Residential North America Hybrid Inverter

Limitless 12K

12K-2P-LL

Compact and Affordable Power, for Every Home.



Key Benefits

Intelligent Energy Management
Multi-Season Time-of-Use, Zero Meter, Self-Consumption.

Grid Interaction
NEM - Grid Sell, Peak Shaving, VPP Ready.

Backup Resilience
5 ms Transfer Time, Auto Generator Start, Smart AC Load Control.

New Installs or Retrofits
AC and DC Solar Coupling, All-in-One PCS platform – no MID.

Battery Choice
Multiple UL 9540 Certifications.

MySolArk V2 Monitoring App
Monitoring and Performance Insights, VPP Enrollment and Participation.

The Sol-Ark Advantage

10-Year Warranty	7-day USA Tech Support	USA Non-FEOC	USA Firmware & Data Hosting

Built for budget-conscious projects, the **Limitless 12K Hybrid Inverter** delivers resilient backup power and advanced energy management in one compact, powerful platform. Capable of delivering **12 kW to the grid** or **10 kW of continuous backup power from batteries**, it easily supports loads such as mini-split A/C systems, well pumps, kitchen appliances, furnace blowers, and lighting.

Designed for flexibility and maximum solar utilization, the Limitless 12K supports both DC and AC solar coupling, making it ideal for new installations and retrofit applications alike. With **100 A grid passthrough** plus integrated **Smart Load** control, and generator support through the multifunction **GEN** port, the Limitless 12K provides a reliable foundation for energy independence and dependable home backup power.

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DATASHEET

LIMITLESS 12K

Model: Limitless 12K — **UL Listed as 12K-2P-LL**

Specification	Unit	Rating
PV (DC)		
Max. STC Rated PV Power	W	19,200
Max. Usable Combined MPPT PV Power	W	12,000
Rated MPPT Operating Voltage Range	V	150 - 425
Start-Up Voltage	V	125
Max. Input Voltage1	V	500
Max. Operating PV Input Current	A	32 (per MPPT)
Max. Input Short Circuit Current	A	60 (per MPPT)
Number of MPPT / Strings per MPPT		3/2
Grid (AC)		
Nominal Voltage (L-N/L-L)	V	120/240, 120/208
Nominal Frequency	Hz	50 / 60
Nominal Voltage Range	V	185 - 275
Nominal Frequency Range	Hz	55 - 65
Max. Passthrough Current (Grid to Load)	A	100
Max. Input Short Circuit Current (100ms)	A	100
Nominal Real Power (240V)	W	12,000
Max. Output Current, Batteries + PV	A	50
THDi	%	2.5
Power Factor Adjustment Range	+/-	0.9
Efficiency		
Max	%	97.6
Grid to Battery - Charge	%	92.7
Mechanical and Environment		
Dimensions, H x W x D	mm (in)	653 x 421.4 x 249.5 (25.7 x 16.59 x 9.8)
Weight	kg (lbs.)	29.5 (65)
Ambient Temperature / De-rated	°C (°F)	-40 to 60 (-40 to 140) / +45 (+113)
Operating Altitude	m (ft)	> 3,000 (9,843)
Idle Consumption - No Load	W	96
Noise (@ 25°C / 77°F)	dB	< 30
Humidity non-condensing	%	0 - 100
Mounting (hanging bracket included)		Wall
Enclosure Rating		IP65 / NEMA 3R
Cooling		Intelligent Fan
Display		LCD

Specification	Unit	Rating	
Battery (DC)			
Compatible Technology		Lead-acid[3] or Lithium	
Nominal DC Voltage	V	48	
Operating Voltage Range	V	43 – 59	
Number of Inputs[4]		1	
Terminal Current Rating	A	300	
Max. Charge / Discharge Current	A	220 / 220	
BMS Communication		CANbus / RS485 / MODBUS RTU	
Charge Controller Type		3-Stage with Equalization[3] / CC/CV - BMS Controlled	
Backup – Off-Grid (AC)			
Rated Voltage (L-N, L-L)	V	120/240	120/208
Rated Frequency	Hz	50 / 60	
Max. Continuous Power	W	10,000	8,660
Peak Surge Power (10s)	W	24,000	20,800
Backup Transfer Time	ms	5	
Max. Load Imbalance Ratio	%	50	
THDv	%	1.6	
GEN Port (AC)[2]			
Max. AC Coupled PV Power (240V)	W	14,000	12,410
Max. Generator Power[2] (240V)	W	14,000	12,410
Max. Current	A	60	
Protection - Integrated			
PV DC Disconnect Switch — NEC 240.15	PV Arc Fault Detection — NEC 690.11		
Ground Fault Detection — NEC 690.5	PV Input Lightning Protection		
PV Rapid Shutdown — NEC 690.12	PV String Input Reverse Polarity Protection		
Surge Protection - DC Type II / AC Type III			
General			
Warranty Years	10		
Parallel Units	12		
Automatic Generator Start (AGS)	2-Wire Start - Integrated		
Communication	Wi-Fi / LAN		
Monitoring Platform	MySolArk Mobile and Web Apps		
Options			
Optional Accessories	4G Dongle (900-00082); Wireless CT; External RGM Kit (810-00040)		

Compliance and Certification	
Safety Certification	UL 1741 3rd SB, UL1741 CRD-PCS[5] (Pending), UL 1699B PVDC AFCI, UL 1998, CSA C22.2 No. 107, NOM
Interconnection Compliance	IEEE 1547- 2018 and interoperability using IEEE 2030.5, Hawaiian Electric SRD V2.0
EMC	FCC Part 15 Class B
Listings	CEC (Pending), SGIP (Pending)

[1] The highest input voltage is based on the open-circuit voltage of the array at the minimum design temperature (See Installation Manual for more details).

[2] Bidirectional AC port for AC fuel generator input, AC-coupled PV input, or AC load (EV Charger, etc.)

[3] Lead-acid charge settings limited to: Capacity Ah, Absorption V, Float V, (Equalization: V + Time).

[4] Utilization of only a single battery input will derate inverter and charger output.

[5] UL1741-CRD-PCS (Pending) Open Loop Response Time (OLRT): Less than 10 seconds, per CA Rule 21.

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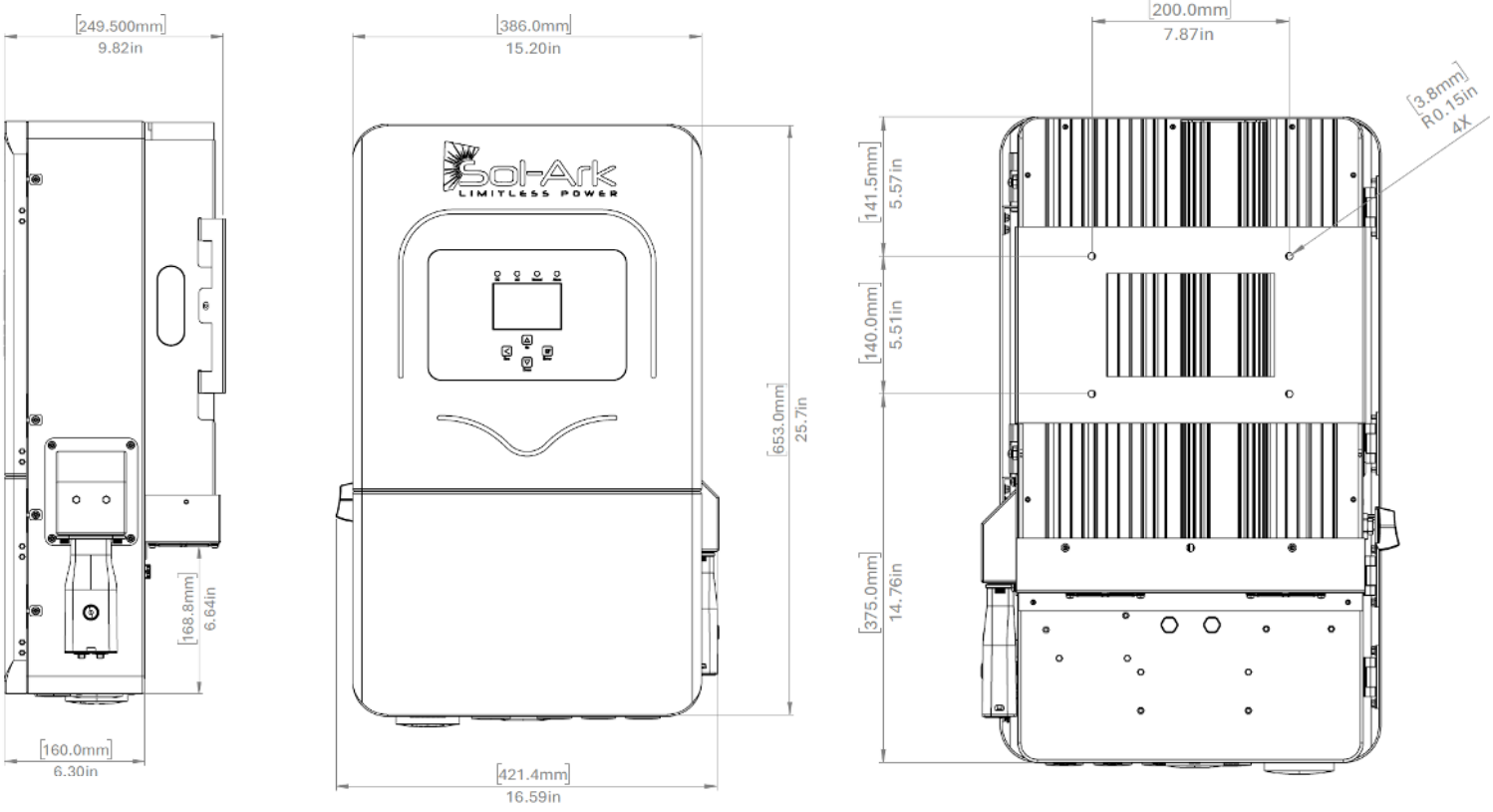
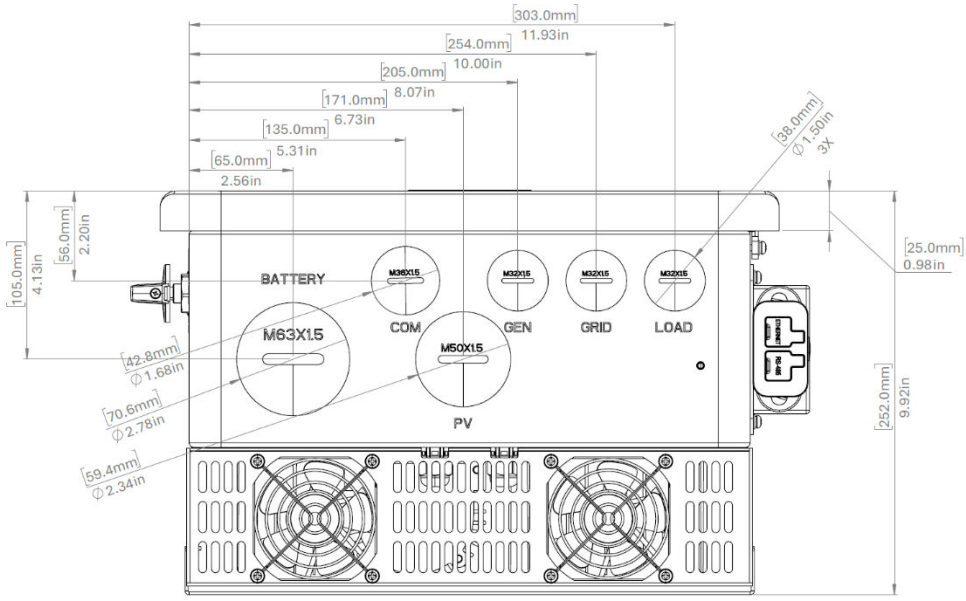
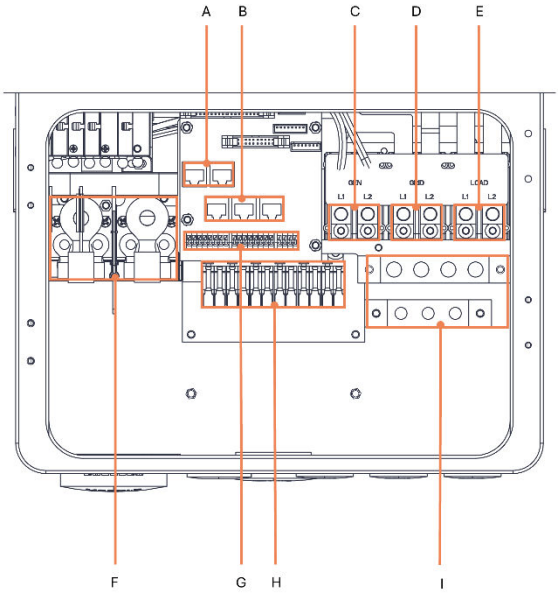
HYBRID INVERTER - RESIDENTIAL NORTH AMERICA







Component	Description	Component	Description	Component	Description
A	BMS RJ45 ports (RS-485/CAN)	D	(100 A) LOAD terminal	G	Input pinouts for sensors and accessories
B	Parallel RJ45 ports	E	(100 A) GRID terminal	H	3 x MPPT inputs
C	(60 A) GEN terminal	F	Battery terminal	I	Ground/Neutral Busbars

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