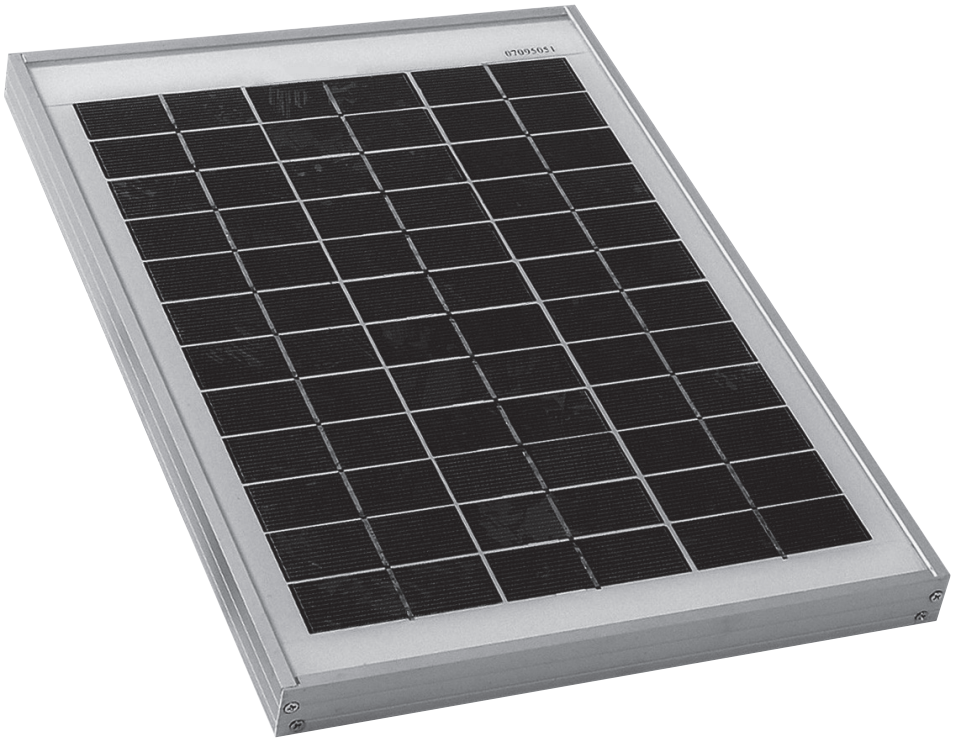
PV Logic®
Rigid

Solar
Technology
International
Without boundaries

User manual



Rigid Solar Panels

5wp/10wp/20wp/30wp/45wp/60wp/80wp/100wp/120wp/150wp/200wp

Important: please read before first use.

Technical helpline 01684 774 000

PV Logic Rigid kit contents

Letters after item descriptions refer to the picture opposite.

Please Note - Any part number with PT noted at the end removes the charge controller (b) as noted below and is replaced by a 15A MPPT charge controller

STP005
1 x 5wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
2 x Crocodile clips (k)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP010
1 x 10wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
2 x Crocodile clips (k)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP020
1 x 20wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
2 x Crocodile clips (k)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP020MA
1 x 20wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
2 x Crocodile clips (k)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH020/PB/AE
1 x 20wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 4pack of premium corner profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
16 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP030
1 x 30wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP030MA
1 x 30wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH030/PB/AE
1 x 30wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 4pack of premium corner profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
16 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK45
1 x 45wp solar panel (a)
1 x 10Ah charge controller (b)
1 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP045
1 x 45wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP045MA
1 x 45wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH045/PB/AE
1 x 45wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 4pack of premium corner profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
16 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK060
1 x 60wp solar panel (a)
1 x 10Ah charge controller (b)
1 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP060
1 x 60wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP060MA
1 x 60wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH060/PB/AE
1 x 60wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 4pack of premium corner profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
16 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK080
1 x 80wp solar panel (a)
1 x 10Ah charge controller (b)
1 x Pair narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP080
1 x 80wp Solar panel (a)
1 x 4m cable (h))
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP080MA
1 x 80wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH080/AE/PB
1 x 80wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 2pack of 52.5cm profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
16 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK100/AE
1 x 100wp solar panel (a)
1 x 10Ah charge controller (b)
1 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP100
1 x 100wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP100MA
1 x 100wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH100/AE/PB
1 x 100wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 2pack of 52.5cm profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
16 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK120
1 x 120wp solar panel (a)
1 x 10Ah charge controller (b)
1 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP120
1 x 120wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP120MA
1 x 120wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH120/AE/PB
1 x 120wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 4pack of premium corner profiles and 1 x 2pack of 18cm profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
24 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK150
1 x 150wp solar panel (a)
1 x 10Ah charge controller (b)
1 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP150
1 x 150wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP150MA
1 x 150wp Solar panel (a)
1 x 10Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH150/AE/PB
1 x 150wp Solar panel (a)
1 x 10Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 4pack of premium corner profiles and 1 x 2pack of 18cm profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
24 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK200
1 x 200wp solar panel (a)
1 x 20Ah charge controller (b)
1 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STP200
1 x 200wp Solar panel (a)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

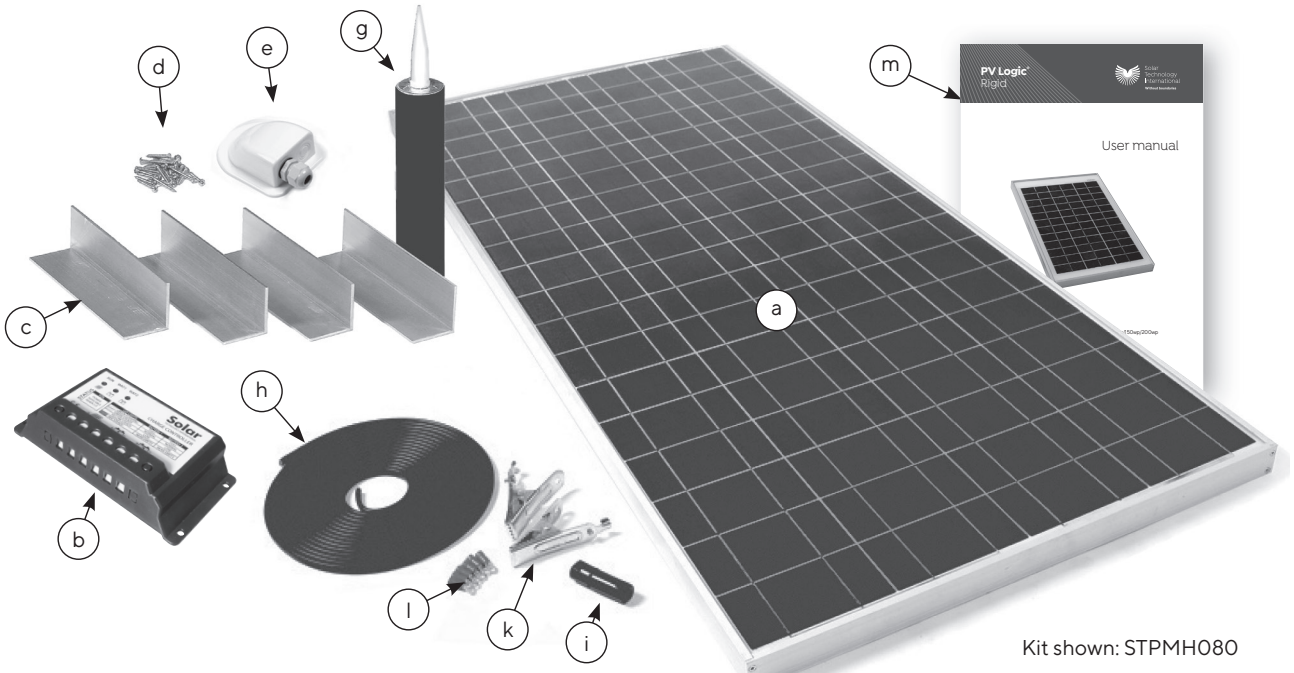
STP200MA
1 x 200wp Solar panel (a)
1 x 20Ah charge controller (b)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STPMH200/PB
1 x 200wp Solar panel (a)
1 x 20Ah charge controller (b)
4 x Aluminium fitting brackets (c)
(or 1 x 4pack of premium corner profiles and 1 x 2pack of 18cm profiles if PB kit has been selected; or 1 x 2pack of aero profiles if AE kit has been selected)
24 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
1 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK300
2 x 150wp solar panel (a)
1 x 20Ah charge controller (b)
2 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
2 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

STBBK400
2 x 200wp solar panel (a)
1 x 30Ah charge controller (b)
2 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
2 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

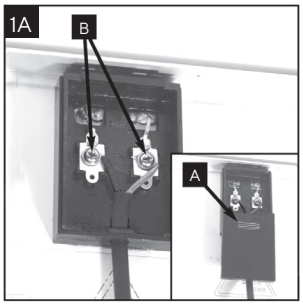
STBBK600
3 x 200wp solar panel (a)
1 x 40Ah charge controller (b)
3 x Pair Narrow boat bracket and fixings
12 x Stainless steel screws (d)
1 x Water resistant cable feed gland (e)
1 x 300cc Tube of bonding agent (g)
3 x 4m cable (h)
1 x In line fuse / holder (i)
6 x Ring terminals (l)
1 x Instruction sheet (m)

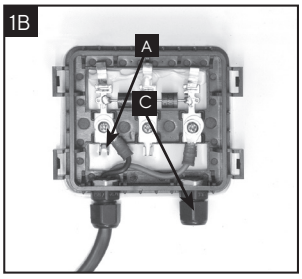


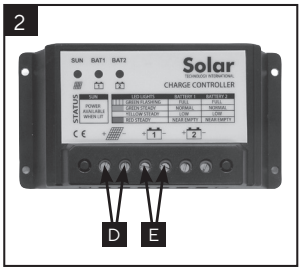
Kit shown: STPMH080

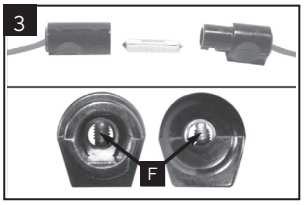
Please read all instructions carefully before work begins

IMPORTANT: When connecting a solar panel to a battery, it is always recommended that a voltage regulator is used to prevent both reverse current feed (at night) and overcharging of the battery. The only exception to this is the **STP005** and **STP010** because they are fitted with a reverse feed diode and if connected to battery size at or greater than 35Ah and 70Ah respectively will not overcharge because of each battery's own impedance.









Step 1: Fitting the cable to the solar panel (Cable pre fitted to 60wp to 150wp panels)

1.1 Remove the cover **(A)** from the terminal box on the rear of the solar panel

1.2 Panel sizes up to 30wp generally have the junction box style shown in Fig 1A. Panels 45wp and over have the syle shown in Fig 1B. Fitting the cable to both is similar but with the 3 terminal style shown in Fig 1B you should ignore the centre terminal (L/H terminal is –ve and R/H is +ve).

1.3 Take one end of the cable and strip back the black outer insulation 4.5cm. Strip back the insulation of the red and black inner cables 1.5cm to expose bare wire.

1.4 Feed the cable through the hole in the terminal box.

1.5 Twist the bare wire ends tightly and wrap clockwise around the loosened terminal screws B or C (depending which junction box style you have). Alternatively, two ring terminals (supplied) can be crimped onto the bare cable ends.

Red (positive), black (negative) as marked on inside of terminal box

1.6 Tighten terminal screws and replace the terminal box cover.

Step 2: Connecting cables to solar charge controller (If required)

2.1 Position the solar charge controller as close as possible to the battery (must be a dry location)

2.2 Measure the distance between your battery terminals and the solar charge controller.

2.3 Cut the measured distance from the end of the cable, allowing some extra for slack.

2.4 Take the loose end of the cable fitted to the solar panel and prepare as per 1.3 and attach to the terminals **(D)** on the solar charge controller by using the same procedure as described in 1.5.

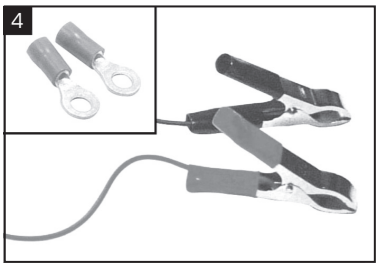
2.5 Prepare battery cable in the same way and insert into terminals **(E)**

Note: Red = positive (+), black = negative (–)

Step 3: Fitting the fuse

3.1 Strip back the black outer insulation of the cable 20cm.

3.2 Position the fuse as close to the battery as possible and if a charge controller is used between the controller and the battery. Cut the red cable at the halfway point and strip 5mm of the red insulation from both the cut ends. Twist the bare wire ends tightly. Fit into the screw terminals **(F)** on each of the fuse holder pieces.



Step 4: Connecting the cable to your battery

4.1 If wishing to fit crocodile clips (supplied in all 5, 10 and 20w kits) strip the red and black insulation (3cm) from the inner cable ends. Attach the cable to crocodile clips by following the same procedure as described in **1.5**.

4.2 For a more secure connection and recommended for every panel of 30w and above, strip the red and black insulation (6cm) from the inner cable ends, twist the bare wire and wrap around the battery terminals and fix into position using your battery clamps. Some clamps have connection screws fitted, in which case, if the supplied ring terminals have been crimped onto the wire ends, simply attach using your battery clamp screws.

4.3 When connecting to a battery always observe correct polarity.

Step 5: Additional information for fitting a MH kit

5.1 If the MH and PB kits have been selected, attach the brackets to the side of the panel using the supplied stainless steel screws, ensuring the brackets are flush with the top of the solar panel frame (thereby leaving a gap between the bottom of the panel frame and the roof). If the AE kit has been selected, please refer to the instructions supplied with this fitting kit.

5.2 Place the panel on the roof position where it is to be fixed and draw a pencil line around the footprint of the brackets or profiles (if PB or AE kit has been selected). Ideally the panel should be fixed above the cable entry hole.

5.3 Clean the area on your motorhome, caravan or boat where each bracket or profile (if PB or AE kit has been selected) and the cable feed gland is to be fixed with spirit, and make sure the area is clean, oil free and dry.

5.4 Insert the cable trailing from the solar panel junction box into the cable feed gland, ensuring the locking nut is loose, and then into the entry hole on the roof. Using the provided bonding agent, now bond the cable feed gland into position.

5.5 Apply the bonding agent (around a 6mm thickness of bonding agent is ideal) to the edge of each bracket or profile (if PB or AE kit has been selected) and then, possibly with assistance, turn the panel so that the solar cells are facing upwards and bond the panel to the roof, positioning the brackets in the pencil lines previously marked.

5.6 Once the cable has been pulled through the cable feed gland, the gland nut should be tightened to affect a water tight seal.

5.7 Now the cable can be channelled into the roof lining or into trunking/capping or similar and down to the battery. Finally, go to Steps 2, 3 and 4 to complete the installation.

NOTE – bonding agent requires 24 hours to properly cure. We would therefore recommend that the motorhome, caravan or boat is not moved during this period.

Step 6: Additional information for fitting a Narrow Boat Ktt

6.1 The brackets are supplied with stainless self-taping screws to fix the bracket to the roof of the narrow boat. Use the bracket itself as a template and mark the hole centres. Be sure to measure the gap between brackets to suit the solar panel.

6.2 Once the drill hole points have been marked drill piolet holes and then apply a 6mm bead of bonding agent approx. 5mm inset from around the edges of the bracket and a zig zag line in the middle. Squirt a blob in the piolet holes.

6.3 Place the brackets onto the surface and push down so the bonding agent just squeezes out beneath the edge of the bracket base. Quickly insert the screws through the bracket holes and tighten up but not too tight so it compresses the bracket against the sealant.

6.4 Leave the brackets to cure for 24 hours and then fully tighten the screws.

6.5 The panel can then be fitted to the bracket and the cable gland installed as per 5.4 and 5.6 above

6.6 The charge controller should then be fitted as per Step 2, 3 and 4.

Options

Connecting an inverter into the system

7.1 Should you require your solar system to power 240v appliances, you will need to connect an inverter. Select an inverter power (measured in watts) that is most appropriate for the power of your appliances (also measured in watts). The inverter will be ideally positioned reasonably close to the battery. Most inverters come with pre-fixed cable so fix the loose end directly onto the battery terminals (positive to positive / negative to negative) - contact 01684 774000 for more information.

Connecting two or more solar panels together

8.1 Should you wish to increase the power and make a solar array or increase the voltage (to produce 24volt instead of 12 volt) this can easily be achieved. Please contact Solar Technology on 01684 774000 and request a copy of our "Creating a Solar Array" technical bulletin, which can also be found in the 'file download' section at www.solartechnology.co.uk.

Adding a second battery

9.1 If a second battery is used, it can be connected to the Charge Controller, using terminals I (Fig. 3), by means of an additional piece of 2-core, 1mm cable (not supplied). As in step 4.6 above, attach the other cable to the second battery, not forgetting to add a fuse on the positive line as descibed in step 5 above. Power from the Charge Controller will be diverted to the second battery only when the primary battery is fully charged.

Warranty

Solar Technology International rigid solar panels are supplied with a 10 year panel build warranty and 20 year cell performance warranty.

10 Year Build Warranty
This guarantees the panel from mechanical failure and water ingress during this period. The frame will not buckle under normal conditions nor will the glass crack unless outside force has been used.

20 Year Cell Performance Warranty
The solar cells are guaranteed to perform for the long term and this warranty specifically confirms that by year 20 the cells will be outputting no less than 80% of their new value. For example, a 100wp solar panel is guaranteed to deliver no less than 80wh by year 20 when tested under Standard Test Conditions.

In the event of a successful warranty claim in both cases, Solar Technology International will, at its discretion provide one of the following remedies; **1.** Replace the defective solar panel or **2.** Refund the percentage of the cost of the solar panel to the customer representing the percentage of the time period between new and year 10 and in the case of a claim on the cell performance a percentage will be paid according to the power output less than 80%.

Solar Technology International Ltd does not accept liability for any 3rd party damage how so ever caused or any costs associated with the return of faulty products.

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