Power Optimizer For North America

S440, S500



POWER OPTIMIZER

PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading

- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)



^{*} Expected availability in 2022

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S440, S500

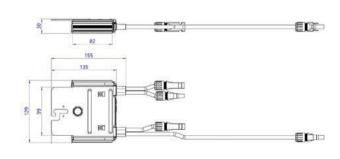
| | S440 | S500 | Unit |
|--|--|---------------|-------|
| INPUT | | | |
| Rated Input DC Power ⁽¹⁾ | 440 | 500 | W |
| Absolute Maximum Input Voltage (Voc) | 60 | | Vdc |
| MPPT Operating Range | 8 - (| Vdc | |
| Maximum Short Circuit Current (Isc) of Connected PV Module | 14.5 | 15 | Adc |
| Maximum Efficiency | 99. | % | |
| Weighted Efficiency | 98. | % | |
| Overvoltage Category | II | | |
| OUTPUT DURING OPERATION | | | |
| Maximum Output Current | 15 | Adc | |
| Maximum Output Voltage | 60 | Vdc | |
| OUTPUT DURING STANDBY (POWER OPTIMIZER DISC | ONNECTED FROM INVERTER OR | INVERTER OFF) | 1 |
| Safety Output Voltage per Power Optimizer | 1+/- | Vdc | |
| STANDARD COMPLIANCE | | | 1 |
| Photovoltaic Rapid Shutdown System | NEC 2014, 20 | | |
| EMC | FCC Part 15 Class B, IEC61 | | |
| Safety | IEC62109-1 (class I | | |
| Material | UL94 V-0, U | | |
| RoHS | Ye | | |
| Fire Safety | VDE-AR-E 2100 | | |
| INSTALLATION SPECIFICATIONS | | | · |
| Maximum Allowed System Voltage | 1000 | | Vdc |
| Dimensions (W x L x H) | 129 x 153 x 30 / 5.07 x 6.02 x 1.18 | | mm/in |
| Weight (including cables) | 655 / 1.5 | | gr/lb |
| Input Connector | MC | | |
| Input Wire Length | 0.1/(| m/ft | |
| Output Connector | MC4 | | |
| Output Wire Length | (+) 2.3, (-) 0.10 / (+) 7.54, (-) 0.32 | | |
| Operating Temperature Range ⁽³⁾ | -40 to | °C | |
| Protection Rating | IP68 / Ty | | |
| Relative Humidity | 0 - 1 | % | |

- (1) Rated power of the module at STC will not exceed the power optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed
- (2) For other connector types please contact SolarEdge
- (3) 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 Usi Inverter | ng a SolarEdge | Single Phase HD-Wave | Three Phase for 208V grid | Three Phase for 277/480V grid | |
|---|----------------|--------------------------------------|---------------------------|-------------------------------|---|
| Minimum String Length (Power Optimizers) | S440, S500 | 8 | 14 | 18 | |
| Maximum String Length (Power Optimizers) | | 25 | | 50(4) | |
| Maximum Nominal Power per String | | 5700 (6000 with SE7600-US-SE11400-U) | 6000 | 12750 | W |
| Maximum Allowed Connected Power per String ⁽⁵⁾ (Permitted only when the difference in connected power between strings is 1,000W or less) | | Refer to Footnote 5 | One String 7200W | 15.000W | |
| | | Refer to Foothote 3 | Two strings or more 7800W | 13,00000 | |
| Parallel Strings of Different Lengths or Orientations | | | Υ | | |







⁽⁴⁾ A string with more than 30 optimizers does not meet NEC rapid shutdown requirements; safety voltage will be above the 30V requirement (5) If the inverters rated AC power < maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power. Refer to: https://www.solaredge.com/ sites/default/files/se-power-optimizer-single-string-design-application-note.pdf
(6) It is not allowed to mix S-series and P-series Power Optimizers in new installations