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# SOLAR iBOOST

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## Installation and Operating Instructions

Model: CS11.z

## Before use please read these instructions carefully

Thank you for purchasing a Solar iBoost. These instructions are intended to provide information on the installation, operation and programming of the unit. Please keep this safe for future reference.

The Solar iBoost is designed to be used in conjunction with micro-generation systems where surplus energy generated can be stored within a domestic hot water cylinder in the form of hot water. By monitoring the amount of energy being exported to the National Grid the Solar iBoost unit will divert energy into an immersion heater when the energy generated exceeds the amount of energy consumed within the property.

### **Important: Immersion elements must have thermal switching (thermostats) built in for this system to operate automatically**

Solar iBoost Features.

- Manual and Programmable Boost facility.
- A single, battery powered, wireless energy sender.
- Displayed energy saving information.
- Up to 3kW operation
- Dual immersion heater capability

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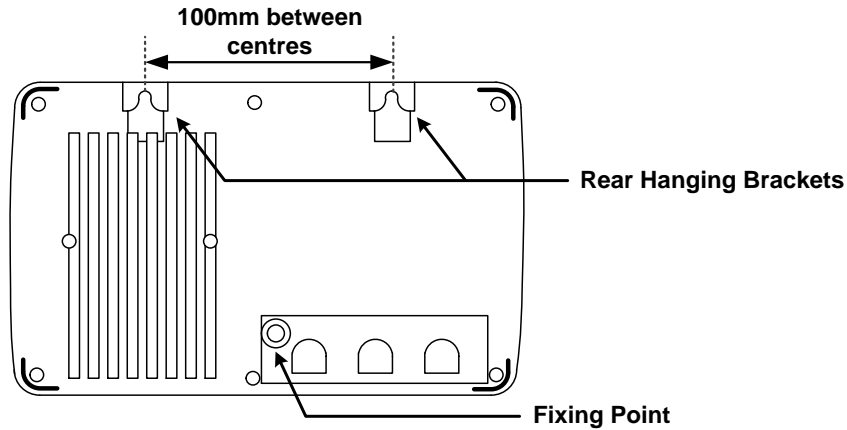
# Installation and Connection

The Solar iBoost unit is typically located close to the hot water tank (airing cupboard or similar) and electrically connected between a fused outlet or MCB and the immersion heater.

The immersion heater must be fitted with thermal cut-out (thermostat) to prevent water overheating.

## 1. Fixing the iBoost unit to the Wall

The iBoost should be fitted onto a level firm wall ensuring a 100mm air gap to all sides of the unit. Special care should be taken when positioning the unit to ensure that air flow is not obstructed.

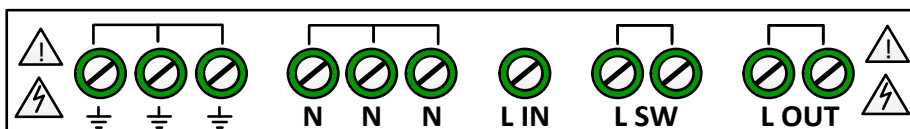


The Solar iBoost should initially be hung from the two top brackets using suitable round headed screws. The screw depth should be adjusted so the head fits snugly under the hanging point and the unit is held firm against the wall. Once hung, the iBoost should be screwed to the wall securely using the lower fixing point located under the terminal cover.

## 2. Connecting the Solar iBoost

**The electrical installation of this device must only be undertaken by a suitably trained and qualified electrician; all local safety standards must be observed. All work must satisfy Building/IEE Wiring regulations in force at the time.**

The Solar iBoost installation must be protected against overcurrent by connecting the unit to a 16A MCB or 13A fused outlet. A terminal cover protects the connection terminals, these are arranged as follows:

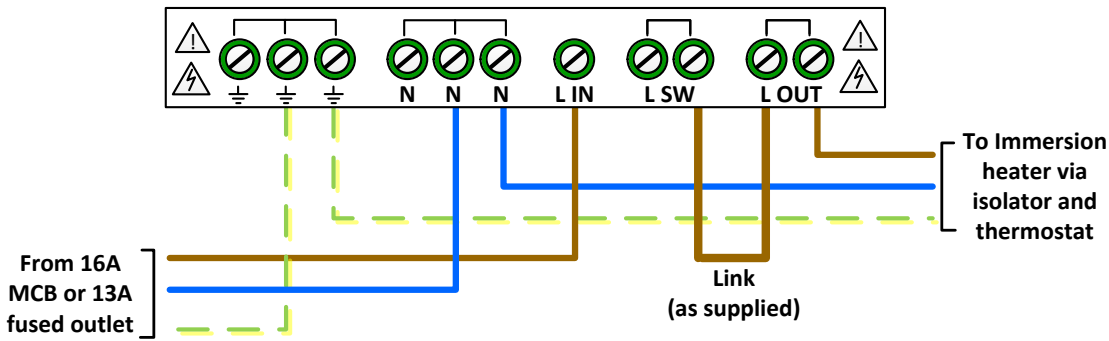


- $\perp$  Earth Terminals (all terminals internally connected)
- N** Neutral Terminals (all terminals internally connected)
- L IN** 230V Live Input – must be protected via 16A MCB or 13A fused outlet
- L SW** 230V Live Switched – output from boost relay, max 13A (see connection diagrams)
- L OUT** 230V Live Out – controlled output to immersion heater, max 13A

Terminals allow the connection of 2.5mm<sup>2</sup> solid copper conductor or multi-strand cable. Ensure terminals are fully tightened when the cable is fitted.

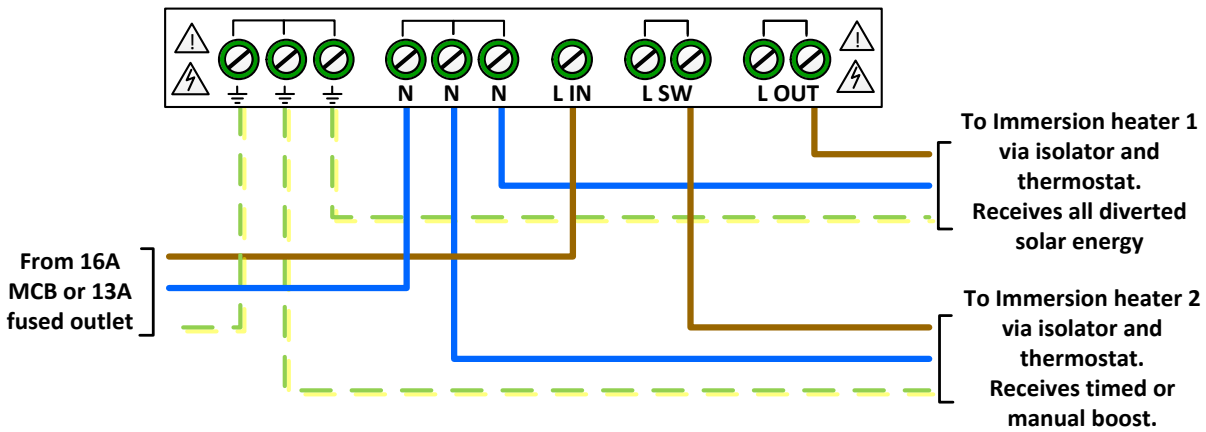
# Connection Diagrams

## A. Single Immersion Heater connection



Where a single immersion heater is fitted the wire link (supplied) should be fitted as shown. This joins the boost output to the controlled output allowing boost override.

## B. Dual Immersion Heater Connection

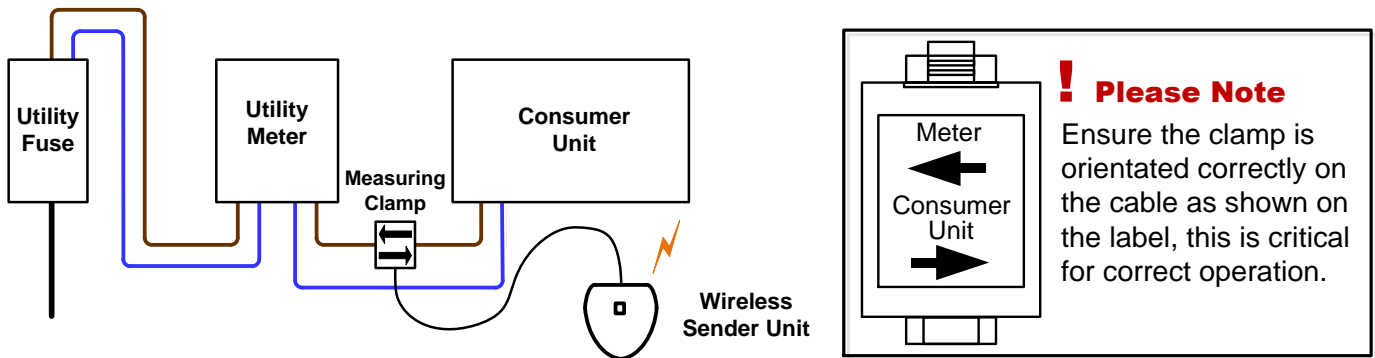


Where two immersion heaters are connected the maximum load through the unit must not exceed 3kW max. The controlled load output will be disconnected when the boost relay is operational to prevent overload.

## 3. Fit the Sender Unit

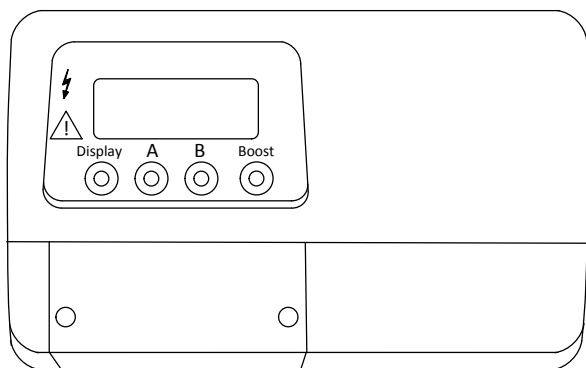
The sender unit uses two AA size batteries (supplied). Install the batteries into the sender unit ensuring correct orientation as shown in the unit's battery compartment.



The sender unit has a measuring clamp that fits around the live utility meter cable feeding into the consumer unit. Identify the cable using the diagram below which shows a typical installation. Open the clamp and clip around the cable ensuring correct orientation as shown.



Plug the clamp cable into the sender. The sender unit connects wirelessly to the iBoost and needs no other connection.

## User Operation



Display Button	Shows the amount of energy saved using the Solar iBoost (see Display Cycle)
A Button	Enables programming (see Programming)
B Button	Enables the Pairing process (see Pairing the Sender)
Boost	Provides a Boost of Hot Water (see Manual Boost)
	Indicates a problem with the unit when lit (see Trouble Shooting)
	Flashes when energy is being diverted to the immersion heater. Symbol is permanently lit when any boost function is on.

## Normal Operation

During normal operation the unit will show the following displays:

These messages will be overridden when other unit functions such as timed or manual boost are active.

<b>Heating by Solar</b> x.xx kW	Instant value of energy being diverted into the immersion heater.
<b>Water Tank</b> <b>HOT</b>	Shown when unit is attempting to divert energy to the immersion heater but tank has reached maximum temperature. The immersion heater thermostat has reached maximum set temperature and switched out.
<b>Water Heating</b> <b>OFF</b>	There is no excess solar generation to divert to the immersion heater or none being generated.

## Display Cycle

A display cycle allows the user to look through their energy saving readings. Each press of the Display button will move through the following sequence

<b>Saved Today</b> x.xx kWh	Current days energy diverted into the immersion heater
<b>Saved Yesterday</b> x.xx kWh	Previous days energy diverted into the immersion heater
<b>Saved Last 7 days</b> x.xx kWh	Last 7 days energy diverted into the immersion heater
<b>Saved Last 28 days</b> x.xx kWh	Last 28 days energy diverted into the immersion heater
<b>Saved Amount</b> x.xx kWh	Total value of energy diverted into the immersion heater since iBoost was installed
<b>Time HH:MM</b>	Current time in 24hr format

## Programming

A programming menu allows the unit's clock time to be changed and Timed Boosts set. Timed Boosts allow the user to specify two times of the day when the iBoost will switch the immersion on to full power irrespective of generation and may take electricity from the grid. This is used to provide hot water at times when there is limited generation etc.

The iBoost unit is programmed using push buttons A and B. To enter programming mode, press any button to switch on the display backlight then press and hold the A button for 3 seconds and release. The first item in the table below is then shown.

One of the digits will be shown flashing, this is the active digit and its value can be changed using the B button, each press adding one to the value. When the desired value is reached, pressing the A button moves the active digit forward one place through the displayed values. The programming cycle is as follows:

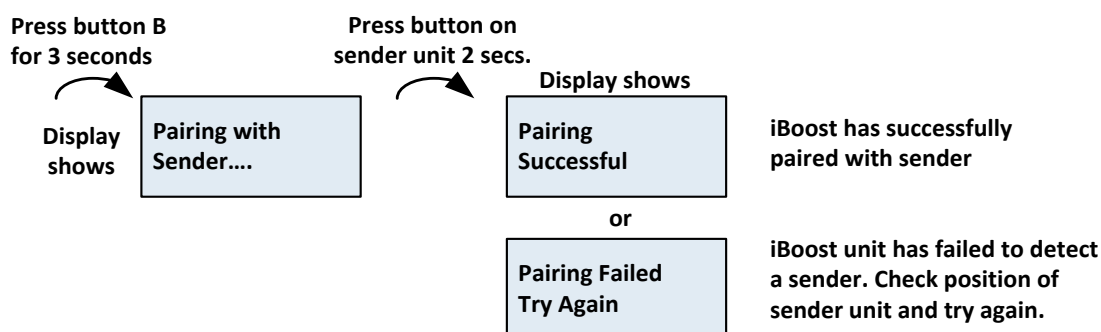
<b>Set Time</b> <b>HH:MM</b>	Set the internal clock time in hours and minutes.
<b>Timed Boost 1</b> <b>HH:MM to HH:MM</b>	Sets the Timed Boost for period 1 (e.g. morning) in hours and minutes. Allows a start and end time of the boost to be specified. Once programmed the boost will occur each day. Set both start and end time to 00:00 to disable.
<b>Timed Boost 2</b> <b>HH:MM to HH:MM</b>	Sets the Timed Boost for period 2 (e.g. evening). Operation as per Timed Boost 1

## Pairing the Sender Unit

The Solar iBoost and Sender unit have an electronic pairing so that units in close proximity do not interfere with each other. When the unit is first supplied, the sender will be pre-paired to the iBoost and not require further action.

However, should a Sender or iBoost unit need replacing, a pairing process for the new device is available as follows:

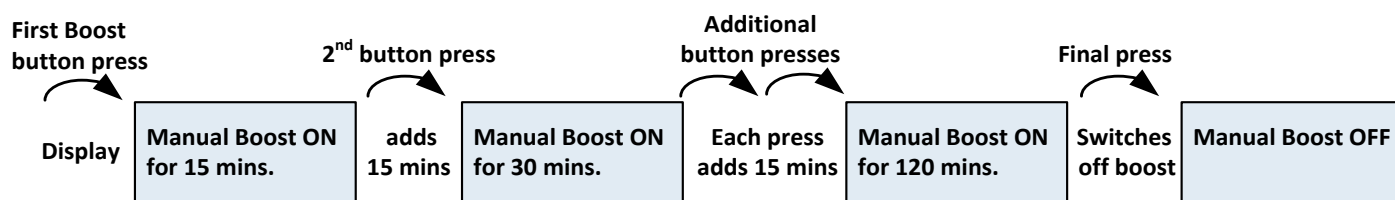
To begin pairing press any button to switch on the display backlight then press and hold the B button for 3 seconds and release. The display changes to show a pairing message and searches for Sender units. The Sender unit is fitted with a button on the front. While the iBoost is in pairing mode press this button for 2 seconds to instruct the iBoost unit to pair with that device. The result of pairing is shown on the screen as follows:



**! Please note:** Do not press the sender button outside of the pairing process. If the sender button is pressed for more than one second the sender may lose its pairing with the iBoost unit. In this case the iBoost will show a 'Lost Signal' message (see Trouble Shooting). To correct, either reset the sender by removing and replacing the batteries or use the above process to reset the pairing.

## Manual Boost

A Manual Boost can be selected which switches full power into the immersion heater for a selected period by pressing the button marked **Boost**. Each press of the Boost button adds 15 minutes to the boost time up to maximum of 2 hours. The amount of time remaining is shown on the display. To cancel the boost simply press the Boost button repeatedly until 'Manual Boost OFF' is shown. Note: The boost facility is likely to draw electricity from the grid.



## Troubleshooting - Warnings and Messages

The Solar iBoost has internal diagnostics to notify users of certain faults within the iBoost installation. When the iBoost unit detects a fault the red warning triangle on the front of the unit will be illuminated. A message on the display will detail the specific fault.

Displayed Message	Description of Problem
<b>Sender Battery LOW</b>	Batteries are low in the sender unit – replace batteries at earliest opportunity.
<b>Lost Signal to Sender</b>	No signal received from sender - The unit can no longer receive messages from the sender unit, possible causes: 1. Batteries may have expired 2. iBoost unit is positioned too far away from sender. 3. Sender unit pairing button may have been pressed inadvertently outside of pairing process (see Pairing the Sender section)
<b>Cooling... Unit Over Temperature</b>	The iBoost unit is over its working temperature – Check that iBoost unit is clear of obstruction and that there is adequate airflow to the unit. The iBoost unit will automatically recover when the internal temperature has reduced to within its normal operating range.

## Important Information about Legionella

Legionella bacteria are common and can be found naturally in environmental water sources such as rivers, lakes and reservoirs, usually in low numbers. As legionella bacteria are commonly encountered they may eventually colonise manufactured water systems and if conditions are favourable the number of bacteria may grow. Contamination risks are however low due to the low availability of nutrients and the regular chlorination of the water supply.

As with any hot water storage system it is important to avoid water stagnation and ensure the water is regularly heated to a minimum temperature of 55-60°C to reduce potential risks.

It is therefore recommended that the hot water tank be heated to 55-60°C at least once per week either using Boost facility or through other heating controls.

## Technical specifications

### Solar iBoost Controller:

Operating Voltage:	220 - 240 Vac
Control type:	1B
Maximum Permissible Loads:	13A Resistive (max 3kW immersion element)
Operating Ambient Temperature Range:	0 to 40°C
Approvals:	EN 60730-2-7, EN 301 489-3, EN 300 220
Dimensions:	210 x 131 x 67 mm

### Solar iBoost Sender:

Battery Type:	2 x AA IEC LR6 1.5V alkaline (supplied)
Battery Life Cycle:	1 year (user replaceable)
Operating Radio Frequency	868.3 MHz
Radio Range	Up to 30m indoors (dependant on construction)
Operating Ambient Temperature Range:	-5 to 40°C
Approvals:	EN 60950, EN 301 489-3, EN 300 220
Dimensions:	95 x 75 x 35 mm (excluding clamp)

## Further Support

For further support please call +44 (0) 1536 201588

## Warranty

SIB Energy Ltd warrants this product, excluding batteries, to be free from malfunctions and defects in both materials and workmanship for 2 years from the date of purchase. Retain the original dated receipt. Proof of the date of purchase will be required with any request for warranty repair.

SIB Energy Ltd will repair or replace products if they fail to function properly during the warranty period subject to conditions stated herein. Warranty service will include the labour to undertake any necessary adjustments or fit replacement parts to the product. SIB Energy Ltd will at its discretion refund the purchase price paid for the product provided it has been returned to SIB Energy Ltd together with proof of purchase price paid. SIB Energy Ltd reserves the right to repair or replace parts using remanufactured components. Replacement parts are warranted for the remaining warranty term of the original purchase or 90 days from the date of repair, whichever is the longer.

This Warranty is void where SIB Energy Ltd considers failure is owing to accident, alteration, modification, incorrect installation, unauthorised service, use of unauthorised components or accessories or mis-use.