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# Power Optimizer For North America

P860 / P960



POWEROPTIMIZER

## 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
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Use with two PV modules connected in parallel

# / Power Optimizer

## For North America

### P860 / P960

| Power Optimizer Model<br>(Typical Module Compatibility)   | P860<br>(for 2 x 72 cell modules)                             |                                  | P960<br>(for 2 x 72 cell modules) |                                  |         |
|---|---|----------------------------------|-----------------------------------|----------------------------------|---------|
| <b>INPUT</b>  |   |                                  |                                   |                                  |         |
| Rated Input DC Power <sup>(1)</sup>   | 860   |                                  | 960                               |                                  | W       |
| Connection Method   | Dual input for independently connected modules <sup>(2)</sup> |                                  |                                   |                                  |         |
| Absolute Maximum Input Voltage<br>(Voc at lowest temperature)   | 60  |                                  |                                   |                                  | Vdc     |
| MPPT Operating Range  | 12.5 - 60   |                                  |                                   |                                  | Vdc     |
| Maximum Short Circuit Current (Isc)   | 22  |                                  | 23                                |                                  | Adc     |
| Maximum Short Circuit Current per Input (Isc)   | 11  |                                  | 11.5                              |                                  | Adc     |
| Maximum Efficiency  | 99.5  |                                  |                                   |                                  | %       |
| Weighted Efficiency   | 98.6  |                                  |                                   |                                  | %       |
| Overvoltage Category  | II  |                                  |                                   |                                  |         |
| <b>OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)</b>                     |   |                                  |                                   |                                  |         |
| Maximum Output Current  | 18  |                                  |                                   |                                  | Adc     |
| Maximum Output Voltage  | 80  |                                  |                                   |                                  | Vdc     |
| <b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)</b> |   |                                  |                                   |                                  |         |
| Safety Output Voltage per Power Optimizer   | 1 ± 0.1   |                                  |                                   |                                  | Vdc     |
| <b>STANDARD COMPLIANCE</b>  |   |                                  |                                   |                                  |         |
| Photovoltaic Rapid Shutdown System  | Compliant with NEC 2014, 2017 <sup>(3)</sup> , 2020           |                                  |                                   |                                  |         |
| EMC   | FCC Part 15 Class A, IEC61000-6-2, IEC61000-6-3               |                                  |                                   |                                  |         |
| Safety  | IEC62109-1 (class II safety), UL1741                          |                                  |                                   |                                  |         |
| Material  | UL94 V-0, UV resistant  |                                  |                                   |                                  |         |
| RoHS  | Yes   |                                  |                                   |                                  |         |
| <b>INSTALLATION SPECIFICATIONS</b>  |   |                                  |                                   |                                  |         |
| Compatible SolarEdge Inverters  | Three phase inverters   |                                  |                                   |                                  |         |
| Maximum Allowed System Voltage  | 1000  |                                  |                                   |                                  | Vdc     |
| Dimensions (W x L x H)  | 129 x 168 x 59 / 5.1 x 6.61 x 2.32                            |                                  |                                   |                                  | mm / in |
| Weight  | 1064 / 2.34   |                                  |                                   |                                  | gr / lb |
| Input Connector   | MC4 <sup>(4)</sup>  |                                  |                                   |                                  |         |
| Input Wire Length   | Wire length options   | Input #1                         |                                   | Input #2                         |         |
|   | (1)   | (-) 0.16 / 0.52, (+) 0.16 / 0.52 |                                   | (-) 0.16 / 0.52, (+) 0.16 / 0.52 |         |
|   | (2)   | (-) 1.6 / 5.24, (+) 0.16 / 0.52  |                                   | (-) 0.16 / 0.52, (+) 1.6 / 5.24  |         |
| Output Wire Type / Connector  | Double insulated; MC4   |                                  |                                   |                                  |         |
| Output Wire Length  | 2.3 / 7.5   |                                  |                                   |                                  | m / ft  |
| Operating Temperature Range <sup>(5)</sup>  | -40 to +85 / -40 to +185                                      |                                  |                                   |                                  | °C / °F |
| Protection Rating   | IP68 / NEMA6P   |                                  |                                   |                                  |         |
| Relative Humidity   | 0 - 100   |                                  |                                   |                                  | %       |

(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) In the event of an odd number of PV modules in one string, installation of one P860 /P960 power optimizer connected to one PV module is allowed. When connecting a single module to the P860/P960, seal the unused input connectors with the supplied pair of seals

(3) NEC 2017 requires that the maximum combined input voltage does not exceed 80V

(4) For other connector types please refer to: <https://www.solaredge.com/sites/default/files/optimizer-input-connector-compatibility.pdf>

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

| PV System Design Using a SolarEdge Inverter <sup>(6)</sup> |                  | Three Phase for 208V Grid <sup>(7)</sup> |      | Three Phase for 277/480V Grid |      |   |
|--|------------------|--|------|-------------------------------|------|---|
|  |                  | P860                                     | P960 | P860                          | P960 |   |
| Minimum String Length                                      | Power Optimizers | 8  |      | 14                            |      |   |
|  | PV Modules       | 15                                       |      | 27                            |      |   |
| Maximum String Length                                      | Power Optimizers | 30                                       |      |                               |      |   |
|  | PV Modules       | 60                                       |      |                               |      |   |
| Maximum Power per String                                   |                  | 7200 <sup>(8)</sup>                      |      | 15300 <sup>(9)</sup>          |      | W |
| Parallel Strings of Different Lengths or Orientations      |                  | Yes                                      |      |                               |      |   |

(6) It is not allowed to mix P860/P960 with P801/P800p/P850/P950/P1100 in one string or to mix with P370-P505 in one string

(7) P860 design with three phase 208V inverters is limited. Use the SolarEdge Designer for verification

(8) For the 208V grid: It is allowed to install up to 7700W per string when the maximum power difference between each string is 1,000W

(9) For the 277/480V grid: it is allowed to install up to 17,550W per string when the maximum power difference between each string is 2,000W