Aplab

MITRA MAX™

IEC SUPER ENERGY HARVESTER

Add-on IEC to any PV panel and harvest 20% more Energy!

How IEC enables super harvesting of energy from any PV module?

For residential, commercial and utility scale photovoltaic solar arrays, **MITRAMAX**™ Energy's **"IEC- Super Energy Harvester Add-on"** unit optimizes the power output of each PV module (solar panel) and delivers module's 'constant peak power output' as a peak current source into a bus at high voltage.

How IEC Super Harvester Add-on enables to set up All Parallel Array?

Since IEC Super Harvester converts its mother PV module nto peak power current source, several hundred such PV modules with embedded super harvester work in parallel. This feature helps you to build All Parallel Array of PV modules where each module delivers its output at high voltage up to 320V DC into a common bus bar.

IEC-SUPER ENERGY HARVESTER

How IEC offers on-line porting of energy harvest data?

IEC super harvester Add-on, as an extra option, delivers module level data for operational management and performance monitoring or every module in an array of large number of panels hooked on a common bus bar.

How IEC offers high voltage safety during installation and maintenance?

IEC topology provides modules energy at high voltages into a bus bar this output is isolated from the module frames and connecting or disconnecting it from the bus needs no contact due to NEC2008 compliant connectors used. This allows anyone to safely deactivate any module for installation, field service or replacement. This gives full safety to personnel during installation, maintenance or fire fighting.

How is the module level energy management monitoring achieved?

IEC – Super Energy Harvester Add-ons are key components of the system which reside on the rear of module (one per solar module). The Super Energy Harvester provides **MEI***, Module Energy Information Data Log* to **AMSC**, **MITRAMAX**™ *Array Management Software Centre* that helps user to monitor module harvest data to efficiently monitor the solar station operation and maintain it in optimum performance with minimum efforts and money.

How IEC, Super Energy Harvester from MITRAMAX™ is made easy to use?

IEC, Super Energy Harvester has a very small size to snugly fit on the rear of any PV solar module and is designed to perform continuously at temperatures up to 80°C. The IP65 packaging makes it waterproof and it is designed to minimize the cost and maximize reliability. IEC, Super Energy Harvester from **MITRAMAX**™ is ideal for use all over the world and provide efficient service throughout its long life.

How IEC saves money for you by avoiding sorting and selecting of matched PV modules?

IEC, Super Energy Harvester output needs no sorting or selecting of the mother panel which can be either mono or poly silicon type and of any Wp or Vp rating within the limits specified under the detailed specifications. IEC retrofits on the rear of any PV module and it optimized the energy harvest and optionally sends the information to AMSC for reporting and control.

What are the benefits of all parallel architecture for your array?

IEC, Super Energy Harvester from **MITRAMAX**™ is designed for all parallel array architecture and this ensures best-in-class array conversion efficiencies. There are many ways in which APA, all parallel array, helps user to get more energy, lower losses and ease of installation and maintenance. All these help you save money and earn more!

- APA avoids catastrophically high losses in series strings as in conventional series-parallel array. (*Failure of one panel due to shadow, dirt causes energy loss of entire string by as much as 60%!)*
- It is established that a common MPPT controller in the solar inverter can never ensure that each module in a conventional series- parallel, array operate at its peak power point. Unlike APA, this prevents conventional array from harvesting all potential power.
- APA sharply reduces the conduction losses since currents from panel are very low and junctions necessary are very few.
- APA can use any type of module of any rating and thus avoids cost and complications caused in selecting and matching of modules as in a conventional array.

What about the environmental endurance and life of IEC, Super Energy Harvester?

IEC, Super Energy Harvester is packaged in a IP65/NEMA3R enclosure (water and weather resistant) and is designed to conform to UL and IEEE safety standards. There are IEC, Super Energy Harvester options designed for various maximum output voltage limits. These add-ons can be fitted to any PV module, mono or poly-crystalline silicon or thin-film, regardless of output voltage or nominal power rating. All components used in IEC have as long life as the panel.

IEC-SUPER ENERGY HARVESTER

Tell us more about IEC, Super Energy Harvester

IEC, Super Energy Harvester from **MITRAMAX**™ uses technology patented in Australia and awaiting patent since July 2009. IEC is designed to greatly enhance the safety in a PV solar installation and maintenance. The array can be installed or maintained by everyone easily, including fire personnel without the exposure to high voltage levels.

What are the financial benefits of using IEC, Super Energy Harvester?

IEC super harvests solar electric output from your PV system that helps you to get quicker return on your investment and thereby accelerate system payback.

Technical Data Sheet and Features of IEC, Super Energy Harvester

- Maximize the power output of individual modules
- Reconsider previously rejected projects because of unfavorable shade or orientation
- Maintain best-in-class conversion efficiency
- Manage the system with module-level data to minimize operational costs and keep the system at peak performance throughout its lifetime
- Ensure high level of safety for new and existing PV solar installations
- Simplify the balance-of-system design, especially for high Voc or thin-film modules

MITRAMAX™ also offers factory embedded IEC Super Energy Harvester add-on the most popular framed solar modules in aluminum frames for simple on-site array installation for your new or existing PV system.

SPECIFICATIONS

INPUT POWER RATING	
PV Power Output Rating	300Wp
Maximum input DC Voltage (Voc)	12 to 60V
Peak Power Voltage - Vp Max Range	16-50V
Maximum Continuous Current (Ip)	10A max
OUTPUT RATING (DC)	
Maximum Output Power	300W
Maximum Continuous Current	10A
Nominal Voltage	Variable - maximum limit set to 320V DC
Max. V Out Limit Set (for off-grid application)	14.5. 29, 58, 87, 116, 145, 188, 290V
MECHANICAL DATA	
Operating Temperature Range	-30°C +80°C
Cooling	Natural convection
Enclosure Environmental Rating	IP-65, NEMA3R
Compliance (designed to meet)	UL1741, IEEE 1547.1, FCC part 15, class BEN 61000
Panel Connector	NEC 2008 compliant MC4 compatible
Bus Connector	NEC 2008 compliant 40AMP

Specifications subject to change: Always check MITRAMAX™ IEC Label for specifications for a particular unit.

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POWER ELECTRONICS DIVISION **APLAB LIMITED** A-5, WAGLE ESTATE, THANE 400 604. INDIA.
TEL: 022-6739 5555/2582 1861 FAX: 91-022-2582 3137 E-MAIL: powerelectronics@aplab.com **www.aplab.com**

●**BANGALORE** Tel: 23576001 Fax: 080-23576008 E-mail: aplabblr@aplab.com ●**CHENNAI** Tel: 26680472 Email: aplabchn@aplab.com ●**KOLKATA** Tel: 22848834 Fax: 033-22866165 Email: aplabcal@aplab.com ●**MUMBAI** Tel:67895300 Fax: 022-29209066 Email: aplabwr@aplab.com ●**NEW DELHI** Tel.: 22158835 Fax: 011-43027668 E-mail: aplabnd@aplab.com ●**SECUNDERABAD** Tel.: 27755101 Fax: 040-27755107 Email: aplabsec@aplab.com