

SUNGROW

SH5K-20

Residential Hybrid Inverter



Smart and Integrated

- Integrated optimised energy management system, battery usage strategies and smart home load control
- Energy trading ready with external EMS to maximise payback on your investment
- Monitoring via smartphone or laptop, providing email reports and alerts.



Flexible Application

- For both new installation and retrofitting solar systems
- Compatible with both lithium-ion and lead-acid batteries



Safe and Durable

- Backup for essential loads in the event of a grid interruption or blackout
- Integrated high-frequency isolated battery charge/discharge circuit
- Protection rating at IP65 (dust-proof and water-proof)



Simple and User Friendly

- Easy commissioning and customisable settings via LCD
- Auto-identification of lithium-ion batteries
- One-click firmware update via Wi-Fi or Ethernet, easy for maintenance and management



DC Input

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 MPP	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	24 A (12 A / 12 A)
Short-circuit current of PV input	24 A (12 A / 12 A)

AC Input and Output Data

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)

Protection

Anti-islanding protection	Yes
AC short-circuit protection	Yes
Leakage current protection	Yes
DC fuse (battery)	Yes
DC switch (solar)	Optional
Overvoltage category	III [Main], II [PV] [Battery]

Battery Data

Battery type	Li-ion battery / Lead-acid battery
Battery voltage	48 V (32 V–70 V)
Max. charge / discharge current	65 A / 65 A

System Data

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 to 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, Wi-Fi (optional), CAN, Ethernet
Analogue input	PT1000
Power management	1 × Digital Output
Earth alarm	1 × Digital Output, email, buzzer inside
PV connection type	MC4
AC connection type	Clamping yoke connector
Certification	AS4777, IEC 62109-1, IEC 62109-2, IEC 62477-1, IEC 62040-1, EN 61000-6-1/-3
Type designation	SH5K-20

Mechanical Data

Dimensions (W × H × D)	457 mm × 515 mm × 170 mm
Mounting method	Wall-mounting bracket
Weight	22 kg

Backup Data

Nominal voltage	230 Vac (±2 %)
Total harmonic factor output voltage	2 % (full resistive load)
Frequency range	50 Hz (±0.2 %)
Switch time to emergency mode	3 s
Power factor	0.8 overexcited/leading to 0.8 underexcited/lagging
Max. output power	5000 W / 5000 VA
Max. output power (battery)	3000 W / 3000 VA

