



eSOLAR HYD-3PH series

Hybrid PV Inverter (10-20kW)

PRODUCT DESCRIPTION

The eSOLAR HYD-3PH series is a cost-effective, three 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-3PH 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 98.2%
- **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 10KTL-3PH | eHYD 15KTL-3PH | eHYD 20KTL-3PH |
|-----------------------------------|--|------------------------|-------------------|
| Capacity | 10000W | 15000W | 20000W |
| PV STRING INPUT | | | |
| Recommended Max. PV input power | 15kWp (2 x 7.5kWp) | 22.5kWp (2 x 11.25kWp) | 30kWp (2 x 15kWp) |
| Max. DC Voltage | 1000Vdc | | |
| Start-up Operating Voltage | 200Vdc | | |
| MPPT Voltage Range | 180Vdc to 960Vdc | | |
| Nominal DC Voltage | 600Vdc | | |
| Full Power MPPT Voltage Range | 220V-850V | 350V-850V | 450V-850V |
| Max. Input Current | 25A / 25A | | |
| Max. Short Circuit Current | 30A / 30A | | |
| No. of MPP Trackers | 2 | | |
| No. of Strings per MPP Tracker | 2 | | |
| AC OUTPUT (Grid-Tied) | | | |
| Nominal AC Power | 10000W | 15000W | 20000W |
| Nominal Grid Voltage | 3/N/PE, 220/380Vac, 230/400Vac | | |
| Grid Voltage Range | 184Vac to 276Vac | | |
| Grid Frequency | 50Hz / 60Hz | | |
| Grid Frequency Range | 45Hz to 55Hz / 55Hz to 65Hz | | |
| Max. AC Output Power to Grid | 11000VA | 16500VA | 22000VA |
| Max. AC Power from Grid | 20000VA | 30000VA | 40000VA |
| Max. AC Output Current to Grid | 16A | 24A | 32A |
| Max. AC Current from Grid | 29A | 44A | 58A |
| Output Power Factor | ~ 1 (0.8 leading to 0.8 lagging) | | |
| Output THDi (@ Linear Load) | < 3% | | |
| AC OUTPUT (Back-Up) | | | |
| Nominal Output Power | 10000W | 15000W | 20000W |
| Nominal Output Voltage | 3/N/PE, 220/380Vac, 230/400Vac | | |
| Nominal Output Frequency | 50Hz / 60Hz | | |
| Max. Output Power | 11000VA | 16500VA | 22000VA |
| Peak Output Power / Duration | 15000VA / 60s | 22000VA / 60s | 22000VA / 60s |
| Max. Output Current | 16A | 24A | 32A |
| Peak Output Current / Duration | 30A / 60s | 32A / 60s | 32A / 60s |
| Output THDv (@ Linear Load) | < 3% | | |
| Switch Time | < 20ms | | |
| Battery Connection | | | |
| Battery Type | Lithium Ion / Lead Acid | | |
| No. of Battery Input | 2 | | |
| Battery Voltage Range | 180Vdc to 800Vdc | | |
| Battery Voltage Range (Full Load) | 200Vdc to 800Vdc | 300Vdc to 800Vdc | 400Vdc to 800Vdc |
| Max. Charge/Discharge Power | 10000W | 15000W | 20000W |
| Max. Charge/Discharge Current | 50A (25A/25A) | | |
| Max. Current (Duration) | 70A (35A/35A), 60s | | |
| Charging Algorithm | Lithium Ion (BMS) / Lead Acid (3-stage charging) | | |
| Battery Capacity | 25AH to 100AH | | |
| Communication Interface | CAN (RS485) | | |

TECHNICAL SPECIFICATIONS

| MODEL | eHYD 10KTL-3PH | eHYD 15KTL-3PH | eHYD 20KTL-3PH |
|---------------------------------------|----------------|---|----------------|
| EFFICIENCY | | | |
| MPPT Efficiency | | 99.99% | |
| Euro Efficiency | 97.7% | 97.7% | 97.7% |
| Max. Efficiency | 98.2% | 98.2% | 98.2% |
| Max. Batt Charge/Discharge Efficiency | 97.8% | 97.8% | 97.8% |
| PROTECTION | | | |
| DC Switch | | Yes | |
| PV Reverse Polarity Protection | | Yes | |
| Output Overvoltage Protection | | Yes | |
| Output Overcurrent Protection | | Yes | |
| Anti-Islanding Protection | | Yes | |
| Residual Current Detection | | Yes | |
| Insulation Resistance Detection | | Yes | |
| Surge Protection Level | | II | |
| Battery Reverse Protection | | Yes | |
| GENERAL DATA | | | |
| Dimension (W x D x H) | | 571.4 x 515 x 264.1 mm | |
| Weight | | 37kg | |
| Inverter Topology | | Transformerless | |
| Standby Self-Consumption | | < 15W | |
| Operating Temperature Range | | -30°C to +60°C | |
| Relative Humidity | | 0 to 100% | |
| Noise | | < 45dB | |
| Operating Altitude | | < 4000m | |
| Cooling | | Forced Airflow | |
| Protection Degree | | IP65 | |
| FEATURES | | | |
| DC Terminal | | MC4 | |
| Grid AC Terminal | | 5P Connector | |
| Back-up AC Terminal | | 5P Connector | |
| Display | | LCD Display | |
| Monitoring Interface | | Bluetooth / RS485 / WIFI / GPRS (Optional) | |
| Parallel Operation | | Yes | |
| Standard Warranty | | Standard 5 years | |
| CEFTIFICATIONS AND STANDARDS | | | |
| EMC | | EN61000-6-1, EN61000-6-3 | |
| Safety | | IEC62109-1, IEC62109-2, NB-T32004/IEC62040-1 | |
| Grid | | ASNZ 4777, VDE V 0124-100, VDE-AR-N 4105, CEI 0-21, EN50549, G98/G99, UTE C15-712-1 | |