

Power Optimizer

P300 / P370 / P404 / P405 / P485 / P500 / P505



POWER OPTIMIZER



solaredge

PV power optimization at the module-level The most cost-effective solution for commercial and large field installations

- Specifically designed to work with SolarEdge commercial inverters SE25K and above
- Extremely long string length for excellent balance of system cost
- A single optimizer supports up to four modules with 2 MPP trackers
- Module-level voltage shutdown for installer and firefighter safety
- Up to 25% more energy
- Advanced maintenance with module-level monitoring
- Superior efficiency (99.5%)
- Fast installation with a single bolt

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| Power optimizer model (compatible with common modules) | P300 (for modules with 60 cells) | P370 (for powerful 60-72-cell modules) | P404 (for modules with 60-72 cells, short strings) | P405 (for thin- film modules) | P485 (for high voltage modules) | P500 (for modules with 96 cells) | P505 (for modules with higher amperage) | |
|--|---|--|--|--|--|---|---|--|
|--|---|--|--|--|--|---|---|--|

INPUT

| | | | | | | | | |
|---|------|------|---------|----------|-----|------|---------|-----|
| Nominal DC input power ⁽¹⁾ | 300 | 370 | 404 | 405 | 485 | 500 | 505 | W |
| Absolute maximum input voltage (Voc at lowest temperature) | 48 | 60 | 80 | 125 | | 80 | 83 | Vdc |
| MPPT operating area | 8-48 | 8-60 | 12.5-80 | 12.5-105 | | 8-80 | 12.5-83 | Vdc |
| Max. short-circuit current (ISC) | 11 | | 10.1 | | | | 14 | Adc |
| Maximum efficiency | 99.5 | | | | | | | % |
| Weighted efficiency | 98.8 | | | | | | | % |
| Overtoltage category | II | | | | | | | |

OUTPUT IN OPERATION (POWER OPTIMIZER CONNECTED WITH SOLAREEDGE INVERTER IN OPERATION)

| | | | | | | | | |
|------------------------|----|----|--|--|----|----|-----|-----|
| Maximum output current | 15 | | | | | | | Adc |
| Maximum output voltage | 60 | 85 | | | 60 | 85 | Vdc | |

OUTPUT IN STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER)

| | | | | | | | | |
|---------------------------------|---------|--|--|--|--|--|--|--|
| Safety output voltage/optimizer | 1 ± 0,1 | | | | | | | |
|---------------------------------|---------|--|--|--|--|--|--|--|

STANDARD COMPLIANCE

| | | | | | | | | |
|-------------|--|--|--|--|--|--|--|--|
| EMC | FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3 | | | | | | | |
| Safety | IEC62109-1 (class II safety) | | | | | | | |
| Fire Safety | VDE-AR-E 2100-712: 2013-05 | | | | | | | |
| RoHS | Yes | | | | | | | |

INSTALLATION SPECIFICATIONS

| | | | | | | | | |
|------------------------------|--------------------|-----|-------------|-------------|---|--------------------|------------|-----|
| Maximum system voltage | 1,000 | | | | | | | Vdc |
| Dimensions (w×l×h) | 129x153x27,5 | | 129x89x42,5 | 129x90x49,5 | | 129x153x33,5 | 129x162x59 | mm |
| Weight (including cable) | 630 | 655 | 775 | 845 | | 750 | 1054 | gr |
| Connector on the module side | MC4 ⁽²⁾ | | | | MC4 (single/dual input) ⁽²⁾ ⁽³⁾ | MC4 ⁽²⁾ | | |
| Length of the input cable | 0.16 | | | | | | | m |
| Output connector | MC4 | | | | | | | |
| Length of the output cable | 0.9 | 1.3 | | | | | | m |
| Operating temperature range | -40 - +85 | | | | | | | °C |
| Protection class | IP68 | | | | | | | |
| Relative humidity | 0=100 | | | | | | | % |

(1) Nominal module power under standard test conditions (STC). Module with up to + 5% performance tolerance.

(2) For other connector types, please contact SolarEdge.

(3) For the dual version for connecting two thin-film modules in parallel, use the P485. With an odd number of PV modules in one string, the installation of a P485 Supports dual version power optimizer connected to a PV module. If you connect a single module, seal the unused input connectors with the supplied seal kit.

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| PV SYSTEM DESIGN USING SOLAREEDGE INVERTER ⁽⁴⁾ ⁽⁶⁾ | | SINGLE PHASE HD WAVE | SINGLE PHASE | THREE-PHASE | THREE-PHASE INVERTER FOR THE 277V / 480V MAINS | |
|--|---------------------------------|-------------------------|-----------------|----------------------------------|--|---|
| Maximum string length (Power optimizer) | P300, P370, P500 ⁽⁶⁾ | 16 | | 16 | 18 | |
| | P404, P405, P485, P505 | 8 | | 14 (13 with SE3K) ⁽⁷⁾ | 14 | |
| Maximum string length (power optimizer) | | 25 | | 50 | 50 | |
| Maximum power per string | | 5,700 | 5,250 | 11250 ⁽⁸⁾ | 12750 | W |
| Parallel strings of different lengths or orientations | | Yes | | | | |

(4) It is not permitted to mix P404 / P405 / P485 / P505 with P300 / P370 / P500 / P600 / P650 / P650 / P730 / P800p / P850 in one string.

(5) For SE15k and larger, the DC power should be at least 11KW.

(6) P300 / P370 / P500 are not suitable for operation with the three-phase inverter SE3K available only in some countries; see data sheet three-phase inverter SE3K-SE10K.

(7) Exact 10 when using the SE3k-RW010BNN (8) For 230V / 400V network: It is possible to install up to 13.5kW in one line, provided that three lines are connected to the inverter / per power unit and the maximum power. Difference between the strings is at most 2,000W. Note the maximum DC input power of the inverter!