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

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### 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

### Protection
- Anti-islanding protection: Yes
- AC short-circuit protection: Yes
- Leakage current protection: Yes
- DC fuse (battery): Optional
- DC switch (solar): 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 %
- European efficiency: > 97.2 %
- 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 x RS485, Wi-Fi (optional), CAN, Ethernet
- Analogue input: PT1000
- Power management: 1 x Digital Output
- Earth alarm: 1 x 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