

# INSTANT SOLAR



## **EH3KWM**

**Product that provides your house with free green solar electricity.**

**Instant Solar ECOHOUSE** is a product that provides your house with free solar electricity. As a hybrid solution it can store unused energy to battery energy storage for night time use. With this solution you can be your own electricity provider.

With electricity getting more expensive and other power sources disappearing due to over use, solar power proves to be the right option that can provide electricity for household as well as commercial premises purposes without worrying about the increased electricity bill.

The Instant Solar ECOHOUSE solution converts solar power into AC power used for commercial and domestic use. With the Instant solar grid - tied solution, it is possible to bring down the electricity bill to zero and as an option selling back to the grid all excess energy that is not needed after charging your energy storage pack. The Instant Solar grid tied solution with battery backup is 100 % capable of catering to all your energy needs.

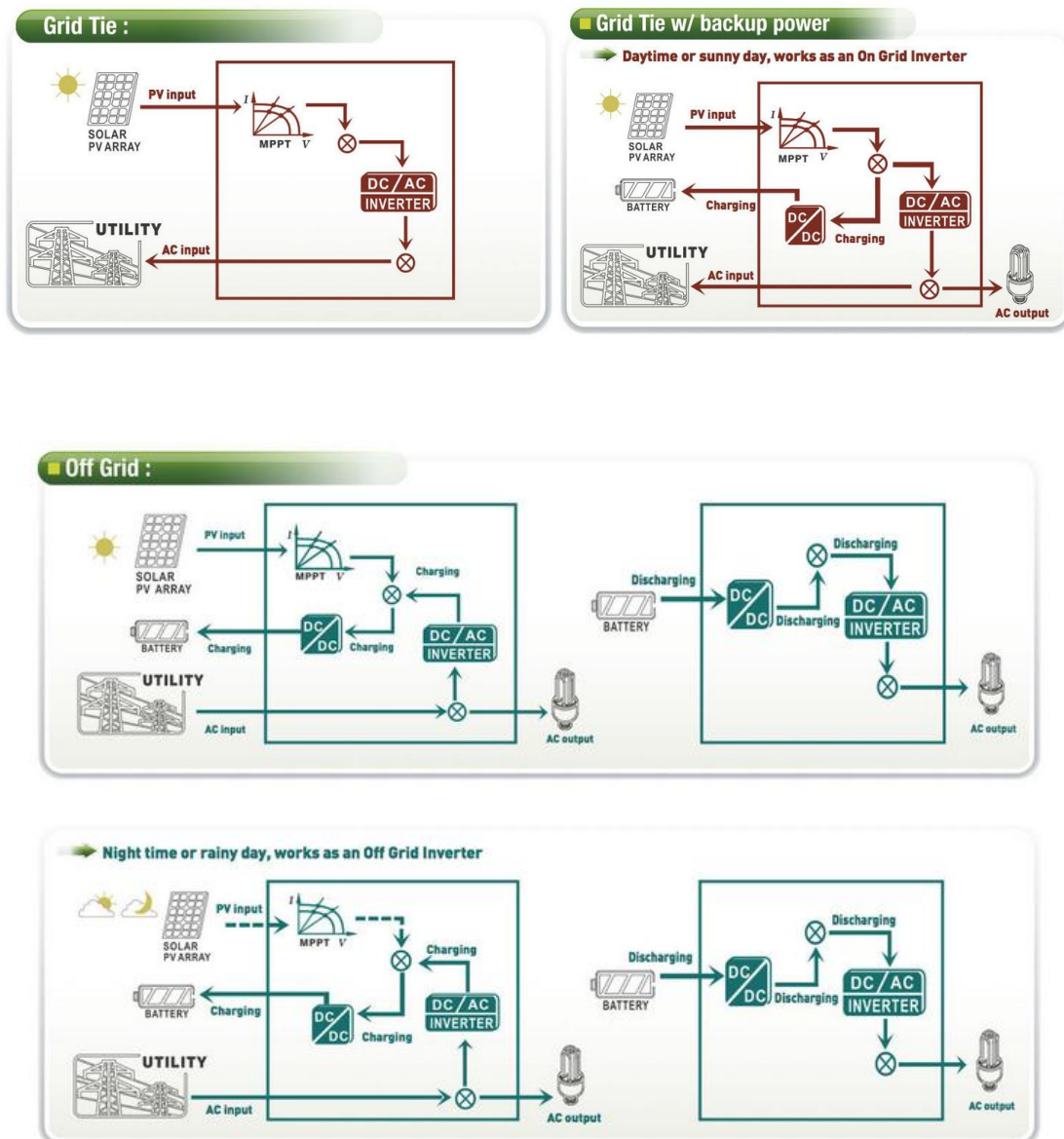
We offer Hybrid solar solution that come with the choice of charging battery by solar and the grid utility as well. Enabled with the intelligence required to automatically change over from mains to battery and from battery to mains it is perfectly suitable for both commercial and domestic use. The system employs an inverter circuitry with two level charger that can charge batteries from solar energy and grid, MPPT solar charge controller and fast switch over mechanism during power failure and resumption. The major benefit of the Instant Solar solution is net metering, where unused energy is fed back to the utility grid (optional). When there is no power generated by the renewable energy system, the power required is drawn from the grid or battery energy storage.

- The design is based on MPPT (Maximum Power Point Tracking).
- Power generation is audited through specially designed software.
- Digital and graphical representation of parameters.
- Pure sine wave output with low total harmonic distortion (THD).
- Deep discharge battery protection and control.



## Working principle

- When solar energy is sufficient DC output of the MPPT is given both to batteries and AC inverter which will give power output to load or feeding back to the mains(optional).
- When solar energy is not sufficient to run the system on its own the unit will combine solar power with energy stored in batteries, completely automatically.
- If the batteries have low voltage condition then the load is shifted to the grid while the batteries are charging directly from solar.
- If solar energy is not sufficient to charge the batteries the mains grid charger will be activated and charge will be given to the batteries.
- Once the batteries are fully charged the load is automatically shifted to solar & batteries.
- If the load is switched off, all the generated power is fed to charge batteries and the excess will be dropped into the grid in sync with its waveform (optional).



## Technical Data

<b>INSTANT SOLAR ECOHOUSE EH3KWM</b>	
<b>Input</b>	
Max PV Array Wattage	4500 W
Max MPPT DC Voltage	500 VDC
Startup Feeding DC Voltage	116 / 150 V
Max Input Current	18 A
MPPT Tracker	1
Input AC Voltage Range	170 – 280 V
<b>Output(AC)</b>	
Nominal AC Voltage	208 / 220 /230 / 240 V
Output Voltage Range	184 – 265 V
Output Frequency (GRID - TIE)	47.5 -51.5 Hz / 59.3 – 60.5 Hz
Output frequency (OFF - GRID)	50 / 60 Hz, Auto sensing
Output Waveform	Pure Sine Wave
Continuous Output	3000 W
Max Output Power (via grid relay)	5100 W
Max Output Power (battery mode)	3000 W
Power Factor	< 1
THD	< 3 %
AC connection	Single phase
<b>Battery energy storage</b>	
Nominal Battery Voltage	48 VDC
Battery Voltage Range	42 – 56 VDC
Max Charge from Grid	30 A
<b>General Data</b>	
Max Efficiency	> 93 %
MPPT Efficiency	> 96 %
Protection	<ul style="list-style-type: none"> <li>• AC short-circuit, Output Over load</li> <li>• Ground fault monitoring, Anti - islanding</li> <li>• Output Transient Voltage Suppression</li> </ul>
Consumption (night)	< 2 W
Cooling Concept	Fan
Enclosure Type	IP 20
Operating Temperature	0°C ~ 40°C
Operating Humidity	0 - 90 % RH (No condensing)
Weight / Dimension	16kg / 420 x 415 x 170 mm
Interfaces	RS 232 / USB
Monitoring and control software	Included
Certification	EN62109-1, EN62109-2, EN62040-1/CE, VDE4105,VDE0126-1-1, AS4777/3100
Warranty	2 years

Our recommendation is to use **ECOHOUSE EH3KWM** in combination with Instant Solar **LiFePO4 Battery Pack** for best performance and longer lifetime compared to Lead Acid or AGM batteries. Also as an option we offer Instant Solar **SolarCloud 3G** remote monitoring device in case you don't have access to internet connection. For all options please feel free to ask our engineering support to make your system the most efficient and do a custom approach and calculations according to your needs.

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*The Sky's the limit*