

SUN2000-30/36/40KTL-M3 Smart PV Controller



Smart

8 strings intelligent monitoring



Efficient

Max. efficiency 98.7%



Safe

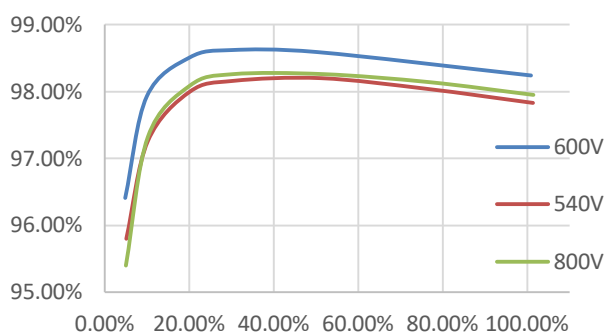
Fuse free design



Reliable

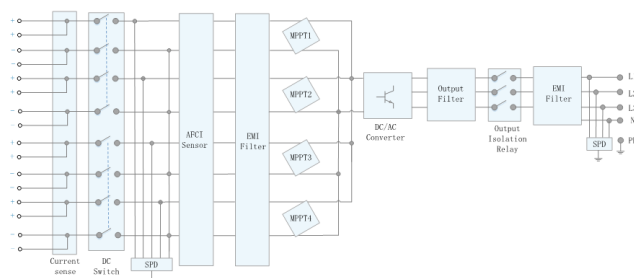
Type II surge arresters for DC & AC

Efficiency Curve



SUN2000-30/36/40KTL-M3

Circuit Diagram



SUN2000-30/36/40KTL-M3

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			
Nighttime 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-M3

Smart PV Controller



Sicurezza attiva

Protezione attiva da arco elettrico basata sull'IA



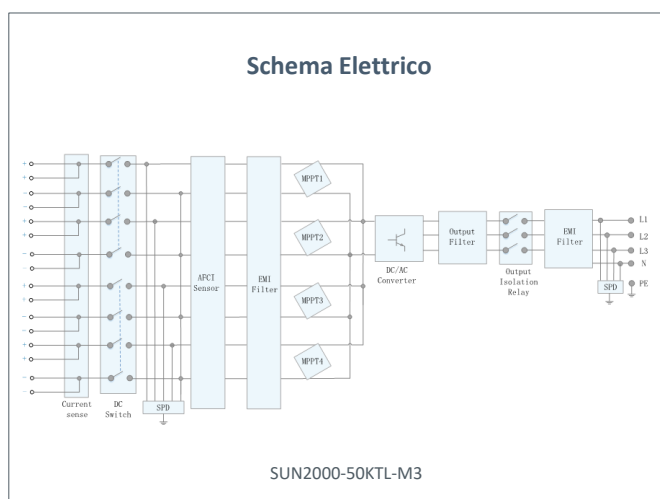
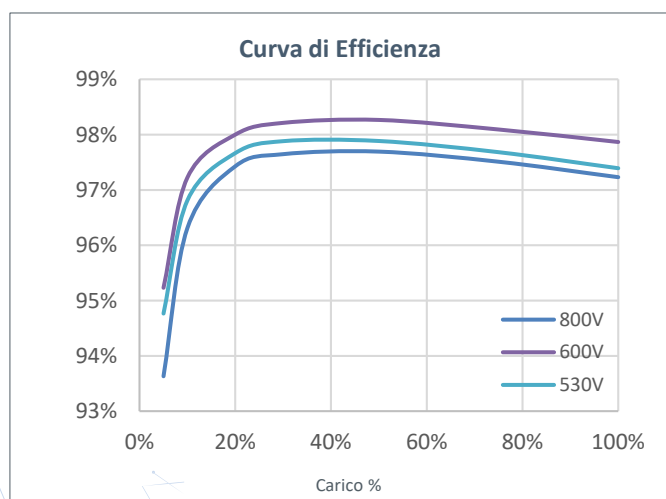
Rendimenti superiori

Fino al 30% in più di energia grazie agli ottimizzatori



Comunicazione flessibile

Tecnologia supportata WLAN,
Fast Ethernet, 4G



Specifiche tecniche	SUN2000-50KTL-M3
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Efficienza	
Massima efficienza	98.5%
Efficienza ponderata Europea	98.0%

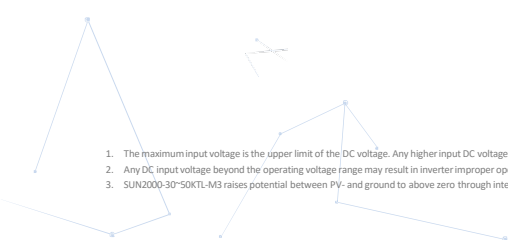
Ingresso	
Tensione masima in ingresso ¹	1,100 V
Corrente Max. per MPPT	30 A (due stringhe) / 20 A (stringa unica)
Corrente di corto circuito Max. per MPPT	40 A
Tensione di Avvio	200 V
Range Operativo MPPT ²	200 V ~ 1,000 V
Tensione di ingresso nominale	600 V
Numero di ingressi	8
Numero di MPPT	4

Uscita	
Potenza Attiva Nominale in AC	50,000 W
Potenza Apparente Max. in AC	55,000 VA
Potenza attiva AC massima (cosφ=1)	55,000 W
Tensione Nominale in Uscita	400 Vac / 480 Vac, 3W+(N) + PE
Frequenza Nominale di Rete AC	50 Hz / 60 Hz
Corrente Nominale in Uscita	72.2 A @ 400Vac, 60.1 A @ 480Vac
Corrente Massima in Uscita	79.8 A @ 400Vac, 66.5 A @ 480Vac
Fattore di potenza regolabile	0.8 Capacitivo ... 0.8 Induttivo
Max. Distorsione Armonica Totale	<3%

Protezione	
Dispositivo di sgancio in ingresso	Sì
Protezione anti-islanding	Sì
Protezione da sovracorrente AC	Sì
Protezione di polarità inversa in DC	Sì
Monitoraggio dei guasti di stringa	Sì
Scaricatore DC integrato	Tipo II
Scaricatore AC integrato	Tipo II
Rilevazione della resistenza di isolamento DC	Sì
Unità di monitoraggio corrente residua	Sì
Protezione attiva di guasto per arco elettrico	Sì
Ripple Receiver Control	Sì
Modulo di ripristino PID integrato ³	Sì

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)

Specifiche tecniche		SUN2000-50KTL-M3	
Comunicazione			
Schermo	Indicatori LED, Bluetooth + APP		
RS485	Sì		
Smart Dongle	WLAN/Ethernet via Smart Dongle-WLAN-FE (Opzionale) 4G / 3G / 2G via Smart Dongle-4G (Opzionale)		
Ottimizzatore compatibile			
Ottimizzatore Compatibile DC MBUS	MERC-1300W-P, MERC-1100W-P		
Dati Generali			
Dimensioni (W x H x D)	640 x 530 x 270 mm (25.2 x 20.9 x 10.6 inch)		
Peso (Senza staffa di montaggio)	49 kg (108.1 lb)		
Intervallo di temp. Operativa	-25°C ~ 60°C (-13°F ~ 140°F)		
Sistema di raffreddamento	Raffreddamento ad aria intelligente		
Altitudine di esercizio massima	4,000 m (13,123 ft.)		
Umidità relativa	0% RH ~ 100% RH		
Connettore DC	Amphenol Helios H4		
Connettore AC	Connettore a Prova di acqua + Terminale OT/DT		
Grado di protezione	IP 66		
Tipologia	Senza trasformatore		
Assorbimento di potenza notturno	≤ 5.5W		
Conformità agli standard (Altri disponibili su richiesta)			
Sicurezza	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683		
Codici di rete	IEC 61727, VDE-AR-N4105, VDE 4110, 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		



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SUN2000-100KTL-M2

Smart PV Controller



10
MPP Trackers



98.8% (@480V)
Max. Efficiency



String-level
Management



Smart I-V Curve Diagnosis
Supported



MBUS
Supported



Support AFCI &
Smart String Level
Disconnect



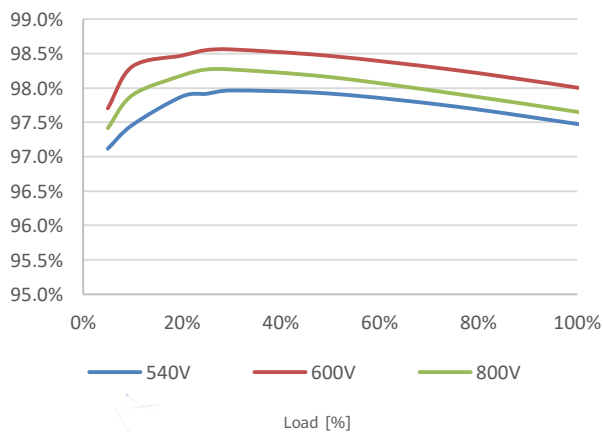
Surge Arresters for
DC & AC



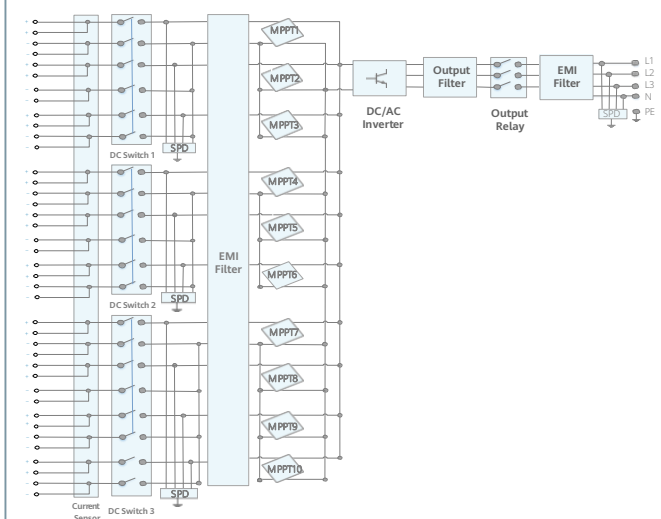
IP66
Protection

Efficiency Curve

SUN2000-100KTL-M2 @400 V



Circuit Diagram



Technical Specification	SUN2000-100KTL-M2
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Efficiency	
Max. efficiency	98.6% @ 400 V, 98.8% @ 480 V
European efficiency	98.4% @ 400 V, 98.6% @ 480 V

Input	
Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	30 A
Max. Current per Input ³	20 A
Max. Short Circuit Current per MPPT	40 A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Nominal Input Voltage	600 V @ 400 Vac, 720 V @ 480 Vac
Number of MPP trackers	10
Max. input number per MPP tracker	2

Output	
Nominal AC Active Power	100,000 W
Max. AC Apparent Power	110,000 VA
Max. AC Active Power (cosφ=1)	110,000 W
Nominal Output Voltage	380 V/ 400 V/ 480 V, 3W+(N)+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	144.4 A @ 400 V, 120.3 A @ 480 V
Max. Output Current	160.4 A @ 400 V, 133.7 A @ 480 V
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
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
Arc Fault Protection	Yes
Smart String Level Disconnecter	Yes

Communication	
Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle-4G	Smart Dongle – 4G / WLAN (Optional)
Monitoring BUS (MBUS)	Yes (isolation transformer required)

General Data	
Dimensions (W x H x D)	1,035 x 700 x 365 mm
Weight (with mounting plate)	93 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Nighttime Power Consumption	< 3.5 W

Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 61727, IEC 60068, IEC 61683
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/11

*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 Single-string access.

SUN2000-115KTL-M2

Smart PV Controller



10
MPP Trackers



98.8% (@480V)
Max. Efficiency



String-level
Management



Smart I-V Curve Diagnosis
Supported



MBUS
Supported



Support
Smart String Level
Disconnecter



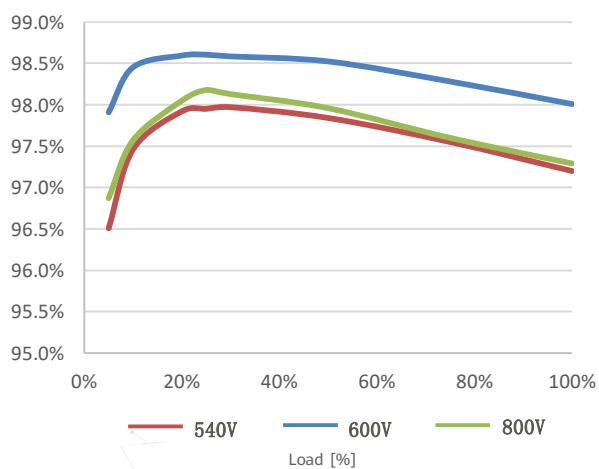
Surge Arresters for
DC & AC



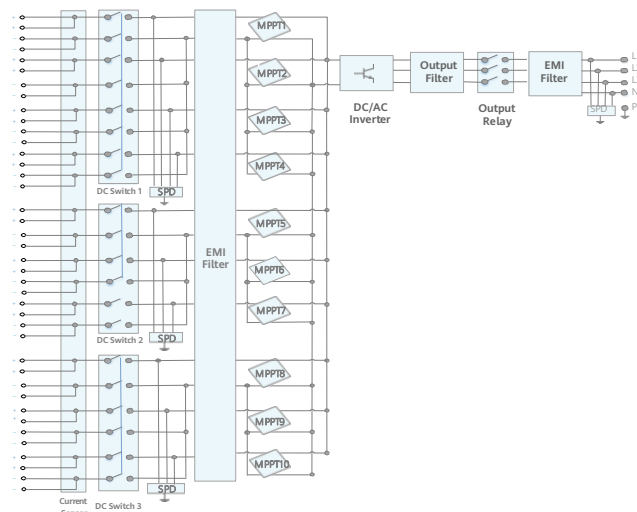
IP66
Protection

Efficiency Curve

SUN2000-115KTL-M2@400V



Circuit Diagram



Technical Specification SUN2000-115KTL-M2

Efficiency	
Max. efficiency	98.6% @400 V, 98.8% @480 V
European efficiency	98.4% @400 V, 98.6% @480 V

Input	
Max. Input Voltage ¹	1,100 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 ~ 1,000 V
Nominal Input Voltage	600 V @400 Vac, 720 V @480 Vac
Number of MPP trackers	10
Max. input number per MPP tracker	2

Output	
Nominal AC Active Power	115,000 W
Max. AC Apparent Power	125,000 VA
Max. AC Active Power (cosφ=1)	125,000 W
Nominal Output Voltage	400 V / 480 V, 3W+(N)+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	166.0 A @400 V, 138.4 A @480 V
Max. Output Current	182.3 A @400 V, 151.9 A @480 V
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
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
Smart String Level Disconnecter	Yes

Communication	
Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle-4G	Smart Dongle – 4G / WLAN (Optional)
Monitoring BUS (MBUS)	Yes (isolation transformer required)

General Data	
Dimensions (W x H x D)	1,035 x 700 x 365 mm
Weight (with mounting plate)	≤ 93 kg
Operating Temperature Range	-25°C ~ 60°C
Cooling Method	Smart Air Cooling
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless
Nighttime Power Consumption	< 3.5 W

Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 61727, IEC 60068, IEC 61683
Grid Connection Standards	VDE-AR-N4105, EN 50549-1, EN 50549-2, RD 661, RD 1699, C10/11

*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.