

SUN2000-2-6KTL-L1 Smart Energy Controller



Active Safety

AI Powered
Active Arcing Protection



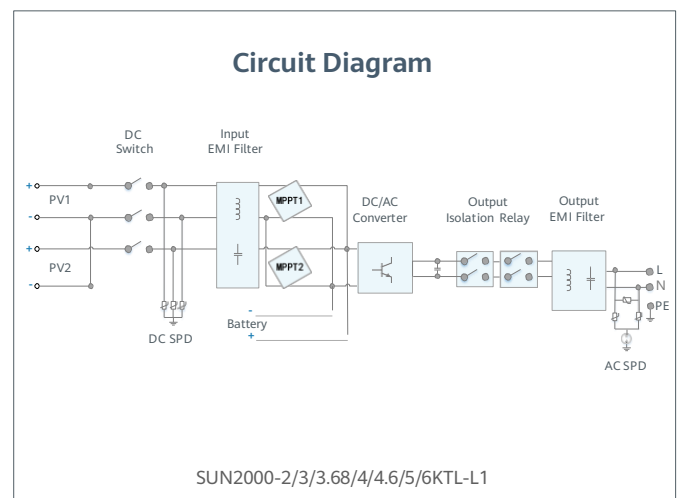
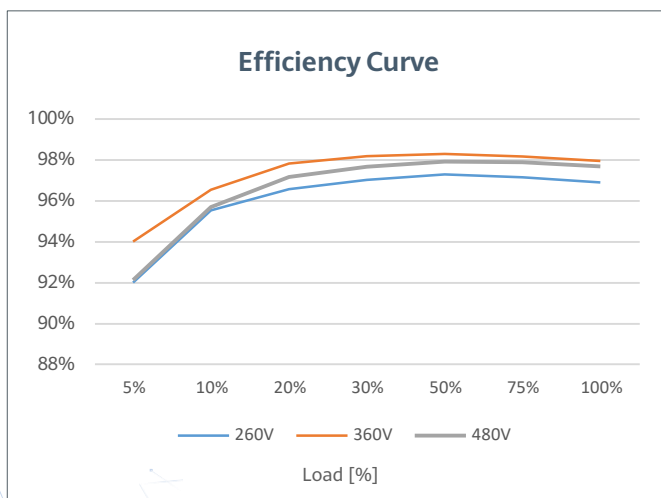
Higher Yields

Up to 30% More
Energy with Optimizer



2x POWER Battery Ready

5KW AC Output plus
5KW Battery Charge



SUN2000-2/3/4/5/6KTL-L1
Technical Specification

Technical Specification	SUN2000 -2KTL-L1	SUN2000 -3KTL-L1	SUN2000 -3.68KTL-L1	SUN2000 -4KTL-L1	SUN2000 -4.6KTL-L1	SUN2000 -5KTL-L1	SUN2000 -6KTL-L1 ¹
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Efficiency

Max. efficiency	98.2 %	98.3 %	98.4 %	98.4 %	98.4 %	98.4 %	98.4 %
European weighted efficiency	96.7 %	97.3 %	97.3 %	97.5 %	97.7 %	97.8 %	97.8 %

Input (PV)

Recommended max. PV power ²	3,000 Wp	4,500 Wp	5,520 Wp	6,000 Wp	6,900 Wp	7,500 Wp	9,000 Wp
Max. input voltage	600 V ³						
Start-up voltage	100 V						
MPPT operating voltage range	90 V – 560 V ³						
Rated input voltage	360 V						
Max. input current per MPPT	12.5 A						
Max. short-circuit current	18 A						
Number of MPP trackers	2						
Max. input number per MPP tracker	1						

Input (DC Battery)

Compatible Battery	HUAWEI Smart ESS Battery 5kWh – 30kWh ¹						
Operating voltage range	350 ~ 560 Vdc						
Max operating current	15 A						
Max charge Power	5,000 W						
Max discharge Power	2,200 W	3,300 W	3,680 W	4,400 W	4,600 W	5,000 W	5,000 W

Output (On Grid)

Grid connection	Single phase						
Rated output power	2,000 W	3,000 W	3,680 W	4,000 W	4,600 W	5,000 W	6,000 W
Max. apparent power	2,200 VA	3,300 VA	3,680 VA	4,400 VA	5,000 VA	5,500 VA	6,000 VA
Rated output voltage	220 Vac / 230 Vac / 240 Vac						
Rated AC grid frequency	50 Hz / 60 Hz						
Max. output current	10 A	15 A	16 A	20 A	23 A	25 A	27.3 A
Adjustable power factor	0.8 leading ... 0.8 lagging						
Max. total harmonic distortion	≤ 3 %						
Backup power output	Yes (via Backup Box-5000 ¹)						

Protection & Feature

Anti-Islanding protection	Yes						
DC reverse polarity protection	Yes						
Insulation monitoring	Yes						
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11						
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11						
Residual current monitoring	Yes						
AC overcurrent protection	Yes						
AC short-circuit protection	Yes						
AC overvoltage protection	Yes						
Over-heat protection	Yes						
Arc fault protection	Yes						
Battery reverse charging from grid	Yes						

General Data

Operating temperature range	-25 ~ +60 °C (Derating above 45 °C @ Rated output power)						
Relative operating humidity	0 %RH ~ 100 %RH						
Operating altitude	0 ~ 4,000 m (Derating above 2,000 m)						
Cooling	Natural convection						
Display	LED indicators; integrated WLAN + FusionSolar APP						
Communication	RS485, WLAN via inverter built-in WLAN module Ethernet via Smart Dongle-WLAN-FE (Optional); 4G / 3G / 2G via Smart Dongle-4G (Optional)						
Weight (incl. mounting bracket)	12.0 kg (26.5 lb)						
Dimension (incl. mounting bracket)	365mm * 365mm * 156 mm (14.4 x 14.4 x 6.1 inch)						
Degree of protection	IP65						
Nighttime power consumption	< 2.5 W						

Optimizer Compatibility

DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-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 50549-1, CEI 0-21, VDE-AR-N-4105, AS 4777.2, C10/11, ABNT, UTE C15-712, RD 1699, TOR D4, IEC61727, IEC62116						

¹ Inverter max input PV power is 10,000Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.
² The maximum input voltage and operating voltage upper limit will be reduced to 495 V when inverter connects and works with LG battery.
³ 2,500 W @ 5kWh HUAWEI ESS battery

SUN2000-3-10KTL-M1 Smart Energy Controller



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Active Arcing Protection



Higher Yields

Up to 30% More Energy
with Optimizer ¹



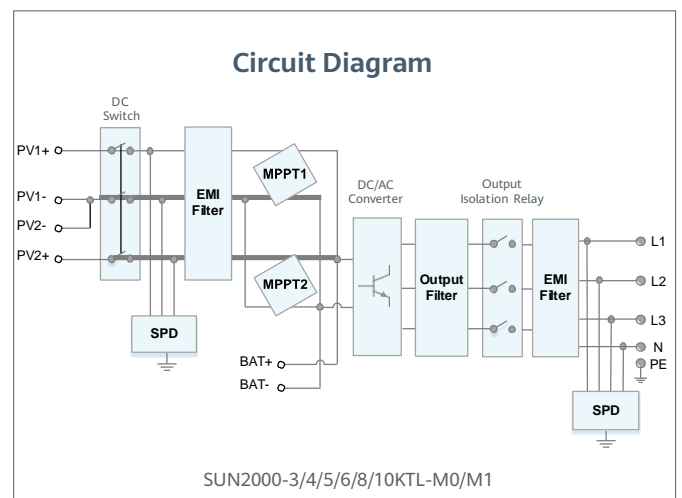
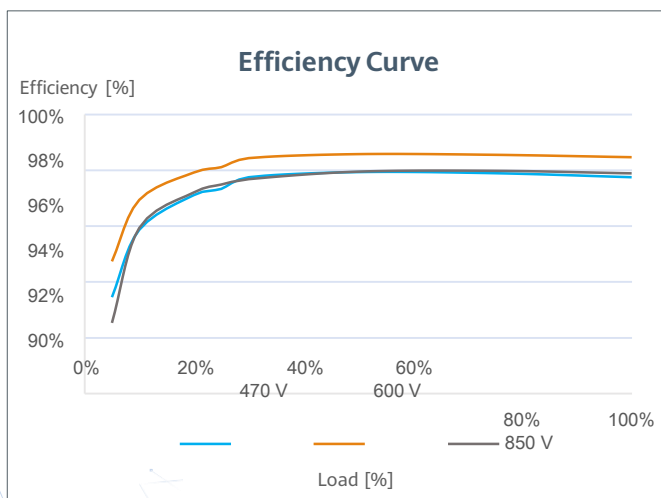
Battery Ready

Plug & Play battery interface ²



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



¹ Only applicable to SUN2000-3/4/5/6/8/10KTL-M1 smart energy center.
² SUN2000-3/4/5/6/8/10KTL-M0 will be compatible with HUAWEI smart string ESS in Q1, 2021

SUN2000-3/4/5/6/8/10KTL-M1 Technical Specification

Technical Specification	SUN2000-3KTL-M1	SUN2000-4KTL-M1	SUN2000-5KTL-M1	SUN2000-6KTL-M1	SUN2000-8KTL-M1	SUN2000-10KTL-M1
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Efficiency

Max. efficiency	98.2%	98.3%	98.4%	98.6%	98.6%	98.6%
European weighted efficiency	96.7%	97.1%	97.5%	97.7%	98.0%	98.1%

Input (PV)

Recommended max. PV power ¹	4,500 Wp	6,000 Wp	7,500 Wp	9,000 Wp	12,000 Wp	15,000 Wp
Max. input voltage ²	1,100 V					
Operating voltage range ³	140 V ~ 980 V					
Start-up voltage	200 V					
Rated input voltage	600 V					
Max. input current per MPPT	11 A					
Max. short-circuit current	15 A					
Number of MPP trackers	2					
Max. input number per MPP tracker	1					

Input (DC Battery)

Compatible Battery	HUAWEI Smart String ESS 5kWh – 30kWh					
Operating voltage range	600 V ~ 980 V					
Max operating current	16.7 A					
Max charge Power	10,000 W					
Max discharge Power	3,300 W	4,400 W	5,500 W	6,600 W	8,800 W	10,000 W

Output (On Grid)

Grid connection	Three-phase					
Rated output power	3,000 W	4,000 W	5,000 W	6,000 W	8,000 W	10,000 W
Max. apparent power	3,300 VA	4,400 VA	5,500 VA	6,600 VA	8,800 VA	11,000 VA ⁴
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	5.1 A	6.8 A	8.5 A	10.1 A	13.5 A	16.9 A
Adjustable power factor	0.8 leading ... 0.8 lagging					
Max. total harmonic distortion	≤ 3%					

Output (Off Grid)

Backup Box	Backup Box – B1					
Maximum apparent power	3,000 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA
Rated output voltage	220 V / 230 V					
Maximum output current	13.6 A	15 A	15 A	15 A	15 A	15 A
Power factor range	0.8 leading ... 0.8 lagging					

Features & Protections

Input-side disconnection device	Yes
Anti-Islanding protection	Yes
DC reverse polarity protection	Yes
Insulation monitoring	Yes
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
Residual current monitoring	Yes
AC overcurrent protection	Yes
AC short-circuit protection	Yes
AC overvoltage protection	Yes
Arc fault protection	Yes
Ripple receiver control	Yes
Integrated PID recovery ⁵	Yes
Battery reverse charging from grid	Yes

General Data

Operating temperature range	-25 ~ +60 °C (-13 °F ~ 140 °F)
Relative operating 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; 4G / 3G / 2G via Smart Dongle-4G (Optional)
Weight (incl. mounting bracket)	17 kg (37.5 lb)
Dimension (incl. mounting bracket)	525 x 470 x 146.5 mm (20.7 x 18.5 x 5.8 inch)
Degree of protection	IP65
Nighttime Power Consumption	< 5.5 W ⁶

Optimizer Compatibility

DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P
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Standard Compliance (more available upon request)

Certificate	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116
Grid connection standards	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

¹ Inverter max input PV power is 20,000 Wp when long strings are designed and fully connected with SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-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 C10 / 11: 10,000 VA

⁵ SUN2000-3-10KTL-M1 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).

⁶ <10 W when PID recovery function is activated.

SUN2000-3-10KTL-M1 (High Current Version) Smart Energy Controller



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Active Arcing Protection



Higher Yields

Up to 30% More Energy
with Optimizer ¹



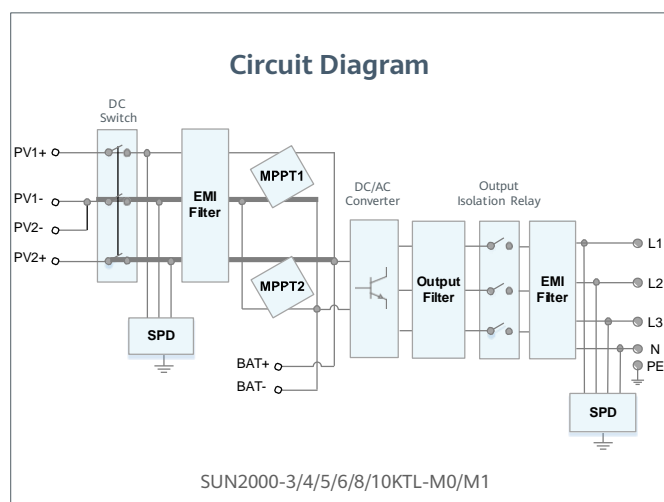
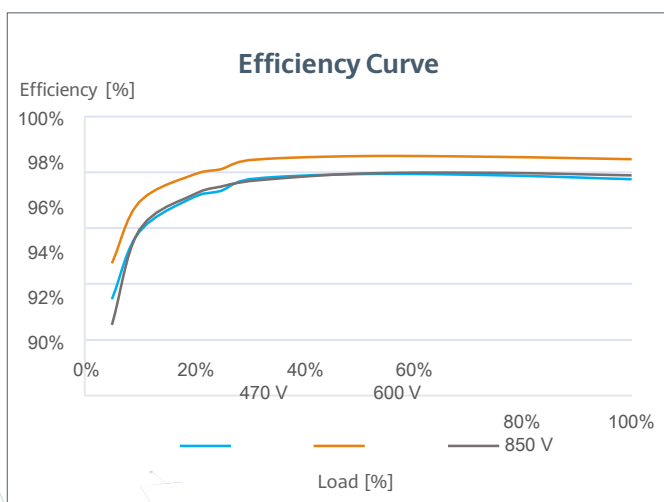
Battery Ready

Plug & Play battery interface ²



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



¹ Only applicable to SUN2000-3/4/5/6/8/10KTL-M1 smart energy center.
² SUN2000-3/4/5/6/8/10KTL-M0 will be compatible with HUAWEI smart string ESS in Q1, 2021

SUN2000-3/4/5/6/8/10KTL-M1 (High Current Version) Technical Specification

Technical Specification	SUN2000 -3KTL-M1	SUN2000 -4KTL-M1	SUN2000 -5KTL-M1	SUN2000 -6KTL-M1	SUN2000 -8KTL-M1	SUN2000 -10KTL-M1
Efficiency						
Max. efficiency	98.2%	98.3%	98.4%	98.6%	98.6%	98.6%
European weighted efficiency	96.7%	97.1%	97.5%	97.7%	98.0%	98.1%
Input (PV)						
Recommended max. PV power ¹	4,500 Wp	6,000 Wp	7,500 Wp	9,000 Wp	12,000 Wp	15,000 Wp
Max. input voltage ²	1,100 V					
Operating voltage range ³	140 V ~ 980 V					
Start-up voltage	200 V					
Rated input voltage	600 V					
Max. input current per MPPT	13.5 A					
Max. short-circuit current	19.5 A					
Number of MPP trackers	2					
Max. input number per MPP tracker	1					
Input (DC Battery)						
Compatible Battery	HUAWEI Smart String ESS 5kWh – 30kWh					
Operating voltage range	600 V ~ 980 V					
Max operating current	16.7 A					
Max charge Power	10,000 W					
Max discharge Power	3,300 W	4,400 W	5,500 W	6,600 W	8,800 W	10,000 W
Output (On Grid)						
Grid connection	Three-phase					
Rated output power	3,000 W	4,000 W	5,000 W	6,000 W	8,000 W	10,000 W
Max. apparent power	3,300 VA	4,400 VA	5,500 VA	6,600 VA	8,800 VA	11,000 VA ⁴
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	5.1 A	6.8 A	8.5 A	10.1 A	13.5 A	16.9 A
Adjustable power factor	0.8 leading ... 0.8 lagging					
Max. total harmonic distortion	≤ 3%					
Output (Off Grid)						
Backup Box	Backup Box – B1					
Maximum apparent power	3,000 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA	3,300 VA
Rated output voltage	220 V / 230 V					
Maximum output current	13.6 A	15 A	15 A	15 A	15 A	15 A
Power factor range	0.8 leading ... 0.8 lagging					
Features & Protections						
Input-side disconnection device	Yes					
Anti-Islanding protection	Yes					
DC reverse polarity protection	Yes					
Insulation monitoring	Yes					
DC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11					
AC surge protection	Yes, compatible with TYPE II protection class according to EN/IEC 61643-11					
Residual current monitoring	Yes					
AC overcurrent protection	Yes					
AC short-circuit protection	Yes					
AC overvoltage protection	Yes					
Arc fault protection	Yes					
Ripple receiver control	Yes					
Integrated PID recovery ⁵	Yes					
Battery reverse charging from grid	Yes					
General Data						
Operating temperature range	-25 ~ +60 °C (-13 °F ~ 140 °F)					
Relative operating 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; 4G / 3G / 2G via Smart Dongle-4G (Optional)					
Weight (incl. mounting bracket)	17 kg (37.5 lb)					
Dimension (incl. mounting bracket)	525 x 470 x 146.5 mm (20.7 x 18.5 x 5.8 inch)					
Degree of protection	IP65					
Nighttime Power Consumption	< 5.5 W ⁶					
Optimizer Compatibility						
DC MBUS compatible optimizer	SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-P					
Standard Compliance (more available upon request)						
Certificate	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116					
Grid connection standards	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					

¹ Inverter max input PV power is 20,000 Wp when long strings are designed and fully connected with SUN2000-450W-P, SUN2000-450W-P2, SUN2000-600W-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 C10 / 11: 10,000 VA

⁵ SUN2000-3-10KTL-M1 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).

⁶ <10 W when PID recovery function is activated. SOLAR.HUAWEI.COM/MEA

Smart String Energy Storage System



More Usable Energy

100% Depth of Discharge
Pack Level Energy Optimization



Flexible Investment

5kWh Modular Design,
Scalable from 5 to 30 kWh



Safe & Reliable

Lithium Iron Phosphate (LFP) Cell



Easy Installation

12 kg Power Module
50 kg Battery Module



Quick Commissioning

Automatically Detected in App

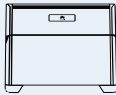




Perfect Compatibility

Compatible to Both Residential
Single & Three Phase Inverter

LUNA2000-5/10/15-S0

Technical Specification

Technical Specification	LUNA2000-5-S0	LUNA2000-10-S0	LUNA2000-15-S0
			

Performance

Power module	LUNA2000-5KW-C0		
Number of power modules	1		
Battery module	LUNA2000-5-E0		
Battery module energy	5 kWh		
Number of battery Modules	1	2	3
Battery usable energy ¹	5 kWh	10 kWh	15 kWh
Max. output power	2.5 kW	5 kW	5 kW
Peak output power	3.5 kW, 10 s	7 kW, 10 s	7 kW, 10 s
Nominal voltage (single phase system)	450 V		
Operating voltage range (single phase system)	350 – 560 V		
Nominal voltage (three phase system)	600 V		
Operating voltage range (three phase system)	600 – 980 V		

Communication

Display	SOC status indicator, LED indicator
Communication	RS485 / CAN (only for parallel operation)

General Specification

Dimension (W*D*H)	670 * 150 * 600 mm (26.4 * 5.9 * 23.6 inch)	670 * 150 * 960 mm (26.4 * 5.9 * 37.8 inch)	670 * 150 * 1320 mm (26.4 * 5.9 * 60.0 inch)
Weight (Floor stand toolkit included)	63.8 kg (140.7 lb)	113.8 kg (250.9 lb)	163.8 kg (361.1 lb)
Power module dimension (W*D*H)	670 * 150 * 240 mm (26.4 * 5.9 * 9.4 inch)		
Power module weight	12 kg (26.5 lb)		
Battery module dimension (W*D*H)	670 * 150 * 360 mm (26.4 * 5.9 * 14.0 inch)		
Battery module weight	50 kg (110.2 lb) ²		
Installation	Floor stand (standard), Wall mount (optional)		
Operating temperature	-20°C ~ +55°C (-4°F ~ 131°F) ³		
Max. operating altitude	4,000 m (13,123 ft.) (Derating above 2,000 m)		
Environment	Outdoor / Indoor ⁴ (*Please refer to the user manual for installation condition)		
Relative humidity	5% ~ 95%		
Cooling	Natural convection		
Protection rating	IP 66		
Noise emission	< 29 dB ⁵		
Cell technology	Lithium-iron phosphate (LiFePO4)		
Scalability	Max. 2 systems in parallel operation		
Compatible inverters	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/4/5/6/8/10KTL-M0 ⁶ , SUN2000-3/4/5/6/8/10KTL-M1		

Standard Compliance (more available upon request)

Certificates	CE, RCM, CEC, VDE2510-50, IEC62619, IEC 60730, UN38.3
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Ordering and Deliverable Part

Product ordering model ⁷	LUNA2000-5KW-C0, LUNA2000-5-E0, LUNA2000 Wall Mounting Bracket
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1. Test conditions: 100% depth of discharge (DoD), 0.2C rate charge & discharge at 25°C, at the beginning of life. If no PV modules are installed or the system has not detected sunlight for at least 24 hours, the minimum end of discharge SOC is 15%.
2. The weight of the battery module is subject to the actual product, with a tolerance of ±3%
3. Refer to battery warranty letter for conditional application.
4. Improper storage system installation may compromise product warranty and operation safety. Please follow the user manual during the installation, use, and maintenance of the storage system.
5. Noise Level(Typical):<29dB(A) @1m, 30°C, Power On and Run Stably for 2 Hours
6. Please contact local engineer for the compatibility between the SUN2000-3/4/5/6/8/10KTL-M0 with the LUNA2000.
7. Storage system is ordered and delivered in the form of power module and battery module separately with corresponding quantity.

Smart PV Optimizer



One-Fits-All Optimizer
Easier Business



<5s Module Auto-Mapping



Arc Fault Pinpoint
Positioning Along PV Cable

Technical Specification	SUN2000-450W-P2	SUN2000-600W-P		
Input				
Rated Input DC Power ¹	450 W	600 W		
Absolute maximum input voltage	80 V			
MPPT operating voltage range	10 - 80 V			
Maximum Short Circuit Current (Isc)	14.5 A			
Max. efficiency	99.5 %			
Weighted efficiency	99.0 %			
Overvoltage category	II			
Output				
Max. output voltage	80 V			
Max. output current	15 A			
Output bypass ²	Yes			
Shutdown output voltage per optimizer ³	0 V			
Shutdown output impedance per optimizer	1k ohm ± 10 %			
Communication				
Communication Method	MBUS			
Standard Compliance				
Safety	IEC62109-1 (class II safety)			
RoHS	Yes			
General Data				
Dimension (W x H x D)	75 x 140 x 28 mm (3.0 x 5.5 x 1.1 inch)			
Weight (including cables)	0.6 kg (1.3 lb.)			
Installation part (optional)	Frame Mounting Bracket / T-shaped Bolt ⁴			
Input connector	MC4			
Input wire length	0.15m (0.49 ft.)			
Output connector	MC4			
Output wire length	1.3 m (4.3 ft.) ⁵			
Operating temperature / humidity range	-40 °C ~ 85 °C ⁵ / 0 %RH ~ 100 %RH			
Degree of protection	IP68			
Compatible product	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1, SUN2000-3/4/5/6/8/10KTL-M1, SUN2000-12/15/17/20KTL-M2, SUN2000-30/36/40KTL-M3			
Long String Design (Full Optimizer)	SUN2000-2-6KTL-L1	SUN2000-3-10KTL-M1	SUN2000-12-20KTL-M2	SUN2000-30-40KTL-M3
Minimum optimizer number per string ⁶	4	6	6	6
Maximum optimizer number per string	25	35	35	25
Maximum DC power per string	6,000 W	10,000 W	12,000 W	12,000 W

^{*1} In the STC environment, The rated power of the module shall not exceed 1.05 times of the optimizer rated input power.

^{*2} Power optimizer is bypassed in the string connected to an operating inverter when it fails to work

^{*3} Power optimizer output 0Vdc when disconnecting to the inverter or inverter is shutdown.

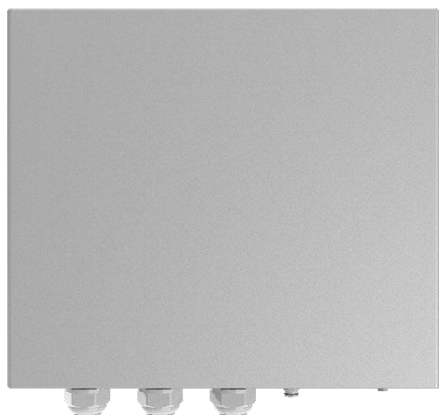
^{*4} Allow PV module frame installation / extruded aluminum profile installation

^{*5} Fits PV module in landscape and portrait installation.

^{*6} Require standard 60 cells module to meet the inverter minimum startup voltage

^{*7} Full power capability refers to online smart design tool.

Backup Box



Simple

Automatic detection & switchover



Reliable

Provide Reliable backup power



Solar Reloading

Battery reloading from sun in backup mode



Black start

Restart the system after battery shutdown

Technical Specification	Backup Box-B0	Backup Box-B1
AC Output (On grid)		
Grid connection	Single Phase	Three Phase
Rated voltage	220 V / 230 V	380 V / 400 V
AC frequency	50Hz / 60Hz	
AC output voltage range	198 V ~ 253 V	342 V ~ 440 V
AC Output (Backup)		
Load connection	Single Phase	Single Phase
Rated voltage	220 V / 230 V	220 V / 230 V
AC frequency	50Hz / 60Hz	
Maximum apparent power	5,000 VA	3,300 VA
Maximum output current	22.7 A	15.2 A
Switchover time	< 3 s	
AC Input (Inverter)		
Rated voltage	220 V / 230 V	380 V / 400 V
AC frequency	50Hz / 60Hz	
Compatible inverter	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1	SUN2000-3/4/5/6/8/10KTL-M1
General Specification		
Operating temperature range	-20 °C to +45 °C (-4 °F to 113 °F)	
Relative humidity range	0 %RH ~ 100 %RH	
Dimensions (W * H * D)	400 x 350 x 130 mm (15.8 x 13.8 x 5.1 inch)	
Weight	11 kg	
Degree of protection	IP 65	

Smart Dongle-WLAN-FE



Smart

WLAN & Fast Ethernet (FE) communication
Support 3rd-party monitoring system ¹



Simple

Plug & Play
Support max. 10 devices



Reliable

IP65
Support auto reconnection

Technical Specification	SDongleA-05
General Data	
Max. Devices Supported	10
Max. Inverters Supported	10 ²
Connection interface	USB
Ethernet Interface	10/100M Ethernet
Installation	Plug-and-play
Indicator	LED Indicator
Dimensions (W * H * D)	146 x 48 x 33 mm (5.1 x 1.9 x 1.3 inch)
Weight	90 g (0.2 lb.)
Degree of protection	IP65
Power consumption (typical)	2.5 W
Operation Mode	STA
Encryption Algorithm	Encryption Mechanism: WPA/WPA2 Encryption: TKIP/CCMP/AES
Wireless Parameter	
Supported standards & frequencies	802.11b/g/n (2.412G—2.484G)
Environment	
Operating temperature range	-30 °C to +65 °C (-22 °F to 149 °F)
Relative humidity range	5 - 95% RH
Storage temperature range	-40°C to +70°C (-40 °F to 158 °F)
Max. operating altitude	4,000 m (13,123 ft.)
Standard Compliance (more available upon request)	
Certificate	SRRC, CE, RCM
Inverter Compatibility	
Inverter model	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1 SUN2000-3/4/5/6/8/10KTL-M0/M1 SUN2000-12/15/17/20KTL-M0/M2 SUN2000-30/36/40KTL-M3

¹ 3rd-party management system shall match the communication protocol with Huawei Smart Dongle
² Support 3 inverters only when there is LUNA2000 battery in the system.

Smart Dongle-4G



Smart

2G, 3G, 4G communication ¹
Support 3rd-party monitoring system ²



Simple

Plug & Play
Support max. 10 devices



Reliable

IP65
Support auto reconnection

Technical Specification	SDongleA-03-EU
General Data	
Max. Devices Supported	10
Max. Inverters Supported	10 ³
Connection interface	USB
Installation	Plug-and-play
Indicator	LED Indicator
Dimensions (W * H * D)	130 x 48 x 33 mm (5.1 x 1.9 x 1.3 inch)
Weight	90 g (0.2 lb.)
Degree of protection	IP65
Power consumption (typical)	3.5 W
Wireless Parameter	
Sim card type	mini-sim (15 mm*25 mm)
Supported standards & frequencies	4G: FDD-LTE / TDD-LTE 3G: WCDMA / HSDPA / HSUPA / HSPA+ 2G: GSM / GPRS / EDGE ⁴
Environment	
Operating temperature range	-30 °C to +65 °C (-22 °F to 149 °F)
Relative humidity range	5 - 95% RH
Storage temperature range	-40 °C to +70 °C (-40 °F to 158 °F)
Max. operating altitude	4,000 m (13,123 ft.)
Standard Compliance (more available upon request)	
Certificate	CE, Type Approval for Thailand, MIC
Inverter Compatibility	
Inverter model	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1 SUN2000-3/4/5/6/8/10KTL-M0/M1 SUN2000-12/15/17/20KTL-M0/M2 SUN2000-30/36/40KTL-M3 SUN2000-60KTL-M0 SUN2000-100KTL-M1

1. To ensure stable data transmission, Huawei suggests 4G dongle to be installed in areas with stable mobile signal (2G signal ≥ 4 bars, 3G/4G signal ≥ 3 bars).
2. 3rd-party management system shall match the communication protocol with Huawei Smart Dongle.
3. Support 3 inverters only when there is LUNA2000 battery in the system.
4. For recommended carriers list and details on supported frequencies, please contact local distributors.

Smart Power Sensor



Accurate

Class 1 measurement accuracy



Simple & Easy

LCD display, easy to set and check



Energy Efficient

Overall power consumption ≤ 1 W

Technical Specification	DDSU666-H	DTSU666-H	DTSU666-H 250A/50mA
General Data			
Dimension (H x W x D)	100 x 36 x 65.5 mm (3.9 x 1.4 x 2.6 inch)	100 x 72 x 65.5 mm (3.9 x 2.8 x 2.6 inch)	100 x 72 x 65.5 mm (3.9 x 2.8 x 2.6 inch)
Mounting type	DIN35 Rail		
Weight (including cables)	1.2 kg (2.6 lb)	1.5 kg (3.3 lb)	1.5 kg (3.3 lb)
Power Supply			
Power grid type	1P2W	3P3W/3P4W	3P3W/3P4W
Input voltage (phase voltage)	176 Vac ~ 288 Vac		
Power consumption	≤ 0.8 W	≤ 1 W	≤ 1 W
Measurement Range			
Line voltage	/	304 Vac ~ 499 Vac	304 Vac ~ 499 Vac
Phase voltage		176 Vac ~ 288 Vac	
Current	0 ~ 100 A	0 ~ 100 A	0 ~ 250 A
Measurement Accuracy			
Current / Voltage	± 0.5 %		
Power / Energy	± 1 %		
Frequency	± 0.01 Hz		
Communication			
Interface	RS485		
Baud rate	9,600 bps		
Communication protocol	Modbus-RTU		
Environment			
Operating temperature range	-25 °C ~ 60 °C		
Storage temperature range	-40 °C ~ 70 °C		
Operating humidity	5 %RH ~ 95 %RH (non-condensing)		
Others			
Accessories	RS485 Cable (10 m / 33 ft.)		
	1 CT 100A / 40mA (5 m / 16.4 ft.)	3 CT 100A / 40mA (5m / 16.4 ft.)	3 CT 250A / 50mA (5m / 16.4 ft.)

Smart Power Sensor



Accurate

Class 1 measurement accuracy



Simple & Easy

LCD display, easy to set and check



Energy Efficient

Overall power consumption ≤ 1.5 W

Technical Specification	DTSU666-HW/YDS60-80
General Data	
Dimension (H x W x D)	100 x 72 x 80 mm (3.9 x 2.8 x 3.1 inch)
Mounting type	DIN35 Rail
Weight (including cables)	< 0.5 kg
Power Supply	
Power grid type	3P4W/3P3W
Input voltage (line voltage)	90 ~ 500 Vac
Power consumption	≤ 1.5 W
Measurement Range	
Line voltage	90 Vac ~ 1000 Vac (> 500 with external PT ¹)
Phase voltage	52~577 Vac
Current	0 ~ 80 A(>80 with external CTs ²)
Measurement Accuracy	
Voltage / Current	± 0.5 %
Power / Energy	± 1 %
Frequency	± 0.01 Hz
Communication	
Interface	RS485
Baud rate	4800/9600/19200/115200 (Default 9600bps)
Communication protocol	Modbus-RTU
Environment	
Operating temperature range	-25 °C ~ 60 °C
Storage temperature range	-40 °C ~ 70 °C
Operating humidity	5 %RH ~ 95 %RH (non-condensing)
Others	
Accessories	RS485 Cable (10 m / 33 ft.)

*1 2nd voltage of CT should be 100V. And accuracy should be better than Class 0.5
 *2 2nd current of CT should be 1A or 5A. And accuracy should be better than Class 0.5

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



Smart

8 strings intelligent monitoring



Efficient

Max. efficiency 98.7%



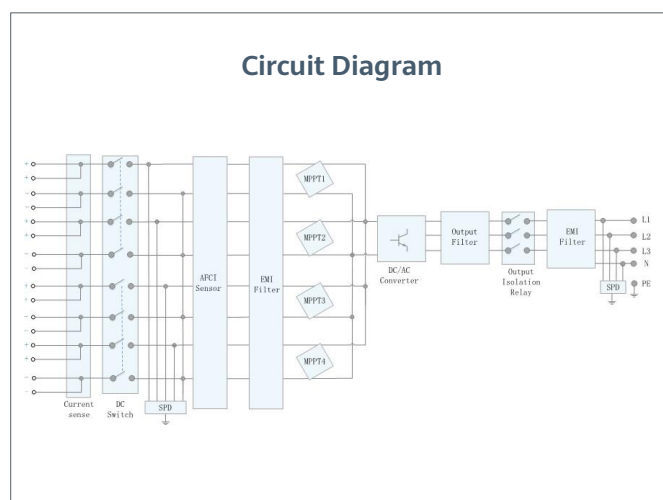
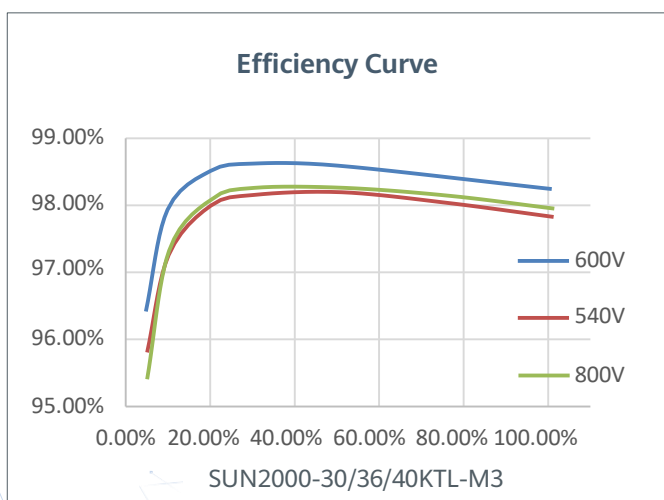
Safe

Fuse free design



Reliable

Type II surge arresters for DC & AC



SUN2000-30/36/40KTL-M3
Technical Specification

Technical Specification	SUN2000-30KTL-M3	SUN2000-36KTL-M3	SUN2000-40KTL-M3
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Efficiency

Max. Efficiency	98.7%
European Efficiency	98.4%

Input

Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	26 A (per MPPT) / 20 A (per Input)
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, SUN2000-450W-P2, SUN2000-600W-P
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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 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 & Ukraine the Max. AC Apparent Power will not exceed 30,000 VA (with regard to grid code: VDE-AR-N-4105 & 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)

SUN2000-100KTL-M1 Smart PV Controller



10
MPP Trackers



98.8% (@480V)
Max. Efficiency



String-level
Management



Smart I-V Curve Diagnosis
Supported



MBUS
Supported



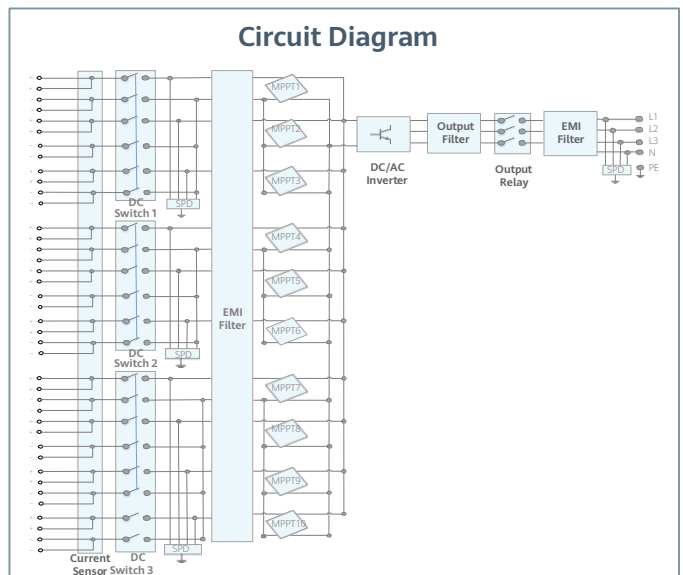
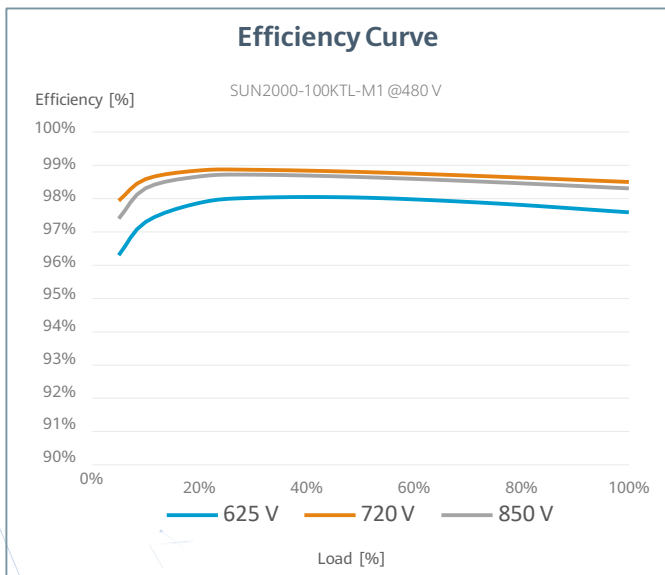
Fuse Free
Design



Surge Arresters for
DC & AC



IP66
Protection



Technical Specification SUN2000-100KTL-M1

Efficiency	
Max. efficiency	98.8% @480 V, 98.6% @380 V / 400 V
European efficiency	98.6% @480 V, 98.4% @380 V / 400 V

Input	
Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	26 A (per MPPT) / 18 A (per Input)
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	720 V @480 Vac, 600 V @400 Vac, 570 V @380 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	480 V/ 400 V/ 380 V, 3W+(N)+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	120.3 A @480 V, 144.4 A @400 V, 152.0 A @380 V
Max. Output Current	133.7 A @480 V, 160.4 A @400 V, 168.8 A @380 V
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
Max. Total Harmonic Distortion	< 3%

Protection	
Smart String-Level Disconnect(SSLD)	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	Optional

Communication	
Display	LED indicators; WLAN adaptor + FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle-4G	4G / 3G / 2G via Smart Dongle - 4G (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)	90 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	Staubli MC4
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.

SmartLogger3000A



Smart

Smart zero export control design



Simple

Easy to install on site



Reliable

Safety by lightning protection module

Technical Specification	SmartLogger3000A03EU	SmartLogger3000A01EU
Device Management		
Max. Number of Connected Devices	80	
Communication Interface		
WAN	WAN x 1, 10 / 100 / 1000 Mbps	
LAN	LAN x 1, 10 / 100 / 1000 Mbps	
RS485	COM x 3, 1200 / 2400 / 4800 / 9600 / 19200 / 115200 bps, 1000 m	
MBUS	MBUS x 1, 115.2 kbps, Compatible with PLC	No MBUS Communication Interface
2G / 3G / 4G ¹	LTE(FDD) : B1,B2,B3,B4,B5,B7,B8,B20 DC-HSPA+/HSPA+/HSPA/UMTS : 850/900/1900/2100 MHz GSM/GPRS/EDGE: 850/900/1800/1900 MHz ²	
Digital / Analog Input / Output	DI x 4, DO x 2, AI x 4	
Active DO	12V, 100mA (connection with relay, sensor)	
Communication Protocol		
Ethernet	Modbus-TCP, IEC 60870-5-104	
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645	
Interaction		
LED	LED Indicator x 3 – RUN, ALM, 4G	
WEB	Embedded Web	
USB	USB 2.0 x 1	
APP	Communication by WLAN for Commissioning	
Environment		
Operating Temperature Range	-40°C ~ 60°C (-40°F ~ 140°F)	
Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)	
Relative Humidity (Non-condensing)	5% ~ 95%	
Max. Operating Altitude	4,000 m (13,123 ft.)	
Electrical		
AC Power Supply	100 V ~ 240 V, 50 Hz / 60 Hz	
DC Power Supply	12 V / 24 V	
Power Consumption	Typical 8 W, Max. 15 W	
Mechanical		
Dimensions (W x H x D)	225 x 160 x 44 mm (8.9 x 6.3 x 1.7 inch, without mounting ears and antenna)	
Weight	2 kg (4.4 lb.)	
Protection Degree	IP20	
Installation Options	Wall Mounting, DIN Rail Mounting, Tabletop Mounting	

*1: When putting inside metal box, extended antenna will be needed.

*2: For recommended carriers list and details on supported frequencies, please contact local distributors.