

SH5.0/6.0RS-20

Residential Hybrid Single Phase Inverter



FLEXIBLE APPLICATION

- 80 V - 460 V wide battery voltage range
- Ideal for both retrofitting and new installations
- Built-in smart PID Zero function



ENERGY INDEPENDENCE

- Seamless transition to backup mode, for protection against power outages
- Fast Charging or discharging, enabling higher self-consumption results
- Built-in EMS with advanced customization



USER FRIENDLY SETUP

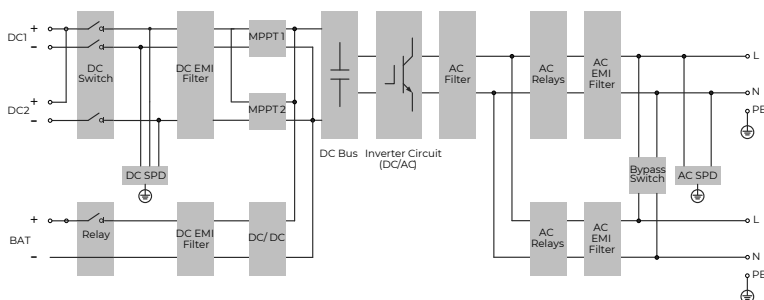
- Plug and play installation
- iSolarCloud monitoring available on App and Web
- Lightweight and compact, optimized for heat-dissipation



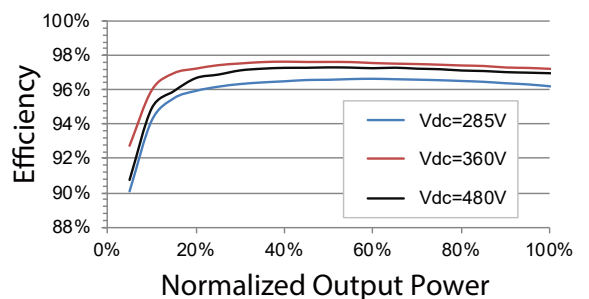
SMART MANAGEMENT

- Real time data (10 seconds refresh sample)
- 24/7 live online monitoring and with integrated display
- Online IV curve scan and diagnosis

CIRCUIT DIAGRAM



EFFICIENCY CURVE (SH6.0RS-20)



Type designation	SH5.0RS-20	SH6.0RS-20
Input (DC)		
Recommended max. PV input power *	7500 Wp	9000 Wp
Max. PV input voltage **	600 V	
Min. PV input voltage / Startup input voltage	40 V / 50 V	
Rated PV input voltage	360 V	
MPPT operating voltage range ***	40 V – 560 V	
MPP voltage range for rated power	235 V - 480 V	285 V - 480 V
No. of independent MPP trackers	2	
No. of PV strings per MPPT	1 / 1	
Max. PV input current	32 A (16 A / 16 A)	
Max. DC short-circuit current	40 A (20 A / 20 A)	
Max. current for input connector	20 A	
Battery data		
Battery type	Li-ion battery	
Battery voltage range	80 V - 460 V	
Max. charge **** / discharge current ****	50 A / 50 A	
Max. charge / discharge power	6600 W	
Input / output (AC)		
Max. AC power from grid	12000 VA	13000 VA
Rated AC output power	5000 W	6000 W
Max. AC output apparent power	5000 VA	6000 VA
Max. AC output current	22.8 A	27.3A
Rated AC voltage	220 V / 230 V / 240 V	
AC voltage range	154 V – 276 V	
Rated grid frequency	50 Hz / 60 Hz	
Grid frequency range	45 Hz – 55 Hz / 55 Hz – 65 Hz	
Harmonic (THD)	< 3 % (of rated power)	
Power factor at rated power / Adjustable power factor	> 0.99 at default value at rated power	
Feed-in phases / connection phases	1 / 1	
Backup data (on grid mode)		
Max. output power for backup load *****	6000 W	
Max. output current for backup load *****	27.3 A	
Backup data (off-grid mode)		
Rated voltage	220 V / 230 V / 240 V (± 2 %)	
Rated frequency	50 Hz / 60 Hz (± 0.2 %)	
THDV(@Linear load)	< 2 %	
Backup switch time	< 10 ms	
Rated output power	5000 W / 5000 VA	6000 W / 6000 VA
Peak output power	8400 VA, 10 s	
Efficiency		
Max. efficiency / European efficiency	97.7 % / 97.3 %	97.7 % / 97.3 %
Protection & Function		
Grid monitoring	Yes	
DC reverse polarity protection	Yes	
AC short-circuit protection	Yes	
Leakage current protection	Yes	
DC switch(solar)	Yes	
Surge protection	DC Type II / AC Type II	
PID Zero	Yes	
Parallel operation on grid port / Max. No of inverters	Master-slave mode / 3	
Optimizer compatibility *****	Optional	
General data		
Topology (Solar / Battery)	Transformerless / Transformerless	
Degree of protection	IP65	
Dimensions (W * H * D)	490 mm * 340 mm * 170 mm	
Weight	18.5 kg	
Mounting method	Wall-mounting bracket	
Operating ambient temperature range	-25 °C - 60 °C	
Allowable relative humidity range	0 % – 100 %	
Cooling method	Natural convection	
Max. operating altitude	4000 m	
Noise (typical)	< 45 dB (A)	
Display	LED digital display & LED indicator	
Communication	RS485 / Ethernet / WLAN / CAN	
DI / DO	DI * 4 / DO * 1 / DRM	
DC connection type	MC4 (PV, Max.6mm ²) / Plug and Play (Battery, Max.10mm ²)	
AC connection type	Plug and Play (Grid Max.16mm ² , Backup Max.6mm ²)	
Grid compliance	IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 61000-3-11, IEC/EN 61000-3-12, EN 62477-1, NRS 097-2-1	

* Max. input PV power for SH5.0RS-20 is 12,000 Wp, for SH6.0RS-20 is 13,000 Wp ** Input voltage exceeding the MPPT operating voltage range triggers inverter protection *** Please refer to the user manual for the full load MPPT voltage range **** Depending on the connected battery ***** Please refer to the user manual and modify the settings based on actual load power ***** Calculated based on 220V grid voltage ***** For optimizer compatibility, please consult Sungrow before placing an order

