

# SH3.0/3.6/4.0/5.0/6.0RS

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

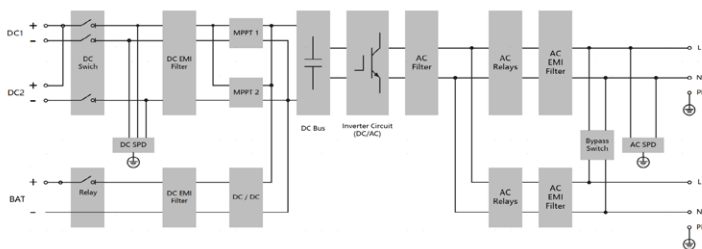
- Plug and play installation
- iSolarCloud monitoring available on App and Web
- Lightweight and compact, optimized for heat-dissipation



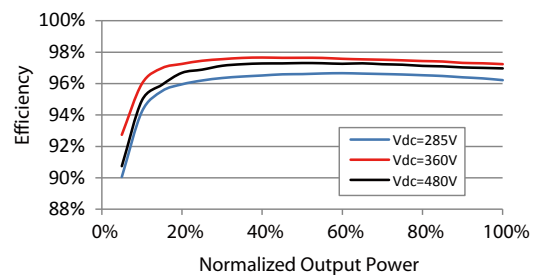
## SMART MANAGEMENT

- 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)



| Type designation                                       | SH3.0RS         | SH3.6RS         | SH4.0RS  | SH5.0RS        | SH6.0RS         |
|--|-----------------|-----------------|--|----------------|-----------------|
| <b>Input (DC)</b>                                      |                 |                 |  |                |                 |
| Recommended max. PV input power                        | 10000 Wp        | 10700 Wp        | 11000 Wp   | 12000 Wp       | 13000 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   |                |                 |
| 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   |                |                 |
| <b>Battery data</b>                                    |                 |                 |  |                |                 |
| Battery type   |                 |                 | Li-ion battery   |                |                 |
| Battery voltage range                                  |                 |                 | 80 V - 460 V   |                |                 |
| Max. charge *** / discharge current ***                |                 |                 | 30 A / 30 A  |                |                 |
| Max. charge / discharge power                          |                 |                 | 6600 W   |                |                 |
| <b>Input / output (AC)</b>                             |                 |                 |  |                |                 |
| Max. AC power from grid                                | 10000 VA        | 10700 VA        | 11000 VA   | 12000 VA       | 13000 VA        |
| Rated AC output power                                  | 3000 W          | 3680 W          | 4000 W   | 5000 W         | 6000 W          |
| Max. AC output apparent power                          | 3000 VA         | 3680 VA         | 4000 VA  | 5000 VA        | 6000 VA         |
| Max. AC output current                                 | 13.7 A          | 16 A            | 18.2 A   | 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  |                |                 |
| <b>Backup data (on grid mode)</b>                      |                 |                 |  |                |                 |
| Max. output power for backup load ****                 |                 |                 | 6000 W   |                |                 |
| Max. output current for backup load *****              |                 |                 | 27.3 A   |                |                 |
| <b>Backup data (off-grid mode)</b>                     |                 |                 |  |                |                 |
| 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                                     | 3000W / 3000VA  | 3680W / 3680VA  | 4000 W / 4000 VA   | 5000W / 5000VA | 6000W / 6000VA  |
| Peak output power                                      |                 |                 | 8400 VA, 10s   |                |                 |
| <b>Efficiency</b>                                      |                 |                 |  |                |                 |
| Max. efficiency / European efficiency                  | 97.4 % / 97.0 % | 97.5 % / 97.1 % | 97.6 % / 97.2 %  | 97.7% / 97.3%  | 97.7 % / 97.3 % |
| <b>Protection &amp; Function</b>                       |                 |                 |  |                |                 |
| 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 compatbility *****                           |                 |                 | Optional   |                |                 |
| <b>General data</b>                                    |                 |                 |  |                |                 |
| 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.6 mm <sup>2</sup> ) / Evo2 Compatible (Battery, Max.6 mm <sup>2</sup> )   |                |                 |
| AC connection type                                     |                 |                 | Plug and Play (Grid Max.16mm <sup>2</sup> , Backup Max.6mm <sup>2</sup> )  |                |                 |
| Grid compliance  |                 |                 | IEC/EN 62109-1, IEC/EN 62109-2, IEC 62116, IEC 61727, IEC/EN 61000-3-11, IEC/EN 61000-3-12, EN 62477-1, AS/NZS 4777.2:2020, EN 50549-1, CEI 0-21, G 98 / G 99, UNE 217002:2020, NTS V2 TypeA, C10/26 |                |                 |

\* 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