

Power Optimizer

For North America

P320 / P340 / P370 / P400 / P405 / P505

POWER OPTIMIZER



PV power optimization at the module-level

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

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| Optimizer model (typical module compatibility) | P320 (for 60-cell modules) | P340 (for high-power 60-cell modules) | P370 (for higher-power 60 and 72-cell modules) | P400 (for 72 & 96-cell modules) | P405 (for thin film modules) | P505 (for higher current modules) | |
|---|--|--|---|------------------------------------|------------------------------------|--------------------------------------|---------|
| INPUT | | | | | | | |
| Rated Input DC Power ⁽¹⁾ | 320 | 340 | 370 | 400 | 405 | 505 | W |
| Absolute Maximum Input Voltage (Voc at lowest temperature) | 48 | | 60 | 80 | 125 ⁽²⁾ | 83 ⁽²⁾ | Vdc |
| MPPT Operating Range | 8 - 48 | | 8 - 60 | 8 - 80 | 12.5 - 105 | 12.5 - 83 | Vdc |
| Maximum Short Circuit Current (Isc) | 11 | | | 10.1 | | 14 | Adc |
| Maximum DC Input Current | 13.75 | | | 12.63 | | 17.5 | Adc |
| Maximum Efficiency | 99.5 | | | | | | % |
| Weighted Efficiency | 98.8 | | | | | 98.6 | % |
| Overvoltage Category | II | | | | | | |
| OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER) | | | | | | | |
| Maximum Output Current | 15 | | | | | | Adc |
| Maximum Output Voltage | 60 | | | 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), UL1741 | | | | | | |
| RoHS | Yes | | | | | | |
| INSTALLATION SPECIFICATIONS | | | | | | | |
| Maximum Allowed System Voltage | 1000 | | | | | | Vdc |
| Compatible inverters | All SolarEdge Single Phase and Three Phase inverters | | | | | | |
| Dimensions (W x L x H) | 129 x 153 x 27.5 / 5.1 x 6 x 1.1 | | | 129 x 153 x 33.5 / 5.1 x 6 x 1.3 | 129 x 159 x 49.5 / 5.1 x 6.3 x 1.9 | 129 x 162 x 59 / 5.1 x 6.4 x 2.3 | mm / in |
| Weight (including cables) | 630 / 1.4 | | | 750 / 1.7 | 845 / 1.9 | 1064 / 2.3 | gr / lb |
| Input Connector | MC4 ⁽³⁾ | | | | | | |
| Output Wire Type / Connector | Double Insulated; MC4 | | | | | | |
| Output Wire Length | 0.95 / 3.0 | | 1.2 / 3.9 | | | | m / ft |
| Input Wire Length | 0.16 / 0.52 | | | | | | m / ft |
| Operating Temperature Range | -40 - +85 / -40 - +185 | | | | | | °C / °F |
| Protection Rating | IP68 / NEMA6P | | | | | | |
| Relative Humidity | 0 - 100 | | | | | | % |

⁽¹⁾ Rated STC power of the module. Module of up to +5% power tolerance allowed

⁽²⁾ NEC 2017 requires max input voltage be not more than 80V

⁽³⁾ For other connector types please contact SolarEdge

| PV System Design Using a SolarEdge Inverter ⁽⁴⁾⁽⁵⁾ | Single Phase HD-Wave | Single phase | Three Phase 208V | Three Phase 480V | |
|---|---|--------------|---------------------|----------------------|---|
| Minimum String Length (Power Optimizers) | P320, P340, P370, P400 P405 / P505 | 8 | 10 | 18 | |
| Maximum String Length (Power Optimizers) | | 6 | 8 | 14 | |
| Maximum String Length (Power Optimizers) | | 25 | 25 | 50 ⁽⁶⁾ | |
| Maximum Power per String | 5700 (6000 with SE7600-US - SE11400-US) | 5250 | 6000 ⁽⁷⁾ | 12750 ⁽⁸⁾ | W |
| Parallel Strings of Different Lengths or Orientations | Yes | | | | |

⁽⁴⁾ For detailed string sizing information refer to: http://www.solaredge.com/sites/default/files/string_sizing_na.pdf

⁽⁵⁾ It is not allowed to mix P405/P505 with P320/P340/P370/P400 in one string

⁽⁶⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement

⁽⁷⁾ For SE14.4KUS/SE43.2KUS: It is allowed to install up to 6,500W per string when 3 strings are connected to the inverter (3 strings per unit for SE43.2KUS) and when the maximum power difference between the strings is up to 1,000W

⁽⁸⁾ For SE30KUS/SE33.3KUS/SE66.6KUS/SE100KUS: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit for SE66.6KUS/SE100KUS) and when the maximum power difference between the strings is up to 2,000W