PV Logic®
MHD Rigid

Solar Technology International

User manual

MHD Rigid Solar Panels

100Wp/125Wp/150Wp/200Wp

PV Logic MHD Rigid kit contents

Letters after item descriptions refer to the picture below.

Kit shown: STPUMH150AE

Basic Kits

Basic kits are available with the following contents:

STPU100
1 x 100Wp Solar panel (a)
1 x 4m cable (not shown)
1 x Fuseholder and fuse (b)
1 x Instruction manual (c)

STPU125
1 x 125Wp Solar panel (a)
1 x 4m cable (not shown)
1 x Fuseholder and fuse (b)
1 x Instruction manual (c)

STPU150
1 x 150Wp Solar panel (a)
1 x 4m cable (not shown)
1 x Fuseholder and fuse (b)
1 x Instruction manual (c)

STPU200
1 x 200Wp Solar panel (a)
2 x 0.9m cable attached to panel with MC4 connectors (not shown)
2 x 3m cable with MC4 connectors (not shown)
1 x Fuseholder and fuse (b)
1 x Instruction manual (c)

NOTE – STPU200 is fitted with twin cables and MC4 connectors. If using a cable gland during installation, the MC4 connectors will need to be removed to feed the wires through the cable gland and then new MC4 connectors attached using MC4 crimping pliers.

Kit options

The basic kits above are available with the following added options:

1. **With Charge Controller**

   In addition to the basic kit contents noted above, a 10A PWM charge controller can be added for panels up to 150Wp – the 200Wp panel requires a 20A PWM charge controller.

   Part numbers are as the basic kits, but with the suffix **MA**.

   Example: STPU100**MA** indicates a 100Wp basic kit with charge controller included.

2. **PV Logic Rooftop Kits**

   In addition to the Basic Kit contents noted above, PV Logic rooftop kits include the following:

   > 1 x PWM charge controller (d) - 10A for panels up to 150Wp and 20A for the 200Wp panel
   >
   > Choice of roof fitting brackets - premium corner brackets (not shown) or aero aluminium brackets (e)
   >
   > 1 x Water resistant cable feed gland (f)
   >
   > 1 x Tube of bonding agent (g)

   Part numbers are as the basic kits but with two additions: an **MH** in the middle of the number, together with a suffix to denote the type of fitting brackets chosen: no suffix indicates standard aluminium, adding **PB** indicates premium corner brackets and **AE** indicates aero aluminium.

   Example: STPU**MH**100**AE** indicates a rooftop kit with aero aluminium fitting brackets.

   Charge Controller Upgrade

   All PV Logic rooftop kits can be supplied with an upgraded 15A, 20A or 30A MPPT charge controller instead of the standard PWM controller.

   Part numbers for these kits are as the standard rooftop kit with an extra suffix of **PT**.

   Example: STPUMH100AE**PT** indicates a rooftop kit with aero brackets and a 15A MPPT charge controller.

3. **Bulk Pack Options**

   This option includes ONLY the solar panel and nothing else. The bulk pack contains 2 panels.

   Part numbers for these kits are as the standard basic kits but with a suffix of **BP**.

   Example: STPU100**BP** indicates a bulk pack of 2 x 100Wp solar panels.

# 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.
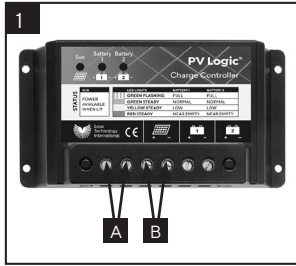
Step 1: Connecting cables to solar charge controller

NOTE: for 200Wp panel with twin cables, connect MC4 connectors attached to panel cable to 2 x 3m cable (supplied) with MC4 connectors and follow instructions below:

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

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

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

1.4   Take the loose end of the cable(s) fitted to the solar panel 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 wires.

1.5   Feed the cable through the hole in the terminal box. Attach to the terminals **(A)** on the solar charge controller. Take care to ensure to ensure the cables are connected to the correct terminals **red = positive (+), black = negative (−)** to avoid reverse polarity.
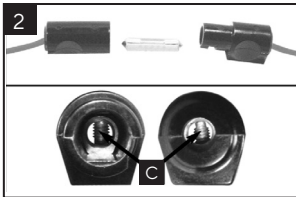
Step 2: Connecting the charge controller to the battery

NOTE: You will need the appropriate length of 2-core cable (not supplied) to connect the controller via the fuse to the battery, e.g. 1.5mm^2 for 100Wp / 125Wp panels or 2.5mm^2 for 150Wp / 200Wp panels.

2.1   Strip back the outer insulation of the cable 20 cm. Now strip back 5mm of the red and black insulation to reveal the bare wires. Twist the bare wire ends tightly and fit into the screw terminals **(B)** of the charge controller, observing polarity.

2.2   Strip 20 cm of the outer insulation from the other end of the cable. Cut the red cable at about halfway and strip 5mm of the red insulation from both cut ends. Twist the bare wire ends tightly and fit into the screw terminals **(C)** on each of the fuse holder pieces.

Step 3: Connecting the cable to your battery

3.1   Strip the red and black insulation (6cm) from the inner cable ends. Twist the bare wire, wrap around the battery terminals, and fix into position using your battery clamps.

Some clamps have screw connections fitted, in which case, if the ring terminals have already been crimped onto the wire ends, simply attach them using your battery clamp screws.

3.2   When connecting to a battery always observe correct polarity. **Note: red = positive (+), black = negative (−)**.

3.3   Refit the fuse into the holder and reassemble the fuse holder. The controller should now be powered up.

Step 4: Additional information for fitting a roof top kit with premium brackets (PB). (If the aero bracket (AE) kit has been selected please refer to the fitting instructions supplied with that kit).

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.

4.1   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).

4.2   Place the panel on the roof position where it is to be fixed and draw a pencil line around the footprint of the brackets. Ideally the panel should be fixed above the cable entry hole, to keep the cable as short as practicable and to hide the cable entry gland.

4.3   Clean the area on your motorhome, caravan or boat where each bracket and the cable feed gland is to be fixed with spirit, and make sure the area is clean, oil free and dry.

4.4   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.

4.5   Apply the bonding agent (around a 6mm thickness of bonding agent is ideal) to the edge of each bracket and then, (we recommend you do this 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.

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

4.7   Now the cable can be channelled into the roof lining or into trunking/capping or similar and down to the battery.
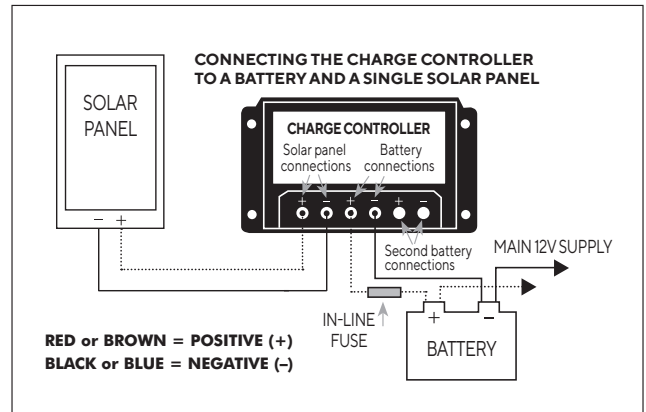
Technical helpline 01684 774 000

Options

Connecting two or more solar panels together

5.1 Should you wish to increase the power and make a solar array or increase the voltage (to produce 24 volt 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.

Adding a second battery to a dual battery charge controller

6.1 Connect a second battery to the dual battery charge controller with an additional piece of 2-core, 1.5mm^2 cable (not supplied) and follow steps 1, 2 & 3 above (not forgetting to add a fuse on the positive line as described in step 2). Power from the charge controller will be diverted to the second battery only when the primary battery is fully charged.

CONNECTING THE CHARGE CONTROLLER TO A BATTERY AND A SINGLE SOLAR PANEL

SOLAR PANEL

CHARGE CONTROLLER

Solar panel connections

Battery connections

Second battery connections

MAIN 12V SUPPLY

IN-LINE FUSE

BATTERY

RED or BROWN = POSITIVE (+)
BLACK or BLUE = NEGATIVE (–)

Warranty

PV Logic MHD rigid solar panels are supplied with a 10 year panel build warranty from the date of purchase from Solar Technology International. This guarantees the panel from mechanical failure and water ingress during this period. The warranty is void if the outer layers, or edges, of the panel have been penetrated, damaged or cracked or the recommended handling, storage, installation and care procedures have not been followed. The warranty is also invalidated if the panel has been abused, or not used for the purpose intended.

Neither the manufacturer nor any of its employees, agents, distributors or resellers are liable for any third-party damage howsoever caused. The extent to which the manufacturer is liable to a customer is limited to the purchase price paid by the customer for the product. We will not accept any costs associated with the return of faulty product.