

DATASHEET

LIMITLESS 12K

HYBRID INVERTER - RESIDENTIAL NORTH AMERICA

12K-2P-LL

Compact and Affordable Power, for Every Home.

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 **12kW to the grid** or **10kW 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 **100A 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.

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

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

U.S. Company - Non-FEOC
Manufacturing & Inventory
Firmware and Data Hosting
7-Days-a-Week Support

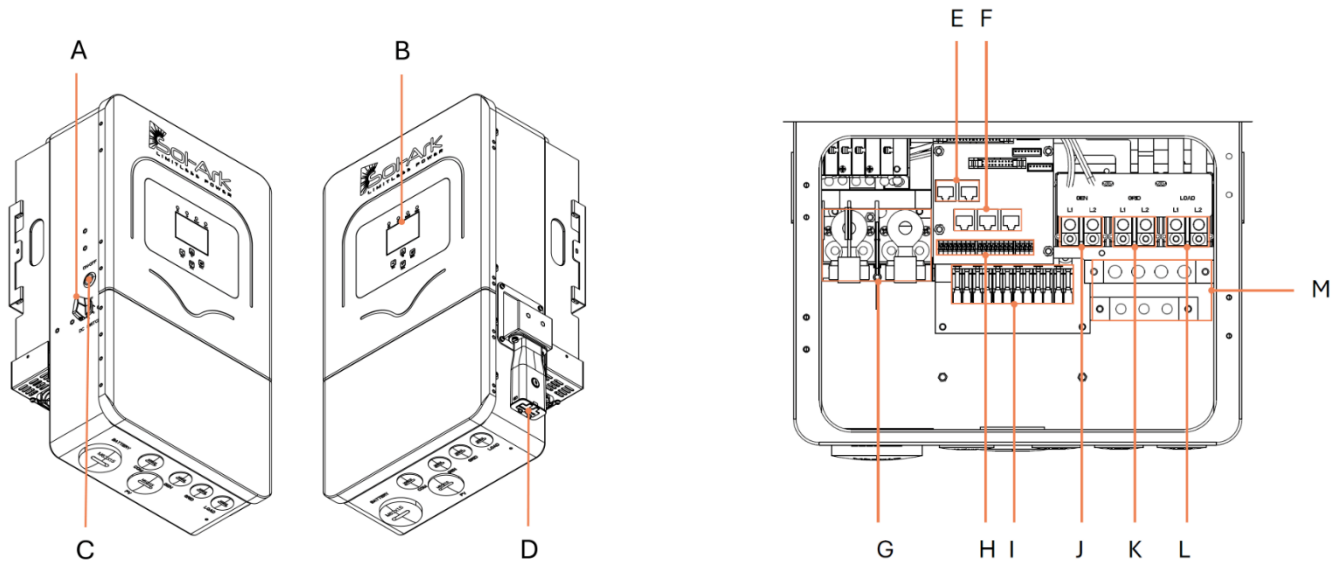
Grid Interaction
NEM - Grid Sell
Peak Shaving
VPP Ready

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 & Performance Insights
VPP Enrollment & Participation



Component	Description	Component	Description
A	PV DC Disconnect	H	Input pinouts for sensors and accessories
B	LCD Touch Screen	I	3 MPPT inputs
C	ON / OFF Button	J	(60A) GEN terminal
D	Wi-Fi / Bluetooth / Ethernet Dongle	K	(100A) LOAD terminal
E	BMS RJ45 ports (RS485 / CAN)	L	(100A) GRID terminal
F	Parallel RJ45 ports	M	Ground / Neutral Busbars
G	Battery terminal		

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Model: 12K-2P-LL

Specification	Unit	Rating	Specification	Unit	Rating
PV (DC)			Battery (DC)		
Max. STC Rated PV Power	W	19,200	Compatible Technology		Lead-acid ³ or Lithium
Max. Usable Combined MPPT PV Power	W	12,000	Nominal DC Voltage	V	48
Rated MPPT Operating Voltage Range	V	150 – 425	Operating Voltage Range	V	43 – 59
Startup Voltage	V	125	Number of Inputs ⁴		1
Max. Input Voltage ¹	V	500	Terminal Current Rating	A	300
Max. Operating PV Input Current	A	32 (per MPPT)	Max. Charge / Discharge Current	A	220 / 220
Max. Input Short Circuit Current	A	60 (per MPPT)	BMS Communication		CANbus / RS485 / MODBUS RTU
Number of MPPT / Strings per MPPT		3/2	Charge Controller Type		3-Stage with Equalization ³ / CC/CV - BMS Controlled
Grid (AC)			Backup – Off-Grid (AC)		
Nominal Voltage (L-N/L-L)	V	120/240, 120/208	Rated Voltage (L-N, L-L)	V	120/240 120/208
Nominal Frequency	Hz	50 / 60	Rated Frequency	Hz	50 / 60
Nominal Voltage Range	V	185 – 275	Max. Continuous Power	W	10,000 8,660
Nominal Frequency Range	Hz	55 – 65	Peak Surge Power (10s)	W	24,000 20,800
Max. Passthrough Current (Grid to Load)	A	100	Backup Transfer Time	ms	5
Max. Input Short Circuit Current (100ms)	A	100	Max. Load Imbalance Ratio	%	50
Nominal Real Power (240V)	W	12,000	THDv	%	1.6
Max. Output Current, Batteries + PV	A	50			
THDi	%	2.5			
Power Factor Adjustment Range	+/-	0.9			
Efficiency			GEN Port (AC)²		
Max	%	97.6	Max. AC Coupled PV Power (240V)	W	14,000 12,410
Grid to Battery - Charge	%	92.7	Max. Generator Power ² (240V)	W	14,000 12,410
			Max. Current	A	60
Mechanical and Environment			Protection - Integrated		
Dimensions, H x W x D	mm (in)	653 x 421.4 x 249.5 (25.7 x 16.59 x 9.8)	PV DC Disconnect Switch — NEC 240.15		PV Arc Fault Detection — NEC 690.11
Weight	kg (lbs.)	29.5 (65)	Ground Fault Detection — NEC 690.5		PV Input Lightning Protection
			PV Rapid Shutdown — NEC 690.12		PV String Input Reverse Polarity Protection
Ambient Temperature / De-rated	°C (°F)	-40 to 60 (-40 to 140) / +45 (+113))			Surge Protection - DC Type II / AC Type III
Operating Altitude	m (ft)	> 3,000 (9843)	General		
Idle Consumption - No Load	W	96	Warranty Years		10
Noise (@ 25°C / 77°F)	dB	< 30	Parallel Units		12
Humidity non-condensing	%	0 - 100	Automatic Generator Start (AGS)		2-Wire Start - Integrated
Mounting (hanging bracket included)		Wall	Communication		WIFI / Bluetooth / LAN
Enclosure Rating		IP65 / NEMA 3R	Monitoring Platform		MySolArk Mobile and Web Apps
Cooling		Intelligent Fan	Options		
Display		LCD	Optional Accessories		4G Dongle, Wireless CT
Compliance and Certification					
Safety Certification	UL1741 3rd SB, UL1741 CRD-PCS ⁵ , UL1699B PVDC AFCI, UL1998, CSA C22.2 No. 107				
Interconnection Compliance	IEEE1547- 2018 and interoperability using IEEE2030.5, Hawaiian Electric SRD V2.0				
EMC	FCC Part 15 Class B				
Listings	CEC, SGIP				

¹The 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 Open Loop Response Time (OLRT): Less than 10 seconds, per CA Rule 21.

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