SH5.0/6.0/8.0/10RT

Residential Hybrid Three Phase Inverter

SUNGROW

Clean power for all

FLEXIBLE APPLICATION

- 150 V-600 V wide battery voltage range
- Supports parallel connection with master-slave controlling
- Provides 100% power to 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

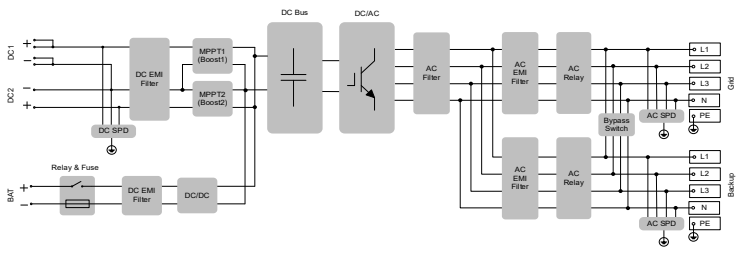
SMART MANAGEMENT

- 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

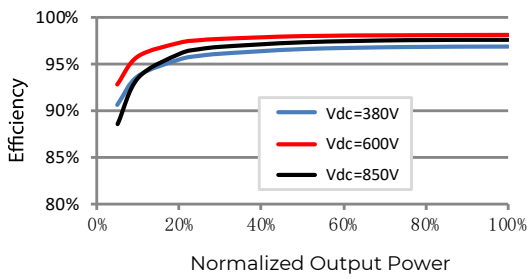
EASY INSTALLATION

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

CIRCUIT DIAGRAM



EFFICIENCY CURVE (SH5.0RT)



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Type designation	SH5.0RT	SH6.0RT	SH8.0RT	SH10RT
Input (DC)				
Recommended max. PV input power	7500 Wp	9000 Wp	12000 Wp	15000 Wp
Max. PV input voltage *	1000 V			
Min. PV input voltage / Startup input voltage	150 V / 180 V	200 V / 250 V	200 V / 250 V	200 V / 250 V
Rated PV input voltage	600 V			
MPPT operating voltage range **	150 V – 950 V	200 V – 950 V	200 V – 950 V	200 V – 950 V
No. of independent MPP trackers	2			
No. 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)	25 A (12.5 A / 12.5 A)	37.5 A (12.5 A / 25 A)
Max. DC short-circuit current	32 A (16 A / 16 A)	32 A (16 A / 16 A)	32 A (16 A / 16 A)	48 A (16 A / 32 A)
Max. current for input connector	30 A			
Battery data				
Battery type	Li-ion battery			
Battery voltage range	150 V - 600 V			
Max. charge *** / discharge current ***	30 A / 30 A			
Max. charge / discharge power	7500 W / 6000 W	9000 W / 7200 W	10600 W / 10600 W	10600 W / 10600 W
Input / Output (AC)				
Max. AC power from grid	12500 W	15000 W	18600 W	20600 W
Rated AC output power	5000 W	6000 W	8000 W	10000 W
Max. AC output apparent power	5000VA	6000 VA	8000 VA	10000 VA
Max. AC output current	7.6 A	9.1 A	12.1 A	15.2 A
Rated AC voltage	3 / N / PE, 220 V / 380 V; 230 V / 400 V; 240 V / 415 V			
AC voltage range	270 V - 480 V			
Rated grid frequency	50 Hz			
Grid frequency range	45 Hz - 55 Hz			
Harmonic (THD)	< 3 % (of rated power)			
DC current injection	< 0.5 % In			
Power factor at rated power / Adjustable power factor	>0.99 / 0.8 leading to 0.8 lagging			
Feed-in phases / connection phases	3 / 3			
Backup data (on grid mode)				
Max. output power for backup load ****	16500 W			
Max. output current for backup load	3 * 25 A			
Backup data (off - grid mode)				
Rated voltage	3 / N / PE, 220Vac / 230Vac / 240Vac			
Rated frequency	50 Hz			
THDV(@Linear load)	2 %			
Backup switch time	< 20 ms			
Rated output power	5000W / 5000VA	6000W / 6000VA	8000W / 8000VA	10000W / 10000VA
Peak output power *****	6000W / 6000VA, 5min 10000W / 10000VA, 10s	7200W / 7200VA, 5min 10000W / 10000VA, 10s	12000W / 12000VA, 5min	12000W / 12000VA, 5min
Peak output power on single phase ******	2000 VA (≥9.6kWh)	2200 VA (≥12.8kWh)	2700 VA (≥12.8kWh)	3400 VA (≥12.8kWh)
Rated output current for backup load	3 * 18.5 A			
Efficiency				
Max. efficiency / European efficiency	98 % / 97.2 %	98.2 % / 97.5 %	98.4% / 97.9%	98.4% / 97.9%
Protection & Function				
Grid monitoring	Yes			
DC reverse polarity protection	Yes			
AC short-circuit protection	Yes			
Leakage current protection	Yes			
DC switch (solar)	Yes			
DC overcurrent protection (Battery)	Yes			
Surge protection	DC Type II / AC Type II			
Parallel operation on grid port / Max. No of inverters	Master-slave mode / 5			
Battery input reverse polarity protection	Yes			
General data				
Topology (solar / battery)	Transformerless / Transformerless			
Degree of protection	IP65			
Dimensions (W * H * D)	460 mm * 540 mm * 170 mm			
Weight	27 kg			
Mounting method	Wall-mounting bracket			
Operating ambient temperature range	-25 ℃ - 60 ℃			
Allowable relative humidity range (non-condensing)	0 % - 100 %			
Cooling method	Natural convection			
Max. operating altitude	4000 m			
Noise (Typical)	30 dB (A)			
Display	LED			
Communication	RS485, WLAN, Ethernet, CAN, 4 × DI, 1 × DO			
DI/DO	DI*4/DO*1/DRM			
DC connection type	MC4 (PV, Max.6mm²) / Evo2 Compatible (Battery, Max.6mm²)			
AC connection type	Plug and play connector (Grid Max.10mm², Backup Max.6mm²)			
Compliance	IEC / EN 62109, IEC / EN 61000-6, EN 62477-1, IEC 61727, IEC 62116, IEC 61683, VDE-AR-N-4105, AS/NZS 4777.2:2020, EN50549-1, NRS 097-2-1, TOR Generator Type A, NA/EEA:2020 NE7, SII 2021, NC RfG PTPiREE, NC RfG, EIFS 2018:2, PPDS4, C10/11			

* 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. ***** Can be reached only if PV and battery power is sufficient. ****** Peak power only for Resistive loads. Detail refer to SHRT backup output power document.

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