Solar iBoost+

Heat Pump Interface

Installation Guide

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Contents

Technical Specifications

Heat Pump Interface – Part number: CA-20/40

Operating Voltage:	230V AC +/-10%
Max Permissible Load:	13A Resistive
Ambient Operating Temperature:	0 to 40°C
Ingress Protection Rating:	IP55
Conforms to:	EN 60335-1, EN 55014-1
Dimensions:	160mm x 118.6mm x 60.5mm

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

At the end of this product's useful life, it should not be disposed of with household waste.

Please recycle where facilities exist. Check with your local authority or retailer for recycling advice in your local area.

Operation and Features

The Heat Pump Interface unit is designed to be used in conjunction with a Solar iBoost+ and heat pump. The unit allows both devices to operate with a single hot water tank immersion heater, allowing the heat pump to take control when requiring to perform a Legionella control cycle.

Under normal operation, the Solar iBoost+ will divert excess generation via the interface unit into the immersion heater instead of being exported to the grid. Standardly the heat pump will be programmed to periodically perform a Legionella control cycle, where the hot water tank is brought to full temperature by switching the immersion heater on fully for a period of time.

When the heat pump begins this cycle, the Solar iBoost+ is disconnected from the immersion heater and priority given to the heat pump. The heat pump's output, or a separate 13A supply, is switched to the immersion heater for the set cycle period. At the end of the cycle the unit automatically reverts back to operation with the Solar iBoost+.

Heat Pump Interface Features:

- 3kW immersion heater capability (maximum)
- Compatible with multiple types of heat pump outputs
- Easy installation for new and retrofit installs

Checks Before Commencing Installation

Before use, please read the instructions carefully.

Please note and ensure the following before commencing any installation work :

- The electrical installation of this device must only be undertaken by a suitably trained and qualified electrician, all local safety standards must be observed.
- To comply with safety regulations, it is necessary to have a means of full isolation of both the Solar iBoost+ supply and heat pump supply into the Heat Pump Interface.
- All work must satisfy Building/IEE Wiring regulations in force at the time.
- Test that the thermal cut out in the immersion heater functions and replace if necessary
- Do not install the Heat Pump Interface where a functioning thermostat is not present.

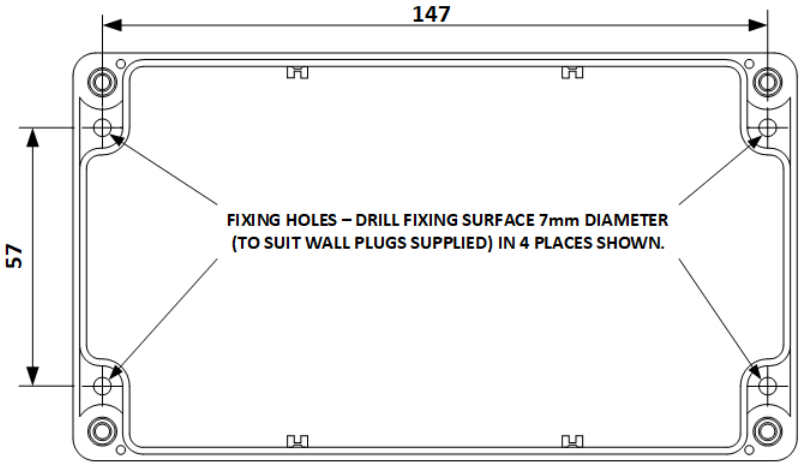
Installation

Pre-Installation

- Read Checks Before Commencing Installation and ensure compliance
- Locate a suitably ventilated flat and vertical surface close to the hot water tank to fix the Interface unit
- Alternatively, the unit may be mounted externally to the property, the protection rating is IP55

Fixing the Heat Pump Interface

Mark the wall according to the fixing dimensions below:



Locate the fixing kit provided.

On masonry walls, drill holes and fit the wall plugs provided in the box.

Use the screws supplied or suitable alternatives to mount the unit to the surface.

Connecting the Solar iBoost+

Refer to the Solar iBoost+ installation guide for further instructions regarding installation of the Solar iBoost+.

Wire the iBoost+ unit to the Heat Pump Interface terminals marked iBOOST+ as shown below:

Interface terminals (marked) iBOOST+	Solar iBoost+ connections
+	Connect to the HTR1 terminal marked +
-	Connect to the HTR1 terminal marked -
⏚	Connect to HTR1 terminal marked ⏚

Connecting the Immersion Heater

Test that the thermal cut-out in the immersion heater functions and replace if necessary. Do not install the Heat Pump Interface where a functioning thermostat is not present. Failure to comply will result in damage to the Solar iBoost+

The immersion heater is wired directly into Heat Pump Interface using the terminals marked IMMERSION. Connections should be made as shown below:

Interface terminals (marked) IMMERSION	Immersion heater connections
L	Connect to Live terminal of the immersion heater, 13A max.
N	Connect to Neutral terminal of immersion heater
⏚	Connect to Earth ⏚ terminal of immersion heater

- Heat Pump Interface wire strip length = 12mm
- Ensure cable glands are tightened sufficiently to provide cord anchorage to all cable entries
- Solar iBoost+ and Interface terminals allow the connection of up to 4mm^2 solid copper conductor or multi-strand cable. Ensure all strands are clamped within the connector.

Heat Pump Connections

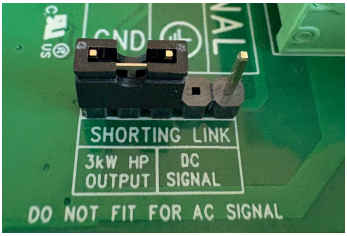
To accommodate a number of different heat pump designs, the Heat Pump Interface can operate with a number of incoming signal types and supplies:

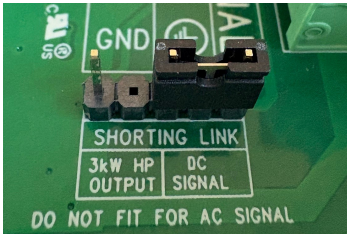
- 230V 3kW supply, where the heat pump is able to directly supply full power to the immersion
- AC control signal, where the heat pump output is insufficient to supply the immersion directly
- DC control signal, where the heat pump only provides low voltage DC signal and unable to supply the immersion directly
- Volt free contact at the heat pump which cannot supply the immersion directly.

The interface must be configured during installation depending on the heat pump's output.

A small Shorting Link connector is used to configure how the unit operates. Three pins are installed on the PCB, the link fits across two pins in either position A or B, as shown below:

Position A





Position B

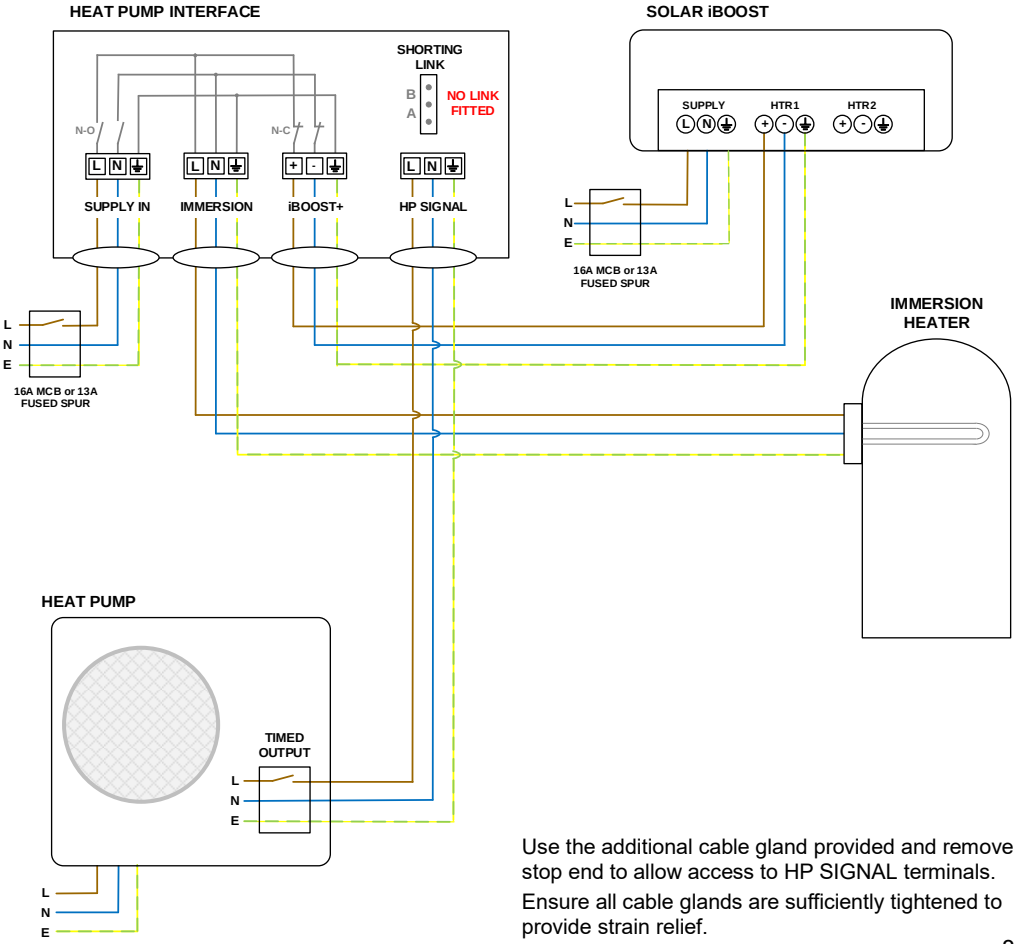
In some installations the link is not required to be fitted and must be removed.

The table below summarises the fitting positions (or removal) of the Shorting Link for the different Heat Pump output options supported:

Heat Pump Signal / Supply	Jumper location
230V AC 3kW	Position A
AC Control Signal	Do not fit jumper
DC Control Signal (+5 to +24VDC)	Position B
Volt free contact	Do not fit jumper

Wiring Diagrams

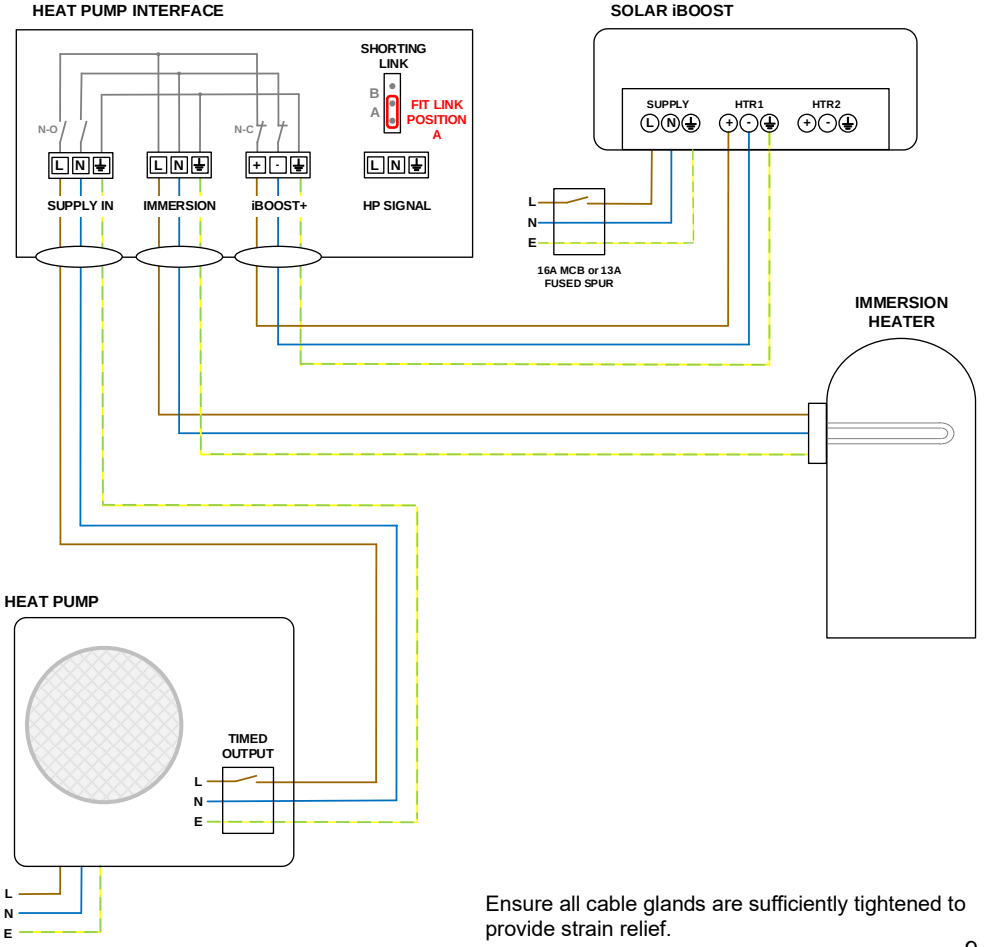
Type 1 - AC control signal



Use the additional cable gland provided and remove stop end to allow access to HP SIGNAL terminals.

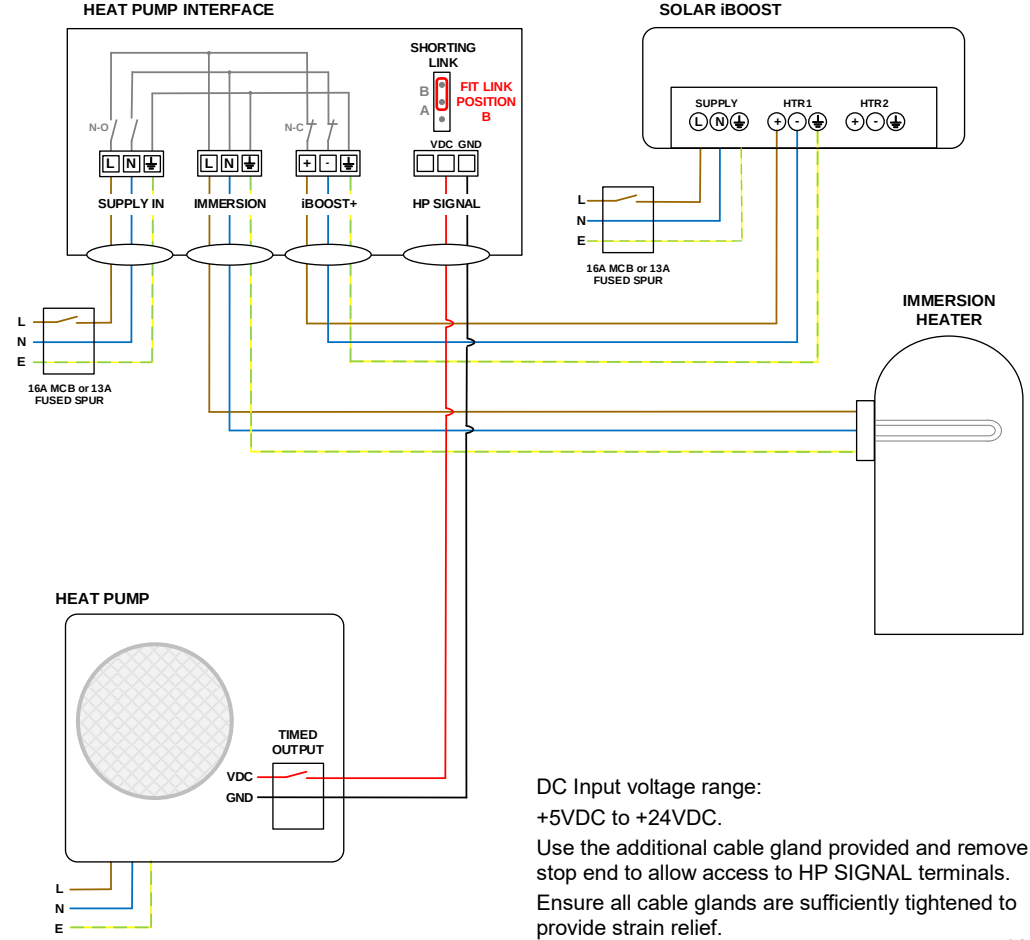
Ensure all cable glands are sufficiently tightened to provide strain relief.

Type 2 - 230V AC 3kW output from Heat Pump



Ensure all cable glands are sufficiently tightened to provide strain relief.

Type 3 - Low voltage DC control signal



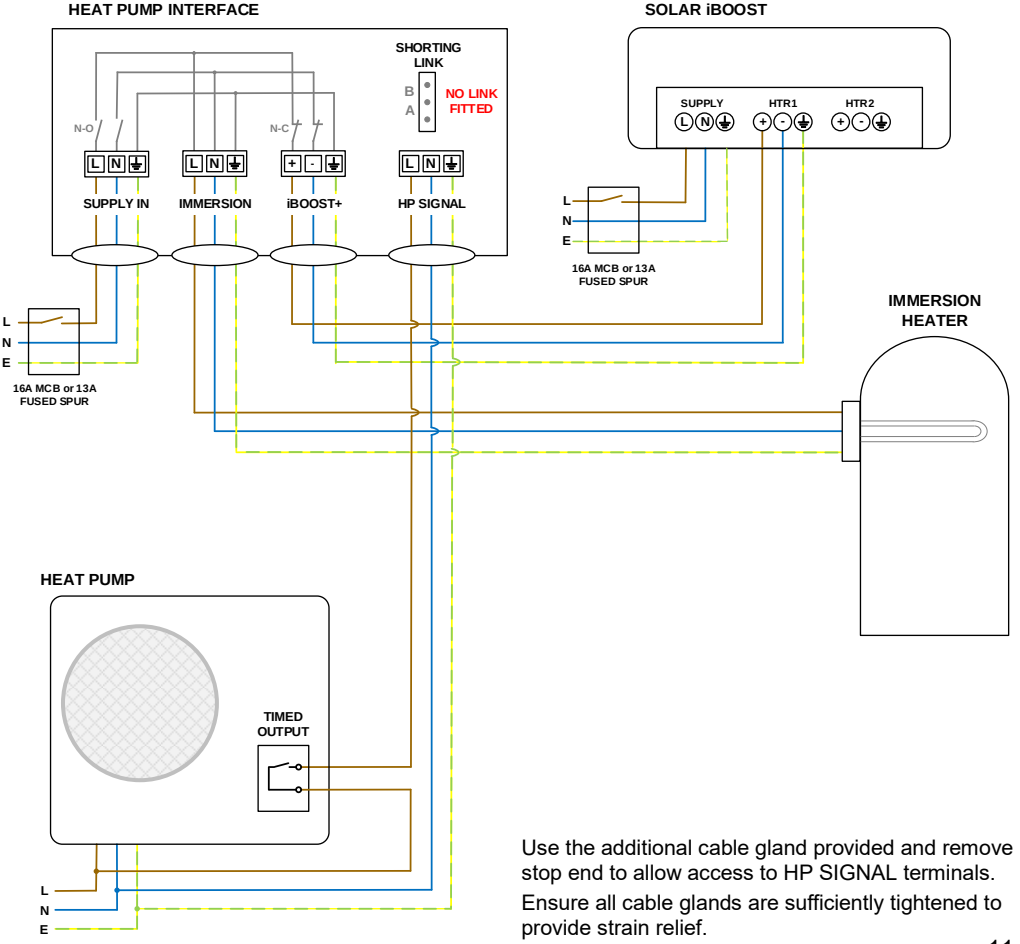
DC Input voltage range:

+5VDC to +24VDC.

Use the additional cable gland provided and remove stop end to allow access to HP SIGNAL terminals.

Ensure all cable glands are sufficiently tightened to provide strain relief.

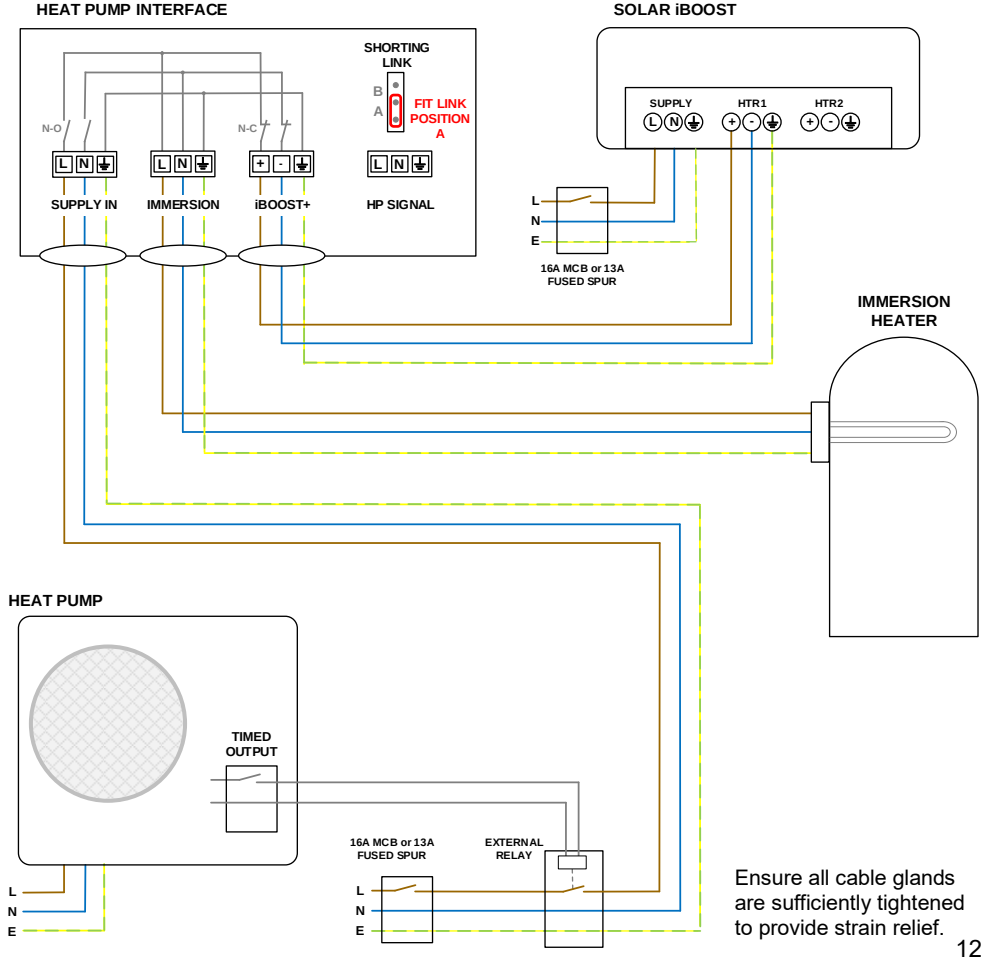
Type 4 - Voltage free contact



Use the additional cable gland provided and remove stop end to allow access to HP SIGNAL terminals.

Ensure all cable glands are sufficiently tightened to provide strain relief.

Type 5 - 230V AC 3kW supply via external relay/contactor



Ensure all cable glands are sufficiently tightened to provide strain relief.