

## Model # HSP10K48SW-LCD

Magnizon Smart HSP series inverter/charger with dual operational modes with built in Advanced MPPT solar charge controller minimizes the hassles of Solar installation especially in hybrid environments. Large LCD display with functional keys to select various parameters and displays real time information, selecting the modes of operation, Battery charger current settings etc along with operational schemes. Day time will be supported through solar panels and night time or rainy days will be with batteries and Utility power with intelligent microprocessor based automatic switching. Reliable Smart Micro controller technology with advanced IGBT design and frequency controlled power, very much compatible to all varieties of loads: resistive/inductive loads such as refrigerators, motors, pumps, compressors and laser printers as well as electronic loads like TV's, Computers, power tool and battery chargers. Smart micro controller based 3-stage built in charging system properly charge and maintain battery bank in the absence of solar power or rainy days. The charge rate is selectable so you can use a variety of battery sizes and types to fit your back up time requirements.



### Applications:

- ❖ Solar power stations
- ❖ Home solar power systems
- ❖ Industrial Solar power storage
- ❖ DC wind turbine stations
- ❖ Health care/Banking/Commercial applications
- ❖ Telecom applications

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### Key features:

- ❖ Micro controller based Smart hybrid technology
- ❖ Pure sine wave output
- ❖ Dual Chargers (Built-in MPPT Solar controller and AC mode battery Charger)
- ❖ **Parallel Mode:** Upto 6nos (1-PH) and Upto 9nos (3-PH)
- ❖ **With Two charging mode:** AC charging mode and solar charging mode, solar charging priority
- ❖ **Can Choose Two work mode:** Solar-Grid-Battery, Solar-Battery-Grid, can choose from LCD display
- ❖ **Intelligent detecting function:** This system microprocessor can continually on-line detect power status, breaker status and all the working status of the circuit.
- ❖ **Excellent load feature:** It is completely capable to load from 0-100% while no need to change to bypass, which make sure the output reliable.
- ❖ **Intelligent communication-URL based remote monitoring and operation:** With RS232 and RS485 standard collocation, optional SNMP and dry contact
- ❖ **Perfect protection:** Input/output over/low voltage protection, input surge protection, phase sequence protection, battery over charge/discharge protection, short circuit protection, over-temperature protection and so on, as well as alarm function.
- ❖ **Selectable battery inspection module:** Can test the single parameter and display on the LCD, battery failure will immediately alarm and inform the administrator.

### Operational Modes:

- ❖ **PV-Grid-Battery:** Magnizon HSP series solar inverter is designed for real-time load sharing function between solar & utility. Solar power priority mode, PV power supply power to inverter via built-in MPPT controller and then the output will be pure sine wave AC power to support load via inverter meanwhile MPPT controller will also charges battery. When solar power is not enough, then utility power will support power to load. If there is no grid power available, then it will uses the battery. In this way, we can maximum use solar power and utility power, hence reduce battery discharge time and extend battery lifespan.
- ❖ **PV-Battery-Grid (Maximum use of solar power under the stable environment of utility power):** Solar power supply power to inverter via MPPT controller and then output pure sine wave AC power to load via inverter, meanwhile charge battery. When the solar power is not enough, to maximum use solar power, the battery will supply power to load. When the battery is discharged t a value, the utility power will supply power to load. The users can maximum use solar power, reduce grid power supply and save electricity.

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### Specifications:

| Model                           | HSP10K48SW-LCD                        |
|---------------------------------|---------------------------------------|
| Rated Power                     | 10KVA/10KW                            |
| INPUT AC                        |                                       |
| Nominal Input Voltage           | 220/230/240V AC                       |
| Low Loss Voltage                | 170V AC +/- 7V (UPS mode)             |
|                                 | 90V AC +/- 7V (Appliances mode)       |
| Low loss return Voltage         | 180V AC +/- 7V (UPS mode)             |
|                                 | 100V AC +/- 7V (Appliances mode)      |
| High loss Voltage               | 280VAC +/- 7V                         |
| High loss Return Voltage        | 270VAC +/- 7V                         |
| Max AC input voltage            | 300V AC                               |
| Frequency Range                 | 50Hz/60Hz (auto sensing)              |
| Low loss frequency              | 40+/-1Hz                              |
| Low loss return frequency       | 42+/-1Hz                              |
| High loss frequency             | 65+/-1Hz                              |
| High loss return frequency      | 63+/-1Hz                              |
| Output Short circuit Protection | Line Mode: Circuit Breaker            |
|                                 | Battery Mode: Electronic Circuits     |
| Efficiency                      | >97%                                  |
| OUTPUT AC                       |                                       |
| AC Voltage Regulation           | 220/230/240V AC +/- 5%                |
| Rated Output Power              | 10KVA/10KW                            |
| Output Voltage Waveform         | Pure Sine wave                        |
| Output Frequency                | 50Hz/60Hz (auto sensing)              |
| Surge Power                     | 30000VA                               |
| Efficiency                      | 95-97%                                |
| Over Load protection            | 5sec @>150% load; 10sec@110~150% load |
| Nominal DC input Voltage        | 48V DC                                |
| Cold Start Voltage              | 46.0V DC                              |
| Low DC Warning Voltage          |                                       |
| @load < 20%                     | 44.0V DC                              |
| @ 20% < load < 50%              | 42.8V DC                              |
| @ load > 50%                    | 40.4V DC                              |
| Low DC Warning Return Voltage   |                                       |
| @load < 20%                     | 46.0V DC                              |
| @ 20% < load < 50%              | 44.8V DC                              |
| @ load > 50%                    | 42.4V DC                              |
| Low DC Cut-off Voltage          |                                       |
| @load < 20%                     | 42.0V DC                              |
| @ 20% < load < 50%              | 40.8V DC                              |
| @ load > 50%                    | 38.4V DC                              |
| High DC Recovery Voltage        | 58V DC                                |
| High DC Cut-off Voltage         | 62V DC                                |
| No Load Power Consumption       | <5W                                   |
| Saving Mode Power Consumption   | <15W                                  |
| Transfer Time                   | 6-10mSec                              |
| Efficiency                      | 93~ 97%                               |
| Charger Mode Specs              |                                       |

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|                                                    |                                                                                  |
|----------------------------------------------------|----------------------------------------------------------------------------------|
| Battery Voltage                                    | 48V DC                                                                           |
| Floating Charge Voltage                            | 54V DC                                                                           |
| Overcharge Protection                              | 60V DC                                                                           |
| Maximum Charge Current                             | 120A                                                                             |
| Bulk Charging Voltage (Flooded Battery)            | 58.4V DC                                                                         |
| Bulk Charging Voltage (AGM/GEL battery)            | 56.4V DC                                                                         |
| Charging Algorithm                                 | 3-Stage (CC-CV-Floating)                                                         |
| <b>Solar Charging Mode Specs</b>                   |                                                                                  |
| Maximum PV Array Power                             | 2nos of 5000Wp (10,000Wp)                                                        |
| MPPT Range @ Operating Voltage                     | 120V DC to 450V DC                                                               |
| Maximum PV Array Open Circuit Voltage              | 500V DC                                                                          |
| Maximum Charging Current                           | 160A                                                                             |
| Maximum Efficiency                                 | 98%                                                                              |
| Battery Voltage Accuracy                           | +/- 0.3%                                                                         |
| PV Voltage Accuracy                                | +/- 2V                                                                           |
| Standby Power Consumption                          | 2Watts                                                                           |
| Charging Algorithm                                 | 3-Stage (CC-CV-Floating)                                                         |
| <b>General Specs</b>                               |                                                                                  |
| Dimension (DxWxH-mm)                               | 420x562x155                                                                      |
| Net Weight (kgs)                                   | 27Kgs                                                                            |
| Humidity                                           | 5% to 95% Relative Humidity (non-condensing)                                     |
| Operating Temperature                              | 0degC to 55deg C                                                                 |
| Storage Temperature                                | -15degC to 60degC                                                                |
| Parallel Compatibility                             | Upto 6nos                                                                        |
| Communication                                      | RS232 Cable along with monitoring software included                              |
| Dry contact for remote management                  | Yes. Ability to monitor Power OFF/On, LOW DC, Battery voltage, charge status etc |
| <b>Quality Standards</b>                           |                                                                                  |
| Disturbance at Mains Terminals                     | EN61000-6-3:2007+ A1: 2011+ AC:2012                                              |
| Radiated Disturbance                               | EN61000-6-3:2007+ A1: 2011+ AC:2012                                              |
| Harmonic Current Emission                          | EN61000-3-12: 2011                                                               |
| Voltage fluctuations & flickering                  | EN61000-3-11: 2000                                                               |
| Electrostatic Discharge (ESD)                      | IEC 6100-4-2:2008                                                                |
| Radio-frequency & continuous radiated disturbances | IEC 6100-4-3:2006 + A1:2007 + A2:2010                                            |
| EFT/B Immunity                                     | IEC 6100-4-4:2012                                                                |
| Surge immunity                                     | IEC 6100-4-5:2014                                                                |
| Conducted RF immunity                              | IEC 6100-4-6:2013                                                                |
| Power frequency magnetic field                     | IEC 6100-4-8:2009                                                                |
| Voltage DIP, >95% reduction                        | IEC 6100-4-11:2004                                                               |
| Voltage DIP, >30% reduction                        | IEC 6100-4-11:2004                                                               |
| Voltage Interruption                               | IEC 6100-4-11:2004                                                               |
| EU Low voltage directives (LVD)                    | EN62109-1: 2010, EN62109-2:2011                                                  |
| EU Electromagnetic compatibility(EMC)              | EN62040-2:2006, EN6100-3-2:2014, EN6100-3-3:2013                                 |
| Quality Certification                              | ISO9001:2015, ISO14001:2015, CE, RoHs                                            |

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