



Single-phase Hybrid Inverter Datasheet

- HYS-3.8LV-USG1**
- HYS-4.8LV-USG1**
- HYS-6.0LV-USG1**
- HYS-7.6LV-USG1**
- HYS-9.6LV-USG1**
- HYS-11.5LV-USG1**

Description

The HYS-LV-USG1 Series is a high-performance single-phase hybrid inverter with excellent reliability, including power classes ranging from 3.8 kW to 11.5 kW. It can support up to 10 inverters in parallel with a maximum power of 115 kW.

The intelligent EMS function supports self-consumption mode, economic mode, and backup mode for multi-scenario applications.

Monitoring management through S-Miles Cloud allows users to remotely diagnose and track individual system's performance over time, maximizing the total solar power production and battery utilization.

Features

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|-----------|---|-----------|--|
| 01 | Max. efficiency 97.6%, CEC efficiency 97.0% | 05 | Support 120 V/240 V backup power without external autotransformer |
| 02 | Double MPPT tracker, up to 32 A MPPT current | 06 | Seamless backup power for whole home or critical loads |
| 03 | DC/AC ratio up to 150% | 07 | Built-in dry contact flexibly set to earth fault alarm, load control, or generator control |
| 04 | Ultralight for easy installation and space-saving | 08 | Integrated arc fault protection and rapid shutdown function |

Technical Specifications

Model	HYS-3.8LV-USG1	HYS-4.8LV-USG1	HYS-6.0LV-USG1	HYS-7.6LV-USG1	HYS-9.6LV-USG1	HYS-11.5LV-USG1
Battery						
Battery type	Li-ion/Lead-acid					
Battery voltage range (V)	40-60					
Max. charge/discharge current (A)	80/80	100/100	100/100	160/160	200/200	200/200
Max. charge/discharge power (W)	3840/3840	4800/4800	4800/4800	7600/7600	9600/9600	9600/9600
Charging strategy for Li-ion battery	Self-adaption to BMS					
Charging curve	3 Stages/Equalization					
External temperature sensor	Optional					
Communication	CAN, RS485					
PV Input						
Recommended max. PV power (W)	5760	7200	9000	11520	14400	14400
Max. input voltage (V)	550					
Rated voltage (V)	380					
Start-up voltage (V)	150					
MPPT voltage range (V)	125-500					
Max. input current (A)	16/16	16/16	16/16	32/32	32/32	32/32
Max. short circuit current (A)	20/20	20/20	20/20	40/40	40/40	40/40
MPPT number/Max. input strings number	2/2	2/2	2/2	2/4	2/4	2/4
AC Input and Output (On-grid)						
Rated output power (W)	3840	4800	6000	7680	9600	11520
Max. output apparent power (VA)	3840	4800	6000	7680	9600	11520
Max. input power (W)	7680	9600	9600	15360	19200	19200
Rated AC output voltage/Range (V)	240, 211-264					
Rated grid frequency (Hz)	60					
Max. output current (A)	16	20	25	32	40	48
Max. input current (A)	32	40	40	64	80	80
Power factor	>0.99 (0.8 leading ... 0.8 lagging)					
THDi (@rated output)	<3%					
AC Output (Off-grid)						
Rated output power (W)	3840	4800	4800	7680	9600	9600
Max. output apparent power (VA) ⁽¹⁾	7680, 10s	9600, 10s	9600, 10s	15360, 10s	19200, 10s	19200, 10s
Back-up switch time (ms)	<10					
Rated output voltage (V)	120/240 (split phase)					
Rated output frequency (Hz)	60					
Max. continuous output current (A)	16	20	20	32	40	40
THDv (@linear load)	<3%					
Efficiency						
MPPT efficiency	99.9%	99.9%	99.9%	99.9%	99.9%	99.9%
Max. efficiency	97.6%	97.6%	97.6%	97.6%	97.6%	97.6%
CEC efficiency	97.0%	97.0%	97.0%	97.0%	97.0%	97.0%
Max. battery discharge to AC efficiency	95.0%	95.0%	95.0%	95.0%	95.0%	95.0%
Protection						
Anti-islanding protection	Integrated					
PV arc fault detection	Integrated					
PV string input reverse polarity protection	Integrated					
Compliant MLRSD products	Integrated					
Insulation resistor detection	Integrated					
Residual current monitoring unit	Integrated					
AC over current protection	Integrated					
AC short current protection	Integrated					
AC overvoltage and undervoltage protection	Integrated					
Surge protection	DC Type II/AC Type III					
General						
Dimensions (W × H × D)	19.8 × 24.2 × 7.95 inch (502 × 615 × 202 mm)			19.8 × 29.1 × 7.95 inch (502 × 740 × 202 mm)		
Weight	68.3 lbs (31 kg)			90.4 lbs (41 kg)		
Mounting	Wall mounting					
Operating temperature	-13°F to +149°F (>113°F, derating)/-25°C to +65°C (>45°C, derating)					
Relative humidity	0-95%, no condensing					
Cooling	Natural convection					
Topology (Solar/Battery)	Transformerless/High-frequency isolation					
Altitude	≤6562 ft (2000 m)					
Protection degree	Type 4X					
Noise (dB)	<40					
User interface	LED, App					
Digital input/output	1 × DI, 2 × DO					
Communication	RS485, optional: Wi-Fi/Ethernet/4G ⁽²⁾					
Warranty	10 Years					
Certifications and Standards						
Grid connection standard	IEEE 1547-2018, IEEE 1547.1-2020, SRD2.0					
Safety/EMC standard	UL 1741, CSA C22.2 No.107.1, UL 1741 CRD, UL 1741 SB, FCC Part 15 Class B					
AFCI	UL 1699B					
Software approval	UL 1998					

(1) Can be achieved only if PV and battery power are sufficient.

(2) The DTS-4G solution will be coming soon.