



SolarEdge Power Optimizer Module Embedded Solution



A superior approach to maximizing the throughput of photovoltaic systems using module embedded electronics

- Up to 25% increase in power output
- Superior efficiency (99.5%) - peak performance in both mismatched and unshaded conditions
- Flexible system design for maximum space utilization
- Next generation maintenance with module-level monitoring and smart alerts
- Unprecedented installer and firefighter safety

- **Embedded into any module as a certified junction box**
- **Faster installation, less wiring and better roof utilization**
- **Electric arc detection**



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SolarEdge Power Optimizer PB250-CSI

Module Embedded Solution

HIGHLIGHTS

- Module level MPPT - optimizes each module independently
- Dynamically tracks the global maximum operating point for both modules and inverter
- Module-level monitoring for automatic module and string level fault detection allowing easy maintenance
- Electric arc detection - reduces fire hazards
- Unprecedented installer and firefighter safety mode - safe module voltage when inverter is disconnected or off
- Up to 4 sub-string inputs with bypass diodes
- Removes manufacturer limitations - no more temperature variance, cell mismatch and manufacturing variations
- Lower installation costs with faster design, less wiring, DC disconnects and fuses
- Easy and flexible installation – use the same installation methods as exist today
- Allows parallel uneven length strings and multi-faceted installations
- Allows connection of different module types simplifying inventory considerations
- Immediate installation feedback for quick commissioning

TECHNICAL DATA

| INPUT | | |
|--|---|---------|
| Rated Input DC Power | 270 | W |
| Absolute Maximum Input Voltage (Voc) | 55 | Vdc |
| MPPT Operating Range | 5 - 55 | Vdc |
| Maximum Input Current | 10 | Adc |
| Reverse-Polarity Protection | Yes | |
| Maximum Efficiency | 99.5 | % |
| European Weighted Efficiency | 98.8 | % |
| CEC Weighted Efficiency | 98.7 | % |
| Nighttime Power Consumption | 0 | W |
| Overvoltage Category | II | |
| OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING INVERTER) | | |
| Maximum Output Current | 15 | Adc |
| Operating Output Voltage | 5 - 60 | Vdc |
| Total Maximum String Voltage (Controlled by Inverter) - US and EU 1-ph | 550 | Vdc |
| Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph | 950 | Vdc |
| OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF) | | |
| Safety Output Voltage per Power Optimizer | 1 | Vdc |
| PV SYSTEM DESIGN | | |
| Minimum String Length | 8 (1ph system) / 15 (3ph system) | modules |
| Maximum String Length | module power dependant; typically 20 - 25 (1ph system) / 45 - 50 (3ph system) | modules |
| Parallel Strings of Different Lengths or Orientations | Yes | |
| STANDARD COMPLIANCE | | |
| EMC | FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3 | |
| Safety | IEC-62103 (class II safety), VDE0126-5, UL1741 | |
| Material | UL-94 (5-VA), UV Resistant | |
| RoHS | Yes | |
| INSTALLATION SPECIFICATIONS | | |
| Dimensions (WxLxH) | 200x141x25 / 7.9x5.6x1 | mm / in |
| Weight | 700 / 1.5 | g / lb |
| Operating Temperature Range | -40 - +85 / -40 - +185 | °C / °F |
| Protection Rating | IP65 Outdoor Use / NEMA 3R | |
| Relative Humidity | 0 - 100 | % |

*CSI power optimizer warranty will not extend beyond the warranty period of the module in which it is embedded.

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