



## PV GRID-CONNECTED INVERTERS

2019 / 2020



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**SUNGROW**  
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# Contents

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Company Profile	04-05
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Central Inverter	06-19
------------------	-------

1500 V – 6.25/6.8 MVA MV Turnkey Station · SG3400HV-MV-20/

SG3125HV-MV-20/SG2500HV-MV-20 · SG3150U-MV/SG2500U-MV ·

SG3400HV-20/SG3125HV-20/SG2500HV-20 · SG3150U/SG2500U

1000 V – SG1250UD/SG1500UD

String Inverter	20-51
-----------------	-------

1500 V – SG250HX · SG125HV

1000 V – SG110CX · SG33/40/50CX · SG33/50CX-US · SG49K5J · SG33K3J ·

SG15KTL-M/SG20KTL-M · SG10KTL-M /SG12KTL-M · SG5KTL-MT/

SG6KTL-MT/SG8KTL-M

600 V – SG8K3-D/SG8K-D · SG2K-S/SG2K5-S/SG3K-S · SG3K-D/SG3K6-D/

SG4K-D/SG4K6-D/SG5K-D/SG6K-D · SH5.0/6.0/8.0/10RT · SH3K6/

SH4K6

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Accessory & Monitoring	52-63
------------------------	-------

Sun box · iSolarCloud · Smart Communication Box · EyeM4 · E-Net · WiFi

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Reference & Global Entry	64-71
--------------------------	-------





 **79GW+**

Deployed  
Worldwide

 **15%+**

Global  
Market Share

 **99%**

Efficiency PV  
Inverters

 **60+**

Countries  
with Sungrow  
Installations

 **No.1**

Largest  
PV Inverter  
R&D Team

 **20+**

Years in the  
Solar Industry



## HISTORY

1997

2002

2011

2016

2017

2018

Foundation

Supplier of  
the Project of  
“Powering the  
Rural Area”

IPO in Shenzhen  
Stock Exchange

Launched the  
Storage Inverter  
Factory

Adopted ‘Clean power for all’  
as Corporate Mission and  
'Becoming a global leader of  
power conversion technology'  
as Corporate Vision

Launched the  
New Factory in  
India

# ABOUT SUNGROW

Sungrow Power Supply Co., Ltd (“Sungrow”) is a global leading inverter solution supplier for renewables with over 79 GW installed worldwide as of December 2018. Founded in 1997 by University Professor Cao Renxian, Sungrow is a leader in the research and development of solar inverters, with the largest dedicated R&D team in the industry and a broad product portfolio offering PV inverter solutions and energy storage systems for utility-scale, commercial, and residential applications, as well as internationally recognized floating PV plant solutions. With a strong 22-year track record in the PV space, Sungrow products power installations in over 60 countries, maintaining a worldwide market share of over 15%.

As a leader of innovation in the solar industry, Sungrow possesses a dynamic R&D team which consists of over 1000 employees. The Company has also invested its own in-house testing center approved by UL, CSA, TÜV Rheinland, and TÜV SÜD. In 2018, Sungrow launched a new inverter factory in India with 3 GW annual capacity.

Offering a wide range of solutions and services, Sungrow is committed to provide clean power for all and is steadfast in its efforts to becoming the global leader of power conversion technology. Learn more about Sungrow by visiting [www.sungrowpower.com](http://www.sungrowpower.com).



# *Central Inverter*



6.25/6.8 MVA MV Turnkey Station	SG3150U/SG2500U
SG3400HV-MV-20/	SG1250UD/SG1500UD
SG3125HV-MV-20/	
SG2500HV-MV-20	
SG3150U-MV/SG2500U-MV	
SG3400HV-20/SG3125HV-20/	
SG2500HV-20	

# 6.25/6.8 MVA MV Turnkey Station

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MV Turnkey Solution for 1500 Vdc System



## HIGH YIELD

- 3-level technology, inverter max. efficiency 99%
- High DC / AC ratio up to 1.5



## EASY O&M

- Integrated current and voltage monitoring function for online analysis and trouble shooting
- Modular design, easy for maintenance
- Convenient external touch screen



## SAVED INVESTMENT

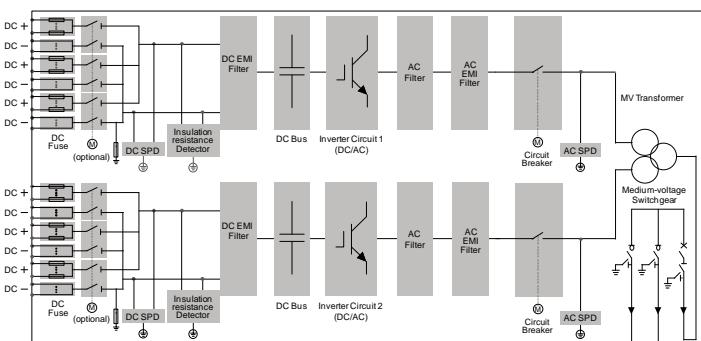
- Easy transportation and installation due to standard container design
- Q at night function (Optional)



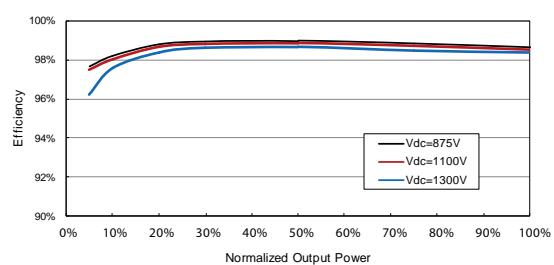
## GRID SUPPORT

- Compliance with standards: IEC 61727, IEC 62116
- Reactive & active power control
- Low / High voltage ride through (L / HVRT), Frequency ride through (FRT)

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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## 6.25/6.8 MVA MV Turnkey Station

Type designation	6.25 MVA MV Turnkey Station	6.8 MVA MV Turnkey Station
<b>Input (DC)</b>		
Max. PV input voltage	1500V	
Min. PV input voltage / Startup input voltage	875 V / 915 V	
MPP voltage range for nominal power	875 – 1300 V	
No. of independent MPP inputs	2	
No. of DC inputs	42 (optional: 48 negative grounding or floating; 56 negative grounding)	
Max. PV input current	2 * 4178 A	
<b>Output (AC)</b>		
AC output power	2 * 3593 kVA @ 25 °C / 2 * 3437 kVA @ 45 °C / 2 * 3125 kVA @ 50 °C	2 * 3593 kVA@ 25 °C / 2 * 3437 kVA @ 45 °C
AC voltage range	20 – 35 kV	
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
THD	< 3 % (at nominal power)	
DC current injection	< 0.5 % In	
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases	3 / 3	
<b>Efficiency</b>		
Inverter Max. efficiency	99.0 %	
Inverter Euro. efficiency	98.7 %	
<b>Transformer</b>		
Transformer rated power	6250 kVA	6873 kVA
Transformer max. power	7186 kVA	
LV / MV voltage	0.6 – 0.6 kV / 20 – 35 kV	
Transformer vector	Dy11 y11	
Transformer cooling type	ONAN (Oil Natural Air Natural)	
Oil type	Mineral oil (PCB free) or degradable oil on request	
<b>Protection and Function</b>		
DC input protection	Load break switch + fuse	
Inverter output protection	Circuit breaker	
AC MV output protection	Circuit breaker	
Overvoltage protection	DC Type I + II / AC Type II	
Grid monitoring / Ground fault monitoring	Yes / Yes	
Insulation monitoring	Yes	
Overheat protection	Yes	
Q at night function	Yes	
<b>General Data</b>		
Weight	31.1 T	
Degree of protection	IP54 (Inverter: IP55)	
Auxiliary power supply	415 V, 15 kVA (Optional: max. 40 kVA)	
Operating ambient temperature range	-35 to 60 °C (> 50 °C derating)	
Allowable relative humidity range (non-condensing)	0 – 95 %	
Cooling method	Temperature controlled forced air cooling	
Max. operating altitude	1000 m (standard) / > 1000 m (optional)	
Display	Touch screen	
Communication	Standard: RS485, Ethernet; Optional: optical fiber	
Compliance	CE, IEC 62109, IEC 62116, IEC 61727	
Grid support	Q at night function (optional), L / HVRT, FRT, active & reactive power control and power ramp rate control	



# SG3400/3125/2500HV-MV-20

**SUNGROW**  
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MV Turnkey Station for 1500 Vdc System - MV Separate  
Transformer + RMU



## HIGH YIELD

- Advanced three-level technology, max. inverter efficiency 99 %



## EASY O&M

- Integrated current, voltage and MV parameters monitoring function for online analysis and fast trouble shooting
- Modular design, easy for maintenance
- Convenient external touch screen



## SAVED INVESTMENT

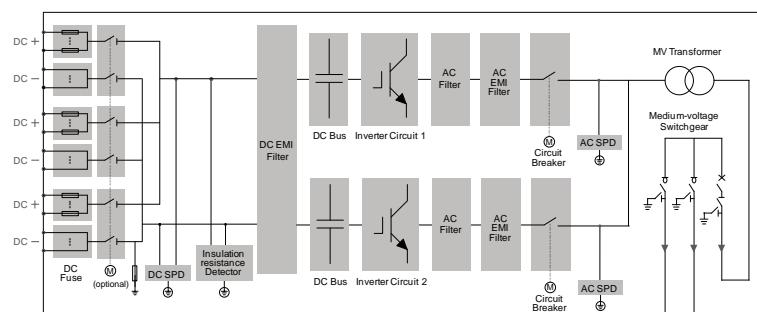
- Low transportation and installation cost due to 20-foot container design
- DC 1500 V system, low system cost
- Integrated MV transformer and switchgear
- Q at night function optional



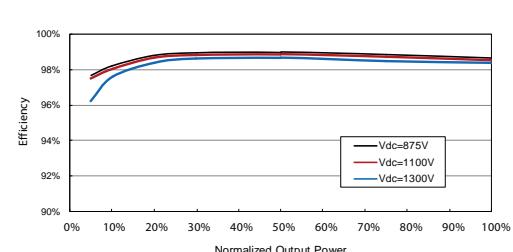
## GRID SUPPORT

- Compliance with standards: IEC 61727, IEC 62116
- Low/High voltage ride through (L/HVRT)
- Active & reactive power control and power ramp rate control

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE (SG3400HV-20)



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Type designation	SG3400HV-MV-20	SG3125HV-MV-20	SG2500HV-MV-20
<b>Input (DC)</b>			
Max. PV input voltage	1500 V		
Min. PV input voltage / Startup input voltage	875 V / 915 V	875 V / 915 V	800 V / 840 V
MPP voltage range for nominal power	875 – 1300 V	875 – 1300 V	800 – 1300 V
No. of independent MPP inputs	1		
No. of DC inputs	21 (optional: 24 negative grounding or floating; 28 negative grounding)		18 – 21
Max. PV input current	4178 A	4178 A	3508 A
<b>Output (AC)</b>			
AC output power	3593 kVA@ 25 °C / 3437 kVA@ 45 °C	3593 kVA@ 25 °C / 3437 kVA@ 45 °C	2750 kVA@ 45 °C / 2500 kVA@ 50 °C
Max. AC output current	3458 A	3458 A	2886 A
AC voltage range	10 – 35 kV		
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz		
THD	< 3 % (at nominal power)		
DC current injection	< 0.5 % In		
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging		
Feed-in phases / Connection phases	3 / 3		
<b>Efficiency</b>			
Inverter Max. efficiency	99.0 %		
Inverter Euro. efficiency	98.7 %		
<b>Transformer</b>			
Transformer rated power	3437 kVA	3125 kVA	2500 kVA
Transformer max. power	3593 kVA	3593 kVA	2750 kVA
LV / MV voltage	0.6 kV / 10 – 35 kV	0.6 kV / 10 – 35 kV	0.55 kV / 10 – 35 kV
Transformer vector	Dy11		
Transformer cooling type	ONAN (Oil Natural Air Natural)		
Oil type	Mineral oil (PCB free) or degradable oil on request		
<b>Protection and Function</b>			
DC input protection	Load break switch + fuse		
Inverter output protection	Circuit breaker		
AC MV output protection	Circuit breaker		
Oversupply protection	DC Type I + II / AC Type II		
Grid monitoring / Ground fault monitoring	Yes / Yes		
Insulation monitoring	Yes		
Overheat protection	Yes		
Q at night function	Optional		
<b>General Data</b>			
Dimensions (W*H*D)	6058 * 2896 * 2438 mm		
Weight	18 T		
Degree of protection	IP54 (Inverter: IP55)	IP54 (Inverter: IP55)	IP54
Auxiliary power supply	415 V, 15 kVA (Optional: max. 40 kVA)	415 V, 15 kVA (Optional: max. 40 kVA)	415 V, 5 kVA (Optional: max. 40 kVA)
Operating ambient temperature range	-35 to 60 °C (> 45 °C derating)	-35 to 60 °C (> 50 °C derating)	-35 to 60 °C (> 50 °C derating)
Allowable relative humidity range (non-condensing)	0 – 95 %		
Cooling method	Temperature controlled forced air cooling		
Max. operating altitude	1000 m (standard) / > 1000 m (optional)		
Display	Touch screen		
Communication	Standard: RS485, Ethernet; Optional: optical fiber		
Compliance	CE, IEC 62109, IEC 62116, IEC 61727		
Grid support	Q at night function (optional), L / HVRT, active & reactive power control and power ramp rate control		



# SG3150/2500U-MV New

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Turnkey Station for North America 1500 Vdc System - MV  
Transformer Integrated



## HIGH YIELD

- Advanced three-level technology, max. inverter efficiency 98.8%, inverter CEC efficiency 98.5 %
- Max. DC/AC ratio more than 1.5



## SAVED INVESTMENT

- Low transportation and installation cost due to 20-foot container design
- 1500V DC system, low system cost
- Integrated MV transformer and LV auxiliary power supply



## EASY O&M

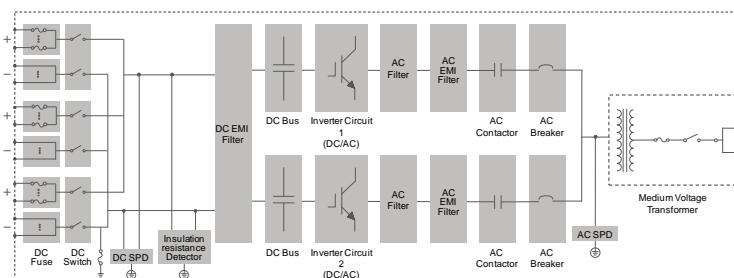
- Integrated current, voltage and MV parameters monitoring function for online analysis and fast trouble shooting
- Modular design, easy for maintenance
- Convenient external LCD



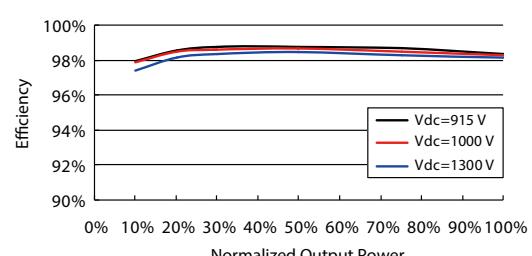
## GRID SUPPORT

- Complies with UL 1741, UL 1741 SA, IEEE 1547, Rule 21 and NEC 2014/2017
- Grid support including L/HVRT, L/HFRT, active & reactive power control and power ramp rate control

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE (SG3150U)



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Type designation	SG3150U-MV	SG2500U-MV
<b>Input (DC)</b>		
Max. PV input voltage	1500V	
Min. PV input voltage / Startup input voltage	915 V / 955 V	800 V / 840 V
MPP voltage range for nominal power	940 – 1300 V	800 – 1300 V
No. of independent MPP inputs	1	
No. of DC inputs	18 – 24	18 – 21
Max. PV input current	3420 A	3508 A
Max. DC short-circuit current	4800 A	
PV array configuration	Negative grounding	
<b>Output (AC)</b>		
AC output power	3150 kVA @ 45 °C (113 °F) / 2500 kVA @ 50 °C (122 °F)	
Max. inverter output current	2886 A	
AC voltage range	34.5 kV	
Nominal grid frequency / Grid frequency range	60 Hz / 55 – 65 Hz	
THD	< 3 % (at nominal power)	
DC current injection	< 0.5 % In	
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases	3 / 3	
<b>Efficiency</b>		
Inverter Max. efficiency	98.8 %	
Inverter Euro. efficiency	98.5 %	
<b>Transformer</b>		
Transformer rated power	3150 kVA	2500 kVA
Transformer max. power	3150 kVA	2750 kVA
LV / MV voltage	0.63 kV / 34.5 kV	0.55 kV / 34.5 kV
Transformer vector	Dy1	
Transformer cooling type	ONAN (Oil Natural Air Natural)	
Oil type	Mineral oil (PCB free) or degradable oil on request	
<b>Protection and Function</b>		
DC input protection	Load break switch + fuse	
Inverter output protection	Circuit breaker	
AC MV output protection	Load break switch + fuse	
Oversupply protection	DC Type II / AC Type II	
Grid monitoring / Ground fault monitoring	Yes / Yes	
Insulation monitoring	Optional	
Overheat protection	Yes	
<b>General Data</b>		
Dimensions (W*H*D)	6058 * 2896 * 2438 mm (238.5" * 114.0" * 96.0")	
Weight	18 T (39683.2 lbs)	
Degree of protection	NEMA 3R	
Auxiliary power supply	120 Vac, 5 kVA / Optional: 480 Vac, 30 kVA	
Operating ambient temperature range	-30 to 60 °C (> 45 °C derating) (-22 to 140 °F (> 113 °F derating))	-30 to 60 °C (> 50 °C derating) (-22 to 140 °F (> 122 °F derating))
Allowable relative humidity range (non-condensing)	0 – 95 %	
Cooling method	Temperature controlled forced air cooling	
Max. operating altitude	1000 m (standard) / > 1000 m (optional) (3280.8 ft (standard) / > 3280.8 ft (optional))	
Display	Touch screen	
Communication	Standard: RS485, Ethernet; Optional: optical fiber	
Compliance	UL 1741, IEEE 1547, UL1741 SA, NEC 2014/2017, CSA C22.2 No.107.1-01	
Grid support	Q at night function (optional), L/HVRT, L/HVRT, active & reactive power control and power ramp rate control, Volt-var, Frequency-watt	



# SG3400/3125/2500HV-20

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Turnkey Station for 1500 Vdc System



## HIGH YIELD

- Advanced three-level technology, max. inverter efficiency 99 %



## SAVED INVESTMENT

- Low transportation and installation cost due to 10-foot container design
- DC 1500 V system, low system cost
- Integrated LV auxiliary power supply
- Q at night function optional



## EASY O&M

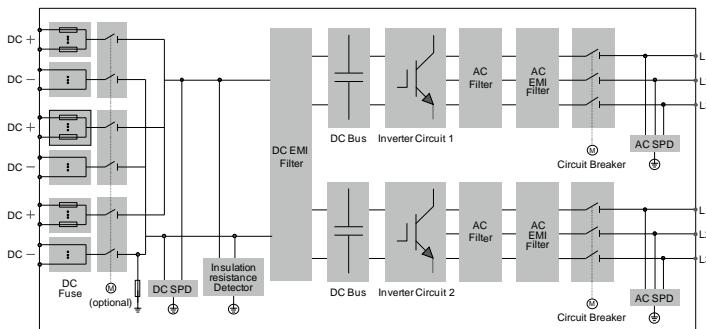
- Integrated current and voltage monitoring function for online analysis and fast trouble shooting
- Modular design, easy for maintenance
- Convenient external touch screen



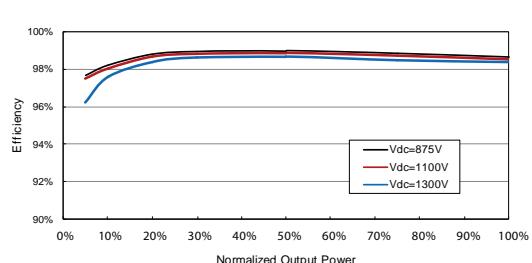
## GRID SUPPORT

- Compliance with standards: IEC 62116, IEC 61727
- Low/High voltage ride through (L/HVRT)
- Active & reactive power control and power ramp rate control

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE (SG3400HV-20)



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Type designation	SG3400HV-20	SG3125HV-20	SG2500HV-20
<b>Input (DC)</b>			
Max. PV input voltage		1500 V	
Min. PV input voltage / Startup input voltage	875 V / 915 V	875 V / 915 V	800 V / 840 V
MPP voltage range for nominal power	875 – 1300 V	875 – 1300 V	800 – 1300 V
No. of independent MPP inputs		1	
No. of DC inputs	21 (optional: 24 negative grounding or floating; 28 negative grounding)		18 – 24
Max. PV input current	4178 A	4178 A	3508 A
<b>Output (AC)</b>			
AC output power	3593 kVA @ 25 °C / 3437 kVA@ 45 °C / 2750 kVA@ 45 °C / 3437 kVA @ 45 °C	3593 kVA@ 25 °C / 3437 kVA@ 45 °C / 2750 kVA@ 45 °C / 3125 kVA@ 50 °C	2500 kVA@ 50 °C
Max. AC output current	3458 A	3458 A	2886 A
Nominal AC voltage	600 V	600 V	550 V
AC voltage range	480 – 690 V	480 – 690 V	495 – 605 V
Nominal grid frequency / Grid frequency range		50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
THD		< 3 % (at nominal power)	
DC current injection		< 0.5 % In	
Power factor at nominal power / Adjustable power factor		> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases		3 / 3	
<b>Efficiency</b>			
Inverter Max. efficiency		99.0%	
Inverter Euro. efficiency		98.7 %	
<b>Protection and Function</b>			
DC input protection		Load break switch + fuse	
AC output protection		Circuit breaker	
Overshoot protection		DC Type I + II / AC Type II	
Grid monitoring / Ground fault monitoring		Yes / Yes	
Insulation monitoring		Yes	
Overheat protection		Yes	
Q at night function		Optional	
<b>General Data</b>			
Dimensions (W*H*D)		2991*2591*2438 mm	
Weight		6.5 T	
Isolation method		Transformerless	
Degree of protection	IP55	IP55	IP54
Auxiliary power supply		415 V, 15 kVA (Optional: max. 40 kVA)	
Operating ambient temperature range		-35 to 60 °C (> 45 °C derating)	
Allowable relative humidity range (non-condensing)		0 – 95 %	
Cooling method		Temperature controlled forced air cooling	
Max. operating altitude	4000 m (> 2300 m derating)	4000 m (>3000 m derating)	4000 m (> 2000 m derating)
Display		Touch screen	
Communication		Standard: RS485, Ethernet; Optional: optical fiber	
Compliance		CE, IEC 62109, IEC 62116, IEC 61727	
Grid support		Q at night function (optional), L/HVRT, active & reactive power control and power ramp rate control	



Turnkey Station for North America 1500 Vdc System



### HIGH YIELD

- Advanced three-level technology, max. efficiency 98.8%, CEC efficiency 98.5 %
- Max. DC/AC ratio more than 1.5



### SAVED INVESTMENT

- Low transportation and installation cost due to 10-foot container design
- 1500V DC system, low system cost
- Integrated LV auxiliary power supply



### EASY O&M

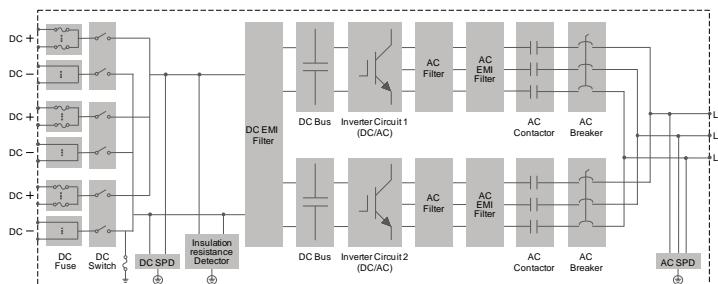
- Integrated current and voltage monitoring function for online analysis and fast trouble shooting
- Modular design, easy for maintenance
- Convenient external LCD



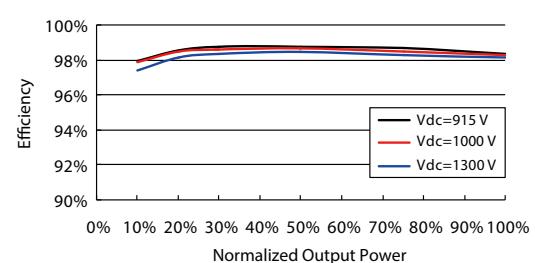
### GRID SUPPORT

- Complies with UL 1741, UL 1741 SA, IEEE 1547, Rule 21 and NEC 2014/2017
- Grid support including L/HVRT, L/HVRT, power ramp rate control, active and reactive power support

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE (SG3150U)



Type designation	SG3150U	SG2500U
<b>Input (DC)</b>		
Max. PV input voltage	1500V	
Min. PV input voltage / Startup input voltage	915 V / 955 V	800 V / 840 V
MPP voltage range for nominal power	940 – 1300 V	800 – 1300 V
No. of independent MPP inputs	1	
No. of DC inputs	18 – 24	18 – 21
Max. PV input current	3420 A	3508 A
Max. DC short-circuit current	4800 A	
<b>Output (AC)</b>		
AC output power	3150 kVA @ 45 °C (113 °F)	2750 kVA @ 45 °C (113 °F) / 2500 kVA @ 50 °C (122 °F)
Max. AC output current	2886 A	
Nominal AC voltage	630 V	550 V
AC voltage range	554 - 690 V	554 - 690 V
Nominal grid frequency / Grid frequency range	50 Hz / 55 – 65 Hz	484 - 605 V
THD	< 3 % (at nominal power)	
DC current injection	< 0.5 % of nominal output current	
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases	3 / 3	
<b>Efficiency</b>		
Max. efficiency	98.8%	
CEC efficiency	98.5 %	
<b>Protection</b>		
DC input protection	Load break switch + fuse	
AC output protection	Circuit breaker	
Oversupply protection	DC Type II / AC Type II	
Grid monitoring / Ground fault monitoring	Yes / Yes	
Insulation monitoring	Optional	
Q at night function	Optional	
Overheat protection	Yes	
<b>General Data</b>		
Dimensions (W*H*D)	2991*2896*2438 mm (117.8" * 114.0" * 96.0")	
Weight	6.9 T (15211.9 lbs)	
Isolation method	Transformerless	
Degree of protection	NEMA 3R	
Auxiliary power supply	120 Vac, 5 kVA / Optional: 480 Vac, 30 kVA	
Operating ambient temperature range	-30 to 60 °C (> 45 °C derating) (-22 to 140 °F (> 113 °F derating))	-30 to 60 °C (> 50 °C derating) (-22 to 140 °F (> 122 °F derating))
Allowable relative humidity range (non-condensing)	0 – 95 %	
Cooling method	Temperature controlled forced air cooling	
Max. operating altitude	4000 m (> 2000 m derating) (13123 ft (> 6561 ft derating))	
Display	Touch screen	
Communication	Standard: RS485, Ethernet; Optional: optical fiber	
Compliance	UL 1741, IEEE 1547, UL1741 SA, NEC 2014 / 2017, CSA C22.2 No.107.1-01	
Grid support	L/HVRT, L/HVRT, active & reactive power control and power ramp rate control, Volt-var, Frequency-watt	



# SG1250UD/SG1500UD

**SUNGROW**  
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Outdoor Inverter for 1000 Vdc System



## HIGH YIELD

- Efficient three-level topology, max. efficiency up to 99 %, European efficiency 98.7 %
- Full power operation without derating at 50 °C
- Long-time overload at 1.1 Pn
- DC/AC ratio up to 1.5



## EASY O&M

- Integrated zone current monitoring function for fast trouble shooting
- Modular design easy for maintenance
- IP65 protection



## SAVED INVESTMENT

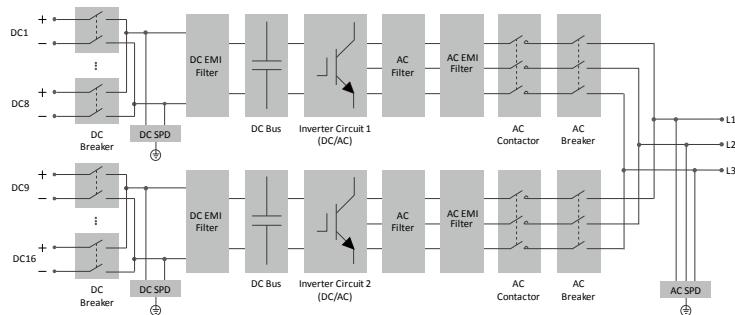
- Can be connected to double-winding transformer, saving transformer costs
- Q at night function optional



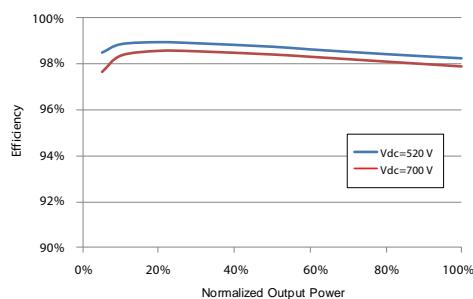
## GRID SUPPORT

- Compliance with standards: CE, IEC 62109, IEC 61727, IEC 62116
- Low/High voltage ride through (L/HVRT)
- Active & reactive power control and power ramp rate control

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



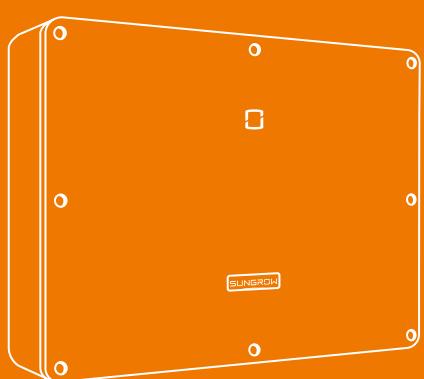
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Type designation	SG2000	SG2500
<b>Input (DC)</b>		
Max. PV input voltage	1100 V	
Min. PV input voltage / Startup input voltage	520 V / 540 V	580 V / 600 V
MPP voltage range for nominal power	520 – 850 V	580 – 850 V
No. of independent MPP inputs	2	
No. of DC inputs	16	
Max. PV input current	2712 A	2896 A
Max. DC short-circuit current	3200 A	
<b>Output (AC)</b>		
Nominal AC power	1386 kVA @ 45 °C / 1260 kVA @ 50 °C	1650 kVA @ 45 °C / 1500 kVA @ 50 °C
Max. AC output current	2222 A	2381 A
Nominal AC voltage	360 V	400 V
AC voltage range	288 – 414 V	320 – 460 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
THD	< 3 % (at nominal power)	
DC current injection	< 0.5 % of nominal output current	
Power factor at nominal power	> 0.99	
Adjustable power factor	0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases	3 / 3	
<b>Efficiency</b>		
Max. efficiency	99.0 %	
Euro. efficiency	98.7 %	
<b>Protection</b>		
DC input protection	Circuit breaker	
AC output protection	Circuit breaker	
Oversupply protection	DC Type II / AC Type II	
Grid monitoring / Ground fault monitoring	Yes / Yes	
Insulation monitoring	Yes	
Overheat protection	Yes	
Q at night function	Optional	
<b>General Data</b>		
Dimensions (W*H*D)	2150*2120*850 mm	
Weight	1900 kg	
Isolation method	Transformerless	
Degree of protection	IP65	
Auxiliary power supply	220 Vac, 2 kVA	
Night power consumption	< 40 W	
Operating ambient temperature range	-35 to 60 °C (> 50 °C derating)	
Allowable relative humidity range (non-condensing)	0 – 95 %	
Cooling method	Temperature controlled forced air cooling	
Max. operating altitude	4500 m (> 3000 m derating)	
Display	Touch screen	
Communication	RS485, Ethernet	
Compliance	IEC62109-1, IEC62109-2, IEC61727, IEC62116	
Grid support	Q at night function (optional), LVRT, HVRT, active & reactive power control and power ramp rate control	
Type designation	SG1250UD	SG1500UD





# *String Inverter*



SG250HX	SG5KTL-MT/SG6KTL-MT/
SG125HV	SG8KTL-M
SG110CX	SG8K3-D
SG33/40/50CX	SG8K-D
SG33/50CX-US	SG3K/3K6/4K/4K6/5K/6K-D
SG49K5J	SG2K/2K5/3K-S
SG33K3J	SH5.0/6.0/8.0/10RT
SG15KTL-M/SG20KTL-M	SH3K6/SH4K6
SG10KTL-M/SG12KTL-M	

# SG250HX New

**SUNGROW**  
Clean power for all

Multi-MPPT String Inverter for 1500 Vdc System



## HIGH YIELD

- 12 MPPTs with max. efficiency 99%
- Compatible with bifacial module
- Built-in Anti-PID and PID recovery function



## SMART O&M

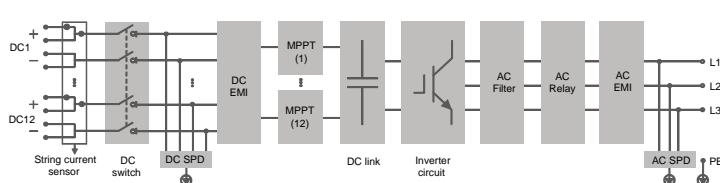
- Touch free commissioning and remote firmware upgrade
- Online IV curve scan and diagnosis
- Fuse free design with smart string current monitoring



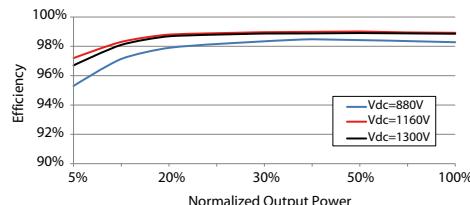
## PROVEN SAFETY

- IP66 and C5 protection
- Type II SPD for both DC and AC
- Compliant with global safety and grid code

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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Type designation	SG250HX
<b>Input (DC)</b>	
Max. PV input voltage	1500 V
Min. PV input voltage / Startup input voltage	600 V / 600 V
Nominal PV input voltage	1080 V
MPP voltage range	600 V – 1500 V
MPP voltage range for nominal power	860 V – 1300 V
No. of independent MPP inputs	12
Max. number of PV strings per MPPT	2
Max. PV input current	26 A * 12
Max. current for input connector	30 A
Max. DC short-circuit current	50 A * 12
<b>Output (AC)</b>	
AC output power	250 kVA @ 30 °C / 225 kVA @40 °C/200 KVA @50°C
Max. AC output current	180.5 A
Nominal AC voltage	3 / PE, 800 V
AC voltage range	680 – 880V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / connection phases	3 / 3
<b>Efficiency</b>	
Max. efficiency	99.0 %
European efficiency	98.7 %
<b>Protection</b>	
DC reverse connection protection	Yes
AC short circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
Ground fault monitoring	Yes
DC switch/ AC switch	Yes / No
PV String current monitoring	Yes
Q at night function	Yes
PID protection	Anti-PID or PID recovery
Ovvoltage protection	DC Type II / AC Type II
<b>General Data</b>	
Dimensions (W*H*D)	1051 * 660 * 363 mm
Weight	95kg
Isolation method	Transformerless
Ingress protection rating	IP66
Night power consumption	< 2 W
Operating ambient temperature range	-30 to 60 °C
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating)
Display	LED, Bluetooth+APP
Communication	RS485 / Optional: PLC
DC connection type	Amphenol UTX (Max. 6 mm <sup>2</sup> )
AC connection type	OT terminal (Max. 300 mm <sup>2</sup> )
Compliance	IEC 62109, IEC 61727, IEC 62116, IEC 60068, IEC 61683, VDE-AR-N 4110:2018, VDE-AR-N 4120:2018, IEC 61000-6-3, EN 50438, UNE 206007-1:2013, P.O.12.3, UTE C15-712-1:2013, UL1741, UL1741SA, IEEE1547, IEEE1547.1, CSA C22.2 107.1-01-2001, FCC Part15 Sub-part B Class A Limits, California Rule 21
Grid Support	Q at night function, LVRT, HVRT,active & reactive power control and power ramp rate control



## String Inverter for 1500 Vdc System



### HIGH YIELD

- Patented five-level topology, max. efficiency 98.9 %, European efficiency 98.7 %, CEC efficiency 98.5 %
- Full power operation without derating at 50 °C
- Patented anti-PID function



### EASY O&M

- Virtual central solution, easy for O&M
- Compact design and light weight for easy installation



### SAVED INVESTMENT

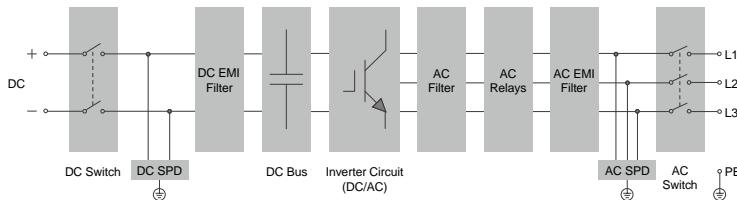
- DC 1500V, AC 600V, low system initial investment
- 1 to 5MW power block design for lower AC transformer and labor cost
- Max.DC/AC ratio up to 1.5



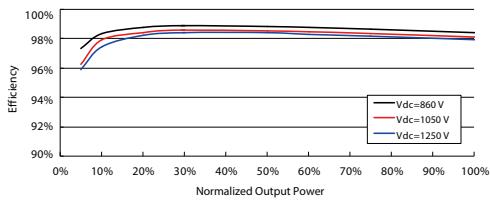
### GRID SUPPORT

- Compliance with both IEC and UL safety, EMC and grid support regulations
- Low/High voltage ride through(L/HVRT)
- Active & reactive power control and power ramp rate control

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE



Type designation	SG125HV
<b>Input (DC)</b>	
Max. PV input voltage	1500 V
Min. PV input voltage / Start-up input voltage	860 V / 920 V
Nominal PV input voltage	1050 V
MPP voltage range	860 – 1450 V
MPP voltage range for nominal power	860 – 1250 V
No. of independent MPP inputs	1
No. of DC inputs	1
Max. PV input current	148 A
Max. DC short-circuit current	240 A
<b>Output (AC)</b>	
AC output power	125000 VA @ 50 °C
Max. AC output current	120 A
Nominal AC voltage	3 / PE, 600 V
AC voltage range	480 – 690 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading - 0.8 lagging
Feed-in phases / connection phases	3 / 3
<b>Efficiency</b>	
Max. efficiency / European efficiency	98.9% / 98.7%
CEC efficiency	98.5%
<b>Protection</b>	
DC reverse connection protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
DC switch / AC switch	Yes / Yes
Q at night function	optional
Anti-PID function	Yes
Overvoltage protection	DC Type II / AC Type II
<b>General Data</b>	
Dimensions (W*H*D)	670*902*296 mm 26.4**35.5**11.7**
Weight	76 kg 167.5 lb
Isolation method	Transformerless
Degree of protection	IP 65 NEMA 4X
Night power consumption	< 4 W
Operating ambient temperature range	-25 to 60 °C (> 50 °C derating) -13 to 140 °F (> 122 °F derating)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating) 13123 ft (> 9843 ft derating)
Display / Communication	LED, Bluetooth+APP / RS485
DC connection type	OT or DT terminal (Max. 185 mm <sup>2</sup> 350 Kcmil)
AC connection type	OT or DT terminal (Max. 185 mm <sup>2</sup> 350 Kcmil)
Compliance	UL1741, UL1741SA, IEEE1547, IEEE1547.1, CSA C22.2 107.1-01-2001, FCC Part15 Sub-part B Class A Limits, California Rule 21, IEC 62109-1/-2, IEC 61000-6-2/-4, IEC 61727, IEC62116, BDEW, UNE 206007-1:2013, P.O.12.3, UTE C15-712-1:2013, CEI 0-16:2017, IEC 61683, PEA, NTCO
Grid Support	Q at night function (optional), LVRT, HVRT, ZVRT, active & reactive power regulation, PF control, soft start/stop
Type designation	SG125HV-20



## Multi-MPPT String Inverter for 1000 Vdc System



### HIGH YIELD

- 9 MPPTs with max. efficiency 98.7%
- Compatible with bifacial module
- Built-in PID recovery function optional



### EASY O&M

- Touch free commissioning and remote firmware upgrade
- Online IV curve scan and diagnosis
- Fuse free design with smart string current monitoring



### LOW COST

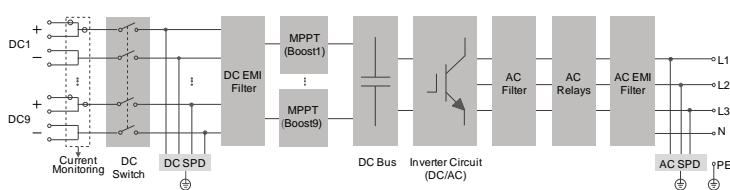
- Compatible with Al and Cu AC cables
- DC 2 in 1 connection enabled
- Q at night function



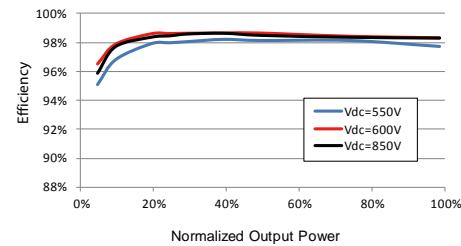
### PROVEN SAFETY

- IP66 and C5 protection
- Type II SPD for both DC and AC
- Compliant with global safety and grid code

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE



Type designation	SG110CX
<b>Input (DC)</b>	
Max. PV input voltage	1100 V
Min. PV input voltage / Startup input voltage	200 V / 250 V
Nominal PV input voltage	585 V
MPP voltage range	200 – 1000 V
MPP voltage range for nominal power	550V – 850 V
No. of independent MPP inputs	9
Max. number of PV strings per MPPT	2
Max. PV input current	26 A * 9
Max. current for input connector	30 A
Max. DC short-circuit current	40 A * 9
<b>Output (AC)</b>	
AC output power	110 kVA @ 45 °C / 100 kVA @ 50 °C
Max. AC output current	158.8 A
Nominal AC voltage	3 / N / PE, 400 V
AC voltage range	320 – 460 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / connection phases	3 / 3
<b>Efficiency</b>	
Max. efficiency	98.7 %
Euro. efficiency	98.5 %
<b>Protection</b>	
DC reverse connection protection	Yes
AC short circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
Ground fault monitoring	Yes
DC switch / AC switch	Yes / No
PV String current monitoring	Yes
Q at night function	Yes
PID recovery function	Optional
Overshoot protection	DC Type II / AC Type II
<b>General Data</b>	
Dimensions (W*H*D)	1051*660*362.5 mm
Weight	85 kg
Isolation method	Transformerless
Ingress protection rating	IP66
Night power consumption	< 2W
Operating ambient temperature range	-30 to 60 °C (> 50 °C derating)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating)
Display	LED, Bluetooth+APP
Communication	RS485 / Optional: Wi-Fi, Ethernet
DC connection type	MC4 (Max. 6 mm <sup>2</sup> )
AC connection type	OT terminal (Max. 240 mm <sup>2</sup> )
Compliance	IEC 62109, IEC 61727, IEC 62116, IEC 60068, IEC 61683, VDE-AR-N 4110:2018, VDE-AR-N 4120:2018, IEC 61000-6-3, EN 50438, AS/NZS 4777.2:2015, CEI 0-21, VDE 0126-1-1/A1 VFR 2014, UTE C15-712-1:2013, DEWA
Grid Support	Q at night function, LVRT, HVRT, active & reactive power control and power ramp rate control



# SG33CX/SG40CX/SG50CX New

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Clean power for all

Multi-MPPT String Inverter for 1000 Vdc System



## HIGH YIELD

- Up to 5 MPPTs with max. efficiency 98.7%
- Compatible with bifacial module
- Built-in PID recovery function optional



## SMART O&M

- Touch free commissioning and remote firmware upgrade
- Online IV curve scan and diagnosis
- Fuse free design with smart string current monitoring



## LOW COST

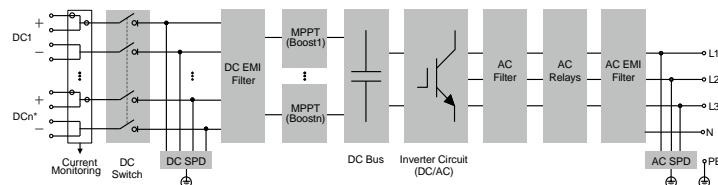
- Compatible with Al and Cu AC cables
- DC 2 in 1 connection enabled
- Cable free communication with optional Wi-Fi



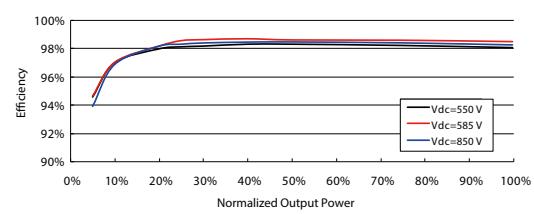
## PROVEN SAFETY

- IP66 and C5 protection
- Type II SPD for both DC and AC
- Compliant with global safety and grid code

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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Type designation	SG33CX	SG40CX	SG50CX
<b>Input (DC)</b>			
Max. PV input voltage		1100 V	
Min. PV input voltage / Start-up input voltage		200 V / 250 V	
Nominal PV input voltage		585 V	
MPP voltage range		200 – 1000 V	
MPP voltage range for nominal power		550 – 850V	
No. of independent MPP inputs	3	4	5
Max. number of PV strings per MPPT		2	
Max. PV input current	78 A	104 A	130 A
Max. current for input connector		30 A	
Max. DC short-circuit current	120 A	160 A	200 A
<b>Output (AC)</b>			
AC output power	36.3 kVA @ 40 °C / 33 kVA @ 45 °C	44 kVA @ 40 °C / 40 kVA @ 45 °C	55 kVA @ 40 °C / 50 kVA @ 45 °C
Max. AC output current	55.2 A	66.9 A	83.6A
Nominal AC voltage		3 / N / PE, 230 / 400 V	
AC voltage range		312 – 528 V	
Nominal grid frequency / Grid frequency range		50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
THD		< 3 % (at nominal power)	
DC current injection		< 0.5 % In	
Power factor at nominal power / Adjustable power factor		> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / connection phases		3 / 3	
<b>Efficiency</b>			
Max. efficiency / European efficiency	98.6 % / 98.3 %	98.6% / 98.3%	98.7% / 98.4%
<b>Protection</b>			
DC reverse connection protection		Yes	
AC short circuit protection		Yes	
Leakage current protection		Yes	
Grid monitoring		Yes	
DC switch / AC switch		Yes / No	
PV String current monitoring		Yes	
Q at night		Yes	
PID recovery function		optional	
Overtoltage protection		DC Type II / AC Type II	
<b>General Data</b>			
Dimensions (W*H*D)	702*595*310mm	782*645*310mm	782*645*310mm
Weight	50 kg	58 kg	62 kg
Isolation method		Transformerless	
Degree of protection		IP66	
Night power consumption		≤2 W	
Operating ambient temperature range		-30 to 60 °C (> 45 °C derating)	
Allowable relative humidity range (non-condensing)		0 – 100 %	
Cooling method		Smart forced air cooling	
Max. operating altitude		4000 m (> 3000 m derating)	
Display		LED, Bluetooth+APP	
Communication		RS485 / Optional: Wi-Fi, Ethernet	
DC connection type		MC4 (Max. 6 mm <sup>2</sup> )	
AC connection type		OT or DT terminal (Max.70 mm <sup>2</sup> )	
Compliance	IEC 62109, IEC 61727, IEC 62116, IEC 60068, IEC 61683, VDE-AR-N 4105:2018, VDE-AR-N 4110:2018, IEC 61000-6-3, EN 50438, AS/NZS 4777.2:2015, CEI 0-21, VDE 0126-1-1/A1 VFR 2014, UTE C15-712-1:2013, DEWA		
Grid Support	Q at night function, LVRT, HVRT, active & reactive power control and power ramp rate control		



# SG33CX-US/SG55CX-US New

**SUNGROW**  
Clean power for all

String Inverter For North America



## HIGH YIELD

- Up to 6 MPPTs with max. efficiency 98.9%
- Compatible with bifacial module
- Built-in PID recovery function



## SMART O&M

- Touch free commissioning and remote firmware upgrade
- Online IV curve scan and diagnosis
- Fuse free design with smart string current monitoring



## LOW COST

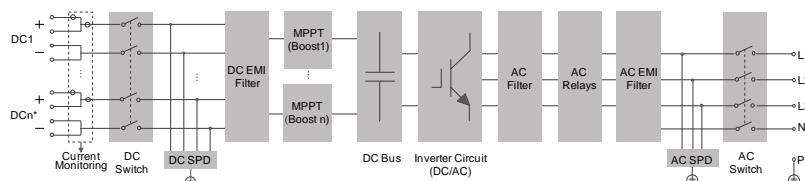
- DC/AC ratio more than 1.5
- Compatible with Al and Cu AC cables
- Flexible installation from vertical to horizontal



## PROVEN SAFETY

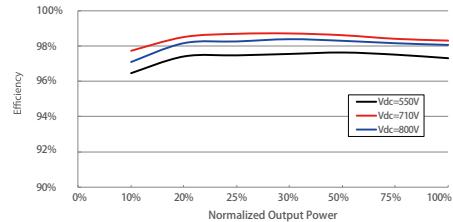
- NEMA 4X and C5 protection
- Type II SPD for both DC and AC
- Compliant with UL safety and grid code

## CIRCUIT DIAGRAM



\*: n=4 (SG33CX-US) / 6 (SG55CX-US)

## EFFICIENCY CURVE



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Type designation	SG33CX-US	SG55CX-US
<b>Input (DC)</b>		
Max. PV input voltage	1000 V	
Min. PV input voltage / Start-up input voltage	200 V / 200 V	
Nominal PV input voltage	710 V	
MPP voltage range	200 – 1000 V	
MPP voltage range for nominal power	500 – 850 V	
No. of independent MPP inputs	4	6
Max. number of PV strings per MPPT	2 / 2 / 2 / 2	2 / 2 / 2 / 2 / 2
Max. PV input current	26 A * 4	26 A * 6
Max. current for input connector		15 A
Max. DC short-circuit current	40 A * 4	40 A * 6
<b>Output (AC)</b>		
AC output power	33 kVA @ 45 °C (113 °F) / 30 kVA @ 50 °C (122 °F)	55 kVA @ 45 °C (113 °F) / 50 kVA @ 50 °C (122 °F)
Max. AC output current	39.7A	66.2 A
Nominal AC voltage	3 / N / PE, 277 / 480 V	
AC voltage range	422 – 528 V	
Nominal grid frequency / Grid frequency range	60 Hz / 55 – 65 Hz	
THD	< 3 % (at nominal power)	
DC current injection	< 0.5 % In	
Power factor at nominal power / Adjustable power factor	>0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases	3 / 3	
<b>Efficiency</b>		
Max. efficiency / CEC efficiency	98.7% / 98.5%	98.9% / 98.5%
<b>Protection</b>		
DC reverse connection protection	Yes	
AC short-circuit protection	Yes	
Leakage current protection	Yes	
Grid monitoring	Yes	
DC switch / AC switch	Yes / Yes	
PV string current monitoring	Yes	
Anti-PID function	Yes	
Arc fault circuit interrupter (AFCI)	Yes	
Ovvoltage protection	DC Type II / AC Type II	
<b>General Data</b>		
Dimensions (W*H*D)	780*930*310 mm (30.7**36.6**12.2")	
Weight	62 kg (136.7 lbs)	68 kg (149.9 lbs)
Isolation method	Transformerless	
Degree of protection	NEMA 4X	
Night power consumption	< 2 W	
Operating ambient temperature range	-30 to 60 °C (> 50 °C derating)	
Allowable relative humidity range (non-condensing)	0 – 100%	
Cooling method	Smart forced air cooling	
Max. operating altitude	4000 m (> 3000 m derating)	
Display	LED, Bluetooth + APP	
Communication	RS485 / optional: WiFi, Ethernet	
Third-Party communication protocol	SunSpec Modbus	
DC connection type	Screw clamp terminal (10AWG, Cu or Al )	
AC connection type	OT (max. 2 / 0AWG, Cu or Al )	
Compliance	UL1741, UL 1741 SA, CA Rule 21, IEEE 1547, IEEE 1547.1, CSA C22.2, No.107.1-01, UL 1699B and FCC Part 15	
Grid support	LVRT, HVRT, active & reactive power control and power ramp rate control	





### HIGH YIELD

- Max. efficiency 98.9 % European efficiency 98.5 %
- Full power operation without derating at 50 °C
- Up to 4 MPP trackers



### EASY O&M

- Integrated IV curve scan function for fast trouble shooting
- Plug-in design of fan and SPD, easy for on-site maintenance.



### SAVED INVESTMENT

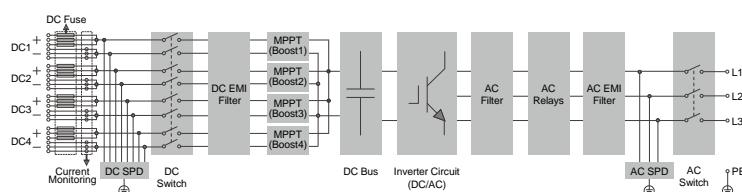
- Max. DC/AC ratio up to 1.5
- Capacity less than 50 kW plant only need one inverter
- Can be installed horizontally, saving installation cost



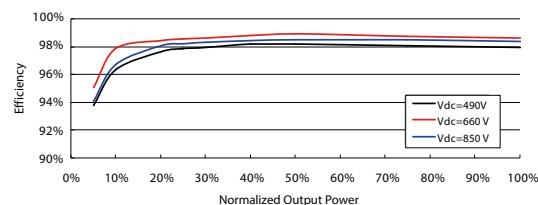
### GRID SUPPORT

- Compliance with Japan utility grid standards
- Fault ride through (FRT) 2017
- Remote active power control

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



Type designation	SG49K5J
<b>Input (DC)</b>	
Max. PV input voltage	1000 V
Min. PV input voltage / Startup input voltage	200 V / 250 V
Nominal input voltage	660 V
MPP voltage range	200 – 950 V
MPP voltage range for nominal power	490 – 850 V
No. of independent MPP inputs	4
Max. number of PV strings per MPPT	3
Max. PV input current	112A (28 A / 28 A / 28 A / 28 A)
Max. current for input connector	12 A
Max. DC short-circuit current	140 A (35 A / 35 A / 35 A / 35 A)
<b>Output (AC)</b>	
AC output power	49500 VA @ 50 °C / 55000 VA @ 50 °C (settable)
Max. AC output current	80 A
Nominal AC voltage	3 / PE, 420 V / 440 V
AC voltage range	374 – 506 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / Connection phases	3 / 3
<b>Efficiency</b>	
Max. efficiency	98.9 %
Euro. efficiency	98.5 %
<b>Protection</b>	
DC reverse connection protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
DC switch / AC switch	Yes / Yes
DC fuse	Yes (positive, 15A)
PV string current monitoring	Yes
Oversupply protection	DC Type II / AC Type II
<b>General Data</b>	
Dimensions (W*H*D)	677*962*282.5 mm
Weight	70 kg
Isolation method	Transformerless
Degree of protection	IP65
Night power consumption	< 2 W
Operating ambient temperature range	-25 to 60 °C (> 50 °C derating)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating)
Display / Communication	Graphic LCD / RS485
DC connection type	OT terminal (Max. 6 mm <sup>2</sup> )
AC connection type	OT terminal (Max. 70 mm <sup>2</sup> )
Grid support	FRT 2017, active & reactive power control and power ramp rate control
Type designation	SG49K5J





### HIGH YIELD

- Max. efficiency 98.5 %, European efficiency 98.3 %
- Full power operation without derating at 50 °C
- Up to 3 MPP trackers



### EASY O&M

- Integrated IV curve scan function for fast trouble shooting
- Compact design and light weight for easy installation
- Plug-in design of fan and SPD, easy for on-site maintenance



### SAVED INVESTMENT

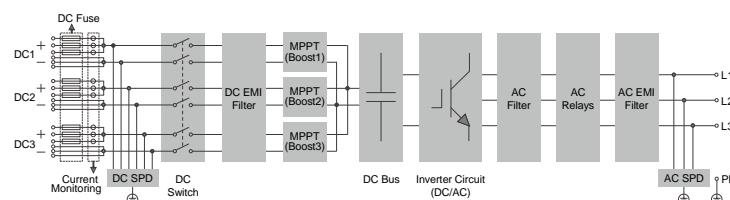
- Max. DC/AC ratio up to 1.8
- Can be installed horizontally, saving installation cost



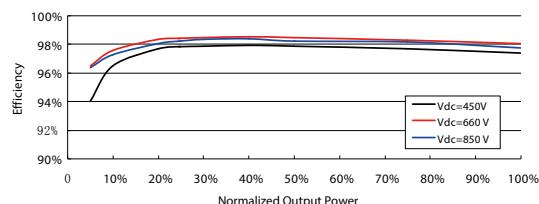
### GRID SUPPORT

- Compliance with Japan utility grid standards
- Fault ride through (FRT) 2017
- Remote active power control

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



Type designation	SG33K3J
<b>Input (DC)</b>	
Max. PV input voltage	1100 V
Min. PV input voltage / Startup input voltage	200 V / 250 V
Nominal input voltage	660 V
MPP voltage range	200 – 1000 V
MPP voltage range for nominal power	450 – 850 V
No. of independent MPP inputs	3
Max. number of PV strings per MPPT	3
Max. PV input current	99 A (33 A / 33 A / 33 A)
Max. current for input connector	12 A
Max. DC short-circuit current	108 A (36 A / 36 A / 36 A)
<b>Output (AC)</b>	
AC output power	33300 VA @ 50 °C / 38900 VA @ 50 °C (settable)
Max. AC output current	53.5 A
Nominal AC voltage	3 / PE, 420 V / 440 V
AC voltage range	365 – 528 V
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz
THD	< 3 % (at nominal power)
DC current injection	< 0.5 % In
Power factor at nominal power / Adjustable power factor	> 0.99 / 0.8 leading – 0.8 lagging
Feed-in phases / Connection phases	3 / 3
<b>Efficiency</b>	
Max. efficiency	98.5 %
Euro. efficiency	98.3 %
<b>Protection</b>	
DC reverse connection protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
DC switch / AC switch	Yes / No
DC fuse	Yes (positive, 15A)
PV string current monitoring	Yes
Oversupply protection	DC Type II / AC Type II
<b>General Data</b>	
Dimensions (W*H*D)	525*740*240 mm
Weight	48 kg
Isolation method	Transformerless
Degree of protection	IP65
Night power consumption	< 2 W
Operating ambient temperature range	-25 to 60 °C (> 50 °C derating)
Allowable relative humidity range (non-condensing)	0 – 100 %
Cooling method	Smart forced air cooling
Max. operating altitude	4000 m (> 3000 m derating)
Display / Communication	Graphic LCD / RS485
DC connection type	MC4 (Max. 6 mm <sup>2</sup> )
AC connection type	OT terminal (Max. 50 mm <sup>2</sup> )
Grid support	FRT 2017, active & reactive power control and power ramp rate control
Type designation	SG33K3J



# SG15KTL-M/SG20KTL-M

**SUNGROW**  
Clean power for all

Multi-MPPT String Inverter for 1000 Vdc System



## HIGH YIELD

- Industry leading efficiency of 98.6%
- Flexible PV string configurations with DC/AC ratio up to 1.3



## SMART MANAGEMENT

- Feature-rich online monitoring via App or Web
- Over-the-air firmware updates
- Gain energy flow transparency with Sungrow smart meter
- Accurate dynamic feed-in control



## SAFE AND DURABLE

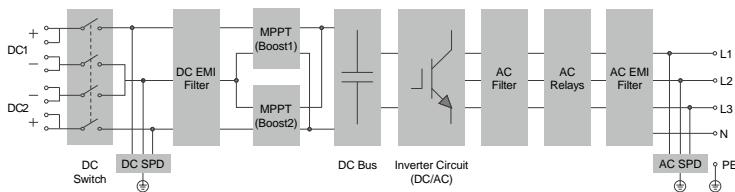
- Built-in surge arresters and residual current protection
- High anti-corrosion rating at C5



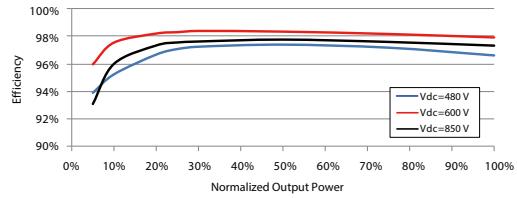
## EASY AND USER FRIENDLY

- 24kg compact design
- Unique push-in connectors for time-saving installation
- Mounting plate with built-in level
- Fast and easy commissioning via App

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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Type designation	SG15KTL-M	SG20KTL-M
<b>Input (DC)</b>		
Max. PV input voltage	1100 V	
Min. PV input voltage / Start-up input voltage	200 V / 250 V	
Nominal PV input voltage	600 V	
MPP voltage range	200 V – 1000 V	
MPP voltage range for nominal power	380 V – 850 V	480 V – 850 V
No. of independent MPP inputs	2	
Max. number of PV strings per MPPT	2	
Max. PV input current	44 A (22 A / 22 A)	
Max. current for input connector	15 A	
Max. DC short-circuit current	60 A (30 A / 30 A )	
<b>Output (AC)</b>		
AC output power	16500 VA @ 35 °C / 15000 kVA @ 45 °C	22000 VA @ 35 °C / 20000 kVA @ 45 °C
Max. AC output current	24.0 A	31.9 A
Nominal AC voltage	3 / N / PE, 230 / 400 V	
AC voltage range	270 V – 480 V	
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
THD	< 3 % (at nominal power)	
DC current injection	< 0.5 % In	
Power factor at nominal power	> 0.99	
Adjustable power factor	0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases	3 / 3	
<b>Efficiency</b>		
Max. efficiency / Euro. efficiency	98.6 % / 98.3 %	
<b>Protection</b>		
LVRT	Yes	
DC reverse connection protection	Yes	
AC short-circuit protection	Yes	
Leakage current protection	Yes	
Grid monitoring	Yes	
DC switch / AC switch	Yes* / No	
PV string current monitoring	Yes	
PID recovery function	Optional	
Overtoltage protection	DC Type II / AC Type II	
<b>General Data</b>		
Dimensions (W*H*D)	370*485*210 mm	
Weight	24 kg	
Isolation method	Transformerless	
Degree of protection	IP65	
Night power consumption	< 3 W	
Operating ambient temperature range	-25 to 60 °C (> 45 °C derating)	
Allowable relative humidity range	0 – 100 % (non-condensing)	
Cooling method	Smart forced air cooling	
Max. operating altitude	4000 m (> 3000 m derating)	
Display / Communication	LED, Bluetooth + APP / RS485 (Optional: WiFi / Ethernet)	
DC connection type	MC4 (Max. 6 mm <sup>2</sup> )	
AC connection type	Plug and play connector (Max. 16 mm <sup>2</sup> )	
Compliance	EN 62109-1, EN 62109-2, EN 61000-3-11, EN 61000-3-12, IEC 61727, IEC 62116, VDE0126-1-1/4105, AS 4777.2, IEC 60068, IEC 61683, EN 50530, CEI 0-21,NB/T 32004-2013, UNE 206007-1, G59/3, UTE C15-712-1	
Grid support	Active & reactive power control and power ramp rate control	
Type designation	SG15KTL-M	SG20KTL-M

\* Devices for Australia are not equipped with DC switches



# SG10KTL-M/SG12KTL-M

**SUNGROW**  
Clean power for all

Multi-MPPT String Inverter for 1000 Vdc System



## HIGH YIELD

- Industry leading efficiency of 98.6%
- Flexible PV string configurations with DC/AC ratio up to 1.3



## SMART MANAGEMENT

- Feature-rich online monitoring via App or Web
- Over-the-air firmware updates
- Gain energy flow transparency with Sungrow smart meter
- Accurate dynamic feed-in control



## SAFE AND DURABLE

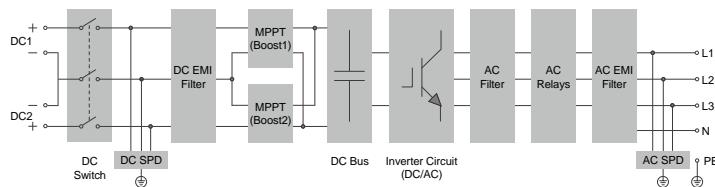
- Built-in surge arresters and residual current protection
- High anti-corrosion rating at C5



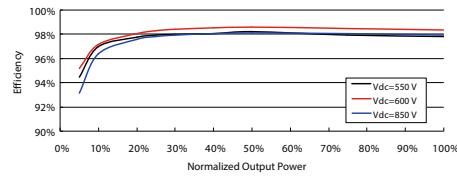
## EASY AND USER FRIENDLY

- 20kg compact design
- Unique push-in connectors for time-saving installation
- Mounting plate with built-in level
- Fast and easy commissioning via App

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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Type designation	SG10KTL-M	SG12KTL-M
<b>Input (DC)</b>		
Max. PV input voltage	1100 V	
Min. PV input voltage / Start-up input voltage	200 V / 250 V	
Nominal PV input voltage	600 V	
MPP voltage range	200 V – 1000 V	
MPP voltage range for nominal power	470 V – 850 V	550 V – 850 V
No. of independent MPP inputs	2	
Max. number of PV strings per MPPT	1	
Max. PV input current	22 A (11 A / 11 A)	
Max. current for input connector	15 A	
Max. DC short-circuit current	30 A (15 A / 15 A)	
<b>Output (AC)</b>		
AC output power	11000 VA * @ 35 °C / 10000 VA @ 45 °C	13200 VA @ 35 °C / 12000 VA @ 45 °C
Max. AC output current	16.5 A	20 A
Nominal AC voltage	3 / N / PE, 230 / 400 V	
AC voltage range	270 V – 480 V	
Nominal grid frequency / Grid frequency range	50 Hz / 45 – 55 Hz, 60 Hz / 55 – 65 Hz	
THD	< 3 % (at nominal power)	
DC current injection	< 0.5 % In	
Power factor at nominal power	> 0.99	
Ajustable power factor	0.8 leading – 0.8 lagging	
Feed-in phases / connection phases	3 / 3	
<b>Efficiency</b>		
Max. efficiency / Euro. efficiency	98.6 % / 98.1 %	
<b>Protection</b>		
LVRT	Yes	
DC reverse connection protection	Yes	
AC short-circuit protection	Yes	
Leakage current protection	Yes	
Grid monitoring	Yes	
DC switch / AC switch	Yes / No	
PV string current monitoring	Yes	
PID recovery function	Optional	
Ovvoltage protection	DC Type II / AC Type II	
<b>General Data</b>		
Dimensions (W*H*D)	370*485*160 mm	
Weight	20 kg	
Isolation method	Transformerless	
Degree of protection	IP65	
Night power consumption	< 3 W	
Operating ambient temperature range	-25 to 60 °C (> 45 °C derating)	
Allowable relative humidity range	0 – 100 % (non-condensing)	
Cooling method	Natural cooling	
Max. operating altitude	4000 m (> 3000 m derating)	
Display / Communication	LED, Bluetooth + APP / RS485 (optional: WiFi, Ethernet)	
DC connection type	MC4 (Max. 6 mm <sup>2</sup> )	
AC connection type	Plug and play connector (Max. 6 mm <sup>2</sup> )	
Compliance	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-3-11, IEC/EN 61000-3-12, UTE C15-712-1, IEC 61727, IEC 62116, VDE0126-1-1/4105, G59/3, CEI 0-21, UNE 206007-1, EN50438:2013	
Grid support	Active & reactive power control and power ramp rate control	
Type designation	SG10KTL-M	SG12KTL-M

\* VDE4105 :10000VA



# SG5KTL-MT/SG6KTL-MT/ SG8KTL-M

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Multi-MPPT String Inverter for 1000 Vdc System



## HIGH YIELD

- Industry leading efficiency of 98.6%
- Flexible PV string configurations with DC/AC ratio up to 1.3



## SMART MANAGEMENT

- Feature-rich online monitoring via App or Web
- Over-the-air firmware updates
- Gain energy flow transparency with Sungrow smart meter
- Accurate dynamic feed-in control



## SAFE AND DURABLE

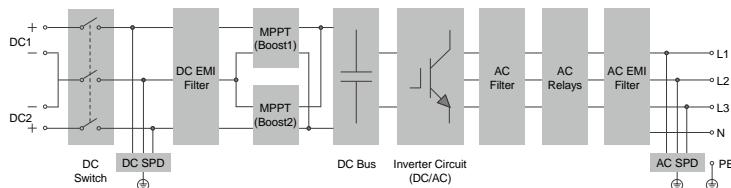
- Built-in surge arresters and residual current protection
- High anti-corrosion rating at C5



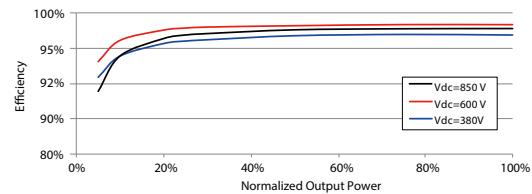
## EASY AND USER FRIENDLY

- 20kg compact design
- Unique push-in connectors for time-saving installation
- Mounting plate with built-in level
- Fast and easy commissioning via App

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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Type designation	SG5KTL-MT	SG6KTL-MT	SG8KTL-M
<b>Input (DC)</b>			
Max. PV input voltage	1100 V		
Min. PV input voltage / Start-up input voltage	200 V / 250 V		
Nominal PV input voltage	600 V		
MPP voltage range	200 – 1000 V		
MPP voltage range for nominal power	240 – 850 V	290 – 850 V	380 – 850 V
No. of independent MPP inputs	2		
Max. number of PV strings per MPPT	1		
Max. PV input current	22A (11A / 11A)		
Max. current for input connector	15 A		
Max. DC short-circuit current	30 A (15A / 15A )		
<b>Output (AC)</b>			
Nominal AC power (at 45 °C)	5000 W	6000 W	8000 W
Max. AC power when PF = 1 (at 35 °C)	5500 W	6600 W	8800 W
Max. AC apparent power (at 35 °C)	5500 VA	6600 VA	8800 VA
Max. AC output current (at 35 °C)	8.5A	10.0 A	13.3 A
Nominal AC voltage	3 / N / PE, 230 / 400 V		
AC voltage range	270 - 480 V		
Nominal grid frequency / Grid frequency range	50 Hz / 45 - 55 Hz, 60 Hz / 55 - 65 Hz		
THD	< 3 % (at nominal power)		
DC current injection	< 0.5 % In		
Power factor at nominal power	>0.99		
Ajustable power factor	0.8 leading - 0.8 lagging		
Feed-in phases / connection phases	3 / 3		
<b>Efficiency</b>			
Max. efficiency / European efficiency	98.2% / 97.6%	98.4% / 97.7%	98.6% / 98.0%
<b>Protection</b>			
VRT	Yes		
Islanding Protection	Yes		
DC reverse connection protection	Yes		
AC short-circuit protection	Yes		
Leakage current protection	Yes		
Grid monitoring	Yes		
DC switch / AC switch	Yes* / No		
PV string current monitoring	Yes		
Oversupply protection	DC Type II / AC Type II		
<b>General Data</b>			
Dimensions (W*H*D)	370*485*160 mm		
Weight	20 kg		
Isolation method	Transformerless		
Degree of protection	IP65		
Night power consumption	< 3 W		
Operating ambient temperature range	-25 to 60 °C (> 45 °C derating)		
Allowable relative humidity range	0 – 100 % (non-condensing)		
Cooling method	Natural cooling		
Max. operating altitude	4000 m (> 3000 m derating)		
Display / Communication	LED, Bluetooth + APP / RS485, (WiFi, E-Net optional)		
DC connection type	MC4 (Max. 6 mm <sup>2</sup> )		
AC connection type	Plug and play connector (Max. 6 mm <sup>2</sup> )		
Compliance	EN62109-1, EN62109-2, IEC 61727, IEC 62116, VDE 0126-1-1/4105, AS 4777.2, EN 50438:2013, C10/11, G59/3	EN62109-1, EN62109-2, IEC 61727, IEC 62116,VDE 0126-1-1/4105, UTE C15-712-1,0126-1-1/4105,EN 50438:2013, C10/11, G59/3	EN62109-1, EN62109-2, IEC 61727, IEC 62116,VDE 0126-1-1/4105,UTE C15-712-1,1,VFR-2014, CEI 0-21, EN 50438:2013, C10/11, G59/3, UNE 206007-1
Grid Support	Active & reactive power control and power ramp rate control		
Type designation	SG5KTL-MT	SG6KTL-MT	SG8KTL-M

\*: Devices for Australia are not equipped with DC switches



# SG8K-D/SG8K3-D

**SUNGROW**  
Clean power for all

## Residential String Inverter



### HIGH YIELD

- Industry leading efficiency of 98.5%
- Flexible PV string configurations
- High DC/AC ratio up to 1.3



### SMART MANAGEMENT

- Feature-rich online monitoring via App or Web
- Firmware updates & new monitoring features
- Gain energy flow with Sungrow smart meter



### SAFE AND RELIABLE

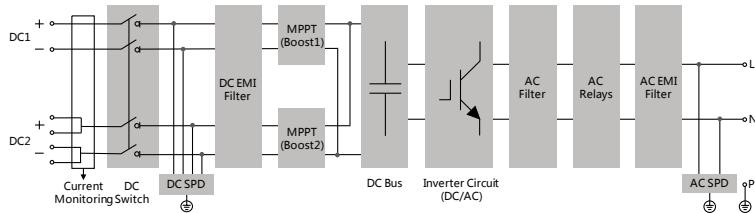
- Built-in surge arresters & RCD
- Cutting-edge technology ensures long life time
- High anti-corrosion rating at C5



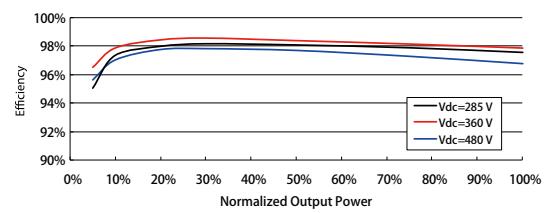
### EASY INSTALLATION

- Push-in connectors for time-saving installation
- Mounting plate with built-in level
- Fast and easy commissioning via App or LCD

## CIRCUIT DIAGRAM (SG8K3-D)



## EFFICIENCY CURVE (SG8K3-D)



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Type designation	SG8K-D	SG8K3-D
<b>Input (DC)</b>		
Max. PV input voltage	600 V	
Min. PV input voltage / Startup voltage	90 V / 120 V	
Nominal input voltage	360 V	
MPP voltage range	90 V – 540 V	
MPP voltage range for nominal power	285 V – 480 V	
No. of MPPTs	2	
Max. number of PV strings per MPPT	1 / 2	
Max. PV input current	12.5 A / 25 A	
Max. current for input connector	15 A / 30 A	15 A
Max. PV short-circuit current	15 A / 30 A	
<b>Output (AC)</b>		
AC output power	8000 VA	8300 VA
Max. AC output current	34.8 A	36.1 A
Nominal AC voltage	230 Vac	220 Vac / 240 Vac
AC voltage range	180 Vac – 276 Vac (this may vary with grid standards)	176 Vac – 276 Vac (this may vary with grid standards)
Nominal grid frequency	50Hz / 60Hz	60 Hz
Grid frequency range	45 Hz – 55 Hz / 55 Hz – 65 Hz (this may vary with grid standard s)	55 Hz–65 Hz (this may vary with grid standards)
Total harmonic distortion (THD)	< 3 % (of nominal power)	
DC current injection	< 0.5 % (of nominal current)	
Power factor	> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases	1/1	
<b>Efficiency</b>		
Max. efficiency / European efficiency	98.5 % / 98.0 %	
<b>Protection</b>		
PV reverse connection protection	Yes	
AC short circuit protection	Yes	
Leakage current protection	Yes	
Grid monitoring	Yes	
PV string current monitoring	Yes	
DC switch	Optional	Yes
Overvoltage protection	DC Type II / AC Type II	
<b>General Data</b>		
Dimensions (W*H*D)	360*390*148 mm	
Weight	15.5 kg	
Isolation method	Transformerless	
Ingress protection rating	IP65	
Power loss in night mode	< 1 W	
Operating ambient temperature	-25 °C to 60 °C (> 45 °C derating)	
Allowable relative humidity (non-condensing)	0 – 100 %	
Cooling method	Natural cooling	
Max. operating altitude	4000 m (> 2000 m derating)	
Display / Communication	LCD / Wi-Fi	
PV connection type	MC4 (Max. 6mm <sup>2</sup> )	
AC connection type	Plug and play connector (Max. 6mm <sup>2</sup> )	
Compliance	IEC62109-1, IEC62109-2, IEC62116, IEC61727, EN 61000-6- 2, EN 61 000-6-3, AS4777.2	IEC62109-1, IEC62109-2, IEC62116, IEC61727, EN 61000-6-2, EN 61 000-6- 3, ABNT NBR 16149, ABNT NBR 16150
Compliance	Active & reactive power control, power ramp rate control	
Type designation	SG8K-D	SG8K3-D



# SG3K/3K6/4K/4K6/5K/6K-D

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Residential String Inverter



## HIGH YIELD

- Industry leading efficiency of 98.4%
- Flexible PV string configurations
- High DC/AC ratio up to 1.3



## SMART MANAGEMENT

- Feature-rich online monitoring via App or Web
- Firmware updates & new monitoring features
- Gain energy flow with Sungrow smart meter



## SAFE AND RELIABLE

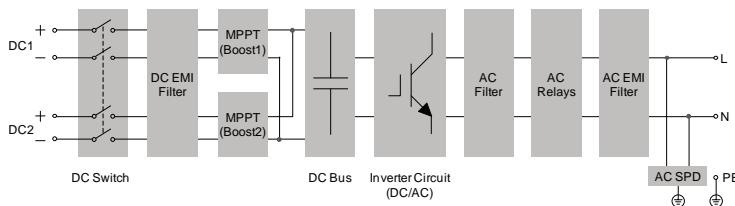
- Built-in surge arresters & RCD
- Cutting-edge technology ensures long life time
- High anti-corrosion rating at C5



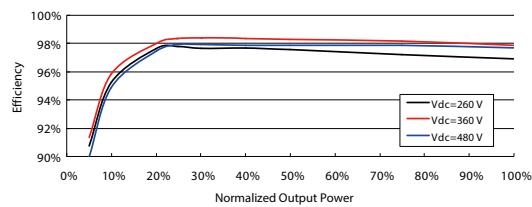
## EASY INSTALLATION

- Push-in connectors for time-saving installation
- Mounting plate with built-in level
- Fast and easy commissioning via App or LCD

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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Type designation	SG3K-D	SG3K6-D	SG4K-D	SG4K6-D	SG5K-D	SG6K-D
<b>Input (DC)</b>						
Max. PV input voltage			600 V			
Min. PV input voltage / Startup voltage			90 / 120 V			
Nominal input voltage			360 V			
MPP voltage range			90 V – 560 V			
MPP voltage range for nominal power	160 V – 480 V	190 V – 480 V	210 V – 480 V	240 V – 480 V	260 V – 480 V	315 V – 480 V
No. of MPPTs			2			
Max. number of PV strings per MPPT			1			
Max. PV input current			20 A (10 A / 10 A)			
Max. current for input connector			12 A (12 A / 12 A)			
Max. PV short-circuit current			24 A (12 A / 12 A)			
<b>Output (AC)</b>						
Nominal AC output power	3000 W	3680 W	4000 W	4600 W	5000 W	6000 W
Max. apparent AC output power	3000 VA	3680 VA	4000 VA	4600 VA	5000 VA	6000 VA
Max. AC output current	13.7 A	16 A	18.2 A	21 A	22.7 A	27.3 A
Nominal AC voltage			230 Vac			
AC voltage range			180 – 276 Vac			
Nominal grid frequency			50 Hz / 60 Hz			
Grid frequency range			45 Hz – 55 Hz / 55 Hz – 65 Hz			
Total Harmonic Distortion (THD)			< 3 % (of nominal power)			
DC current injection			< 0.5 % (of nominal current)			
Power factor			> 0.99 / 0.8 leading – 0.8 lagging			
Feed-in phases / Connection phases			1/1			
<b>Efficiency</b>						
Max. efficiency			98.4 %			
Max. European efficiency	97.7 %	97.7 %	98.0 %	98.0 %	98.0 %	98.0 %
<b>Protection</b>						
PV reverse connection protection			Yes			
AC short circuit protection			Yes			
Leakage current protection			Yes			
Grid monitoring			Yes			
PV string current monitoring			Yes			
DC switch			Yes			
Overvoltage protection			AC Type II			
<b>General Data</b>						
Dimensions (W*H*D)			360*390*133 mm			
Weight			11.5 kg			
Isolation method			Transformerless			
Ingress protection rating			IP65			
Night power consumption			< 3 W			
Operating ambient temperature range			-25 °C to 60 °C (>45 °C derating)			
Allowable relative humidity			0 – 100 %			
Cooling method			Natural cooling			
Max. operating altitude			4000 m (> 2000 m derating)			
Display			LCD			
Communication			Wifi / Ethernet (optional)			
DC connection type			MC4 (Max. 6 mm <sup>2</sup> )			
AC connection type			Plug and play connector (max. 6 mm <sup>2</sup> )			
Compliance			IEC62109-1, IEC62109-2, IEC62116, IEC61727, EN 61000-6-2, EN 61000-6-3, VDE-AR-N-4105, CEI 0-21, VDE0126-1-1, UTE C15-712, VFR-2014, EN50438, C10/11, G83/2, G59/3			
Compliance			Active & reactive power control, power ramp rate control			
Type designation	SG3K-D	SG3K6-D	SG4K-D	SG4K6-D	SG5K-D	SG6K-D



# SG2K-S/SG2K5-S/SG3K-S

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## Residential String Inverter



### HIGH YIELD

- Industry leading efficiency of 98.2%
- Flexible PV string configurations
- High DC/AC ratio up to 1.3



### SMART MANAGEMENT

- Feature-rich online monitoring via App or Web
- Firmware updates & new monitoring features
- Gain energy flow with Sungrow smart meter



### SAFE AND RELIABLE

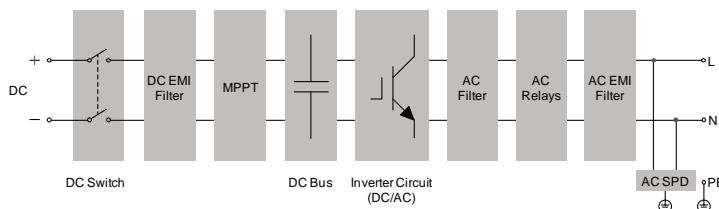
- Built-in surge arresters & RCD
- Cutting-edge technology ensures long life time
- High anti-corrosion rating at C5



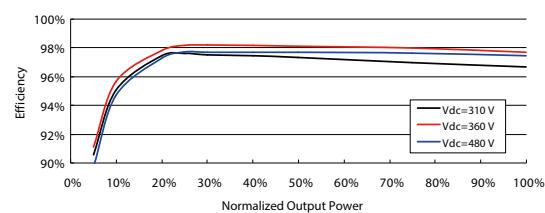
### EASY INSTALLATION

- Push-in connectors for time-saving installation
- Mounting plate with built-in level
- Fast and easy commissioning via App or LCD

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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Type designation	SG2K-S	SG2K5-S	SG3K-S
<b>Input (DC)</b>			
Max. PV input voltage		600 V	
Min. PV input voltage / Startup voltage		90 / 120 V	
Nominal input voltage		360 V	
MPP voltage range		90 V – 560 V	
MPP voltage range for nominal power	210 V – 480 V	260 V – 480 V	310 V – 480 V
No. of MPPTs		1	
Max. number of PV strings per MPPT		1	
Max. PV input current		10 A	
Max. current for input connector		12 A	
Max. PV short-circuit current		12 A	
<b>Output (AC)</b>			
Nominal AC output power	2000 W	2500 W	3000 W
Max. apparent AC output power	2000 VA	2500 VA	3000 VA
Max. AC output current	9.1 A	11.3 A	13.7 A
Nominal AC voltage		230 Vac	
AC voltage range		180 Vac – 276 Vac	
Nominal grid frequency		50 Hz / 60 Hz	
Grid frequency range		45 Hz – 55 Hz / 55 Hz – 65 Hz	
Total Harmonic Distortion (THD)		< 3 % (of nominal power)	
DC current injection		< 0.5 % (of nominal current)	
Power factor		> 0.99 / 0.8 leading – 0.8 lagging	
Feed-in phases / Connection phases		1/1	
<b>Efficiency</b>			
Max. efficiency / European efficiency	98.2 % / 97.2 %	98.2 % / 97.5 %	98.2 % / 97.7 %
<b>Protection</b>			
PV reverse connection protection		Yes	
AC short circuit protection		Yes	
Leakage current protection		Yes	
Grid monitoring		Yes	
PV string current monitoring		Yes	
DC switch		Yes	
Oversupply protection		AC Type II	
<b>General Data</b>			
Dimensions (W*H*D)		300*370*125 mm	
Weight		8.5 kg	
Isolation method		Transformerless	
Ingress protection rating		IP65	
Night power consumption		< 3 W	
Operating ambient temperature range		-25 °C to 60 °C (>45 °C derating)	
Allowable relative humidity (non-condensing)		0 – 100 %	
Cooling method		Natural cooling	
Max. operating altitude		4000 m (> 2000 m derating)	
Display		LCD	
Communication		Wifi / Ethernet (optional)	
DC connection type		MC4 (Max. 6 mm <sup>2</sup> )	
AC connection type		Plug and play connector (Max. 6 mm <sup>2</sup> )	
Compliance		IEC62109-1, IEC62109-2, IEC62116, IEC61727, EN 61000-6-2, EN 61000-6-3, VDE-AR-N-4105, CEI 0-21, VDE0126-1-1, UTE C15-712, VFR-2014, EN50438, C10/11, G83/2, G59/3	
Compliance		Active & reactive power control, power ramp rate control	
Type designation	SG2K-S	SG2K5-S	SG3K-S



## Hybrid Inverter



### FLEXIBLE APPLICATION

- 150~600V wide battery voltage range
- Supports parallel connection with full communication between inverters
- Provides 100% unbalance loads in backup mode



### ENERGY INDEPENDENCE

- Seamless transition to backup mode for protection against power outages
- Fast charging/discharging to meet the demand of higher consumption and energy trading



### SMART MANAGEMENT

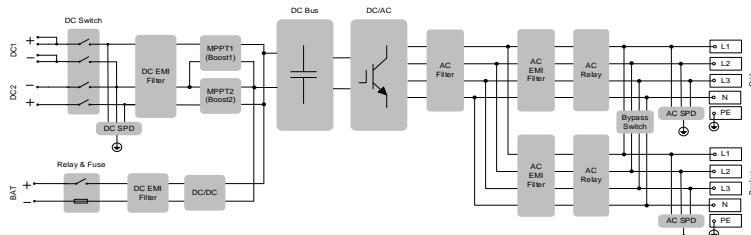
- High self-consumption with optimised built-in EMS
- Free online monitoring to enhance energy management for end user, installer and retailer
- Remote firmware update and customisable settings



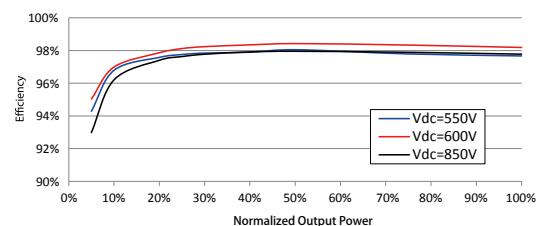
### EASY INSTALLATION

- Unique push-in connectors for time-saving installation
- Touch free commissioning with smartphone
- Lightweight and compact

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE (SH10RT)



Type designation	SH5.0RT	SH6.0RT	SH8.0RT	SH10RT
<b>PV Input</b>				
Max. PV input power	6600 W	8000 W	10600 W	13300 W
Max. PV input voltage	1100 V	1100 V	1100 V	1100 V
Startup voltage	180	250	250	250
Nominal input voltage	600 V	600 V	600 V	600 V
MPP voltage range	150 V-1000 V	200V-1000 V	200V-1000 V	200 V-1000 V
MPP voltage range for nominal power	210 V-850 V	250 V-850 V	330 V-850 V	280 V-850 V
No. of MPPTs			2	
Max. number of PV strings per MPPT	1/1	1/1	1/1	1/2
Max. PV input current	25 A (12.5 A / 12.5 A)	25 A (12.5 A / 12.5 A)	25A (12.5 A / 12.5 A)	37.5 A (12.5 A / 25 A)
Max. current for input connector			16 A	
Short-circuit current of PV input	32 A (16 A / 16 A)	32 A (16 A / 16 A)	32A (16 A / 16 A)	48 A (16 A / 32 A)
<b>AC Input and Output</b>				
Nominal AC output power	5000 W	6000 W	8000 W	10000 W
Max. AC output apparent power	5000 VA	6000 VA	8000 VA	10000 VA
Nominal AC ouput current	7.3 A	8.7 A	11.6 A	14.5 A
Max. AC output current	8.5 A	10 A	13.5 A	17 A
Nominal AC voltage		3 / N / PE, 220 / 380 V; 230 / 400 V; 240 / 415 V		
AC voltage range		270-480 Vac (this may vary with grid standards)		
Nominal grid frequency		50 Hz / 60 Hz, 45-55 Hz		
Grid frequency range		55-65 Hz (this may vary with grid standards)		
THD		<3 % (of nominal power)		
DC current injection		<0.5 % (of nominal current)		
Power factor		>0.99 at default value at nominal power (adj. 0.8 overexcited / leading o 0.8 underexcited / lagging)		
<b>Protection</b>				
LVRT		Yes		
Anti-islanding protection		Yes		
AC short circuit protection		Yes		
Leakage current protection		Yes		
DC switch (solar)		Yes		
DC fuse (battery)		Yes		
Overshoot Protection		DC Type II / AC Type II		
<b>Battery Data</b>				
Battery type		Li-ion battery		
Battery voltage		150 V-600 V		
Max charge / discharge current		25 A / 25 A		
Max charge / discharge power	6600 W	8000 W	10600 W	10600 W
<b>System Data</b>				
Max. efficiency / European efficiency	98.0% / 97.2%	98.2% / 97.5%	98.4% / 97.9%	98.4% / 97.9%
Max. charge / discharge efficiency			98.5%	
Isolation method (solar) / (battery)		Transformerless / Transformerless		
Ingress protection rating		IP65		
Operating ambient temperature range		-25 °C- 60 °C (>45 °C derating)		
Allowable relative humidity range		0%~100%		
Cooling method		Natural convection		
Max. operating altitude		4000m (>2000m derating)		
Display		LED, Graphic LCD (Optional)		
Communication		RS485, Wi-Fi, Ethernet, 1 * Digital Output, 4 * Digital Input		
DC connection type		MC4 (PV) / Sunclix (Battery)		
AC connection type		Plug and play connector		
Compliance		IEC / EN 62109-1, IEC / EN 62109-2, IEC / EN 61000-3-11, IEC / EN 61000-3-12, EN 62477-1, VDE0126-1-1 / 4105, CEI 0-21, AS 4777.2, EN50438		
<b>Mechanical Data</b>				
Dimensions (W * H * D)		480 * 540 * 170 mm		
Mounting method		Wall-mounting bracket		
Weight		25 kg		
<b>Backup Data</b>				
Nominal voltage		220 Vac / 230 Vac / 240 Vac (±2 %)		
Frequency range		50 Hz / 60 Hz (±0.2 %)		
Total harmonic factor output voltage		2 % (full resistive load)		
Switch time to emergency mode		<20ms		
Nominal output power	5000 W / 5000 VA	6000 W / 6000 VA	8000 W / 8000 VA	10000 W / 10000 VA
Peak output power	6000 W / 6000 VA, 5 min	7200 W / 7200 VA, 5 min	12000 W / 12000 VA, 5 min	12000 W / 12000 VA, 5 min
	10000 W / 10000 VA, 10 s	10000 W / 10000 VA, 10 s		
Parallel operation		Yes		



# SH3K6/SH4K6

Hybrid Inverter

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## FLEXIBLE APPLICATION

- Convenient for new installation and retrofit
- Compatible with both lithium-ion and lead-acid batteries
- Energy trading ready with 3rd-party EMS to maximise ROI



## SAFE AND RELIABLE

- Built-in surge arresters and residual current protection
- Durable finish with high anti-corrosion enclosure



## SMART MANAGEMENT

- High self-consumption with optimised built-in EMS
- Free online monitoring to enhance energy management for end user, installer and retailer
- Remote firmware update and customisable settings



## EASY INSTALLATION

- Custom-fit mounting plate with built-in level
- Fast and easy commissioning via front panel LCD or App
- Lightweight and compact



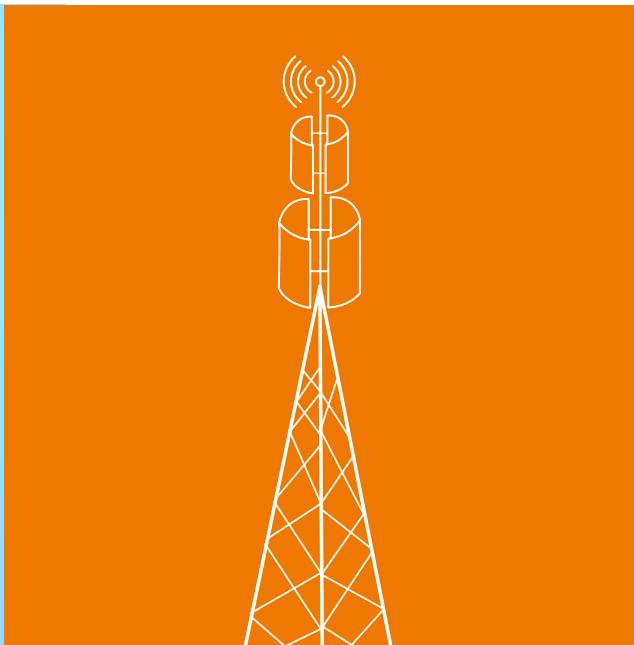
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Type designation	SH3K6	SH4K6
<b>PV Input Side Data</b>		
Max. PV input power	6500 W	
Max. PV input voltage	600 V	
Startup voltage	125 V	
Nominal input voltage	360 V	
MPP voltage range	125 V – 560 V	
MPP voltage range for nominal power	180 V – 520 V	220 V – 520 V
No. of MPPTs	2	
Max. number of PV strings per MPPT	1/1	
Max. PV input current	22 A (11 A / 11 A)	
Max. current for input connector	12 A	
Short-circuit current of PV input	24 A (12 A / 12 A)	
<b>AC Input and Output Data</b>		
Nominal AC output power to grid	3680 W	4600 W
Max. AC output apparent power to grid	3680 VA	4600 VA
Max. AC input power from grid	3000 W	3000 W
Nominal AC output current	16 A	20 A
Max. AC output current	16 A	20 A
Nominal AC voltage	230 Vac	
AC voltage range	180 Vac – 276 Vac (this may vary with grid standards)	
Nominal grid frequency	50 Hz	
Grid frequency range	45 Hz – 55 Hz (this may vary with grid standards)	
THD (Total Harmonic Distortion)	< 3 % (of nominal power)	
DC current injection	< 0.5 % (of nominal current)	
Power factor	> 0.99 at default value at nominal power (adj. 0.8 overexcited / leading–0.8 underexcited / lagging)	
<b>Protection</b>		
Anti-islanding protection	Yes	
AC short circuit protection	Yes	
Leakage current protection	Yes	
DC switch (solar)	Yes	
DC fuse (solar)	No	
DC fuse (battery)	Yes	
Overvoltage Category	III [MAINS], II [PV] [BATTERY]	
<b>Battery Data</b>		
Battery type	Li-ion battery / Lead-acid battery	
Battery voltage	48 V (32 V–70 V)	
Max. charge / discharge current	65 A / 65 A	
<b>System Data</b>		
Max. efficiency	> 97.7 %	
European efficiency	> 97.0 %	> 97.2 %
Max. charge / discharge efficiency	> 94.0 %	
Isolation method (solar)	Transformerless	
Isolation method (battery)	HF	
Ingress protection rating	IP65	
Night power consumption	< 1 W	
Operating ambient temperature range	-25 °C to 60 °C (> 45 °C derating)	
Allowable relative humidity range	0 %-100 %	
Cooling method	Natural convection	
Max. operating altitude	2000 m	
Display	Graphic LCD	
Communication	2 × RS485, Wi-Fi (optional), CAN, Ethernet	
Analogue inputs	PT1000	
Power management	1 × Digital Output	
Earth alarm	1 × Digital Output, email, buzzer inside	
PV connection type	MC4	
AC connection type	Plug and play connector	
Certification	VDE-AR-N-4105, DIN VDE0126-1-1, G83/2, G59/3, CEI 0-21, IEC 62109-1, IEC62109-2, EN 62477-1, EN 61000-6-1/-3	
<b>Mechanical Data</b>		
Dimensions (W * H * D)	457 mm * 515 mm * 170 mm	
Mounting method	Wall-mounting bracket	
Weight	22 kg	





# *Accessory & Monitoring*



Sunbox

iSolarCloud

PVM1000

Smart Communication Box

EyeM4

E-Net

WiFi

PV combiner box for 1500 Vdc system



### EFFICIENT AND SAFE

- 1500V-Specific PV fuse, both positive and negative terminal
- 1500V-Specific PV SPD with fault alarm
- String current and voltage monitoring
- Main load switch state monitoring (optional)



### FLEXIBLE

- IP65 protection, meet the outdoor installation and usage requirements
- Self-powered power supply with lightning protection
- Output cable sectional area 120 – 400 mm<sup>2</sup> (max. 400 mm<sup>2</sup> Al cable)
- PG Gland / MC4 terminal connector



### QUALIFIED

- Highly optimize the system wiring
- Modular design, easy and quick maintenance
- CE

Type designation	PVS-16MH	PVS-20MH	PVS-24MH
<b>Parameters</b>			
Max. PV string voltage		1500 V	
Max. PV string parallel inputs	16	20	24
Rated fuse current for each string (replaceable)		15 A / 20 A	
Switch disconnector		400 A	
SPD		1500 Vdc Type II	
Input terminal type		PG Gland / MC4 terminal	
Output terminal type	120 – 300 mm <sup>2</sup>	120 – 300 mm <sup>2</sup>	120 – 400 mm <sup>2</sup>
Protection class		IP65	
Environment temperature		-40 °C to 60 °C	
Environment humidity		0 – 95%	
Dimensions (W * H * D)		930 * 730 * 260 mm	
Weight	38 kg	40 kg	42 kg
Switch-disconnector handle		Internal handle	
Material		SMC Plastic	
<b>Standard Accessories</b>			
DC main output load switch		Yes	
PV specific application SPD		Yes	
PV SPD failure monitoring		Yes	
PV self power supply for internal loads		Yes	
RS485 Communication port		Yes	
Current and voltage monitoring for each string		Yes	
<b>Optional Accessories</b>			
Negative Grounding		Optional	
Monitoring for load switch state		Optional	



PV combiner box for 1500 Vdc system



#### EFFICIENT AND SAFE

- 1500V-Specific PV fuse, both positive and negative terminal
- 1500V-Specific PV SPD with fault alarm
- Specialized 2 in 1 fuse with favorable heat dissipation performance and compact size
- String current and voltage monitoring
- Main load switch state monitoring (optional)



#### FLEXIBLE

- IP65 protection, meet the outdoor installation and usage requirements
- Self-powered power supply with lightning protection
- Output cable sectional area 120 – 400 mm<sup>2</sup> (max. 400 mm<sup>2</sup> Al cable)
- MC4 connector



#### RELIABLE

- Highly optimize the system wiring
- Modular design for easy and quick maintenance
- CE

Type designation	PVS-8MH-DB	PVS-12MH-DB	PVS-16MH-DB
<b>Parameters</b>			
Max. PV string voltage		1500 V	
Max. PV string parallel inputs	8 * 2	12 * 2	16 * 2
Rated fuse current for each string (replaceable)		30 A	
Switch disconnector	250 A	400 A	400 A
SPD		Type II	
Input terminal type		6 mm <sup>2</sup> (MC4)	
Output terminal type	120 – 300 mm <sup>2</sup>	120 – 300 mm <sup>2</sup>	120 – 400 mm <sup>2</sup>
Protection class		IP65	
Environment temperature		-40 °C to 60 °C	
Environment humidity		0 – 95 %	
Dimensions (W*H*D)	730*580*260 mm	730*580*260 mm	930*730*260 mm
Weight	28 kg	30 kg	40 kg
Material		SMC Plastic	
<b>Standard Accessories</b>			
DC main output load switch		Yes	
PV specific application SPD		Yes	
PV SPD failure monitoring		Yes	
PV self power supply for internal loads		Yes	
Communication port		Yes	
Current and voltage monitoring for each string		Yes	
<b>Optional Accessories</b>			
Negative grounding		Optional	
Monitoring for load switch state		Optional	



PV combiner box for 1000 Vdc system



### EFFICIENT AND SAFE

- PV specific application fuses, both positive and negative polarity
- PV specific application SPD with failure alarm function
- PV string current and voltage abnormal alarm
- Specific application combiner busbar parts with shield
- Main load breaker switch state monitoring (need optional accessory)



### FLEXIBLE

- IP65 protection
- Self supplied power with SPD
- Output cable sectional area range 120 - 400 mm<sup>2</sup> (max. 400 mm<sup>2</sup> Al cable)

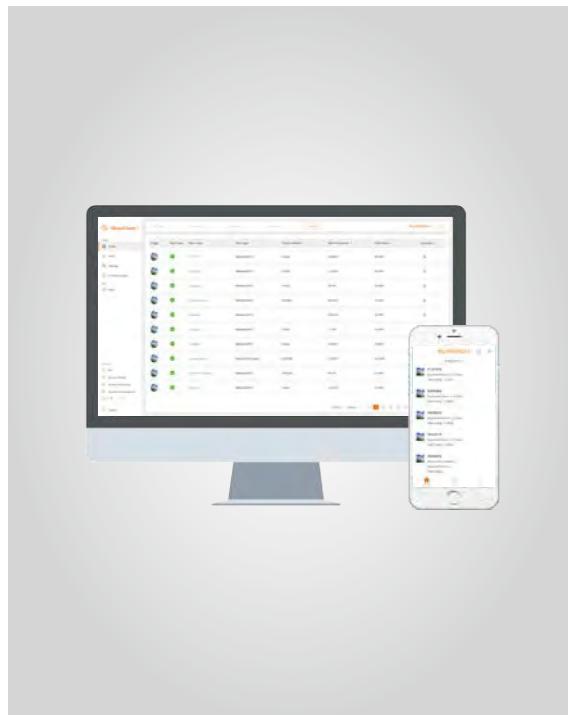


### RELIABLE

- Highly optimize the system wiring
- Modular design for easy and quick maintenance
- CE

Type designation	PVS-16M-DB
<b>Parameters</b>	
Max. PV string voltage	1000 V
Max. PV string parallel inputs	16 * 2
Rated fuse current for each string (replaceable)	30 A
Input terminal type	6 mm <sup>2</sup>
Output terminal type	120 – 400 mm <sup>2</sup>
Protection class	IP65
Environment temperature	-40 °C to 60 °C
Environment humidity (non-condensing)	0 – 95 %
Dimensions (W*H*D)	720 * 680 * 180 mm
Weight	41 kg
Material of enclosure	Steel
<b>Standard Accessories</b>	
DC main output load switch	Yes
PV specific application SPD	Yes
PV SPD failure monitoring	Yes
PV self power supply for internal loads	Yes
Communication port	Yes
Current and voltage monitoring for each string	Yes
<b>Optional Accessories</b>	
Monitoring for load break switch state	Optional





### FLEXIBLE AND FRIENDLY

- Centralized power plant management, optimized OPEX
- Simple network infrastructure, fast platform deployment
- Flexible data access, Web portal and APP



### SIMPLE AND EFFICIENT

- Full plant supervision via multi-dimensional analysis, automated reports
- Accurate positioning of faults, quick trouble shooting, real-time push of information, reducing time to resolve faults
- Parameter setting, firmware updates, IV curve diagnosis
- Support of plant maintenance by remote Web access of local data logger / SCADA



### SAFE AND RELIABLE

- Hierarchical access management
- Cyber security and redundant data storage over the lifecycle of plants, certified data security
- Full log for trace and audit

Type designation	iSolarCloud
<b>Monitoring Device</b>	
Device type	Inverter, combiner box, meteo station, energy meter, transformer and other plant devices
<b>Data Collection</b>	
Monitoring Capacity	More than 100 GW (scalable)
Time interval	5 minutes
<b>General Data</b>	
Language	Chinese, English, Japanese, German, French, Spanish, Portuguese, Italian, Dutch, Korean
Data storage time	>25 years
Storage capability	>100PB
System reliability	99.99%
<b>Minimum Web requirements</b>	
Browser	IE11, Chrome 56, Safari 11
Resolution	1366 * 768, 1920 * 1080 recommended
<b>Minimum Operating Environment for APP</b>	
Minimum OS	Android 4.4, iOS 9.3
Resolution	1920 * 1080, 2001 * 1125, 1280 * 720



# Smart Communication Box

COM100

**SUNGROW**  
Clean power for all



## FLEXIBLE NETWORKING

- Support of RS485, Ethernet, Optical Fiber
- Ethernet switch and WiFi communication
- Support of energy meter, meteo station, sensors and other equipment



## CONVENIENT O&M

- Inverter batch parameter settings and firmware updates
- PV-Plant maintenance via remote Web access for optimized OPEX
- Active and reactive power control
- Local monitoring



## EASY OPERATION

- Embedded Web portal, easy to commissioning
- Robust enclosure, easy to install



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Type designation	COM100 (Utility)	COM100 (C&I)
<b>Communication</b>		
Max. number of devices	200	30
RS485 interface	6	3
Ethernet	2 * RJ45, 10 / 100 Mbps	1 * RJ45, 10 / 100 / 1000 Mbps
Digital input	16, Max. 24 VDC	5, Max. 24 VDC
Analog input	2, PT100 / PT1000 4, support 4 – 20 mA or 0~10 VDC	4, support 4 – 20 mA or 0~10 VDC
Fiber Ethernet Switch	2 Fiber ports and 6 Ethernet ports	/
<b>Wireless communication</b>		
4G communication	/	Yes
WiFi communication	/	Yes
<b>Power supply</b>		
AC input	110 VAC – 240 VAC ( 50 / 60 Hz )	100 VAC – 277 VAC (50 / 60 Hz)
Power consumption	Typ. 20 W, Max. 30 W	Typ. 20 W, Max. 30 W
Night light for maintenance	/	<1 W
<b>Ambient conditions</b>		
Operating Temperature	-20 °C – 60 °C	-30 °C – 60 °C
Storage Temperature	-30 °C – 70 °C	-40 °C – 80 °C
Relative air humidity	≤95 % (non-condensing)	≤95 % (non-condensing)
Elevation	≤3000 m	≤4000 m
Protection class	IP65	IP66
<b>Mechanical parameters</b>		
Dimensions (W * H * D)	570 * 790 * 90 mm	460 * 315 * 126 mm
Weight	32 kg	6 kg
Mounting type	Wall mounted, ground mounted	Wall mounted, outdoor and indoor
Box material	Metal	PC
<b>Ordering information</b>		
COM100A	The COM100A includes Logger3000, PLC, Ethernet Switch, SPD Apply to Global	
COM100D		The COM100D includes Logger1000A and support of 4G, WiFi wireless communication Apply to China, India, Malaysia
COM100E		The COM100E includes Logger1000B and support of WiFi wireless communication Apply to Global



# PVM1000

**SUNGROW**  
Clean power for all

Sungrow Local SCADA for PV plant consists of local monitoring hardware and software



## SMART AND FLEXIBLE

- Insight integrated (monitoring software), monitoring of devices such as inverters, combiner boxes, transformers, power conversion systems
- Integrated fibre switch, convenient and flexible networking



## SIMPLE AND EFFICIENT

- Applicable to 200 MW utility scale power plants
- Seamless connection to iSolarCloud and easy centralized management of power plants



## SAFE AND RELIABLE

- Equipped with hardware firewall

Type designation	PVM1000
<b>Monitoring system</b>	
Server	IPC / Server
Workstation	Desktop computer
Monitoring software	Insight
<b>Switch</b>	
Number of optical fiber ports	4, 8, 16, or 24
Number of Ethernet ports	8, 16, or 20
Firewall	Optional
<b>Power supply</b>	
Power supply	200~240 VAC, 32 A, and 50 Hz
<b>Ambient parameters</b>	
Operating temperature	-20 °C~60 °C (IPC) / 10 °C ~ 35 °C (Server)
Operating humidity	≤95 % (25 °C)
<b>Communication</b>	
Communication medium networking method	Optical fiber, Ethernet bus / fiber ring
Communication protocol	IEC104 master / slave
<b>Mechanical Parameters</b>	
Dimensions (W * H * D)	600mm * 2000mm * 1000mm (Server)





## SMART AND FLEXIBLE

- One-click access to iSolarCloud
- One module can manage up to 10 inverters for remote maintenance and control
- Plug and play, easy installation



## CONVENIENT O&M

- Built-in Web server for monitoring and configuration, by PC or smartphone browser; no APP required
- Support of plant maintenance by remote Web access, optimized OPEX
- Support of local and remote parameter setting and firmware updates

Type designation	EyeM4
Communication	
Max. number of devices	10
LED display	LED × 3
Wireless communication	
WiFi communication	WCDMA:B1, B8 802.11 b / g / n / ac HT20 / 40 / 80 MHz 2.4 GHz / 5 GHz
Power Supply	
DC input	5 VDC, 0.8 A
Power consumption	<4 W
Ambient conditions	
Operating Temperature	-30 °C ~ 60 °C
Relative air humidity	≤95 % (non-condensing)
Elevation	≤4000 m
Protection class	IP66
Mechanical parameters	
Dimensions (W * H * D)	48 mm * 130 mm * 36 mm
Mounting type	Plug and Play
Ordering information	
EyeM4C	Support of WiFi wireless communication Apply to Global





### SMART AND FLEXIBLE

- Automatic network configuration with DHCP, transmission without configuration
- Stable data connection where wireless communication is not possible



### SIMPLE AND EFFICIENT

- Support of remote operation and maintenance functions including remote firmware updates and parameter setting
- Plug and play, quick installation



### SAFE AND RELIABLE

- Wired transmission, safe and reliable
- IP65, wide temperature range

Type designation	E-Net
<b>Basic data</b>	
Supported devices	Sungrow string inverters
Max. number of supported devices	1
LED display	LED × 3
Configuration	Built-in Web server
<b>Communication</b>	
RS485 interface	1
Ethernet	1×RJ45, 10/100 Mbps
<b>Power supply</b>	
Input voltage	5 VDC, 0.4 A
Power consumption	<2 W
<b>Ambient conditions</b>	
Operating temperature	-25 °C- 60 °C
Relative air humidity	≤95 % (non-condensing)
Elevation	≤4000 m
Protection class	IP65
<b>Mechanical parameters</b>	
Dimensions (W * H * D)	48 mm * 127 mm * 36 mm
Mounting type	Plug and Play





### SMART AND FLEXIBLE

- Supporting mainstream WLAN networking protocols, with favourable compatibility



### SIMPLE AND EFFICIENT

- Supporting remote operation and maintenance functions including remote upgrading, parameter setting
- Supporting direct connection configuration with APP, quickly and easily
- Plug and play, quick installation



### SAFE AND RELIABLE

- Professional design in wireless communication, and high quality signal
- IP65, wide temperature range

Type designation	WiFi
<b>Basic data</b>	
Supported device number	1
Display	LED * 3
Configuration	APP
<b>Max. Communication Range</b>	
RS485	1
WLAN	2.4 GHz 802.11 b / g / n
<b>Power supply</b>	
Input voltage	5.0 ± 0.25 Vdc
Power consumption	Typ. 2 W
<b>Ambient Parameters</b>	
Operating temperature	-25 °C to 60 °C
Allowable relative humidity range (non-condensing)	≤ 95 %
Max. operating altitude	≤ 4000 m
Protection class	IP65
<b>Mechanical parameters</b>	
Dimensions (W * H * D)	48 mm * 97 mm * 36 mm
Installation	Plug-in type



# Global Reference



205 MW PV Plant Fresno, California, USA 



40 MW PV Plant Thailand 



30 MW PV Plant USA 



43MW PV Plant in Philippines



50 MW PV Plant India



190MW Floating PV Plant China



250MW PV Plant in Ninh Thuan, Vietnam 



25MW PV Plant in Argentina 



19.2MW PV Plant USA 



75MW PV Plant Thailand 



1.4MW PV Plant Vietnam 



15MW PV Plant Andijk Netherlands 



100 kW PV plant Japan 



3.15MW PV Plant Chile 



2.25MW PV Parking Structure FL USA 

We are committed to the clean and efficient energy, and to bring more green electricity to all mankind

We have a thorough understanding of customers' needs to provide them with comprehensive and perfect services:



### Consulting Services

Sungrow has set up marketing service agencies in France, Germany, Italy, Austria, the United States, Canada, Australia and other countries to provide customers with professional and convenient project advisory services.



### System design services

Our senior system engineers have abundant PV power generation system design experience for years, who's able to develop tailored solutions accurately. The system design profile, budget, power generating capacity, and data as carbon dioxide emissions will be took into account and provided to the customer as well.



### Quality assurance services

We pursue high quality all the time. Every product is under quality inspections during manufacturing process, and needs to pass the complete machine test before shipment to ensure that it can be stably operated. Detailed and rapid warranty services are guaranteed by on-line monitoring system, hardware/software upgrades, regular inspection and training.



### Training services

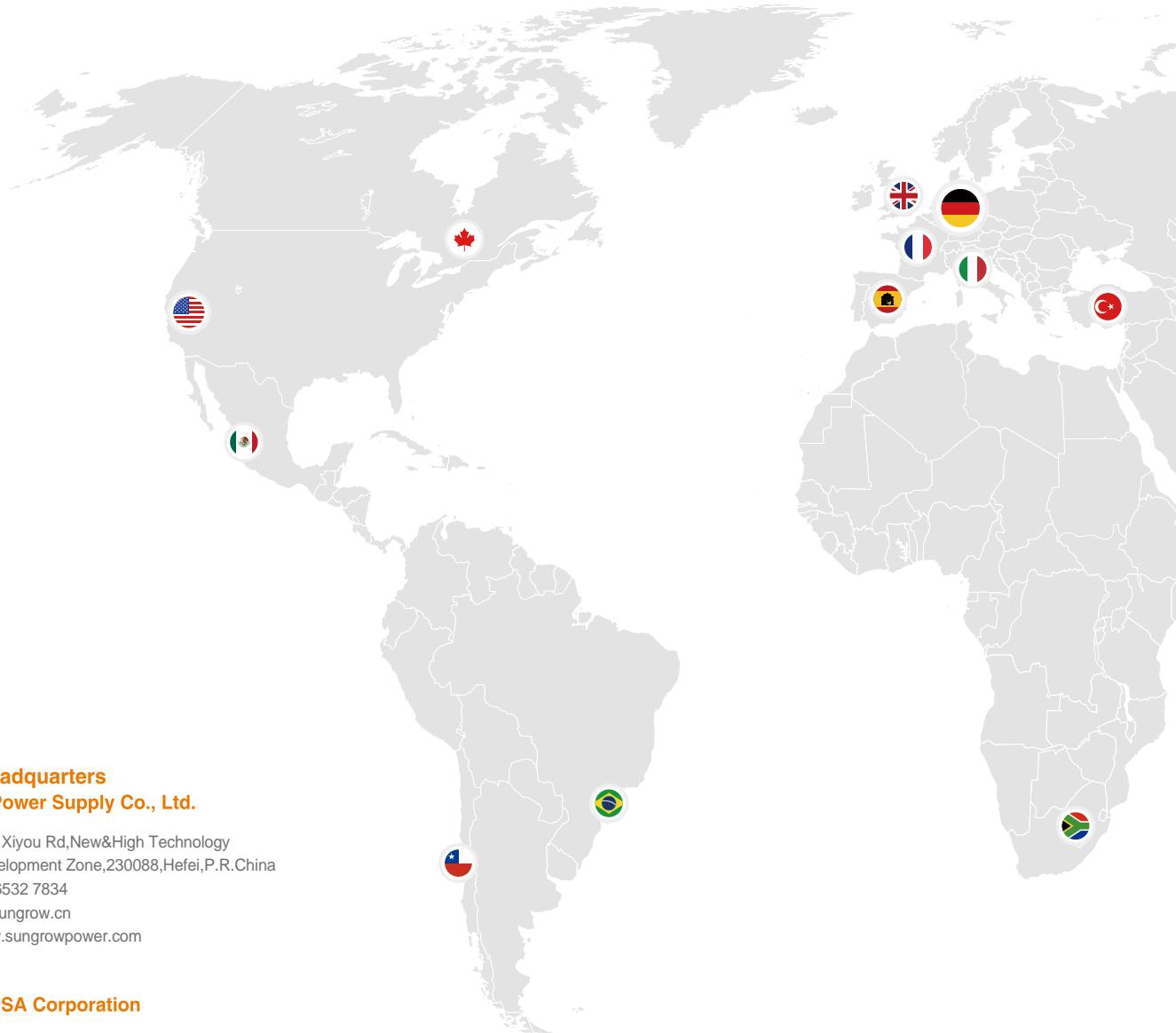
We provide customers with comprehensive, professional technical training and guidance by delivering the knowledge of power system and equipment's daily use and maintenance.



### On-site service

Our technical service engineers can provide customers with professional and rapid installation and debugging services according to requirements, to ensure that customers' projects would be successfully completed and connected to the grid perfectly.

# Global Entry



- **Global Headquarters**

- Sungrow Power Supply Co., Ltd.**

Add: No.1699 Xiyou Rd, New&High Technology  
Industrial Development Zone, 230088, Hefei, P.R.China  
Tel: +86 551 6532 7834  
Email: info@sungrow.cn  
Website: www.sungrowpower.com

- **Sungrow USA Corporation**

Add: 426 17th St. #700 Oakland, CA 94612  
Tel: +1 510 656 1259  
Tech Support: +1 833 SGPOWER  
Email: sales@sungrow-na.com  
Service Email: service@sungrow.ca

- **Sungrow Mexico S.A. de C.V.**

Add: Paseo de la Reforma 296 Col Juárez. CMX, 06600 Piso 41 Oficina 41A-104  
Tel: +52 1 (55)6905-2534  
Email: mexico@sungrow-na.com

- **Sungrow Do Brasil**

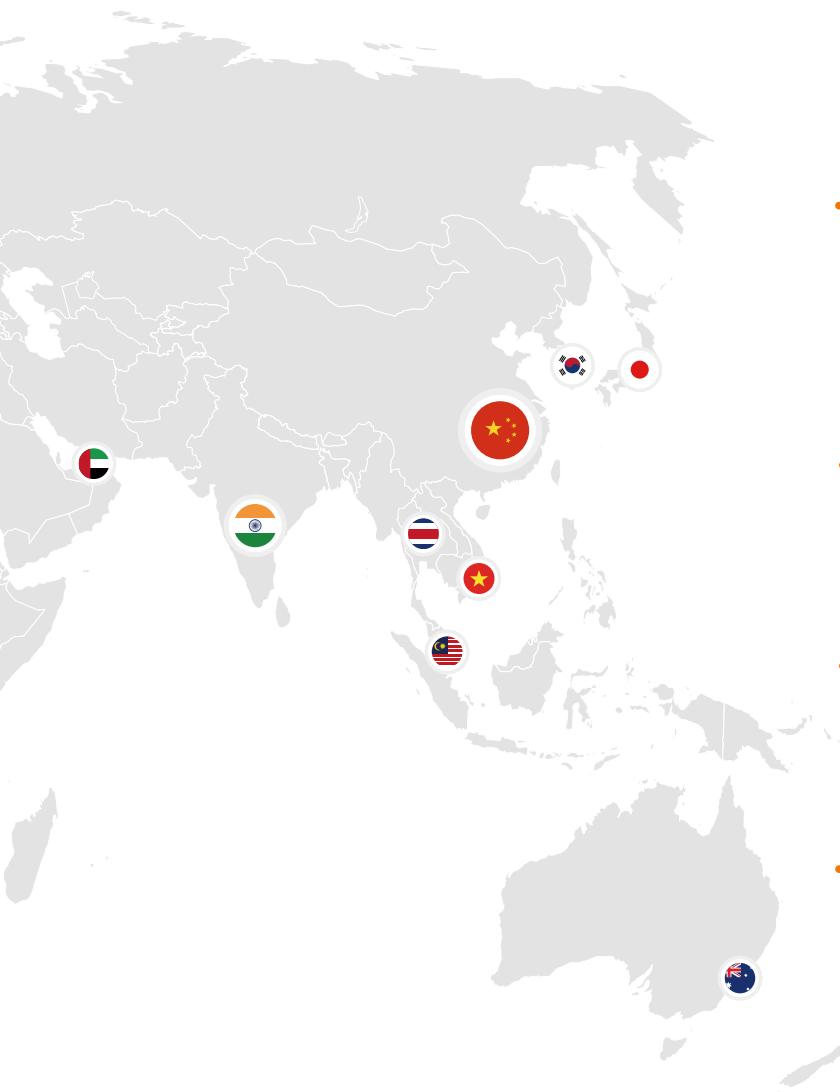
Add: Condomínio Edifício Franciso Mellão Rua Funchal 263 – Vila Olímpia  
Sala 121 – 12º Andar – SP - Brazil  
Tel: +55 11 2366-1957  
Email: latam@cn.sungrowpower.com  
Service Email: latam.service@sa.sungrowpower.com

- **Sungrow Deutschland GmbH**

Add: Balanstrasse 59, 81541 München  
Tel: +49 89 324 914 789  
Email: germany@sungrow.co  
Service Email: service.germany@sungrow.co

- **Sungrow Power UK Ltd**

Add: The Pinnacle Midsummer Boulevard, Milton Keynes, MK9 1BP  
Tel: +44 (0)1908 414126; +44 (0) 7934 738185; +44 (0)7909 757986  
Service: +44 (0)1908 414127; +44 (0)7480 853555  
Email: uk@sungrow.co  
Service Email: service.uk@sungrow.co



- **Sungrow Chile**

Add: Alonso de Córdova 5870, Of. 523, Las Condes, Santiago, Chile  
Tel: +56 2 2993 5195  
Email: latam@cn.sungrowpower.com  
Service Email: latam.service@sa.sungrowpower.com

- **Sungrow Australia Group Pty.Ltd.**

Add: Suite 1703, 99 Mount Street, North Sydney, NSW 2060. Australia  
Tel: (toll free): 1800 SUNGROW (786 476); (Overseas): +612 9922 1522  
Sales Email: info@sungrowpower.com.au  
Service-Email: service@sungrowpower.com.au

- **Sungrow (India) Private Limited**

Add: 301 & 314, 3rd Floor, JMD Pacific Square, Sector - 15(II), Gurgaon, Haryana -122022, India  
Email: india@sungrow.cc  
Website: www.sungrowpower.com  
Dedicated service contacts:  
Mail: service@in.sungrowpower.com

- **Sungrow SEA**

Add: B-02-26 Dataran Cascades. No 13A, Jln PJU 5/1 Kota Damansara 47810 pj Selangor, Malaysia  
Tel: Tel: +60 18 9879 756  
Email: luis.xu@sungrow.cn

- **Sungrow Vietnam**

Add: Dreamplex building, 10 Floor, 195 Dien Bien Phu, Binh Thanh district, Ho Chi Minh city  
Email: thang.vu@cn.sungrowpower.com  
Tel: +84914187998

- **Sungrow Japan K.K.**

Add: 5F, VORT Akihabara maxim, 1-7-9, Kandasudacho, Chiyoda-ku, Tokyo, Japan  
Tel: +81 3 6262 9917  
Fax: +81 3 6262 9918  
Email: Japan@sungrow.cc

- **Sungrow Power Korea Limited**

Add: 10 floor, 5, Teheran-ro 33-gil, Gangnam-gu, Seoul, Republic of Korea  
Tel: +82-2-2051-1888  
Email: info@kr.sungrowpower.com

- **Sungrow Thailand**

Add: 17th Fl, Unit 2,3,3A & 4, Silom Complex Tower, 191 Silom Road,Silom, Bangrak, Bangkok, 10500, Thailand  
Tel: +66 945986455  
Email: sathian.k@th.sungrowpower.com

- **Sungrow Southern Africa Pty LTD**

Adr.: 2nd Floor, Wrigley Fields, The Campus, 57 Sloane St, Bryanston, Sandton, 2191  
Tel: +27824846973  
Email: info@sungrow.cn



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Industrial Development Zone,  
230088, Hefei, P.R.China  
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# PV GRID-CONNECTED INVERTERS

2019 / 2020



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Clean power for all