

# SUN2000-50KTL-M3 Smart PV Controller



## Higher Yields

Up to 30% More Energy  
with Optimizer



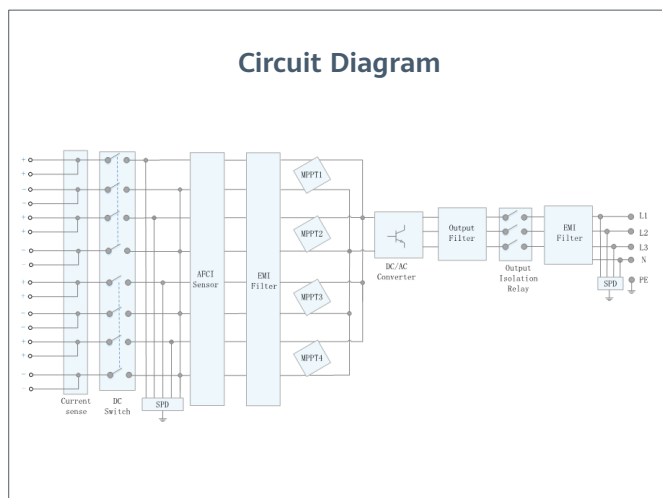
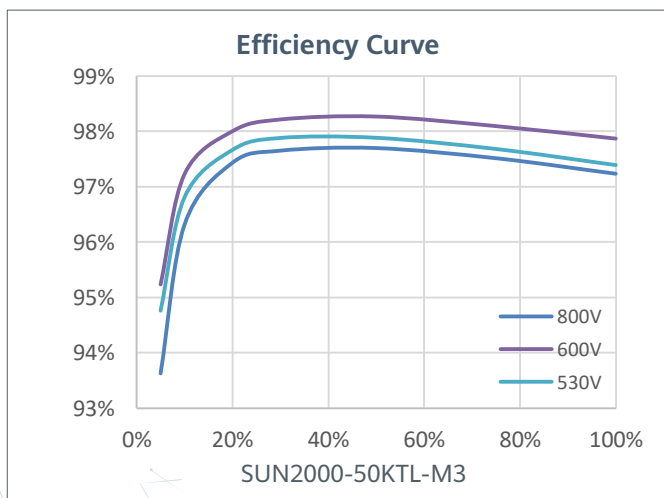
## Active Safety

AI Powered  
Active Arcing Protection



## Flexible Communication

WLAN, Fast Ethernet, 4G  
Communication Supported



**Technical Specification** **SUN2000-50KTL-M3**

| Efficiency          |       |
|---------------------|-------|
| Max. Efficiency     | 98.5% |
| European Efficiency | 98.0% |

| Input                                     |                 |
|---|-----------------|
| Max. Input Voltage <sup>1</sup>           | 1,100 V         |
| Max. Current per MPPT                     | 30 A            |
| Max. Current per Input                    | 20 A            |
| Max. Short Circuit Current per MPPT       | 40 A            |
| Start Voltage                             | 200 V           |
| MPPT Operating Voltage Range <sup>2</sup> | 200 V ~ 1,000 V |
| Rated Input Voltage                       | 600 V           |
| Number of Inputs                          | 8               |
| Number of MPP Trackers                    | 4               |

| Output                         |                                  |
|--------------------------------|----------------------------------|
| Rated AC Active Power          | 50,000 W                         |
| Max. AC Apparent Power         | 55,000 VA                        |
| Max. AC Active Power (cosφ=1)  | 55,000 W                         |
| Rated Output Voltage           | 400 Vac / 480 Vac, 3W+(N) + PE   |
| Rated AC Grid Frequency        | 50 Hz / 60 Hz                    |
| Rated Output Current           | 72.2 A @ 400Vac, 60.1 A @ 480Vac |
| Max. Output Current            | 79.8 A @ 400Vac, 66.5 A @ 480Vac |
| Adjustable Power Factor Range  | 0.8 LG ... 0.8 LD                |
| Max. Total Harmonic Distortion | <3%                              |

| Protection                           |         |
|--------------------------------------|---------|
| Input-side Disconnection Device      | Yes     |
| Anti-islanding Protection            | Yes     |
| AC Overcurrent Protection            | Yes     |
| DC Reverse-polarity Protection       | Yes     |
| PV-array String Fault Monitoring     | Yes     |
| DC Surge Arrester                    | Type II |
| AC Surge Arrester                    | Type II |
| DC Insulation Resistance Detection   | Yes     |
| Residual Current Monitoring Unit     | Yes     |
| Arc Fault Protection                 | Yes     |
| Ripple Receiver Control              | Yes     |
| Integrated PID Recovery <sup>3</sup> | Yes     |

| Communication         |  |
|-----------------------|--|
| Display               | LED Indicators, Bluetooth + APP  |
| RS485                 | Yes  |
| Smart Dongle          | WLAN/Ethernet via Smart Dongle-WLAN-FE (Optional)<br>4G / 3G / 2G via Smart Dongle-4G (Optional) |
| Monitoring BUS (MBUS) | Yes (Isolation Transformer required)   |

| Optimizer Compatibility                   |                   |
|---|-------------------|
| DC MBUS Compatible Optimizer <sup>4</sup> | MERC-1100/1300W-P |

| General Data                 |  |
|------------------------------|--|
| Dimensions (W x H x D)       | 640 x 530 x 270 mm (25.2 x 20.9 x 10.6 inch) |
| Weight (with mounting plate) | 49 kg (108.1 lb)                             |
| Operating Temperature Range  | -25°C ~ 60°C (-13°F ~ 140°F)                 |
| Cooling Method               | Smart Air Cooling                            |
| Max. Operating Altitude      | 4,000 m (13,123 ft.)                         |
| Relative Humidity            | 0% RH ~ 100% RH                              |
| DC Connector                 | Amphenol HH4                                 |
| AC Connector                 | Waterproof Connector + OT/DT Terminal        |
| Protection Degree            | IP 66  |
| Topology                     | Transformerless                              |
| Nighttime Power Consumption  | ≤ 5.5W                                       |

| Standard Compliance (more available upon request) |  |
|---|--|
| Safety  | EN 62109-1/-2, IEC 62109-1/-2, EN 50530, IEC 62116, IEC 60068, IEC 61683   |
| Grid Connection Standards                         | IEC 61727, VDE-AR-N4105, VDE 0126-1-1, BDEW, G59/3, UTE C 15-712-1, CEI 0-16, CEI 0-21, RD 661, RD 1699, P.O. 12.3, RD 413, EN-50438-Turkey, EN-50438-Ireland, C10/11, MEA, Resolution No.7, NRS 097-2-1, DEWA |

1. The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage inverter.  
2. Any DC input voltage beyond the operating voltage range may result in inverter improper operating.  
3. SUN2000-30-50KTL-M3 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), N-type (nPERT, HIT)