

# Smart PV Optimizer



One-Fits-All Optimizer  
Easier Business



<5s Module Auto-Mapping



Arc Fault Pinpoint Positioning  
Along PV Cable

| Technical Specification                            |  | SUN2000-450W-P   |                    |                     |                     |
|--|--|--|--------------------|---------------------|---------------------|
|  |  | <b>Input</b>   |                    |                     |                     |
| Rated Input DC Power <sup>1</sup>                  |  | 450 W  |                    |                     |                     |
| Absolute maximum input voltage                     |  | 80 V   |                    |                     |                     |
| MPPT operating voltage range                       |  | 8 - 80 V   |                    |                     |                     |
| Maximum Short Circuit Current (Isc)                |  | 13 A   |                    |                     |                     |
| Max. efficiency                                    |  | 99.5 %   |                    |                     |                     |
| Weighted efficiency                                |  | 99.0 %   |                    |                     |                     |
| Overvoltage category                               |  | II   |                    |                     |                     |
|  |  | <b>Output</b>  |                    |                     |                     |
| Max. output voltage <sup>2</sup>                   | $V_{MOD\ MAX}$ (the Voc of the PV modules connected, corrected for the lowest operating temperature) |  |                    |                     |                     |
| Max. output current                                |  | 15 A   |                    |                     |                     |
| Output bypass <sup>3</sup>                         |  | Yes  |                    |                     |                     |
| Shutdown output voltage per optimizer <sup>4</sup> |  | 0 V  |                    |                     |                     |
| Shutdown output impedance per optimizer            |  | 1k ohm $\pm$ 10 %  |                    |                     |                     |
|  |  | <b>Communication</b>   |                    |                     |                     |
| Communication Method                               |  | MBUS   |                    |                     |                     |
|  |  | <b>Standard Compliance</b>   |                    |                     |                     |
| Safety   |  | IEC62109-1 (class II safety)   |                    |                     |                     |
| RoHS   |  | Yes  |                    |                     |                     |
|  |  | <b>General Data</b>  |                    |                     |                     |
| Dimension (W x H x D)                              |  | 71 x 138 x 25 mm (2.8 x 5.4 x 1.0 inch)  |                    |                     |                     |
| Weight (including cables)                          |  | 0.55 kg (1.2 lb.)  |                    |                     |                     |
| Installation part (optional)                       |  | Frame Mounting Bracket / T-shaped Bolt <sup>5</sup>  |                    |                     |                     |
| Input connector                                    |  | MC4  |                    |                     |                     |
| Input wire length                                  |  | 0.15m (0.5 ft.)  |                    |                     |                     |
| Output connector                                   |  | MC4  |                    |                     |                     |
| Output wire length                                 |  | 1.2 m (3.9 ft.) <sup>6</sup>   |                    |                     |                     |
| Operating temperature / humidity range             |  | -40 °C ~ 85 °C <sup>6</sup> / 0 %RH ~ 100 %RH  |                    |                     |                     |
| Degree of protection                               |  | IP68   |                    |                     |                     |
| Compatible product                                 |  | SUN2000-2/3/4/4.6/5/6KTL-L1, SUN2000-5/6/8/10KTL-M1,<br>SUN2000-8/10/12/15/17/20KTL-M2, SUN2000-29.9/36/40KTL-M3 |                    |                     |                     |
| Long String Design (Full Optimizer)                |  | SUN2000-2-6KTL-L1  | SUN2000-3-10KTL-M1 | SUN2000-12-20KTL-M2 | SUN2000-30-40KTL-M3 |
| Minimum optimizer number per string <sup>7</sup>   |  | 4  | 6                  | 6                   | 6                   |
| Maximum optimizer number per string                |  | 25   | 50                 | 50                  | 25                  |
| Maximum DC power per string <sup>8</sup>           |  | 5,000 W  | 10,000 W           | 10,000 W            | 10,000 W            |

<sup>\*1</sup> In the STC environment, The rated power of the module shall not exceed 1.05 times of the optimizer rated input power.

<sup>\*2</sup> The power optimizer has the output voltage equal to or less than its input voltage, being the output voltage of the PV module it connects to. Refer to AS/NZS 5033:2021 Clause 4.2.1.2 for the calculation of  $V_{MOD\ MAX}$ .

<sup>\*3</sup> Power optimizer is bypassed in the string connected to an operating inverter when it fails to work.

<sup>\*4</sup> Power optimizer output 0Vdc when disconnecting to the inverter or inverter is shutdown.

<sup>\*5</sup> Allow PV module frame installation / extruded aluminum profile installation.

<sup>\*6</sup> Fits PV module in landscape and portrait installation.

<sup>\*7</sup> Require standard 60 cells module to meet the inverter minimum startup voltage

<sup>\*8</sup> Full power capability refers to online smart design tool.