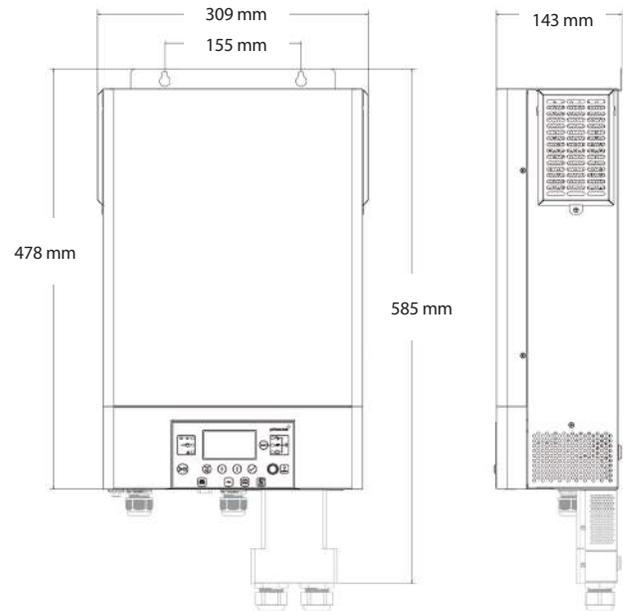




Technical Drawing



PSW-H-3KW-120/24V, PSW-H-3KW-230/24V
and PSW-H-5KW-230/48V*

*only the PSW-H-3KW-120/24V model
includes greyed out bottom cable glands
and extension box

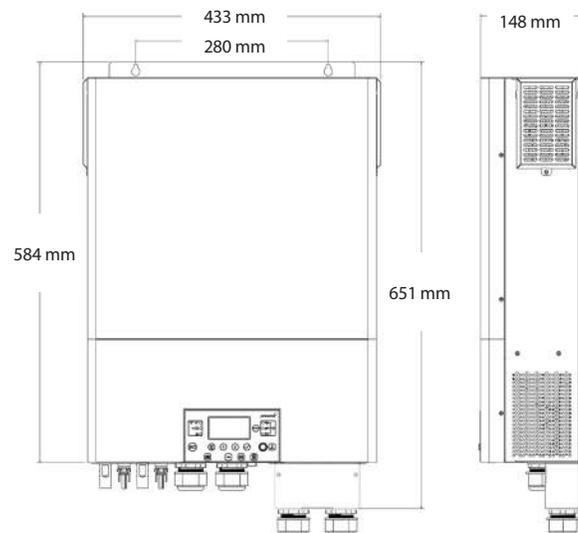
Product Introduction

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 Any-Grid 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 Any-Grid 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 Any-Grid 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 one to two quality, integrated MPPT charge controller(s). The controller(s) accept(s) 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 parallel, 3-phase or split-phase for up to 72 kW of synchronized AC power.



PSW-H-6.5KW-120/48V and
PSW-H-8KW-230/48V*

*only the PSW-H-6.5KW-120/48V model
includes bottom greyed out extension box



Product Features

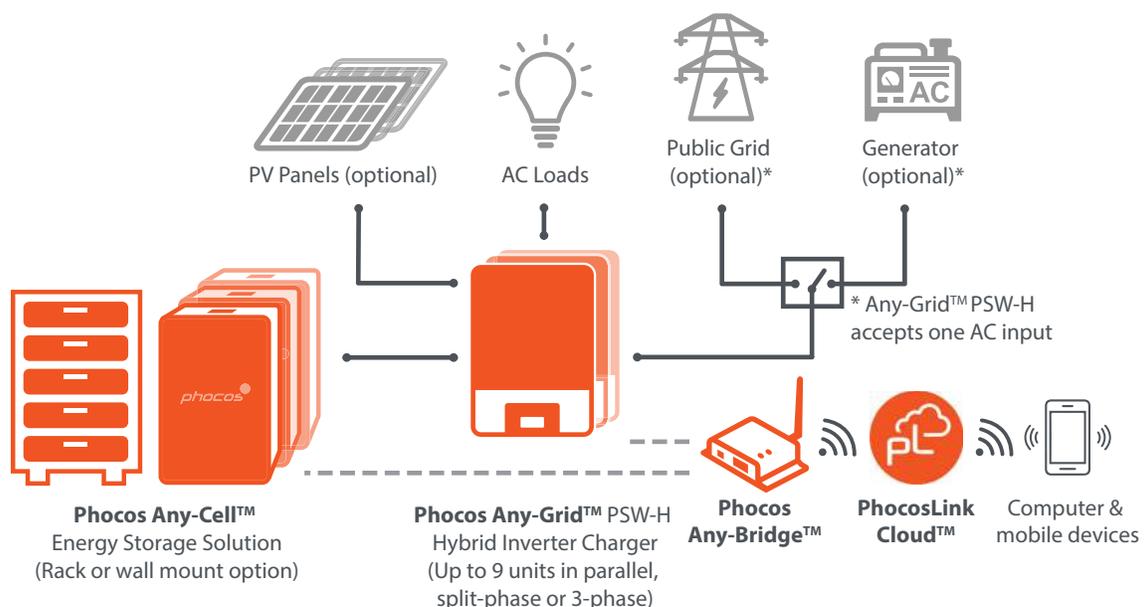
- Flexible, advanced features with options to solve many common challenges in the field
- Integrated high-voltage MPPT charge controller(s). The high-voltage PV connection means in most scenarios the PV modules can simply be connected in series of one or two strings, avoiding costly combiner boxes and string fuses or diodes, thus reducing total system cost
- Integrated AC battery charger
- Charge controller(s) function(s) even if inverter is turned off to keep batteries fully charged
- Compatible with Lithium batteries
- Functions even 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
- Compatible with Phocos Any-Bridge™ AB-PLC and PhocosLink Cloud for remote monitoring & control
- Integrated buzzer for button feedback and error indications
- Galvanic isolation of battery allows positive or negative grounding of the same
- Up to 9 inverters can be connected in parallel, 3-phase or split-phase for up to 72 kW of synchronized AC power
- Washable filter reduces dust buildup in the inverter
- Grid feed-in option is code-protected to avoid accidental feed-in



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 Inverter 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™ PSW-H (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	PSW-H-6.5KW-120/48V	PSW-H-8KW-230/48V
Output Waveform	Pure Sine Wave				
System Voltage	24 Vdc		48 Vdc		
Rated AC Output Power	3000 VA / 3000 W		5000 VA / 5000 W	6500 VA / 6500 W	8000 VA / 8000 W
Max. Charge Current (PV)	80 Adc			120 Adc	
Max. Charge Current (AC)	80 Adc			120 Adc	
Max. Total Charge Current	80 Adc			120 Adc	
Max. AC Input Current	38.3 Aac	30 Aac	40 Aac	60 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	27.1 Vdc (adjustable)		54.7 Vdc (adjustable)		
Overvoltage Protection	33 Vdc		66 Vdc		
Undervoltage Protection	18.8 Vdc		37.5 Vdc		
Battery Discharge Current Requirement	168 Adc continuous 336 Adc surge (5s)		140 Adc continuous 280 Adc surge (5s)	154 Adc continuous 308 Adc surge (5s)	184 Adc continuous 368 Adc surge (5s)
Max. PV Panel Voltage	250 Vdc	450 Vdc		250 Vdc x 2 MPPTs	500 Vdc x 2 MPPTs
PV Panel MPP Voltage	90 ~ 230 Vdc	90 ~ 430 Vdc	120 ~ 430 Vdc	90 ~ 230 Vdc x 2 MPPTs	120 ~ 450 Vdc x 2 MPPTs
Max. Usable PV Current	22 Adc			22 Adc x 2 MPPTs, 36 Adc total	27 Adc x 2 MPPTs, 40 Adc total
Max. Usable PV Power	4000 W (2400 W for battery charging)		4800 W	4000 W x 2 MPPTs	
Max. PV Array Power	5000 Wp		6000 Wp	5000 Wp x 2 MPPTs	
AC Frequency	50 / 60 Hz auto recognition				
AC Output Voltage	110 ~ 127 Vac ± 5% (adjustable)	220 ~ 240 Vac ± 5% (adjustable)		110 ~ 127 Vac ± 5% (adjustable)	220 ~ 240 Vac ± 5% (adjustable)
Surge Power	2x rated power for 5 seconds				
Extensibility	Up to 9 units in parallel, 3-phase or split-phase	Up to 9 units in parallel or 3-phase		Up to 9 units in parallel, 3-phase or split-phase	Up to 9 units in parallel or 3-phase
Inverter Efficiency (from Battery)	> 90 % peak	> 91 % peak	> 93 % peak	> 92 % peak	
Inverter Efficiency (from PV)	> 96 % peak				> 97 % peak
Idle Self-Consumption	< 40 W on			< 58 W on	< 75 W on
Grounding	Galvanically isolated battery allows positive or negative battery grounding				
Ambient Temperature	-10 to +50 °C / +14 to +122 °F				
Storage Temperature & Humidity	-15 to +60 °C / +5 to +140 °F, 5-95 % (non-condensing)				
Transfer time between grid mode and off-grid mode and vice versa	10ms typical when in UPS mode, 20ms typical when in APL mode, up to 50ms when using multiple synchronized Any-Grids				
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)			Battery: 70 mm ² (AWG 2/0), PV: 16 mm ² (AWG 4), AC: 16 mm ² (AWG 6)	
Dimensions (WxHxD)	478 x 309 x 143 mm / 18.8 x 12.2 x 5.6 in			584 (651) x 433 x 148 mm / 23 (25.6) x 17 x 5.8 in (with extension box)	584 x 433 x 148 mm / 23 x 17 x 5.8 in
Weight	12 kg / 27 lbs	11.2 kg / 24.7 lbs	11.8 kg / 26 lbs	18.2 kg / 40 lbs	21.5 kg / 47.4 lbs
Ingress Protection	IP21				
Certificates	RoHS compliant	CE compliant, RoHS compliant		UL1741, CSA C22.2 No. 107.1-16, FCC Class A, RoHS compliant	CE compliant, RoHS compliant
Warranty	3 years				