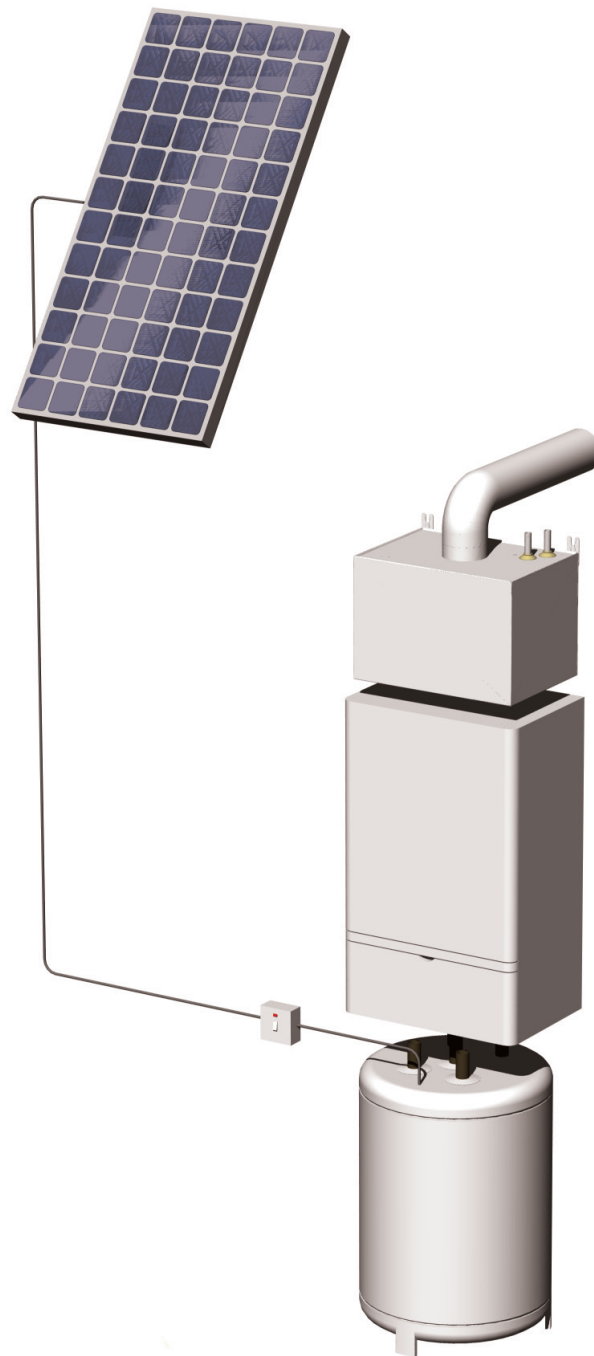


# ***Installation Instructions***

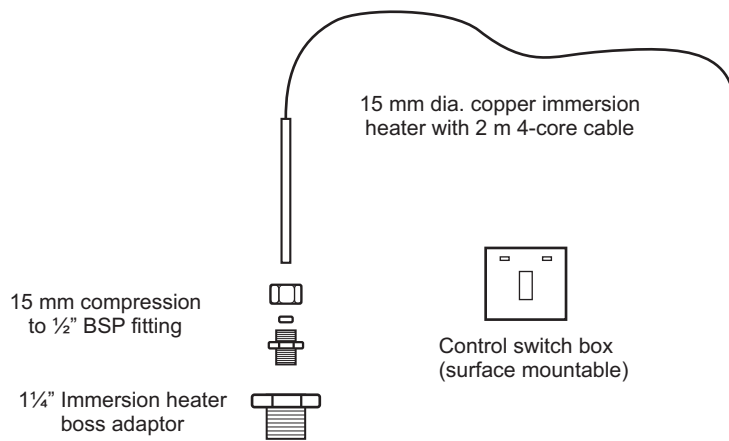
## **Low Voltage PV Immersion Heater**

**(Kit Part No. 6.2003060)**

**Only for use with the Alpha FlowSmart 25 or 50**



**Leave these instructions with the User**



## KIT CONTENTS

### 1. GENERAL

The Alpha FlowSmart low voltage PV (photovoltaic) immersion heater is an additional renewable energy source that can be added to an Alpha FlowSmart system to further increase energy saving and reduce CO<sup>2</sup> emissions.

This product is recognised within the governments SAP (Standard Assessment Procedure).

The immersion heater consists of two 12 V heater units encased in a 15 mm copper sleeve and has been designed specifically to be used in conjunction with a maximum of two 12 V/80 W photovoltaic solar panels and the Alpha FlowSmart 25 or 50 thermal store.

The solar PV immersion heater kit must be fitted in accordance with these instructions.

### 2. TECHNICAL DATA

Immersion heater length	300 mm
Immersion heater diameter	15 mm
Immersion heater material	Copper
Immersion heater fitting	1/2" BSP to 1/4" Boss adaptor
Inlet voltage	12 V DC nominal
Input power	2 x 80 W nominal PV panels
Nominal current	2 x 6.5 Amps
Immersion heater resistance	2 x 2 Ohms

### 3. SOLAR PV PANELS

The immersion element is designed for one or two 12 V/80 W photovoltaic panels.

Any panel type providing 12 V/80 W nominal output can be used.

### 4. INSTALLATION

In order to fit the immersion heater, the FlowSmart cylinder will need to be drained. Drain the heating system using the lowest drain point, then drain the FlowSmart cylinder using the cylinder drain valve.

Remove the three screws retaining the immersion inspection cover and remove the immersion plug using a suitable spanner or socket.

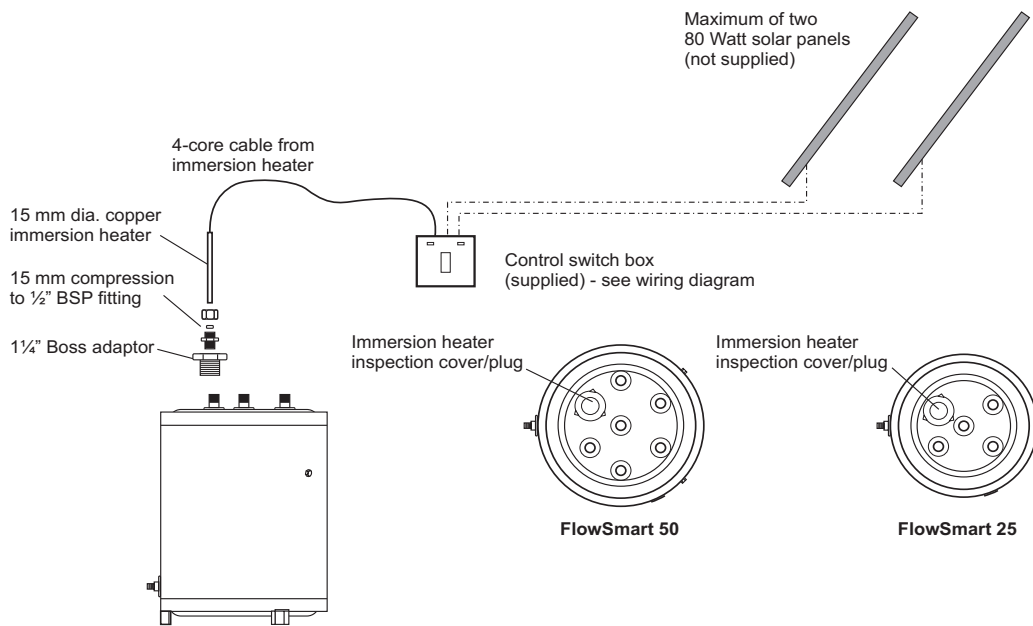
Assemble the 1/2" compression fitting to the brass immersion boss adaptor supplied. We recommend the use of PTFE tape or thread sealer to provide a good seal.

Fit the brass immersion boss adaptor to the cylinder and tighten with a socket or spanner. Insert the immersion heater element (fully) into the compression fitting and tighten.

Close all drain points and re-fill the central heating system.

**Notes:** The immersion heater is designed to work only when submersed in the cylinder water.

Always isolate the immersion heater from the power source when it is not fitted to the cylinder or when the cylinder is not completely full of water.



## 5. ELECTRICAL CONNECTIONS

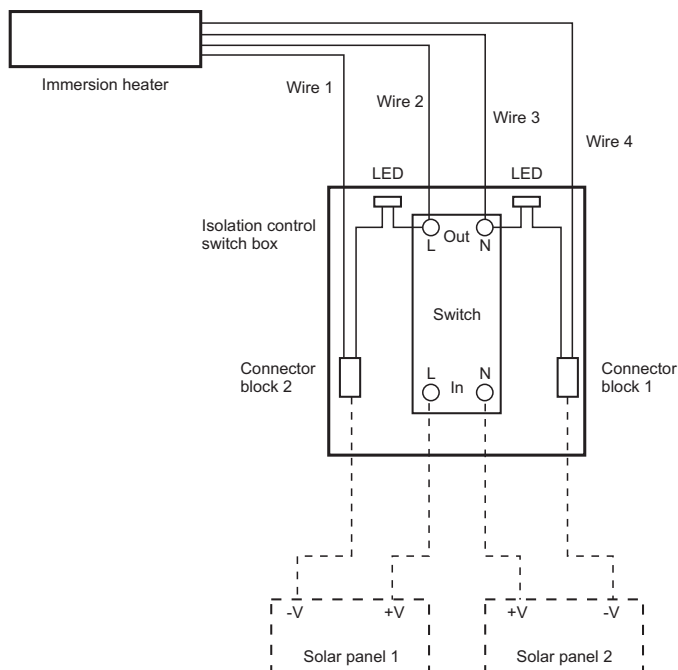
Mount the isolation switch box in a suitable position within 1.5 m of the FlowSmart cylinder and connect the immersion heater wires as shown in the wiring diagram.

After fitting the PV panels according to the manufacturers recommendations connect the PV panel wires to the other side of the isolation box as shown in the wiring diagram.

Additional cable may be required between the isolation box and the PV panels. To prevent high resistance and losses twin core cable of the following size is required:

Up to 6 m	1 mm <sup>2</sup>
6 m to 15 m	1.5 mm <sup>2</sup>
15 m to 22 m	2.5 mm <sup>2</sup>
22 m to 37 m	4 mm <sup>2</sup>

## 6. WIRING DIAGRAM



**Note:** Immersion heater wires are labelled 1 to 4.

## 7. INSTALLATION CERTIFICATE

The following installation certificate must be completed by the installer to identify the details of the installed components and verify that they have been fitted in accordance with the above instructions for the purposes of SAP appendix Q recognition. Where multiple immersion heaters are installed, one certificate should be completed for each immersion heater. The installation certificate must be given to the customer with the recommendation it is retained; e.g. for future inspection when selling the property.

<b>Installation Certificate</b>	
Indicate which system installed: Alpha FlowSmart FS-25-PV1 Alpha FlowSmart FS-50-PV1	
Immersion heater nominal power (total)	(Watts)
Whether one or both elements have been connected	One/two elements connect
Total PV power installed	(Watts)
Length of cable (to nearest metre)	(metres)
Cable size (conductor cross-section)	(mm <sup>2</sup> )
I certify that the installation has been installed in compliance with the Installation Instructions and the details in this Installation Certificate	
Name (print)	
Signature	
Date	

**Alpha**

HEATING INNOVATION

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Zenex SuperFlow Technology  
Patent Protected No. 2420174  
Other Patents Pending

*These instructions have been carefully prepared but we reserve the right to alter the specification at any time in the interest of product improvement.  
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