



eSOLAR HYD series

Hybrid PV Inverter

PRODUCT DESCRIPTION

The eSOLAR HYD (EP) series is a cost-effective, single phase, transformerless type hybrid PV inverter designed for a combination of both grid-tied and off-grid applications.

Integrating the hybrid PV string inverter with PV panels, batteries, and the balance of systems, direct current (DC) generated by the solar panels are converted into high quality alternating current (AC) that can be fed into the public electricity network, charge the batteries and supplying to the load. Depending on the grid conditions, the reserve energy may be used to meet the load demands.

The eSOLAR HYD (EP) series is designed to provide a smart, simple, reliable and efficient solution for small to medium hybrid PV systems.

KEY FEATURES

- **Wide operating and MPPT input voltage range**
Enables PV generation at low starting voltage
- **Highly efficient**
Up to max efficiency of 98.0%
- **Hybrid application for flexible solution**
Includes grid and off-grid applications combining with storage energy and load
- **Battery Management System for storage batteries**
Compatible for both lead acid and lithium battery technologies
- **Supports different communication modes**
Standard RS485, Bluetooth, WIFI, GRPS (Optional)
- **IP65 rated enclosure with natural cooling**
- **Optional modular batteries**
- **Small, light and easy to install**

APPLICATIONS

- Residential
- Small to medium commercial
- Small to medium industrial



TECHNICAL SPECIFICATIONS

MODEL	eHYD 3KTL-EP	eHYD 4KTL-EP	eHYD 5KTL-EP	eHYD 6KTL-EP
Capacity	3000W	4000W	5000W	6000W
PV STRING INPUT				
Recommended Max. PV input power	4500Wp	6000Wp	7500Wp	9000Wp
Max DC Power per MPPT	3500W			
Max. DC Voltage	600Vdc			
Start-up Operating Voltage	100Vdc			
MPPT Voltage Range	90Vdc to 580Vdc			
Nominal DC Voltage	360Vdc			
Full Power MPPT Voltage Range	160Vdc-520Vdc	200Vdc-520Vdc	250Vdc-520Vdc	300Vdc-520Vdc
Max. Input Current per MPPT	13A / 13A			
Max. Short Circuit Current per MPPT	18A / 18A			
No. of MPP Trackers	2			
AC OUTPUT (Grid-Tied)				
Nominal AC Power	3000W	4000W	5000W	6000W
Nominal Grid Voltage	L/N/PE, 220, 230, 240Vac			
Grid Voltage Range	180Vac to 276Vac			
Grid Frequency Range	50Hz / 60Hz			
Max. AC Output Power to Grid	3300VA	4400VA	5500VA	6000VA
Max. AC Output Current to Grid	15.0A	20.0A	25.0A	27.3A
Max. AC Power from Grid	6000VA	8000VA	10000VA	12000VA
Max. AC Current from Grid	27.3A	36.4A	43.4A	54.6A
Output Power Factor	1 @ default (± 0.8 adjustable)			
Output THDi (@ Linear Load)	< 3%			
AC OUTPUT (Back-Up)				
Nominal Output Power	3000VA	4000VA	5000VA	5000VA
Nominal Output Voltage	L/N/PE, 230Vac			
Nominal Output Frequency	50Hz / 60Hz			
Max Output Current	13.6A	18.2A	22.7A	22.7A
Peak Output Power / Duration	3600VA / 60s	4800VA / 60s	6000VA / 60s	6000VA / 60s
Output THDv (@ Linear Load)	< 3%			
Switch Time	10ms default			
Battery Connection				
Battery Type	Lithium Ion / Lead Acid			
Nominal Battery Voltage	48Vdc			
Battery Voltage Range	42Vdc to 58Vdc			
Max. Charge/Discharge Power	5000W			
Max. Charge/Discharge Current	100A / 100A (configurable)			
Charging Algorithm	Lithium Ion (BMS) / Lead Acid (3-stage charging)			
Battery Capacity	50AH to 2000AH			
Depth of Discharge	Lithium Ion: 0-90% DOD adjustable; Lead Acid: 0-50% DOD adjustable			
EFFICIENCY				
MPPT Efficiency	99.9%			
Euro Efficiency	97.2%	97.2%	97.3%	97.5%
Max. Efficiency	97.6%	97.6%	97.8%	98.0%
Max. Batt Charge/Discharge Efficiency	94.6%			

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PROTECTION				
DC Switch			Yes	
PV Reverse Polarity Protection			Yes	
PV Insulation Detection			Yes	
Ground Fault Monitoring			Yes	
Overcurrent Protection			Yes	
Overvoltage Protection			Yes	
Firm Frequency Response Function			Optional	
Surge Protection Level			MOV: Type III Standard	
GENERAL DATA				
Dimension (W x H x D)		482 x 503 x 183 mm		
Weight		22.5kg		
Topology		High Frequency Isolation (for Batt)		
Standby Self-Consumption		< 10W		
Operating Temperature Range		-30°C to +60°C (de-rating @ > 45°C)		
Relative Humidity		0 to 100%		
Noise		< 25dB		
Max Operating Altitude		4000m		
Cooling		Natural Cooling		
Protection Degree		IP65		
Protection Class		Class 1		
Current Sensor Connection		External		
FEATURES				
Display		LCD Display / APP+Bluetooth		
Communication Interface		RS485 / WIFI / Ethernet / GPRS, CAN2.0		
Parallel Operation		Yes (max 6 units)		
Standard Warranty		Standard 5 years		
CERTIFICATIONS AND STANDARDS				
EMC		EN 61000-6-2, EN 61000-6-3, EN 61000-3-2, EN 61000-3-3, EN 61000-3-11, EN 61000-3-12		
Safety		IEC62109-1/2, IEC62040-1, IEC62116, IEC61727, IEC-61683, IEC60068(1,2,14,30)		
Grid		AS/NZS 4777, VDE V 0124-100, V 0126-1-1, VDE-AR-N 4105, CEI 0-21, EN50549, G83/G59/G98/G99, UTE C15-712-1, UNE 206 007-1		