

Step 4: Connecting the Flexi PV Cable to Charge Controller (if supplied)

- 4.1 A Charge Controller will be necessary for SFP020 and above and if using the SFP010 on a battery smaller in capacity than 70Ah.
- 4.2 Position the Charge Controller as close as possible to the battery (must be a dry location).
- 4.3 Measure the distance between your battery terminals and the Charge Controller.
- 4.4 Cut the cable so that there is sufficient cable for the panel to reach the Charge Controller and then the cut section to reach from the controller to the battery.
- 4.5 Strip back 20mm of the black outer sheath of the cable end to be connected to the Charge Controller.
- 4.6 Strip back 10mm of the red or brown and black or blue inner sheaths to reveal the bare cable. Twist both ends and connect to the terminals G of the Charge Controller, ensuring the positive and negative polarity is observed (either wrap the cable around each terminal G or crimp 2 ring terminals to the cable end).
- 4.7 If multiple panels are used the positive and negative cables from each panel should collectively be fitted to the corresponding terminals on the Charge Controller (G). In this case ensure the ring terminals are crimped on the cable ends to provide a reliable connection. Only one cable then needs to be wired from the Charge Controller (terminals H) to the battery.



Step 7: Testing the System

- 7.1 If the selected Flexi PV / Premium kit has been supplied with a Charge Controller, this product comes with its own instructions and LED indicators will confirm the system is working correctly.
- 7.2 If a Roof/Decktop Kit has been selected that includes a Solar Test Meter, the performance of the panel and the Charge Controller can be accurately checked.

OPTIONS

Expanding the Flexi PV System

- 8.1 Any Flexi PV panel can be expanded by up to three panels (if a single Flexi PV / Premium panel was selected in the first instance). To do this purchase the required kit plus an additional multi gang cable (if required) – see your local retailer or www.solartechtechnology.co.uk for more information. In all cases the 8Ah Charge Controller (if originally supplied) will accept up to 120W combined and a 12Ah Charge Controller should be specified if using a 160wp system.

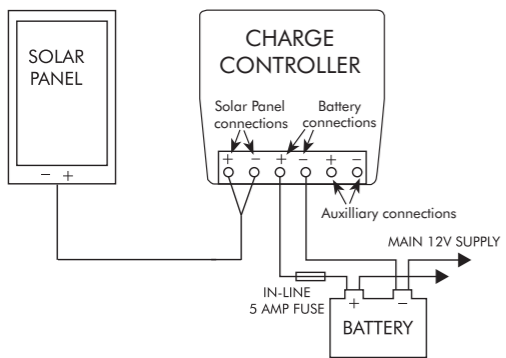
Connecting an inverter into the system

- 9.1 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.

Adding a second battery

- 10.1 If a second battery is used, it can be connected to the Charge Controller, using terminals I, 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 described in step 5 above. 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



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

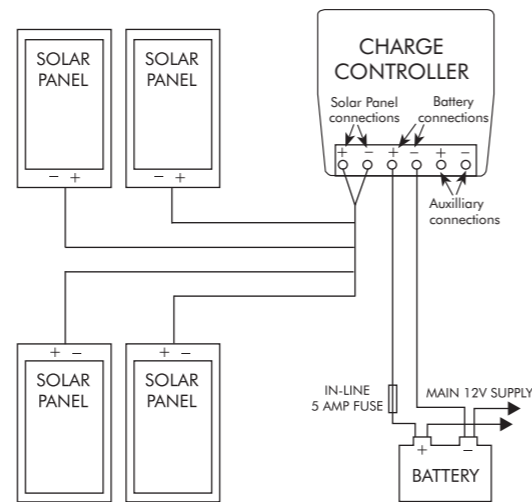
Step 5: Fitting the Fuse (not necessary for SFP010)

- 5.1 The fuse should be fitted on the positive (red or brown) line between the battery and the charge controller (if used) or between the panel and the battery. Position the fuse close to the battery.
- 5.2 Strip back the black outer insulation of the cable 20cm.
- 5.3 Cut the red or brown 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 on each of the fuse holder pieces.

Step 6: Connecting to the Battery

- 6.1 If the SFP010 has been selected, the supplied crocodile clips or the ring terminals can be fixed directly to the terminals of a 12v battery (greater in capacity than 70Ah) ensuring that the correct polarity is observed. If a smaller battery is used purchase a Charge Controller and follow Step 4, or self regulate the Flexi PV. This entails checking the battery at regular intervals with a digital voltmeter and when the battery is showing a volt reading of 14v or above, disconnecting the Flexi PV until the battery level has reduced.
- 6.2 Alternatively, for a more permanent connection to the battery, strip the outer sheath by 150mm and the inner red or brown and black or blue insulation by 20mm, twist the bare wire, 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 the battery clamp screws.
- 6.3 When connecting to a battery always observe correct polarity.

CONNECTING THE CHARGE CONTROLLER TO A BATTERY AND MULTIPLE SOLAR PANELS



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

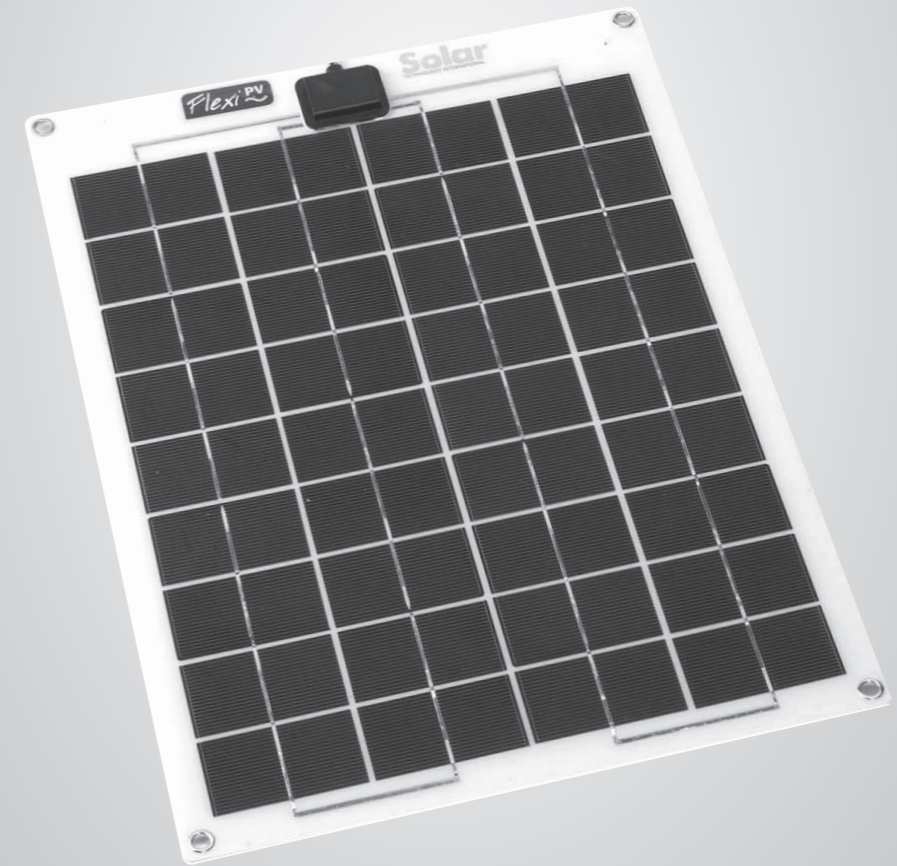


User Manual

FLEXIBLE SOLAR PANELS



10wp/20wp/30wp/40wp/60wp/80wp/120wp/160wp



Models:

FLEXI: SFP010/SFPRT010/SFP020/SFP020MA/SFPRT020/SFP030/SFP030MA/SFPRT030/SFP040/SFP040MA/SFPRT040/SFP060/SFP060MA/SFPRT060/SFP080/SFP080MA/SFPRT080

FLEXI PREMIUM: SFPP040/SFPP040MA/SFPRT040/SFPP060/SFPP060MA/SFPRT060/SFPP080/SFPP080MA/SFPRT080/SFPP080(2)/SFPP080MA(2)/SFPRT080(2)/SFPP120/SFPP120MA/SFPRT120/SFPP160/SFPP160MA/SFPRT160MA

FLEXI PV KIT CONTENTS

(Letters after item descriptions refer to the picture opposite)

SFP010 - 10wp Solar Kit

- 1 x 10wp Flexi PV Panel with 4m pre-wired cable (a)
- 1 x Extra cable section containing a blocking diode
- 1 x Fuse (d)
- 6 x Terminals (e)
- 2 x Croc clips – not shown

SFPR010 - 10wp Complete Solar Roof / Deck Top Kit

- 1 x 10wp Flexi PV Panel with 4m pre-wired cable (a)
- 1 x Extra cable section containing a blocking diode
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x SIKA Flex 291 – 300ml (g)
- 1 x Waterproof cable feed gland (h)
- 4 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFP020 - 20wp Solar Kit

- 1 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFP020MA - 20wp Solar Kit including Charge Controller

- 1 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge controller (f)

SFPR020 - 20wp Complete Solar Roof / Deck Top Kit

- 1 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge controller (f)
- 1 x SIKA Flex 291 – 300ml (g)
- 1 x Waterproof cable feed gland (h)
- 4 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFP030 - 30wp Solar Kit

- 1 x 10wp Flexi PV Panel with 4m pre-wired cable (a)
- 1 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFP030MA - Solar Kit including Charge Controller

- 1 x 10wp Flexi PV Panel with 4m pre-wired cable (a)
- 1 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge controller (f)

SFPR030 - 30wp Complete Solar Roof / Deck Top Kit

- 1 x 10wp Flexi PV Panel with 4m pre-wired cable (a)
- 1 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge controller (f)
- 1 x SIKA Flex 291 – 300ml (g)
- 2 x Waterproof cable feed glands (h) or 1 double gland (not shown)
- 8 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFP040 - 40wp Solar Kit

- 2 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFP040MA - 40wp Solar Kit including Charge Controller

- 2 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge controller (f)

SFPR040 - 40wp Complete Solar Roof / Deck Top Kit

- 2 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge controller (f)
- 1 x SIKA Flex 291 – 300ml (g)
- 2 x Waterproof cable feed glands (h) or 1 double gland (not shown)
- 8 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFP060 - 60wp Solar Kit

- 3 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 8 x Terminals (e)

SFP060MA - 60wp Solar Kit including Charge Controller

- 3 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 8 x Terminals (e)
- 1 x 8Ah Charge controller (f)

SFPR060 - 60wp Complete Solar Roof / Deck Top Kit

- 3 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 8 x Terminals (e)
- 1 x 8Ah Charge controller (f)
- 1 x SIKA Flex 291 – 300ml (g)
- 3 x Waterproof cable feed glands (h)
- 12 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFP080 - 80wp Solar Kit

- 4 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 8 x Terminals (e)

SFP080MA - 80wp Solar Kit including Charge Controller

- 4 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 8 x Terminals (e)
- 1 x 8Ah Charge controller (f)

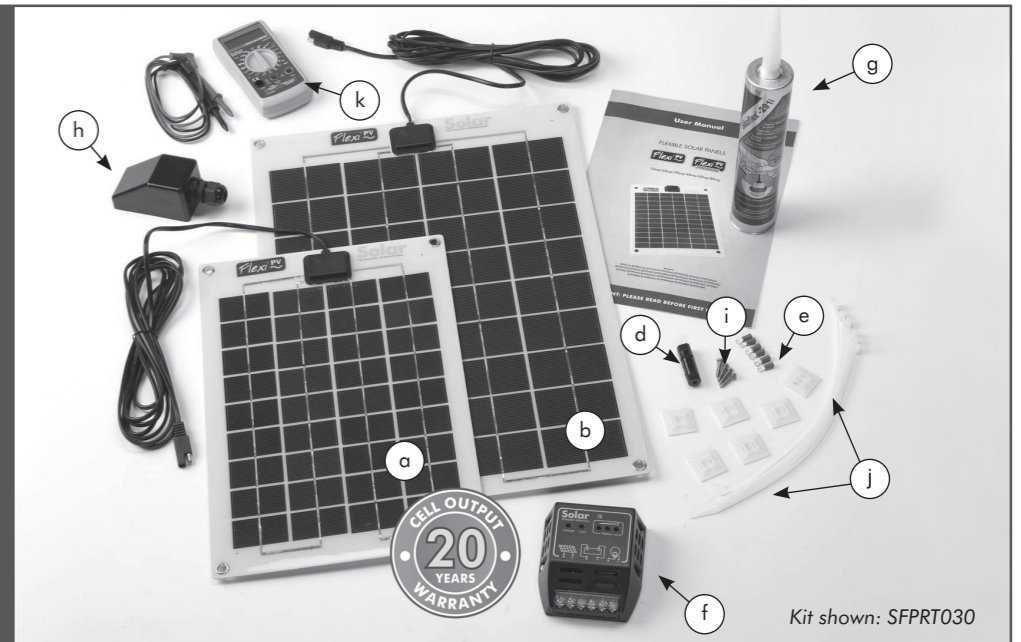
SFPR080 - 80wp Complete Solar Roof / Deck Top Kit

- 4 x 20wp Flexi PV Panel with 4m pre-wired cable (b)
- 1 x Fuse (d)
- 8 x Terminals (e)
- 1 x 8Ah Charge controller (f)
- 1 x SIKA Flex 291 – 300ml (g)
- 4 x Waterproof cable feed glands (h) or 2 double glands (not shown)
- 16 x Stainless steel fixing screws (i)
- 1 x Solar Test Meter (k)

SPECIAL NOTE

1. The Flexi and Flexi Premium panels are highly flexible allowing fitment to a curved surface. **However, under no circumstances fix or bend the panels in an ark greater than 10 degrees** – most boat decks are less than this. Damage to the solar cells can occur if over stressed.

2. If using a multi panel system ensure the connection point of the multi gang extension cable (if used) is located in a covered area, protected from environmental conditions. The material in the connector is copper and as such will corrode if exposed to salt water.



Kit shown: SFPR030

PLEASE READ ALL INSTRUCTIONS CAREFULLY BEFORE WORK BEGINS

Please refer to circuit diagram, please at all times observe correct polarity; **POSITIVE = RED or BROWN cable; NEGATIVE = BLACK or BLUE cable**

Note – we recommend a Solar Technology 4Ah or 8Ah Charge Controller is added to any system (if not included in this kit), unless the 10wp (SFP010) panel has been purchased in which case this can be connected direct to the battery terminals (unless the battery has a smaller capacity than 70Ah, in which case a Charge Controller must be used). The SFP010 is supplied with an extra cable section containing a blocking diode and the purpose of this diode is to prevent reverse battery drain. This extra cable should always be used if connecting the SFP010 directly to a battery but can be discarded if a Charge Controller is used.

Step 1: Positioning the Flexi PV Panel/s

- 1.1 Select a location that is generally free from shade, has a solid surface and is within 4m of the Charge Controller and/or battery. If the Roof Top Kit has been selected please also refer to Step 3.1.
- 1.2 If the panel is to be free standing, go to Step 2.
- 1.3 Ensure all panels can be sited close to one another (if a multi panel system has been selected), and that the cables cable can be correctly positioned. Note – 2, 3 and 4 gang extension cables and mating connectors are available separately should they be required but in most cases cables from a multi panel system will be all fed directly to the Charge Controller.
- 1.4 If fixing the panel using screws through the panel’s mounting grommets, ensure the fixings penetrate deep enough to ensure the Flexi PV / Premium is held securely.
- 1.5 If fixing using SIKA Flex bonding agent or similar, mark the area with a pencil line where the panel(s) are to be fixed (SIKA Flex is very strong and instantly bonds, so there is only one chance to get the location correct). Clean the area well and ensure any grease or other film is removed.

Now apply a thin line (approx 6mm wide) of SIKA bonding agent or other to the outside edge of the underside (not the solar cell side) of each panel. Carefully place the side with the bonding agent within the positioning pencil lines drawn earlier. Firmly press down on the panel so that the bonding agent squeezes near or on the edge of the panel. (it does not matter if the agent squeezes further but it is not as neat). Repeat this process until all panels are fixed. SIKA Flex 291 generally takes 24 hours to cure. Please check the manufacturers recommended curing time if using another agent.

- 1.6 In some cases it may be desirable to both bond and screw the Flexi PV in position. If this method is selected, ensure the holes are pre drilled before bonding the panel(s) and ensure a liberal blob of bonding agent is applied to each hole, ensuring that once the screws are fixed the hole will be sealed (Note – once the bonding agent is applied to the holes, time is limited before it “sets off”).

Step 2: Prepare the Cable

- 2.1 The Flexi PV / Premium range are all fitted with a 4m cable and connector. In most cases the connector will be manually cut from the end of the cable and the black outer sheath removed approx 20mm (longer if connecting the 10wp panel direct to a battery) and the inner red or brown and black or blue cable will be revealed. Remove this sheath and the copper cable will be visible (red or brown is positive and black or blue is negative). Now the supplied ring terminals can be crimped to the cable end for either connecting to the supplied crocodile clips (for the SFPR(T)010 only) or to a charge controller if any 20wp panel or larger has been purchased. If wiring a multi panel system, repeat the above for each and fix all cable terminals to the + and – terminals on the charge controller.

- 2.2 If a charge controller is being used please read Step 4.
- 2.3 If a multi gang (2, 3 or 4 way) 4m extension cable has been specified as an accessory (not supplied as standard) to be used with a multi panels system, these cables have mating connector to enable swift connection with the Flexi PV / Premium panel. **WARNING** – the inner contacts of the connectors on the Flexi PV / Premium panels and the mating connectors on the multi gang extension cable are made of copper. This will quickly corrode if exposed to salt water so either ensure the connectors are coupled in a location where salt water exposure cannot occur or seal the connector with a water resistant grease of sealant.
- 2.4 If the Roof Top Kit has been selected, the cable/s can now be secured using the nylon base and cable ties supplied. Once the cable run has been determined, remove the cover from the sticky pad on the underside of the nylon base and fix it to a clean dry surface underneath the cable run – spacing one base every 30cm. Now secure the cable to the base using the cable ties provided.

Step 3: Fix the Cable Feed Gland (only for Roof Top Kits)

- 3.1 STFR060/080/SFPR0120/160 have been selected either a double cable feed gland or two cable feed glands have been supplied where in both cases two cables can fit through each gland grommet.
- 3.2 The Cable Feed Gland is a completely waterproof unit designed to cover a hole that has been drilled to channel the Flexi PV / Premium cable from the outside to inside. The location of the Flexi PV / Premium panels (as discussed in 1.1) will have been determined, to a certain extent, by the desired location of the cable feed hole. The cable entry point should allow the cable/s to be easily routed to the Charge Controller (if used) and the battery.
- 3.3 Now slacken the feed grommet/s on the Cable Feed Gland/s to allow the cable to be easily threaded through it and now allow the cable/s to pass through the drilled hole.
- 3.4 Mark the area around where the gland is to be fixed and squeeze a 6mm line of SIKA Flex on the underside of the gland ensuring there are no gaps. Now fix the gland onto the dry, clean surface. SIKA Flex will take 24 hours to cure. Ensure this process is completed at roughly the same time as step 1.5.
- 3.5 Now push the cable/s from the solar panel(s) through the gland grommet so that it is reasonably taught. The threaded grommet can now be tightened ensuring a perfect seal is made around the cable itself.

FLEXI PREMIUM KIT CONTENTS

(Letters after item descriptions refer to the picture opposite)

SFPP040 - Premium 40wp Solar Kit

- 1 x 40wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFPP040MA - Premium 40wp Solar Kit including Charge Controller

- 1 x 40wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)

SFPR040 - Premium 40wp Complete Solar Roof / Deck Top Kit

- 1 x 40wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)
- 1 x Sika 291 – 300ml (g)
- 1 x Waterproof cable feed gland (h)
- 4 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFPP060 - Premium 60wp Solar Kit

- 1 x 60wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFPP060MA - Premium 60wp Solar Kit including Charge Controller

- 1 x 60wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)

SFPR060 - Premium 60wp Complete Solar Roof / Deck Top Kit

- 1 x 60wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)
- 1 x Sika 291 – 300ml (g)
- 1 x Waterproof cable feed gland (h)
- 4 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFPP080 - Premium 80wp Solar Kit

- 1 x 80wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFPP080MA - Premium 80wp Solar Kit including Charge Controller

- 1 x 80wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)

SFPR080 - Premium 80wp Complete Solar Roof / Deck Top Kit

- 1 x 80wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)
- 1 x Sika 291 – 300ml (g)
- 1 x Waterproof cable feed gland (h)
- 4 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFPP080(2) - Premium 80wp Solar Kit

- 2 x 40wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFPP080MA(2) - Premium 80wp Solar Kit including Charge Controller

- 2 x 40wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)

SFPR080(2) - Premium 80wp Complete Solar Roof / Deck Top Kit

- 2 x 40wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)
- 1 x Sika 291 – 300ml (g)
- 2 x Waterproof cable feed glands or a double gland (not shown) (h)
- 8 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFPP120 - Premium 120wp Solar Kit

- 2 x 60wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFPP120MA - Premium 120wp Solar Kit including Charge Controller

- 2 x 60wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)

SFPR120 - Premium 120wp Complete Solar Roof / Deck Top Kit

- 2 x 60wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 8Ah Charge Controller (f)
- 1 x Sika 291 – 300ml (g)
- 2 x Waterproof cable feed glands or a double gland (not shown) (h)
- 8 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)

SFPP160 - Premium 160wp Solar Kit

- 2 x 80wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)

SFPP160MA - Premium 160wp Solar Kit including Charge Controller

- 2 x 80wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 12Ah Charge Controller (f)

SFPR160 - Premium 160wp Complete Solar Roof / Deck Top Kit

- 2 x 80wp Flexi Premium Panel with 4m pre-wired cable (a)
- 1 x Fuse (d)
- 6 x Terminals (e)
- 1 x 12Ah Charge Controller (f)
- 1 x Sika 291 – 300ml (g)
- 2 x Waterproof cable feed glands (h) or a double gland (not shown)
- 8 x Stainless steel fixing screws (i)
- 6 x Nylon self adhesive base and cable ties (j)
- 1 x Solar Test Meter (k)