Smart Energy Center

Active Safety
AI Powered
Active Arcing Protection

Higher Yields
Up to 30% More Energy with Optimizer

Battery Ready
Plug & Play battery interface

Flexible Communication
WLAN, Fast Ethernet, 4G Communication Supported

Efficiency Curve

*1. Will be compatible with HUAWEI smart string ESS in Q1, 2021

Circuit Diagram

SUN2000-5/6KTL-M1
### Technical Specification

#### SUN2000-5KTL-M1

| Efficiency | Max. efficiency | 98.4% | 98.6% |
| Max. efficiency | European weighted efficiency | 97.5% | 97.7% |

#### Input (PV)

- **Recommended max. PV power**: 7,500 Wp
- **Max. input voltage**: 1,100 V
- **Operating voltage range**: 140 V ~ 980 V
- **Start-up voltage**: 200 V
- **Rated input voltage**: 600 V
- **Max. input current per MPPT**: 11 A
- **Max. short-circuit current**: 15 A
- **Number of MPP trackers**: 2
- **Max. input number per MPP tracker**: 1

#### Input (DC Battery)

- **Compatible Battery**: HUAWEI Smart String ESS 5kWh – 30kWh
- **Cell Technology**: Lithium-iron phosphate (LiFePO4)
- **Operating voltage range**: 600 V ~ 980 V
- **Max. charge Power**: 10,000 W
- **Max. discharge Power**: 6,600 W

#### Output (On Grid)

| Grid connection | Three-phase |
| Rated output power | 5,000 W | 6,000 W |
| Max. apparent power | 5,500 VA | 6,600 VA |
| Rated output voltage | 220 Vac / 380 Vac, 230 Vac / 400 Vac, 3W / N+PE |
| Rated AC grid frequency | 50 Hz / 60 Hz |
| Max. output current | 8.5 A | 10.1 A |

- **Adjustable power factor**: 0.8 leading ~ 0.8 lagging
- **Max. total harmonic distortion**: ≤ 3 %

#### Output (Backup Power via Backup Box-B1)

- **Maximum apparent power**: 3,300 VA
- **Rated output voltage**: 220 V / 230 V
- **Maximum output current**: 15 A

- **Power factor range**: 0.8 leading ~ 0.8 lagging

#### Features & Protections

- **Input-side disconnection device**: Yes
- **Anti-islanding protection**: Yes
- **DC reverse polarity protection**: Yes
- **Insulation monitoring**: Yes
- **DC surge protection**: Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
- **AC surge protection**: Yes, compatible with TYPE II protection class according to EN/IEC 61643-11
- **Residual current monitoring**: Yes
- **AC overcurrent protection**: Yes
- **AC short-circuit protection**: Yes
- **AC overvoltage protection**: Yes
- **Arc fault protection**: Yes
- **Ripple receiver control**: Yes
- **Integrated PID recovery**: Yes
- **Battery reverse charging from grid**: Yes
- **Nighttime Power Consumption**: < 5.5W

#### General Data

- **Operating temperature range**: -25 ~ + 60 °C (-13 °F ~ 140 °F)
- **Relative operating humidity**: 0 %RH ~ 100 %RH
- **Operating altitude**: 0 ~ 4,000 m (13,123 ft.) (Derating above 2000 m)
- **Cooling**: Natural convection
- **Display**: LED Indicators; Integrated WLAN + FusionSolar App
- **Communication**: RS485; WLAN/Ethernet via Smart Dongle-WLAN-FE; 4G / 3G / 2G via Smart Dongle-4G (Optional)
- **Weight (incl. mounting bracket)**: 17 kg (37.5 lb)
- **Dimension (incl. mounting bracket)**: 525 x 470 x 146.5 mm (20.7 x 18.5 x 5.8 inch)
- **Degree of protection**: IP65

#### Optimizer Compatibility

- **DC MBUS compatible optimizer**: SUN2000-450W-P

#### Standard Compliance (more available upon request)

- **Certificate**: EN/IEC 62109-1, EN/IEC 62109-2, IEC 62116
- **Grid connection standards**: AS/NZS4777.2015

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*Inverter max input PV power is 20,000 Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.

*1 Inverter max input PV power is 20,000 Wp when long strings are designed and fully connected with SUN2000-450W-P power optimizers.

*2 The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.

*3 Any DC input voltage beyond the operating voltage range may result in inverter improper operating.

*4 SUN2000-5/6KTL-M1 raises potential between PV- and ground to above zero through integrated PID recovery function to recover module degradation from PID. Supported module types include: P-type (mono, poly).

*5 ≤ 10 W when PID recovery function is activated