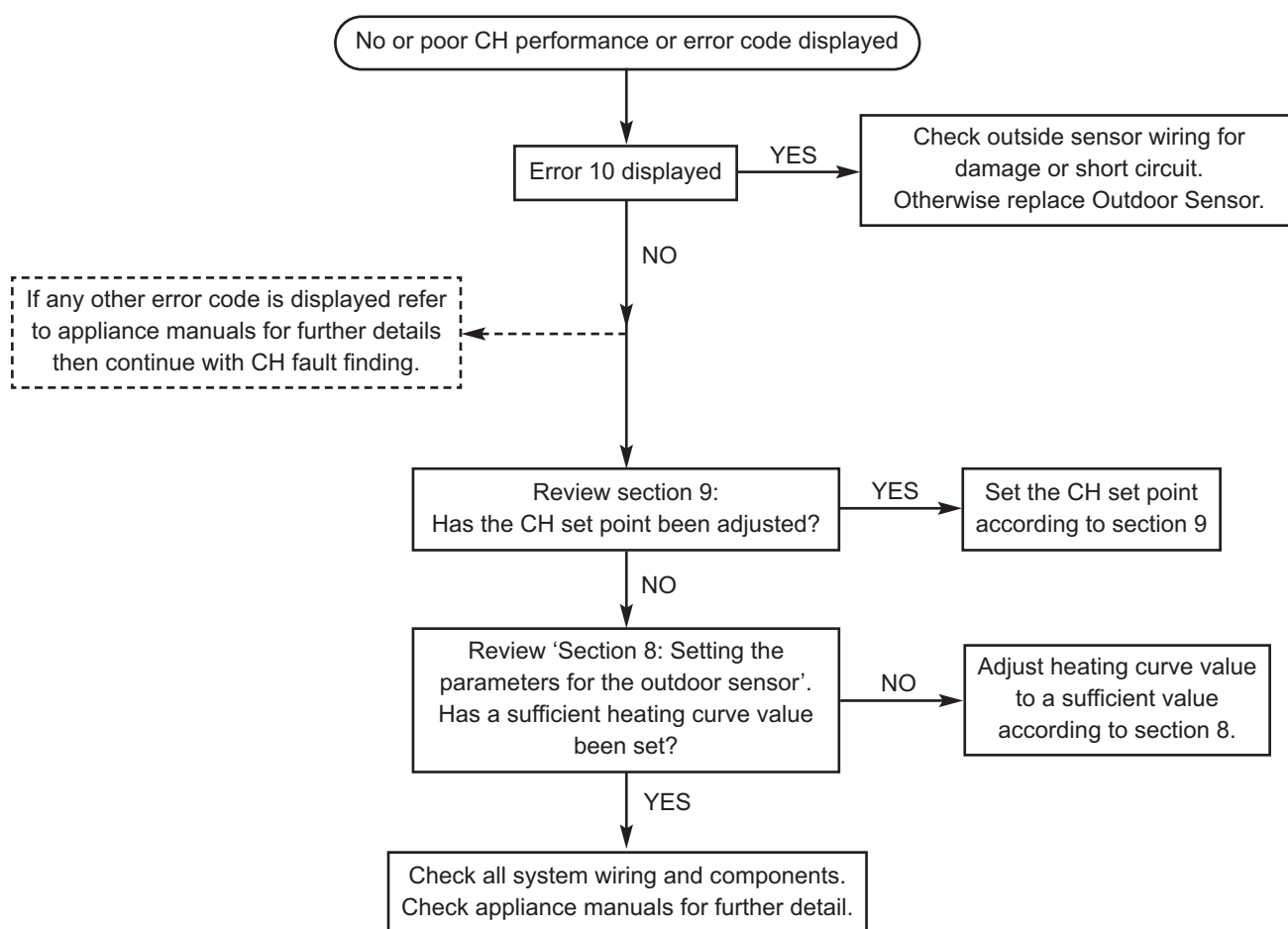
## 10.0 Fault Finding

**NOTE:** The following information is provided for guidance of the Installer, Service Engineer or other competent person. If the control PCB has been replaced check that the EcoBlue Outdoor Sensor Kit has been installed and configured according to these instructions.





## 10.0 Fault Finding



All descriptions and illustrations provided in this leaflet have been carefully prepared but we reserve the right to make changes and improvements in our products which may affect the accuracy of the information contained in this leaflet. All goods are sold subject to our standard Conditions of Sale which are available on request.

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