



Any-Grid™ Hybrid Inverter Charger 

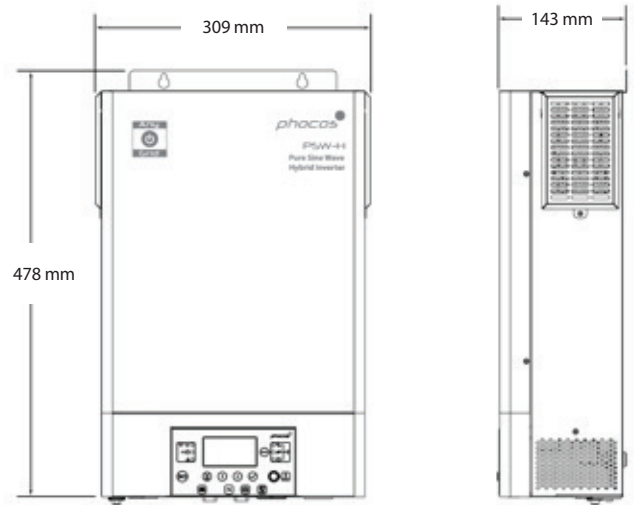


phocos 

NEW



Technical Drawing



230 Vac models

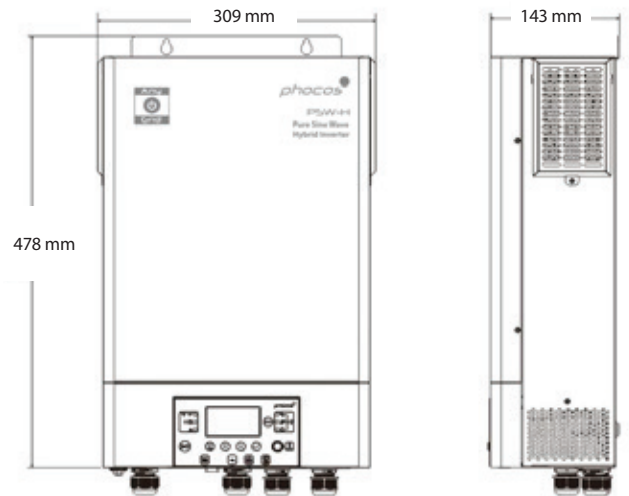
Product Introduction

The Phocos Any-Grid™ PSW-H Inverter Charger Series (Pure Sine Wave Hybrid) represents Phocos' most versatile line of inverters/chargers. Flexibility and reliability are key characteristics of this product line, with a strong potential for cost saving opportunities in real world conditions. The PSW-H converts DC (Direct Current) energy into AC (Alternating Current), with multiple advantages beyond standard inverters. This product includes an integrated MPPT charge controller and can function as an AC to DC battery charger, which provides flexible energy access solutions in a broad range of applications.

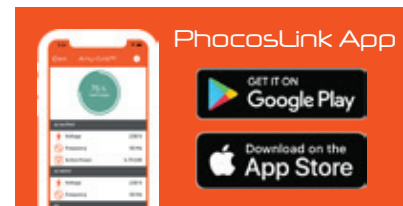
The battery can be charged from solar and/or an AC source (public grid or generator), with easily programmable priorities. The PSW-H can function without an AC source or alternatively even without solar, as a pure uninterruptible power supply (UPS). When the utility grid or AC generator fails, the PSW-H immediately switches to 'Off-Grid' mode within 10 ms (typical, in UPS mode) to securely power the loads at all times. Solar can be set as the priority energy source to save electricity costs.

The Any-Grid PSW-H can function in a battery-free mode. In this mode, for installations with stable public grids, grid energy consumption can be reduced without the need to invest in a costly battery bank. Additionally, power can be supplied directly to loads from the grid and solar simultaneously.

This unit comes with a quality, integrated MPPT charge controller. The controller accepts particularly high PV voltages, allowing many PV modules to be connected in series, decreasing installation cost and avoiding combiner boxes. Up to 9 inverters can be connected in parallel or 3-phase for up to 45 kW of synchronized AC power.



120 Vac model



Product Features

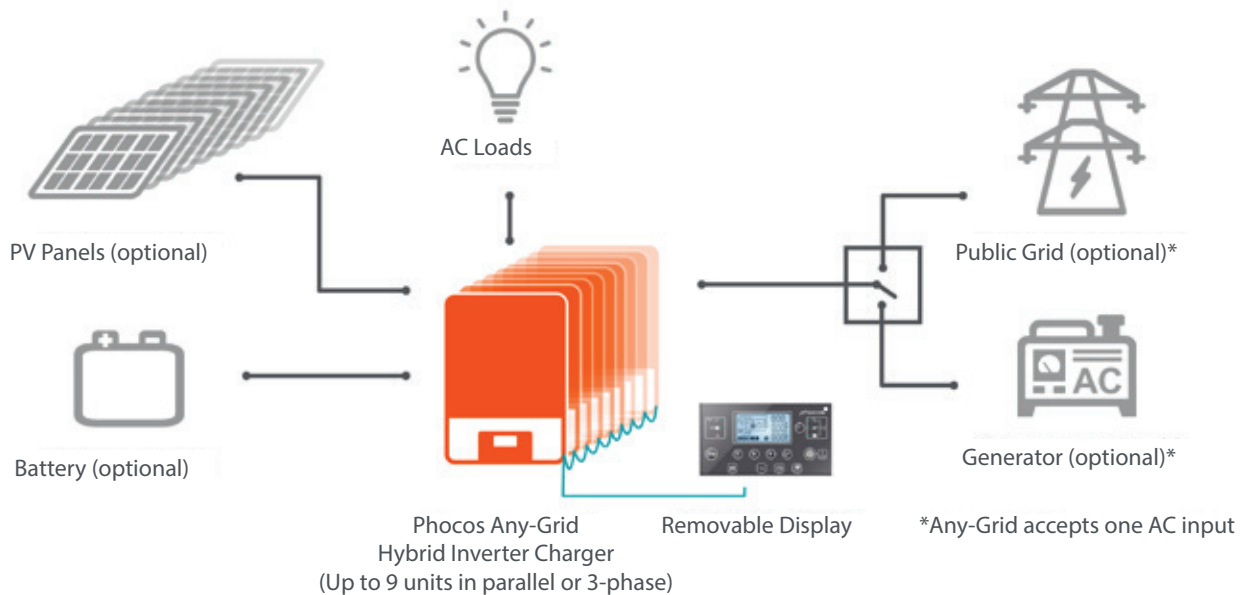
- Flexible, advanced features with options to solve many common challenges in the field
- Integrated high-voltage MPPT charge controller. The high-voltage PV connection means in most scenarios the PV modules can simply be connected in series of one or two strings, avoiding costly combiner boxes and string fuses or diodes, thus reducing total system cost
- Integrated AC battery charger
- Charge controller functions even if inverter is turned off to keep batteries fully charged
- Compatible with Lithium batteries
- Functions without an expensive battery to reduce energy consumption from the grid with minimal investment
- Detachable display / communication unit with 6 LEDs and an intuitive LCD screen
- High level of connectivity: BLE, USB-OTG (on-the-go), CAN Bus, RS-485, RS-232, relay for generator start
- Datalogger with up to 60 days of data storage
- Store or load parameters via USB for quick configuration
- Integrated buzzer for error indications
- Galvanic isolation of battery allows positive or negative grounding
- Up to 9 inverters can be connected in parallel or 3-phase for up to 45 kW of synchronized AC power
- Washable filter reduces dust buildup in the inverter



What is Any-Grid?

Traditionally, the energy industry defines power systems relative to their access to the grid as Off-Grid or On-Grid. At Phocos, we believe energy access should be available under 'Any-Grid' conditions whether you have full or partial access to renewable energy and/or grid power, and if energy sources are unreliable. The Phocos Any-Grid Hybrid Inverter Charger Series provides flexible energy access solutions that optimize the use of locally available energy resources that can adapt as access to resources changes over time.

Any-Grid (Off-Grid and/or On-Grid) Capability



Technical Data

Type	PSW-H-3KW-120/24V	PSW-H-3KW-230/24V	PSW-H-5KW-230/48V
Output Waveform	Pure Sine Wave		
System Voltage	24 Vdc		48 Vdc
Rated Power	3000 VA / 3000 W		5000 VA / 5000 W
Max. Charge Current (PV)	80 Adc		
Max. Charge Current (AC)	80 Adc		
Max. Total Charge Current	80 Adc		
Max. AC Input Current	40 Aac	30 Aac	40 Aac
Float Charge	27.6 Vdc (adjustable)		55.2 Vdc (adjustable)
Boost Charge	28.8 Vdc (adjustable)		57.6 Vdc (adjustable)
Equalization Charge	29.6 Vdc (adjustable)		59.2 Vdc (adjustable)
Deep-Discharge Protection	22 Vdc (adjustable)		44 Vdc (adjustable)
Reconnect Level	25.6 Vdc (adjustable)		51.2 Vdc (adjustable)
Overvoltage Protection	33 Vdc		66 Vdc
Undervoltage Protection	18.8 Vdc		37.5 Vdc
Battery Discharge Current Requirement	167 Adc continuous 334 Adc surge (5s)	140 Adc continuous 280 Adc surge (5s)	168 Adc continuous 336 Adc surge (5s)
Max. PV Panel Voltage	250 Vdc		450 Vdc
PV Panel MPP Voltage	90 ~ 230 Vdc	90 ~ 430 Vdc	120 ~ 430 Vdc
Max. Usable PV Power	2400 W	4000 W (2400 W for battery charging)	4800 W
Max. PV Array Power	3000 Wp	5000 Wp	6000 Wp
AC Frequency	50 / 60 Hz auto recognition		
AC Output Voltage	110 ~ 120 Vac ± 5% (adjustable)	220 ~ 240 Vac ± 5% (adjustable)	
Surge Power	2x rated power for 5 seconds		
Extensibility	Up to 9 units in parallel or 3-phase		
Inverter Efficiency (from Battery)	> 90 % peak	> 91 % peak	> 93 % peak
Inverter Efficiency (from PV)	> 96 % peak		
Idle Self-Consumption	< 40 W on, < 14 W Green Mode		
Grounding	Galvanically isolated battery allows positive or negative battery grounding		
Ambient Temperature	-10 to +50 °C		
Storage Temperature & Humidity	-15 to +60 °C, 5-95 % (non-condensing)		
Max. Altitude	4,000 m above sea level, 1 % power de-rating per 100m above 1,000 m above sea level		
Battery Type	Lead acid (gel, AGM, flooded), Lithium		
Datalogger	60 days		
Max. Wire Cross Section	Battery: 50 mm ² (AWG 0), PV: 16 mm ² (AWG 4), AC: 10 mm ² (AWG 7)		
Dimensions (WxHxD)	478 x 309 x 143 mm / 18.8 x 12.2 x 5.6 in		
Weight	12 kg / 27 lbs	11 kg / 24 lbs	11.8 kg / 26 lbs
Ingress Protection	IP21		
Certificates	CE compliant, RoHS compliant		
Warranty	2 years		