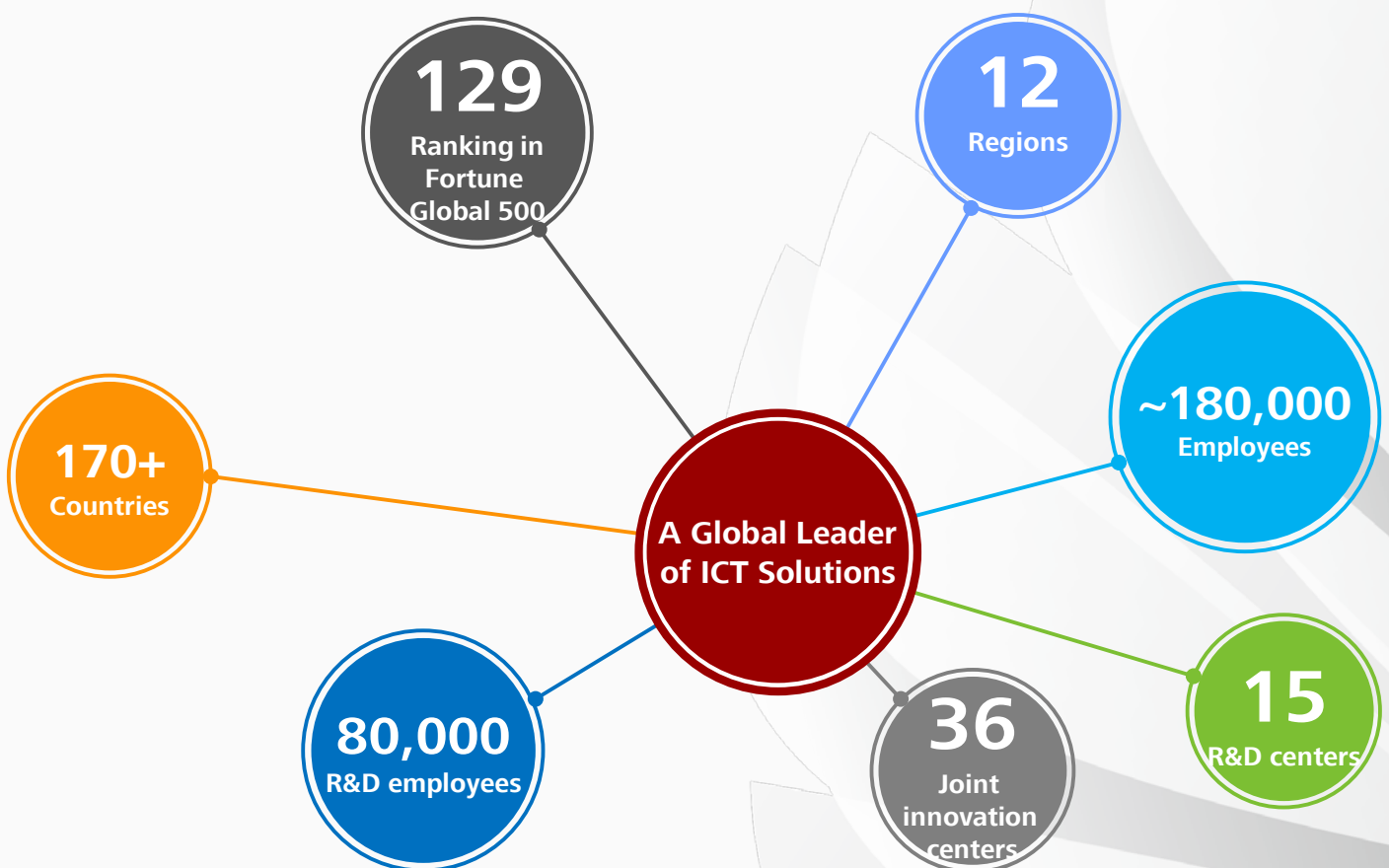


FusionSolar[®]

Smart PV Solution



Huawei is a leading global information and communications technology (ICT) solutions provider. Driven by a commitment to sound operations, ongoing innovation, and open collaboration, we have established a competitive ICT portfolio of end-to-end solutions in telecom and enterprise networks, devices, and cloud technology and services. Our ICT solutions, products, and services are used in more than 170 countries and regions, serving over one-third of the world's population. With 180,000 employees, Huawei is committed to enabling the future information society, and building a Better Connected World. Continuously innovating based on customer needs, we are committed to enhancing customer experiences and creating maximum value. The annual revenue of 75.1 billion USD in 2016 represents an increase of 23.5% year-on-year.



Smart String Inverter (SUN2000-8/12KTL)



Smart

- 2 MPPTs for versatile adaptations to different module types or quantities built up with different alignments
- 4 strings intelligent monitoring and 80% time saving for fault detection
- RS485 and USB ports for connectivity and data management
- Local graphic LCD display and remote monitoring

Efficient

- Max. efficiency 98.5%, European efficiency 98.0%
- Easy to install with the weight of 42kg

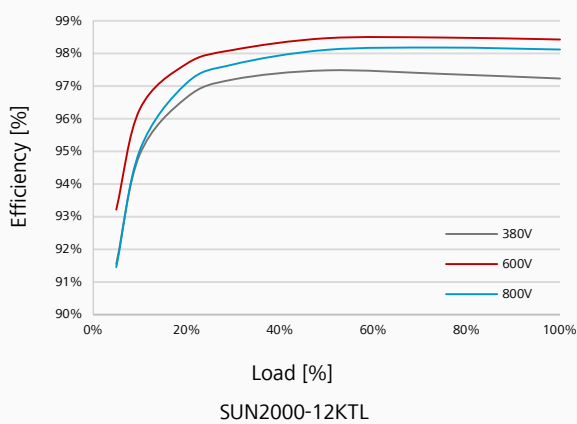
Safe

- DC disconnect integrated, safe and convenient for maintenance
- Type II surge arresters for both DC and AC
- Ground fault protection
- Residual Current Detection (RCD) protection

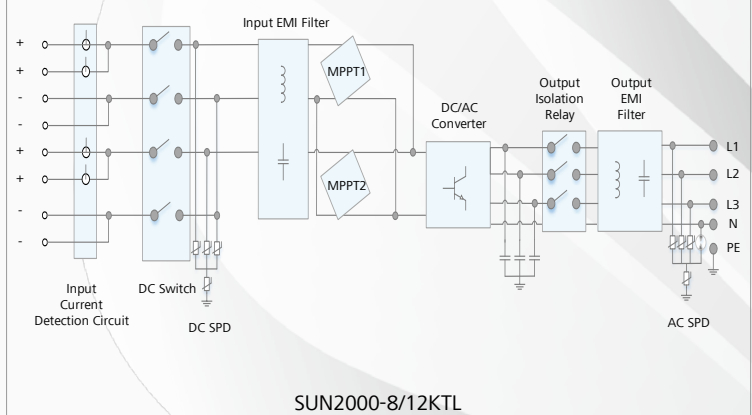
Reliable

- No need for external fans with natural cooling technology
- Protection rating of IP65

Efficiency Curve



Circuit Diagram



Smart String Inverter (SUN2000-8/12KTL)



Technical Specifications	SUN2000-8KTL	SUN2000-12KTL
Efficiency		
Max. Efficiency	98.5%	98.5%
European Efficiency	98.0%	98.0%
Input		
Max. DC Usable Power	9,000 W	13,500 W
Max. Input Voltage	1,000 V	1,000 V
Max. Current per MPPT	18 A	18 A
Max. Short Circuit Current per MPPT	25 A	25 A
Min. Operating Voltage / Start Input Voltage	200 V / 250 V	200 V / 250 V
Full Power MPPT Voltage Range	320 V ~ 800 V	380 V ~ 800 V
MPPT Operating Voltage Range	200 V ~ 950 V	200 V ~ 950 V
Rated Input Voltage	620 V	620 V
Max. Number of Inputs	4	4
Number of MPP Trackers	2	2
Output		
Rated AC Active Power	8,000 W	12,000 W
Max. AC Apparent Power	8,800 VA	13,200 VA
Max. AC Active Power (cosφ=1)	8,800 W	13,200 W
Rated Output Voltage	220V / 380V, 230V / 400V, 3W+N+PE	220V / 380V, 230V / 400V, 3W+N+PE
Rated AC Grid Frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Max. Output Current	13.4 A	20 A
Adjustable Power Factor	0.8 LG ... 0.8 LD	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%	< 3%
Protection		
Input-side Disconnection Device	Yes	Yes
Anti-Islanding Protection	Yes	Yes
AC Overcurrent Protection	Yes	Yes
DC Reverse-Polarity Protection	Yes	Yes
PV-array String Fault Monitoring	Yes	Yes
DC Surge Arrester	Type II	Type II
AC Surge Arrester	Type II	Type II
Insulation Monitoring	Yes	Yes
Residual Current Detection	Yes	Yes
Communication		
Display	Graphic LCD	Graphic LCD
RS485	Yes	Yes
USB	Yes	Yes
General		
Dimensions (W×H×D, with mounting bracket)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inches)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inches)
Weight	41 kg (90.4 lb.), without mounting bracket 42 kg (92.6 lb.), with mounting bracket	41 kg (90.4 lb.), without mounting bracket 42 kg (92.6 lb.), with mounting bracket
Operation Temperature Range	-25 °C ~ 60 °C (-13°F ~ 140°F)	-25 °C ~ 60 °C (-13°F ~ 140°F)
Cooling	Natural Convection	Natural Convection
Max. Operating Altitude Without Derating	3,000 m (9,842 ft.)	3,000 m (9,842 ft.)
Relative Humidity	0~100%	0~100%
DC Connector	Amphenol H4	Amphenol H4
AC Connector	Amphenol C16/3	Amphenol C16/3
Protection Rating	IP65	IP65
Topology	Transformerless	Transformerless
Standards Compliance		
Safety	EN/IEC 62109-1, EN/IEC 62109-2	
Grid Code	IEC 61727, IEC 62116, NB/T 32004-2013, VDE-AR-N-4105, VDE 0126-1-1, BDEW, G83/2 (Only 8KTL), G59/3 (Only 12KTL), UTE C 15-712-1, CEI 0-16, CEI 0-21, C10/11, EN 50438-Ireland, EN 50438-Turkey, AS 4777, PEA (Only 12KTL), MEA (Only 12KTL), NRS 097-2-1	

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Smart String Inverter (SUN2000-17/20KTL)



Smart

- 3 MPPTs for versatile adaptations to different module types or quantities built up with different alignments
- 6 strings intelligent monitoring and 80% time saving for fault detection
- RS485 and USB ports for connectivity and data management
- Local graphic LCD display and remote monitoring

Efficient

- Max. efficiency 98.6%, European efficiency 98.3%
- Easy to install with the weight of 50kg

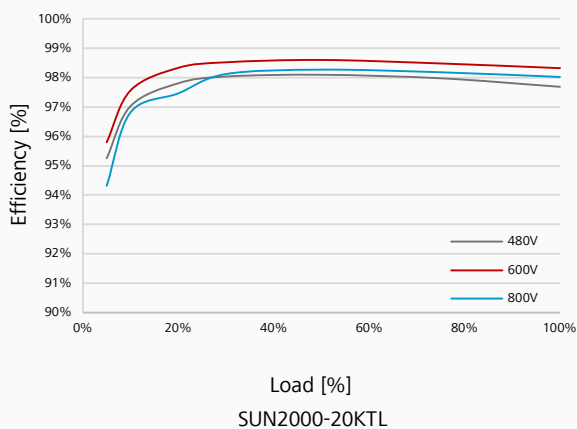
Safe

- DC disconnect integrated, safe and convenient for maintenance
- Type II surge arresters for both DC and AC
- Ground fault protection
- Residual Current Detection (RCD) protection

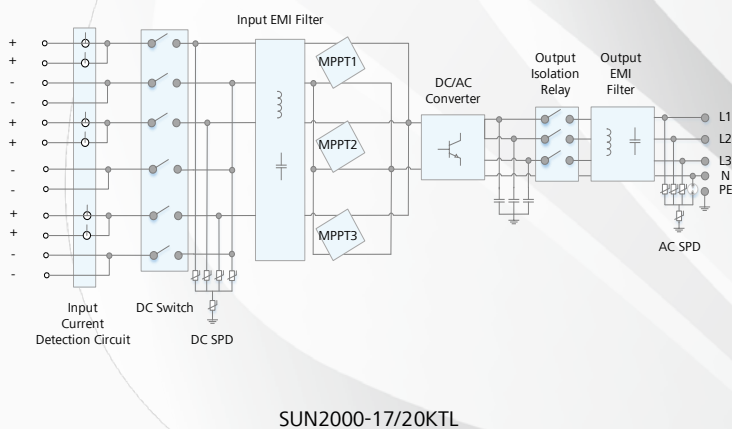
Reliable

- No need for external fans with natural cooling technology
- Protection rating of IP65

Efficiency Curve



Circuit Diagram



Smart String Inverter (SUN2000-17/20KTL)



Technical Specifications	SUN2000-17KTL	SUN2000-20KTL
Efficiency		
Max. Efficiency	98.6%	98.6%
European Efficiency	98.3%	98.3%
Input		
Max. DC Usable Power	19,100 W	22,500 W
Max. Input Voltage	1,000 V	1,000 V
Max. Current per MPPT	18 A	18 A
Max. Short Circuit Current per MPPT	25 A	25 A
Min. Operating Voltage / Start Input Voltage	200 V / 250 V	200 V / 250 V
Full Power MPPT Voltage Range	400 V ~ 800 V	480 V ~ 800 V
MPPT Operating Voltage Range	200 V ~ 950 V	200 V ~ 950 V
Rated Input Voltage	620 V	620 V
Max. Number of Inputs	6	6
Number of MPP Trackers	3	3
Output		
Rated AC Active Power	17,000 W	20,000 W
Max. AC Apparent Power	18,700 VA	22,000 VA
Max. AC Active Power (cosφ=1)	18,700 W	22,000 W
Rated Output Voltage	220V / 380V, 230V / 400V, 3W+N+PE	220V / 380V, 230V / 400V, 3W+N+PE
Rated AC Grid Frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Max. Output Current	28.4 A	33.4 A
Adjustable Power Factor	0.8 LG ... 0.8 LD	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%	< 3%
Protection		
Input-side Disconnection Device	Yes	Yes
Anti-Islanding Protection	Yes	Yes
AC Overcurrent Protection	Yes	Yes
DC Reverse-Polarity Protection	Yes	Yes
PV-array String Fault Monitoring	Yes	Yes
DC Surge Arrester	Type II	Type II
AC Surge Arrester	Type II	Type II
Insulation Monitoring	Yes	Yes
Residual Current Detection	Yes	Yes
Communication		
Display	Graphic LCD	Graphic LCD
RS485	Yes	Yes
USB	Yes	Yes
General		
Dimensions (W×H×D, with mounting bracket)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inches)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inches)
Weight	49 kg (108.0 lb.), without mounting bracket 50 kg (110.2 lb.), with mounting bracket	49 kg (108.0 lb.), without mounting bracket 50 kg (110.2 lb.), with mounting bracket
Operation Temperature Range	-25 °C ~ 60 °C (-13°F ~ 140°F)	-25 °C ~ 60 °C (-13°F ~ 140°F)
Cooling	Natural Convection	Natural Convection
Max. Operating Altitude Without Derating	3,000 m (9,842 ft.)	3,000 m (9,842 ft.)
Relative Humidity	0~100%	0~100%
DC Connector	Amphenol H4	Amphenol H4
AC Connector	Amphenol C16/3	Amphenol C16/3
Protection Rating	IP65	IP65
Topology	Transformerless	Transformerless
Standards Compliance		
Safety	EN/IEC 62109-1, EN/IEC 62109-2	
Grid Code	IEC 61727, IEC 62116, NB/T 32004-2013, VDE-AR-N-4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, C10/11, EN 50438-Ireland, EN 50438-Turkey, AS 4777, PEA (Only 20KTL), MEA (Only 20KTL), NRS 097-2-1	

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Smart String Inverter (SUN2000-33KTL-A)



Smart

- 4 MPPTs for versatile adaptations to different layouts
- 8 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart String I-V Diagnosis supported

Efficient

- Max. efficiency 98.6%, European efficiency 98.4%

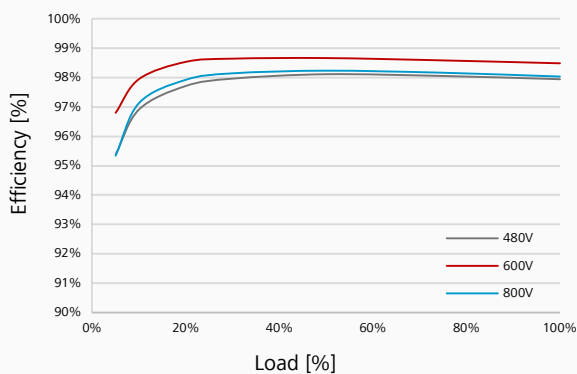
Safe

- DC disconnect integrated, safe and convenient for maintenance
- Type II surge arresters for both DC and AC
- Ground fault protection
- Residual Current Detection (RCD) protection

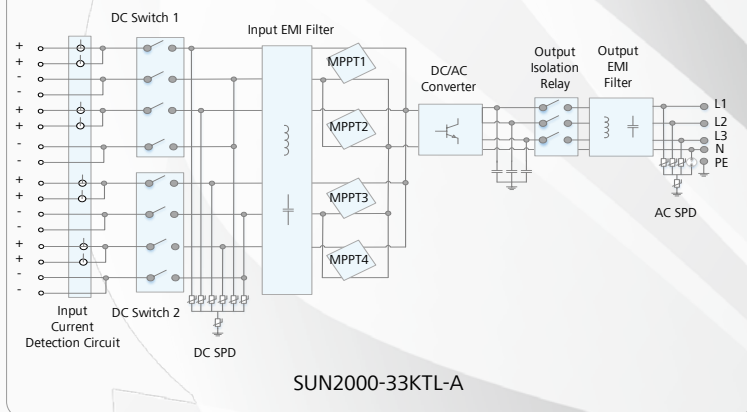
Reliable

- No need for external fans with natural cooling technology
- Protection rating of IP65

Efficiency Curve



Circuit Diagram



Smart String Inverter (SUN2000-33KTL-A)



Technical Specifications	SUN2000-33KTL-A
	Efficiency
Max. Efficiency	98.6%
European Efficiency	98.4%
	Input
Max. DC Usable Power	30,600 W
Max. Input Voltage	1100 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Min. Operating Voltage / Start Input Voltage	200 V / 250 V
Full Power MPPT Voltage Range	480 V ~ 800 V
MPPT Operating Voltage Range	200 V ~ 1000 V
Rated Input Voltage	620 V
Max. Number of Inputs	8
Number of MPP Trackers	4
	Output
Rated AC Active Power	30,000 W
Max. AC Apparent Power	33,000 VA
Max. AC Active Power (cosφ=1)	30,000 W
Rated Output Voltage	230 V / 400 V, default 3W+N+PE;
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. Output Current (@400V)	48 A
Adjustable Power Factor	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	Protection
Input-side Disconnection Device	Yes
Anti-Islanding Protection	Yes
DC Reverse-Polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
Insulation Monitoring	Yes
Residual Current Detection	Yes
	Communication
Display	LED Indicators
USB / Bluetooth +APP	Yes
RS485	Yes
PLC	Yes
	General
Dimensions (W×H×D, with mounting plate)	930 × 550 × 283 mm (36.6 × 21.7 × 11.1 inches)
Weight	60 kg (132.3 lb.), without mounting plate 62 kg (136.7 lb.), with mounting plate
Operation Temperature Range	-25 °C ~ 60 °C (-13 °F ~ 140 °F)
Cooling	Natural Convection
Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof PG Terminal + OT Connector
Protection Rating	IP65
Topology	Transformerless
	Standards Compliance
Safety	EN/IEC 62109-1, EN/IEC 62109-2



Smart String Inverter (SUN2000-36KTL)



Smart

- 4 MPPTs for versatile adaptations to different layouts
- 8 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart String I-V Diagnosis supported

Efficient

- Max. efficiency 98.8%, European efficiency 98.6% (@480Vac)
- Max. efficiency 98.6%, European efficiency 98.4% (@380Vac / 400Vac)

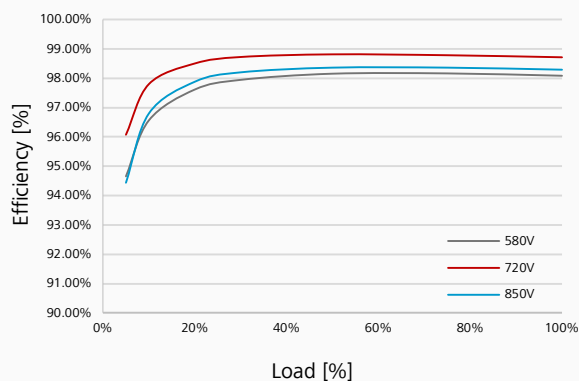
Safe

- DC disconnect integrated, safe and convenient for maintenance
- Type II surge arresters for both DC and AC
- Ground fault protection
- Residual Current Detection (RCD) protection

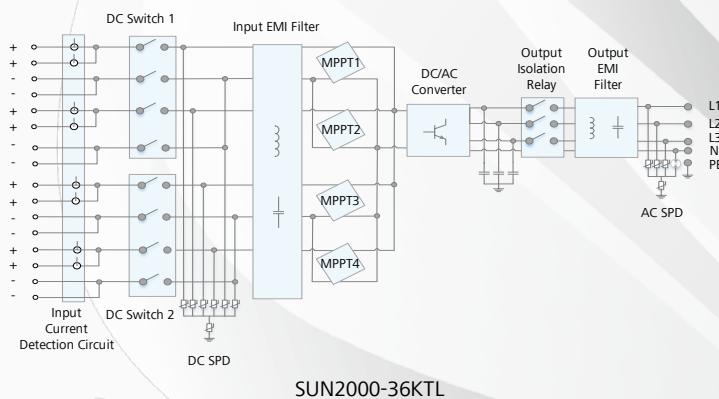
Reliable

- No need for external fans with natural cooling technology
- Protection rating of IP65

Efficiency Curve



Circuit Diagram



Smart String Inverter (SUN2000-36KTL)



Technical Specifications	SUN2000-36KTL
	Efficiency
Max. Efficiency	98.8% @480Vac
European Efficiency	98.6% @380Vac / 400Vac 98.6% @480Vac 98.4% @380Vac / 400Vac
	Input
Max. DC Usable Power	40,800 W
Max. Input Voltage	1,100 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Min. Operating Voltage / Start Input Voltage	200 V / 250 V
Full Power MPPT Voltage Range	480 V ~ 850 V @380Vac / 400Vac 580V~850V @480Vac
MPPT Operating Voltage Range	200 V ~ 1000 V
Rated Input Voltage	620 V @380Vac / 400Vac 720V @480Vac
Max. Number of Inputs	8
Number of MPP Trackers	4
	Output
Rated AC Active Power	36,000 W
Max. AC Apparent Power	40,000 VA
Max. AC Active Power (cosφ=1)	Default 40,000W; 36,000W optional in settings
Rated Output Voltage	220V / 380V, 230V / 400V, default 3W+N+PE; 3W+PE optional in settings 277V/480V, 3W+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. Output Current(@380V/400V/480V)	60.8 A / 57.8 A / 48.2 A
Adjustable Power Factor	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	Protection
Input-side Disconnection Device	Yes
Anti-Islanding Protection	Yes
DC Reverse-Polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
Insulation Monitoring	Yes
Residual Current Detection	Yes
	Communication
Display	LED Indicators
USB / Bluetooth +APP	Yes
RS485	Yes
PLC	Yes
	General
Dimensions (W×H×D, with mounting plate)	930 × 550 × 283 mm (36.6 x 21.7 x 11.1 inches)
Weight	60 kg (132.3 lb.), without mounting plate 62 kg (136.7 lb.), with mounting plate
Operation Temperature Range	-25 °C ~ 60 °C (-13°F ~ 140°F)
Cooling	Natural Convection
Max. Operating Altitude Without Derating	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof PG Terminal + OT Connector
Protection Rating	IP65
Topology	Transformerless
	Standards Compliance
Safety	EN/IEC 62109-1, EN/IEC 62109-2
Grid Code	IEC 61727, IEC62116, VDE-AR-N4105, VDE 0126-1-1, BDEW 2008, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661/2007, RD 1699/2011, RD 413/2014, PO 12.3, EN-50438-Turkey, EN-50438-Ireland, PEA, MEA, Resolution No.7, NRS 097-2-1

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Smart String Inverter (SUN2000-42KTL)



Smart

- 4 MPPTs for versatile adaptations to different layouts
- 8 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart String I-V Diagnosis supported

Efficient

- Max. efficiency 98.8%, European efficiency 98.6%

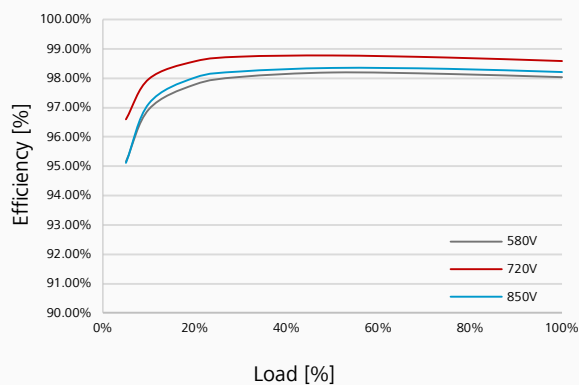
Safe

- DC disconnect integrated, safe and convenient for maintenance
- Type II surge arresters for both DC and AC
- Ground fault protection
- Residual Current Detection (RCD) protection

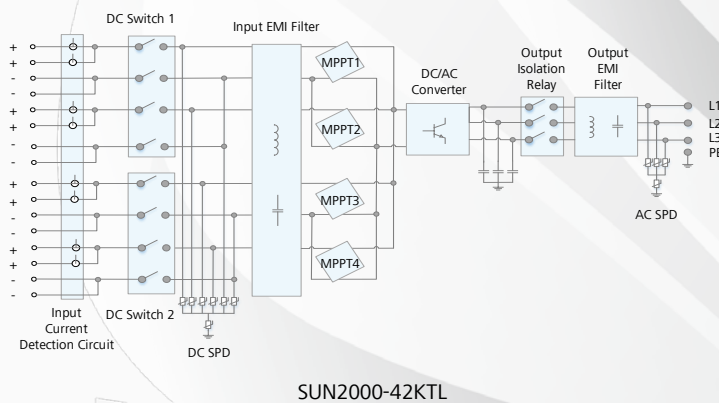
Reliable

- No need for external fans with natural cooling technology
- Protection rating of IP65

Efficiency Curve



Circuit Diagram



Smart String Inverter (SUN2000-42KTL)



Technical Specifications	SUN2000-42KTL
Efficiency	
Max. Efficiency	98.8%
European Efficiency	98.6%
Input	
Max. DC Usable Power	47,900 W
Max. Input Voltage	1,100 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Min. Operating Voltage / Start Input Voltage	200 V / 250 V
Full Power MPPT Voltage Range	580 V ~ 850 V
MPPT Operating Voltage Range	200 V ~ 1000 V
Rated Input Voltage	720 V
Max. Number of Inputs	8
Number of MPP Trackers	4
Output	
Rated AC Active Power	42,000 W
Max. AC Apparent Power	47,000 VA
Max. AC Active Power (cosφ=1)	Default 47,000 W; 42,000W optional in settings
Rated Output Voltage	277V / 480V, 3W+PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. Output Current	56.6 A
Adjustable Power Factor	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
Protection	
Input-side Disconnection Device	Yes
Anti-Islanding Protection	Yes
DC Reverse-Polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
Insulation Monitoring	Yes
Residual Current Detection	Yes
Communication	
Display	LED Indicators
USB / Bluetooth +APP	Yes
RS485	Yes
PLC	Yes
General	
Dimensions (W×H×D, with mounting plate)	930 × 550 × 283 mm (36.6 x 21.7 x 11.1 inches)
Weight	60 kg (132.3 lb.), without mounting plate 62 kg (136.7 lb.), with mounting plate
Operation Temperature Range	-25 °C ~ 60 °C (-13°F ~ 140°F)
Cooling	Natural Convection
Max. Operating Altitude Without Derating	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof PG Terminal + OT Connector
Protection Rating	IP65
Topology	Transformerless
Standards Compliance	
Safety	EN/IEC 62109-1, EN/IEC 62109-2
Grid Code	IEC 61727, IEC62116, VDE-AR-N4105, VDE 0126-1-1, BDEW 2008, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661/2007, RD 1699/2011, RD 413/2014, PO 12.3, EN-50438-Turkey, EN-50438-Ireland, PEA, Resolution No.7, NRS 097-2-1



Smart String Inverter (SUN2000-60KTL-HV-D1-001)



Smart

- 4 MPPTs for versatile adaptations to different layouts
- 8 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart String I-V Diagnosis supported

Safe

- DC disconnect integrated, safe and convenient for maintenance
- Type II surge arresters for both DC and AC
- Ground fault protection
- Residual Current Detection (RCD) protection

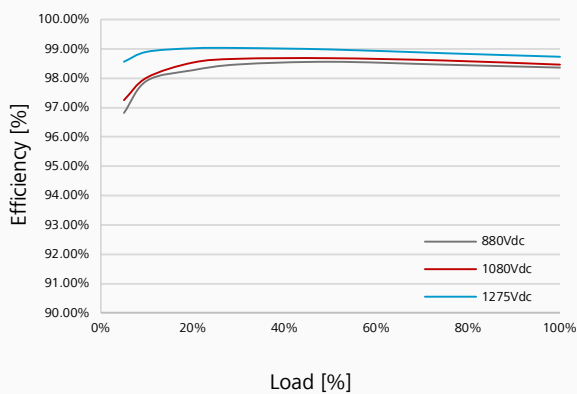
Efficient

- Max. efficiency 99.0%, European efficiency 98.8%
- 800V output voltage and decrease 75% AC wire loss versus 400V
- Without N Line and save more AC cable

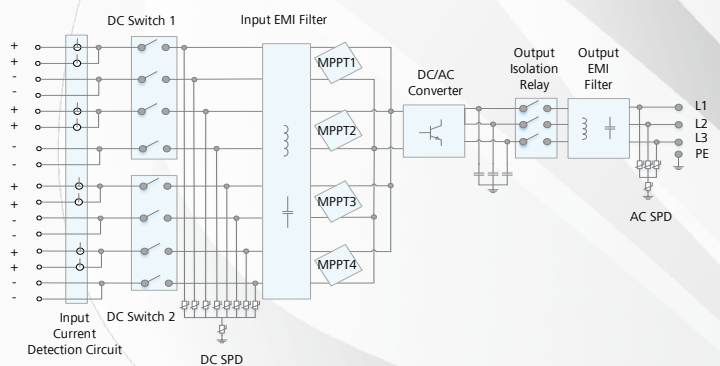
Reliable

- No need for external fans with natural cooling technology
- Protection rating of IP65

Efficiency Curve



Circuit Diagram



SUN2000-60KTL-HV-D1-001



Smart String Inverter (SUN2000-60KTL-HV-D1-001)



Technical Specifications	SUN2000-60KTL-HV-D1-001
	Efficiency
Max. Efficiency	99.0%
European Efficiency	98.8%
	Input
Max. DC Usable Power	67,300 W
Max. Input Voltage	1,500 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Min. Operating Voltage / Start Input Voltage	600V / 650V
MPPT Operating Voltage Range	600 V ~ 1,450 V
Rated Input Voltage	1,080 V
Max. Number of Inputs	8
Number of MPP Trackers	4
	Output
Rated AC Active Power	60,000 W
Max. AC Apparent Power	66,000 VA
Max. AC Active Power (cosφ=1)	66,000 W
Rated Output Voltage	800V, 3W+PE
Rated Output Current	43.3 A
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. Output Current	48 A
Adjustable Power Factor	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	Protection
Input-side Disconnection Device	Yes
Anti-Islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-Polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
Insulation Monitoring	Yes
Residual Current Detection	Yes
	Communication
Display	LED Indicators
RS485	Yes
USB / Bluetooth + APP	Yes
Power Line Communication (PLC)	Yes
	General
Dimensions (W×H×D)	930 × 600 × 270 mm (36.6×23.6×10.6 inches)
Weight	62 kg (136.7 lb.)
Operation Temperature Range	-25 °C ~ 60 °C (-13°F ~ +140°F)
Cooling	Natural Convection
Max. Operating Altitude Without Derating	4,000 m (13,123 ft)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol UTX
AC Connector	Waterproof PG Terminal + OT Connector
Protection Rating	IP65
Topology	Transformerless

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SmartACU2000A (Smart Array Controller Unit)

is a powerful integration of PV array communication and other smart functions.

Smart

- SmartLogger2000 built-in
- Multiple communication interfaces including PLC, RS485, Fast Ethernet, and SFP ports, flexible applications

Simple

- Integrated communication unit with multiple functions built-in
- Easy installation with SmartLogger2000 pre-assembled inside the cabinet

Reliable

- Industrial application and carrier-class reliability

Specifications	SmartACU2000A
	Configuration
SmartLogger	SmartLogger2000
PLC	Integrated
	Environment
Operating Temperature	-40°C ~ +60°C (-40 °F ~ +140 °F)
Relative Humidity (Non-Condensing)	5% ~ 95%
Max. Operating Altitude	4,000m (13,123 ft.)
	Electrical
Max. Input AC Power	70 W
Input AC Voltage for Cabinet	100V ~ 240V, W + N + PE
Input AC Voltage for PLC	380V ~ 400V, 480V ~ 500V
Input AC Frequency	50/60 Hz
	Mechanical
Cable Entries	Bottom in & out
Maintenance	Front
Dimensions (W/H/D)	550mm × 650mm × 280mm (1.8 × 2.1 × 0.9 ft.)
Weight	27 kg (59.5 lb.)
Protection Rating	IP65
Installation Options	Wall-Mounted, Rack-Mounted





With Anti-PID



Without Anti-PID

SmartACU2000B (Smart Array Controller Unit)

is a powerful integration of PV array communication and other smart functions. What's more, it supports 1000V / 1100V / 1500V DC system perfectly.

Smart

- SmartLogger2000 built-in
- Smart Anti-PID2000 module built-in (optional)
- Multiple communication interfaces including PLC, RS485, Fast Ethernet, and SFP ports, flexible applications

Simple

- Integrated communication unit with multiple functions built-in
- Easy installation with SmartLogger2000 & Smart Anti-PID2000 module pre-assembled inside the cabinet

Reliable

- Industrial application and carrier-class reliability

Specifications	SmartACU2000B With Anti-PID	SmartACU2000B Without Anti-PID
	Configuration	
SmartLogger	SmartLogger2000	
RS485	Integrated	
PLC	Integrated	
Smart Anti-PID2000 Module	Integrated	/
	Environment	
Operating Temperature	-40°C ~ +60°C (-40 °F ~ +140 °F)	
Relative Humidity	5% ~ 95%	
Max. Operating Altitude	4,000m (13,123 ft.)	
	General	
Input AC Voltage for Cabinet	100V ~ 240V, L/N+ PE	
Input AC Voltage for PID	380V/400V/480V/500V/600V/800V, 3Ph+FE (Functional Earth)	
Input AC Voltage for PLC	380V/400V/480V/500V/600V/800V, 3Ph	
Input AC Frequency	50/60 Hz	
Cable Entries	Bottom in & out	
Maintenance	Front	
Dimensions (W/H/D)	880mm × 770mm × 369mm (2.89 × 2.52 × 1.21 ft.)	640mm × 770mm × 315mm (2.09 × 2.52 × 1.03 ft.)
Weight	32kg (70.55lb) /47kg (103.62lb) /59kg (130.07lb) ^[1]	
Protection Rating	IP65 ^[2]	
Installation Options	Wall Mounting, Rack Mounting, Pole Mounting	

[1] The weight is the cabinet weight in standard configuration of cabinet mechanical parts, preinstalled components and cables, excluding the brackets.

[2] Electronic equipment like SmartLogger, PLC CCO, etc. are installed in the right cabinet (IP65). Smart Anti-PID2000 module(s) with the protection rating of IP65 is/are installed in the left additional protective case.





Smart

- Functioning as communication manager, data logger, PLC master and Ethernet switch
- Multiple communication interfaces including PLC, RS485, Fast Ethernet, and SFP ports, flexible applications
- Up to 200 devices supported, including up to 150 Smart Inverters
- STP and RSTP supported for multi-ring Ethernet network and ring protection
- Bluetooth, embedded WEB and USB supported, user-friendly
- Smart String I-V Diagnosis supported
- Fast and reliable active and reactive power compensation control

Simple

- An integration of data collection, protocol conversion and Ethernet switch

Reliable

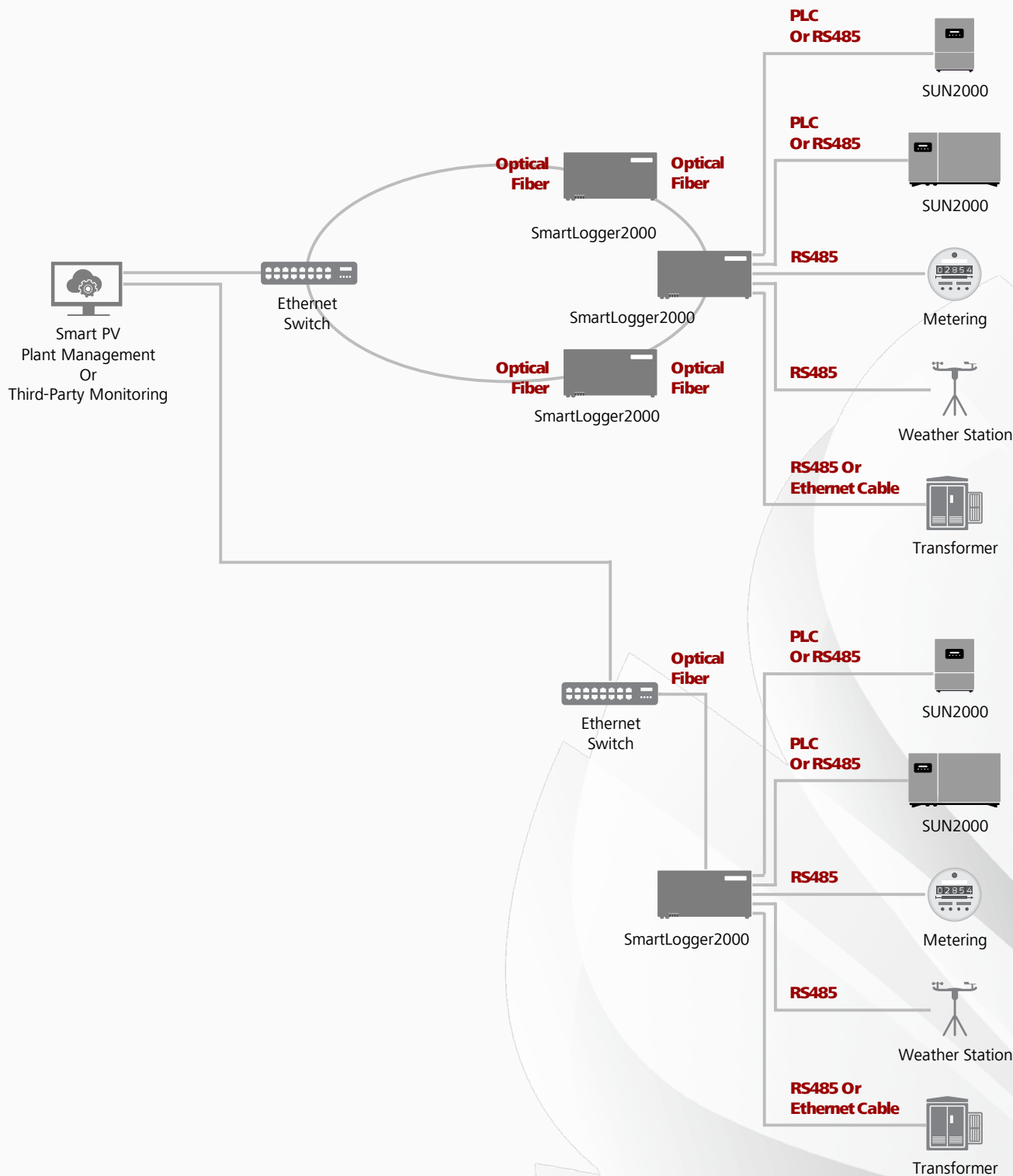
- Industrial application and carrier-class reliability

Technical Specifications	SmartLogger2000
	Device Management
Max. Number of Manageable Devices	200
Max. Number of Manageable Smart Inverters	150
	Communication Interface
Electrical Ethernet	ETH × 2, 10 / 100 Mbps
Optical Ethernet (optional)	SFP × 2, 100 Mbps
RS485	COM × 6, 4800 / 9600 / 19200 bps
PLC	PLC × 1, 115.2 kbps
Digital / Analog Input / Output	DI × 8, DO × 3, AI × 7, AO × 4, PT100/1000*2
	Communication Protocol
Ethernet	ModBus-TCP, IEC 60870-5-104
RS485	MODBUS-RTU, IEC 60870-5-101/103
	Interaction
LED	LED Indicator × 4
WEB	Embedded WEB
Bluetooth	SUN2000 App
USB	USB2.0 × 1
	Environment
Operating Temperature	-40°C ~ +60°C (-40 °F ~ +140 °F)
Storage Temperature	-40°C ~ +85°C (-40 °F ~ +185 °F)
Relative Humidity (Non-Condensing)	5% ~ 95%
Operating Altitude	0 ~ 4,000m (0 ~ 13,123 ft.)
	Electrical
Power Supply	100 Vac ~ 240 Vac , 50Hz / 60Hz
Power Consumption	Min. 8W, Max. 15W
	Mechanical
Dimensions (W/H/D)	350mm × 170mm × 44mm (13.8 × 6.7 × 1.7 inches)
Weight	3.8 kg (8.4 lb.)
Protection Rating	IP20
Installation Options	Wall-Mounted, Rail-Mounted, Integrated Inside Huawei Smart Array Controller (SACU)



Network Applications

I Multi-Ring Ethernet Network + PLC or RS485



II Star Ethernet Network + PLC or RS485



Smart Anti-PID2000 Module



Smart Anti-PID2000 Module is installed in the SmartACU2000B cabinet to reduce the negative effect of the Potential Induced Degradation (PID), and it supports 1000V / 1100V / 1500V DC System.

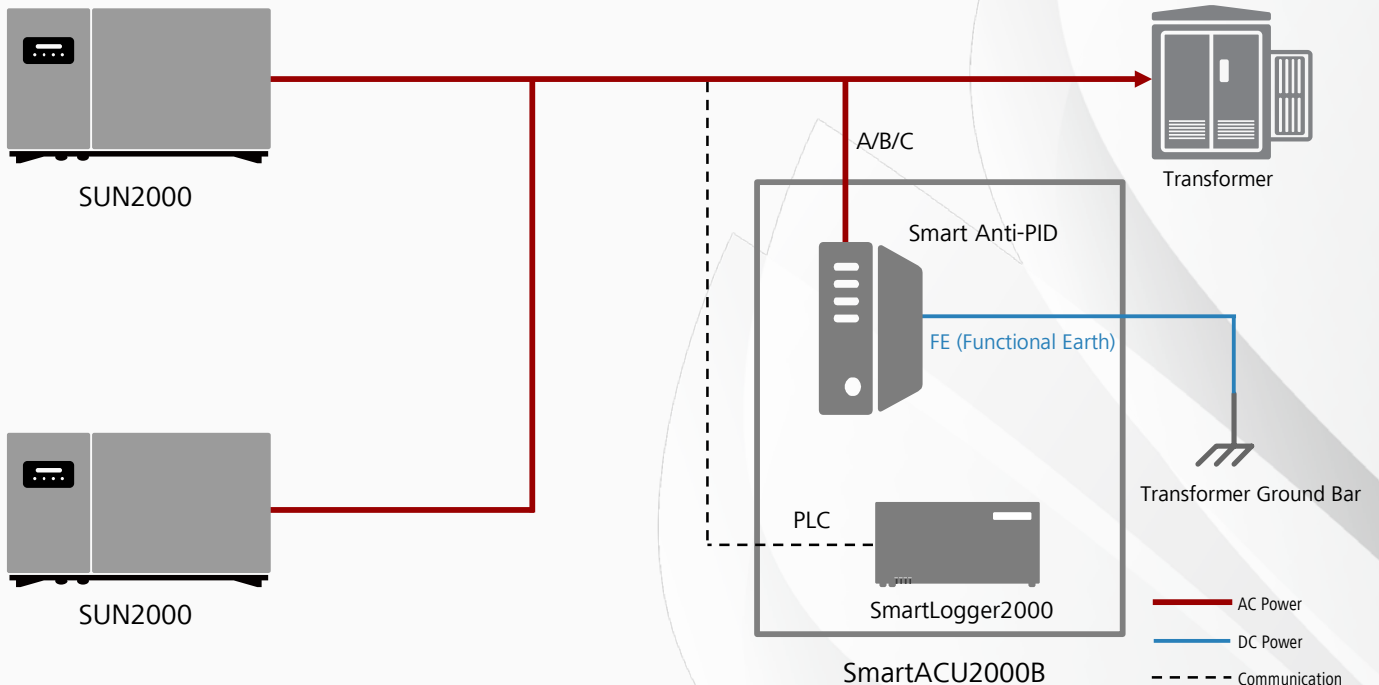
Smart

- Automatically set the compensation mode according to the type of PV module, take the PV system isolation and inverters status into consideration, adjust compensation voltage safely
- Get information of the Anti-PID module and O&M by mobile APPs

Safe

- Guarantee human safety by highly accurate Residual Current Detection (RCD) protection
- Protection rating of IP65

Smart Anti-PID2000 Solution



Notes:

1. The Smart Anti-PID2000 solution could be deployed in installations which are normally connected to the grid with transformer and running WITHOUT neutral line.
2. The Smart Anti-PID2000 module must work with Huawei SmartLoggers and Huawei inverters.





Smart

- MODBUS-TCP for connections to Huawei NetEco
- IEC60870-5-104 for connections to third-party monitoring systems
- USB and embedded web for data reading and software upgrade
- Automatically detecting facilities and mapping RS485 addresses
- Remote control of active & reactive power

Simple

- Up to 80 inverters per SmartLogger1000
- Up to 30 devices per RS485 bus
- Easy to install on walls, tabletops and rails

Stable

- Max. reliable communication range of 1,000m

Technical Specifications	SmartLogger1000
	Device Management
Max. Number of Manageable Devices	80
Max. Number of Manageable Smart Inverters	80
	Communication Interface
Electrical Ethernet	ETH × 1, 10 / 100 Mbps
RS485	COM × 3, 4800 / 9600 / 19200 bps
Digital / Analog Input / Output	DI × 4, DO × 3, AI × 2
	Communication Protocol
Ethernet	ModBus-TCP, IEC 60870-5-104
RS485	MODBUS-RTU, IEC 60870-5-101/103
	Interaction
LCD	3.5inch Graphic LCD
LED	LED Indicator × 3
WEB	Embedded WEB
Bluetooth	SUN2000 App
USB	USB2.0 × 1
	Environment
Operating Temperature	-20°C ~ +60°C (-4 °F ~ +140 °F)
Storage Temperature	-40°C ~ +85°C (-40 °F ~ +185 °F)
Relative Humidity (Non-Condensing)	5% ~ 95%
	Electrical
Power Supply	90 Vac ~ 264 Vac , 50Hz / 60Hz
Power Consumption	Min. 3W, Max. 7W
	Mechanical
Dimensions (W/H/D)	225 × 140 × 50 mm (8.9×5.5 × 2.0 inch)
Protection Grade	IP20
Installation Options	Wall-Mounted, Rail-Mounted, Tabletop-Mounted





Smart

- Easy data accesses on mobile devices
- Proactive reports of yields and alarms
- Smart String I-V Diagnosis supported

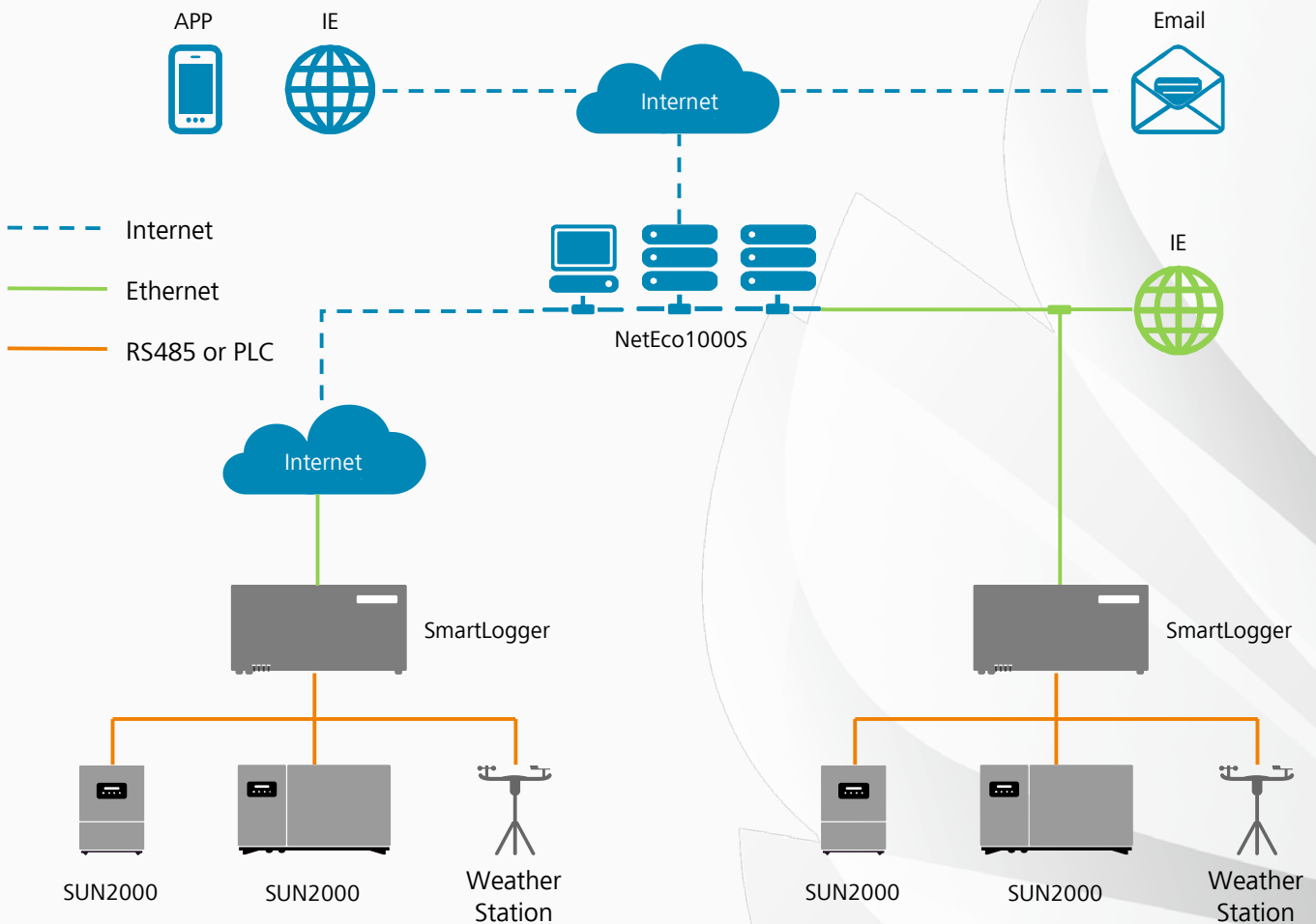
Simple

- One-click installation on PC
- Fault alarms via SMS and E-mail

Stable

- Hierarchical management
- Up to 25 years data storage in CSV file format

Network Structure



Smart PV Management System

FusionSolar Cloud Management Center



FusionSolar Plant Management System



Increasing Yields

- Actively increasing yields through PR analysis
- Quick fault clearance, reducing yield losses
- Remote and centralized maintenance, reducing costs

Assisting Decisions

- Decisions on investment plans
- Decisions on equipment choices
- Evaluations on team KPIs

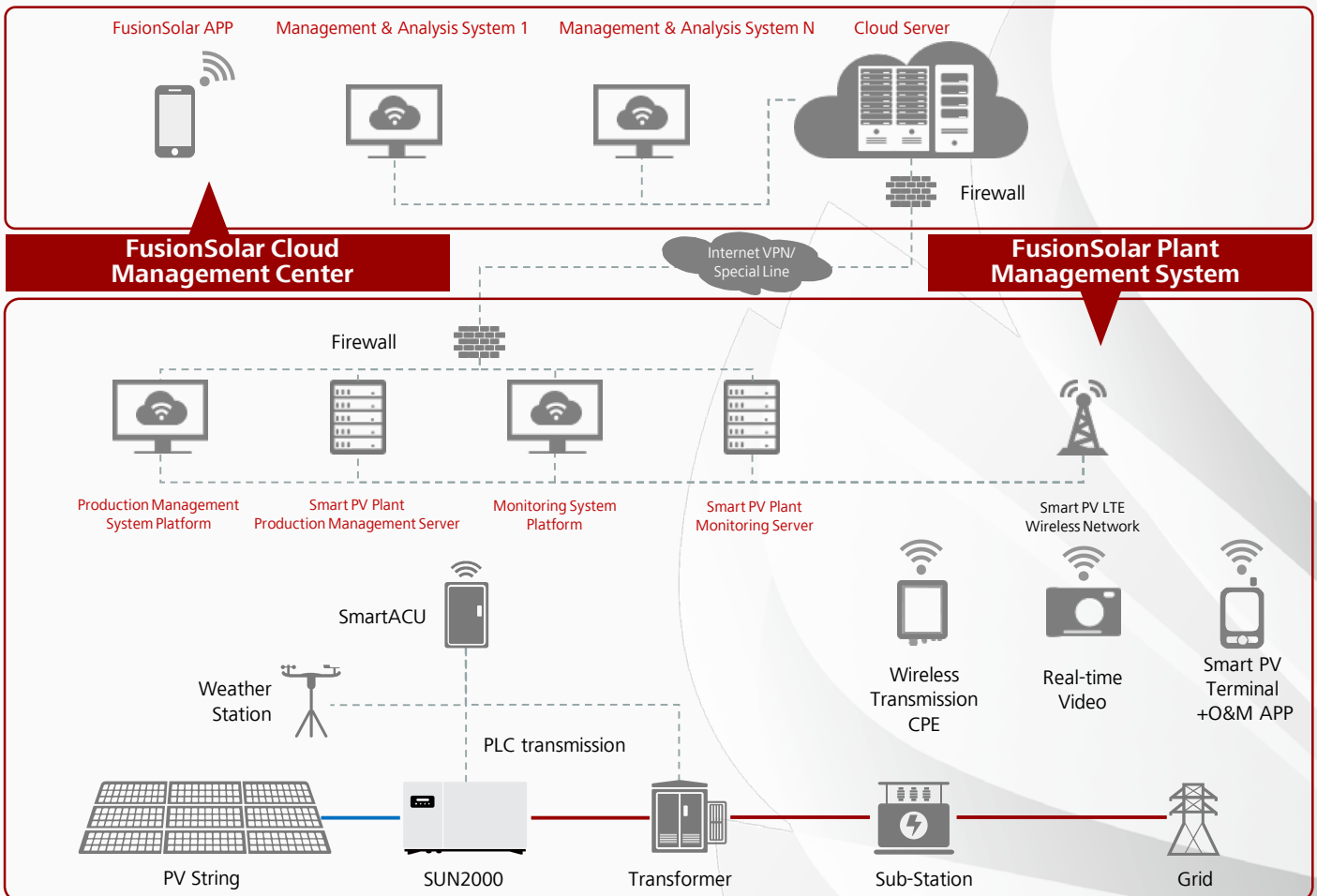
Assuring Safety

- Assuring safe and traceable operations
- Providing reliable data and information
- Assuring full-lifecycle safety of assets

Promoting Financing

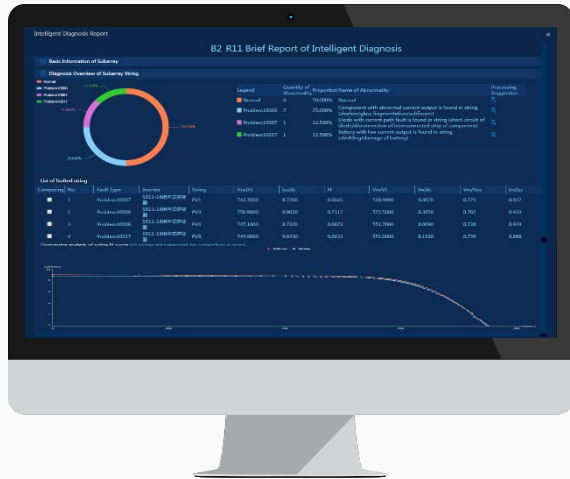
- Credible and reliable financial analyses
- Direct display to investors in multiple ways

Network Structure



Smart I-V Curve Diagnosis

Smart I-V Curve Diagnosis is based on string I-V curve pattern analysis with advanced diagnosis algorithm, conducting PV plant complete string I-V curve analysis. The online scanning and analysis can help in achieving higher O&M efficiency, proactive maintenance and lower operation cost.

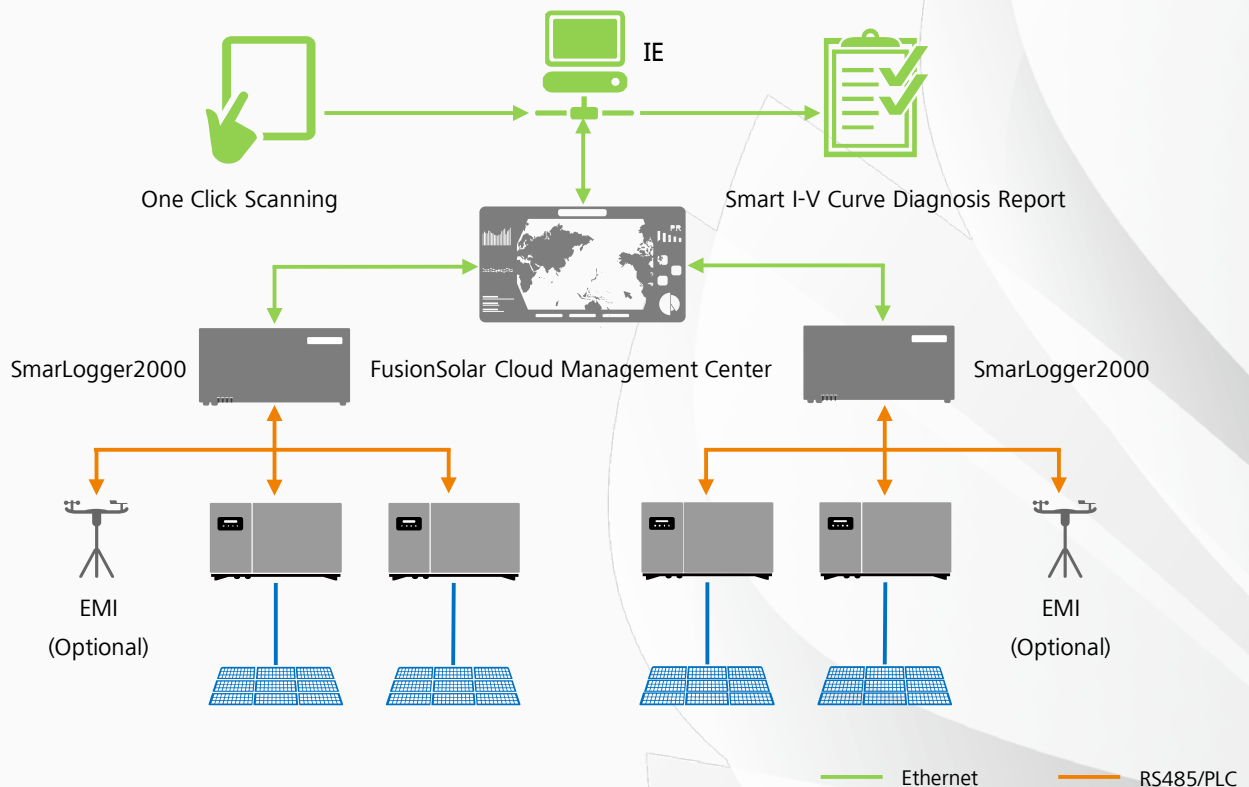


Smart

- Supports plant-level, array-level or inverter-level I-V curve analysis and Diagnosis
- Identifies different module faults with automatic report generation

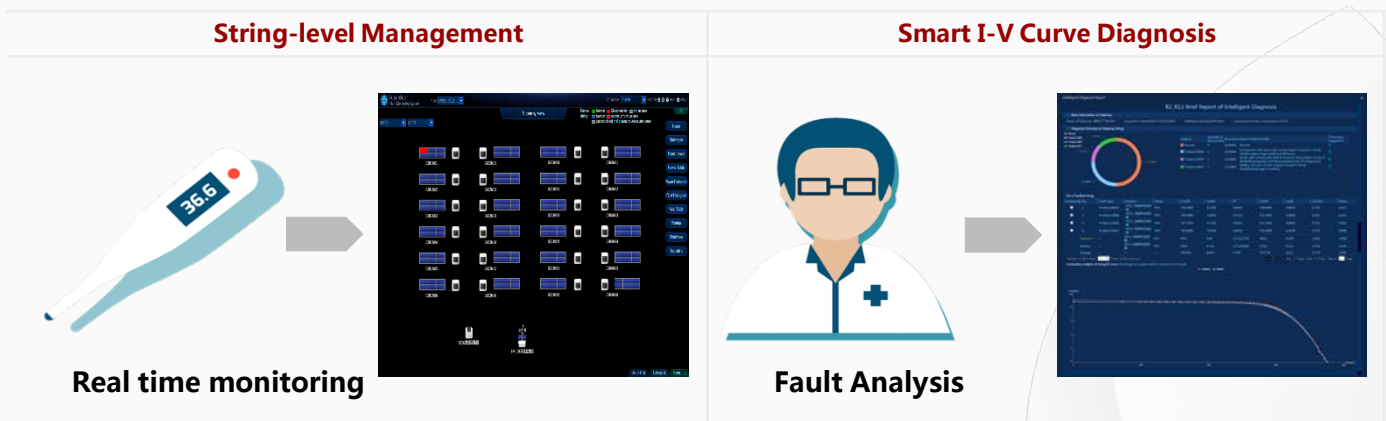
Efficient

- One click scanning without onsite experts or equipment
- Online I-V curve scanning on entire strings
- Automatic report generation within 10~15min

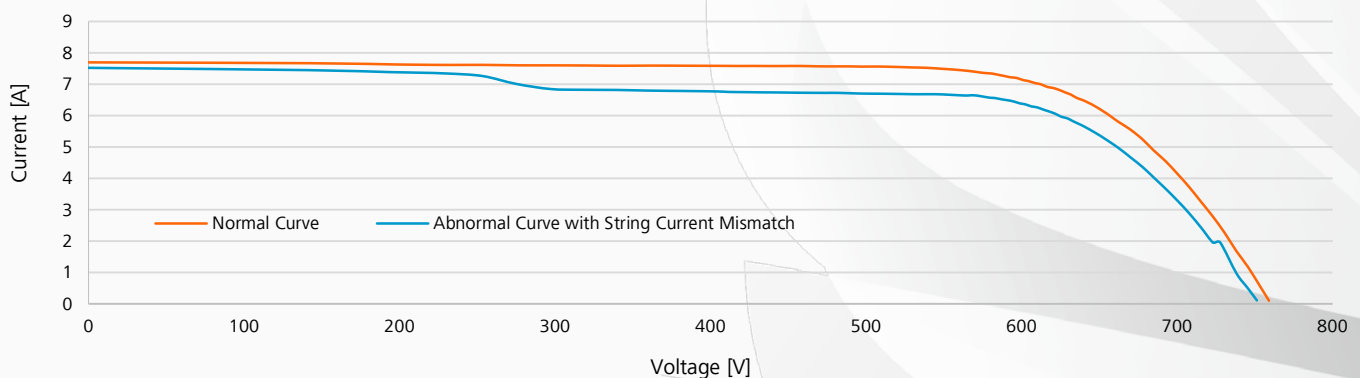
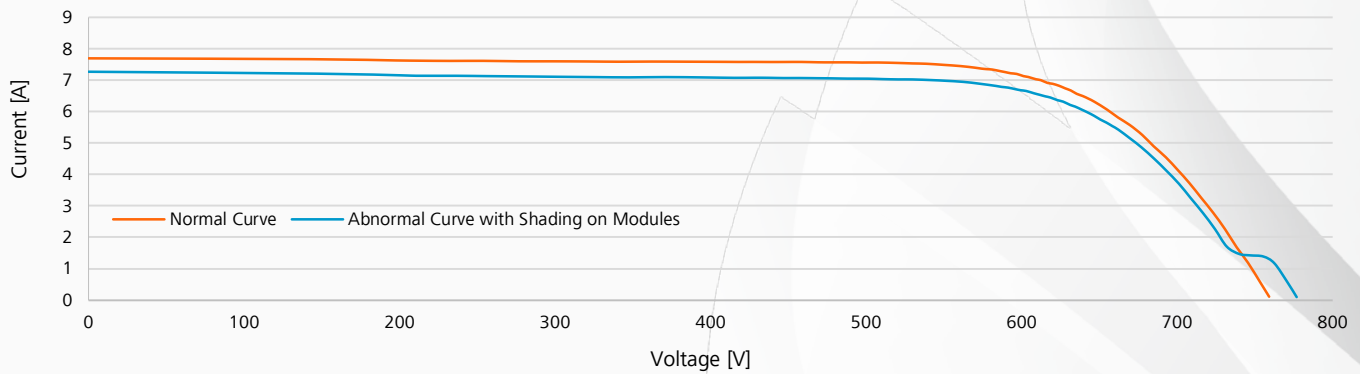


Smart I-V Curve Diagnosis

Technical Specification	Smart I-V Curve Diagnosis
	Configuration
Smart String Inverter	SUN2000-36KTL/42KTL/60KTL-HV-D1-001
Data Logger	SmartLogger2000, SmartLogger1000
Management System	FusionSolar Cloud Management Center, NetEco1000s
	Performance
Scanning Time	< 1s
Sampling Points per I-V Curve	128
Voltage Accuracy	0.5%rdg. + 1dgt. (rdg.>5, dgt.=0.3)
Current Accuracy	0.5%rdg. + 2dgt. (rdg.>0.3, dgt.=0.006)
	TÜVRheinland® Smart I-V Curve Diagnosis is TÜV Verified



String I-V Curve Cases



FusionSolar Smart PV Solution References



- Largest Single Site Worldwide, 1GW, Yanchi, Ningxia, China



- Largest Tracking System PV Plant Worldwide, 700MW, Hongdunzi, Ningxia, China



- Largest Rooftop-Mounted Solar Plant Worldwide, 300MW, Haining, Zhejiang, China

Always Available for Highest Yields

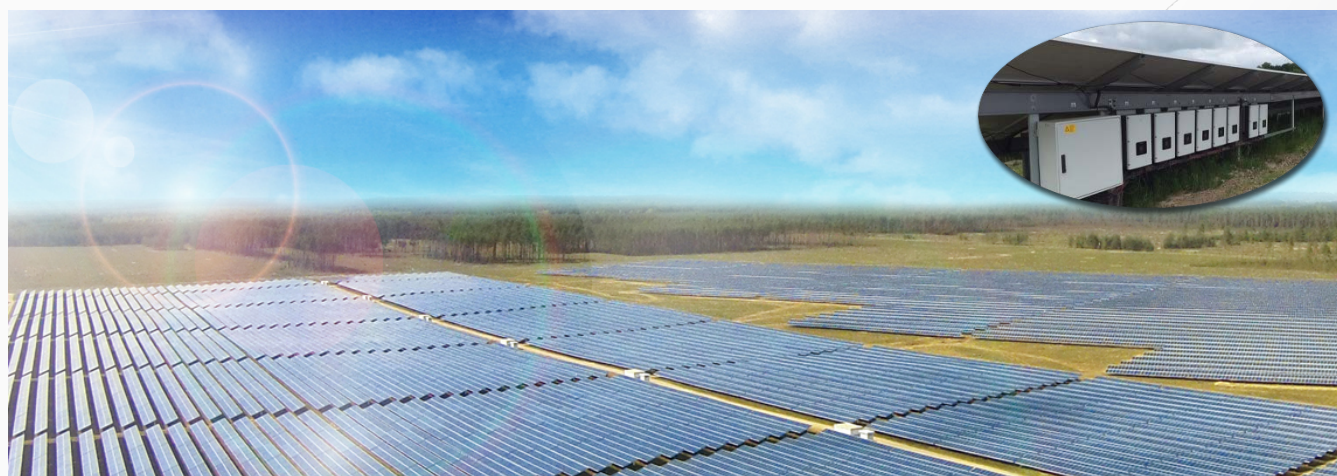


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FusionSolar Smart PV Solution References



- **Ground-Mounted Smart PV Plant, 20MW, Trowbridge, Wiltshire, UK**



- **Ground-Mounted Smart PV Plant, 10MW, Krempendorf, Germany**



- **Mountain-Mounted Smart PV Plant, 6MW, Corum, Turkey**

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FusionSolar Smart PV Solution References



- **Ground-Mounted Smart PV Plant, 66MW, Monte Plata, Dominican Republic**



- **Seashore Smart PV Plant, 2MW, Miyako-jima, Japan**



- **Ground-Mounted Smart PV Plant, 30MW, Khao Yoi, Thailand**

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