

Smart PV Controller



Active Safety

AI Powered Arcing Protection



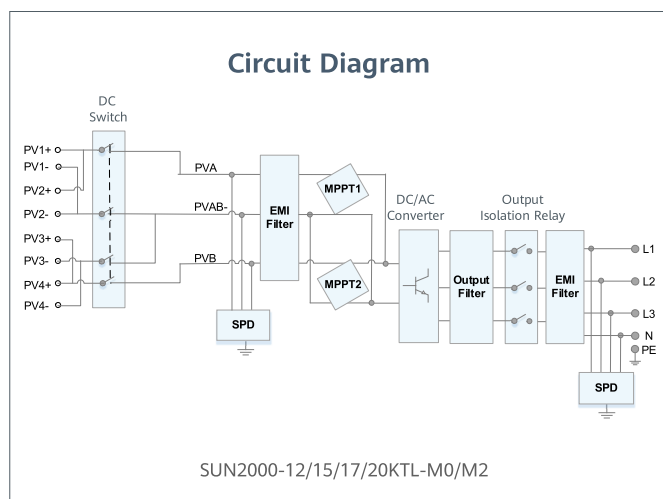
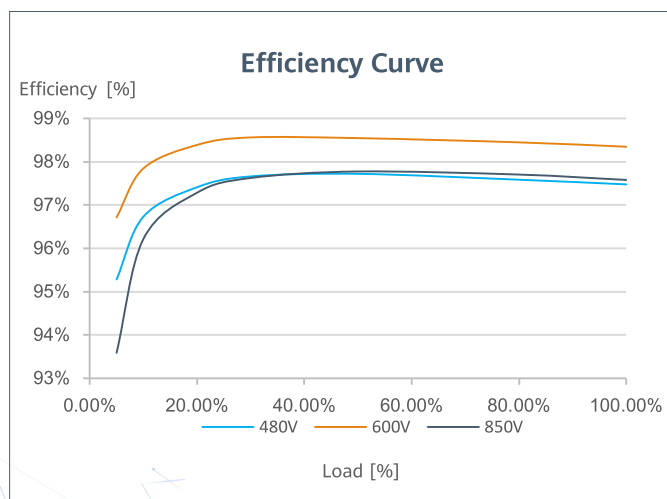
Higher Yields

Up to 30% More Energy with Optimizer ¹



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



^{*1} Only applicable to SUN2000-12/15/17/20KTL-M2 inverter.

SUN2000-12/15/17/20KTL-M2

Technical Specification

Technical Specification	SUN2000 -12KTL-M2	SUN2000 -15KTL-M2	SUN2000 -17KTL-M2	SUN2000 -20KTL-M2
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Efficiency

Max. efficiency	98.50%	98.65%	98.65%	98.65%
European weighted efficiency	98.00%	98.30%	98.30%	98.30%

Input

Recommended max. PV power ¹	18,000 Wp	22,500 Wp	25,500 Wp	30,000 Wp
Max. input voltage ²	1,080 V			
Operating voltage range ³	160 V ~ 950 V			
Start-up voltage	200 V			
Rated input voltage	600 V			
Max. input current per MPPT	22 A			
Max. short-circuit current	30 A			
Number of MPP trackers	2			
Max. input number per MPP tracker	2			

Output

Grid connection	Three phase			
Rated output power	12,000 W	15,000 W	17,000 W	20,000 W
Max. apparent power	13,200 VA	16,500 VA	18,700 VA	22,000 VA
Rated output voltage	220 Vac / 380 Vac, 230 Vac / 400 Vac, 3W + N + PE			
Rated AC grid frequency	50 Hz / 60 Hz			
Max. output current	20 A	25.2 A	28.5 A	33.5 A
Adjustable power factor	0.8 leading ... 0.8 lagging			
Max. total harmonic distortion	≤ 3 %			

Features & Protections

Input-side disconnection device	Yes
Anti-islanding protection	Yes
AC over-current protection	Yes
AC short-circuit protection	Yes
AC over-voltage protection	Yes
DC reverse-polarity protection	Yes
DC surge protection	TYPE II
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
Residual current monitoring unit	Yes
Arc fault protection	Yes
Ripple receiver control	Yes
Integrated PID recovery ⁴	Yes

General Data

Operation temperature range	-25 ~ +60 °C (-13 °F ~ 140 °F)
Relative humidity	0 % RH ~ 100% RH
Max. operating altitude	4,000 m (13,123 ft.) (Derating above 2000 m)
Cooling	Natural Convection
Display	LED Indicators; Integrated WLAN + FusionSolar App
Communication	RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional) 4G / 3G / 2G via Smart Dongle-4G (Optional)
Weight (with mounting plate)	25 kg
Dimensions (W x H x D) (incl. mounting plate)	525 x 470 x 262 mm (20.7 x 18.5 x 10.3 inch)
Degree of protection	IP65
Nighttime Power Consumption	< 5.5 W ⁵

Optimizer Compatibility

DC MBUS compatible optimizer	SUN2000-450W-P
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Standard Compliance (more available upon request)

Safety	EN/IEC 62109-1, EN/IEC 62109-2
Grid connection standards	G98, G99, EN 50549, CEI 0-21, VDE-AR-N-4105, VDE-AR-N-4110, AS 4777.2, C10/11, ABNT, VFR 2019, RD 1699, RD 661, PO 12.3, TOR D4, IEC61727, IEC62116, DEWA

^{*1} Inverter max input PV power is 40,000 Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.

^{*2} The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

^{*3} Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

^{*4} SUN2000-12~20KTL-M2 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)

^{*5} <10 W when PID recovery function is activated.

Smart String Inverter

SUN2000-60KTL-M0



Smart

- 12 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart I-V Curve Diagnosis supported

Efficient

- Max. efficiency 98.9%, European efficiency 98.7% (@480 V)
- Max. efficiency 98.7%, European efficiency 98.5% (@380 V / 400 V)
- 6 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

Reliable

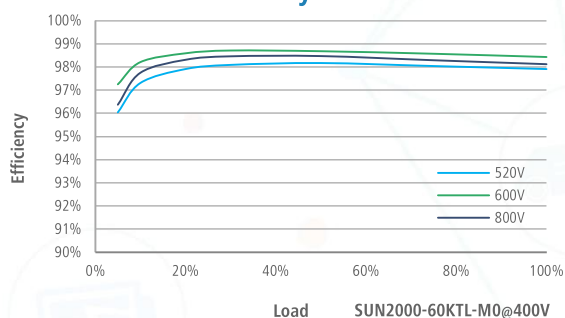
- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

Smart String Inverter (SUN2000-60KTL-M0)

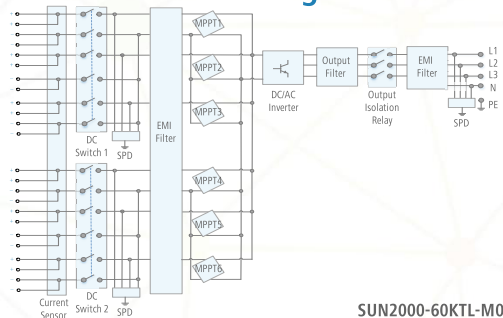


Technical Specifications		SUN2000-60KTL-M0
		Efficiency
Max. Efficiency		98.9% @480 V; 98.7% @380 V / 400 V
European Efficiency		98.7% @480 V; 98.5% @380 V / 400 V
		Input
Max. Input Voltage		1,100 V
Max. Current per MPPT		22 A
Max. Short Circuit Current per MPPT		30 A
Start Voltage		200 V
MPPT Operating Voltage Range		200 V ~ 1,000 V
Rated Input Voltage		600 V @380 Vac / 400 Vac; 720 V @480 Vac
Number of Inputs		12
Number of MPP Trackers		6
		Output
Rated AC Active Power		60,000 W
Max. AC Apparent Power		66,000 VA
Max. AC Active Power (cosφ=1)		66,000 W
Rated Output Voltage		220 V / 380 V, 230 V / 400 V, default 3W + N + PE; 3W + PE optional in settings; 277 V / 480 V, 3W + PE
Rated AC Grid Frequency		50 Hz / 60 Hz
Rated Output Current		91.2 A @380 V, 86.7 A @400 V, 72.2 A @480 V
Max. Output Current		100 A @380 V, 95.3 A @400 V, 79.4 A @480 V
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		Type II
AC Surge Arrester		Type II
DC Insulation Resistance Detection		Yes
Residual Current Monitoring Unit		Yes
		Communication
Display		LED Indicators, Bluetooth + APP
RS485		Yes
USB		Yes
Power Line Communication (PLC)		Yes
		General
Dimensions (W x H x D)		1,075 x 555 x 300 mm (42.3 x 21.9 x 11.8 inch)
Weight (with mounting plate)		74 kg (163.1 lb.)
Operating Temperature Range		-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method		Natural Convection
Max. Operating Altitude		4,000 m (13,123 ft.)
Relative Humidity		0 ~ 100%
DC Connector		Amphenol Helios H4
AC Connector		Waterproof PG Terminal + Terminal Clamp
Protection Degree		IP65
Topology		Transformerless
		Standard Compliance (more available upon request)
Certificate		EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code		IEC 61727, VDE-AR-N4105, VDE 0126-1-1, BDEW, VDE 4120, 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

Efficiency Curve



Circuit Diagram



SUN2000-60KTL-M0