Connecting your **Solar** panel...

Product contents

1 x **Solar** Panel

1 x Cable*+

1 x In-line connector+

1 x In-line fuse+

2 x Crocodile clips+

6 x Ring terminals+

1 x Instruction sheet

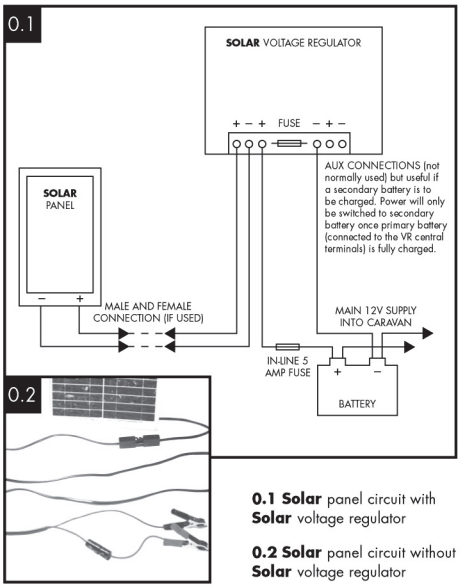
+not included if **Solar** panel is purchased separately

IMPORTANT: A **Solar** voltage regulator (not included) must be used with the STP018, STP028, STP043, STP060, STP080, STP120 and STP150

The **Solar** STS01204 voltage regulator is recommended for the STP18 to STP060 panels and the STS01208 for the bigger size solar panels.

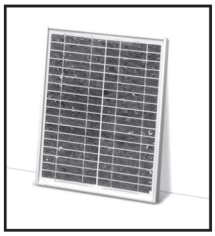
* Cable lengths - all panels are supplied with a 5m cable

STP005 and STP010 have a reverse feed diode fitted in the junction box so they can be connected directly to any battery of 34Ah or 70Ah (respectively) or over <u>without</u> a **Solar** voltage regulator



0.1 Solar panel circuit with **Solar** voltage regulator

0.2 Solar panel circuit without **Solar** voltage regulator



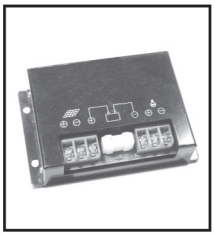
Solar Panel

Cable

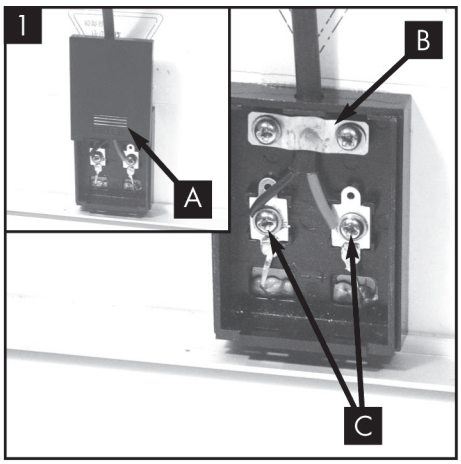
In-line connector

In-line fuse

Crocodile clips and ring terminals



Voltage regulator (NOT INCLUDED)



STEP 1: Fitting the cable to the **Solar** panel

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

1.2 Unscrew and remove the **cable clamp (B).** Loosen (do not remove) the two **terminal screws (C).**

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.

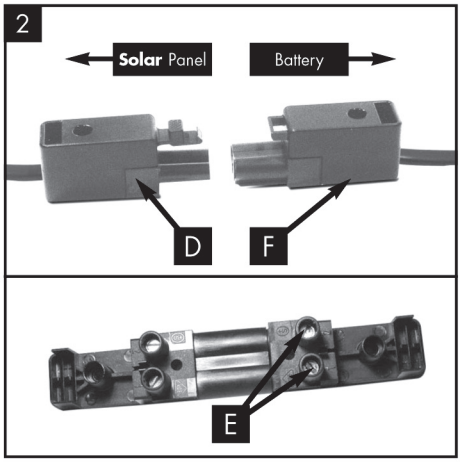
Note: the STP043 panel size and above have three terminals. Do not use the centre terminal unless connecting one solar panel to another.

1.5 Twist the bare wire ends tightly and wrap clockwise around the loosened terminal screws. 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, refit the cable clamp and replace the terminal box cover.

Note: cable clamp will give best results with low profile cable if fitted with the bulge facing (touching) the cable.



STEP 2: Fitting the in-line connector to cable (OPTIONAL)

This connector is supplied as a convenient means of disconnecting the panel from battery.

2.1 Decide where in the cable you would like to locate the in-line plug and socket. Cut the cable.

2.2 Strip back the black outer insulation of the cable connected to the solar panel 2cm. Strip back the insulation of the red and black inner cables 0.5cm to expose bare wire.

2.3 Remove the cover screw on the **male plug (D)** and remove the cover. Loosen the **two terminal screws (E).**

2.4 Twist the bare wire ends tightly and feed through the hole on the plug. Fit each wire end into the correct terminal and tighten the clamp screw:
RED (POSITIVE) = terminal 1 (E)
BLACK (NEGATIVE) = terminal 2 (E)

2.5 Tighten terminal screws and replace cover.

2.6 Repeat procedure for the **female socket (F)**.

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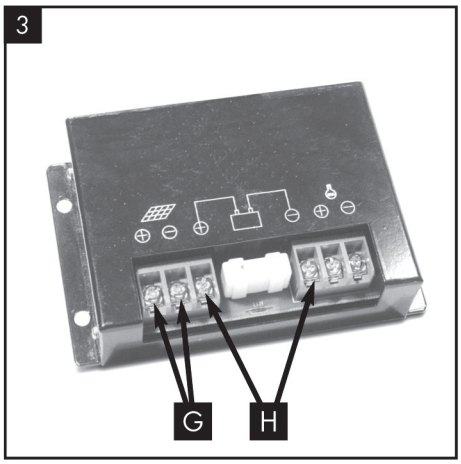

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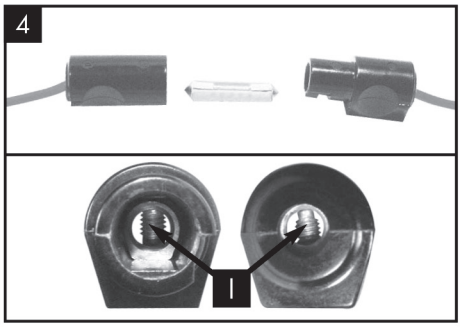

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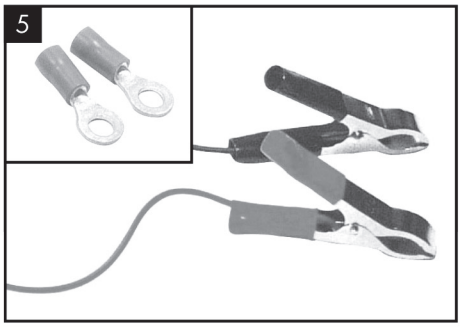

STEP 3: Connecting cables to **Solar** voltage regulator

(if required)

3.1 Position the **Solar** voltage regulator as close as possible to the battery (must be a dry location).

3.2 Measure the distance between your battery terminals and the **Solar** voltage regulator.

3.3 Cut the measured distance from the end of the cable.

3.4 Prepare as described in **2.2** the end of the cable from the inline connector (if fitted) and attach to the **two terminals (G)** on the **Solar** voltage regulator.

3.5 Take one end of the remaining cable, prepare as above and attach to the **centre terminals (H)** on the **Solar** voltage regulator by using the same procedure as described in **1.5**.

NOTE:
RED= POSITIVE (+)
BLACK = NEGATIVE (-)

STEP 4: Fitting the fuse

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

4.2 Cut the red acble 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 (I)** on each of the fuse holder pieces.

STEP 5: Connecting the cable to your battery

5.1 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**.

WARNING - only attach crocodile clips to a stationary battery.

5.2 Alternatively, for a more permanent connection to the battery, strip 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 you battery clamp screws.

5.3 When connecting to a battery always observe correct polarity.

Options

Connecting an inverter into the system

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 01242 210100 for more information.

Connecting two or more solar panels together

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 01242 210100 and request a copy of our “Creating a Solar Array” technical bulletin.

Fitting your **Solar** panel...

When permanent fitting is required it is important to leave a minimum 10mm air gap underneath the panel to allow for heat dissipation.

Solar Fitting Kits ensure the correct air gap is achieved.

Fitting Kits are simple to use and full instructions are provided.

Solar Help Line – 01242 210100.

Temporary fixing suggestions

1) The SOLAR Panel Stand, part number 10008, is a quick and cost effective means of supporting the solar panel at the appropriate angle. Alternatively, a similar arrangement can be fabricated using timber, UPVC or aluminium.

2) Attach the **Solar** panel to the roof of a caravan, motorhome or boat with self-adhesive velcro strips (loop nylon side to panel, ‘hook’ side to roof). The Solar panel will receive light throughout the day and benefits from the added security of being out of sight. (USE ONLY WHEN STATIONARY).

3) An alternative to 2) used very successfully by the Solar Technology team is to fix rubber bungs (found in all DIY stores) to the underside of the panel frame – a simple anti-scratch/slip solution.

Solar Technology International Ltd.
Unit 1 Malmesbury Road Kingsditch Trading Estate Cheltenham GL51 9PL
T: 01242 210100 F: 01242 262261 E: sales@solartechnology.co.uk
www.solartechnology.co.uk