

SH5.0/6.0/8.0/10RT

Residential Hybrid Three Phase Inverter



FLEXIBLE APPLICATION

- 150–600V wide battery voltage range
- Supports parallel connection with master-slave controlling
- Provides 100% power to unbalance loads in backup mode

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

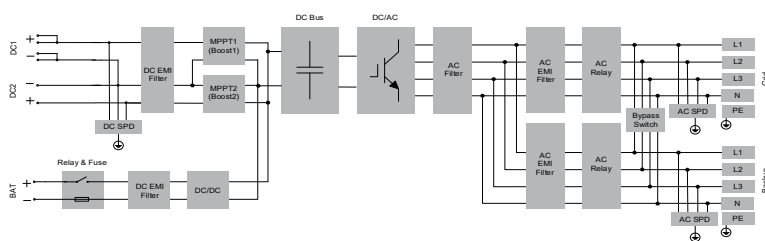
ENERGY INDEPENDENCE

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

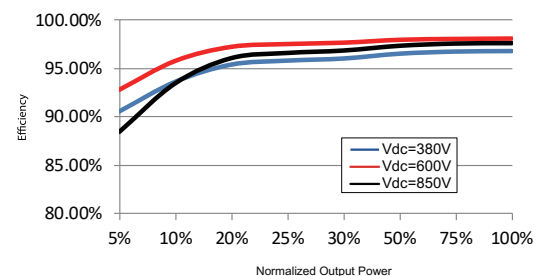
EASY INSTALLATION

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

CIRCUIT DIAGRAM



EFFICIENCY CURVE (SH5.0RT)



Type designation	SH5.0RT	SH6.0RT	SH8.0RT	SH10RT
PV Input				
Recommended max. PV input power	7500 W	9000 W	12000 W	15000 W
Max. PV input voltage			1000 V	
Startup voltage	180 V	250 V	250 V	250 V
Rated input voltage			600 V	
MPP voltage range	150 V – 950 V	200 V – 950 V	200 V – 950 V	200 V – 950 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	25A (12.5A / 12.5A)	25A (12.5A / 12.5A)	25A (12.5A / 12.5A)	37.5A (12.5A / 25A)
Max. current for input connector			30 A	
Short-circuit current of PV input	32 A (16 A / 16 A)	32 A (16 A / 16 A)	32 A (16 A / 16 A)	48 A (16 A / 32 A)
AC Input and Output				
Max. AC input 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 power	5000 VA	6000 VA	8000 VA	10000 VA
Rated AC output apparent power	5000 VA	6000 VA	8000 VA	10000 VA
Rated AC output current	7.3 A	8.7 A	11.6 A	14.5 A
Max. AC output current	7.6 A	9.1 A	12.1 A	15.2A
Rated AC voltage		3 / N / PE, 220 / 380 V; 230 / 400 V; 240 / 415 V		
AC voltage range			270 - 480V	
Rated grid frequency / Grid frequency range			50Hz / 45 - 55Hz	
THD			<3% (of rated power)	
DC current injection			<0.5% In	
Power factor			>0.99 / 0.8 leading to 0.8 lagging	
Protection & Function				
LVRT			Yes	
Anti-islanding protection			Yes	
AC short circuit protection			Yes	
Leakage current protection			Yes	
DC switch (solar)			No	
DC fuse (battery)			Yes	
Overvoltage category		III [MAINS], II [PV] [BATTERY]		
SPD		DC Type II / AC Type II		
Battery input reverse polarity protection			Yes	
Parallel operation on grid port / Max. No. of inverters			Master-slave mode / 5 * (need same inverters type)	
Battery Data				
Battery type			Li-ion battery	
Battery voltage			150-600V	
Max charge / discharge current			30A ** / 30A **	
Max charge / discharge power	7500W / 6000W	9000 W / 7200 W	10600 W / 10600 W	10600 W / 10600 W
System Data				
Max. efficiency	98.0 %	98.2 %	98.4 %	98.4 %
European efficiency	97.2 %	97.5 %	97.9 %	97.9 %
Isolation method (solar / battery)		Transformerless / Transformerless		
Degree of protection			IP65	
Operating ambient temperature range			-25 °C – 60 °C	
Allowable relative humidity range (non-condensing)			0% - 100%	
Cooling method			Natural convection	
Max. operating altitude		4000 m (>3000 m Derating)		
Noise (Typical)			30dB (A)	
Display			LED	
Communication		RS485, WLAN, Ethernet, CAN, 4×DI, 1×DO		
DC connection type			MC4 (PV) / Sunclix (Battery)	
AC connection type			Plug and play connector	
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		
Country of manufacture		China		
Mechanical Data				
Dimensions (W * H * D)		460 * 540 * 170 mm		
Mounting method		Wall-mounting bracket		
Weight		27 kg		
Backup Data				
Rated voltage		3 / N / PE, 220Vac / 230Vac / 240Vac		
Frequency range		50Hz / 60Hz		
Total harmonic factor output voltage (Linear load)		2%		
Switch time to emergency mode		<20ms		
Rated 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, 5min 10000 W / 10000 VA, 10s	7200 W / 7200 VA, 5min 10000 W / 10000 VA, 10s	12000 W / 12000 VA, 5min	12000 W / 12000 VA, 5min
Rated output current for backup load during on grid mode		3 * 18.5 A		

*: Germany is available for 2 inverters parallel in maximum if no ripple control is used in system **: Depending on the connected battery

***: Can be reached only if PV and battery power is sufficient.

SH15/20/25T

Hybrid Three Phase Inverter



FULL BACKUP

- Built-in 63 A bypass for whole home backup
- 10 ms seamless switch
- Peak output up to 36500 VA (10 s) in backup mode (SH25T)



FLEXIBLE APPLICATION

- Support 100 % unbalance output in backup and on grid mode
- Max. 16 A DC input current per string
- 50 A fast charge / discharge current



FRIENDLY INSTALLATION

- Plug & Play installation
- Quiet operation for indoor or outdoor installation



SAFE AND DURABLE

- Support precise AFCI
- IP65/C5



Type designation	SH15T	SH20T	SH25T
Input (DC)			
Recommended max. PV input power	30000 Wp	40000 Wp	50000 Wp
Max. PV input voltage *		1000 V	
Min. PV input voltage / Startup input voltage		150 V / 180 V	
Rated PV input voltage		600 V	
MPPT operating voltage range **		150 V - 950 V	
No. of independent MPP trackers		3	
No. of PV strings per MPPT		2 / 2 / 1	
Max. PV input current		80 A (32 A / 32 A / 16 A)	
Max. DC short-circuit current		100 A (40 A / 40 A / 20 A)	
Max. current for input connector		30 A	
Battery data			
Battery type		Li-ion battery	
Battery voltage range		100 V - 700 V	
Max. charge / discharge current ***		50 A / 50 A	
Max. charge / discharge power	30000 W / 15000 W	30000 W / 20000 W	30000 W / 25000 W
Input and Output (AC)			
Max. AC power from grid ****		43000 VA	
Rated AC output power	15000 W	20000 W	25000 W
Max. AC output apparent power	15000 VA	20000 VA	25000 VA
Max. AC output current	22.8 A	30.4 A	37.9 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 / 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 / 0.8 leading to 0.8 lagging	
Feed-in phases/connection phases		3 / 3-N-PE	
Backup data (on grid mode)			
Max. output power for backup load ****		43000 W	
Max. output current for backup load		3 * 63 A	
Backup data (off-grid mode)			
Rated voltage		3 / N / PE, 220 / 380 V; 230 / 400 V; 240 / 415 V (± 2 %)	
Rated frequency		50 Hz / 60 Hz (± 0.2 %)	
THDV(@Linear load)		< 2 %	
Backup switch time		< 10 ms	
Rated output power	15000 W / 15000 VA	20000 W / 20000 VA	25000 W / 25000 VA
Peak output power *****	25500 W / 25500 VA , 10 s	32000 W / 32000 VA , 10s	36500 W / 36500 VA , 10 s
Efficiency			
Max. efficiency / European efficiency	98.1 % / 97.6 %		98.2 % / 97.8 %
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	
Battery input reverse polarity protection		Yes	
General data			
Topology (solar / battery)		Transformerless / Transformerless	
Degree of protection		IP65	
Dimensions (W * H * D)		620 mm * 480 mm * 245 mm	
Weight	38 kg		40 kg
Mounting method		Wall-mounting bracket	
Operating ambient temperature range		-25 °C - 60 °C	
Allowable relative humidity range(Non-condensing)		0 % - 100 %	
Cooling method		Natural convection	Fan cooling
Max. operating altitude		2000 m	
Noise(Typical)	35 dB (A)		50 dB (A)
Display		LED	
Communication		RS485, WLAN, Ethernet, CAN	
DI / DO		DI * 4 / DO * 2 / DRMO	
DC connection type	MC4 compatible connector (PV, Max.6 mm ²)/Plug and play connector (battery, Max.10 mm ²)		
AC connection type	Plug and play connector (Max.16 mm ²)		
Compliance	IEC / EN 62109, IEC 61000-6, EN 62477-1, IEC 61727, IEC 62116, IEC 62920, EN 55011, CISPR 11, VDE-AR-N-4105, EN 50549-1, NRS 097, AS/NZS 4777.2:2020, TOR Type A, R25, CEI 0-21		
Country of manufacture	China		

* 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

