



COMMERCIAL&INDUSTRIAL One-Fits-All Solution



About Huawei

Huawei is a leading global provider of information and communications technology (ICT) infrastructure and smart devices. With integrated solutions across four key domains – telecom networks, IT, smart devices, and cloud services – we are committed to bringing digital to every person, home and organization for a fully connected, intelligent world. Huawei's end-to-end portfolio of products, solutions and services are both competitive and secure. Through open collaboration with ecosystem partners, we create lasting value for our customers, working to empower people, enrich home life, and inspire innovation in organizations of all shapes and sizes. At Huawei, innovation focuses on customer needs. We invest heavily in basic research, concentrating on technological breakthroughs that drive the world forward.



Employees
208,000+



R&D Personnel
54%



Countries
170+



Brands Global Brands
93

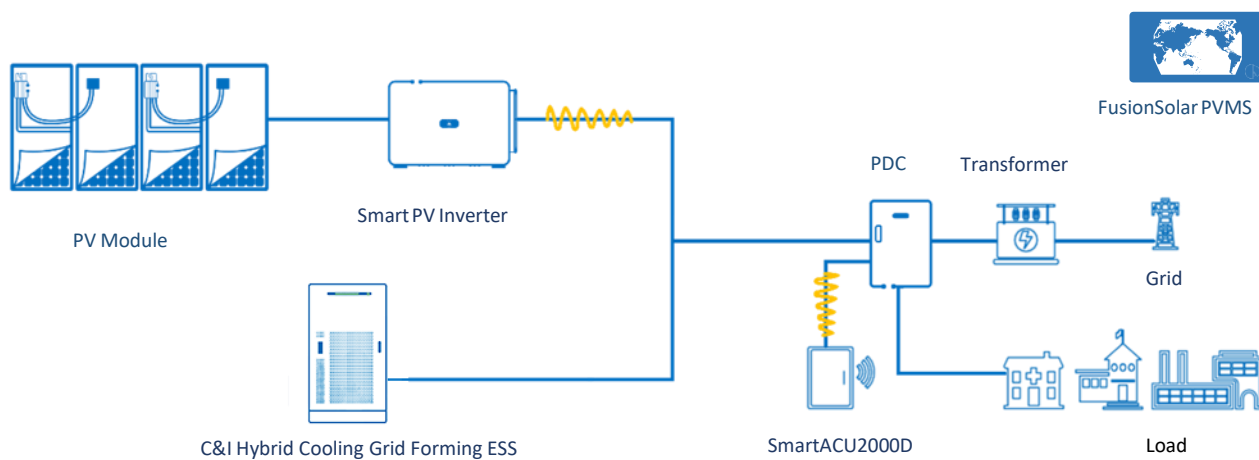


R&D Investment
6



Most Innovative Companies
10

Commercial & Industrial Smart PV Solution



Proactive Safety



Higher Revenue



Premium Quality



One-Fits-All



SUN2000-30/40K-MC0

Smart PV Controller



Smart



Efficient

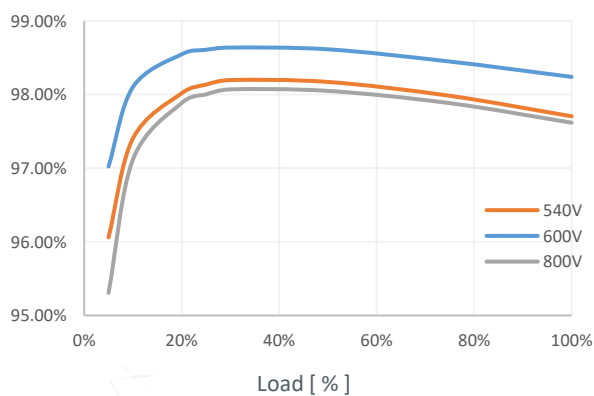


Safe

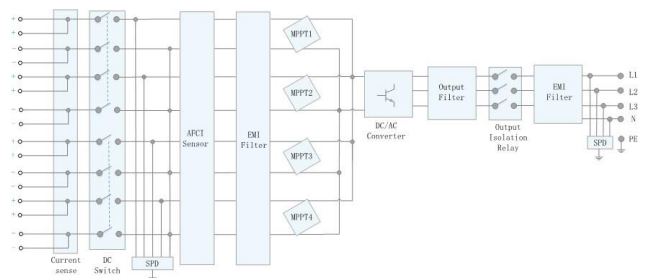


Reliable

Efficiency Curve



Circuit Diagram



SUN2000-30/40K-MC0
Technical Specification

Technical Specification		SUN2000-30K-MC0	SUN2000-40K-MC0
Efficiency			
Max. Efficiency	98.6% @400V, 98.7% @480V		
European Efficiency	98.4%		
Input			
Max. Input Voltage ¹	1,100 V		
Max. Current per MPPT	27 A (per MPPT) / 23 A (per Input)		
Max. Short Circuit Current per MPPT	40 A		
Start Voltage	180 V		
MPPT Operating Voltage Range ²	180 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	40,000 W	
Max. AC Apparent Power	33,000 VA	44,000 VA	
Rated Output Voltage	380 Vac / 400 Vac / 480 Vac, 3W/N+PE		
Rated AC Grid Frequency	50 Hz / 60 Hz		
Rated Output Current	45.6A@380V, 43.3 A@400V, 36.1A@480V	60.8A@380V, 57.7 A@400V, 48.1A@480V	
Max. Output Current	50.4A@380V, 47.9 A@400V, 39.9A@480V	67.2A@380V, 63.8 A@400V, 53.2A@480V	
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 I + II ³		
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 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)		
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)	45 kg		
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	Amphenol Helios H4		
AC Connector	Waterproof Connector + OT/DT Terminal		
Protection Degree	IP 66		
Topology	Transformerless		
Optimizer Compatibility			
DC MBUS Compatible Optimizer	MERC-1100W/1300W-P		
Standard Compliance (more available upon request)			
Safety	EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 60068, IEC 61683		
Grid Connection Standards	IEC 61727, VDE-AR-N4105, VDE 0124-1-1, UTE C 15-712-1, CEI 0-16, CEI 0-21, EN-50549, C10/11, MEA, PEA, DEWA, G99		

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. SPD devices comply with IEC/EN 61643-11 and IEC/EN 61643-31 standards.

4. SUN2000-30~40KTL-MC0 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)

SUN2000-50K-MC0

Smart PV Controller



Smart



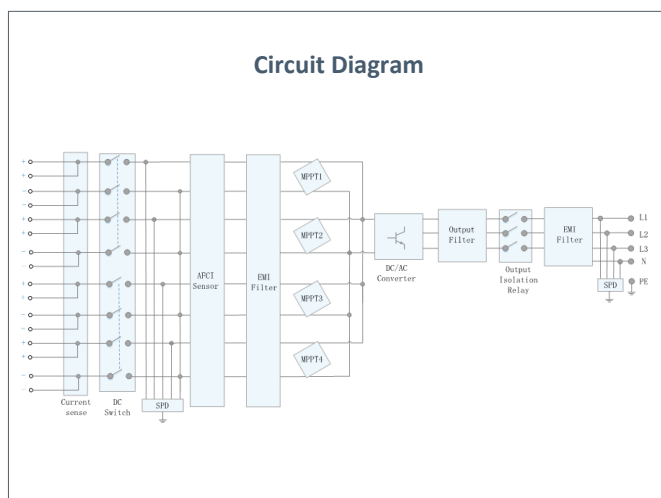
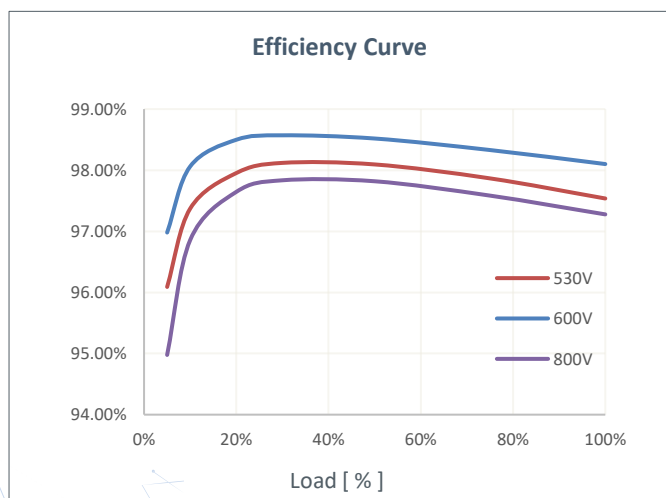
Efficient



Safe



Reliable



SUN2000-50K-MC0

Technical Specification

Technical Specification		SUN2000-50K-MC0
Efficiency		
Max. Efficiency	98.5% @400V, 98.7% @480V	
European Efficiency	98.2%	
Input		
Max. Input Voltage ¹	1,100 V	
Max. Current per MPPT	30/33/33/30A	
Max. Current per Input	23 A	
Max. Short Circuit Current per MPPT	40/44/44/40A	
Start Voltage	180 V	
MPPT Operating Voltage Range ²	180 V ~ 1,000 V	
Rated Input Voltage	600 V	
Number of Inputs	8	
Number of MPP Trackers	4	
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	380 Vac / 400 Vac / 480 Vac, 3W+(N) + PE	
Rated AC Grid Frequency	50 Hz / 60 Hz	
Rated Output Current	76.0 A @ 380Vac, 72.2 A @ 400Vac, 60.1 A @ 480Vac	
Max. Output Current	84.0 A @ 380Vac, 79.8 A @ 400Vac, 66.5 A @ 480Vac	
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 I + II ³	
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 ⁴	Yes	
Communication		
Display	LED Indicators, Integrated 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 (25.2 x 20.9 x 10.6 inch)	
Weight (with mounting plate)	50 kg	
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)	
Cooling Method	Smart Air Cooling	
Max. Operating Altitude	4,000 m (13,123 ft.)	
Relative Humidity	0% RH ~ 100% RH	
DC Connector	Amphenol HH4	
AC Connector	Waterproof Connector + OT/DT Terminal	
Protection Degree	IP 66	
Topology	Transformerless	
Standard Compliance (more available upon request)		
Safety	EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 60068, IEC 61683	
Grid Connection Standards	IEC 61727, VDE-AR-N4105, VDE 0124-1-1, UTE C 15-712-1, CEI 0-16, CEI 0-21, EN-50549, C10/11, MEA, PEA, DEWA, G99	

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. SPD devices comply with IEC/EN 61643-11 and IEC/EN 61643-31 standards.

4. SUN2000-30~50K-MC0 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)

SUN2000-50K-MGLO

Smart PV Controller



Arc Fault Protection



PV Ground-Fault Protection



PID Recovery



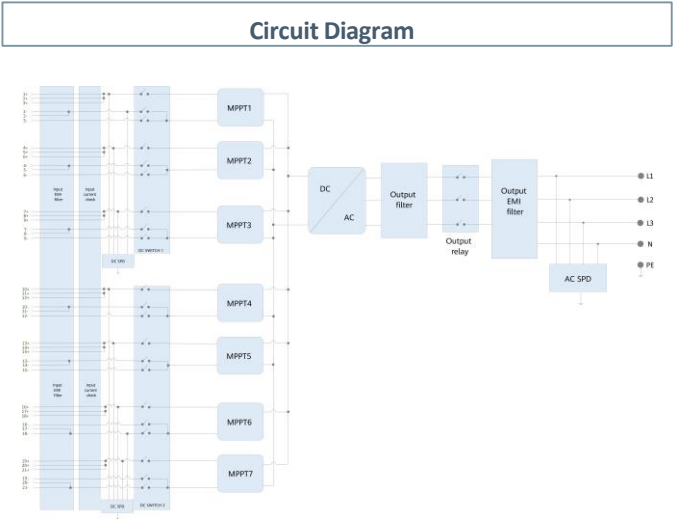
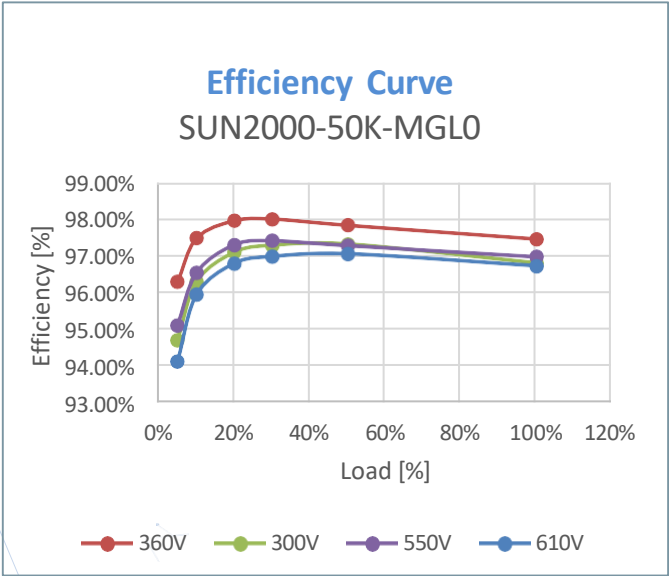
Smart String Level Disconnect



Smart Connector Temperature Detection



IP66 Protection



Technical Specification	SUN2000-50K-MGLO
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Efficiency	
Max. efficiency	98% @ 220 V
European efficiency	97.5%

Input	
Max. Input Voltage ¹	750 V
Max. Current per MPPT	48 A
Max. Short Circuit Current per MPPT	66 A
Start Voltage	160 V
MPPT Operating Voltage Range ²	160 V ~ 750 V
Number of MPP trackers	7
Max. input number per MPP tracker	3

Output	
Nominal AC Active Power	50,000 W
Max. AC Apparent Power	55,000 VA
Max. AC Active Power (cosφ=1)	55,000 W
Nominal Output Voltage	220Vac, 3W/N+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	131.3 A
Max. Output Current	144.4 A
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
Arc Fault Protection	Yes
Terminal Temperature Detection	Yes
PID Recovery	Yes
PV Ground-Fault Protection	Yes

Communication	
Display	LED indicators; FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle	Smart Dongle – 4G / WLAN (Optional)

General Data	
Dimensions (W x H x D)	1,000 x 710 x 395 mm
Weight (with mounting plate)	98 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

Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 61727, IEC 60068, IEC 61683

*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.

SUN2000-80K-MGLO

Smart PV Controller



Arc Fault Protection



PV Ground-Fault Protection



PID Recovery



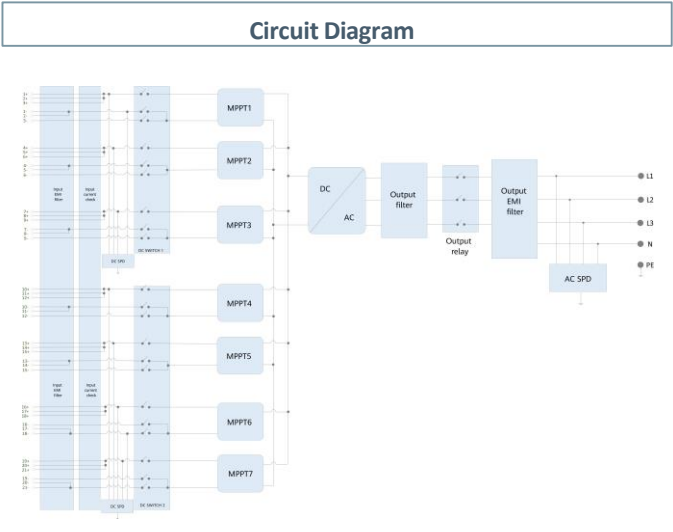
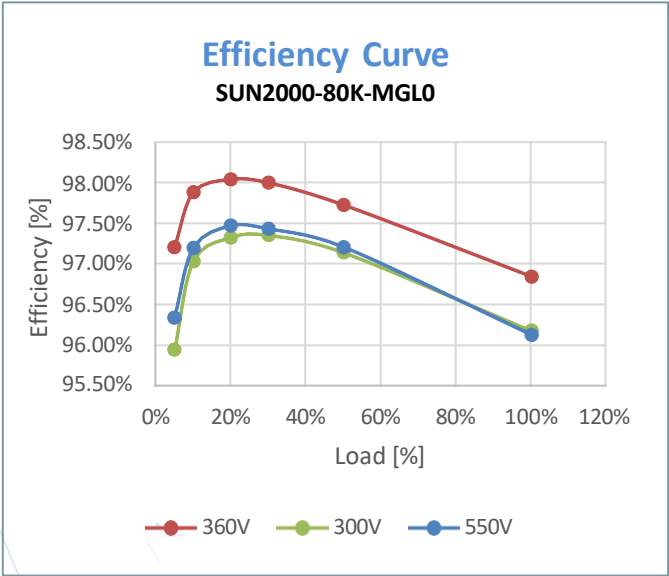
Smart String Level Disconnect



Smart Connector Temperature Detection



IP66 Protection



Technical Specification	SUN2000-80K-MGLO
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Efficiency	
Max. efficiency	98% @ 220 V
European efficiency	97.5%

Input	
Max. Input Voltage ¹	750 V
Max. Current per MPPT	48 A
Max. Short Circuit Current per MPPT	66 A
Start Voltage	160 V
MPPT Operating Voltage Range ²	160 V ~ 750 V
Number of MPP trackers	7
Max. input number per MPP tracker	3

Output	
Nominal AC Active Power	80,000 W
Max. AC Apparent Power	88,000 VA
Max. AC Active Power (cosφ=1)	88,000 W
Nominal Output Voltage	220Vac, 3W/N+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	210.0 A
Max. Output Current	231.0 A
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
Arc Fault Protection	Yes
Terminal Temperature Detection	Yes
PID Recovery	Yes
PV Ground-Fault Protection	Yes

Communication	
Display	LED indicators; FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle	Smart Dongle – 4G / WLAN (Optional)

General Data	
Dimensions (W x H x D)	1,000 x 710 x 395 mm
Weight (with mounting plate)	98 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

Standard Compliance (more available upon request)	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, IEC 62116, IEC 61727, IEC 60068, IEC 61683

*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.

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



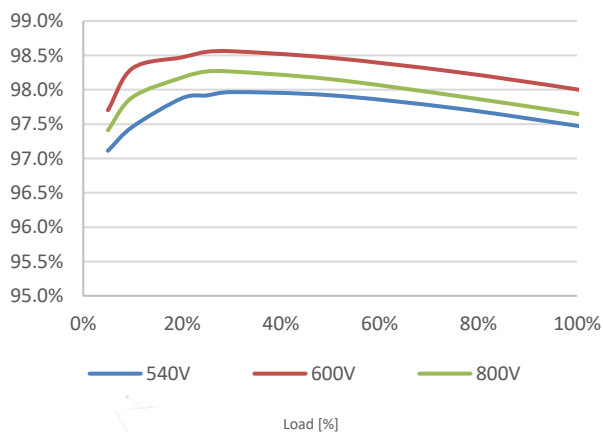
Surge Arresters for
DC & AC



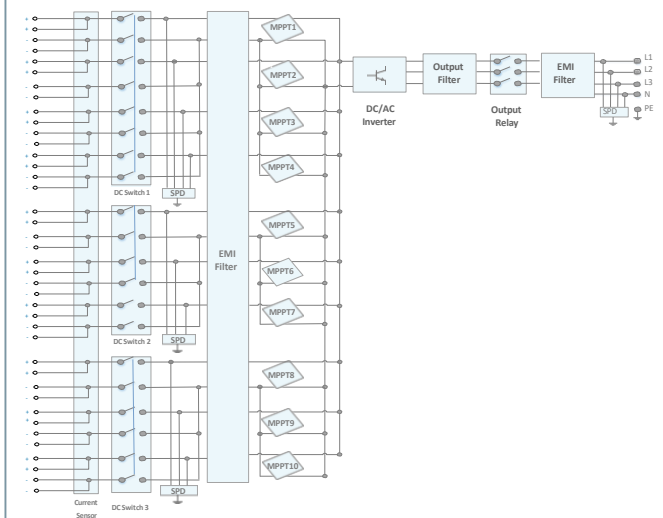
IP66
Protection

Efficiency Curve

SUN2000-100KTL-M2 @400 V



Circuit Diagram



SUN2000-100KTL-M2

Technical Specification

Technical Specification

SUN2000-100KTL-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 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; FusionSolar APP
RS485	Yes
USB	Yes
Smart Dongle	Smart Dongle – 4G / Smart Dongle – WLAN-FE (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.

*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



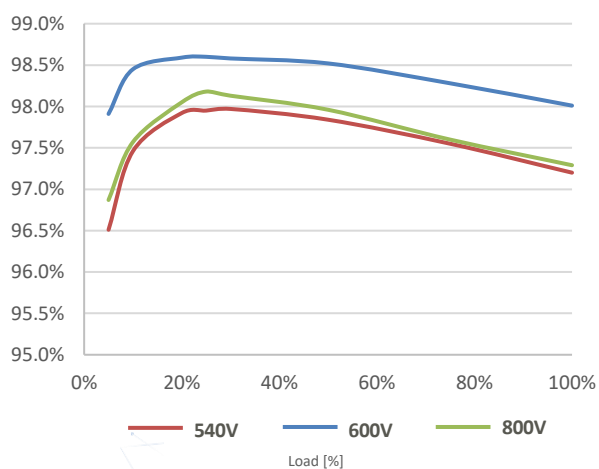
Surge Arresters for
DC & AC



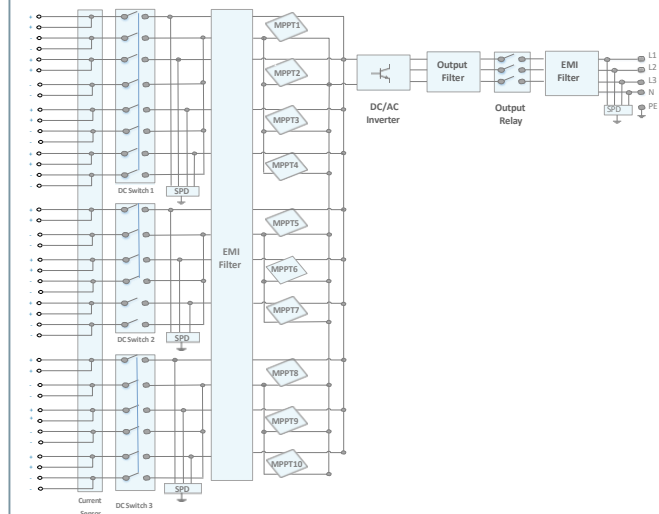
IP66
Protection

Efficiency Curve

SUN2000-115KTL-M2 @400 V



Circuit Diagram



SUN2000-115KTL-M2

Technical Specification

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 Disconnect		Yes
Communication		
Display		LED indicators; FusionSolar APP
RS485		Yes
USB		Yes
Smart Dongle		Smart Dongle – 4G / Smart Dongle – WLAN-FE (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.

SUN2000-150K-MG0

Smart PV Controller



Arc Fault Protection



PV Ground-Fault Protection



PID Recovery



Smart String Level Disconnect

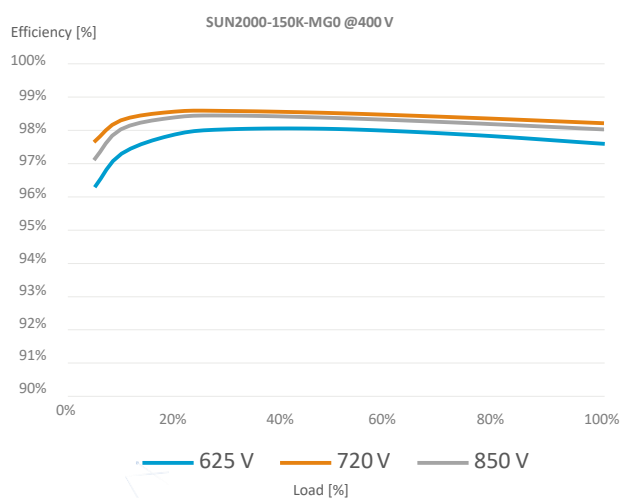


Smart Connector Temperature Detector

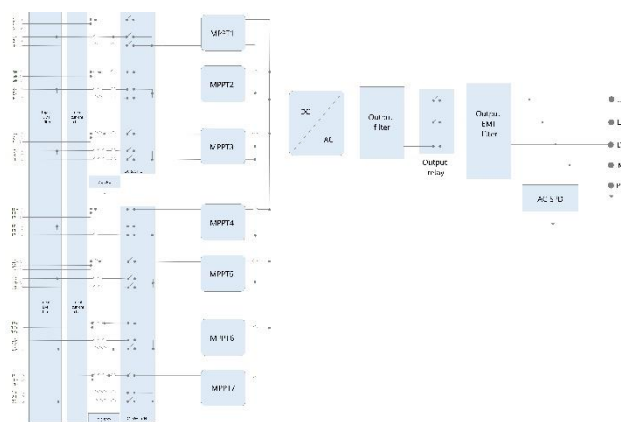


MBUS

Efficiency Curve



Circuit Diagram



Technical Specification

SUN2000-150K-MG0

Efficiency

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

Input

Max. Input Voltage ¹	1,100 V
Max. Current per MPPT	48A
Max. Current per Input	23A
Max. Short Circuit Current per MPPT	66A
Start Voltage	200 V
MPPT Operating Voltage Range ²	200 V ~ 1,000 V
Number of MPP trackers	7
Max. input number per MPP tracker	3

Output

Nominal AC Active Power	150,000 W
Max. AC Apparent Power	165,000 VA
Max. AC Active Power (cosφ=1)	165,000 W
Nominal Output Voltage	380 V/400 V/480Vac
Rated AC Grid Frequency	50 Hz / 60 Hz
Nominal Output Current	227.9 A @380 V, 216.5 A @400 V, 180.4A @480Vac
Max. Output Current	253.2 A @380 V, 240.5 A @400 V, 200.5A @480Vac
Adjustable Power Factor Range	0.8 leading... 0.8 lagging
alternating current THDi	<1%

Protection

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
Arc Fault Protection	Yes
Terminal Temperature Detection	Yes
PID Recovery	Yes
PV Ground-Fault Protection	Yes

Communication

Display	LED indicators; 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)	1,000 x 710 x 395 mm
Weight (without mounting plate)	≤ 99 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 HH4
AC Connector	Waterproof Connector + OT/DT Terminal
Protection Degree	IP66
Topology	Transformerless

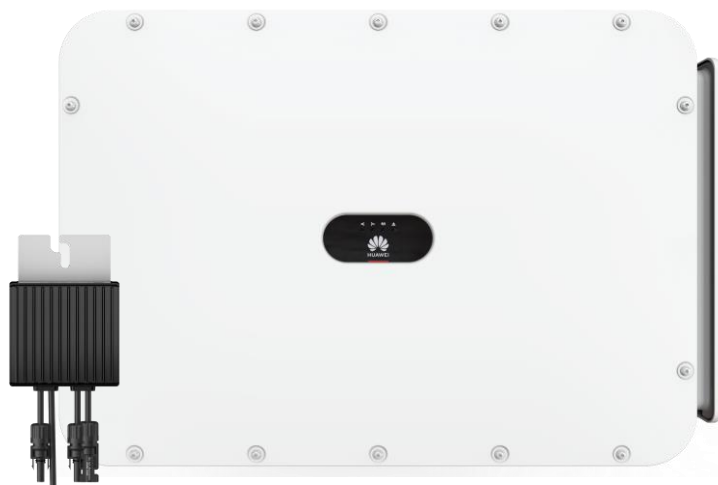
Standard Compliance (more available upon request)

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.

Fusionsolar C&I SmartPV Solution

SUN5000 Series



ProfiLink

PV Module Optimization
Links Inverter to Increase
Energy Yield by 5% to 30%



SafeLink

Links Varies Safety Function
AFCI+ RSD
To Cover the Breakpoint of PV Safety



SmartLink

One-stop Smart Platform Links Smartdesign &
Module-level Management
To Provide Lifecycle Intelligent Experience

Technical Specification	MERC-1100W-P	MERC-1300W-P
Input		
Rated Input DC Power	1100 W	1300 W
Max. Input DC Power	1155W ¹	1430W ¹
Max. input voltage	125 V	
MPPT operating voltage range	12.5 – 105 V	
Max. short-circuit current (Isc)	20 A	
Max. efficiency	99.5 %	
Weighted efficiency	99.0 %	
Overvoltage category	II	
Output		
Rated Output DC Power	1100W	1300W
Max. Output DC Power	1155W	1430W ²
Max. output voltage	80 V	
Max. output current	22 A	
Output bypass ³	Yes	
Shutdown output voltage per optimizer ⁴	1 V	
Standards Compliance		
Safety	IEC62109-1 (class II safety)	
RoHS	Yes	
General Data		
Dimension (W x H x D)	149 mm x 104 mm x 49 mm (5.9 in. x 4.1 in. x 1.9 in.)	
Weight (including cables)	1.0 kg (2.2 lb.)	
Installation part (optional)	PV Module Frame Plate/T-shaped Bolt ⁵	
Input connector	Staubli MC4	
Input wire length	0.1 m (short input cable version) ⁶	
Output connector	Staubli MC4	
Output wire length	0.1 m (+), 5.1 m (–) (short input cable version) ⁶	
Operating temperature / humidity range	–40°C to +85°C ⁷ / 0%–100% RH	
Degree of protection	IP68	

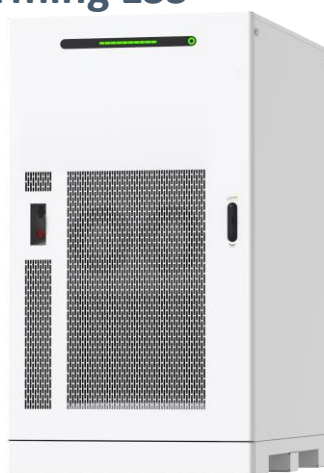
Technical Specification		SUN5000-150K-MG0	
Efficiency			
Max. efficiency		98.6% @400V, 98.8% @480V	
European efficiency		98.4%	
Input			
Max. Input Voltage		1,100 V	
Max. Short Circuit Current		66 A	
Operating Voltage Range		200 V ~ 1,000 V	
Max. input number		12	
Output			
Nominal AC Active Power		150,000 W	
Max. AC Apparent Power		165,000 VA	
Max. AC Active Power (cosφ=1)		165,000 W	
Nominal Output Voltage		380 V/400 V/480Vac	
Rated AC Grid Frequency		50 Hz / 60 Hz	
Nominal Output Current		227.9 A @380 V, 216.5 A @400 V, 180.4A @480Vac	
Max. Output Current		253.2 A @380 V, 240.5 A @400 V, 200.5A @480Vac	
Adjustable Power Factor Range		0.8 leading... 0.8 lagging	
alternating current THDi		<1%	
Protection			
Anti-islanding Protection		Yes	
AC Overcurrent Protection		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	
Arc Fault Protection		Yes	
Smart Connector Temperature Detector		Yes	
PID Recovery		Yes	
PV Ground-Fault Protection		Yes	
Communication			
Display		LED indicators; FusionSolar APP	
RS485 / 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)		1,000 x 710 x 395 mm	
Weight (without mounting plate)		≤ 100 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 HH4	
AC Connector		Waterproof Connector + OT/DT Terminal	
Protection Degree		IP66	
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	

String Configuration (Full Optimizer Configuration) ^{8/9/10} * MERC-1100/1300W-P support full optimizer configuration only		SUN5000-150K-MG0 DC/AC Ratio Recommendation			
Max Input Power Per String	Max Number Per Strings	9 Strings	10 Strings	11 Strings	12 Strings
20kW	12-20	0.8-1.0	1.0-1.1	1.1-1.2	1.2-1.6

- MERC-1100W-P can connect to PV modules with power ≤605W at STC. MERC-1300W-P can connect to PV modules with power ≤800W at STC.
- When the ambient temperature around the optimizer is ≤60°C and the module STC power is ≤715W, the MERC-1300W-P has no DC output power limit.
- Any power optimizer, which is connected to an operating inverter in a PV string, will be bypassed when it fails.
- When the MERC-1100/1300W-P is disconnected from inverter or when the inverter is off, its output voltage will be 1 V.
- It is for PV module frame/extruded aluminum profile racking system installation.
- Pay attention to PV module wire length. To match PV modules with a split junction box and short output wire, the long-input-cable version (input wire: 1.3 m(+/-); output wire 0.1m(+)/2.9m(-)) of MERC-1100/1300W-P is available upon request.
- When the operating temperature of the MERC-1100/1300W-P reaches 70 °C to 85 °C, it may shut down due to over-temperature protection and report an over-temperature alarm. After the temperature decreases, it can automatically resume working without any damage.
- Each PV module under the same inverter must be equipped with a MERC-1100/1300W-P.
- SUN2000-450W-P2/600W-P and MERC-1100/1300W-P can NOT be used in mixture under the same Smart Energy/PV controller.
- It is recommended that strings under the same inverter have an equal capacity. If it is not feasible, the capacity difference between strings under the same inverter must not exceed 2 kW. Otherwise, the energy yield will be reduced.

HUAWEI LUNA2000-241-2S1

C&I Hybrid Cooling Grid Forming ESS



More Energy



Simple O&M



Safe & Reliable

Energy Storage System Parameters

Model type	LUNA2000-241-2S1
Rated capacity	241.0kWh
Maximum cycle efficiency	91.3%
Depth of charge and discharge	0~100%
Dimensions (W x D x H)	1150mm×1800mm×2100mm
Weight	< 2.8 T
Operating temperature range	-30 °C ~ 55 °C (> 50°C Derating)
Storage temperature range	-35 °C ~ 60 °C
Operating humidity range	0 ~ 100%RH (non-condensing)
Maximum operating altitude	4,000 m
System temperature control mode	Hybrid cooling
Balance mode	Active balance
SOC calibration mode	Automatic
Fire suppression mode	Pack-level oxygen barrier, Directional gas exhaust, Top explosion vent, Aerosol
Auxiliary power supply	176~300 Vac, single phase, ≤5 kW
Power consumption standby	≤150 W
Communication port	Ethernet / Optical fiber
Communication protocol	Modbus TCP
Protection degree	IP55
EMC protection rating	Class B
Noise (rated operating condition)	≤65 dB(A)
Lightning protection	Type II (AC port)
Protection mode	Anti-islanding protection, residual current detection, insulation resistance detection, AC overcurrent protection, and AC cable connection protection
Environment	RoHS6
Certification standards	UL9540A; UN38.3; IEC 62477-1; IEC 62040-1; IEC 61000-6-1/2/3/4; IEC 62619; IEC 60529; VDE-AR-E 2510-2/50; IEC 62933-5-1/2; IEC 61727; EN 50549; GB/T 34120

Battery Parameters (DC)

Cell material	LFP
Rated battery capacity	314Ah
System battery configuration	240S1P
Number of battery packs	4
Operating voltage range	648~852 V
Rated DC current	140 A

PCS Parameters (AC)

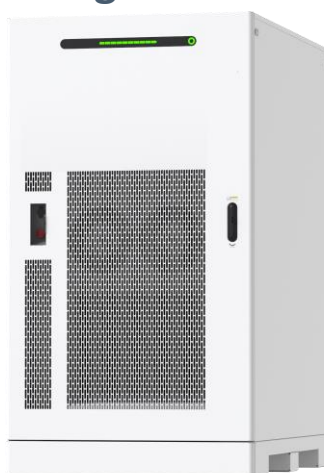
PCS model type	PCS2000-108K-MB1
Rated output power	108 kW
Rated AC current	164.1 A
AC voltage & frequency	380 / 400 / 415 V (3P4W), 50 / 60 Hz
Adjustable power factor range	-1 ... +1
AC current harmonics THDi (rated output power @on-grid)	≤1.5 %
AC Voltage harmonics THDu (linear load @off-grid)	≤2.0 %

Note:

(1) * Rated operating condition: In the on-grid scenario, the ambient temperature is 25°C, and the AC output voltage is 400 Vac.

HUAWEI LUNA2000-161-2S11

C&I Hybrid Cooling Grid Forming ESS



More Energy



Simple O&M



Safe & Reliable

Energy Storage System Parameters

Model type	LUNA2000-161-2S11
Rated capacity	161.3kWh
Maximum cycle rate	0.67 CP
Maximum cycle efficiency	88.0%
Depth of charge and discharge	0~100%
Dimensions (W x D x H)	1150mm×1800mm×2100mm
Weight	≤ 2.4 T
Operating temperature range	-30 °C ~ 55 °C (> 50°C Derating)
Storage temperature range	-35 °C ~ 60 °C
Operating humidity range	0 ~ 100% (non-condensing)
Maximum operating altitude	4,000 m
System temperature control mode	Hybrid cooling
Balance mode	Active balance
SOC calibration mode	Automatic
Fire suppression mode	Pack-level oxygen barrier, Directional gas exhaust, Top explosion vent, Aerosol
Auxiliary power supply	176~300 Vac, single phase, ≤5 kW
Power consumption standby	≤150 W
Communication port	Ethernet / Optical fiber
Communication protocol	Modbus TCP
Protection degree	IP55
EMC protection rating	Class B
Noise (rated operating condition)	≤65 dB(A)
Lightning protection	Type II (AC port)
Protection mode	Anti-islanding protection, residual current detection, insulation resistance detection, AC overcurrent protection, and AC cable connection protection
Environment	RoHS6
Certification standards	UL9540A; UN38.3; IEC 62477-1; IEC 62040-1; IEC 61000-6-1/2/3/4; IEC 62619; IEC 60529; VDE-AR-E 2510-2/50; IEC 62933-5-1/2; IEC 61727; EN 50549; GB/T 34120

Battery Parameters (DC)

Cell material	LFP
Rated battery capacity	280Ah
System battery configuration	180S1P
Number of battery packs	3
Operating voltage range	486~648 V
Rated DC current	187 A

PCS Parameters (AC)

PCS model type	PCS2000-108K-MB1
Rated output power	108 kW
Rated AC current	155.9 A
AC voltage & frequency	380/400/415/420/440/480 V (3P4W), 50/60 Hz
Adjustable power factor range	-1 ... +1
AC current harmonics THDi (rated operating condition @on-grid)	≤1.5 %
AC Voltage harmonics THDu (linear load @off-grid)	≤2.0 %

Note:

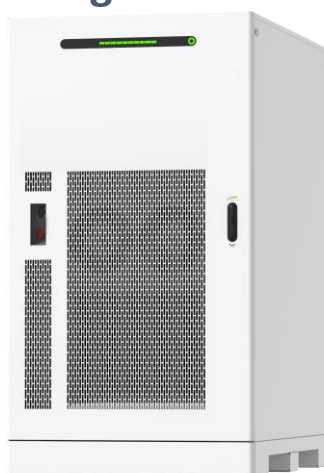
(1) * Rated operating condition: In the on-grid scenario, the ambient temperature is 25°C, the charge/discharge rate is 0.67 CP, and the AC output voltage is 400 Vac.

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Version No.: 01-202510

HUAWEI LUNA2000-107-1S11

C&I Hybrid Cooling Grid Forming ESS



More Energy



Simple O&M



Safe & Reliable

Energy Storage System Parameters

Model type	LUNA2000-107-1S11
Rated capacity	107.5kWh
Maximum cycle rate	1 C
Maximum cycle efficiency	86.0%
Depth of charge and discharge	0~100%
Dimensions (W x D x H)	1150mm×1800mm×2100mm
Weight	≤ 2.0 T
Operating temperature range	-30 °C ~ 55 °C (> 50°C Derating)
Storage temperature range	-35 °C ~ 60 °C
Operating humidity range	0 ~ 100% (non-condensing)
Maximum operating altitude	4,000 m
System temperature control mode	Hybrid cooling
Balance mode	Active balance
SOC calibration mode	Automatic
Fire suppression mode	Pack-level oxygen barrier, Directional gas exhaust, Top explosion vent, Aerosol
Auxiliary power supply	176~300 Vac, single phase, ≤5 kW
Power consumption standby	≤150 W
Communication port	Ethernet / Optical fiber
Communication protocol	Modbus TCP
Protection degree	IP55
EMC protection rating	Class B
Noise (rated operating condition)	≤65 dB(A)
Lightning protection	Type II (AC port)
Protection mode	Anti-islanding protection, residual current detection, insulation resistance detection, AC overcurrent protection, and AC cable connection protection
Environment	RoHS6
Certification standards	UL9540A; UN38.3; IEC 62477-1; IEC 62040-1; IEC 61000-6-1/2/3/4; IEC 62619; IEC 60529; VDE-AR-E 2510-2/50; IEC 62933-5-1/2; IEC 61727; EN 50549; GB/T 34120

Battery Parameters (DC)

Cell material	LFP
Rated battery capacity	280Ah
System battery configuration	120S1P
Number of battery packs	2
Operating voltage range	324~432 V
Rated DC current	280 A

PCS Parameters (AC)

PCS model type	PCS2000-108K-MB1
Rated output power	108 kW
Rated AC current	155.9 A
AC voltage & frequency	380/400/415/420/440/480 V (3P4W), 50/60 Hz
Adjustable power factor range	-1 ... +1
AC current harmonics THDi (rated operating condition @on-grid)	≤1.5 %
AC Voltage harmonics THDu (linear load @off-grid)	≤2.0 %

Note:

(1) * Rated operating condition: In the on-grid scenario, the ambient temperature is 25°C, the charge/discharge rate is 1 C, and the AC output voltage is 400 Vac.

MERC-1100/1300W-P

Smart Module Controller



Higher Yields
Module-level Optimization
Increase System Energy
Yield by 5% to 30%



Flexible Design
Long String Design
to Reduce Bos



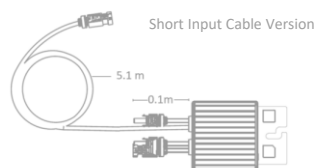
Active Safety
Safe Voltage Shutdown
Ensure Firefighting and
Maintenance Safety



Smart O&M
Pinpointing Open-
Circuit Fault for Quick
Troubleshooting

MERC-1100/1300W-P
Smart Module Controller

Technical Specification	MERC-1100W-P		MERC-1300W-P	
Input				
Rated Input DC Power	1100W		1300W	
Max. Input DC Power	1155W ¹		1430W ¹	
Max. input voltage	125 V			
MPPT operating voltage range	12.5 – 105 V			
Max. short-circuit current (Isc)	20 A			
Max. efficiency	99.5 %			
Weighted efficiency	99.0 %			
Overvoltage category	II			
Output				
Rated Output DC Power	1100W		1300W	
Max. Output DC Power	1155W		1430W ²	
Max. output voltage	80 V			
Max. output current	22 A			
Output bypass ³	Yes			
Shutdown output voltage per optimizer ⁴	1 V			
Standards Compliance				
Safety	IEC62109-1 (class II safety)			
RoHS	Yes			
General Data				
Dimension (W x H x D)	149 mm x 104 mm x 49 mm (5.9 in. x 4.1 in. x 1.9 in.)			
Weight (including cables)	1.0 kg (2.2 lb.)			
Installation part (optional)	PV Module Frame Plate/T-shaped Bolt ⁵			
Input connector	Staubli MC4			
Input wire length	0.1 m (short input cable version) ⁶			
Output connector	Staubli MC4			
Output wire length	0.1 m (+), 5.1 m (–) (short input cable version) ⁶			
Operating temperature/humidity range	–40°C to +85°C ⁷ / 0%–100% RH			
Degree of protection	IP68			
Compatible Inverter	SUN2000-30/40/50K-MC0 SUN2000-30/36/40KTL-M3 SUN2000-50KTL-M3 SUN5000-150K-MG0			
String Configuration (Full Optimizer Configuration) ^{8/9/10} * MERC-1100/1300W-P support full optimizer configuration only	SUN2000-30/40/50K-MC0	SUN2000-30/36/40KTL-M3	SUN2000-50KTL-M3	SUN5000-150K-MG0
Minimum optimizers per string	8	8	8	12
Maximum optimizers per string	20	25	20	20
Maximum DC power per string	20,000 W	20,000 W	20,000 W	20,000 W



*1 MERC-1100W-P can connect to PV modules with power ≤605W at STC. MERC-1300W-P can connect to PV modules with power ≤800W at STC.

*2 When the ambient temperature around the optimizer is ≤60°C and the module STC power is ≤715W, the MERC-1300W-P has no DC output power limit.

*3 Any power optimizer, which is connected to an operating inverter in a PV string, will be bypassed when it fails.

*4 When the MERC-1100/1300W-P is disconnected from inverter or when the inverter is off, its output voltage will be 1 V.

*5 It is for PV module frame/extruded aluminum profile racking system installation.

*6 Pay attention to PV module wire length. To match PV modules with a split junction box and short output wire, the long-input-cable version (input wire: 1.3 m(+/-); output wire 0.1m(+)/2.9 m (-)) of MERC-1100/1300W-P is available upon request.

*7 When the operating temperature of the MERC-1100/1300W-P reaches 70 °C to 85 °C, it may shut down due to over-temperature protection and report an over-temperature alarm. After the temperature decreases, it can automatically resume working without any damage.

*8 Each PV module under the same inverter must be equipped with a MERC-1100/1300W-P.

*9 SUN2000-450W-P2/600W-P and MERC-1100/1300W-P can NOT be used in mixture under the same Smart Energy/PV controller.

*10 It is recommended that strings under the same inverter have an equal capacity. If it is not feasible, the capacity difference between strings under the same inverter must not exceed 2 kW. Otherwise, the energy yield will be reduced.

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(AP+STA)
General Data	
Max. Devices Supported	10
Max. Inverters Supported	10
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	AP + 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, RoHS
Inverter Compatibility	
Inverter Model	SUN2000-2/3/3.68/4/4.6/5/6-L1 SUN2000-3/4/5/6/8/10-M1 SUN2000-12/15/17/20KTL-M2 SUN2000-12/15/17/20/25KTL-M5 SUN2000-30/36/40/50KTL-M3 SUN2000-30/40/50K-MC0 SUN2000-100/115KTL-M2 SUN2000-150K-MG0 SUN5000-150K-MG0

1: 3rd-party management system shall match the communication protocol with Huawei Smart Dongle.

Smart Dongle-4G



Smart

4G communication¹

Support 3rd-party monitoring system²



Simple

Plug & Play

WLAN-AP for local deploying³



Reliable

IP65

Support auto reconnection

Technical Specification	SDongleB-06-EU	SDongleB-06-AU	SDongleB-06-NH
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General Data			
Max. Devices Supported	10		
Max. Inverters Supported	10		
Connection interface	USB		
Installation	Plug-and-play		
Indicator	LED Indicator		
Dimensions (W * H * D)	162*48*28mm		
Degree of protection	IP65		
Power consumption (typical)	3.5W		

Wireless Parameter			
Sim card type	mini-sim (15 mm*25 mm)		
Supported standards & frequencies ⁴	LTE-FDD : B1/B3/B7/B8/B20/B28 LTE-TDD : B38/B40/B41 GSM : 850/900/1800/1900MHz	LTE-FDD: B1/B2/B3/B4/B5/B7/B8/B28 LTE-TDD: B40 WCDMA: B1/B2/B5/B8 GSM: 850/900/1800/1900MHz	LTE-FDD: B1/B3/B8/B18/B19/B26 LTE-TDD: B41 WCDMA: B1/B6/B8/B19
Wifi Operation Mode	AP		
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	CE	RCM	TELEC

Inverter Compatibility		
Inverter model	SUN600-5/6KTL-L0 SUN2000-2~6KTL-L1 SUN2000-3~10KTL-M1 SUN2000-8~20KTL-M2 SUN2000-12~25KTL-M5 SUN2000-20~50KTL-M3 SUN2000-30~50K-MC0 SUN2000-50/60KTL-M0	SUN2000-50KTL-JPM1 SUN2000-63KTL-JPM0 SUN2000-75KTL-M1 SUN2000-100KTL-M0/M1 SUN2000-100KTL-INM0 SUN2000-110KTL-INM2 SUN2000-100/115KTL-M2 SUN2000-150K-MG0 SUN500-150K-MG0

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: When all inverters support WLAN hotspot, hotspot of Dongle will be disabled by default.

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



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.

SmartLogger5000B

Smart Monitor and Data Logger



Product Description

The SmartLogger5000B is a highly integrated device dedicated for centralized monitoring and management of PV/PV+ESS systems in C&I scenario. It implements functions such as access and convergence, protocol conversion, data collection, data storage, centralized monitoring, centralized maintenance, and power control for all devices in PV+ESS systems. In addition, multiple industrial communication protocols are supported to interconnect with third-party systems.

Key Features



Huawei-developed quad-core CPU, improving computing power by 3.5 times



Huawei-developed power operating system, millisecond-level real-time control



Voltage/current/frequency direct sampling



Closed-loop control for zero feed-in within 2s
Closed-loop peak shaving and capacity limit control within 5s



PV+ESS+charger unified monitor



Multiple southbound IoT ports, such as MBUS, RS485, FE, DI, DO, and AI



Intelligent control of active and reactive power, supporting multiple power control policy overlay



APP wizard-based deployment, simplified experience

SmartLogger5000B

Smart Monitor and Data Logger



	Communications ports
WAN	WAN x 1, 10/100/1000 Mbit/s
LAN	LAN x 1, 10/100/1000 Mbit/s
MBUS	Maximum AC voltage: 1000 V ($\pm 10\%$); maximum communication distance: 500 m
RS485	COM x 3; maximum communication distance: 1000 m
2G/3G/4G	Supported
DI/DO	DI x 4, DO x 2. DI ports can receive passive dry contact signals, and DO ports support a maximum of 12 V signal voltage.
AI/DI	AI x 4 (three channels of current-type input + one channel of voltage-type input). The AI mode can be set to DI mode through software. Current-type: 0–20 mA or 4–20 mA; input precision: less than 10 mA Voltage-type: 0–10 V; input precision: less than 1 V
	Electricity measurement
Voltage measurement	Input: 3 channels; measurement precision: 0.5% Measurement range: L-N: 57.7–277 V (L-L: 100–480 V) (three-phase three-wire or three-phase four-wire)
Current measurement	Input: three channels; measurement range: 5A; measurement precision: 0.5%
Frequency measurement	measurement range: 40Hz–70Hz; measurement precision: ± 0.01 Hz
	Software functions
Scenario	Support only PV and PV+ESS management in grid-connected scenario
Maximum number of connected devices	Only PV: 80*inverters; only Battery: 50*ESS cabinets, 10MWh; PV+Battery: 30*inverters+20*ESS cabinets <i>*Note: SmartModule is required when access more than 1 ESS cabinet</i>
Southbound protocol	Modbus-RTU, Modbus-TCP, and GOOSE
Northbound protocol	Modbus-TCP, IEC 60870-5-104, and GOOSE
	Display
LED	LED x 3 – RUN, ALM, 4G
USB	USB 2.0 x 1
App	WLAN connection, used for commissioning
	Environment
Operating temperature	–40°C to +60°C (–40°F to +140°F)
Storage temperature	–40°C to +70°C (–40°F to +158°F)
Relative humidity (non-condensing)	5%–95%
Maximum altitude	5000 m (16,404 ft.)
	Electrical specifications
AC power supply	Adapter: 100–240 V AC, 50 Hz/60 Hz
DC power supply	12 V/24 V
Power consumption	Typical: 9 W; maximum: 12 W
	Mechanical specifications
Dimensions (W x H x D)	225 mm x 160 mm x 44 mm (excluding mounting ears and antennas)
Weight	2 kg (4.4 lb.)
IP rating	IP20
Installation mode	Wall-mounted, guide rail-mounted, or desk-mounted

SmartMGC5000B

Smart Monitor and Controller



Product Description

The SmartMGC5000B is a highly integrated C&I controller that supports grid connection, seamless on/off-grid switching, and off-grid control scenarios. It supports various microgrid features, such as detection of grid exception, synchronous control, and one-click automatic black start. In addition, it supports optical fiber and GE/FE ring networking, and provides functions such as device access and convergence, protocol conversion, data collection, data storage, centralized monitoring, centralized maintenance, and power control.

Key Features



Huawei-developed quad-core CPU, improving computing power by 3 times



Huawei-developed power operating system, millisecond-level real-time control



20ms seamless switching, no impact on loads*



Closed-loop control for zero feed-in within 2s
Closed-loop peak shaving and capacity limit control within 5s



Direct sampling of AC power and synchronous control



PV+ESS+Charger unified monitor



Intelligent control of active and reactive power, supporting multiple power control policy overlay



Multiple southbound IoT ports, such as MBUS, RS485, FE, DI, DO, and AI

* Requires a fast grid-connected switch

SmartMGC5000B

Smart Monitor and Controller



	Communications ports
WAN	WAN x 1, 10/100/1000 Mbit/s
LAN	LAN x 1, 10/100/1000 Mbit/s
GE	GE x 4, 10 / 100 / 1000 Mbps*
MBUS	Maximum AC voltage: 1000 V ($\pm 10\%$); maximum communication distance: 500 m
Optical fiber	SFP x 2, 1000 Mbit/s, 1310 nm wavelength, 10 km transmission distance using single-mode optical fibers
RS485	COM x 3, maximum communication distance: 1000 m
2G/3G/4G	Supported
ELV DI/DO	DI x 4, DO x 2. DI ports can receive passive dry contact signals, and DO ports support a maximum of 12 V signal voltage.
Electrical DI (HV)/DO (HV)	DI (HV) x 4, contact voltage range: 100V AC~277 V AC DO (HV) x 8, contact voltage range: 100V AC~277 V AC, 1 fast DO port action time <1ms to support seamless on/off-grid switching
AI/DI	AI x 4 (three channels of current-type input + one channel of voltage-type input). The AI mode can be set to DI mode through software. Current-type: 0–20 mA or 4–20 mA; input precision: less than 10 mA Voltage-type: 0–10 V; input precision: less than 1 V
	Electricity measurement
Voltage measurement	6 ports; measurement precision: 0.5% Measurement range: L-N: 57.7–277 V (L-L: 100–480 V) (three-phase three-wire or three-phase four-wire)
Current measurement	3 ports; measurement range: 5 A; measurement precision: 0.5%
Frequency measurement	measurement range: 40Hz-70Hz; measurement precision: ± 0.01 Hz
	Software functions
Scenario	ESS and PV+ESS in grid-connected; seamless on/off-grid switching; off-grid operation
Maximum number of connected devices	Only PV: 80*inverters; Only Battery: 50*ESS cabinets, 10MWh; PV+Battery: 30*inverters+20*ESS cabinets
Southbound protocol	Modbus-RTU, Modbus-TCP, and GOOSE
Northbound protocol	Modbus-TCP, IEC 60870-5-104, and GOOSE
	Display
LED	LED x 3 – RUN, ALM, 4G
USB	USB 2.0 x 1
App	WLAN connection, used for commissioning
	Environment
Operating temperature	–40°C to +60°C (–40°F to +140°F)
Storage temperature	–40°C to +70°C (–40°F to +158°F)
Relative humidity (non-condensing)	5%–95%
Maximum altitude	5000 m (16,404 ft.)
	Electrical specifications
AC power supply	Adapter: 100–240 V, 50 Hz/60 Hz
DC power supply	12/24 V
Power consumption	Typical: 12.5 W; maximum: 16.5 W
	Mechanical specifications
Dimensions (W x H x D)	225 mm x 160 mm x 44 mm (excluding mounting ears and antennas)
Weight	2 kg (4.4 lb.)
IP rating	IP20
Installation mode	Wall-mounted, guide rail-mounted, or desk-mounted

* Only GE3 and GE4 ports support ring networking.

SmartACU2000D

Smart Array Controller



With SmartPID2000 Module



Without SmartPID2000 Module



Smart

Support one-click commissioning
Patented anti-PID module



Simple

SmartPID2000 & Smartlogger3000B pre-installed with multiple interfaces



Reliable

Industrial-level application and high reliability

Technical Specification	SmartACU2000D-D-00	SmartACU2000D-D-02	SmartACU2000D-D-01	SmartACU2000D-D-03
Configuration				
Smart Logger	SmartLogger3000B x 1			
SmartModule1000A	Optional			Standard with SmartModule1000A x 1
RS485	Supported			
No. of MBUS ¹	1	2	1	2
No. of SmartPID2000	0	0	1	2
Environment				
Operating Temperature Range	-40°C ~ 60°C (-40°F ~ 140°F)			
Relative Humidity	4% ~ 100%			
Max. Operating Altitude	4,000 m (13,123 ft.)			
Electrical				
AC Input Voltage for SACU	100 V ~ 240 V, L / N (L)+ PE			
AC Input Voltage for MBUS	380 V ~ 800 V, 3Ph			
AC Input Voltage for PID	380 V ~ 800 V, 3Ph + FE (Functional Earth)			
AC Input Frequency	50 / 60 Hz			
Power Supply	Standard: 12 V DC Optional: 24 V DC ²			
Mechanical				
Cable Entries	Bottom in & out			
Maintenance	Front			
Dimensions (W x H x D)	640 x 770 x 315 mm (25.2 x 30.3 x 12.4 inch)		880 x 770 x 369 mm (34.6 x 30.3 x 14.5 inch)	
Weight	29 kg (63.9 lb.)	32 kg (70.5 lb.)	49 kg (108.0 lb.)	61 kg (134.5 lb.)
Protection Degree	IP65			
Installation Options	Wall Mounting, Rack Mounting, Pole Mounting			

1. Compatible with communication mode of PLC (Power Line Communication).
2. 24V DC power supply is optional to power devices that require 24Vdc input and output.

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



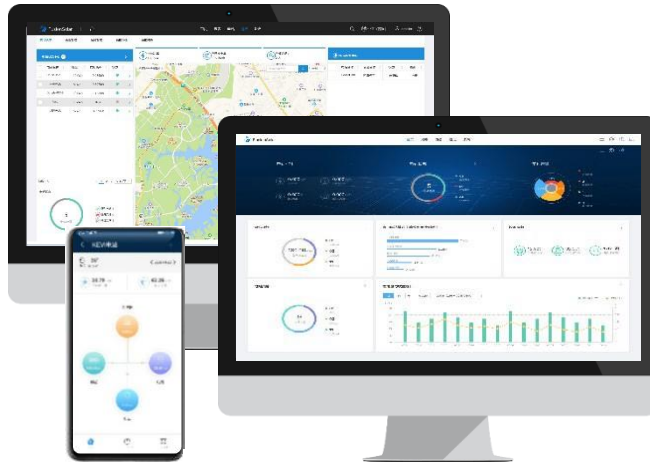
Energy Efficient

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

FusionSolar Smart PV Management System



Better experience

- ▣ One APP for all access procedure
- ▣ Auto-definition of local components
- ▣ Module auto-mapping within 5s



Energy visualization

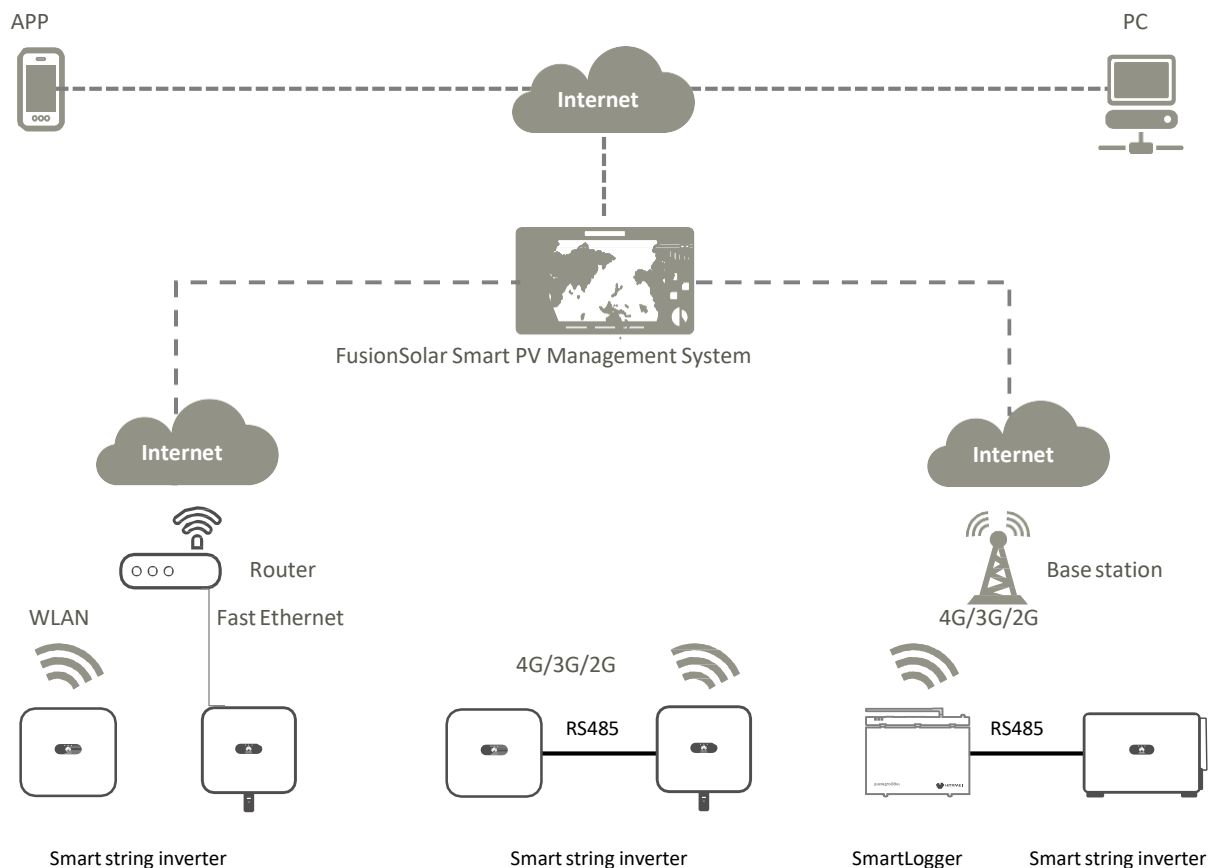
- ▣ KPI Dashboard, centralized management of multiple plants
- ▣ Module-level monitoring
- ▣ Report subscription and real-time alarm push



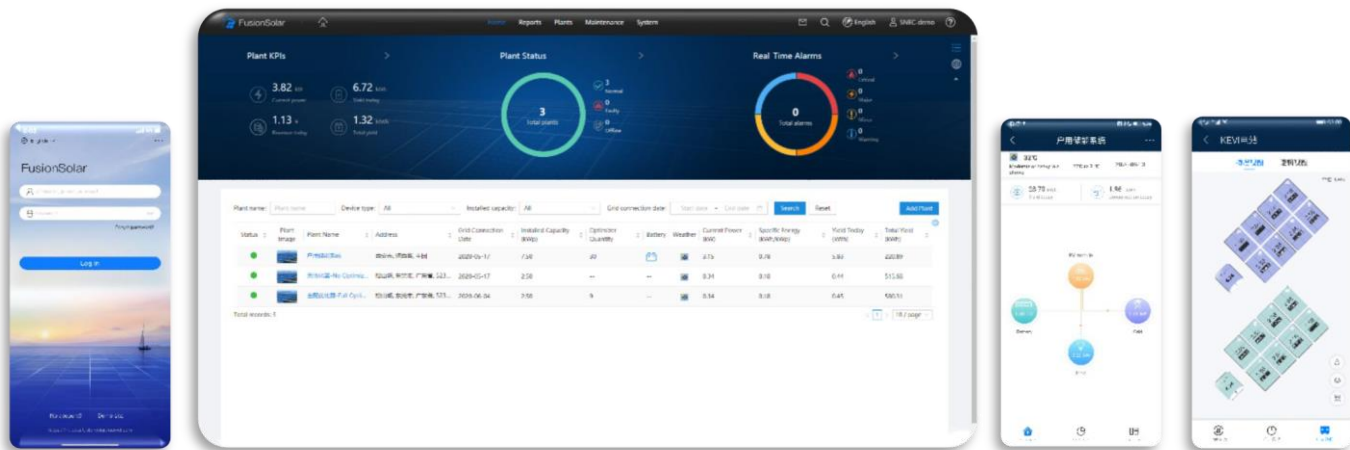
Smart O&M

- ▣ One-screen mgmt. of site, personnel, status
- ▣ One-click ticket dispatching & site navigation
- ▣ Online Smart I-V Curve Diagnosis, 15mins required for a 100MW plant diagnosis

Networking



FusionSolar Smart PV Management System

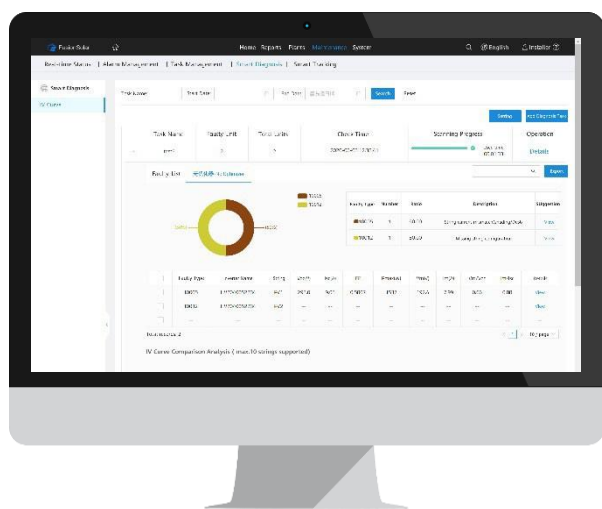


Category	Function	Web	APP
Homepage	PV Plants List	●	●
	Add Plant	●	●
Report Management	Plant Report	●	
	Inverter Report	●	
	Battery Report	●	
Device Management	Device Details	●	●
	Remote Parameter Setting	●	
	Remote Optimizer Search	●	
Intelligent O&M	Real-time Status	●	
	Alarm Management	●	●
	Task Management	●	●
	Smart IV-Curve Diagnose	●	
KPI Dashboard	KPI Dashboard	●	
Homepage of Single Plant	Energy Flow	●	●
	Energy Management	●	●
	Plant Layout	●	●
	Kiosk Mode	●	
System Setting	Plant Management	●	●
	Company Management	●	
Demo	Demo Site	●	●

Smart I-V Curve Diagnosis



Smart I-V Curve Diagnosis is able to carry out online I-V curve analysis on entire strings with advanced diagnosis algorithm. The scanning would help to find out and identify the strings with low performance or faults, which would help to achieve proactive maintenance, higher O&M efficiency and lower operation cost.



Smart

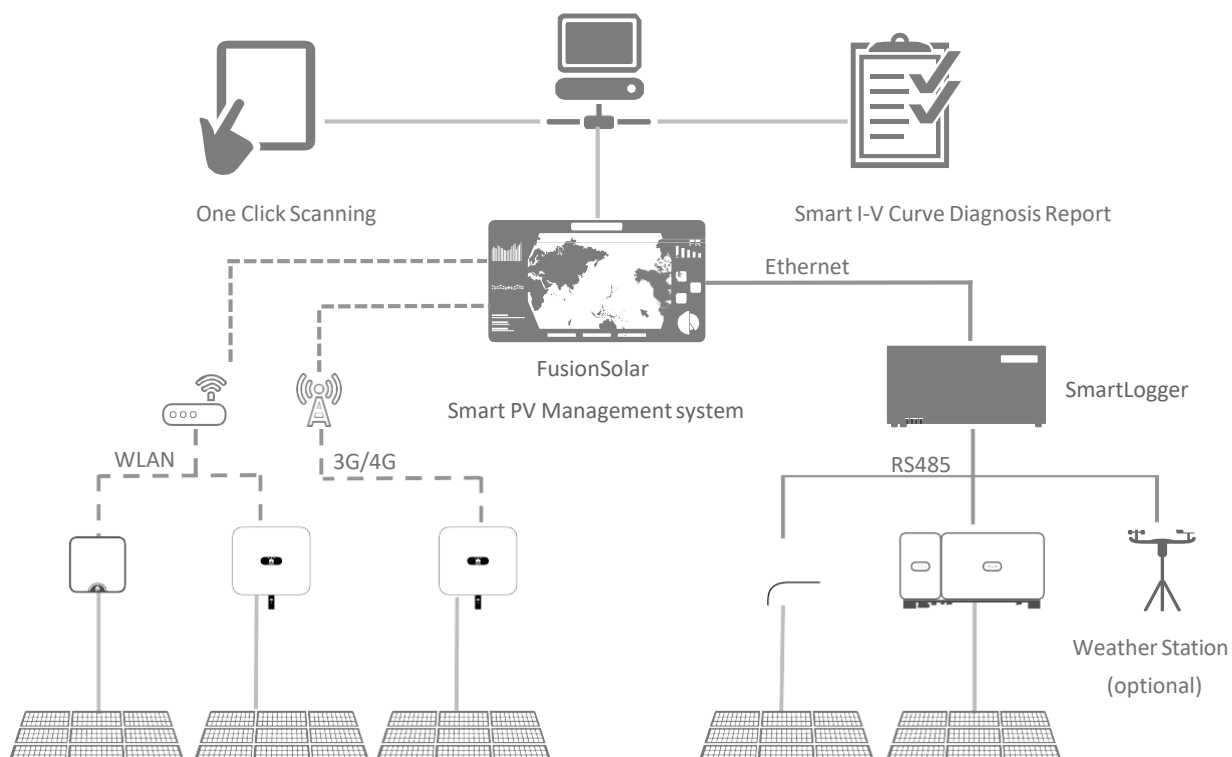
- Support plant-level, array-level and inverter-level analysis and diagnosis
- Automatically identify different failure types and provide recovery suggestion



Efficient

- One-click scanning without onsite experts or equipment
- Online I-V curve scanning on entire strings of 5 MW plant within 5min
- Automatic report generation of 5 MW plant within 15min

Network



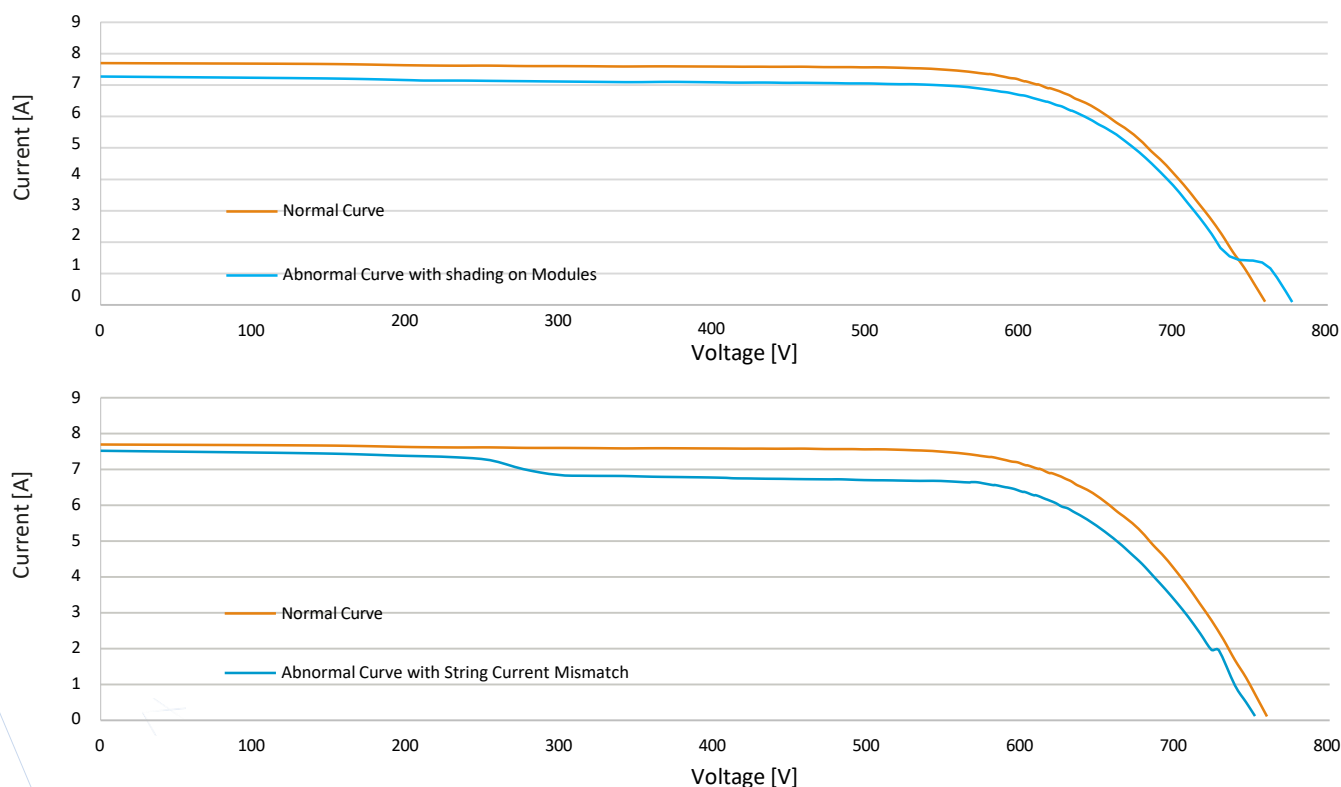
Smart I-V Curve Diagnosis

Technical Specifications	Smart I-V Curve Diagnosis
Smart PV Inverter	SUN2000-2/3/3.68/4/4.6/5/6KTL-L1*, SUN2000-3/4/5/6/8/10KTL-M0, SUN2000-12/15/17/20KTL-M0, SUN2000-33KTL-A/36KTL, SUN2000- 60KTL-M0, SUN2000-100KTL-M1
Communication	SmartLogger3000A, Smart Dongle-WLAN-FE/4G
Management System	FusionSolar Smart PV Management System, NetEco1000s
Scanning Time	<1s (1 string)
Sampling Points per I-V Curve	128
Certification	 TÜV Rheinland® TÜV

* I-V curve diagnosis is not supported when inverter is connected with power optimizer.



String I-V Curve Comparison





Sunlight Ecotourism Island Resort

Naglayan Island, Palawan

Project Scale

2.25 MW PV + 3.4MWh BESS

Annual power generation

1.5 million kWh

- ◆ Cuts down diesel reliance & operational cost
- ◆ Marketing & brand value uplift
- ◆ Scalability & replication model



Mindoro Medical Center

Calapan City, Oriental Mindoro

Project Scale

518kW

Annual power generation

681,000 kWh

- ◆ Saving ₱5.4million in annual electricity bill
- ◆ Helps with Emergency Preparedness
- ◆ ROI < 5 years



JG Summit Petrochemical Group

Project Scale

13.8MWp

- ◆ cut grid demand and emissions, with ~17.8 GWh/year projected savings.
- ◆ **Environmental impact** with a reduction of 17,000 tons of GHG emissions annually.
- ◆ **Energy security** with increased resilience against grid outages.

Philippine Cases



Sanacor Shrimp Farm

Sarangani, Mindanao

Project Scale

704 kWp

Annual power generation

840,000 kWh

- ◆ Saves 20-25% of total electricity consumption
- ◆ Huge Diesel Savings + Fuel Independence

Other Cases



Guangdong Mate-Youth City

Project Scale

5MW +215kWh ESS+600/720kW

Annual power generation

5.5 million kWh

- ◆ Max. self-consumption, increases green electricity consumption through PV+ESS collaboration
- ◆ Time of use, suppress the charging load fluctuation, and ensure the charging stability
- ◆ IRR ~ 16.93%, ROI < 5.6 years, saving electricity bills ~ \$10,000 annually



Guangdong Gobao Intelligent Technology

Project Scale

215kWh*16 + 1.3MW

Full-lifecycle Revenue Improvement

> \$486,000

- ◆ Time of use, annual charge and discharge capacity 21,000,000 kWh
- ◆ Max. self-consumption, ROI < 4 years
- ◆ Low-carbon transformation of manufacturing industry

Fusion Solar Installer Video

Watch the video in 3 Easy Steps

1

Visit the Website



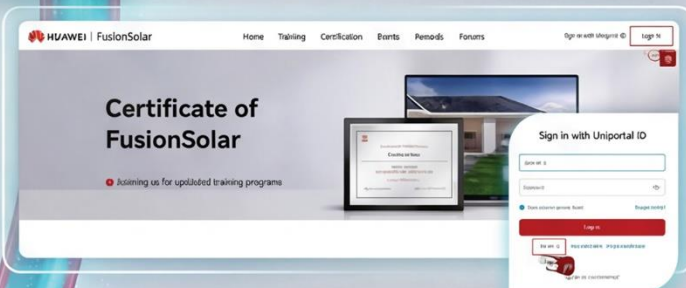
Click on the link or scan the QR code to Register

<https://community.solar.huawei.com/community/ph/>



2

Create an
installer account



3

Proceed to Installer
Training video



Click on the link or scan the QR code to watch the training video

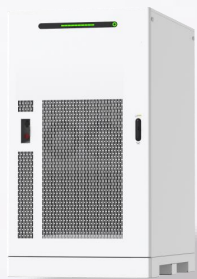
<https://community.solar.huawei.com/community/ph/training>



LEARN MORE



HUAWEI LUNA2000-241-2S1



Smart PV Controller



Smart Module Controller



Commercial & Industrial
Website



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