

Power Optimizer

P600 / P650 / P730 / P850 / P800p



POWER OPTIMIZER

PV power optimization at the module-level

The most cost effective solution for commercial and large field installations

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Balance of System cost reduction; 50% less cables, fuses and combiner boxes, over 2x longer string lengths possible
- Fast installation with a single bolt
- Advanced maintenance with module-level monitoring
- Module-level voltage shutdown for installer and firefighter safety
- Use with two PV modules connected in series or in parallel

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| Optimizer Model (Typical Module Compatibility) | P600 (for 2 x 60-cell PV modules) | P650 (for 2 x 60-cell PV modules) | P730 ⁽¹⁾ (for 2 x 72-cell PV modules) | P850 ⁽¹⁾ (for series connection of 2x high power or bi-facial modules) | P800p (for parallel connection of 2x 96-cell 5" PV modules) | |
|---|--|--|--|---|---|------------|
| INPUT | | | | | | |
| Rated Input DC Power ⁽²⁾ | 600 | 650 | 730 | 850 | 800 | W |
| Connection Method | Single input for series connected modules | | | | Dual input for independently connected ⁽⁷⁾ | |
| Absolute Maximum Input Voltage (Voc at lowest temperature) | 96 | | 125 | | 83 | Vdc |
| MPPT Operating Range | 12.5 - 80 | | 12.5 - 105 | | 12.5 - 83 | Vdc |
| Maximum Short Circuit Current per Input (Isc) | 10.25 | 11 | | 12.5 | 7 | Adc |
| Maximum Efficiency | | | | 99.5 | | % |
| Weighted Efficiency | | | | 98.6 | | % |
| Overvoltage Category | | | | II | | |
| OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER) | | | | | | |
| Maximum Output Current | 15 | | | 18 | | Adc |
| Maximum Output Voltage | | | | 85 | | Vdc |
| OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE 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) | | |
| RoHS | | | | Yes | | |
| Fire Safety | | | | VDE-AR-E 2100-712:2013-05 | | |
| INSTALLATION SPECIFICATIONS | | | | | | |
| Compatible SolarEdge Inverters | Three phase inverters SE15K & larger | | Three phase inverters SE16K & larger | | | |
| Maximum Allowed System Voltage | | | | 1000 | | Vdc |
| Dimensions (W x L x H) | 129 x 153 x 42.5 / 5.1 x 6 x 1.7 | | 129 x 153 x 49.5 / 5.1 x 6 x 1.9 | 129 x 162 x 59 / 5.1 x 6.4 x 2.32 | 129 x 168 x 59 / 5.1 x 6.61 x 2.32 | mm / in |
| Weight | 834 / 1.8 | | 933 / 2.1 | 1064 / 2.3 | | gr / lb |
| Input Connector | | | | MC4 ⁽³⁾ | | |
| Input Wire Length | 0.16 / 0.52 | | 0.16 / 0.52 , 0.9 / 2.95 ⁽⁴⁾ | 0.16 / 0.52, 0.9 / 2.95, 1.3 / 4.26, 1.6 / 5.24 ⁽⁴⁾ | 0.16 / 0.52 | m / ft |
| Output Connector | | | | MC4 | | |
| Output Wire Length | | | | Portrait Orientation: 1.2 / 3.9 | | m / ft |
| | Landscape Orientation: 1.8 / 5.9 | | Landscape Orientation: 2.2 / 7.2 | | Landscape Orientation: 1.8 / 5.9 | |
| Operating Temperature Range ⁽⁵⁾ | | | | -40 - +85 / -40 - +185 | | °C / °F |
| Protection Rating | | | | IP68 / NEMA6P | | |
| Relative Humidity | | | | 0 - 100 | | % |

⁽¹⁾ P730 replaced the P700; P850 replaced the P800s; each pair can be used interchangeably and can be connected in the same string.

⁽²⁾ 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.

⁽³⁾ For other connector types please contact SolarEdge.

⁽⁴⁾ Longer inputs wire length are available for use with split junction box modules. (For 0.9m/0.52ft order P730-xxxLxxx or P850-xxxLxxx. For 1.3m/4.26ft order P850-xxxXxxx. For 1.6m/5.24ft order P850-xxxYxxx).

⁽⁵⁾ For ambient temperature above +70°C / +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details.

| PV System Design Using a SolarEdge Inverter ⁽⁶⁾⁽⁷⁾⁽⁸⁾ | | Three Phase SE15K and larger | | Three Phase SE16K and larger | | | | Three Phase for 277/480V grid | | | | | |
|---|---------------------------|------------------------------------|------|------------------------------|----------------------|------|------|-------------------------------|-----------------------|------|------|------|-------|
| | | P600 | P650 | P600 | P650 | P730 | P850 | P800p | P600 | P650 | P730 | P850 | P800p |
| Compatible Power Optimizers | | P600 | P650 | P600 | P650 | P730 | P850 | P800p | P600 | P650 | P730 | P850 | P800p |
| Minimum String Length | Power Optimizers | | | | | | | 14 | | | | | |
| | PV Modules ⁽⁷⁾ | | | | | | | 27 | | | | | |
| Maximum String Length | Power Optimizers | | | | | | | 30 | | | | | |
| | PV Modules ⁽⁷⁾ | | | | | | | 60 | | | | | |
| Maximum Power per String | | 11250 ⁽⁹⁾ | | | 13500 ⁽⁹⁾ | | | 12750 ⁽¹⁰⁾ | 15300 ⁽¹⁰⁾ | | | | |
| Parallel Strings of Different Lengths or Orientations | | | | | | | | Yes | | | | | |

⁽⁶⁾ P600, P650 and P730 can be mixed in one string. It is not allowed to mix P600/P650/P730 with P850/P800p or to mix P600/P650/P730/P850/P800p with P300/P370/P404/P405/P500/P505 in one string.

⁽⁷⁾ In a case of odd number of PV modules in one string it is allowed to install one P600/P650/P730/P850/P800p power optimizer connected to one PV module. When connecting a single module to the P800p seal the unused input connectors with the supplied pair of seals.

⁽⁸⁾ For SE15k and above, the minimum DC power should be 11KW.

⁽⁹⁾ For the 230/400V grid: When three strings are connected to the inverter (when using three phase inverters with synergy technology – three strings per unit), with a maximum power difference of 2,000W between each string, then up to 13,500W per string may be installed with P600/P650/P730 and up to 15,750W per string may be installed with P850/P800p.

⁽¹⁰⁾ For the 277/480V grid: When three strings are connected to the inverter (when using three phase inverters with synergy technology – three strings per unit), with a maximum power difference of 2,000W between each string, then up to 15,000W per string may be installed with P600/P650/P730 and up to 17,550W per string may be installed with P850/P800p.