



# SUN FLUX

NEXT GEN SOLAR HOT WATER

## SUN FLUX USER MANUAL & INSTALLATION GUIDE



## OFF GRID / HYBRID SOLAR HOT WATER CONTROLLER

## **WARNING**

**Be sure to read the Sun Flux user manual & installation guide thoroughly before beginning installation, failure to do so may result in fire, electric shock or death.** Installation must be carried out by a licensed electrician following all relevant safety standards and local regulations of your state/territory or country on installing this equipment.

**Note: the Sun Flux is not an inverter and delivers a modified DC output.**

1: Check and make sure the Sun Flux is not damaged in any way before beginning installation.

2: Connect 4 solar panels in series with a minimum output of 120volts/vmp 8amps and a maximum output of 150volts/vmp 10amps.

**Note: To size the solar array correctly you must divide the voltage/vmp of the solar array by the resistance/ohm's of the element to determine the maximum current you will receive, then you can multiply the current by the voltage/vmp of the solar array to determine the maximum wattage you will receive.**

**Using Standard AC elements with a resistance of 24 to 12 Ohm's.**

3: Turn off all PV solar power and AC grid power then test to confirm isolation before beginning installation.

4: Attach the Sun Flux securely in place using appropriate fixtures in close proximity to the hot water tank.

5: Connect the PV solar array to a 12.5amp DC circuit breaker, then from the DC circuit breaker to the Sun Flux using MC4 connectors.

**Note: The Sun Flux has reverse polarity protection for up to 10 seconds.**

**Be sure to connect the MC4 plugs from the PV solar array correctly or reverse polarity can occur damaging the Sun Flux and the protections provided voiding all warranty.**

6: Remove the protective cover from the terminal block on the base of the Sun Flux.

7: Connect the AC grid input wires to the AC grid input on the base of the Sun Flux in accordance with the instructions below terminal block.

**AC input must be provided from the home standard hot water circuit via the meter box or a circuit created using 16awg cable rated for 20amp via a 20amp circuit breaker.**

### **8.A: Single element tank.**

Connect the load output of the Sun Flux directly to the standard single element electric hot water tank using the standard AC grid input connection on the tank using 16awg cable rated for 20amp.

**The selector/isolation switch on the base of the Sun Flux will give you the ability to switch back to AC grid power if required.**

**8.B: Twin element tank.**

Connect the load output of the Sun Flux directly to the lower thermostat of the tank then connect the AC grid from the homes hot water circuit at the meter box or using 16awg cable rated for 20amp via a 20amp circuit breaker directly to the upper thermostat of the tank making sure of no connection between upper and lower thermostats and elements.

**Giving automatic AC grid power backup on the upper element when required.**

**Note: Be sure to set the lower thermostat 10 to 20 degrees higher than the upper thermostat for maximum efficiency.**

**9:** Restore the protective cover over the terminal block on the base of the Sun Flux.

**10:** Turn on PV solar power and AC grid power and commence operation and inspection.

**When the Sun Flux is powered up in solar mode the green led will be lit if the green led is not lit turn off the PV solar power immediately and check the polarity of the MC4 plugs from the PV solar array are correct.**

**When in grid mode the red led will be lit if the red led is not lit turn off the PV solar power and AC grid power immediately and check all connections.**

<b>SPECIFICATION</b>	
<b>MAX SOLAR VMP</b>	<b>150 VMP</b>
<b>MAX SOLAR AMPS</b>	<b>10 AMPS</b>
<b>AC INPUT VOLTAGE</b>	<b>110 TO 240 VAC</b>
<b>AC INPUT AMPS</b>	<b>4.5 TO 20AMPS</b>
<b>ELEMENT OHM</b>	<b>24 TO 12 OHM</b>
<b>MODEL NO. SEI-01</b>  <b>E5427 ISO9001</b>	

**Sun Flux functions**

- 1: Green led lit when in solar mode.
- 2: Red led lit when in grid mode.
- 3: Negative MC4 input from the solar array.
- 4: Positive MC4 input from the solar array.
- 5: Terminal block for AC grid input and load output.
- 6: selector/isolation switch to select solar mode or grid mode.

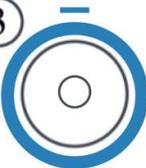
① ● SOLAR MODE

② ● GRID MODE



SPECIFICATION	
MAX SOLAR VMP	150 VMP
MAX SOLAR VOC	185 VOC
MAX SOLAR AMPS	10 AMPS
AC INPUT VOLTAGE	110 TO 240 VAC
AC INPUT AMPS	10 TO 16 AMPS
ELEMENT OHM	16 TO 24 OHM
MODEL NO. SE1-01	ES427 ISO9901

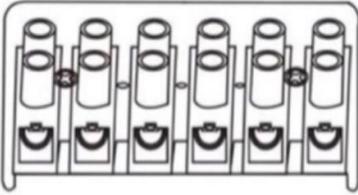
③



④



⑤



AC GRID INPUT			OUTPUT TO LOAD		
L	N	G	G	L/+	N/-

⑥

