



# RESIDENTIAL PV/ESS PLANT

## SYSTEM SOLUTIONS

**SUNGROW**  
Clean power for all



# ABOUT SUNGROW





Sungrow Power Supply Co., Ltd (“Sungrow”) is the world’s most bankable inverter brand with over 87 GW installed worldwide as of June 2019. 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 2019, Sungrow launched the world’s largest inverter factory, once fully operational, the global annual production capacity will reach 50 GW, including 3 GW of India factory.

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

## The World's Most Bankable Inverter Brand

No.1 supplier in financed projects • 100% bankable

Source: BloombergNEF

  
**87GW+**

Deployed  
Worldwide

  
**15%+**

Global  
Market Share

  
**99%**

Efficiency PV  
Inverters

  
**60+**

Countries  
with Sungrow  
Installations

  
**No.1**

Largest  
PV Inverter  
R&D Team

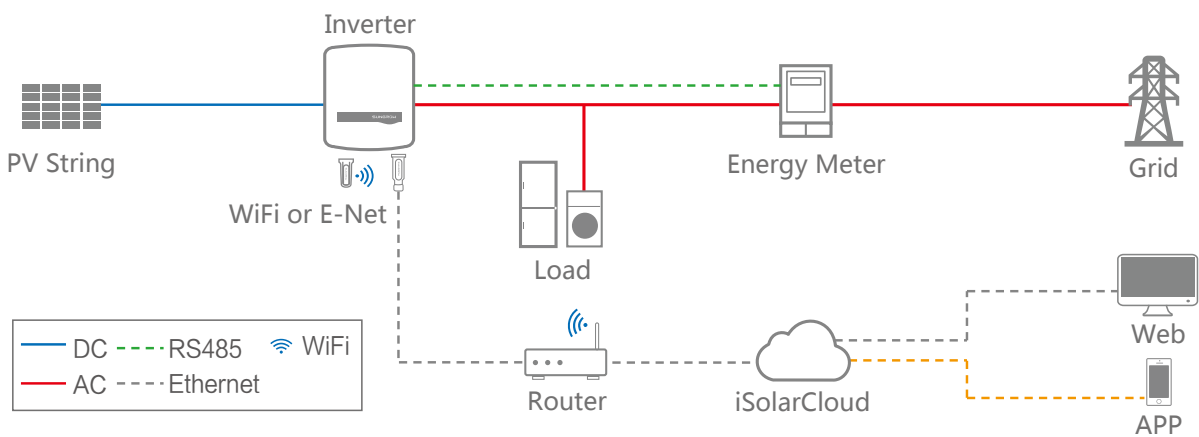
  
**20+**

Years in the  
Solar Industry

# Residential PV Plant System Solution



## Solar System for Your Home



## Recommend Products

Single Phase

Three Phase



SG2K/2K5/3K-S  
SG3K/5K/8K-D



SG5/10KTL-MT



WiFi



E-Net



iSolarCloud



Single-phase meter

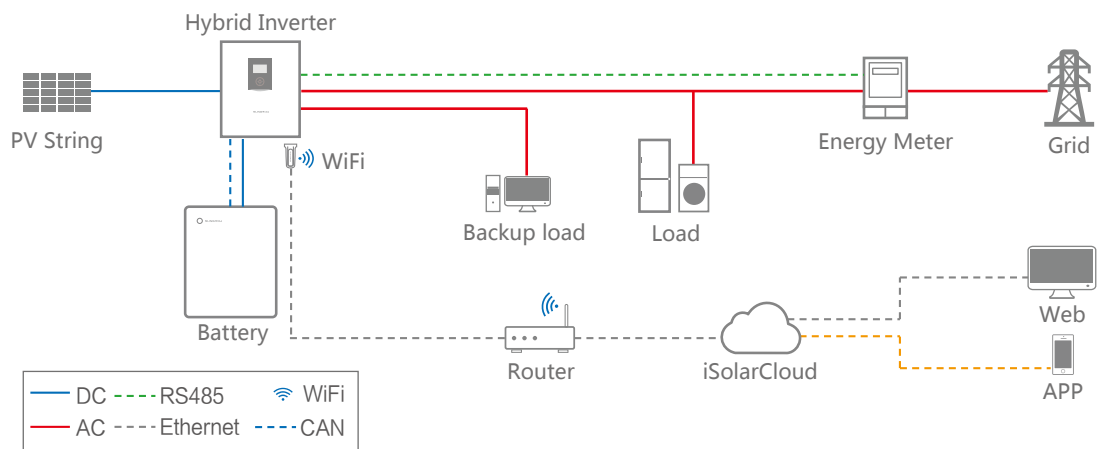


Three-phase meter

# Residential Energy Storage System Solution



## Solar Batteries for Your Home



## Recommend Products

Single Phase

Three Phase

Single Phase



SH5K-20/  
SH5K-30



SH5.0/  
8.0/10RT



SH5.0RS



SBP4K8  
Battery



WiFi



iSolarCloud



Single-phase  
meter

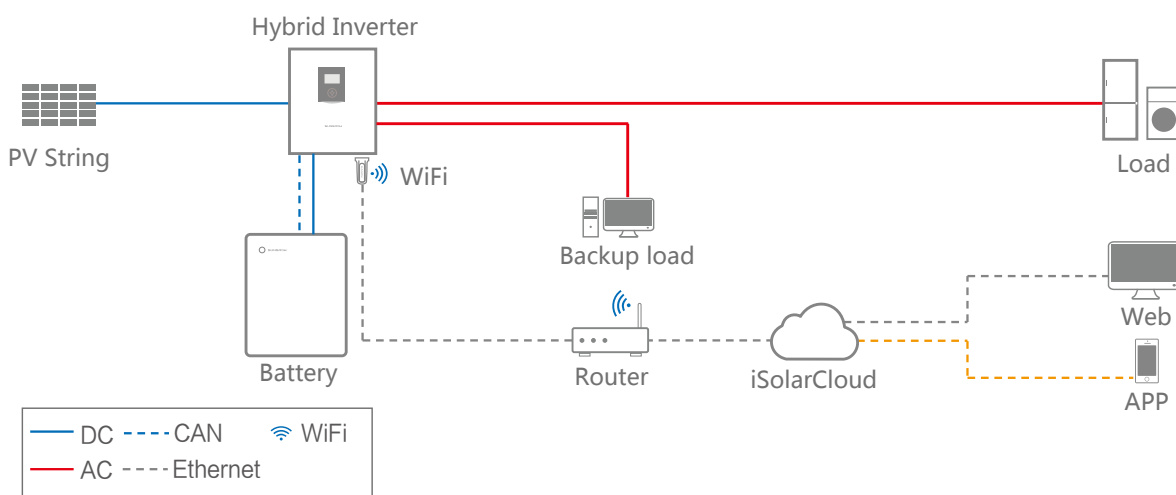


Three-phase  
meter

# Residential Energy Storage System Solution



## Off-grid solution



## Recommend Products

Single Phase



SH5K-20/  
SH5K-30

Single Phase



SH5.0RS

Three Phase



SH5.0/  
8.0/10RT



SBP4K8  
Battery



WiFi

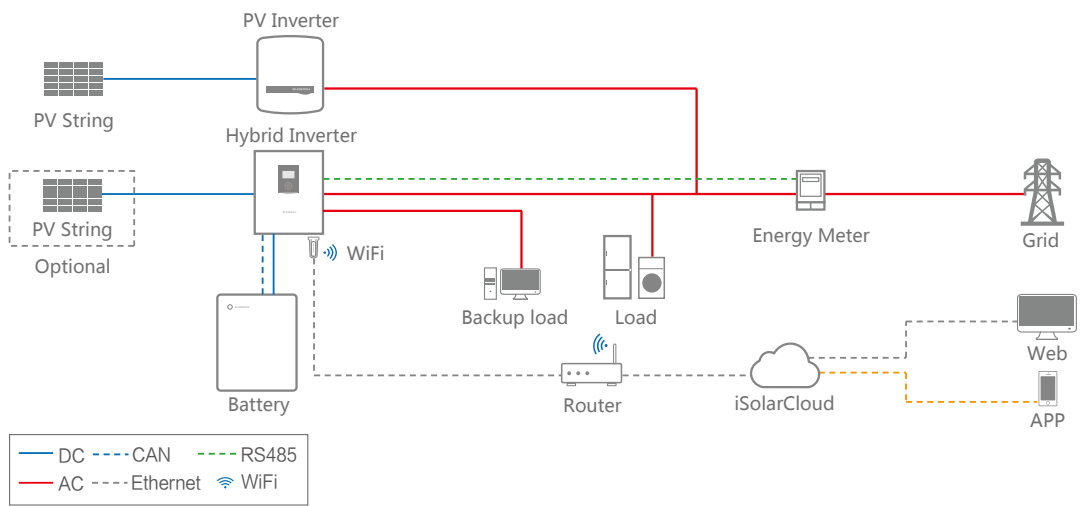


iSolarCloud

# Residential Energy Storage System Solution



## Retrofitting Solution



## Recommend Products

Single Phase

Single Phase

Three Phase



SH5K-20/  
SH5K-30



SH5.0RS



SH5.0/  
8.0/10RT



SBP4K8  
Battery



WiFi



iSolarCloud



Single-phase  
meter

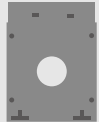
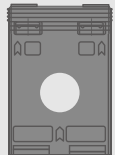



Three-phase  
meter

# Sungrow Smart Energy Meter Application Guide

The Sungrow Smart Meter presents a clear overview of energy consumption in combination with Sungrow iSolarCloud. The Sungrow Smart Meter is ideally suited for use with the Sungrow single-phase inverter and three-phase string inverters.

Note: The CT's primary current should be equal to or greater than the maximum expected AC current from the grid, per phase. The closer the expected AC current is to the chosen primary current value, the more precise the measurement will be.

Type	Inverter type of application	CT requirement
<b>S100</b>	SG2/2.5/3K-S, SG3/5/8K-D, SH5K-20, SH5K-30, SH5.0RS	No, S100 itself owns CT.
<b>T65</b> (only used for the phase current ≤ 65A)	SG5/10KTL-MT, SH5.0/8.0/10RT, SG15/20KTL-M	No, T65 integrated CT inside.
<b>DTSD1352-C/1(6)A</b> (only used for the phase current > 65A)	SG5/10KTL-MT, SH5.0/8.0/10RT, SG15/20KTL-M	<p>Yes, CT's with 5A secondary current output. Sungrow meters are compatible with CTs as below:</p> <p><b>IPD CTME-3 Series for Single Turn Primary</b></p> <ul style="list-style-type: none"> <li>a. 150A: CTME3150</li> <li>b. 200A: CTME3200</li> <li>c. 300A: CTME3300</li> <li>d. 400A: CTME3400</li> <li>e. 500A: CTME3500</li> </ul>  <p><b>SOCOMEK TCA 21/TCA14 SERIES</b></p> <ul style="list-style-type: none"> <li>a. 75A: TCA21-75/5</li> <li>b. 80A: TCA21-80/5</li> <li>c. 100A: TCA21-100/5</li> <li>d. 125A: TCA21-125/5</li> <li>e. 150A: TCA21-150/5</li> <li>f. 200A: TCA21-200/5</li> </ul>  <p><b>SOCOMEK TCB 18 - 20 SERIES</b></p> <ul style="list-style-type: none"> <li>a. 100A: 192T3310</li> <li>b. 150A: 192T3315</li> <li>c. 200A: 192T3320</li> <li>d. 250A: 192T3325</li> </ul> 



## S100 Single-phase Smart Energy Meter



Type designation	S100
<b>Electrical Parameter</b>	
Nominal voltage	240 Vac
Input voltage range	180 Vac - 286 Vac
Power consumption	<2W (10 VA)
Max. operating current	100 A
Grid frequency	50 Hz
Measurement accuracy	Class 1
Interface and communication	RS485
<b>Environmental Condition</b>	
Ingress protection rating	IP20
Operating ambient temperature	-25 to 75 °C
Relative humidity	0 - 95 %
<b>Mechanical Data</b>	
Dimensions (W * H * D)	18 * 117 * 65 mm
Weight	0.2 kg
Installation	35 mm DIN-rail

## T65 Three-phase Smart Energy Meter



Type designation	T65
<b>Electrical Parameter</b>	
Nominal voltage	230 Vac / 400 Vac
Input voltage range	180 Vac - 286 Vac
Power consumption	<2W (10 VA)
Max. operating current	65 A
Grid frequency	50 Hz
Measurement accuracy	Class 1
Interface and communication	RS485
<b>Environmental Condition</b>	
Ingress protection rating	IP20
Operating ambient temperature	-25 to 70 °C
Relative humidity	0 - 95 %
<b>Mechanical Data</b>	
Dimensions (W * H * D)	85 * 72 * 72 mm
Weight	0.4 kg
Installation	35 mm DIN-rail

## DTSD1352-C/1 (6)A\* Three-phase Smart Energy Meter



Type designation	DTSD1352
<b>Electrical Parameter</b>	
Nominal voltage	230 Vac / 400 Vac
Input voltage range	180 Vac - 268 Vac
Power consumption	<2W (10 VA)
Max. operating current	3×1 (6) A
Grid frequency	50 Hz
Measurement accuracy	Class 0.5 (Active)
Interface and communication	RS485
<b>Environmental Condition</b>	
Ingress protection rating	IP20
Operating ambient temperature	-25 to 55 °C
Relative humidity	0 - 95 %
<b>Mechanical Data</b>	
Dimensions (W * H * D)	126 * 91 * 74 mm
Weight	0.35 kg
Installation	35 mm DIN-rail

\* DTSD1352 needs to be used with CT externally.

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

SUNGROW

Residential Single Phase Inverter



## HIGH YIELD

- Higher yield with Max. efficiency 98.2 %, European efficiency 97.7 %
- Flexible PV string configurations, DC/AC ratio up to 1.3



## SMART MANAGEMENT

- Easy local and online monitoring via App or Web
- Export power control with smart energy meter



## SAFE AND DURABLE

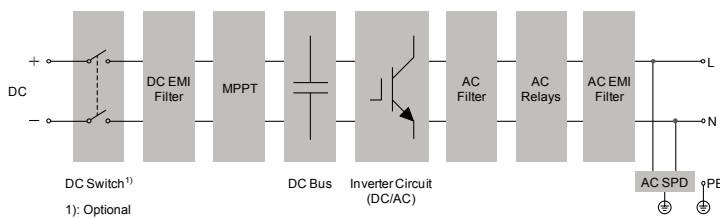
- Built-in surge arresters and residual current protection
- High anti-corrosion with aluminum alloy die casting



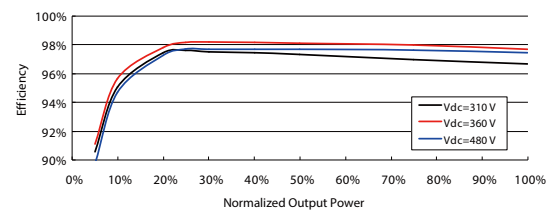
## EASY AND USER FRIENDLY

- 8.5 kg compact design, plug and play installation
- Fast commissioning via LCD

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



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>			
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		Optional	
Overvoltage 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	
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 / WiFi	
PV 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, AS4777.2		
Grid support	Active & reactive power control, power ramp rate control		
Type designation	SG2K-S	SG2K5-S	SG3K-S



# SG3K-D/SG5K-D

SUNGROW

## Residential Single Phase Inverter



### HIGH YIELD

- Higher yield with max. efficiency 98.4 %, European efficiency 98.0 %
- Flexible PV string configurations, DC/AC ratio up to 1.3



### SMART MANAGEMENT

- Easy local and online monitoring via App or Web
- Export power control with smart energy meter



### SAFE AND DURABLE

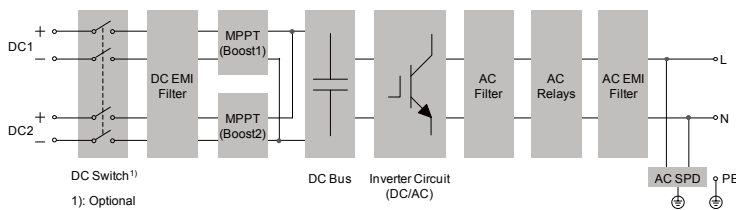
- Built-in surge arresters and residual current protection
- High anti-corrosion with aluminum alloy die casting



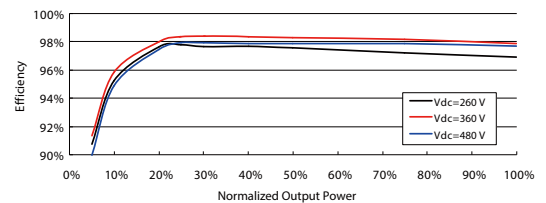
### EASY AND USER FRIENDLY

- 11.5 kg compact design, plug and play installation
- Fast commissioning via LCD

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE



Type designation	SG3K-D	SG5K-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	260 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	24 A (12 A / 12 A)	
Max. PV short-circuit current	24 A (12 A / 12 A)	
<b>Output (AC)</b>		
AC output power	3000 VA	4990 VA
Max. AC output current	13.7 A	21.7 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 %	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	
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	
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 / WiFi	
PV connection type	MC4 (Max. 6 mm2)	
AC connection type	Plug and play connector (max. 6 mm2)	
Compliance	IEC62109-1, IEC62109-2, IEC62116, IEC61727, EN 61000-6-2, EN 61000-6-3, AS4777.2	
Grid support	Active & reactive power control, power ramp rate control	
Type designation	SG3K-D	SG5K-D



## Residential Single Phase Inverter



### HIGH YIELD

- Higher yield with max. efficiency 98.5 %, European efficiency 98.0 %
- Flexible PV string configurations, DC/AC ratio up to 1.3



### SMART MANAGEMENT

- Easy local and online monitoring via App or Web
- Export power control with smart energy meter



### SAFE AND DURABLE

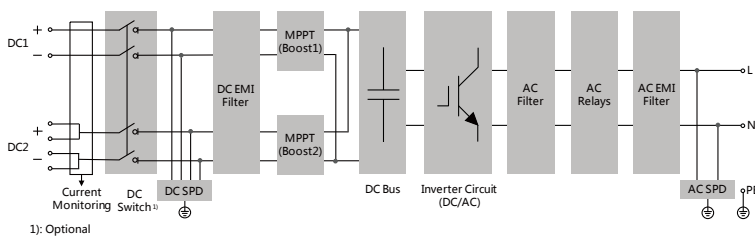
- Built-in surge arresters and residual current protection
- High anti-corrosion with aluminum alloy die casting



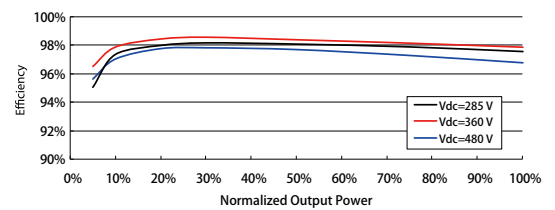
### EASY AND USER FRIENDLY

- 15.5 kg compact design, plug and play installation
- Fast commissioning via LCD

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



Type designation	SG8K-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	275 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
Max. PV short-circuit current	15 A / 30 A
<b>Output (AC)</b>	
AC output power	8000 VA
Max. AC output current	34.8 A
Nominal AC voltage	230 Vac
AC voltage range	180 Vac – 276 Vac (this may vary with grid standards)
Nominal grid frequency	50Hz / 60Hz
Grid frequency range	45 Hz – 55 Hz / 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
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 / WiFi
PV 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, AS4777.2
Grid support	Active & reactive power control, power ramp rate control
Type designation	SG8K-D-10



# SG5KTL-MT

## Residential Three Phase Inverter



### HIGH YIELD

- Industry leading efficiency of 98.4%
- 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

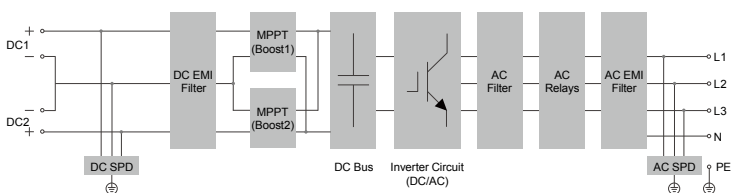
- Built-in surge arresters and residual current protection
- High anti-corrosion rating at C5



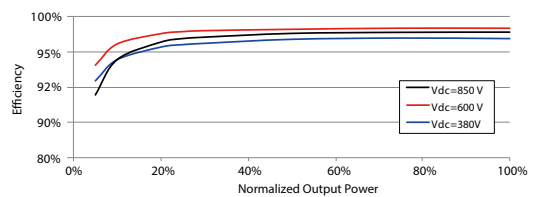
### EASY AND USER FRIENDLY

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

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE





Type designation	SG5KTL-MT
<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
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	5500 VA@ 35 °C / 5000 VA @ 45 °C
Max. AC output current (at 35 °C)	8.5A
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 % I <sub>n</sub>
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 / European efficiency	98.4% / 97.6%
<b>Protection</b>	
LVRT	Yes
Islanding Protection	Yes
DC reverse connection protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
DC switch	No
AC switch	No
PV string current monitoring	Yes
Overvoltage 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	< 1 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	EN 62109-1, EN 62109-2, IEC 61727, IEC 62116, IEC 61000-3-11, IEC 61000-3-12, VDE-AR-N 4105:2018, AS/NZS 4777.2, EN 50549-1:2019, EN 50438, C10/11, G59/3
Grid Support	Active & reactive power control and power ramp rate control

# SG10KTL-MT

## Residential Three Phase Inverter



### HIGH YIELD

- Max. efficiency 98.6%, European efficiency 98.1%
- 4 string inputs, flexible PV configuration



### SMART MANAGEMENT

- Touch free commissioning and monitoring with smartphone
- One-click local and remote firmware update
- Export power control with smart energy meter



### SAFE AND DURABLE

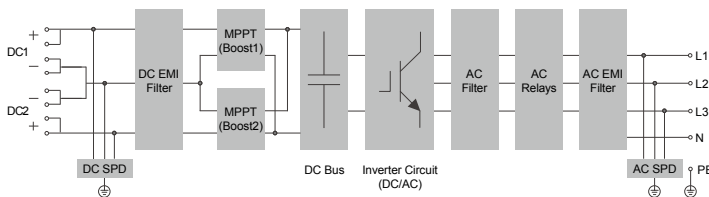
- High anti-corrosion with aluminum alloy die casting
- Built-in SPD and residual current protection



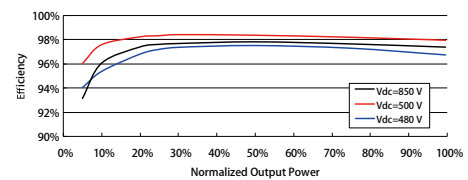
### EASY INSTALLATION

- Plug and play connectors
- 24kg compact design

## CIRCUIT DIAGRAM



## EFFICIENCY CURVE



Type designation	SG10KTL-MT
<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	320 – 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	10000 VA @ 45 °C
Max. AC output current	16.5 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 % I <sub>n</sub>
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 / Euro. efficiency	98.6 % / 98.1 %
<b>Protection</b>	
DC reverse connection protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
Grid monitoring	Yes
DC switch	No
AC switch	No
PV string current monitoring	Yes
Overvoltage 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	< 1 W
Operating ambient temperature range	-25 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: 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, IEC61000-6-2, IEC 61000-6-3, IEC 62116, AS 4777.2
Grid Support	Active & reactive power control and power ramp rate control



## Residential Hybrid Single Phase Inverter for Low Voltage Battery



### FLEXIBLE APPLICATION

- Convenient for new installation and retrofit
- Compatible with both lithium-ion and leadacid 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

Type designation	SH5K-20		
<b>DC Input Data</b>		<b>Backup Data</b>	
Max. PV input power	6500 W	Nominal voltage	230 Vac ( $\pm 2\%$ )
Max. PV input voltage	600 V	Total harmonic factor output voltage	2 % (full resistive load)
Startup voltage	125 V	Frequency range	50 Hz ( $\pm 0.2\%$ )
Nominal input voltage	350 V	Switch time to emergency mode	3 s
MPP voltage range	125 V–560 V	Power factor	0.8 overexcited / leading to 0.8 underexcited / lagging
MPP voltage range for nominal power	240 V–520 V	Max. output power	5000W / 5000 VA
No. of MPP	2	Max. output power (battery)	3000 W / 3000 VA
Max. number of PV strings per MPPT	1 / 1		
Max. PV input current	22 A (11 A / 11 A)		
Max. current for input connector	24 A (12 A / 12 A)		
Short-circuit current of PV input	24 A (12 A / 12 A)		
<b>AC Input and Output Data</b>			
Max. AC input power		3000 W	
Nominal AC output power		4990 W	
Nominal AC output current		21.6 A	
Max. AC output apparent power		5000 VA	
Max. AC output current		21.7 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 to 0.8 underexcited / lagging)	
<b>Protection</b>			
Anti-islanding protection		Yes	
AC short circuit protection		Yes	
Leakage current protection		Yes	
DC switch (solar)		No	
DC fuse (battery)		Yes	
Overvoltage Category		III [MAIN], 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 %	
Max. European efficiency		> 97.2 %	
Max. charge / discharge efficiency		> 94.0 %	
Isolation method (solar)		Transformerless	
Isolation method (battery)		HF	
Ingress protection rating		IP65	
Operating ambient temperature range		-25 °C~60 °C (>45 °C derating)	
Relative humidity range		0–100 %	
Cooling method		Natural convection	
Max. operating altitude		2000 m	
Display		Graphic LCD	
Communication		2 × RS485, WiFi (optional) , CAN, Ethernet	
Analogue input		PT1000	
Power management		1 × Digital Output	
Earth alarm		Email, buzzer inside	
PV connection type		MC4	
AC connection type		Clamping yoke connector	
Certification		AS4777, IEC 62109-1, IEC62109-2, IEC62477-1, IEC 62040-1, 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	

\*: sungrow provides Samsung SDI battery as standard solution.

Note: SH5K-20 needs extra backup box outside when switching a system from on-grid to off-grid.



## Residential Hybrid Single Phase Inverter for Low Voltage Battery



### 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

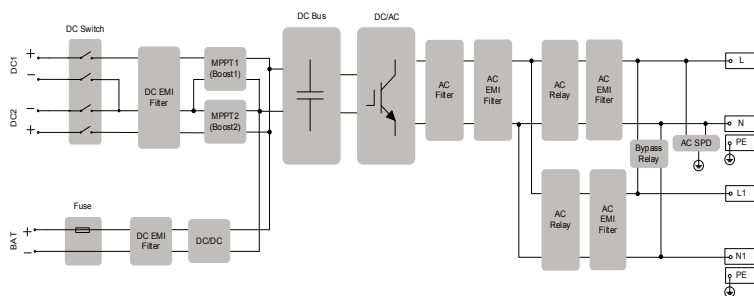
- High self-consumption with optimised built-in EMS
- Free online monitoring to enhance energy management for end user, installer and retailer
- Remote firmware update and customisable settings



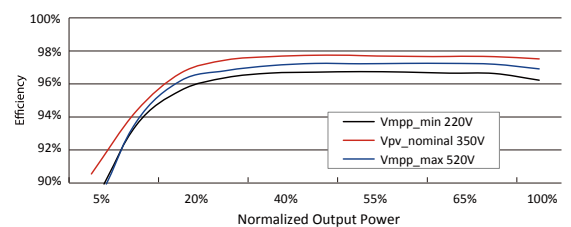
### EASY INSTALLATION

- Cleaner and simpler install with EPS built-in to inverter
- Custom-fit mounting plate with built-in level
- Fast and easy commissioning via front panel LCD or App

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE



Type designation	SH5K-30	
<b>DC Input Data</b>		
Max. PV input power	6500 W	
Max. PV input voltage	600 V	
Startup voltage	125 V	
Nominal input voltage	350 V	
MPP voltage range	125 V – 560 V	
MPP voltage range for nominal power	240 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	5000 W *1	
Nominal AC output current	22.7 A *2	
Max. AC output apparent power	5000 VA	
Max. AC output current	22.7 A *2	
Max. AC input power	8000 W	
Max. AC input current	36.4 A *3	
Nominal AC voltage	220 Vac / 230 Vac / 240 Vac	
AC voltage range	176 Vac~276 Vac	
Nominal grid frequency	50 Hz / 60 Hz	
Grid frequency range	45~55 Hz / 55~65 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 to 0.8 underexcited / lagging)	
<b>Protection</b>		
Anti-islanding protection	Yes	
AC short circuit protection	Yes	
Leakage current protection	Yes	
DC switch (solar)	Optional	
DC fuse (battery)	Yes	
Overvoltage Category	III [MAIN], 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 %	
Max. European efficiency	> 97.1 %	
Max. charge / discharge efficiency	> 94.0 %	
Isolation method (solar)	Transformerless	
Isolation method (battery)	HF	
Ingress protection rating	IP65	
Operating ambient temperature range	-25 °C~60 °C (>45 °C derating)	
Relative humidity range	0%~100%	
Cooling method	Natural convection	
Max. operating altitude	2000m	
Display	Graphic LCD	
Communication	2 × RS485, WiFi, CAN, Ethernet	
Power management	1 × Digital Output	
Earth alarm	Email, buzzer inside	
PV connection type	MC4	
AC connection type	Clamping yoke connector	
Certification	AS4777, IEC 62109-1, IEC62109-2, IEC62477-1, IEC 62040-1, EN 61000-6-1/-3, ABNT NBR 16149: 2013 ABNT NBR 16150: 2013	
<b>Mechanical Data</b>		
Dimensions (W * H * D)	457 mm * 515 mm * 170 mm	
Mounting method	Wall-mounting bracket	
Weight	22 kg	

\*: sungrow provides Samsung SDI battery as standard solution.

\*1: AS4777 : 4990 W, 4990 VA

\*2: AS4777 : 21.7 A

\*3: AS4777 : 34.8 A



## Residential Hybrid Single Phase Inverter for High Voltage Battery



### FLEXIBLE APPLICATION

- 80~550V wide battery voltage range
- Supports parallel connection with full communication between inverters



### ENERGY INDEPENDENCE

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



### SMART MANAGEMENT

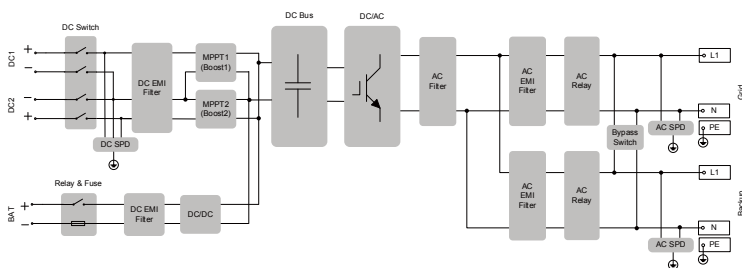
- High self-consumption with optimised built-in EMS
- Free online monitoring to enhance energy management for end user, installer and retailer
- Remote firmware update and customisable settings



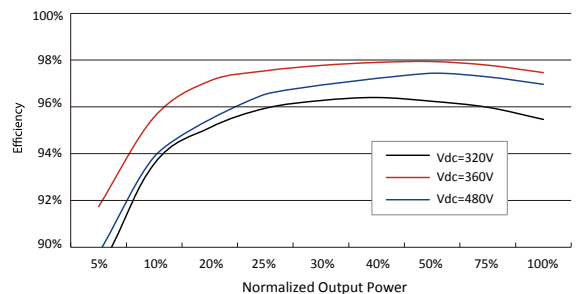
### EASY INSTALLATION

- Touch free commissioning with smartphone
- Lightweight and compact

### CIRCUIT DIAGRAM



### EFFICIENCY CURVE





Type designation	SH5.0RS
<b>PV Input Side Data</b>	
Max. PV input power	6600 W
Max. PV input voltage	600 V
Startup voltage	120 V
Nominal input voltage	350 V
MPP voltage range	90 V – 560 V
MPP voltage range for nominal power	215 V – 520 V
No. of MPPTs	2
Max. number of PV strings per MPPT	1 / 1
Max. PV input current	25 A (12.5 A / 12.5 A)
Max. current for input connector	16 A
Short-circuit current of PV input	32 A (16 A / 16 A)
<b>AC Input and Output Data</b>	
Nominal AC output power	5000W*
Nominal AC output current	21.7A
Max. AC output apparent power	5000VA*
Max. AC output current	21.7A
Nominal AC voltage	220/230/240Vac
AC voltage range	176-276Vac (this may vary with grid standards)
Nominal grid frequency	50Hz / 60Hz
Grid frequency range	45-55Hz / 55-65Hz (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 to 0.8 underexcited/lagging)
<b>Protection</b>	
Anti-islanding protection	Yes
AC short circuit protection	Yes
Leakage current protection	Yes
DC switch(solar)	Optional
DC fuse(battery)	Yes
Overvoltage Category	III [MAINS], II [PV] [BATTERY]
Overvoltage Protection	DC Type II / AC Type II
<b>Battery Data</b>	
Battery type	Li-ion battery
Battery voltage	80V-550V
Max charge / discharge current	25A/25A
Max charge / discharge power	6600W
<b>System Data</b>	
Max. European efficiency	97.3%
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)
Noise	<30dB
Display	LED, Graphic LCD
Communication	RS485, WiFi, Ethernet / 1 × Digital Output
DC connection type	MC4 (PV) / Sunclix ( Battery )
AC connection type	Spring-cage terminal
<b>Mechanical Data</b>	
Dimensions (W * H * D)	460 mm * 543 mm * 163 mm
Mounting method	Wall-mounting bracket
Weight	20 kg
<b>Backup Data</b>	
Nominal voltage	220Vac / 230Vac / 240Vac (±2%)
Frequency range	50Hz / 60Hz (±0.2%)
Total harmonic factor output voltage	2% (full resistive load)
Switch time to emergency mode	<20ms
Nominal output power	5000W / 5000VA
Nominal output current	21.7A
Peak output power	6000W / 6000VA , continuous 6600VA , 10s
Peak output current	28.7A
Max. parallel connection units	Yes

\*: AS4777 : 4990 W, 4990 VA



# SH5.0/8.0/10RT **New**

SUNGROW

Residential Hybrid Three Phase Inverter for High Voltage Battery



## 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

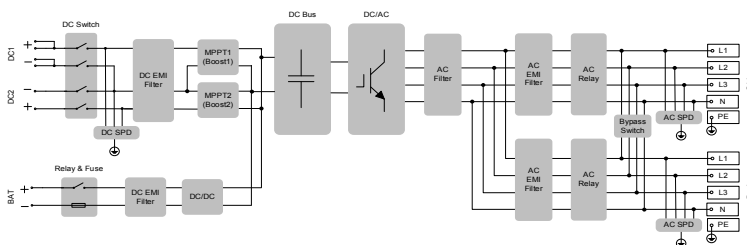
- High self-consumption with optimised built-in EMS
- Free online monitoring to enhance energy management for end user, installer and retailer
- Remote firmware update and customisable settings



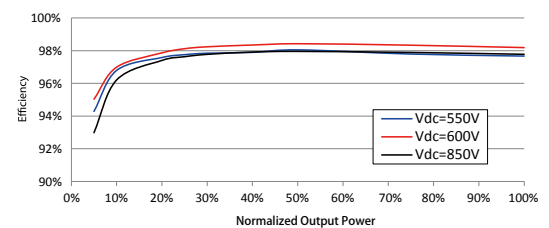
## EASY INSTALLATION

- 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	SH8.0RT	SH10RT
<b>PV Input</b>			
Max. PV input power	6600 W	10600 W	13300 W
Max. PV input voltage	1100 V	1100 V	1100 V
Startup voltage	180	250	250
Nominal input voltage	600 V	600 V	600 V
MPP voltage range	150 V-1000 V	200V-1000 V	200 V-1000 V
MPP voltage range for nominal power	210 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 / 2
Max. PV input current	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)	32A (16 A / 16 A)	48 A (16 A / 32 A)
<b>AC Input and Output</b>			
Max. AC apparent power	5000 VA	8000 VA	10000 VA
Nominal AC output current	7.3 A	11.6 A	14.5 A
Max. AC output current	8.5 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		
Grid frequency range	45-55 Hz / 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 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)		Optional	
DC fuse (battery)		Yes	
Overvoltage 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	10600 W	10600 W
<b>System Data</b>			
Max. efficiency / European efficiency	98.0% / 97.2%	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, WiFi, 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 AC voltage		3 / N / PE, 220 / 380V; 230 / 400V; 240 / 415V	
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	8000 W / 8000 VA	10000 W / 10000 VA
Peak output power	6000 W / 6000 VA, 5 min	12000 W / 12000 VA, 5 min	12000 W / 12000 VA, 5 min
Parallel operation	10000 W / 10000 VA, 10 s	Yes	



# SBP4K8

SUNGROW

48V Lithium ion Battery



## INNOVATIVE AND RELIABLE

- High reliability and safety with prismatic cells from Samsung
- Robust BMS provides multi-protection at both cell level and system level
- Over 95% depth of discharge to maximise the usable capacity



## EASY INSTALLATION

- Suitable for both free-standing and wall-mountable installation
- Simple setup for multiple batteries
- One-click online firmware update



## INTELLIGENT MANAGEMENT

- Remote monitoring of battery status with App and web portal
- Smart hibernation technology to maintain battery state of health



Type designation	SBP4K8
<b>Data</b>	
Total energy capacity	4.8 kWh
Battery capacity	94 Ah
Nominal voltage	51.52 V
Battery type	Lithium ion
Voltage range	44.8 V–58.1 V
Max. charge current	47 A
Max. discharge current	80 A
Round-trip efficiency (RTE)	> 95 %
Depth of discharge (DOD)	> 95 %
Cell balance technique	Bi-directional active cell balancing
Cell balance current	5 A
Scalability	Yes, up to 14.4 kWh
Over/under voltage protection	Yes
Over current protection	Yes
Over/under temperature protection	Yes
Short-circuit protection	Yes
Mounting type	Free-standing / wall-mountable
Weight	48 kg
Dimensions (W x H x D)	510 mm x 565 mm x 190 mm
Communication	CAN
Firmware upgrade	Local and remote
Current consumption in sleep mode	< 30 $\mu$ A
Noise	< 30 dB
Ingress protection rating	IP55
Relative humidity range	0–85 %, non-condensing
Operating temperature	-10°C to 45°C
Storage temperature	-20°C to 50°C
Altitude	< 2000 m
Storage period	Less than 6 months
Cooling strategy	Natural convection
Certification	UN38.3, IEC62619, IEC-61000-6-1/3, SAA
Applicable inverter type	SH3K6, SH4K6, SH5K-20, SH5K-30



## WiFi Communication Module



### 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>Communication</b>	
RS485	1 port
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

## LAN Communication Module



### 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

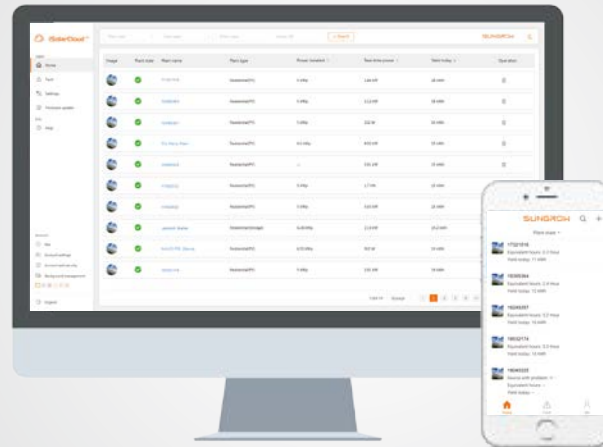


### SAFE AND RELIABLE

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

Type designation	E-Net
<b>Basic data</b>	
Max. number of supported devices	1
LED display	LED × 3
Configuration	Built-in Web server
<b>Communication</b>	
RS485	1 port
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





### 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



### FLEXIBLE AND FRIENDLY

- Centralized power plant management, low O&M cost
- Flexible data access, Web portal and APP, remote or local maintenance
- Easy account management, share plants with co-workers and friends



### SIMPLE AND EFFICIENT

- Scan QR to create plant or get support
- Accurate positioning of faults, quick trouble shooting, real-time push of information to reduce the time to resolve faults
- Parameter setting, firmware updates, automated data reports



Type designation	iSolarCloud
<b>Monitoring Device</b>	
Device type	Inverter, combiner box, meteo station, energy meter, transformer and other plant devices
Monitoring Capacity	More than 100 GW (scalable)
<b>Data Collection</b>	
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, Firefox 60
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



## Global Reference



Residential PV project in Germany 



Residential PV project in China 🇨🇳



Residential PV project in Australia 🇦🇺



Residential PV project in Czech 🇨🇪

## Global Reference



Residential PV project in Australia 🇦🇺



Residential PV project in Italy 🇮🇹



Residential PV project in Australia 



**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

Tel: 1800 SUNGROW (786 476) (Local Toll-free)

+61 2 9922 1522 (Overseas)

Email: [service@sungrowpower.com.au](mailto:service@sungrowpower.com.au)

Website: [www.sungrowpower.com](http://www.sungrowpower.com)



© 2019 Sungrow Power Supply Co., Ltd. All rights reserved.  
Subject to change without notice. Version 1.1

