

# Marlec Alpex Range of Solar Panels

Installation & User Manual

Issue B



# Marlec Apex Range of Solar Panels

## Installation & User Manual

Thank you for purchasing this solar panel. To enjoy maximum satisfaction from the product we strongly recommend you read the following instructions!

### Important Information

- Always observe the correct polarity when making electrical connections. Reverse polarity connection to a battery is a fire hazard and may damage your solar regulator/charge controller.
- Do not walk or drop objects on the panel front or rear.
- Do not use mirrors or any other objects to concentrate sunlight on the solar panels.
- Always handle with care.

This manual contains important installation and safety instructions – please read and follow carefully.

### 1. Mounting

- Choose a location that is free from shade and as close as possible to South facing (in the Northern hemisphere). Always fix to a solid and supportive surface capable of withstanding all expected loads including the weight of the panel as well as those imposed by wind and snow.
- For optimum performance tilt the panel at an angle of 15° plus the location's latitude from horizontal. On a boat or caravan it is usually more practical to install it flat.

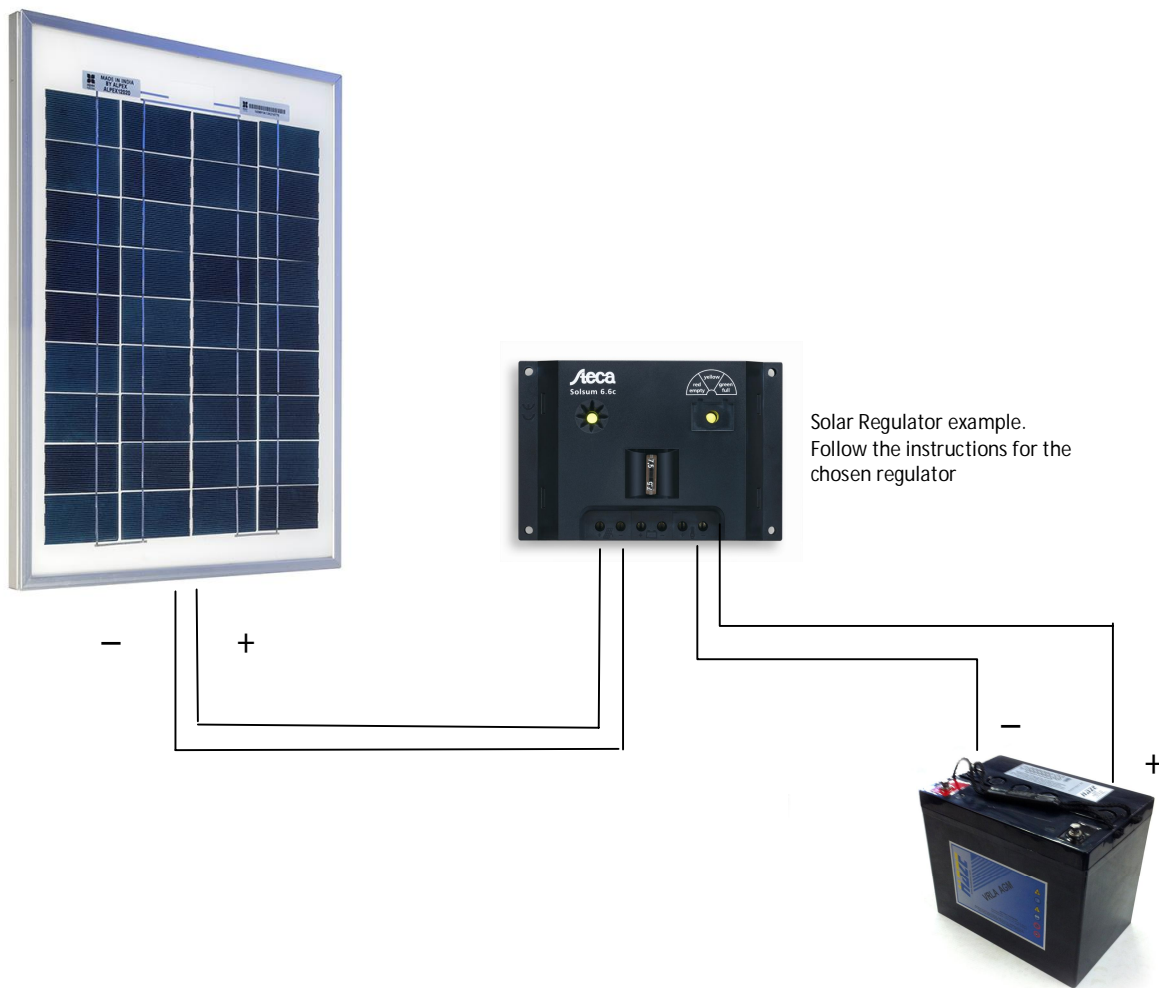
### 2. Electrical Connection—see diagram overleaf

- Marlec solar panels are suitable for use with sealed and non-sealed 12V lead acid batteries. For best results use good quality Gel or AGM type batteries.
- To avoid short circuits and sparking, cover the panel when making electrical connections.
- Always observe the correct polarity (Red +VE/Black –VE)!
- Always use good quality battery connectors NOT crocodile clips.
- It is strongly recommended that a Solar Regulator/Charge Controller is used when battery charging to prevent over charge and optimise the charging process. Always refer to manufacturer's instruction manual for installation and operation.
- The Solar Regulator should always be located in a cool, dry, well ventilated, easily accessible area as close to the battery as possible.
- If a solar regulator is not used then a blocking diode must be fitted between the solar panel and battery to prevent reverse current in dark conditions.
- Use cable of sufficient diameter to avoid unnecessary voltage drop, typically a 2.5mm<sup>2</sup> cable can be used for distances up to 20m run of cable.
- More than one panel may be used together in parallel to give higher output current. Use blocking diodes as necessary.

### 3. Maintenance

- Occasionally wipe the solar panel with a damp cloth (use only water and mild detergent) to remove the build-up of dirt, salt, etc.
- Batteries should be maintained in accordance with manufacturer's instructions.
- All wiring and connections should be regularly checked for integrity and corrosion.

## Typical Electrical Connection



### 4. Troubleshooting

If your solar panel does not seem to be performing properly start by addressing the following points:-

- Inspect all electrical connection for any sign of corrosion or loose wiring.
- Test the panel's open circuit voltage (Voc). To reduce risk of sparking cover the panel before disconnecting. Using a multi-meter set to DC Volts, measure the voltage across the +ve and -ve terminals of the panel. In bright sunny conditions a reading of approx. 18—22V should be seen.
- If an Ammeter is fitted in circuit then a reading of close to the panel's peak operating current (see Current at Pmax(I<sub>mpp</sub>) in table below) should be seen in bright sunny conditions.
- Verify the condition of the battery. Over time a battery will lose its ability to recharge, especially after repeated heavy cycles of charge and deep discharge. Contact the battery's manufacturer for more detailed guidelines on battery testing.
- Make sure your system is properly sized for your power requirements. For further assistance contact your supplier.

## 6. Warranty

- “ Marlec Alpex solar panels carry a 10 year warranty providing free replacement cover for all defects in parts and workmanship from the date of purchase.
- “ A valid proof of purchase will be required if making a warranty claim.
- “ This warranty is void in the event of improper installation, modification, owner neglect, misuse or damage caused by natural disasters and does not extend to batteries, regulators, inverters or other ancillary equipment.
- “ No responsibility is assumed for incidental or consequential damage or damage caused by the use of unauthorised components.
- “ Your statutory rights are not affected.

Defective products must be returned pre-paid to your dealer or to  
Marlec Engineering Co. Ltd., Trevithick Road, Corby, Northants, NN17 5XY.

## Specifications of Solar Panels

Models	Nominal Rating	Product Dimensions (+/-2mm)			Weight	Electrical Characteristics				
Panel Type	Power (W)	Width	Length	Depth	Net/Packed (Kgs)	Voc (V)	Isc (A)	Pmax (W)	Vpm (V)	Ipm (A)
ALP-10	10	360	295	22	1.3 / 1.5	21.4	0.63	10	17.7	0.57
ALP-20	20	360	485	22	2.06 / 2.3	21.4	1.25	20	17.7	1.15
ALP-30/A	30	666	435	30	2.84 / 3.2	21.4	1.85	30	17.7	1.7
ALP-40/A	40	666	435	25	3.42 / 3.8	21.4	2.45	40	17.7	2.3
ALP-50	50	666	556	30	4.22 / 4.7	21.4	3.1	50	17.7	2.85
ALP-75	75	666	796	35	6.06 / 6.8	21.4	4.6	75	17.7	4.25
ALP-100	100	666	1006	35	7.6 / 8.3	21.4	6.3	100	17.7	5.7
ALP-125	125	666	1151	35	8.5 / 9.7	21.4	7.6	125	17.7	7.1
ALP-135	135	1006	1006	35	10.9 / 11.9	21.4	8.0	135	17.7	7.65

Specifications are subject to change, up to date details are at [www.marlec.co.uk](http://www.marlec.co.uk)



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