Smart Energy Center

Aktív biztonság

MI vezérelt aktív ívvédelem

Magasabb hozamok

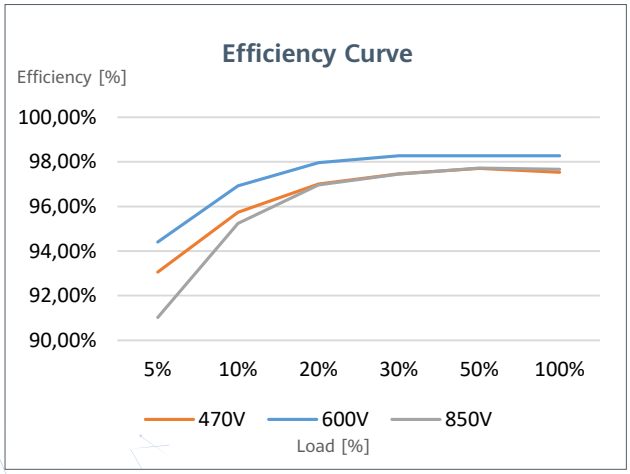
Az optimalizálóval akár 30%-kal több energia [1]

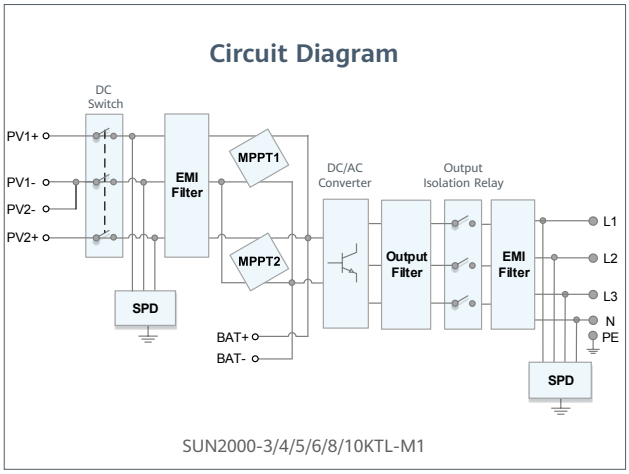
Akkumulátor előkészítés

Plug & Play akkumulátor felület [1]

Rugalmas kommunikáció

WLAN, Fast Ethernet, 4G Kommunikáció





*1. Kompatibilis lesz a HUAWEI ESS intelligens stringgel 2021 első negyedévében

Műszaki paraméterek

Műszaki paraméterek	SUN2000 -3KTL-M1	SUN2000 -4KTL-M1	SUN2000 -5KTL-M1	SUN2000 -6KTL-M1	SUN2000 -8KTL-M1	SUN2000 -10KTL-M1
Hatékonyság						
Max. hatásfok	98.2%	98.3%	98.4%	98.6%	98.6%	98.6%
EU súlyozott hatásfok	96.7%	97.1%	97.5%	97.7%	98.0%	98.1%
Bemenet (PV)						
Ajánlott max. PV teljesítmény [1]	4,500 Wp	6,000 Wp	7,500 Wp	9,000 Wp	12,000 Wp	15,000 Wp
Max. bemeneti feszültség [2]	1,100 V					
Működési feszültség tartománya [3]	140 V ~ 980 V					
Induló feszültség	200 V					
Névleges bemeneti feszültség	600 V					
Max. bemeneti áramerősség / MPPT	11 A					
Max. rövidzárlati áramerősség	15 A					
MPP-követők száma	2					
Max. bemenet száma / MPP-követő	1					
Bemenet (DC Akkumulátor)						
Kompatibilis akkumulátor	HUAWEI Smart String ESS 5kWh – 30kWh					
Működési feszültség tartomány	600 V ~ 980 V					
Max működési áramerősség	16A					
Max töltési teljesítmény	10,000 W					
Max kisütési teljesítmény	3,300 W	4,400 W	5,500 W	6,600 W	8,800 W	10,000 W
Kimenet (Hálózaton)						
Hálózati csatlakozás	Háromfázisú					
Névleges kimeneti teljesítmény	3,000 W	4,000 W	5,000 W	6,000 W	8,000 W	10,000 W
Max. látszólagos teljesítmény	3,300 VA	4,400 VA	5,500 VA	6,600 VA	8,800 VA	11,000 VA [4]
Névleges kimeneti feszültség	220 Vac / 380 Vac, 230 Vac / 400 Vac, 3W / N+PE					
Évleges AC hálózati frekvencia	50 Hz / 60 Hz					
Max. kimeneti áramerősség	5.1 A	6.8 A	8.5 A	10.1 A	13.5 A	16.9 A
Állítható teljesítménytényező	0.8 kapacitív ... 0.8 induktív					
Max. teljes harmonikus torzítás	≤ 3 %					
Kimenet （Tartalék energia Backup Box-B1-en keresztül）						
Maximum látszólagos teljesítmény	3,300 VA					
Névleges kimeneti feszültség	220 V / 230 V					
Maximum kimeneti áramerősség	15 A					
Teljesítménytényező tartomány	0.8 kapacitív ... 0.8 induktív					
Jellemzők és Védelem						
Bemeneti leválasztó eszköz	Igen					
Szigetüzem elleni védelem	Igen					
DC fordított polaritás elleni védelem	Igen					
Szigetelés ellenőrzése	Igen					
DC túlfeszültség-levezető	Igen, kompatibilis II-es típusú védelmi osztály az EN/IEC 61643-11 szabvány szerint					
AC túlfeszültség-levezető	Igen, kompatibilis II-es típusú védelmi osztály az EN/IEC 61643-11 szabvány szerint					
Szivárgóáram ellenőrzése	Igen					
AC túláram védelem	Igen					
AC rövidzárlat elleni védelem	Igen					
AC túlfeszültség elleni védelem	Igen					
Ívhiba védelem	Igen					
Rádiófrekvenciás vezérlés	Igen					
Beépített PID helyreállítás [5]	Igen					
Fordított akkumulátortöltés hálózatról	Igen					
Éjszakai áramfogyasztás	< 5.5W [6]					
Általános adatok						
Működési hőmérsékleti tartomány	-25 ~ + 60 °C (-13 °F ~ 140 °F)					
Relatív működési páratartalom	0 %RH～100 %RH					
Üzemi magasság	0 ～ 4,000 m (13,123 ft.) (2000 m felett észlelhető teljesítménycsökkenés)					
Hűtés	Természetes légáramlás					
Kijelző	LED-jelzők; beépített WLAN + FusionSolar App					
Kommunikáció	RS485; WLAN/Ethernet Smart Dongle-WLAN-FE-n keresztül; 4G / 3G / 2G a Smart Dongle-4G-n keresztül (Opcionális)					
Súly (tartószerkezettel együtt)	17 kg (37.5 lb)					
Méret (tartószerkezettel együtt)	525 x 470 x 146.5 mm (20.7 x 18.5 x 5.8 inch)					
Védelmi fokozat	IP65					
Optimalizálóval való kompatibilitás						
DC MBUS kompatibilis optimalizáló	SUN2000-450W-P					
Szabványoknak való megfelelőség (igény szerint további szabvány kérhető)						
Tanúsítvány	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116					
Hálózati csatlakozási szabványok	G98, G99, EN 50438, CEI 0-21, VDE-AR-N-4105, AS 4777, C10/11, ABNT, UTE C15-712, RD 1699, TOR D4, NRS 097-2-1, IEC61727, IEC62116, DEWA 2.0					

*1 Az inverter maximum bemeneti PV teljesítménye 20,000 Wp, hosszú stringekkel és teljesen csatlakoztatva a SUN2000-450WP energia optimalizálókhoz.
*2 A maximum bemeneti feszültség a DC feszültség felső határa. Bármilyen DC feszültségnél magasabb bemeneti feszültség károsíthatja az invertert.
*3 A működési feszültségnél magasabb DC bemeneti feszültség az inverter nem megfelelő működését eredményezheti.
*4 C10 / 11: 10,000 VA

*5 SUN2000-3~10KTL-M1 az integrált PID helyreállítási funkciójának segítségével nulla fölé emeli a potenciált a napelem és a talja között, hogy helyreállítsa a modulok PID által történő romlását. A támogatott modulok a következők: P-típusú (mono, poly).
*6 <10 W amikor a PID helyreállítási funkció aktiválva van

Smart PV Controller

inter solar award 2019 WINNER

Active Safety

AI Powered Arcing Protection

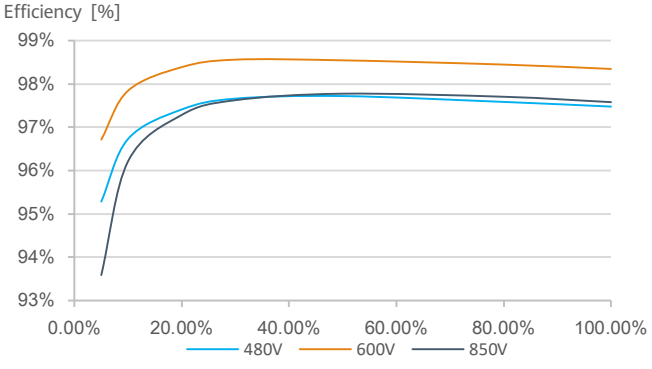
Higher Yields

Up to 30% More Energy with Optimizer [1]

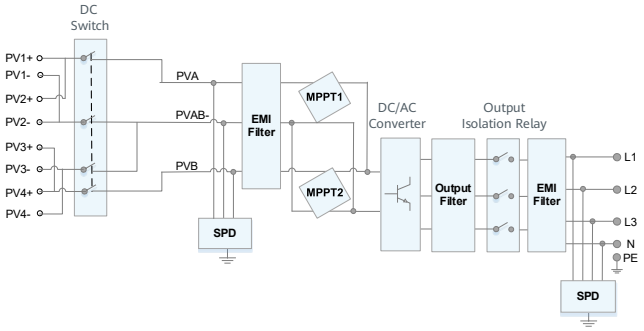
Flexible Communication

WLAN, Fast Ethernet, 4G Communication Supported

Efficiency Curve



Circuit Diagram



SUN2000-12/15/17/20KTL-M0/M2

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

Technical Specification

Technical Specification	SUN2000 -12KTL-M2	SUN2000 -15KTL-M2	SUN2000 -17KTL-M2	SUN2000 -20KTL-M2
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			
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, CEI 0-16, 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

SUN2000-25/30KTL-US

Smart

- 6 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported

Efficient

- Max. efficiency 98.6%
- CEC. efficiency 98.0%
- 3 MPPT per unit, effectively reducing string mismatch

Safe

- DC AFCI compliant to UL 1699B Type I
- Residual Current Monitoring Unit (RCMU) integrated inside
- Fuse free design

Reliable

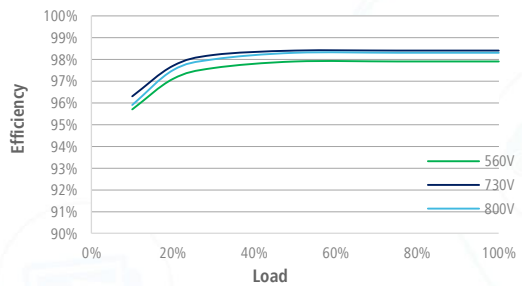
- Natural cooling technology
- Protection degree of Type 4X
- Type II surge arresters for both DC and AC

Smart String Inverter (SUN2000-25/30KTL-US)

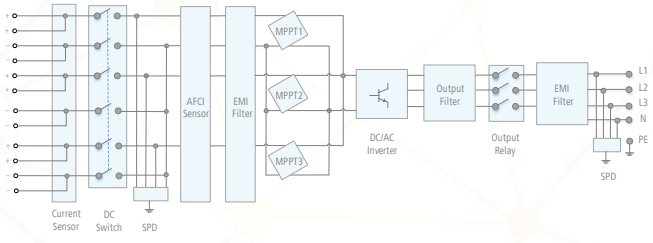
Technical Specifications	SUN2000-25KTL-US	SUN2000-30KTL-US
Efficiency		
Max. Efficiency	98.6%	98.6%
CEC. Efficiency	98.0%	98.0%
Input		
Max. Input Voltage	1,000 V	1,000 V
Max. Current per MPPT	25 A	25 A
Max. Short Circuit Current per MPPT	33 A	33 A
Start Voltage	250 V	250 V
MPPT Operating Voltage Range	250 V ~ 950 V	250 V ~ 950 V
Number of Inputs	6	6
Number of MPP Trackers	3	3
Output		
Rated AC Active Power	25,000 W	30,000 W
Max. AC Apparent Power	27,500 VA	33,000 VA
Max. AC Active Power (cosϕ=1)	25,000 W	30,000 W
Rated Output Voltage	480 V, 3W + PE / 3W + N + PE	480 V, 3W + PE / 3W + N + PE
Rated AC Grid Frequency	60 Hz	60 Hz
Rated Output Current	30.1 A	36.1 A
Max. Output Current	33 A	40 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%	< 3%
Protection		
DC Arc Fault Circuit Interrupter	Yes, compliant to UL 1699B Type I	
Input-side Disconnection Device	Yes	
Anti-islanding Protection	Yes	
DC Reverse-polarity Protection	Yes	
AC Overcurrent 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	
USB	Yes	
RS485	Yes	
Power Line Communication (PLC)	Yes	
General		
Dimensions (W x H x D)	550 x 770 x 281 mm (21.7 x 30.3 x 11.1 inch)	
Weight (with mounting plate)	57 kg (126 lb.)	
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)	
Cooling Method	Natural Convection	
Relative Humidity	0 ~ 100%	
DC Connector	Amphenol Helios H4	
AC Connector	Waterproof Cable Connector + OT Terminal	
Protection Degree	Type 4X	
Topology	Transformerless	
Standard Compliance *(more available upon request)*		
Certificate	UL 1741, UL 1699B, CSA C22.2 #107.1-01, FCC Part 15	
Grid Code	IEEE 1547, IEEE 1547a	

Efficiency Curve

SUN2000-25KTL-US



Circuit Diagram



SUN2000-25/30KTL-US

SUN2000-30/36/40KTL-M3

Smart PV Controller

Smart

8 strings intelligent monitoring

Efficient

Max. efficiency 98.7%

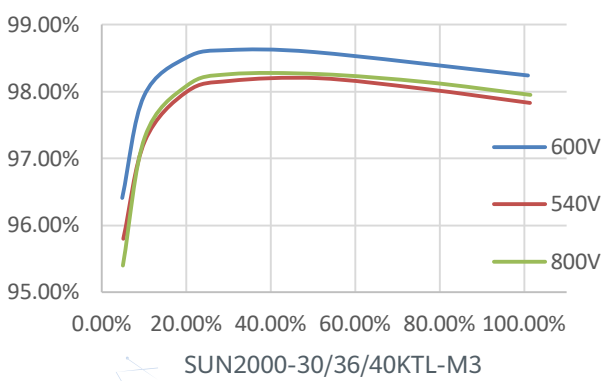
Safe

Fuse free design

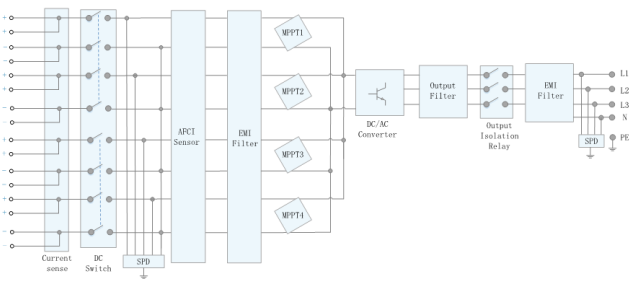
Reliable

Type II surge arresters for DC & AC

Efficiency Curve



Circuit Diagram



Technical Specification

Technical Specification	SUN2000-30KTL-M3	SUN2000-36KTL-M3	SUN2000-40KTL-M3
Efficiency			
Max. Efficiency	98.7%		
European Efficiency	98.4%		
Input			
Max. Input Voltage [1]	1,100 V		
Max. Current per MPPT	26 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	30,000 W	36,000 W	40,000 W
Max. AC Apparent Power	33,000 VA [3]	40,000 VA	44,000 VA
Rated Output Voltage	230 Vac / 400 Vac / 480 Vac, 3W/N+PE		
Rated AC Grid Frequency	50 Hz / 60 Hz		
Rated Output Current	43.3 A	52.0 A	57.8 A
Max. Output Current	47.9 A	58.0 A	63.8 A
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	Yes		
DC Insulation Resistance Detection	Yes		
Residual Current Monitoring Unit	Yes		
Arc Fault Protection	Yes		
Ripple Receiver Control	Yes		
Integrated PID Recovery [4]	Yes		
Communication			
Display	LED Indicators, Integrated WLAN + FusionSolar 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)		
General Data			
Dimensions (W x H x D)	640 x 530 x 270 mm (25.2 x 20.9 x 10.6 inch)		
Weight (with mounting plate)	43 kg (94.8 lb)		
Operating Temperature Range	-25 ~ + 60 °C (-13 °F ~ 140 °F)		
Cooling Method	Natural Convection		
Max. Operating Altitude	4,000 m (13,123 ft.) (Derating above 2000 m)		
Relative Humidity	0% RH ~ 100% RH		
DC Connector	Staubli MC4		
AC Connector	Waterproof Connector + OT/DT Terminal		
Protection Degree	IP 66		
Topology	Transformerless		
Nightime Power Consumption	≤ 5.5W		
Optimizer Compatibility			
DC MBUS Compatible Optimizer	SUN2000-450W-P		
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, AS/NZS 4777.2, 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. For Austria, German, Belgium & Ukraine the Max. AC Apparent Power will not exceed 30,000 VA (with regard to grid code: VDE-AR-N-4105, C10/11 & Austria)
4. SUN2000-30~40KTL-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)

SUN2000-50KTL-M0

Smart String Inverter

Smart

Smart I-V Curve Diagnosis supported

Efficient

Max. efficiency 98.7%

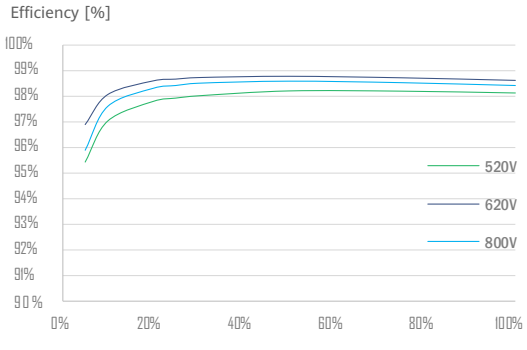
Safe

Fuse free design

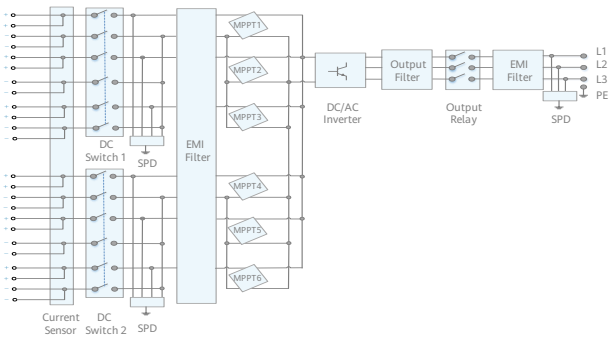
Reliable

Type II surge arresters for DC & AC

Efficiency Curve



Circuit Diagram



SUN2000-50KTL-M0

Technical Specification

Technical Specification	SUN2000-50KTL-M0
Efficiency	
Max. Efficiency	98.7%
European Efficiency	98.5%
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
Number of Inputs	12
Number of MPP Trackers	6
Output	
Rated AC Active Power	50,000 W
Max. AC Apparent Power	55,000 VA
Max. AC Active Power (cosϕ=1)	55,000 W
Rated Output Voltage	220 V / 380 V, 230 V / 400 V, default 3W + N + PE; 3W + PE optional in settings
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	76 A @380 V / 72.2 A @400 V
Max. Output Current	83.6 A @380 V / 79.4 A @400 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
Monitoring BUS (MBUS)	Yes
General Data	
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 + OT Connector
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 62910, IEC 60068, IEC 61683, IRR-DCC-MV, G99
Grid Code	IEC 61727, G59/3, DEWA, NRS 097-2-1, IEEE 1547, SASO, DEWA