HUAWEI

FusionSolar
Smart PV Solution

About Huawei

Huawei is a leading global information and communications technology (ICT) solutions provider. We provide telecom carriers, enterprises, and consumers with competitive ICT solutions, products, and services. We work in more than 170 countries and regions, serving over one-third of the world's population. Among our 180,000 employees, there are more than 160 different nationalities with a localization rate of almost 70%. Huawei's vision and mission is to bring digital to every person, home and organization for a fully connected, intelligent world. We maintained our strategic focus, intensified efforts in improving operations quality, and created value for our customers. Our 2017 annual revenue was 92.549 billion USD.

Smart String Inverter

SUN2000-8/12KTL

Smart

- 4 strings intelligent monitoring and fast trouble-shooting
- RS485 and USB ports for communication and data management
- Local graphic LCD display and remote monitoring

Efficient

- Max. efficiency 98.5%
- European efficiency 98.0%
- 2 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

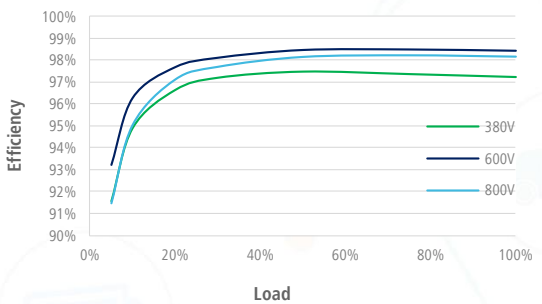
Reliable

- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

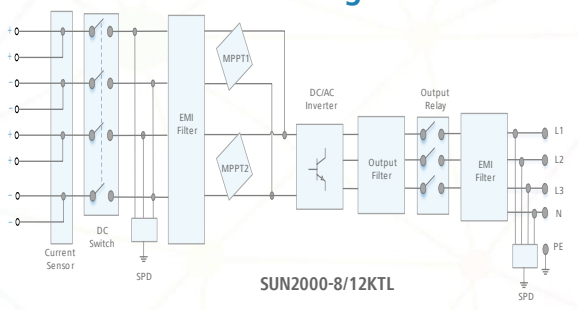
Smart String Inverter (SUN2000-8/12KTL)

Technical Specifications	SUN2000-8KTL	SUN2000-12KTL
Efficiency		
Max. Efficiency	98.5%	98.5%
European Efficiency	98.0%	98.0%
Input		
Max. 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
Start Voltage	250 V	250 V
MPPT Operating Voltage Range	200 V ~ 950 V	200 V ~ 950 V
Rated Input Voltage	620 V	620 V
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	220 V / 380 V, 230 V / 400 V, 3W + N + PE	220 V / 380 V, 230 V / 400 V, 3W + N + PE
Rated AC Grid Frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Rated Output Current	12.2 A @380 V / 11.6 A @400 V	18.3 A @380 V / 17.4 A @400 V
Max. Output Current	13.4 A	20 A
Adjustable Power Factor Range	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
DC Insulation Resistance Detection	Yes	Yes
Residual Current Monitoring Unit	Yes	Yes
Communication		
Display	Graphic LCD	Graphic LCD
RS485	Yes	Yes
USB	Yes	Yes
General		
Dimensions (W x H x D)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inch)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inch)
Weight (with mounting plate)	42 kg (92.6 lb.)	42 kg (92.6 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Natural Convection	Natural Convection
Max. Operating Altitude	3,000 m (9,842 ft.)	3,000 m (9,842 ft.)
Relative Humidity	0 ~ 100%	0 ~ 100%
DC Connector	Amphenol Helios H4	Amphenol Helios H4
AC Connector	Amphenol C16 / 3	Amphenol C16 / 3
Protection Degree	IP65	IP65
Topology	Transformerless	Transformerless
Standard Compliance *(more available upon request)*		
Certificate	EN 62109-1/-2, IEC 62109-1/-2, IEC62116	
Grid Code	ABNT, IEC 61727, NB/T 32004-2013, VDE-AR-N-4105, VDE 0126-1-1, 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	

Efficiency Curve



Circuit Diagram



SUN2000-8/12KTL

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Smart String Inverter

SUN2000-17/20KTL

Smart

- 6 strings intelligent monitoring and fast trouble-shooting
- RS485 and USB ports for communication and data management
- Local graphic LCD display and remote monitoring

Efficient

- Max. efficiency 98.6%
- European efficiency 98.3%
- 3 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

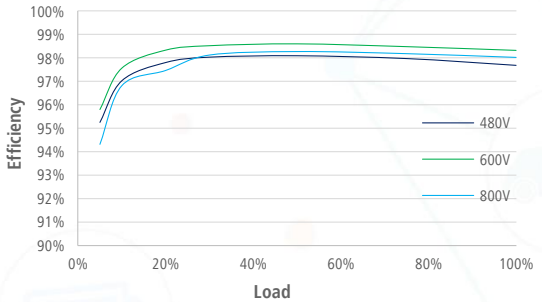
Reliable

- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

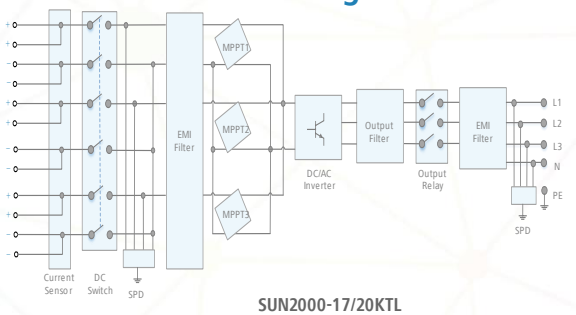
Smart String Inverter (SUN2000-17/20KTL)

Technical Specifications	SUN2000-17KTL	SUN2000-20KTL
Efficiency		
Max. Efficiency	98.6%	98.6%
European Efficiency	98.3%	98.3%
Input		
Max. 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
Start Voltage	250 V	250 V
MPPT Operating Voltage Range	200 V ~ 950 V	200 V ~ 950 V
Rated Input Voltage	620 V	620 V
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	220 V / 380 V, 230 V / 400 V, 3W + N + PE	220 V / 380 V, 230 V / 400 V, 3W + N + PE
Rated AC Grid Frequency	50 Hz / 60 Hz	50 Hz / 60 Hz
Rated Output Current	25.8 A @380 V, 24.7 A @400 V	30.4 A @380 V, 29 A @400 V
Max. Output Current	28.5 A	33.5 A
Adjustable Power Factor Range	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
DC Insulation Resistance Detection	Yes	Yes
Residual Current Monitoring Unit	Yes	Yes
Communication		
Display	Graphic LCD	Graphic LCD
RS485	Yes	Yes
USB	Yes	Yes
General		
Dimensions (W x H x D)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inch)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inch)
Weight (with mounting plate)	50 kg (110.2 lb.)	50 kg (110.2 lb.)
Operating Temperature Range	-25 °C ~ 60 °C (-13°F ~ 140°F)	-25 °C ~ 60 °C (-13°F ~ 140°F)
Cooling Method	Natural Convection	Natural Convection
Max. Operating Altitude	3,000 m (9,842 ft.)	3,000 m (9,842 ft.)
Relative Humidity	0 ~ 100%	0 ~ 100%
DC Connector	Amphenol Helios H4	Amphenol Helios H4
AC Connector	Amphenol C16/3	Amphenol C16/3
Protection Degree	IP65	IP65
Topology	Transformerless	Transformerless
Standard Compliance *(more available upon request)*		
Certificate	EN 62109-1/-2, IEC 62109-1/-2, IEC62116	
Grid Code	ABNT, IEC 61727, NB/T 32004-2013, VDE-AR-N-4105, VDE 0126-1-1, 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	

Efficiency Curve



Circuit Diagram



SUN2000-17/20KTL

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Smart String Inverter

SUN2000-36KTL

Smart

- 8 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart I-V Curve Diagnosis supported

Efficient

- Max. efficiency 98.6%
- European efficiency 98.4%
- 4 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

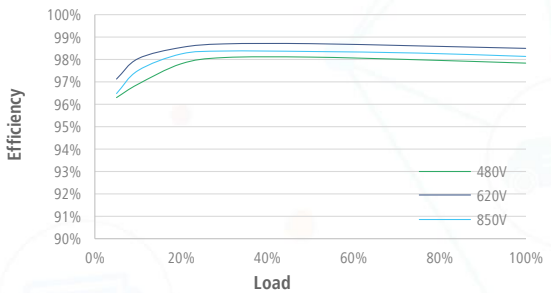
Reliable

- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

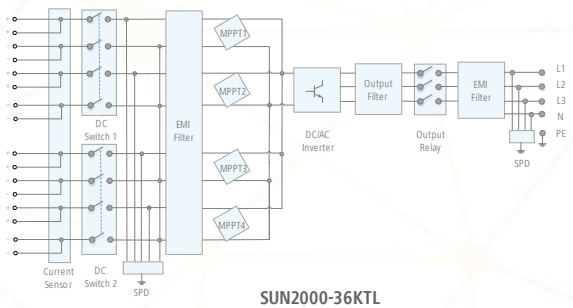
Smart String Inverter (SUN2000-36KTL)

Technical Specifications	SUN2000-36KTL
	Efficiency
Max. Efficiency	98.6%
European Efficiency	98.4%
	Input
Max. Input Voltage	1,100 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Start Voltage	250 V
MPPT Operating Voltage Range	200 V ~ 1,000 V
Rated Input Voltage	620 V
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 40,000 W; 36,000 W optional in settings
Rated Output Voltage	220 V / 380 V, 230 V / 400 V, default 3W + N + PE; 3W + PE optional in settings
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	54.6 A @380 V, 52.2 A @400 V
Max. Output Current	60.8 A @380 V, 57.8 A @400 V
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	Protection
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
	Communication
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	General
Dimensions (W x H x D)	930 x 550 x 283 mm (36.6 x 21.7 x 11.1 inch)
Weight (with mounting plate)	62 kg (136.7 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Natural Convection
Max. Operating Altitude	4,000 m (13.123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof PG Terminal + OT Connector
Protection Degree	IP65
Topology	Transformerless
	Standard Compliance *(more available upon request)*
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code	IEC 61727, VDE-AR-N4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, P.O. 12.3, RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, MEA, Resolution No.7, NRS 097-2-1, AS/NZS 4777.2, ABNT NBR 16149, ABNT NBR 16150, ABNT NBR IEC 62116

Efficiency Curve



Circuit Diagram



SUN2000-36KTL

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Smart String Inverter

SUN2000-60KTL-M0

Smart

- 12 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart I-V Curve Diagnosis supported

Efficient

- Max. efficiency 98.7%
- European efficiency 98.5%
- 6 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

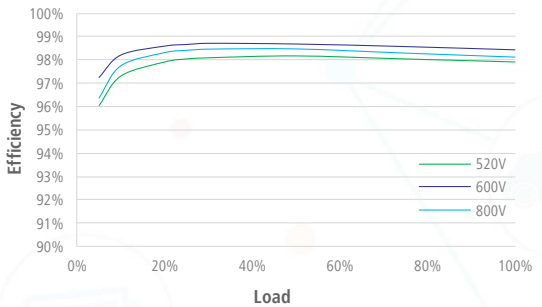
Reliable

- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

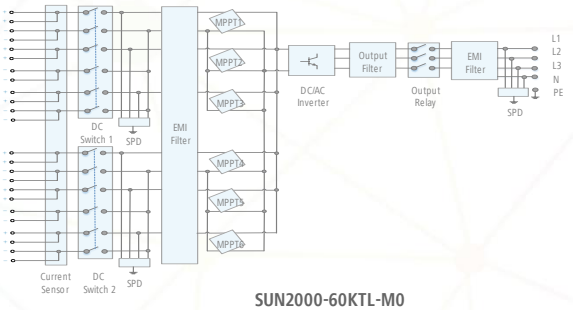
Smart String Inverter (SUN2000-60KTL-M0)

Technical Specifications	SUN2000-60KTL-M0
	Efficiency
Max. Efficiency	98.7%
European Efficiency	98.5%
	Input
Max. Input Voltage	1,100 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Start Voltage	200 V
MPPT Operating Voltage Range	200 V ~ 1,000 V
Rated Input Voltage	600 V
Number of Inputs	12
Number of MPP Trackers	6
	Output
Rated AC Active Power	60,000 W
Max. AC Apparent Power	66,000 VA
Max. AC Active Power (cosϕ=1)	66,000 W
Rated Output Voltage	220 V / 380 V, 230 V / 400 V, default 3W + N + PE; 3W + PE optional in settings
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	91.2 A @380 V, 86.7 A @400 V
Max. Output Current	100 A @380 V, 95.3 A @400 V
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	Protection
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
	Communication
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	General
Dimensions (W x H x D)	1,075 x 555 x 300 mm (42.3 x 21.9 x 11.8 inch)
Weight (with mounting plate)	74 kg (163.1 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Natural Convection
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof PG Terminal + OT Connector
Protection Degree	IP65
Topology	Transformerless
	Standard Compliance *(more available upon request)*
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code	IEC 61727, VDE-AR-N4105, VDE 0126-1-1, G59/3, MEA, PEA, AS/NZS 4777.2, ABNT NBR 16149, ABNT NBR 16150, ABNT NBR IEC 62116

Efficiency Curve



Circuit Diagram



SUN2000-60KTL-M0

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Smart String Inverter

SUN2000-65KTL-M0

Smart

- 12 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart I-V Curve Diagnosis supported

Efficient

- Max. efficiency 98.9%
- European efficiency 98.7%
- 6 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

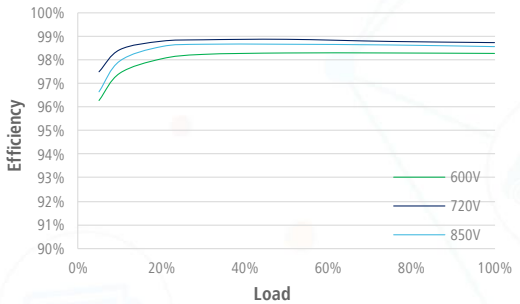
Reliable

- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

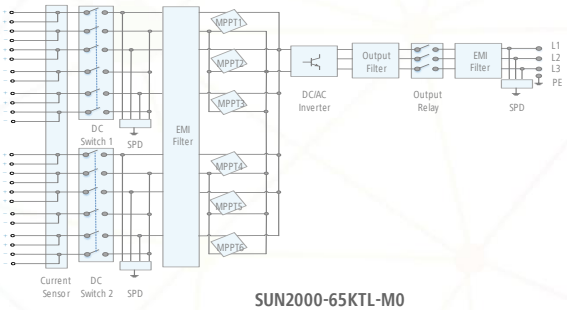
Smart String Inverter (SUN2000-65KTL-M0)

Technical Specifications	SUN2000-65KTL-M0
Efficiency	
Max. Efficiency	98.9%
European Efficiency	98.7%
Input	
Max. Input Voltage	1,100 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Start Voltage	200 V
MPPT Operating Voltage Range	200 V ~ 1,000 V
Rated Input Voltage	720 V
Number of Inputs	12
Number of MPP Trackers	6
Output	
AC Active Power	65,000 W @50°C, 70,000 W @45°C, 72,000 W @40°C
Max. AC Apparent Power	72,000 VA
Max. AC Active Power (cosϕ=1)	72,000 W
Rated Output Voltage	480 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	78.2 A
Max. Output Current	86.7 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Communication	
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
General	
Dimensions (W x H x D)	1,075 x 555 x 300 mm (42.3 x 21.9 x 11.8 inch)
Weight (with mounting plate)	72 kg (158.7 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Natural Convection
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Waterproof PG Terminal + OT Connector
Protection Degree	IP65
Topology	Transformerless
Standard Compliance *(more available upon request)*	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code	IEC 61727, G59/3, MEA, PEA, ABNT NBR 16149, ABNT NBR 16150, ABNT NBR IEC 62116, AS/NZS 4777.2, DEWA

Efficiency Curve



Circuit Diagram



SUN2000-65KTL-M0

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Smart String Inverter

SUN2000-60KTL-HV-D1-001

Smart

- 8 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart I-V Curve Diagnosis supported

Efficient

- Max. efficiency 99.0%
- European efficiency 98.8%
- 4 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

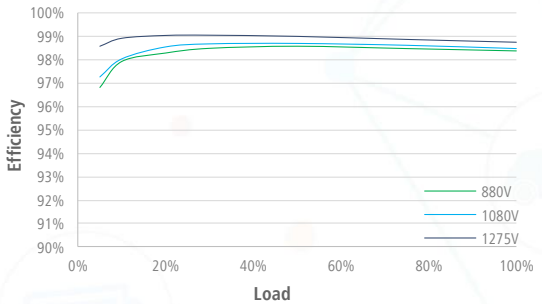
Reliable

- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

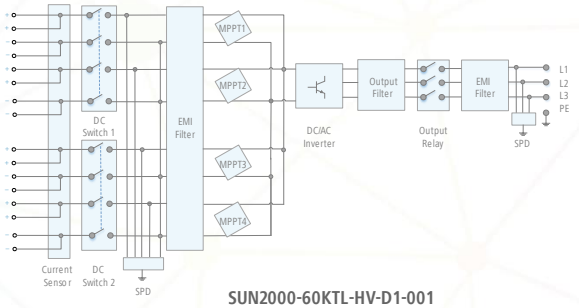
Smart String Inverter (SUN2000-60KTL-HV-D1-001)

Technical Specifications	SUN2000-60KTL-HV-D1-001
Efficiency	
Max. Efficiency	99.0%
European Efficiency	98.8%
Input	
Max. Input Voltage	1,500 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	30 A
Start Voltage	650 V
MPPT Operating Voltage Range	600 V ~ 1,450 V
Rated Input Voltage	1,080 V
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	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	43.3 A
Max. Output Current	48 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
Protection	
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
Communication	
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
General	
Dimensions (W x H x D)	930 x 600 x 270 mm (36.6 x 23.6 x 10.6 inch)
Weight (with mounting plate)	62 kg (136.7 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Natural Convection
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol UTX
AC Connector	Waterproof PG Terminal + OT Connector
Protection Degree	IP65
Topology	Transformerless
Standard Compliance *(more available upon request)*	
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code	IEC 61727, G59/3, UTE C 15-712-1, RD 661, RD 413, RD 1699, P.O. 12.3, BDEW, VDE4120, UNE 206007-1 IN, UNE 2006006 IN, ABNT NBR 16149, ABNT NBR 16150, ABNT NBR IEC 62116

Efficiency Curve



Circuit Diagram



SUN2000-60KTL-HV-D1-001

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Smart String Inverter

SUN2000-100KTL-H1

Smart

- 12 strings intelligent monitoring and fast trouble-shooting
- Power Line Communication (PLC) supported
- Smart I-V Curve Diagnosis supported

Efficient

- Max. efficiency 99.0%
- European efficiency 98.8%
- 6 MPPT per unit, effectively reducing string mismatch

Safe

- DC switch integrated, safe and convenient for maintenance
- Residual Current Monitoring Unit (RCMU) integrated
- Fuse free design

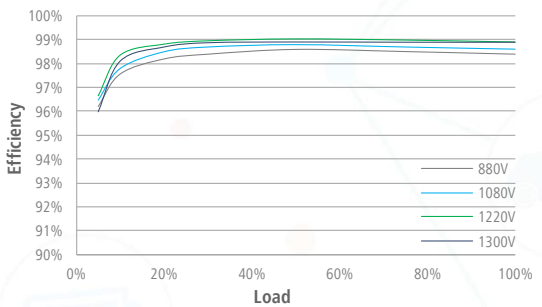
Reliable

- Natural cooling technology
- Protection degree of IP65
- Type II surge arresters for both DC and AC

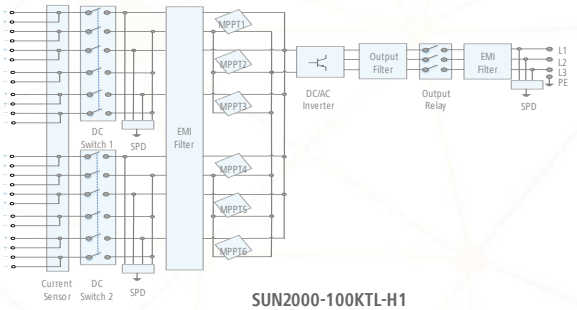
Smart String Inverter (SUN2000-100KTL-H1)

Technical Specifications	SUN2000-100KTL-H1
	Efficiency
Max. Efficiency	99.0%
European Efficiency	98.8%
	Input
Max. Input Voltage	1,500 V
Max. Current per MPPT	22 A
Max. Short Circuit Current per MPPT	33 A
Start Voltage	650 V
MPPT Operating Voltage Range	600 V ~ 1,500 V
Rated Input Voltage	1,080 V
Number of Inputs	12
Number of MPP Trackers	6
	Output
Rated AC Active Power	100,000 W @40°C
Max. AC Apparent Power	105,000 VA @35°C
Max. AC Active Power (cosϕ=1)	105,000 W @35°C
Rated Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	72.2 A
Max. Output Current	80.2 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	Protection
Input-side Disconnection Device	Yes
Anti-islanding Protection	Yes
AC Overcurrent Protection	Yes
DC Reverse-polarity Protection	Yes
PV-array String Fault Monitoring	Yes
DC Surge Arrester	Type II
AC Surge Arrester	Type II
DC Insulation Resistance Detection	Yes
Residual Current Monitoring Unit	Yes
	Communication
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	General
Dimensions (W x H x D)	1,075 x 605 x 310 mm (42.3 x 23.8 x 12.2 inch)
Weight (with mounting plate)	77 kg (169.8 lb.)
Operating Temperature Range	-25°C ~ 60°C (-13°F ~ 140°F)
Cooling Method	Natural Convection
Max. Operating Altitude	4,000 m (13,123 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol UTX
AC Connector	Waterproof PG Terminal + OT Connector
Protection Degree	IP65
Topology	Transformerless
	Standard Compliance *(more available upon request)*
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code	IEC 61727, ABNT NBR 16149, ABNT NBR 16150, ABNT NBR IEC 62116, RD 1699, RD 661, RD 413, UNE 206007-1 IN, UNE 2006006 IN, P.O. 12.3

Efficiency Curve



Circuit Diagram



SUN2000-100KTL-H1

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SmartACU2000B

With SmartPID2000 Module

Without SmartPID2000 Module

SmartACU2000B (Smart Array Controller)
is a powerful integration of PV array communication and other smart functions. What's more, it supports 1000 V / 1100 V / 1500 V DC system perfectly.

Smart

- SmartLogger2000 built-in
- SmartPID2000 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 & SmartPID2000 module pre-assembled inside the cabinet

Reliable

- Industrial-level application and high reliability

Specifications	SmartACU2000B-D-PLC	SmartACU2000B-D-2PLC	SmartACU2000B-D-PID/PLC	SmartACU2000B-D-2PID/2PLC
Configuration				
SmartLogger	SmartLogger2000			
RS485	Yes			
Number of PLC Module	1	2	1	2
Number of SmartPID2000 Module	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				
Input AC Voltage for Cabinet	100 V ~ 240 V, L / N (L) + PE			
Input AC Voltage for PID	380 V ~ 800 V, 3Ph + FE (Functional Earth)			
Input AC Voltage for PLC	380 V ~ 800 V, 3Ph			
Input AC Frequency	50 Hz / 60 Hz			
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			

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SmartLogger1000

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 DIN rails

Reliable

- Max. reliable communication range of 1,000 m

Technical Specifications	SmartLogger1000
	Device Management
Max. Number of Manageable Devices	80
Max. Number of Manageable Smart Inverters	80
	Communication Interface
Electrical Ethernet	ETH x 1, 10 / 100 Mbps
RS485	COM x 3, 2400 / 4800 / 9600 / 19200 / 115200 bps
Digital / Analog Input / Output	DI x 4, DO x 3, AI x 2
	Communication Protocol
Ethernet	Modbus-TCP, IEC 60870-5-104
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
	Interaction
LCD	3.5 inch Graphic LCD
LED	LED Indicator x 3
WEB	Embedded WEB
USB	USB 2.0 x 1
	Environment
Operating Temperature Range	-20°C ~ 60°C (-4°F ~ 140°F)
Relative Humidity (Non-condensing)	5% ~ 95%
Max. Operating Altitude	4,000 m (13,123 ft.)
	Electrical
Power Supply	100 V ~ 240 V, 50 Hz / 60 Hz
Power Consumption	Typical 3 W, Max. 7 W
	Mechanical
Dimensions (W x H x D)	225 x 140 x 50 mm (8.9 x 5.5 x 2.0 inch)
Weight	0.5 kg (1.1 lb.)
Protection Degree	IP20
Installation Options	Wall Mounting, DIN Rail Mounting, Tabletop Mounting

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SmartLogger2000

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
- STP and RSTP supported for fiber ring network and ring protection
- Bluetooth, embedded WEB and USB supported, user-friendly
- Fast and reliable active and reactive power compensation control
- Smart I-V Curve Diagnosis supported

Simple

- Up to 200 devices supported, including up to 150 inverters
- An integration of data collection, protocol conversion and Ethernet switch

Reliable

- Industrial-level application and high reliability

Technical Specifications	SmartLogger2000
	Device Management
Max. Number of Manageable Devices	200
Max. Number of Manageable Smart Inverters	150
	Communication Interface
Electrical Ethernet	ETH x 2, 10 / 100 Mbps
Optical Ethernet (optional)	SFP x 2, 100 Mbps
RS485	COM x 6, 2400 / 4800 / 9600 / 19200 / 115200 bps
PLC	PLC x 1, 115.2 kbps
Digital / Analog Input / Output	DI x 8, DO x 3, AI x 7, AO x 4, PT100 / PT1000 x 2
	Communication Protocol
Ethernet	Modbus-TCP, IEC 60870-5-104
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
	Interaction
LED	LED Indicator x 4
WEB	Embedded WEB
Bluetooth	SUN2000 App
USB	USB 2.0 x 1
	Environment
Operating Temperature Range	-40°C ~ 60°C (-40°F ~ 140°F)
Storage Temperature Range	-40°C ~ 70°C (-40°F ~ 158°F)
Relative Humidity (Non-condensing)	5% ~ 95%
Max. Operating Altitude	4,000 m (13,123 ft.)
	Electrical
Power Supply	100 V ~ 240 V, 50 Hz / 60 Hz
Power Consumption	Typical 8 W, Max. 15 W
	Mechanical
Dimensions (W x H x D)	411 x 170 x 58.6 mm (16.2 x 6.7 x 2.3 inch)
Weight	2.5 kg (5.5 lb.)
Protection Degree	IP20
Export Limitation	Supported
Installation Options	Wall Mounting, DIN Rail Mounting, Integrated Inside SmartACU2000B

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SmartPID2000 Module
Inside Smart Array Controller

The SmartPID2000 Module is installed in the SmartACU2000B cabinet to reduce the negative effect of the Potential Induced Degradation (PID), and support 1000 V / 1100 V / 1500 V DC system.

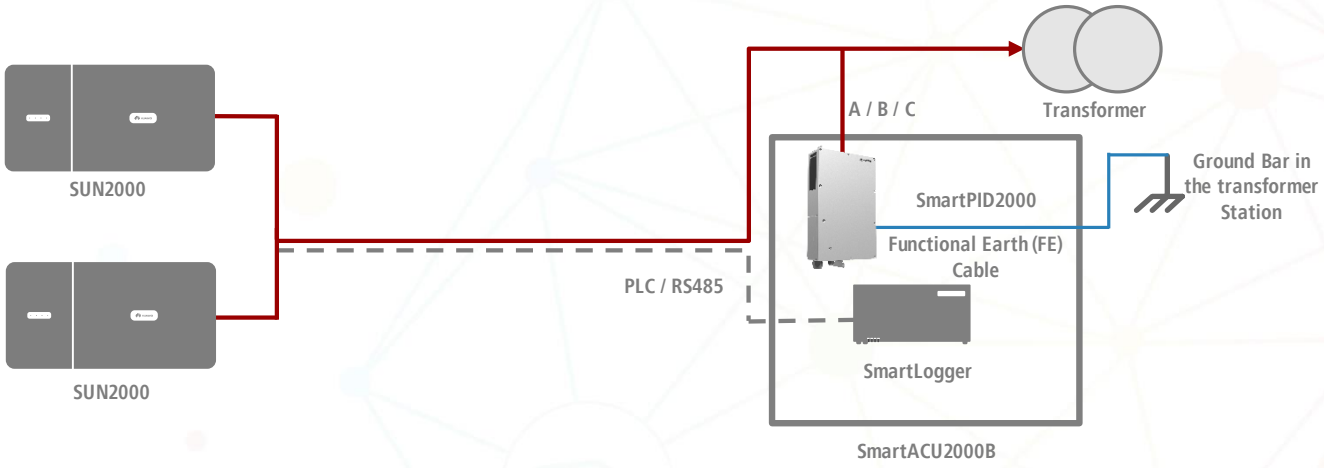
Smart

- Data read and software upgrade through USB or the embedded Web
- Support 1000 V / 1100 V / 1500 V DC system and can support a 5MW block
- Set and display the PID module operating parameters by mobile phone APP and Bluetooth connection

Reliable

- Protection degree of IP65

SmartPID2000 Solution Diagram



Note:
1. The Anti-PID solution could ONLY be deployed in utility installations which are normally connected to the medium voltage (MV) grid running WITHOUT neutral line.
2. The Anti-PID module must work with Huawei SmartLoggers and Huawei inverters.

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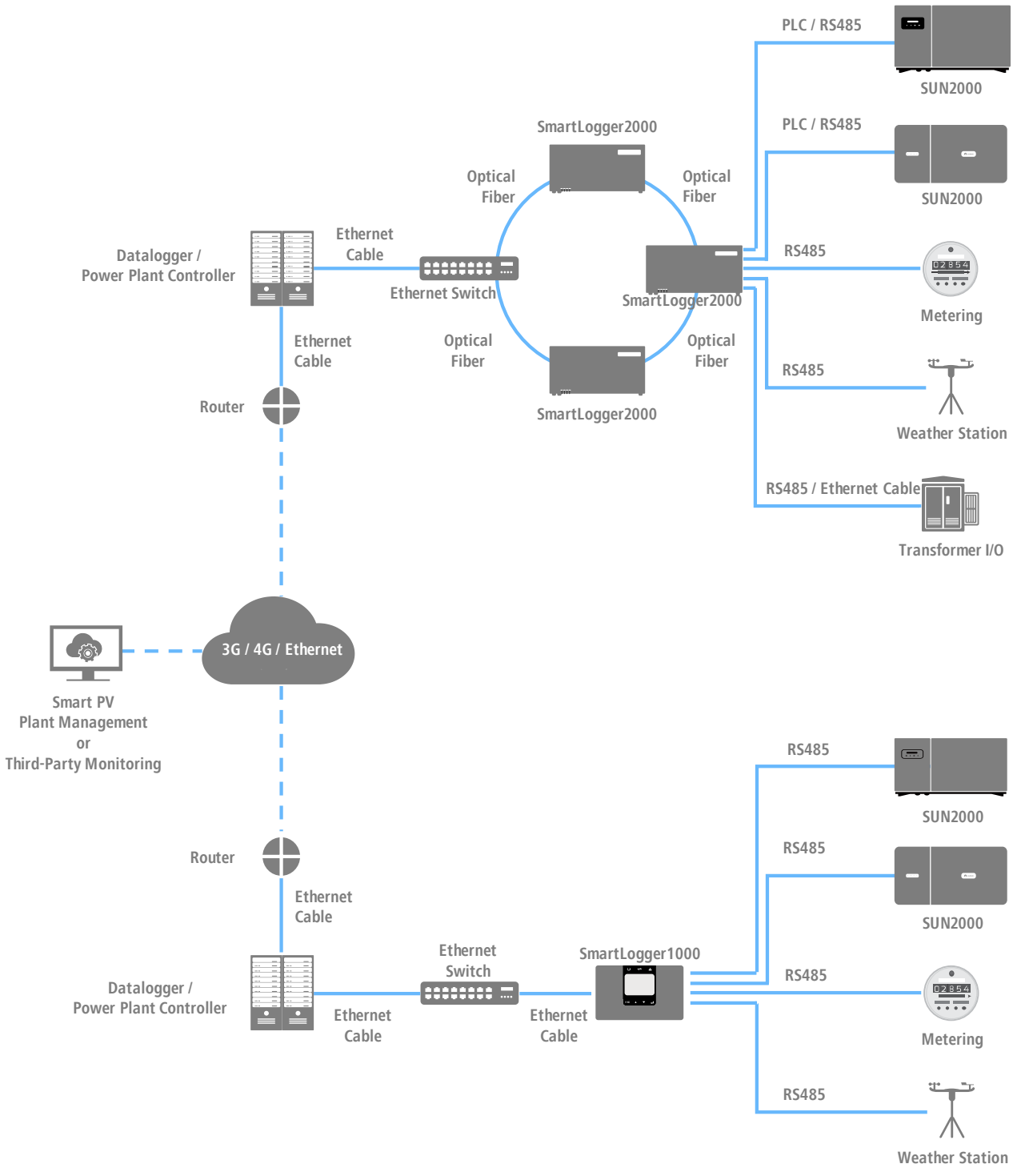
Network Applications

I Optical Fiber Ring Network + PLC



II Ethernet Network + RS485

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NetEco1000S

Smart

- Easy data accesses on mobile devices
- Auto faults alarming and reports issuing
- Smart I-V Curve Diagnosis supported

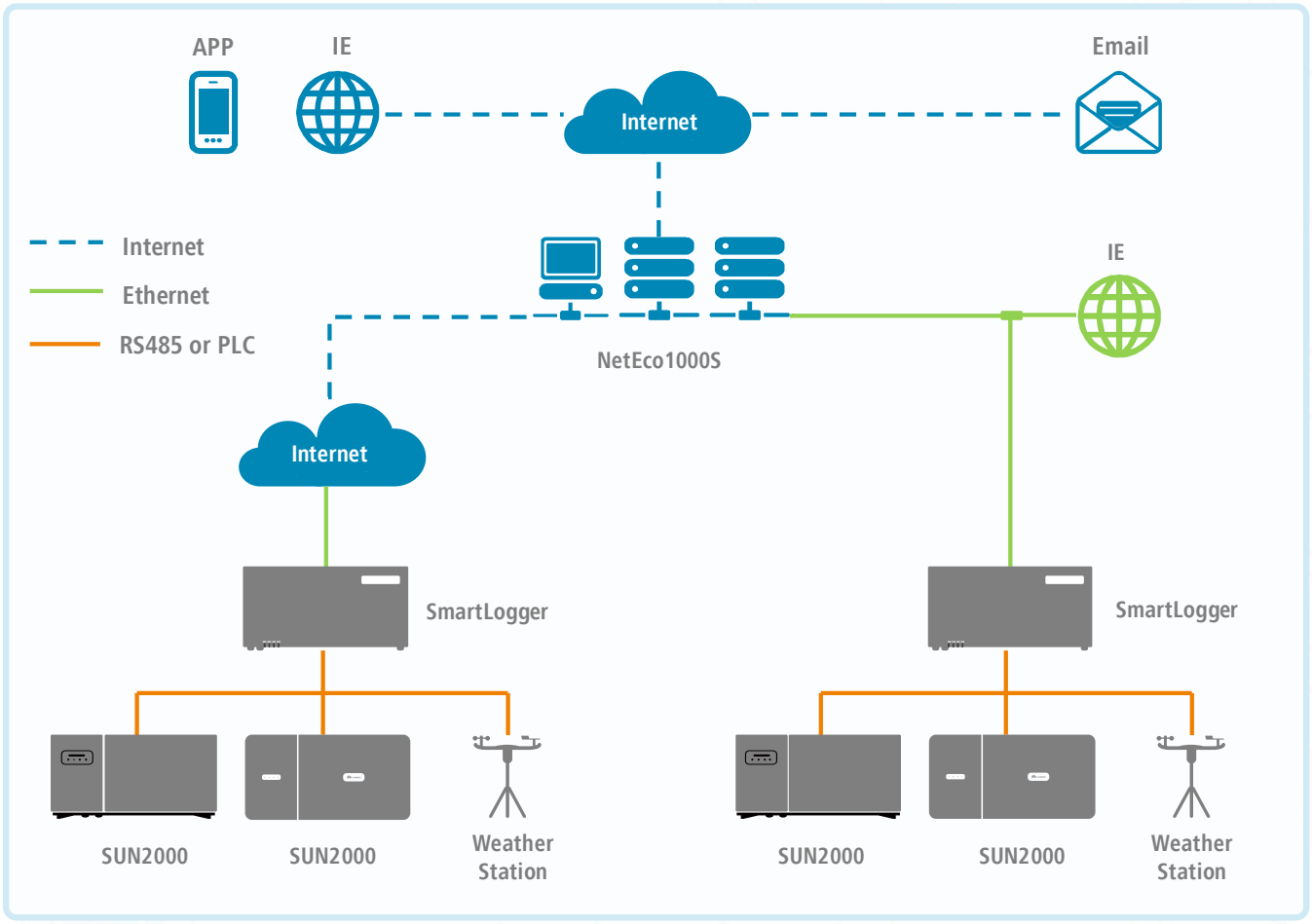
Simple

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

Reliable

- Hierarchical management
- Up to 25 years data storage

Network Structure



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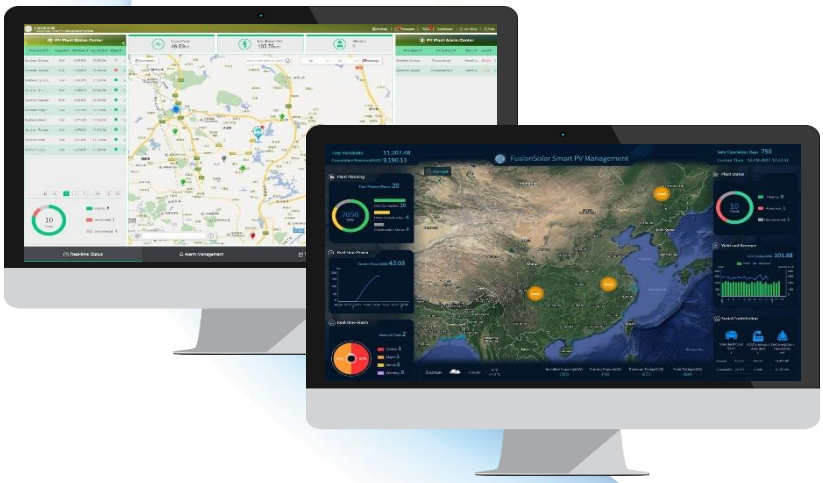
Smart PV Management System



Increasing Yields

- Actively increasing yields through dispersion ratio and Smart I-V Curve Diagnosis
- Quick fault clearance, reducing yield losses
- Remote and centralized maintenance, reducing costs

Assisting Decisions

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

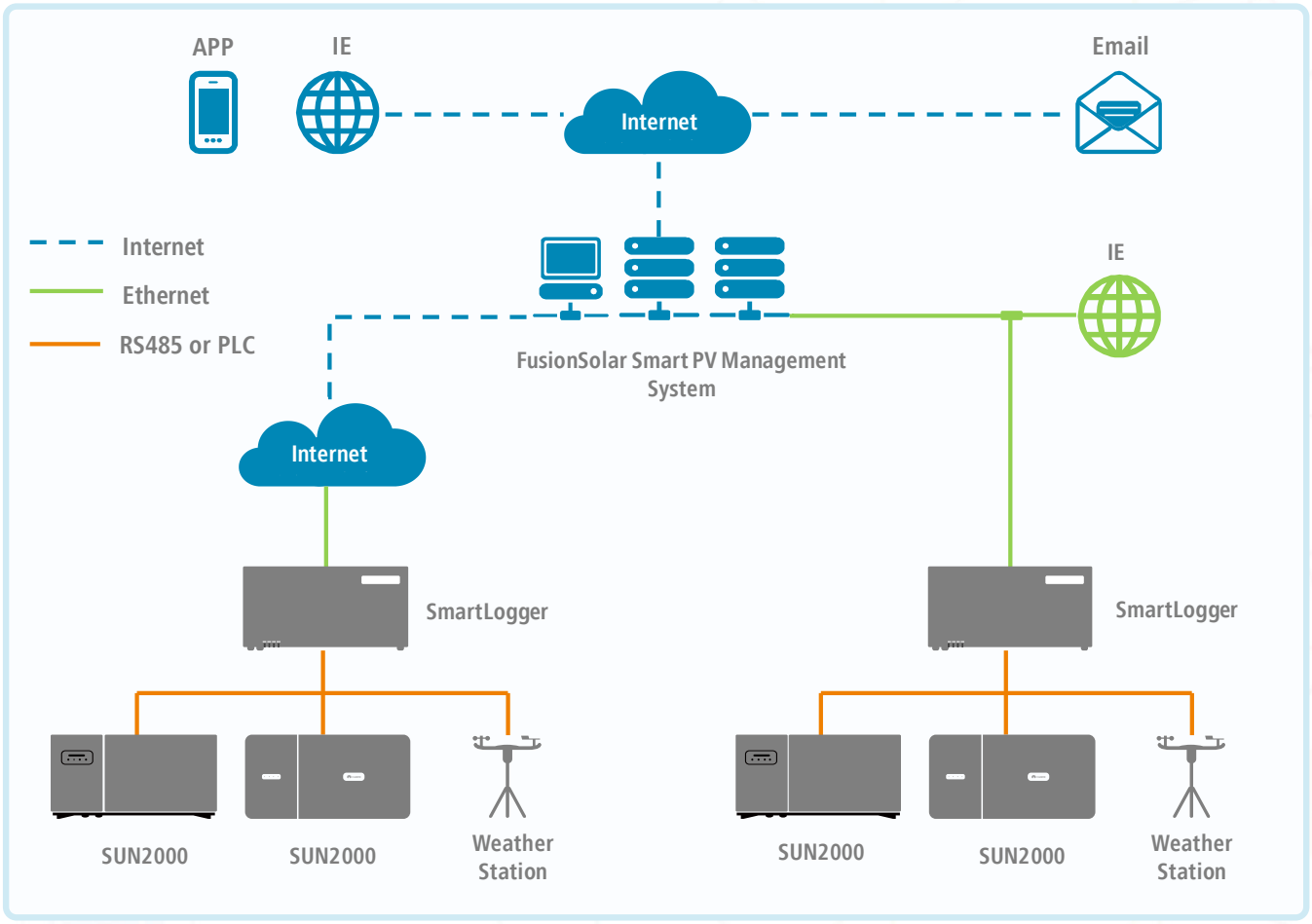
Assuring Safety

- 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



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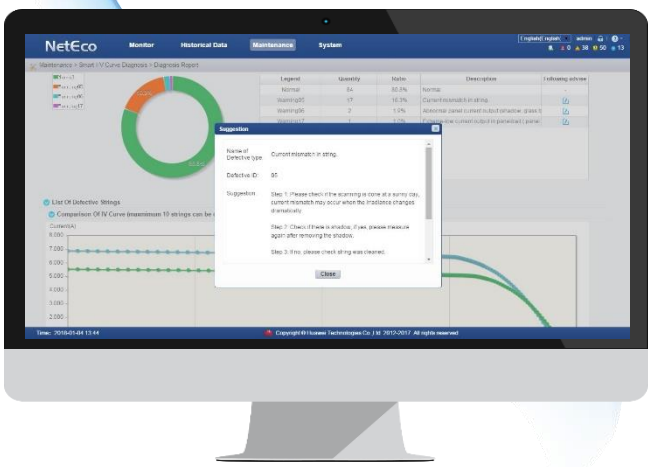
Smart I-V Curve Diagnosis

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.

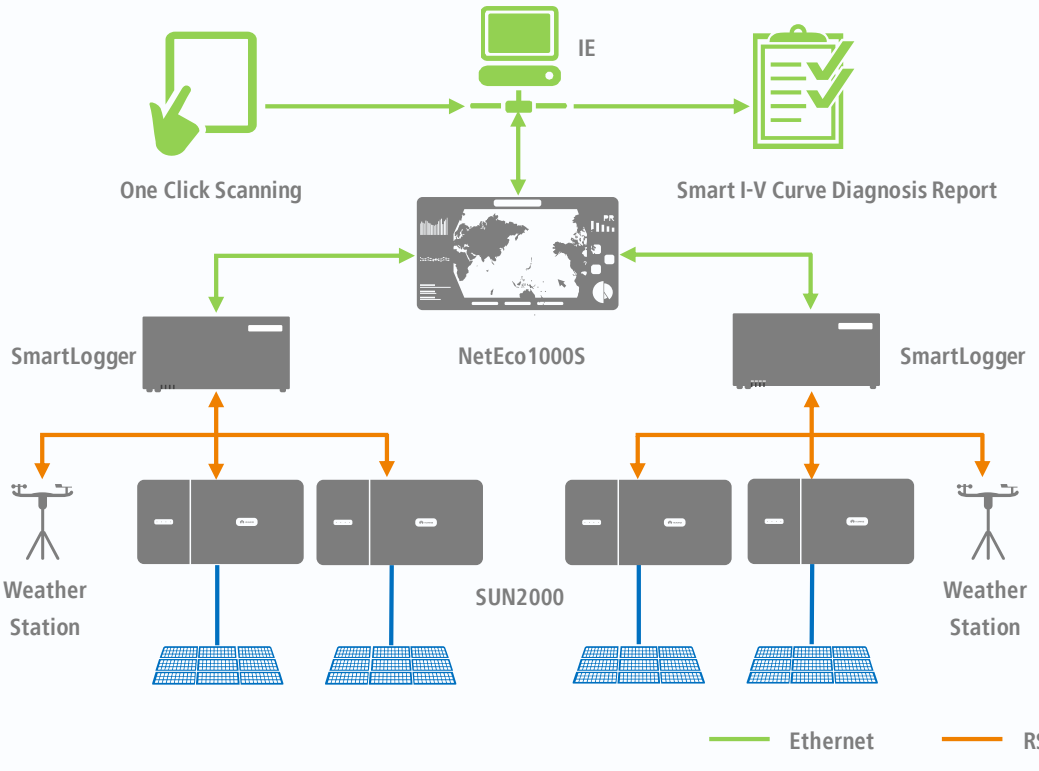


Smart

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

Efficient

- One click scanning without onsite experts or equipment
- Online I-V curve scanning on entire strings of 5 MW within 4 ~ 5min
- Automatic report generation of 5 MW within 10 ~ 15min



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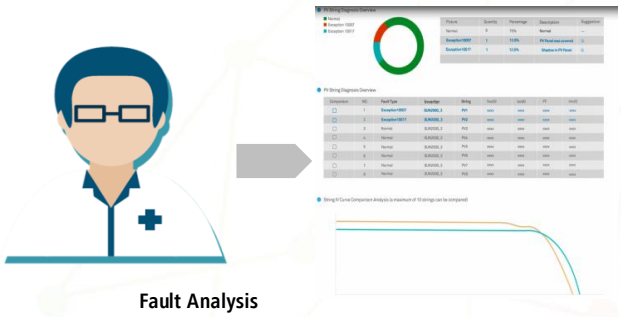
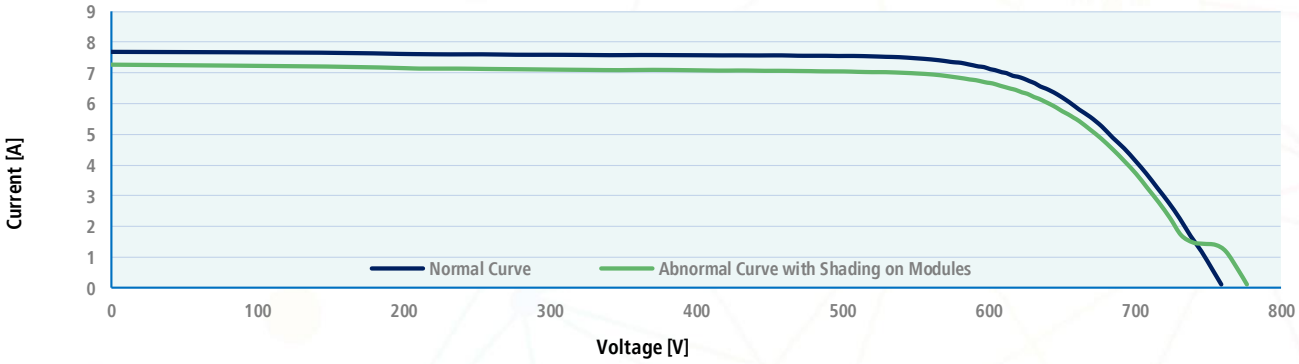
Smart I-V Curve Diagnosis

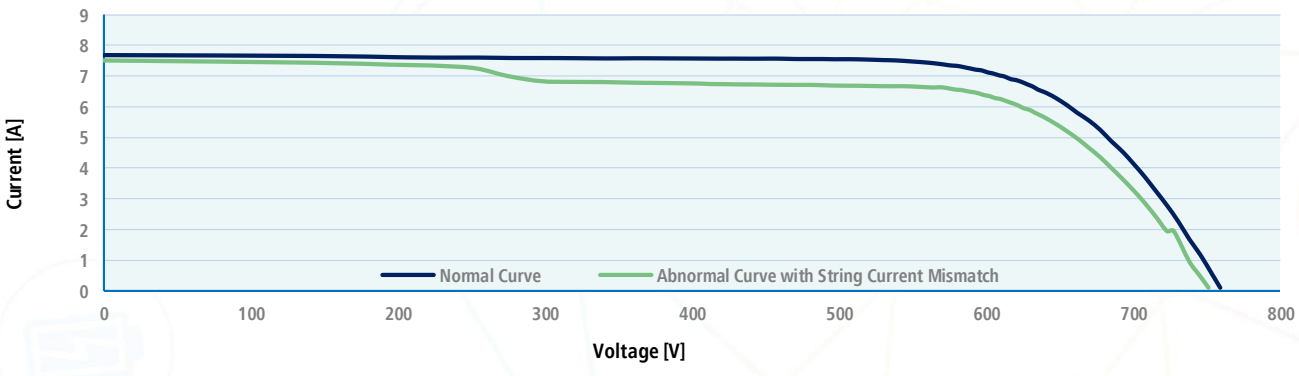
Technical Specifications	Smart I-V Curve Diagnosis
	Configuration
Smart PV Inverter	SUN2000-36KTL and new version
Data Logger	SmartLogger2000, SmartLogger1000
Management System	FusionSolar Smart PV Management System, NetEco1000S
	Performance
Scanning Time	< 1s
Sampling Points per I-V Curve	128
Voltage 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 TUV Verified

String-level Management	Smart I-V Curve Diagnosis
	
Real time monitoring	Fault Analysis

String I-V Curve Comparison





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FusionSolar Smart PV Solution Reference

66 MW | Ground-mounted Smart PV Plant, Monte Plata, Dominican Republic

35 MW | Ground-mounted Smart PV Plant, Santiago, Chile

30 MW | Ground-mounted Smart PV Plant, Khao Yoi, Thailand

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FusionSolar Smart PV Solution Reference

43 MW | Ground-mounted Smart PV Plant, Cuyama, USA

20 MW | Ground-mounted Smart PV Plant, Wilson, USA

12 MW | Ground-mounted Smart PV Plant, Five Points, CA, USA

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FusionSolar Smart PV Solution Reference

100 MW Ground-mounted Smart PV Plant, Kakkireni, India

2.8 MW Rooftop-mounted Smart PV Plant, Changi Airport, Singapore

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

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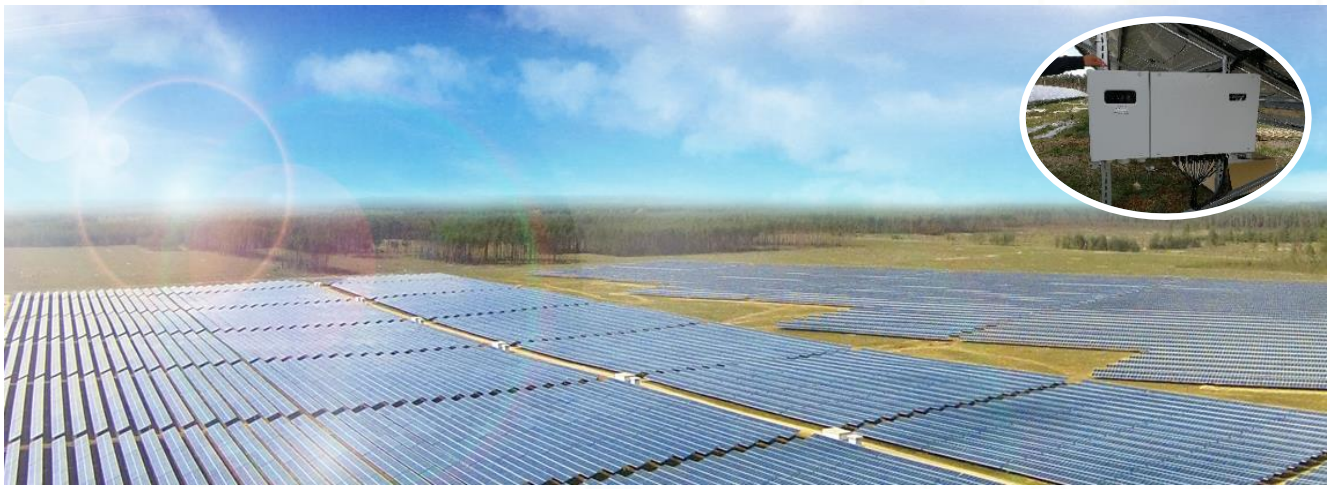
FusionSolar Smart PV Solution Reference

20 MW Ground-mounted Smart PV Plant, Trowbridge, Wiltshire, UK

20 MW Ground-mounted Smart PV Plant, Krempendorf, Germany



12 MW Ground-mounted Smart PV Plant, Saint Leger sur Vouzance, France

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FusionSolar Smart PV Solution Reference

1 GW

Largest Single PV Plant Worldwide, Yanchi, Ningxia, China

700 MW

Largest Tracking System PV Plant Worldwide, Hongdunzi, Ningxia, China

300 MW

Largest Rooftop-mounted PV Plant Worldwide, Haining, Zhejiang, China

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FusionSolar Smart PV Solution Reference

590 MW Ground-mounted Smart PV Plant, Golmud, Qinghai, China

100 MW Mountain-mounted Smart PV Plant, Datong, Shanxi, China

50 MW Highest (4,300 m) Ground-mounted Smart PV Plant Worldwide, Luhuo, Sichuan, China

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Huawei do Brasil Telecomunicações Ltda.
Rua Arquiteto Olavo Redig de Campos
105-24º andar, São Paulo-CEP 04718-000
Huawei (Argentina) S.A.
Alem 815, 7th Floor
Buenos Aires, Argentina
Huawei (Chile) S.A.
Rosario Norte 532, Of.1701-1704, Las Condes
Santiago, 8320000, Chile

HUAWEI TECHNOLOGIES CO.,LTD.
Huawei Industrial Base
Bantian, Longgang
Shenzhen 518129,P.R.China
Tel.:400-822-9999
solar.huawei.com/la
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