

SINGLE PHASE HYBRID INVERTER

MKL-HY-S1-12K-LV

12kW | 48V Low Voltage | Single Phase

MKL-HY-S1-12K-LV is a hybrid solar inverter for residential and commercial energy storage applications. It supports self-consumption, backup power, battery charging and intelligent energy management.

KEY HIGHLIGHTS

- **Rated Power:** 12kW
- **Battery:** 48V Low Voltage
- **Phase:** Single Phase
- **Protection:** IP66
- **MPPT:** 2 MPPT
- **Monitoring:** WiFi / 4G optional

FEATURES

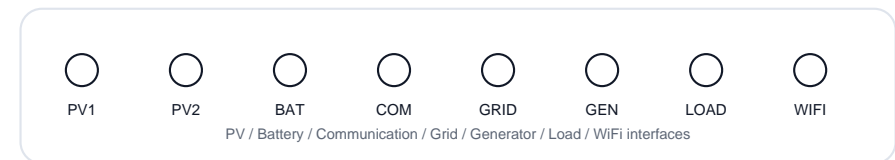
Pure Sine Wave Stable output	High PV Input Wide PV range	Multi MPPT Flexible array
Smart EMS Energy management	Battery Ready BMS support	Remote Monitor WiFi / 4G

CERTIFICATIONS

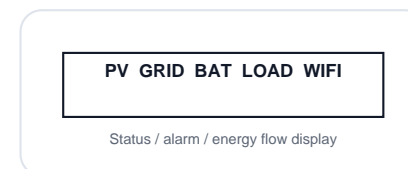
- CE
- IEC 62109
- IEC 61000
- EN 50549
- RoHS



PRODUCT CHARACTERISTICS



LCD DISPLAY ICONS



BASIC SYSTEM ARCHITECTURE



Technical Specifications - Battery & PV Data

MKL-HY-S1-12K-LV

Model and Battery Input Data	
Model	MKL-HY-S1-12K-LV
Product Series	Single Phase Hybrid Inverter
Rated Power	12kW
Battery Platform	48V Low Voltage
Phase / Grid Type	Single Phase
Battery Type	Lead-acid or Lithium-ion
Battery Voltage Range	40-60V
Rated Battery Voltage	48Vdc
Max. Charging Current	240A
Max. Discharging Current	240A
Charging Strategy for Li-ion Battery	Self-adaption to BMS
PV String Input Data	
Max. PV Access Power	24000W
Max. PV Input Power	19200W
Max. PV Input Voltage	500V
Start-up Voltage	125V
PV Input Voltage Range	125-500V
MPPT Voltage Range	150-425V
Rated PV Input Voltage	370V
Max. Operating PV Input Current	26+26A
Max. Input Short-circuit Current	39+39A
No. of MPP Trackers	2 MPPT

Technical Specifications - AC & Efficiency Data

MKL-HY-S1-12K-LV

AC Input / Output Data	
Rated AC Input / Output Active Power	12000W
Max. AC Apparent Power	13200VA
Peak Power (off-grid)	2 times of rated power, 10s
Rated AC Input / Output Current	52.2A
Max. AC Input / Output Current	57.4A
Max. Continuous AC Passthrough	70A
Rated Input / Output Voltage	220/230/240Vac
Grid Connection Form	L+N+PE
Rated Grid Frequency / Range	50Hz/45-55Hz, 60Hz/55-65Hz
Power Factor Adjustment Range	0.8 leading to 0.8 lagging
Total Harmonic Distortion (THDi)	<3% of nominal power
DC Injection Current	<0.5% In
Efficiency Data	
Max. Efficiency	97.6%
Euro Efficiency	96.5%
MPPT Efficiency	>99%
Battery Charge Efficiency	97.0%
Battery Discharge Efficiency	96.5%

Technical Specifications - Protection & General Data

MKL-HY-S1-12K-LV

Equipment Protection	
DC Polarity Reverse Protection	Yes
PV Input Reverse Polarity Protection	Yes
AC Output Overcurrent Protection	Yes
AC Output Overvoltage Protection	Yes
AC Output Short-circuit Protection	Yes
Thermal Protection	Yes
DC Insulation Monitoring	Yes
Ground Fault Monitoring	Yes
Island Protection Monitoring	Yes
Residual Current Detection	Yes
Arc Fault Circuit Interrupter (AFCI)	Optional
Surge Protection Level	Type II (DC) / Type II (AC)
Interface and General Data	
Display	LCD + LED
Communication Interface	RS232 / RS485 / CAN
Monitor Mode	WiFi / Bluetooth / 4G / LAN optional
Generator Input / Smart Load	Supported by configuration
Parallel Operation	Up to 16 units
Operating Temperature Range	-40C to +60C, derating above 45C
Permissible Humidity	0-100%, non-condensing
Ingress Protection Rating	IP66
Installation	Wall-mounted
Cooling	Intelligent air cooling
Dimensions (W x H x D)	340 x 475 x 248 mm
Weight	19kg
Warranty	5 years standard, 10 years optional

Contact & Support

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