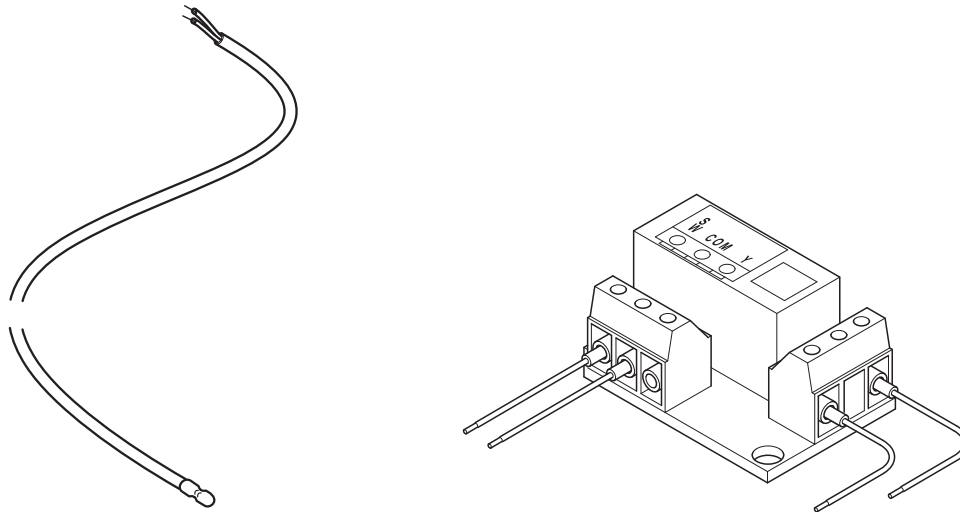


Multifit



Part No. 7729979

Installation & Commissioning Instructions

IFOS - In Flue Outdoor Sensor
Temperature Compensation Device & Relay PCB Kit

**Suitable for System boilers fitted in conjunction with
horizontal or vertical flue terminals ONLY &
flue systems up to 4 metres**

(optional extension cable available for longer flues)

**For use with Baxi 600/800, Main Eco Compact &
Potterton Assure System Boilers ONLY**

These instructions should be read in conjunction with the
Boiler Installation and Service Manual and left with the User when completed.

Please keep these instructions in a safe place.
If you move house please hand them over to the next occupier.

The In Flue Outdoor Sensor is suitable for use with the following boilers:-

BOILER GROUP 'E'

Baxi 600 System range

Baxi 800 System range

Main Eco Compact System range

Potterton Assure System range

Refer to the Installation & Service Manual supplied with the appliance if the boiler being installed is not on the above list.

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ErP Information

Regulation EU811/2013, supplementing Ecodesign and Energy Labelling Directives 2010/30EU		
Part Number	This Thermostatic Control Device is rated	Correction Factor (Contribution to system energy efficiency)
7729979	Class 'II'	2 %

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

1. The In Flue Outdoor Sensor - IFOS - kit positions a temperature sensor in the horizontal or vertical flue terminal. The flue system can be up to 4 metres of actual length, or a further 5 metres with the optional extension cable. Installation of this kit permits the customer to gain the efficiency benefits of outdoor weather temperature compensation control. The sensor allows the outdoor temperature to be taken into consideration and the boiler flow temperature regulated accordingly to provide required comfort levels.

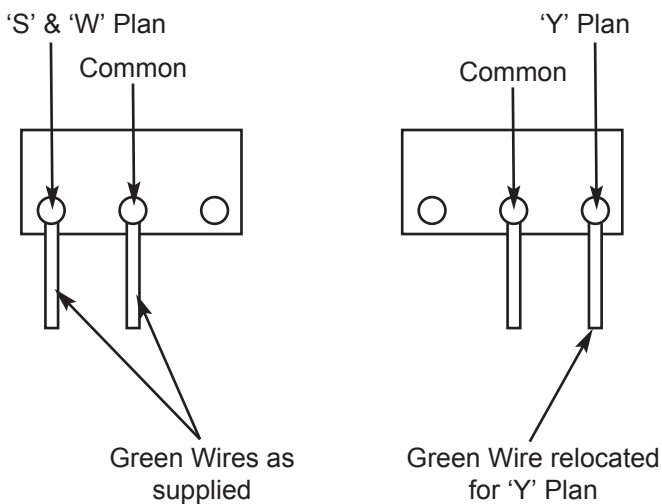
2. The curve determining boiler flow temperature should be set as low as possible but still maintaining required comfort levels. The selected curve must be noted on the identifying label to be affixed to the boiler.

3. The addition of anything that may interfere with the normal operation of the appliance without express written permission from the manufacturer could invalidate this kit and the appliance warranty. In GB this could also infringe the Gas Safety (Installation and use) Regulations.

4. This kit is only suitable for use with the boiler ranges listed on page 2. The relay PCB supplied **MUST** be fitted to the system boiler to ensure correct operation.

5. A 230V switched live from the DHW cylinder thermostat (demand signal) must be connected to the spare position on terminal block M1 (Figs. 15 & 19).

IMPORTANT: The relay PCB is set up for 'S' or 'W' plan systems. For a 'Y' plan system change the green wire over on the relay PCB as shown below.



IMPORTANT: This kit is for use with horizontal & vertical flue terminals in a flue system of up to 4 metres actual length. A 5 metre sensor cable extension is available as an optional extra. The kit cannot be fitted where other devices such as the MULTIFIT GasSaver are incorporated into the flue system. It is permissible to shorten the cable. If shortening the cable **DO NOT** cut the sensor end !

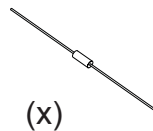
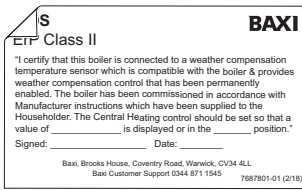
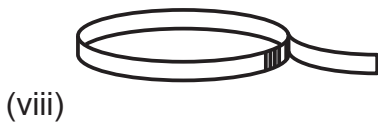
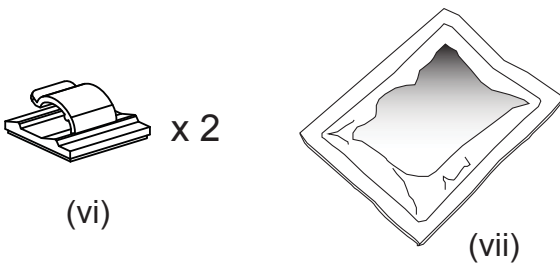
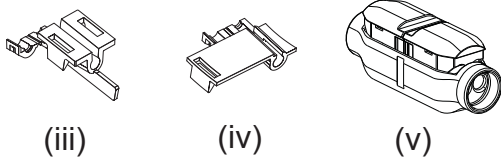
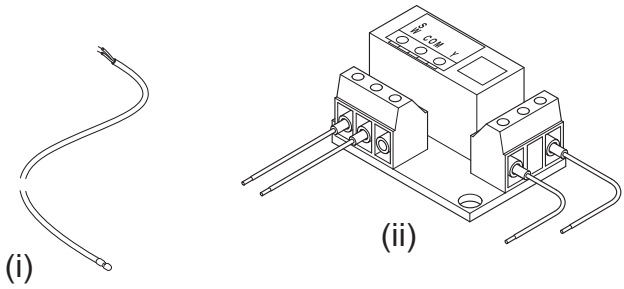
Conventional Controls: Standard mains voltage ON/OFF controls do not affect the method of setting the curve or boiler operation when the IFOS is fitted. Conventional controls in conjunction with IFOS represent the simplest solution. When a DHW demand is applied to the boiler the Outdoor Sensor is overridden.

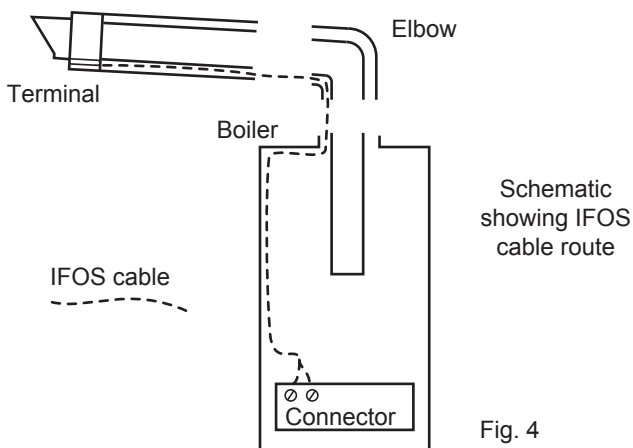
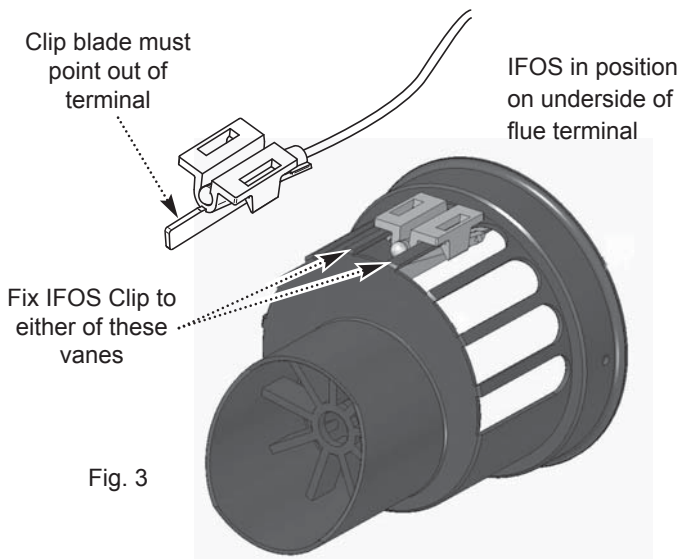
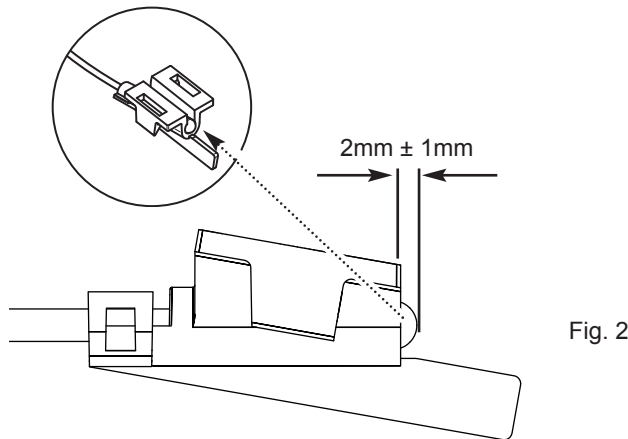
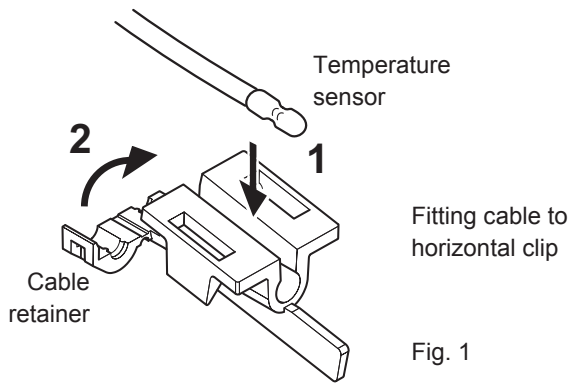
OpenTherm Controls: If an OpenTherm control is also to be connected to the boiler this must be taken into consideration as some devices affect the operation of the boiler control knobs or buttons. Depending on the device used it is possible that the OpenTherm control will assume the role of "master", rendering the boiler controls inoperative or altering their function. It is recommended that the IFOS is fitted and set prior to connecting any OpenTherm device. Consult the instructions supplied with such devices before setting the curve. The Baxi uSense device is recommended for this type of control application.

3.0 Contents of Pack

Description

- (i) In Flue Outdoor Sensor (IFOS) Cable
- (ii) Relay PCB & Screw
- (iii) Clip for Horizontal Flue
- (iv) Clip for Vertical Flue
- (v) Connector for Optional 5 metre Cable Extension
- (vi) 2 x Self Adhesive Routing Clips
- (vii) Cleaning Wipe Sachet
- (viii) ESD Earth Wrist Strap
- (ix) Identifying Label
- (x) Resistor for High Heating Loss Applications





4.0 Fitting the In Flue Outdoor Sensor (IFOS) - Horizontal Flue

1. The IFOS comprises of a length of small diameter flexible 2 core cable. One end is a temperature sensor. The other end has two wires to be connected to the boiler low voltage terminal.

2. The temperature sensor end must be fitted to the clip. Snap the cable retainer into position over the cable (Fig. 1).

NOTE: To ensure effective operation the end of the IFOS sensor must be positioned to protrude 2mm ± 1mm from the body of the clip (Fig. 2).

3. The IFOS must be fixed in the air inlet of the boiler horizontal flue terminal at the time of installation. It **MUST** be positioned as shown (Fig. 3) or to the adjacent vane.

4. Commence the boiler installation as described in the Installation & Service manual to the point where the flue is cut or adjusted and set to length. **Do not cut the flue once the IFOS cable is inserted.**

5. Insert the loose end of the IFOS cable into air inlet of the cut or adjusted flue terminal. Fix the clip to one of the vanes on the air inlet as shown (Fig. 3). Ensure that it is firmly in position.

6. Pull the loose end of the IFOS cable out of the flue air duct.

7. Pass the loose end of the IFOS cable through the air duct of the flue elbow and into the outer part of the boiler adaptor (Fig. 4).

8. Ensure that the IFOS cable is accessible within the boiler and continue to assemble and complete the flue installation.

NOTE: It is recommended that a continuity test is performed on the IFOS cable. A reading of greater than 0Ω indicates continuity.

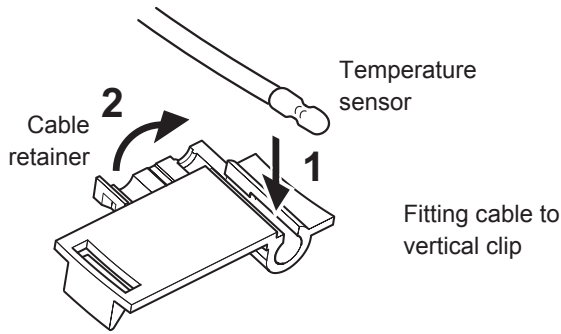


Fig. 5

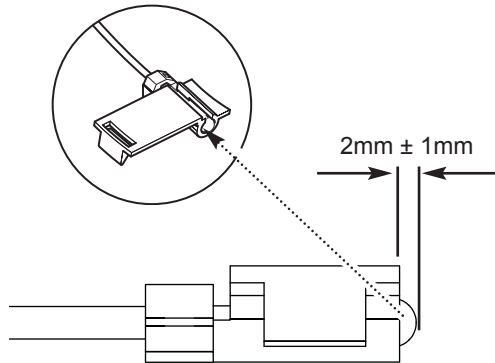


Fig. 6

4.0 Fitting the In Flue Outdoor Sensor (IFOS) - Vertical Flue

9. The IFOS comprises of a length of small diameter flexible 2 core cable. One end is a temperature sensor. The other end has two wires to be connected to the boiler low voltage terminal.

10. The temperature sensor end must be fitted to the clip. Snap the cable retainer into position over the cable (Fig. 5).

NOTE: To ensure effective operation the end of the IFOS sensor must be positioned to protrude $2\text{mm} \pm 1\text{mm}$ from the body of the clip (Fig. 6).

11. The IFOS must be fixed in the air inlet of the boiler vertical flue terminal at the time of installation. It **MUST** be positioned as shown (Fig. 7).

12. Commence the boiler installation as described in the Installation & Service manual to the point where the flue is cut or adjusted and set to length. **Do not cut the flue once the IFOS cable is inserted.**

13. Insert the loose end of the IFOS cable into air inlet of the cut or adjusted flue terminal. Fix the clip to the flange as shown (Fig. 7). Ensure that it is firmly in position.

14. Pull the loose end of the IFOS cable out of the flue air duct.

15. Pass the loose end of the IFOS cable into the outer part of the boiler adaptor (Fig. 8).

16. Ensure that the IFOS cable is accessible within the boiler and continue to assemble and complete the flue installation.

NOTE: It is recommended that a continuity test is performed on the IFOS cable. A reading of greater than 0Ω indicates continuity.

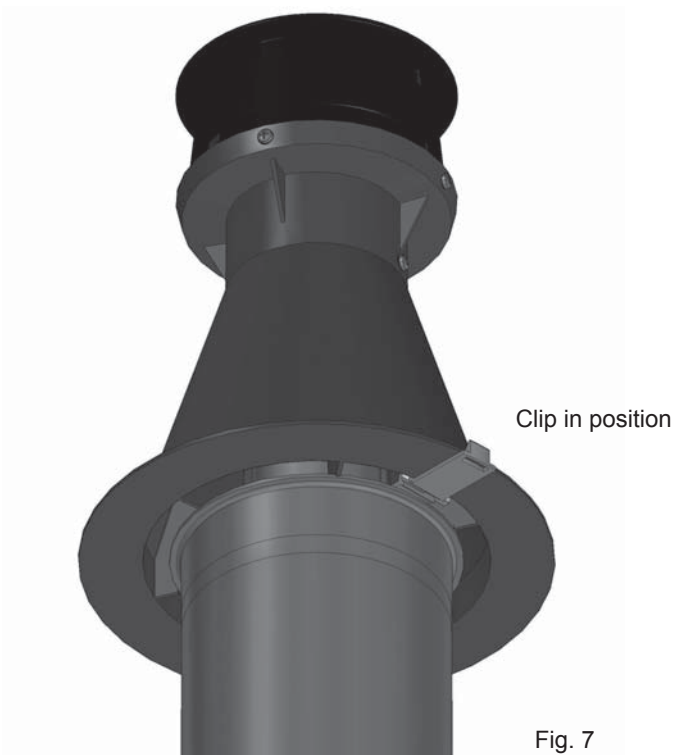


Fig. 7

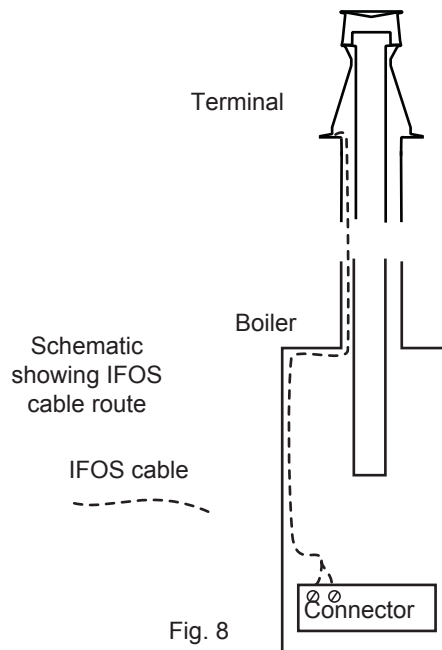


Fig. 8

Fix Routing Clip to inner face of top panel - typical example shown. Depending on boiler model it may be desirable to route the cable to the left.

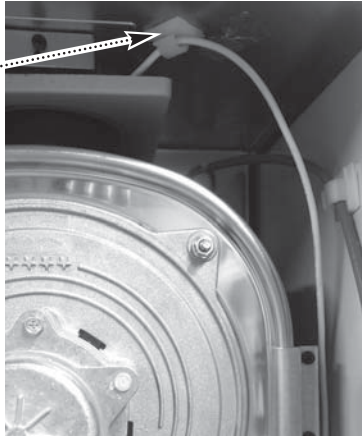


Fig. 9

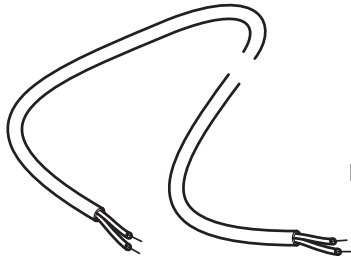


Fig. 10

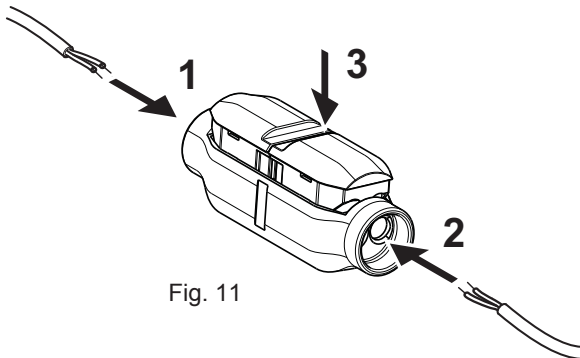


Fig. 11

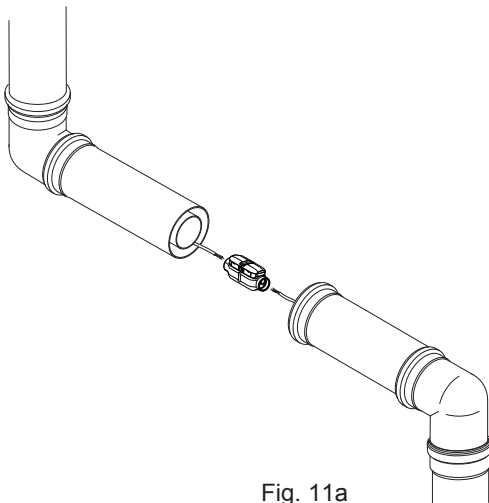


Fig. 11a

4.0 Fitting the In Flue Outdoor Sensor (IFOS) - Completion

17. Using the wipe provided clean an area on the inner face of the top panel. Fix one of the self adhesive routing clips to the panel (Fig. 9).

18. Route the IFOS cable through the boiler ensuring that it does not touch any hot surfaces or is adjacent to moving parts, e.g. fan. The second routing clip will assist this.

NOTE: The cable can be run to either the left or right.

Extending the cable

19. On longer flue runs (over 4 metres) it will be necessary to extend the IFOS cable using the available cable extension (part no. 7724260, Fig. 10).

20. Take the connector supplied, item (iv) in section 3. Ensure that the connector is fully open and insert the IFOS cable wires into one end and the extension cable wires in the other.

21. Press the connector together to retain and connect the cables (Fig. 11).

IMPORTANT: Care must be taken to not damage the cable when securing flue extensions especially if drilling holes for screws.

22. On shorter runs if there are several elbows in the flue (Fig. 11a) it is permissible to cut the standard IFOS cable and use the extension connector to ease installation.

5.0 Fitting the Relay PCB & Connecting the IFOS

1. Ensure that the electrical supply to the boiler and the system controls are isolated. Undo the screws securing the door panel and lift off the front panel. Hinge down the controls (Fig. 12).

2. Disconnect the electrode lead.

3. Release the cover retaining barbs from their slots. Disengage the rear of the cover from the fascia and lift the cover away (Figs. 12 & 13).

4. Do not touch the PCB unnecessarily, and take care when removing and fitting connectors. Use the ESD earth wrist strap provided.

5. Install the relay PCB in the location indicated (Figs. 13 & 14) and secure with screw provided.

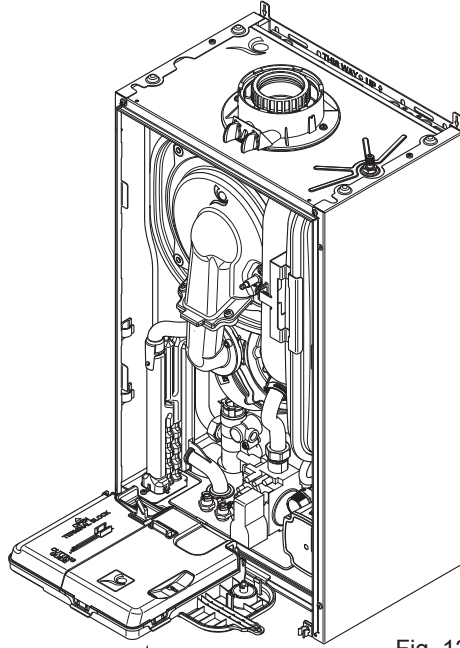


Fig. 12

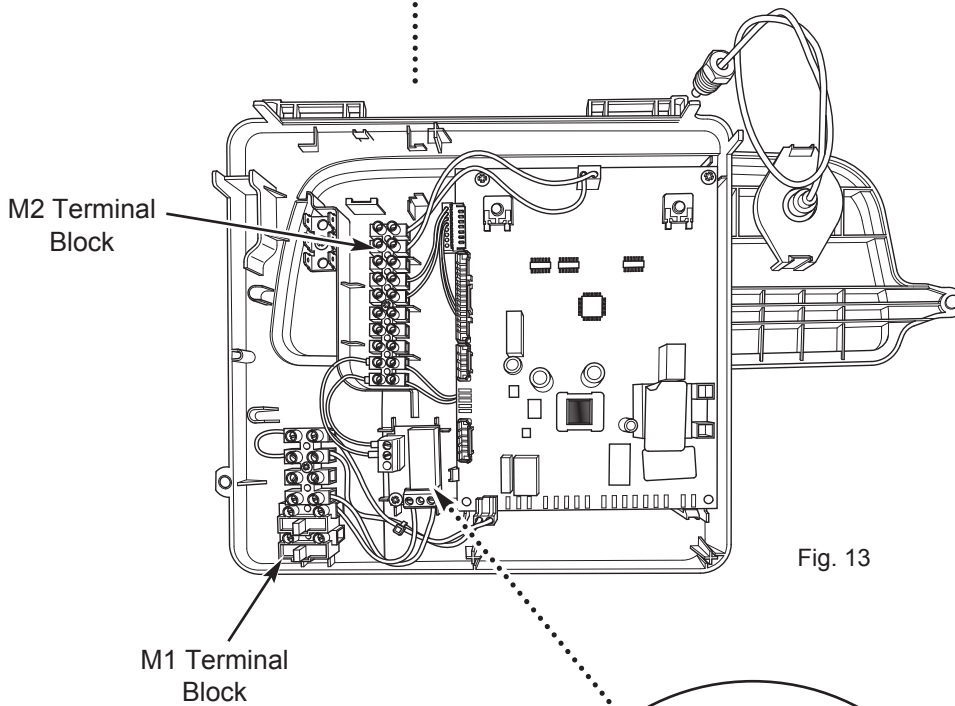


Fig. 13

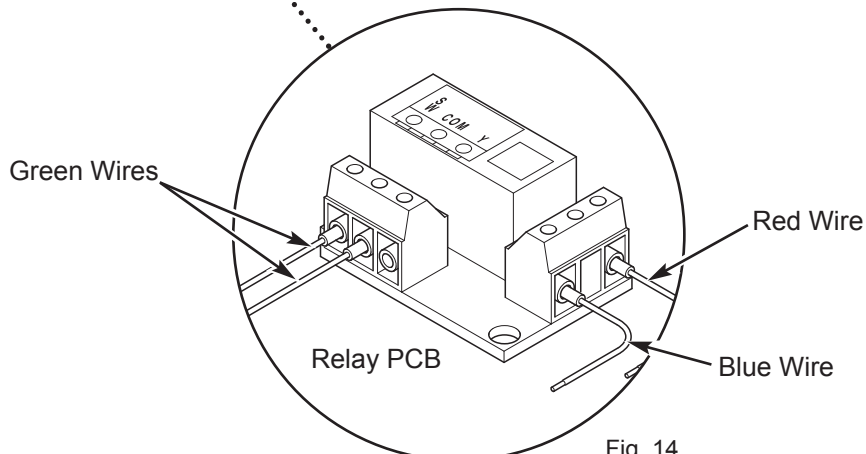


Fig. 14

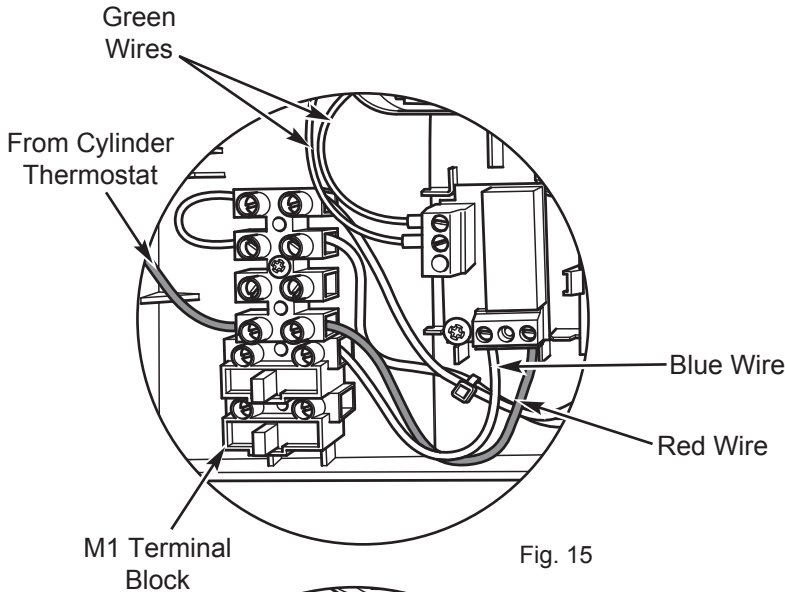


Fig. 15

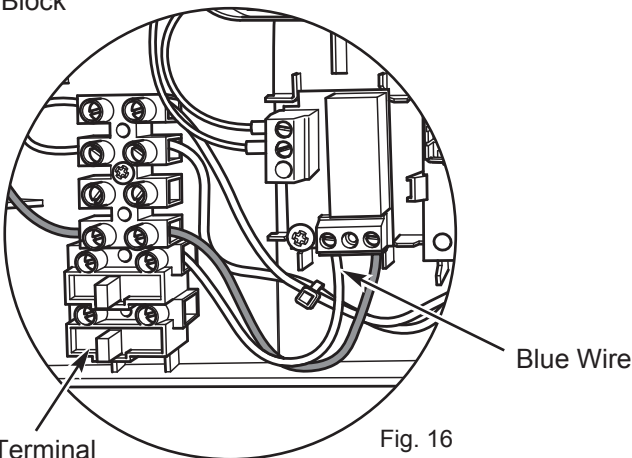


Fig. 16

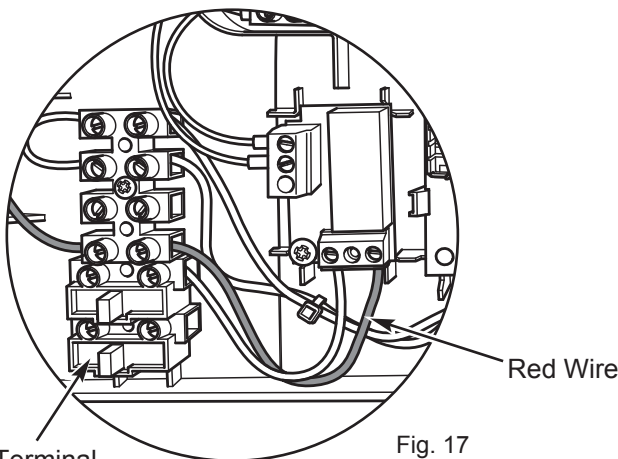


Fig. 17

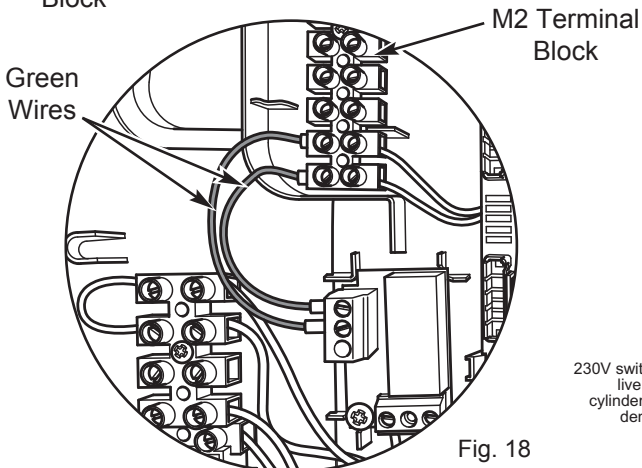


Fig. 18

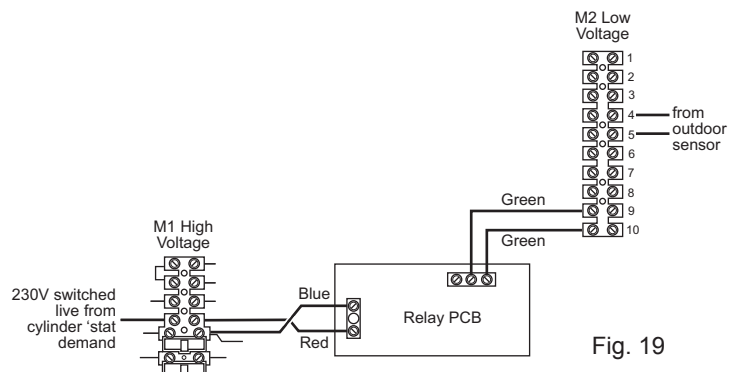


Fig. 19

5.0 Fitting the Relay PCB & Connecting the IFOS (cont.)

6. Connect the blue wire from the relay PCB to the neutral connection of the M1 terminal block (Fig. 16).
7. Connect the red wire to the spare terminal between the neutral and earth connection on same M1 terminal block (Fig. 17).
8. Connect the two green wires from the Relay PCB to the top two terminals of M2 terminal block (terminals 9 & 10, Figs. 18 & 19).
9. Connect the IFOS wiring to positions 4 & 5 on terminal strip M2 (Fig. 19).
10. Re-connect the electrode lead.
11. Refit all covers, re-secure the facia and door panel and continue to commission the boiler.
12. Turn on the boiler.
13. Create a demand for DHW and the DHW demand indicator should flash (Fig. 20).

The included identifying label Ref. (7221476-01) must be signed and affixed on or adjacent to the boiler. The label must be readily accessible without removing the boiler casing or any other disassembly. This label is required to enable SAP and energy assessors to identify that a weather compensation device is installed and connected.

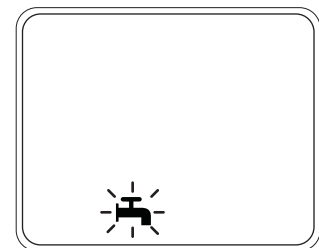


Fig. 20

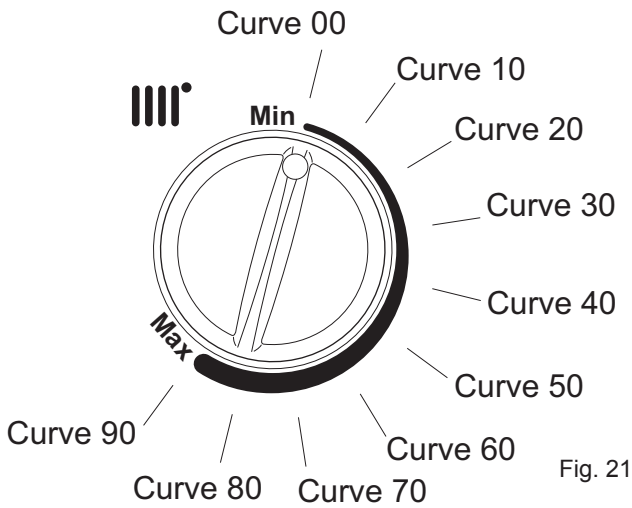


Fig. 21

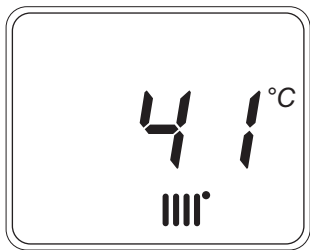


Fig. 22

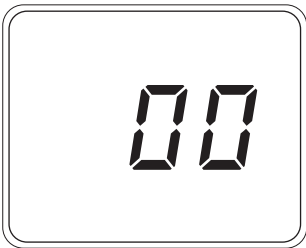
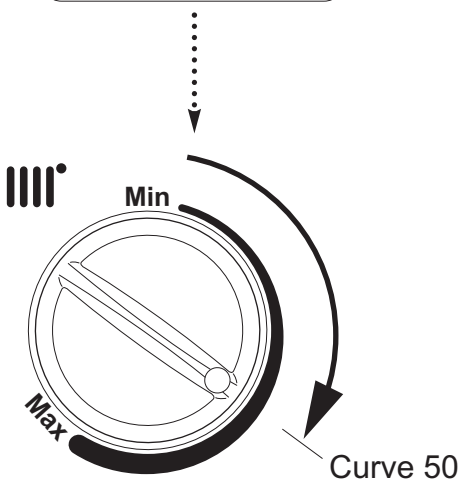


Fig. 23



6.0 Setting the Sensor Curve

1. Ensure that there is power to the boiler (though it is not necessary for there to be a heating demand).
2. The Central Heating Control Knob should be turned clockwise (Fig. 21) to the position which corresponds with the desired curve as shown on the graph (Fig. 24).

NOTE: The curves are given as examples in convenient increments of 10. It is possible to set the curve between these recommendations, e.g. at 62, but for clarity this detail is not shown on the graph .

3. Curve 50 is recommended as the most suitable for the normal range of conditions expected in the UK. Consider the type of dwelling and discuss with the user their requirements - one of the other curves may be more appropriate.

For example, if Curve '40' is selected (Fig. 24), at an outside temperature of 0°C the boiler flow temperature will be 80°C. Consider the type of dwelling and discuss with the user their requirements to determine the most appropriate curve.

4. Normally the display will show the current temperature of the water in the boiler (e.g. 41°C, Fig. 22). As the knob is turned the display will show the selected curve (Fig. 23).
5. Continue with the installation and commissioning of the boiler as described in the Installation & Service Manual.

IMPORTANT: Explain to the user how the outdoor sensor regulates the boiler flow temperature for central heating and that Central Heating Temperature Control will NOT operate in the way as described in the boiler User Guide.

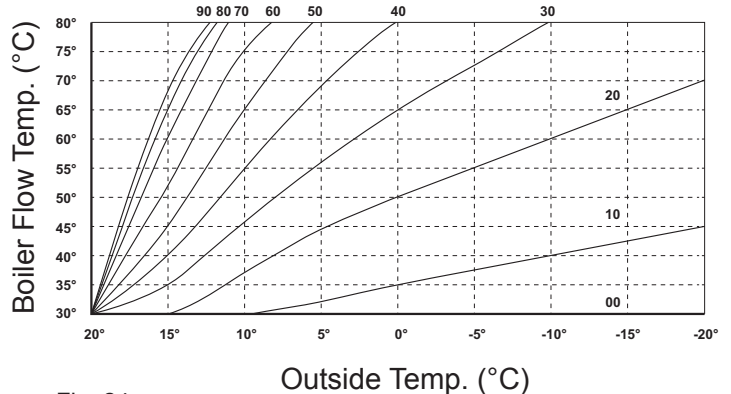


Fig. 24

7.0 Resistor for High Heat Loss Applications

Introduction

1. The addition of a resistor (Fig. 25) allows the boiler to achieve higher flow temperatures for a given outside temperature when compared with the standard outdoor sensor.

2. It is intended for applications where higher temperatures are required in the dwelling whilst retaining the benefit of weather compensation.

Fitting (Fig. 26)

3. Isolate the power to the boiler.

4. Remove the front panel, hinge down the control box and unclip the terminal block cover.

5. Identify the low voltage terminal block M2.

6. Connect the IFOS cable to terminals 4 & 6. Connect one end of the High Heat Loss resistor to terminal 5.

7. Connect the other end of the resistor to terminal 6 with the IFOS cable.

8. Ensure all terminal screws are tight and reassemble the boiler.

9. Reinstate the power supply.

10. Set the boiler as described in Section 6.0 to correspond with the desired curve as shown on the graph (Fig. 27).

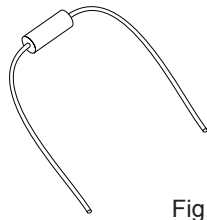


Fig. 25

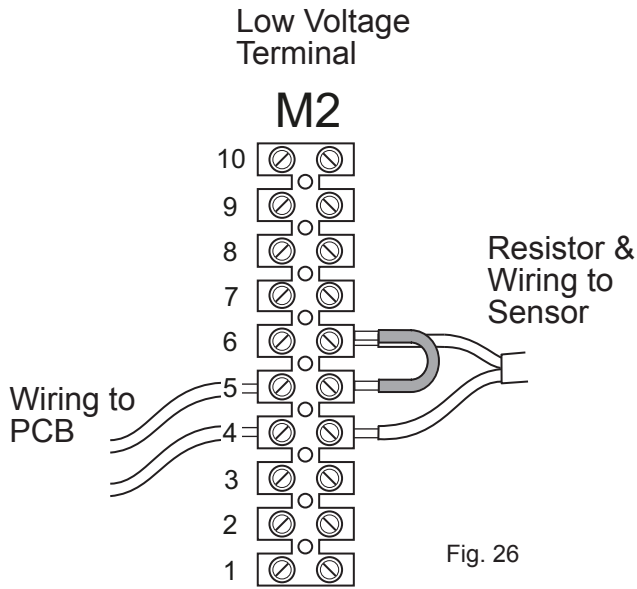


Fig. 26

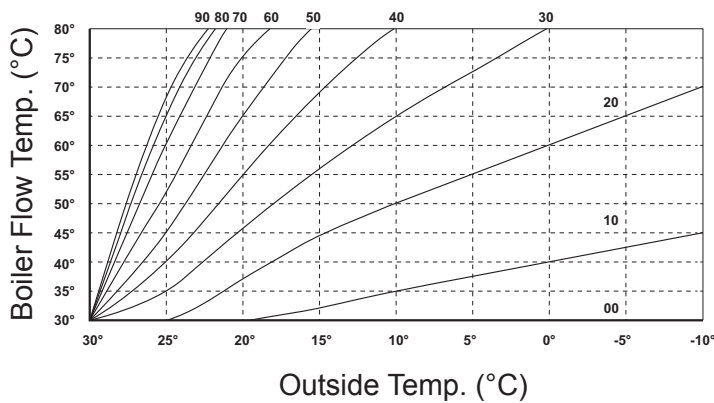


Fig. 27

Graph - Resistor Fitted

For example, if Curve **'40'** is selected (Fig. 27), at an outside temperature of 10°C the boiler flow temperature will be 80°C. Consider the type of dwelling and discuss with the user their requirements to determine the most appropriate curve.

8.0 User Information

NOTE: The Central Heating Temperature Control will NOT operate in the same way as described in the User Instructions supplied with the boiler !

1. Your installation has been fitted with an In Flue Outdoor Sensor (IFOS) that acts as a Temperature Compensation Device.
2. The IFOS enables the boiler to respond effectively to changes in the ambient temperature outside the dwelling.
3. As the outside temperature decreases, the boiler flow temperature will increase, thus maintaining comfort levels within the dwelling.
4. Your installer will have set the boiler according to the anticipated outside temperature range.
5. When there is a demand for domestic hot water the boiler will heat the cylinder as if the control knob was set to maximum. The Outdoor Sensor will be disregarded until the DHW cylinder thermostat is satisfied.
6. If you require a different comfort level consult your installer or follow the instructions in this booklet. Do not attempt to adjust the boiler if you are unsure how to proceed !

Baxi Customer Support



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e&oe

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