

# FusionSolar Smart PV Solution



# About Huawei



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# Smart String Inverter

SUN2000-8/12KTL



## Smart

- 4 strings intelligent monitoring and fast trouble-shooting
- 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%
- 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

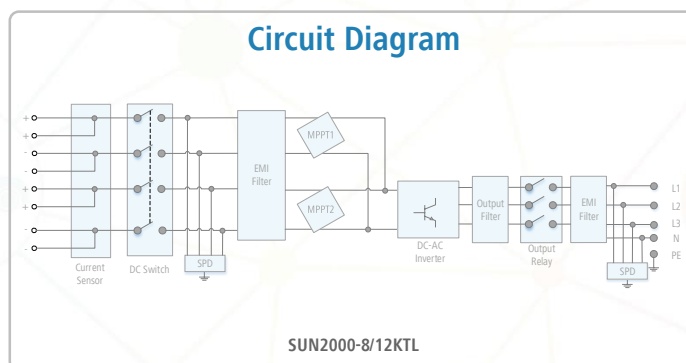
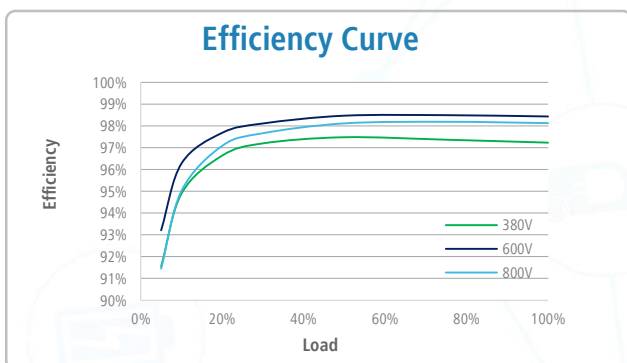
## Reliable

- 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
<b>Efficiency</b>		
Max. Efficiency	98.5%	98.5%
European Efficiency	98.0%	98.0%
<b>Input</b>		
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
<b>Output</b>		
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 @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%
<b>Protection</b>		
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 Detection	Yes	Yes
Residual Current Monitoring Unit	Yes	Yes
<b>Communication</b>		
Display	Graphic LCD	Graphic LCD
RS485	Yes	Yes
USB	Yes	Yes
<b>General</b>		
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	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
<b>Standard Compliance (more available upon request)</b>		
Certificate	EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116	
Grid Code	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	



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# Smart String Inverter

SUN2000-17KTL



## Smart

- 6 strings intelligent monitoring and fast trouble-shooting
- 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%
- 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

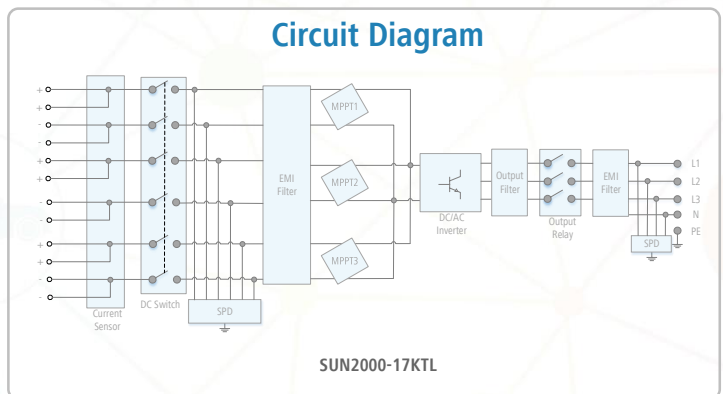
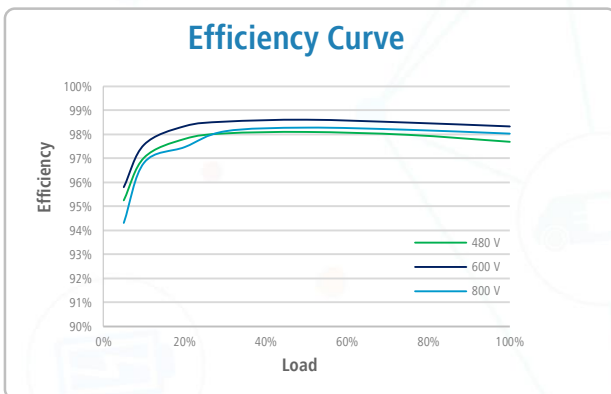
## Reliable

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

# Smart String Inverter (SUN2000-17KTL)



Technical Specifications	SUN2000-17KTL
	<b>Efficiency</b>
Max. Efficiency	98.6%
European Efficiency	98.3%
	<b>Input</b>
Max. Input Voltage	1,000 V
Max. Current per MPPT	18 A
Max. Short Circuit Current per MPPT	25 A
Start Voltage	250 V
MPPT Operating Voltage Range	200 V ~ 950 V
Number of Inputs	6
Number of MPP Trackers	3
	<b>Output</b>
Rated AC Active Power	17,000 W
Max. AC Apparent Power	18,700 VA
Max. AC Active Power (cosφ=1)	18,700 W
Rated Output Voltage	220 V / 380 V, 230 V / 400 V, 3W + N + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	25.8 A @380 V / 24.7 A @400 V
Max. Output Current	28.5 A
Adjustable Power Frequency	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	<b>Protection</b>
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 Monitoring Unit	Yes
	<b>Communication</b>
Display	Graphic LCD
RS485	Yes
USB	Yes
	<b>General</b>
Dimensions (W x H x D, with mounting bracket)	520 x 610 x 266 mm (20.5 x 24.0 x 10.5 inch)
Weight (with mounting plate)	50 kg (110.2 lb.)
Operating Temperature Range	-25 °C ~ 60 °C (-13 °F ~ 140 °F)
Cooling Method	Natural Convection
Max. Operating Altitude	3,000 m (9,842 ft.)
Relative Humidity	0 ~ 100%
DC Connector	Amphenol Helios H4
AC Connector	Amphenol C16/3
Protection Degree	IP65
Topology	Transformerless
	<b>Standard Compliance (more available upon request)</b>
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683
Grid Code	IEC 61727, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, RD 413, P.O. 12.3, EN-50438-Turkey, EN-50438-Ireland, PEA, MEA, Resolution No.7, NRS 097-2-1



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# Smart String Inverter

SUN2000-36KTL



## 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

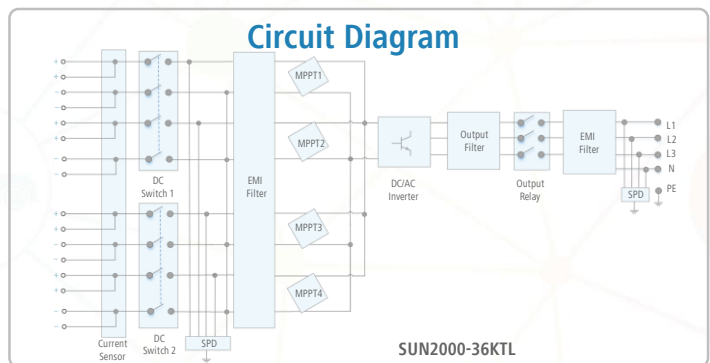
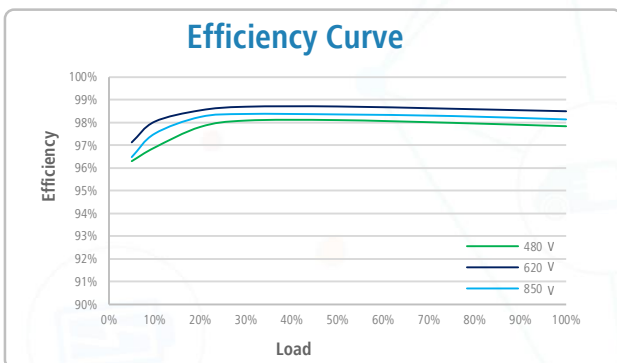
## Reliable

- 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
	<b>Efficiency</b>
Max. Efficiency	98.6%
European Efficiency	98.4%
	<b>Input</b>
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 ~ 1000 V
Rated Input Voltage	620 V
Number of Inputs	8
Number of MPP Trackers	4
	<b>Output</b>
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 Output Current	54.6 A @380 V / 52.2 A @400 V
Rated AC Grid Frequency	50 Hz / 60 Hz
Max. Output Current(@380 V / 400 V)	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%
	<b>Protection</b>
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
	<b>Communication</b>
Display	LED Indicators, Bluetooth +APP
USB	Yes
RS485	Yes
PLC	Yes
	<b>General</b>
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
	<b>Standard Compliance (more available upon request)</b>
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



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# Smart String Inverter

SUN2000-50KTL-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

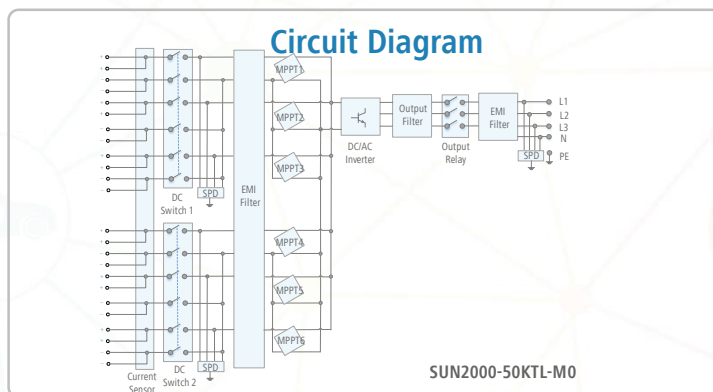
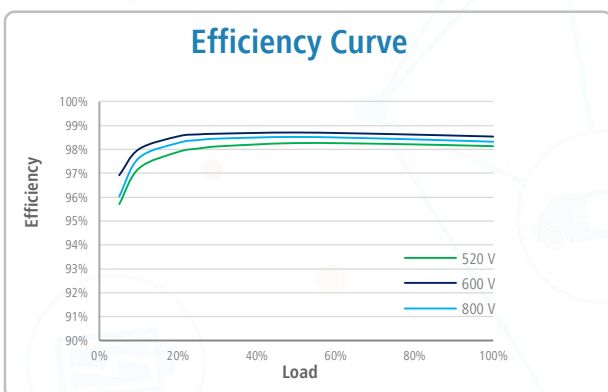
## Reliable

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

# Smart String Inverter (SUN2000-50KTL-M0)



Technical Specifications	SUN2000-50KTL-M0
	<b>Efficiency</b>
Max. Efficiency	98.7%
European Efficiency	98.5%
	<b>Input</b>
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
	<b>Output</b>
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	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	76 A @380 V, 72.2 A @400 V
Max. Output Current	83.6 A @380 V, 79.4 A @400 V
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	<b>Protection</b>
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
	<b>Communication</b>
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	<b>General</b>
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 Convention
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
	<b>Standard Compliance (more available upon request)</b>
Certificate	EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 62910, IEC 60068, IEC 61683
Grid Code	IEC 61727, G59/3, AS/NZS 4777.2, DEWA



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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

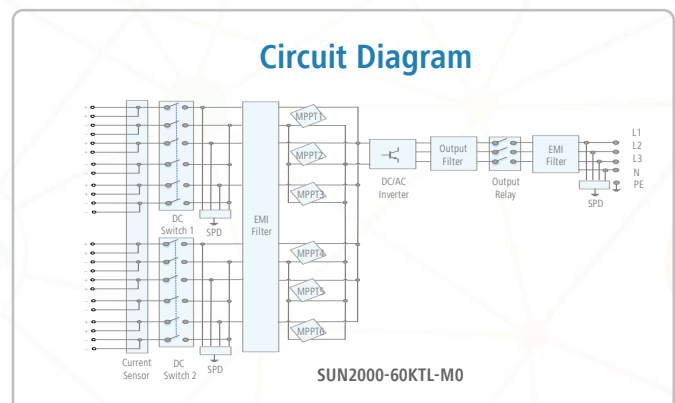
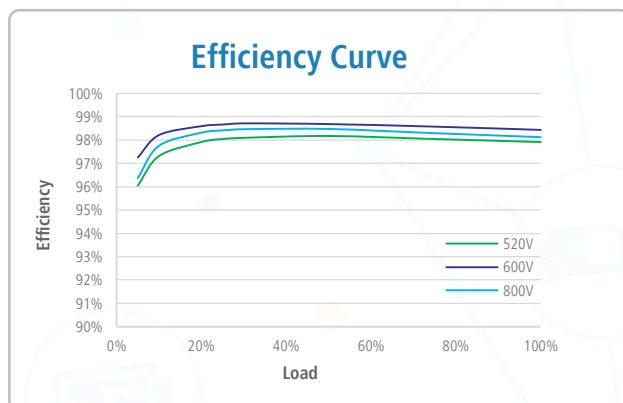
## Reliable

- 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
	<b>Efficiency</b>
Max. Efficiency	98.7%
European Efficiency	98.5%
	<b>Input</b>
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
	<b>Output</b>
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%
	<b>Protection</b>
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
	<b>Communication</b>
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	<b>General</b>
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
	<b>Standard Compliance (more available upon request)</b>
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, DEWA



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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

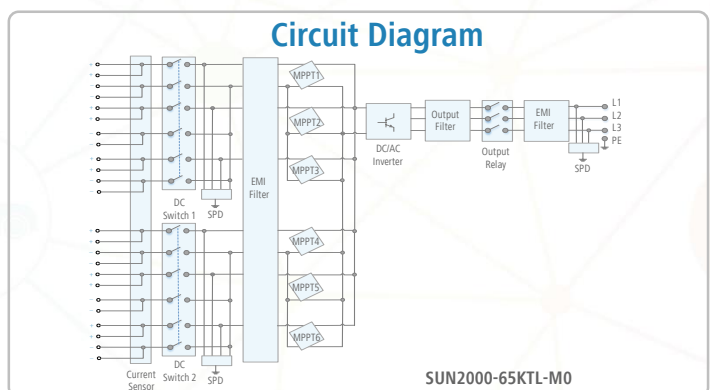
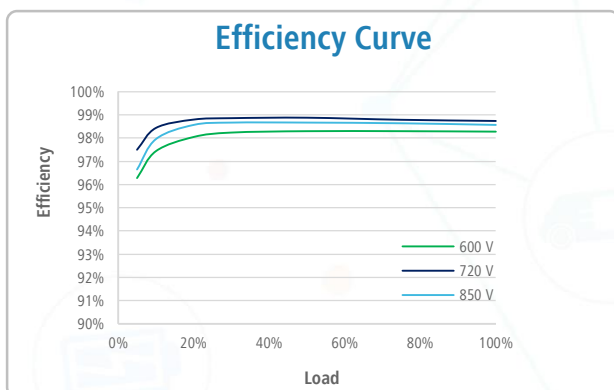
## Reliable

- 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
	<b>Efficiency</b>
Max. Efficiency	98.9%
European Efficiency	98.7%
	<b>Input</b>
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
	<b>Output</b>
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%
	<b>Protection</b>
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
	<b>Communication</b>
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	<b>General</b>
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
	<b>Standard Compliance (more available upon request)</b>
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, DEWA



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# Smart String Inverter

SUN2000-105KTL-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

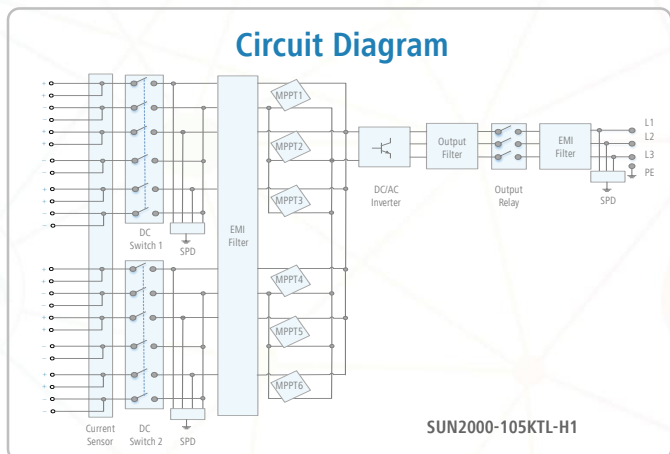
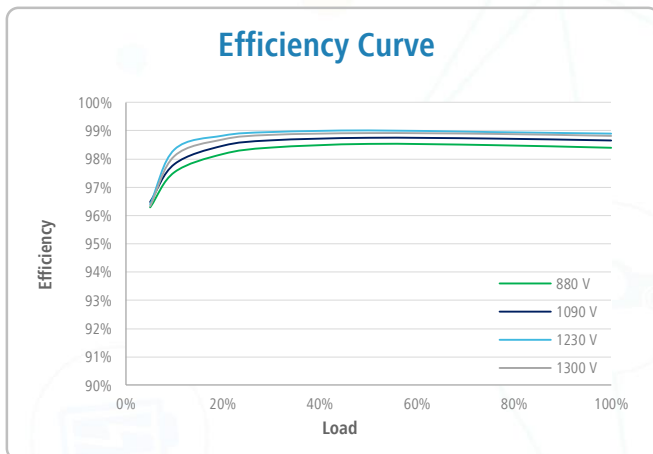
## Reliable

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

# Smart String Inverter (SUN2000-105KTL-H1)



Technical Specifications	SUN2000-105KTL-H1
	<b>Efficiency</b>
Max. Efficiency	99.0%
European Efficiency	98.8%
	<b>Input</b>
Max. Input Voltage	1,500 V
Max. Current per MPPT	25 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
	<b>Output</b>
Rated AC Active Power	105,000 W @40°C
Max. AC Apparent Power	116,000 VA @25°C
Max. AC Active Power (cosφ=1)	116,000 W @25°C
Rated Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	75.8 A
Max. Output Current	84.6 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	<b>Protection</b>
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
	<b>Communication</b>
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	<b>General</b>
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)	79 kg (174.2 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	Cable gland + OT/DT terminal
Protection Degree	IP65
Topology	Transformerless
	<b>Standard Compliance (more available upon request)</b>
Certificate	EN 62109-1/-2, IEC 62109-1/-2
Grid Code	ABNT NBR 16149, ABNT NBR 16150, ABNT NBR IEC 62116, RD 1699, RD 661, RD 413, P.O. 12.3, UTE C 15-712-1, G59/3, CEI 0-16



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# Smart String Inverter

SUN2000-90KTL-H2



## 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

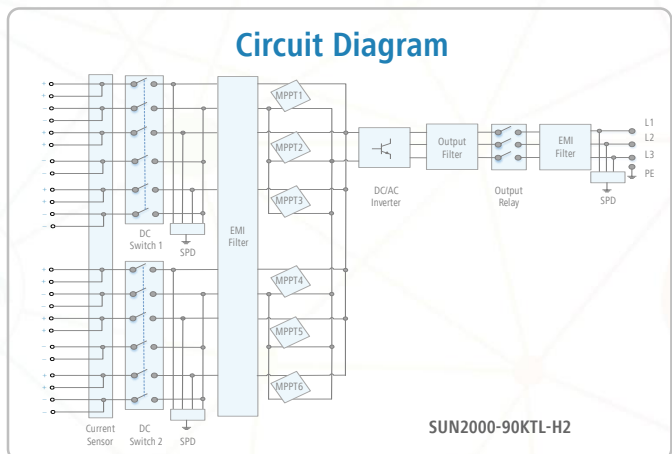
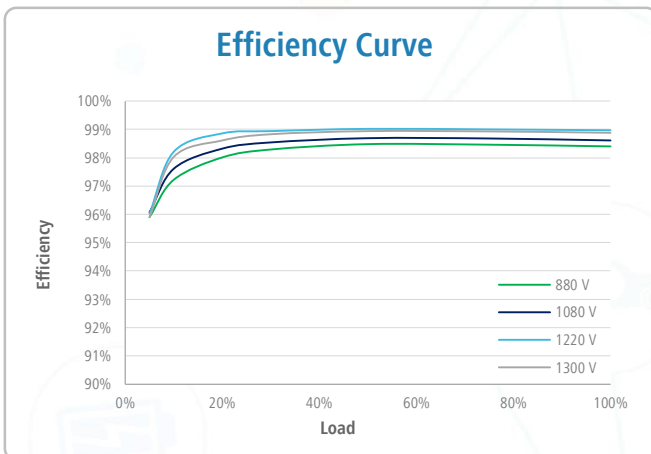
## Reliable

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

# Smart String Inverter (SUN2000-90KTL-H2)



Technical Specifications	SUN2000-90KTL-H2
	<b>Efficiency</b>
Max. Efficiency	99.0%
European Efficiency	98.8%
	<b>Input</b>
Max. Input Voltage	1,500 V
Max. Current per MPPT	25 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
	<b>Output</b>
Rated AC Active Power	90,000 W @50°C
Max. AC Apparent Power	100,000 VA @40°C
Max. AC Active Power (cosφ=1)	100,000 W @40°C
Rated Output Voltage	800 V, 3W + PE
Rated AC Grid Frequency	50 Hz / 60 Hz
Rated Output Current	65.0 A
Max. Output Current	72.9 A
Adjustable Power Factor Range	0.8 LG ... 0.8 LD
Max. Total Harmonic Distortion	< 3%
	<b>Protection</b>
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
	<b>Communication</b>
Display	LED Indicators, Bluetooth + APP
RS485	Yes
USB	Yes
Power Line Communication (PLC)	Yes
	<b>General</b>
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)	79 kg (174.2 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	Cable gland + OT/DT terminal
Protection Degree	IP65
Topology	Transformerless
	<b>Standard Compliance (more available upon request)</b>
Certificate	EN 62109-1/-2, IEC 62109-1/-2



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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 devices 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
	<b>Device Management</b>
Max. Number of Manageable Devices	80
Max. Number of Manageable Smart Inverters	80
	<b>Communication Interface</b>
Electrical Ethernet	ETH x 1, 10 / 100 Mbps
RS485	COM x 3, 2400 / 4,800 / 9,600 / 19,200 / 115,200 bps
Digital / Analog Input / Output	DI x 4, DO x 3, AI x 2
	<b>Communication Protocol</b>
Ethernet	Modbus-TCP, IEC 60870-5-104
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
	<b>Interaction</b>
LCD	3.5 inch Graphic LCD
LED	LED Indicator x 3
WEB	Embedded WEB
USB	USB 2.0 x 1
	<b>Environment</b>
Operating Temperature Range	-20°C ~ 60°C (-4°F ~ 140°F)
Relative Humidity	5% ~ 95%
Max. Operating Altitude (Non-condensing)	4,000 m (13,123 ft.)
	<b>Electrical</b>
Power Supply	100 V ~ 240 V, 50 Hz / 60 Hz
Power Consumption	Typical 3 W, Max. 7 W
	<b>Mechanical</b>
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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# SmartACU2000B



With Anti-PID Module



Without Anti-PID Module

**SmartACU2000B (Smart Array Controller)** 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 & 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
<b>Configuration</b>				
SmartLogger	SmartLogger2000			
RS485	Yes			
Number of PLC Module	1	2	1	2
Number of SmartPID2000 Module	0	0	1	2
<b>Environment</b>				
Operating Temperature Range	-40°C ~ 60°C ( -40°F ~ 140°F )			
Relative Humidity	4% ~ 100%			
Max. Operating Altitude	4,000 m (13,123 ft.)			
<b>Electrical</b>				
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			
<b>Mechanical</b>				
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			

# 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
	<b>Device Management</b>
Max. Number of Manageable Devices	200
Max. Number of Manageable Smart Inverters	150
	<b>Communication Interface</b>
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 x3, AI x 7, AO x 4, PT100 / PT1000 x 2
	<b>Communication Protocol</b>
Ethernet	Modbus-TCP, IEC 60870-5-104
RS485	Modbus-RTU, IEC 60870-5-103 (standard), DL / T645
	<b>Interaction</b>
LED	LED Indicator x 4
WEB	Embedded WEB
Bluetooth	SUN2000 App
USB	USB2.0 x 1
	<b>Environment</b>
Operating Temperature Range	-40°C ~ 60°C (-40°F ~ 140°F)
Storage Temperature	-40°C ~ 70°C (-40°F ~ 158°F)
Relative Humidity	5% ~ 95%
Max. Operating Altitude (Non-condensing)	4,000 m (13,123 ft.)
	<b>Electrical</b>
Power Supply	100 V ~ 240 V , 50 Hz / 60 Hz
Power Consumption	Typical 8 W, Max. 15 W
	<b>Mechanical</b>
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.)
Export Limitation	Supported
Protection Degree	IP20
Installation Options	Wall Mounting, DIN Rail Mounting, Integrated Inside of SmartACU2000B

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# SmartPID2000 Module

## Inside of Smart Array Controller



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

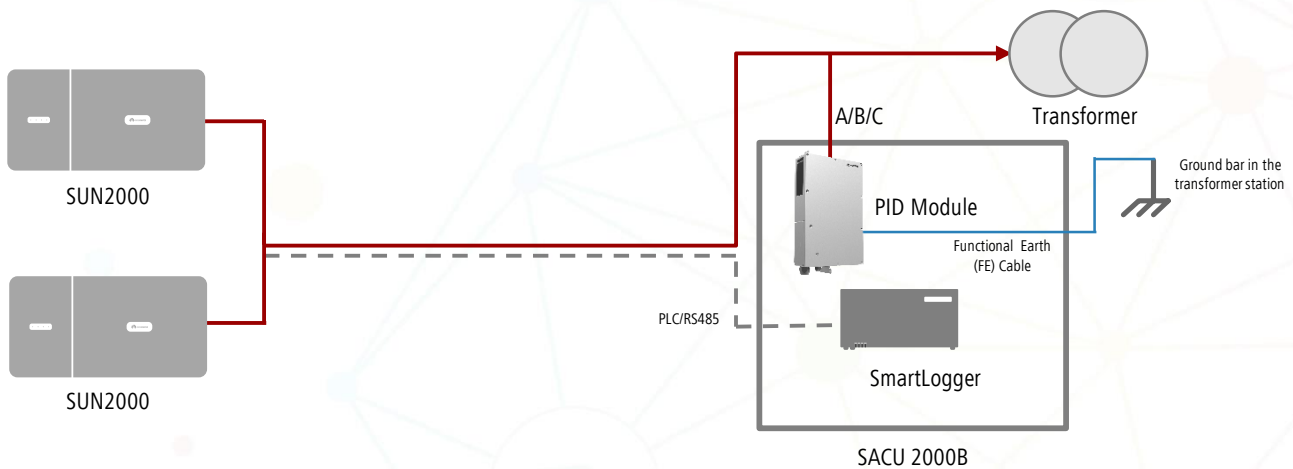
### Smart

- Data reading and software upgrade through USB or the embedded Web
- Support 1000V / 1100V / 1500V 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

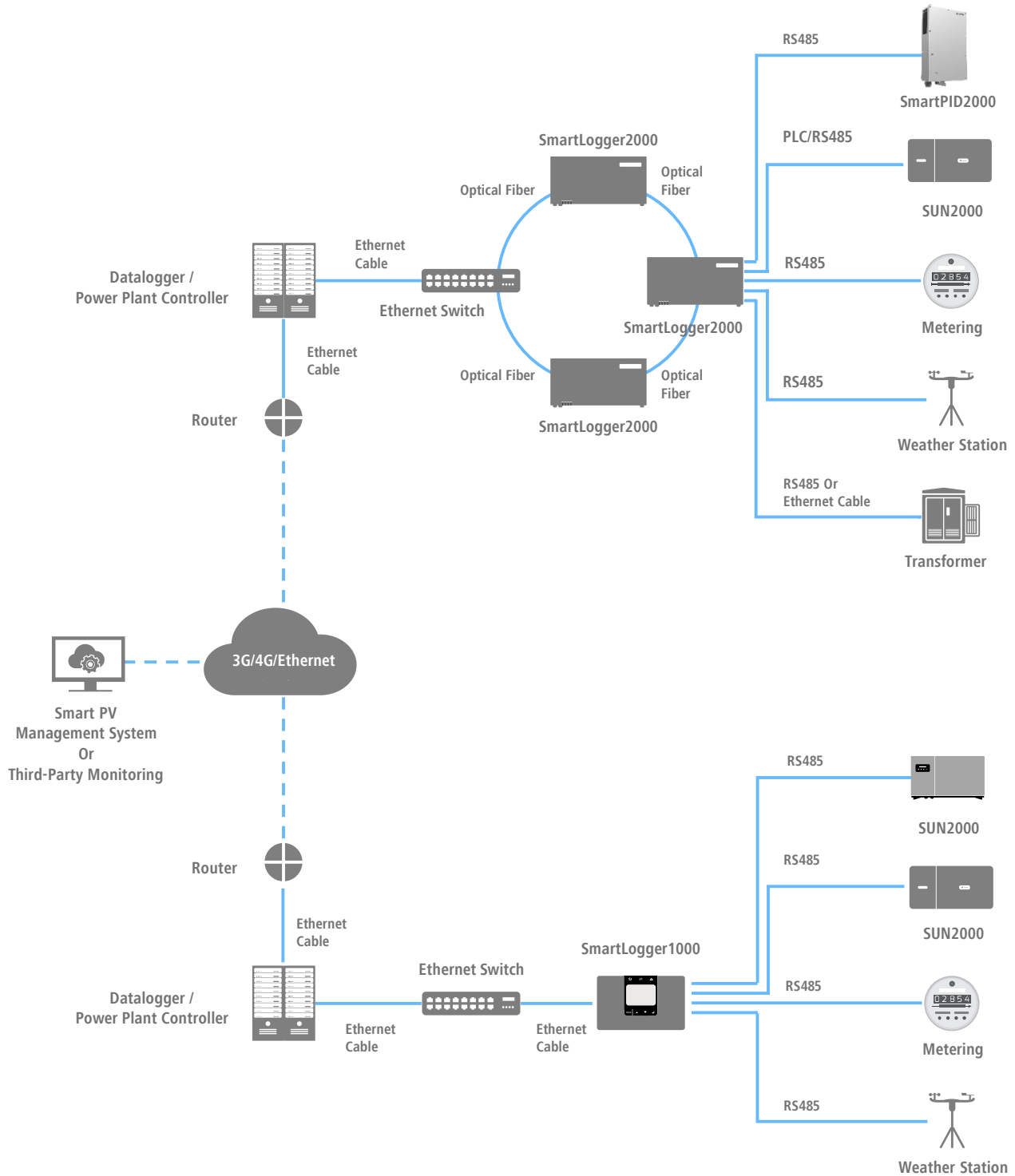
### SmartPID2000 Solution Diagram



Note:

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

## 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

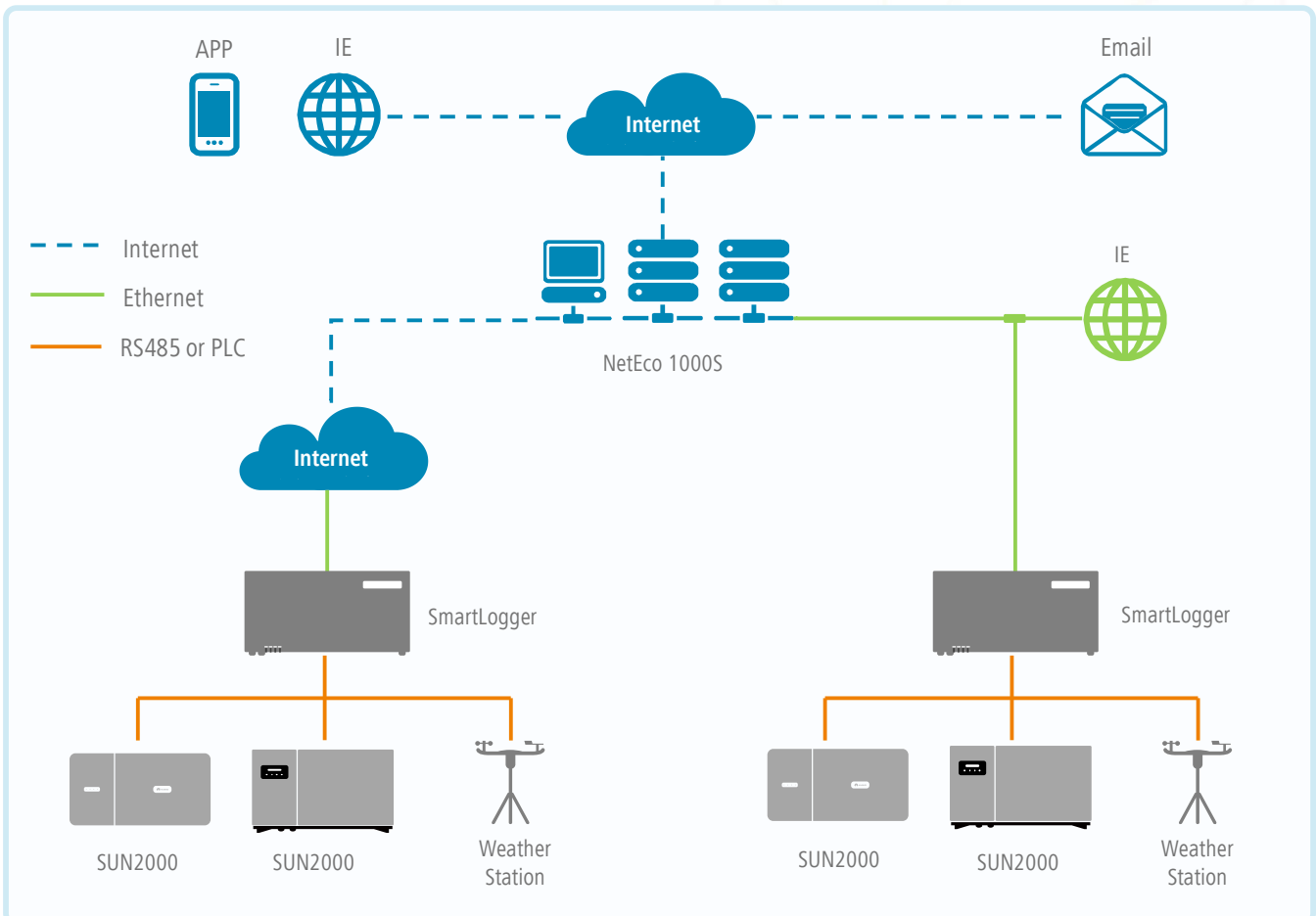
## Simple

- 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

## 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 device choices
- Evaluations on team KPIs

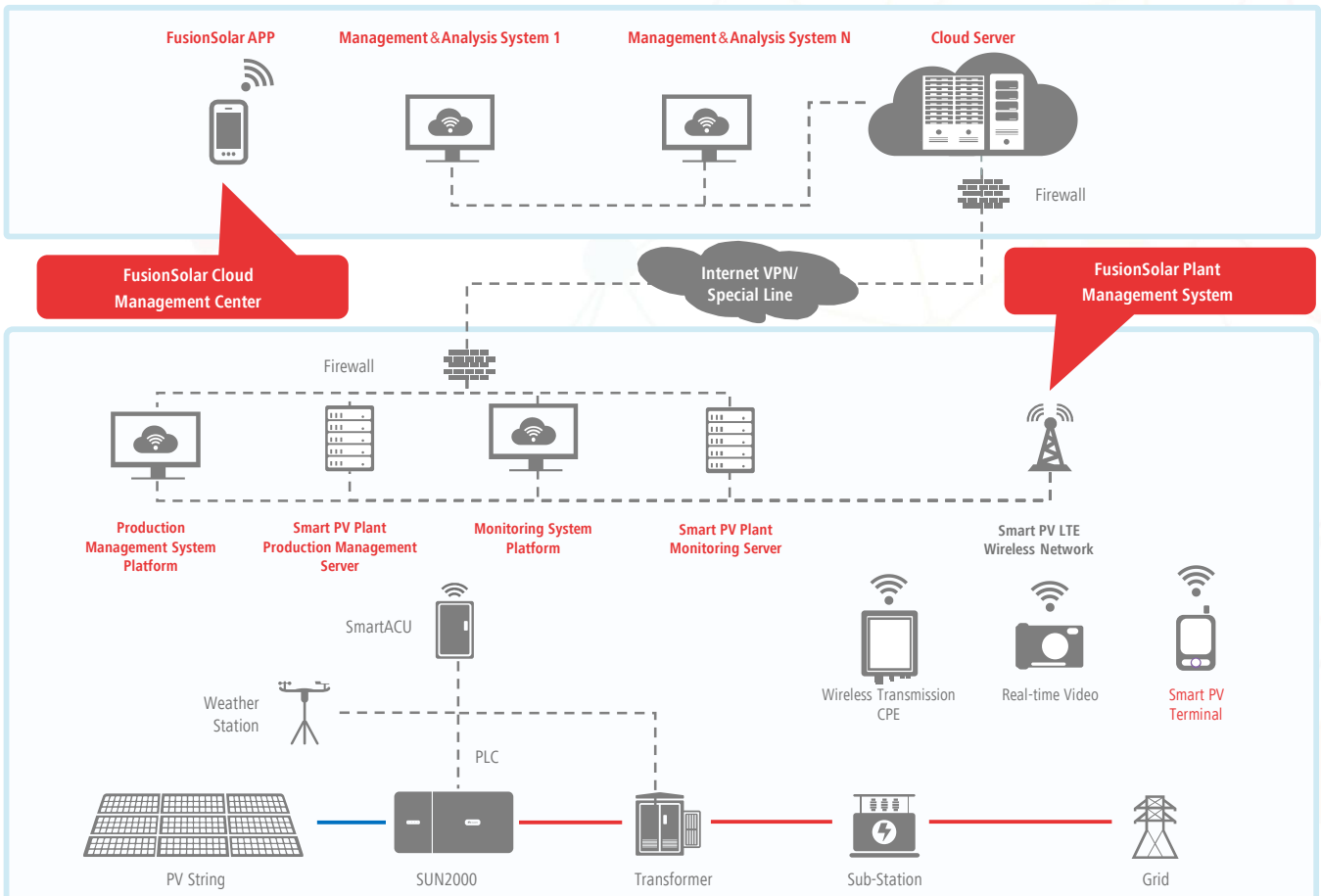
### Assuring Safety

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

### Promoting Financing

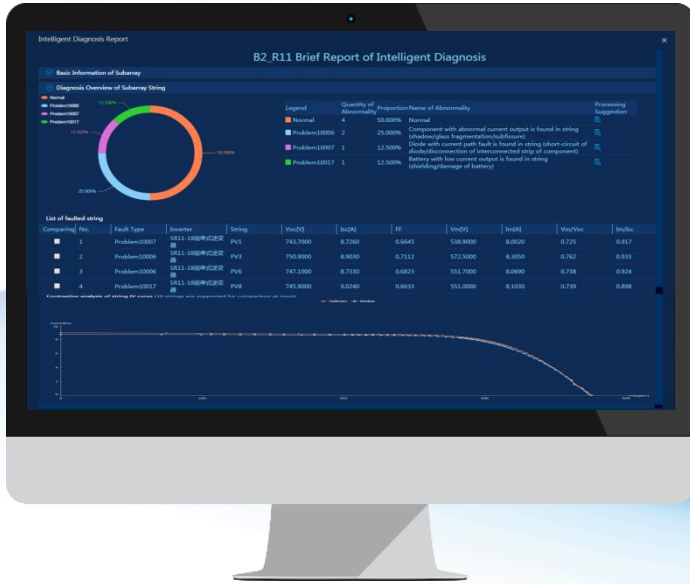
- Credible and reliable financial analyses
- Direct display to investors in multiple ways

## Network Structure



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# Smart I-V Curve Diagnosis



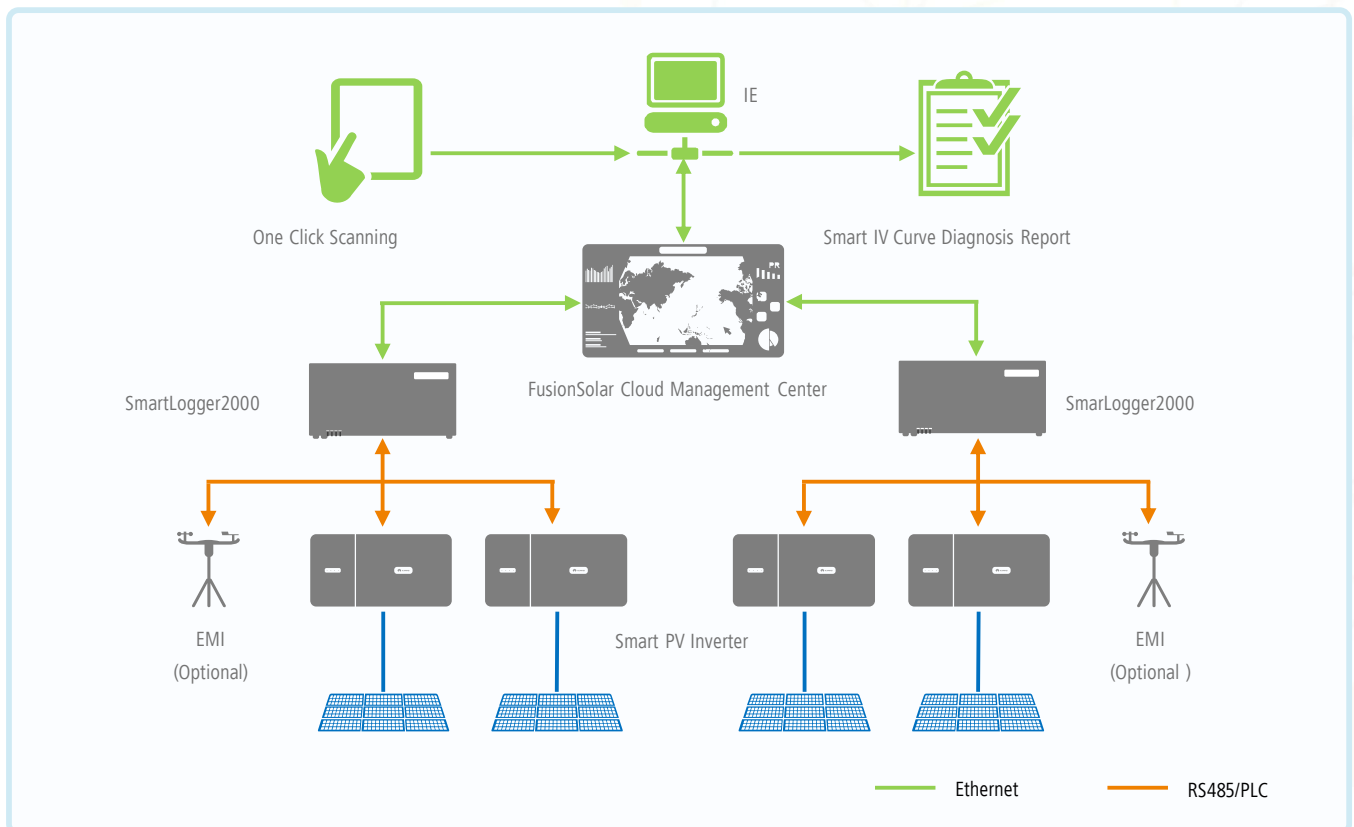
**Smart I-V Curve Diagnosis** is based on string IV curve pattern analysis with advanced diagnosis algorithm, conducting PV plant complete string IV curve analysis. The online scanning and analysis can assist achieving higher O&M efficiency, proactive maintenance and lower operation cost.

## Smart

- Supports plant-level, array-level or inverter-level IV curve analysis and diagnosis
- Identifies different module faults with automatic report generation

## Efficient

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



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	Technical Specification	Smart I-V Curve Diagnosis
Configuration	Smart PV Inverter	SUN2000-36KTL/42KTL or New Versions
	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 TUV Verified

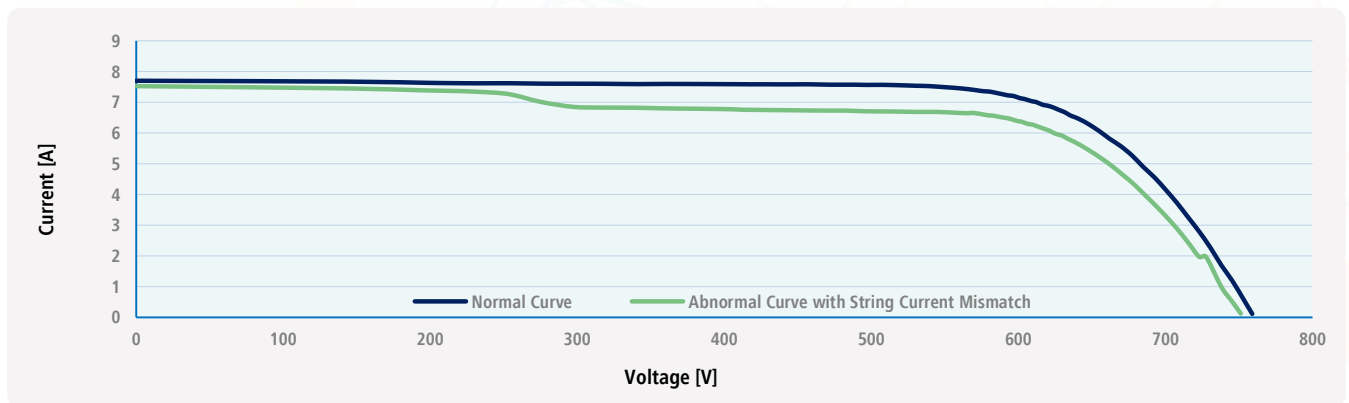
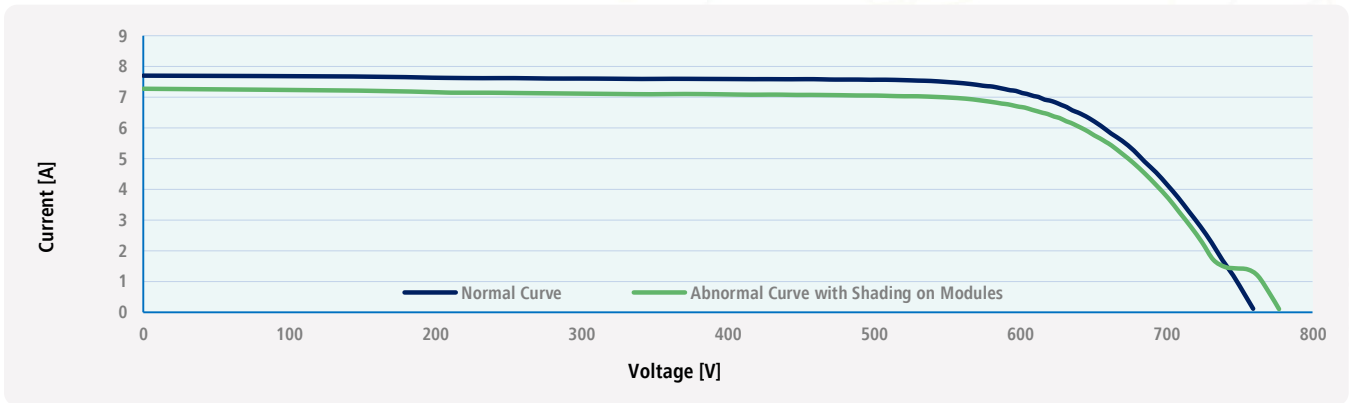
## String-level Management

Real time monitoring

## Smart I-V Curve Diagnosis

Fault Analysis

## String I-V Curve Comparison



1 GW

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



700 MW

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



300 MW

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



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# FusionSolar Smart PV Solution Reference



590 MW

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



100 MW

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



50 MW

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





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