Power Optimizer
P300 / P370 / P404 / P405 / P500 / P505

PV power optimization at the module level

- Specifically designed to work with SolarEdge inverters
- Superior efficiency (99.5%)
- Up to 25% more energy
- Flexible system design for maximum space utilization
- Next generation maintenance with module-level monitoring
- Module-level voltage shutdown for installer and firefighter safety
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Fast installation with a single bolt

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## Power Optimizer

**P300 / P370 / P404 / P405 / P500 / P505**

### OPTIMIZER MODEL

<table>
<thead>
<tr>
<th>(typical module compatibility)</th>
<th>P300 (for 60-cell modules)</th>
<th>P370 (for high power 60 and 72-cell modules)</th>
<th>P404 (for 60-cell and 72-cell, short strings)</th>
<th>P405 (for thin film modules)</th>
<th>P500 (for 96-cell modules)</th>
<th>P505 (for higher current modules)</th>
<th>UNIT</th>
</tr>
</thead>
</table>

### INPUT

<table>
<thead>
<tr>
<th>Rated Input DC Power&lt;sup&gt;(1)&lt;/sup&gt;</th>
<th>300</th>
<th>370</th>
<th>405</th>
<th>405</th>
<th>500</th>
<th>505</th>
<th>W</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absolute Maximum Input Voltage (Voc at lowest temperature)</td>
<td>48</td>
<td>60</td>
<td>80</td>
<td>125</td>
<td>80</td>
<td>87</td>
<td>Vdc</td>
</tr>
<tr>
<td>MPPT Operating Range</td>
<td>8 - 48</td>
<td>8 - 60</td>
<td>12.5 - 80</td>
<td>12.5 - 105</td>
<td>8 - 80</td>
<td>12.5-87</td>
<td>Vdc</td>
</tr>
<tr>
<td>Maximum Short Circuit Current (Isc)</td>
<td>11</td>
<td>10.1</td>
<td>14</td>
<td>Adc</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximum Efficiency</td>
<td>99.5</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighted Efficiency</td>
<td>98.8</td>
<td>%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overvoltage Category</td>
<td>II</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)

| Maximum Output Current | 15 | Adc |
| Maximum Output Voltage | 60 | 85 | 60 | 85 | Vdc |

### OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF)

Safety Output Voltage per Power Optimizer = 1 ± 0.1 Vdc

### STANDARD COMPLIANCE

**EMC**
FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3

**Safety**
IEC62109-1 (class II safety), UL1741

**RoHS**
Yes

**Fire Safety**
VDE-AR-E 2100-712:2013-05

### INSTALLATION SPECIFICATIONS

| Maximum Allowed System Voltage | 1000 | Vdc |
| Dimensions (W x L x H) | 129 x 153 x 27.5 / 5.1 x 6 x 1.1 | mm / in |
| Weight (including cables) | 630 / 1.4 | 655 / 1.5 | 775 / 1.7 | 845 / 1.9 | 750 / 1.7 | 1064 / 2.3 | gr / lb |

**Input Connector**
- MC4<sup>(2)</sup>
- Single or Dual MC4<sup>(3)(4)</sup>

**Input Wire Length**
- 0.16 / 0.52 m / ft

**Output Connector**
- MC4

**Output Wire Length**
- 0.9 / 2.95  m / ft
- 1.2 / 3.9  m / ft

**Operating Temperature Range**
- -40 - +85 / -40 - +185 ˚C / ˚F

**Protection Rating**
- IP68

**Relative Humidity**
- 0 - 100 %

### PV SYSTEM DESIGN USING A SOLAREDGE INVERTER<sup>(4)(5)</sup>

<table>
<thead>
<tr>
<th>SINGLE PHASE HD-WAVE</th>
<th>SINGLE PHASE</th>
<th>THREE PHASE</th>
<th>THREE PHASE FOR 277/480V GRID</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum String Length (Power Optimizers)</td>
<td>P300, P370, P500&lt;sup&gt;(6)&lt;/sup&gt;</td>
<td>8</td>
<td>16</td>
</tr>
<tr>
<td>P404, P405, P505</td>
<td>6</td>
<td>14 (13 with SE3K&lt;sup&gt;(7)&lt;/sup&gt;)</td>
<td>14</td>
</tr>
<tr>
<td>Maximum String Length (Power Optimizers)</td>
<td>25</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>Maximum Power per String</td>
<td>5700</td>
<td>5250</td>
<td>11250&lt;sup&gt;(8)&lt;/sup&gt;</td>
</tr>
<tr>
<td>Parallel Strings of Different Lengths or Orientations</td>
<td>Yes</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<sup>(1)</sup> Rated power of the module at STC will not exceed the optimizer “Rated Input DC Power”. Modules with up to +5% power tolerance are allowed.

<sup>(2)</sup> For other connector types please contact SolarEdge.

<sup>(3)</sup> For dual version for parallel connection of two modules use the P405. In the case of an odd number of PV modules in one string, installing one P405 dual version power optimizer connected to one PV module is supported. When connecting a single module, seal the unused input connectors using the supplied pair of seals.

<sup>(4)</sup> It is not allowed to mix P404/P405/P505 with P300/P370/P500/P600/P650/P730/P800/P850 in one string.

<sup>(5)</sup> For SE15k and above, the minimum DC power should be 11KW.

<sup>(6)</sup> The P300/P370/P500 cannot be used with the SE3K three phase inverter (available in some countries; refer to the three phase inverter SE3K-SE10K datasheet).

<sup>(7)</sup> Exactly 10 when using SE3K-RW010BNN4

<sup>(8)</sup> For SE27.6K, SE55K, SE82.8K: It is allowed to install up to 13,500W per string when 3 strings are connected to the inverter and when the maximum power difference between the strings is up to 2,000W; inverter max DC power: 37,250W

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