

installation

***i*max combined remote indication & BMS (0-10V) option kit**

Your Ideal installation guide

When replacing any part on this kit, 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 Boilers.

***i* Ideal** BOILERS
The High Efficiency Pioneers

INTRODUCTION

- Kit Contents: Dual PCB assembly (Remote indication, BMS (0-10V) and bracket) 1 off
Ribbon Cable Assembly 1 off

This kit is suitable only for the following boilers listed:

- **imax W45**
- **imax W45P**
- **imax W60**
- **imax W60P**
- **imax W80**
- **imax W80P**
- **imax W100**

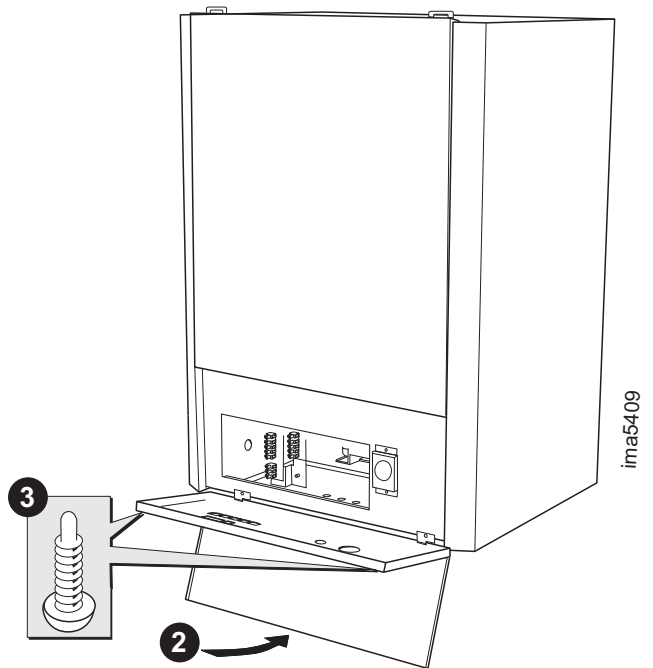
This kit provides a volt-free interface for wiring external monitoring of 'boiler on' and alarm indication of 'boiler lock-out' condition and facility for wiring a 0-10volt analogue input signal to facilitate external boiler control by a building management system (BMS) for all variants of imax boiler. Once the kit is fitted the operating parameters of the boiler require re-configuration to facilitate its operation

LOCATING THE KIT

The Kit Comprises a printed circuit board (PCB) assembly (bearing two PCB's), which fits inside the control panel of the imax boiler and a ribbon cable to connect to the boiler module control.

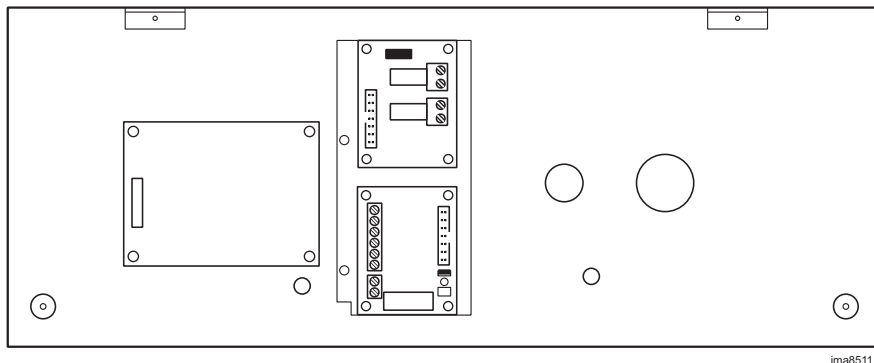
1 FITTING THE KIT

1. Switch off and disconnect the electricity supply to the boiler and any external controls.
2. Press the centre of the lower casing door to unlatch the magnetic catch and lower it.
3. Remove the two screws from the control fascia and lower it to expose the interior of the control box.



2 FITMENT OF PCB ASSEMBLY

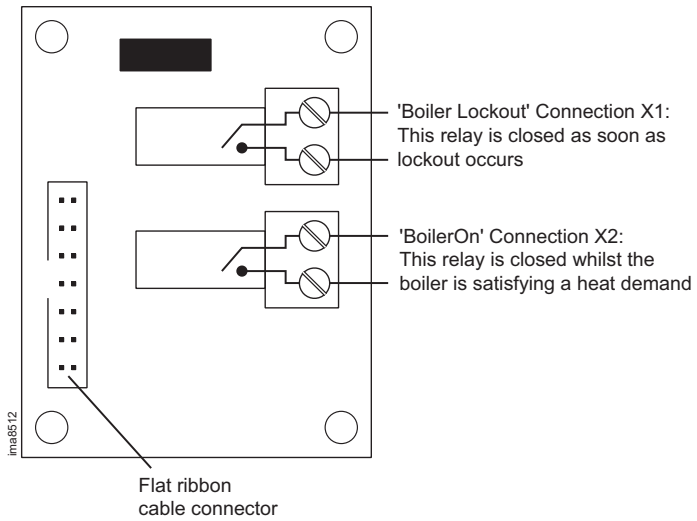
Identify the four PCB mounting pillars located to the right of the existing PCB located on the back of the control fascia. Locate the PCB assembly onto the pillars whilst orienting the PCBs as shown below. Carefully clip the assembly onto the pillars, avoiding excessive distortion of the printed circuit boards.



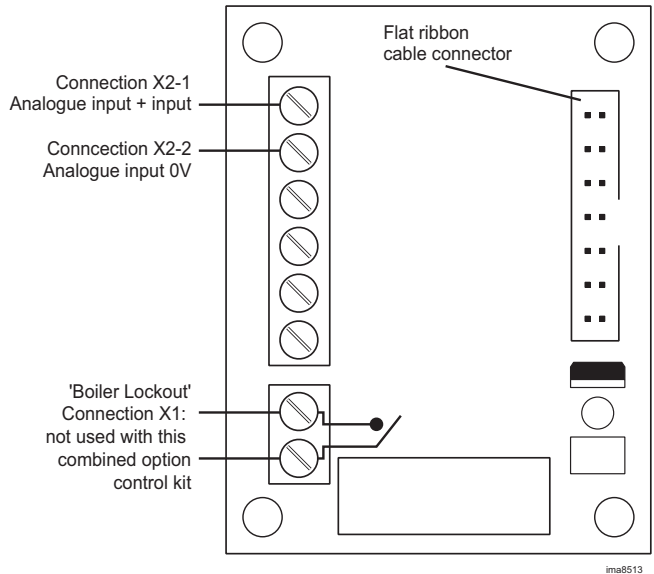
3 WIRING CONNECTIONS

Route the external sequencer and BMS signal / indication cables into the boiler control box via the cable gland fittings located on the bottom panel of the imax boiler. Wire the cables directly to the screw terminals on the PCB's as indicated in the diagrams below.

PCB - Remote Indication



PCB - BMS (0-10V)

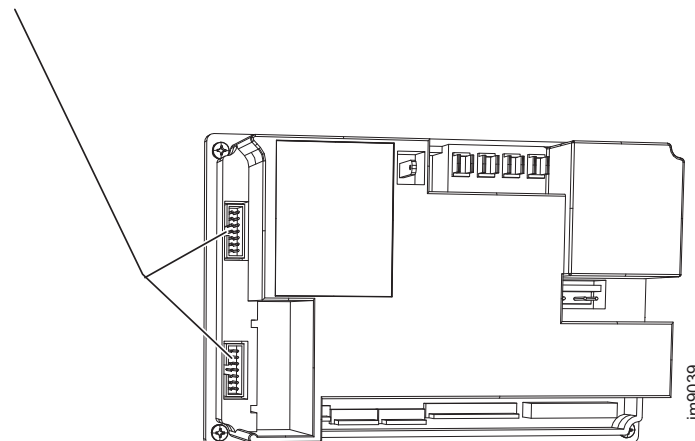


Note. Relays are suitable for switching 230-V loads: if inductive loads are connected take precautions over this load against peak voltages, e.g. RC-network

Locate the flat ribbon cable supplied within the kit. Plug the connector, located mid-way along the ribbon cable's length, into the socket on the left-hand face of the BMS PCB (nearest the hinge points). Plug the nearest connector on the ribbon cable into the right-hand face of the remote indication PCB and plug the remaining connector on the ribbon cable into the free socket on the boiler control module located within the controls area.

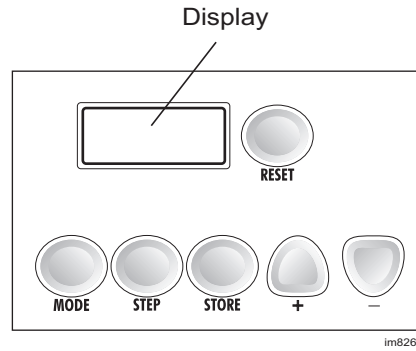
Re-assemble the controls fascia in reverse order.

Ribbon Cable Connectors






4 CHANGING CONTROL PARAMETERS - METHOD OF PROGRAMMING PARAMETERS FOR BMS (0-10V) OPERATION


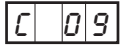
Maximum and minimum limits of analogue signal operation are set on the control panel using the parameter mode (with code) function.





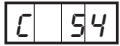
Code Mode is entered from standby mode by pressing and holding the 'mode' and 'step' buttons.

| Press | Display |
|---|---|
|   |  |


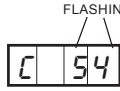
Press the 'step' button once and the display will show 'c' as the first digit and a random number in the 3rd and 4th digits.

| Press | Display |
|---|---|
|  |  |

Use the '+' or '-' button to change the code to 54.

| Press | Display |
|--|---|
|  or  |  |

Press and release the 'store' button, the display flashes to show the code has been accepted.

| Press | Display |
|---|---|
|  |  |

To leave code mode after parameter changes press reset. If no buttons are pressed the boiler automatically leaves code mode after 20 minutes.







5 CHANGING CONTROL PARAMETERS CONT'D

Access the 'PARA' mode using the 'mode' button and adjust the following parameters if necessary, whilst also referring to Frame 6.

Press the '+' or '-' buttons to change the values.

The parameter setting can be stored by pressing and releasing the 'store' button, the new setting flashes twice to show it has been accepted. The new setting will become active when the parameter mode is left.

***j*max W**

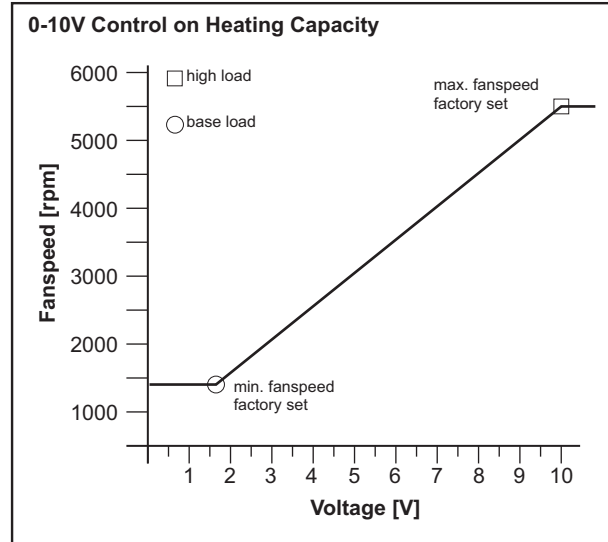
| Press | Display | Description | Lower Limit | Upper Limit | Factory Setting |
|---|---|---|-------------|-------------|-----------------|
|  | P A R A | | | | |
|  | P04 4. 8 2 | CH set flow temperature (°C) T, (max) | 20 | 90 | 82 |
|  | P10 appears for 1 second . 2 0 | CH flow temperature (min) (°C) When using outside temperature sensor compensation | 15 | 60 | 25 |
|  | P35 . 0 5 | CH modulation hysteresis off | 00 | 10 | 05 |
|  | P40 . 0 0 | Blocking time CH (seconds) Minimum off period between CH demands to reduce cycling | 00 | 30 | 00 |
|  | P45 . 0 0 | 04=0-10V BMS: capacity 05=0-10V BMS: temperature | | | 00 |

6 ANALOGUE CONTROL CHARACTERISTICS

The 0-10V BMS control signal can control the boiler's heating capacity or flow temperature operation.

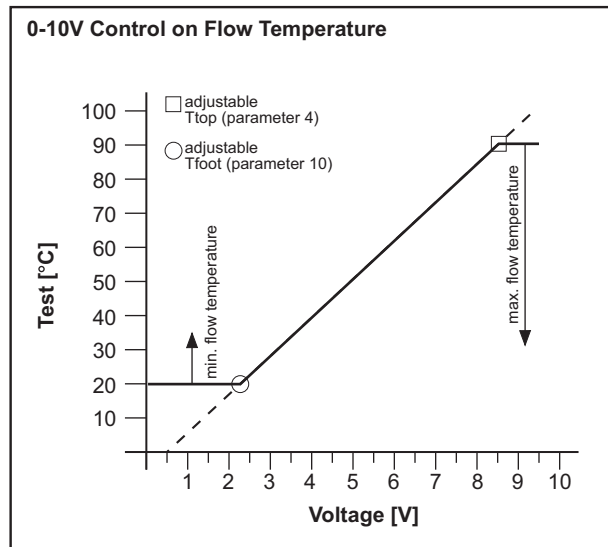
0-10V CONTROL ON HEATING CAPACITY

To control the boiler on heating capacity set CH type (parameter 45) to 04. A heat-request is generated when the analogue input voltage >0.5V. The maximum boiler flow temperature is set by parameter 4. The voltage controls modulation by controlling the boiler fan speed (1.8V = minimum load, 10V = maximum load). The burner will be switched off when the flow temperature is greater than the CH set flow temperature (parameter 4) + hysteresis off (parameter 35).



0-10V CONTROL ON FLOW TEMPERATURE

To control the boiler on flow temperature set CH type (parameter 45) to 05. A heat-request is generated when the analogue input voltage >0.5V. The voltage controls the set-value flow temperature (0V=0°C, 10V=100°C, but is top limited by the CH set flow temperature (parameter 4) and bottom limited by CH flow temperature min (parameter 10). The modulation is based on PI-control. The burner will be switched off when the flow temperature is greater than the CH set flow temperature (parameter 4) + hysteresis off (parameter 35).



If the burner switches off because of CH set flow temperature + hysteresis off, the CH blocking time (parameter 40) always becomes active.

Technical Training

The Ideal Boilers Technical Training Centre offers a series of first class training courses for domestic, commercial and industrial heating installers, engineers and system specifiers. For details of courses please ring: 01482 498 432

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December 2008 UIN 203007 A03



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