

Smart Energy Controller

SUN2000-50KTL-M3



Higher Yields

Up to 30% More Energy with Optimizer



Active Safety

AI Powered Active Arcing Protection



Flexible Communication

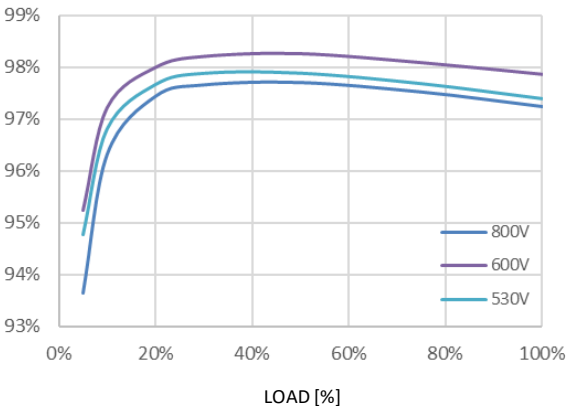
WLAN, Fast Ethernet, 4G Communication Supported



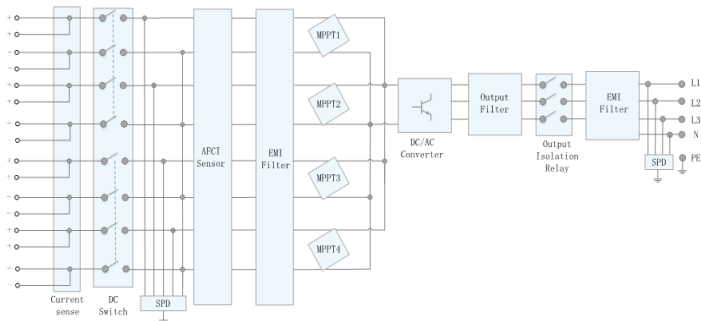
DC Surge protection

Type I + Type II

Efficiency Curve



Circuit Diagram



SUN2000-50KTL-M3

Technical Specification

SUN2000	-50KTL-M3
	Efficiency
Max. Efficiency	98.5%
European Efficiency	98.0%
	Input
Max. Input Voltage ¹	1100 V
Max. Current per MPPT	30 A
Max. Current per Input	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V - 1000 V
Rated Input Voltage	600 V
Number of Inputs	8
Number of MPP Trackers	4
	Output
Rated AC Active Power	50000 W
Max. AC Apparent Power	55000 VA
Max. AC Active Power (cosφ=1)	55000 W
Rated Output Voltage	400 Vac, 3W+(N) + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	72.2 A @ 400Vac
Max. Output Current	79.8 A @ 400Vac
Adjustable Power Factor Range	0.8 LG... 0.8 LD
Max. Total Harmonic Distortion	<3%
	Protection
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Yes
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Arc Fault Protection	Yes
Ripple Receiver Control	Yes
Integrated PID Recovery ³	Yes
DC Surge protection ⁴	Type I + II
	Communication
Display	LED Indicators, WLAN + APP
RS485	Yes
Smart Dongle	WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)
Monitoring BUS (MBUS)	Yes (Isolation Transformer required)
	Optimizer Compatibility
DC MBUS Compatible Optimizer	MERC-1100/1300W-P
	General Data
Dimensions (W x H x D)	640 x 530 x 270 mm
Weight (with mounting plate)	49 kg
Operating Temperature Range	-25°C to +60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4000 m
Relative Humidity	0% RH - 100% RH
DC Connector	Amphenol HH4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP 66
Topology	Transformerless
Nighttime Power Consumption	≤ 5.5W
	Standard Compliance (more available upon request)
Safety	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Connection Standards	IEC 61727, VDE-AR-N4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, P.O. 12.3, RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, MEA, Resolution No.7, NRS 097-2-1, DEWA

*1. The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

*2. Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

*3. SUN2000-30-50KTL-M3 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly), N-type (nPERT, HIT).

*4. SPD Type I+II for inverters with a manufacturing date after 09/01/2024, see self-declaration for more details

Disclaimer: the preceding values are measured by an internal laboratory of Huawei in a specific environment. The actual values may vary with products, software versions, usage conditions, and environmental factors.