
Power Optimizer with IndOP™ Technology

P401I



POWER OPTIMIZER

PV power optimization at the module-level

- Independent optimization technology (IndOP™) - allows operation with any inverter and requires no additional interface hardware
- Up to 25% more energy
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Superior efficiency (99.5%)
- Fast installation with a single bolt

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| BENEFITS PER SOLUTION | SolarEdge Power Optimizer with SolarEdge Inverter | SolarEdge Power Optimizer with SolarEdge Safety & Monitoring Interface and a Non-SolarEdge Inverter | SolarEdge Power Optimizer with a Non-SolarEdge Inverter |
|-----------------------|---|---|---|
| Added Energy | + | | |
| Safety | | + | - |
| Monitoring | | + | - |
| Multi-facet Design | + | | |
| Long String Design | + | | - |

| | P401I (for 60-cell & 72-cell PV modules) | | Unit |
|---|--|--|---------|
| INPUT | | | |
| Rated Input DC Power ⁽¹⁾ | 420 | | W |
| Absolute Maximum Input Voltage (Voc at lowest temperature) | 60 | | Vdc |
| MPPT Operating Range | 8 - 60 | | Vdc |
| Maximum Short Circuit Current (Isc) | 12.5 | | Adc |
| Maximum Efficiency | 99.5 | | % |
| Weighted Efficiency | 98.6 | | % |
| Overvoltage Category | II | | |
| OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING INVERTER) | Power Optimizer connected to a SolarEdge Inverter | Power Optimizer connected to a Non-SolarEdge Inverter⁽²⁾ | |
| Maximum Output Current | 15 | 10 | Adc |
| Maximum Output Voltage | 60 | Voc of connected PV module | Vdc |
| OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)⁽³⁾ | | | |
| Safety Output Voltage per Power Optimizer | 1.0 ± 1 | | Vdc |
| STANDARD COMPLIANCE | | | |
| EMC | FCC Part15 Class A, IEC61000-6-2, IEC61000-6-3 | | |
| Safety | IEC62109-1 (class II safety), UL1741 | | |
| RoHS | Yes | | |
| Fire Safety | VDE-AR-E 2100-712:2013-05 | | |
| INSTALLATION SPECIFICATIONS | | | |
| Maximum Allowed System Voltage | 1000 | | Vdc |
| Dimensions (WxLxH) | 129 x 153 x 29.5 / 5.08 x 6.02 x 1.16 | | mm / in |
| Weight (including cables) | 655 / 1.5 | | g / lb |
| Input Connector | MC4 ⁽⁴⁾ | | |
| Output Wire Connector | MC4 | | |
| Output Wire Length | 1.2 / 3.9 | | m / ft |
| Input Wire Length | 0.16 / 0.52 | | m / ft |
| Operating Temperature Range | -40 to +85 / -40 to +185 | | °C / °F |
| Protection Rating | IP68 / NEMA 6P | | |
| Relative Humidity | 0 - 100 | | % |

| PV SYSTEM DESIGN | SOLAREEDGE SINGLE PHASE HD-WAVE | SOLAREEDGE SINGLE PHASE INVERTER | SOLAREEDGE THREE PHASE INVERTER | NON-SOLAREEDGE INVERTER ⁽²⁾ | |
|--|---------------------------------|----------------------------------|---------------------------------|---|---|
| Minimum String Length (Power Optimizers) | 8 | | 16 | According to inverter design rules & PV module datasheet, minimum 4 power optimizers per string | W |
| Maximum String Length (Power Optimizers) | 25 | | 50 | | |
| Maximum Power per String | 5700 | 5250 | 11250 | | |
| Parallel Strings of Different Lengths | Yes | | | No | |
| Parallel Strings of Different Orientations | | | Yes | | |

(1) 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.

(2) Available only if Safety & Monitoring Interface (SMI) is installed or if SafeDCTM is disabled during installation by a one-time operation using the SolarEdge Key.

(3) Available only if Safety & Monitoring Interface (SMI) is installed or if connected to a SolarEdge Inverter.

(4) For other connector types please contact SolarEdge.