

Smart Energy Controller



Active Safety

AI Powered
Active Arcing Protection



Higher Yields

Up to 30% More Energy
with Optimizer ¹



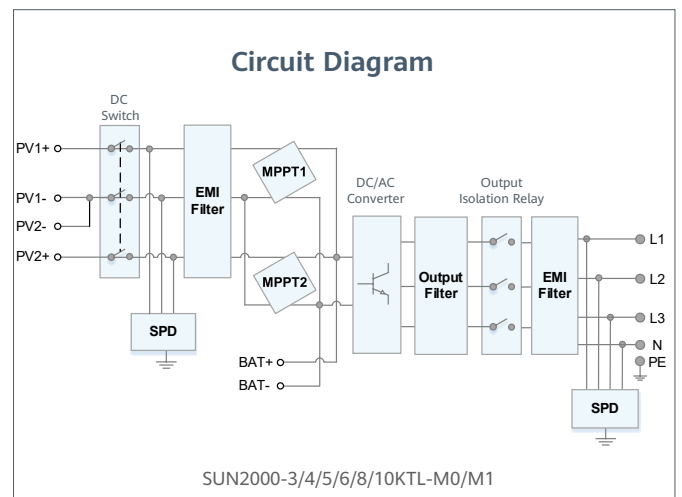
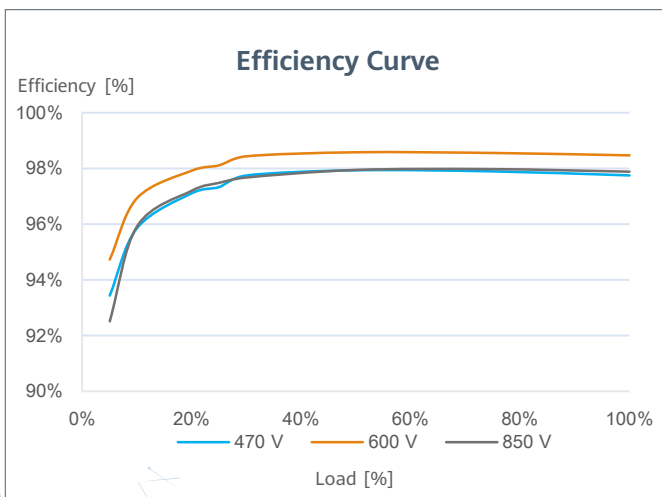
Battery Ready

Plug & Play battery interface ²



Flexible Communication

WLAN, Fast Ethernet, 4G
Communication Supported



¹ Only applicable to SUN2000-3/4/5/6/8/10KTL-M1 smart energy center.
² SUN2000-3/4/5/6/8/10KTL-M0 will be compatible with HUAWEI smart string ESS in Q1, 2021

SUN2000-3/4/5/6/8/10KTL-M1
Technical Specification

| Technical Specification | SUN2000 -3KTL-M1 | SUN2000 -4KTL-M1 | SUN2000 -5KTL-M1 | SUN2000 -6KTL-M1 | SUN2000 -8KTL-M1 | SUN2000 -10KTL-M1 |
|-------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|
|-------------------------|---------------------|---------------------|---------------------|---------------------|---------------------|----------------------|

Efficiency

| | | | | | | |
|------------------------------|-------|-------|-------|-------|-------|-------|
| Max. efficiency | 98.2% | 98.3% | 98.4% | 98.6% | 98.6% | 98.6% |
| European weighted efficiency | 96.7% | 97.1% | 97.5% | 97.7% | 98.0% | 98.1% |

Input (PV)

| | | | | | | |
|--|---------------|----------|----------|----------|-----------|-----------|
| Recommended max. PV power ¹ | 4,500 Wp | 6,000 Wp | 7,500 Wp | 9,000 Wp | 12,000 Wp | 15,000 Wp |
| Max. input voltage ² | 1,100 V | | | | | |
| Operating voltage range ³ | 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 | | | | | |
| Operating voltage range | 600 V ~ 980 V | | | | | |
| Max operating current | 16.7 A | | | | | |
| Max charge Power | 10,000 W | | | | | |
| Max discharge Power | 3,300 W | 4,400 W | 5,500 W | 6,600 W | 8,800 W | 10,000 W |

Output (On Grid)

| | | | | | | |
|--------------------------------|---|----------|----------|----------|----------|------------------------|
| Grid connection | Three-phase | | | | | |
| Rated output power | 3,000 W | 4,000 W | 5,000 W | 6,000 W | 8,000 W | 10,000 W |
| Max. apparent power | 3,300 VA | 4,400 VA | 5,500 VA | 6,600 VA | 8,800 VA | 11,000 VA ⁴ |
| 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 | 5.1 A | 6.8 A | 8.5 A | 10.1 A | 13.5 A | 16.9 A |
| Adjustable power factor | 0.8 leading ... 0.8 lagging | | | | | |
| Max. total harmonic distortion | ≤ 3 % | | | | | |

Output (Off Grid)

| | | | | | | |
|------------------------|-----------------------------|----------|----------|----------|----------|----------|
| Backup Box | Backup Box – B1 | | | | | |
| Maximum apparent power | 3,000 VA | 3,300 VA | 3,300 VA | 3,300 VA | 3,300 VA | 3,300 VA |
| Rated output voltage | 220 V / 230 V | | | | | |
| Maximum output current | 13.6 A | 15 A | 15 A | 15 A | 15 A | 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 ⁵ | Yes |
| Battery reverse charging from grid | Yes |

General Data

| | |
|------------------------------------|--|
| Operating temperature range | -25 ~ + 60 °C (-13 °F ~ 140 °F) |
| Relative operating humidity | 0 %RH ~ 100 %RH |
| Max. operating altitude | 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 |
| Nighttime Power Consumption | < 5.5 W ⁶ |

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 | G98, G99, EN 50438, CEI 0-21, VDE-AR-N-4105, AS 4777, C10/11, ABNT, UTE C15-712, RD 1699, TOR D4, NRS 097-2-1, IEC61727, IEC62116, DEWA |

^{*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} C10 / 11: 10,000 VA

^{*5} SUN2000-3~10KTL-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).

^{*6} <10 W when PID recovery function is activated.

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