

SPLIT PHASE HYBRID INVERTER

MKL-HY-SP-12K-LV-US

12kW | 48V Low Voltage | Split Phase

MKL-HY-SP-12K-LV-US 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:** Split Phase
- **Protection:** IP66
- **MPPT:** 4 MPPT
- **Monitoring:** WiFi / 4G optional

FEATURES

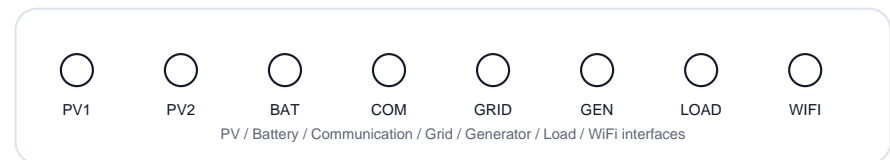
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|--|---------------------------------------|-------------------------------------|
| Pure Sine Wave Stable output | High PV Input Wide PV range | Multi MPPT Flexible array |
| Smart EMS Energy management | Battery Ready BMS support | Remote Monitor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

CERTIFICATIONS

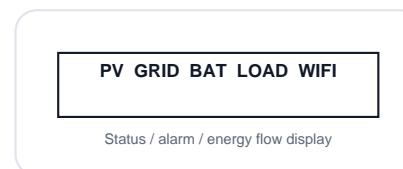
- CE
- IEC 62109
- IEC 61000
- EN 50549
- RoHS



PRODUCT CHARACTERISTICS



LCD DISPLAY ICONS



BASIC SYSTEM ARCHITECTURE



Technical Specifications - Battery & PV Data

MKL-HY-SP-12K-LV-US

| Model and Battery Input Data | |
|--------------------------------------|-----------------------------|
| Model | MKL-HY-SP-12K-LV-US |
| Product Series | Split Phase Hybrid Inverter |
| Rated Power | 12kW |
| Battery Platform | 48V Low Voltage |
| Phase / Grid Type | Split Phase |
| Battery Type | Lithium / Lead-acid |
| Battery Voltage Range | 43-63V |
| 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 | 15600W |
| Max. PV Input Power | 15600W |
| Max. PV Input Voltage | 500V |
| Start-up Voltage | 125V |
| PV Input Voltage Range | 150-500V |
| MPPT Voltage Range | 150-500V |
| Rated PV Input Voltage | 370V |
| Max. Operating PV Input Current | 26A per MPPT |
| Max. Input Short-circuit Current | 44A per MPPT |
| No. of MPP Trackers | 4 MPPT |

Technical Specifications - AC & Efficiency Data

MKL-HY-SP-12K-LV-US

| 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 | 50.0A @240V |
| Max. AC Input / Output Current | 62.5A @240V |
| Max. Continuous AC Passthrough | 100A |
| Rated Input / Output Voltage | 120/240V, 120/208V, 220V |
| Grid Connection Form | Split phase / L1+L2+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-SP-12K-LV-US

| 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 12 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) | 800 x 450 x 282 mm |
| Weight | 52kg |
| Warranty | 5 years standard, 10 years optional |

Contact & Support

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