# Commercial Power Optimizer

S1400

POWER OPTIMIZER


## SolarEdge's most powerful and compact Power Optimizer for commercial and large field installations

- **Greater Energy Yields**
  - High efficiency (99.5%) with module-level MPPT, for maximized system energy production and revenue, and fast project ROI
  - Supports up to 700W and 20A high power and current modules, including bifacial and G12 modules
- **Maximum Protection with Built-In Safety**
  - Designed to automatically reduce high DC voltage to touch-safe levels, upon grid/inverter shutdown, with SafeDC™
  - Includes SolarEdge Sense Connect, for connector-level monitoring during production to detect overheating due to installation issues or wear and tear
- **Lower BoS Costs with Flexible Design**
  - More power with up to 30.4 kW per string for optimal usage of the installation area, enabling up to 2x longer and fewer strings, and 50% fewer cables, fuses, and combiner boxes
  - Compact size and slimmer profile for simple cost-effective installations, especially in challenging spaces
  - Connects to two PV modules in series
- **Simpler O&M**
  - Module-level system monitoring enabling pinpointed fault detection
  - Remote, time-saving troubleshooting for fewer truck rolls and less time on-site

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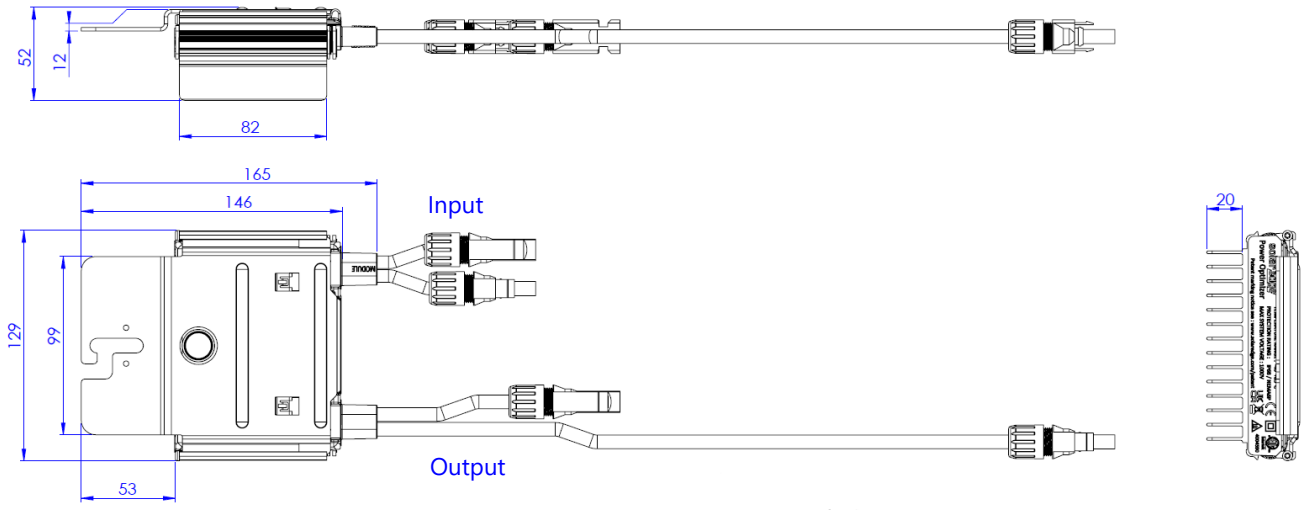
## S1400

| | S1400 | Unit |
|---|---|---|
| **INPUT** | | |
| Rated Input DC Power[1] | 1400 | W |
| Absolute Maximum Input Voltage (Voc) | 125 | Vdc |
| MPPT Operating Range | 12.5 – 105 | Vdc |
| Maximum Short Circuit Current (Isc) of connected PV Module[2] | 20 | Adc |
| Maximum Efficiency | 99.5 | % |
| Weighted Efficiency | 98.8 | % |
| Overvoltage Category | II | |
| **OUTPUT DURING OPERATION** | | |
| Maximum Output Current | 24 | Adc |
| Maximum Output Voltage | 80 | Vdc |
| **OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR OFF)** | | |
| Safety Output Voltage per Power Optimizer | 1 ± 0.1 | Vdc |
| **STANDARD COMPLIANCE** | | |
| EMC | FCC Part 15, IEC 61000-6-2, and IEC 61000-6-3 – Class B, EN 55011 | |
| Safety | IEC 62109-1 (class II safety) | |
| Material | UL94 V-0, UV Resistant | |
| RoHS | Yes | |
| Fire Safety | VDE-AR-E 2100-712:2013-05 | |
| **INSTALLATION SPECIFICATIONS** | | |
| Compatible SolarEdge Inverters | Commercial inverters without integrated DC fuses[3] | |
| Maximum Allowed System Voltage | 1000 | Vdc |
| Dimensions (W x L x H) | 129 x 165 x 52 / 5.08 x 6.49 x 2.04 | mm / in |
| Weight | 1087 / 2.39 | gr / lb |
| Input Connector | MC4[4] | |
| Input Wire Length | Short Input Option: 0.1 / 0.32<br>Long Input Option: 1.8 / 5.9[5] | m / ft |
| Output Connector | MC4 | |
| Output Wire Length[6] | Option 1: (+) 5.7 (-) 0.10 / (+) 18.7 (-) 0.32<br>Option 2: (+) 3.0 (-) 0.10 / (+) 9.8 (-) 0.32 | m / ft |
| Operating Temperature Range[7] | -40 to +85 / -40 to +185 | ˚C / ˚F |
| Protection Rating | IP68 / NEMA6P | |
| Relative Humidity | 0 – 100 | % |
| Maximum Operating Altitude | 2000 | m |

(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) When using bifacial modules, consider only the front side Isc at STC (0% back side gain). For details, see the Compatibility of Bifacial Modules with SolarEdge Power Optimizers application note.
(3) S1400 is designed to be paired with inverters that do not have integrated DC fuses. Inverters with DC fuses must be manually adjusted, as described in this technical note.
(4) For other connector types please contact SolarEdge.
(5) For S-Series models with long input cables (1.8m / 5.9ft), the Sense Connect feature is only enabled on the output cable connector.
(6) Option 1 fits best when modules are placed in landscape orientation or in portrait orientation with the Power Optimizers connected using the leapfrog wiring method. Option 2 fits best when modules are placed in portrait orientation.
(7) For ambient temperatures above +65°C / +149°F power derating is applied.

## S1400 Mechanical Drawing




* When installing SolarEdge power optimizers, maintaining clearance is required. For details, see the Power Optimizer Clearance application note.

# / Power Optimizer

## S1400

| PV System Design Using a SolarEdge Inverter[1][2][3] | | 230/400V Grid SE15K[4] | 230/400V Grid SE16K[5],SE17K[5] | 230/400V Grid SE25K* | 230/400V Grid SE27.6K* | 230/400V Grid SE30K* | 230/400V Grid SE33.3K* | 277/480V Grid SE40K* |
|---|---|---|---|---|---|---|---|---|
| Compatible Power Optimizers | | S1400 | | | | | | |
| Minimum String Length | Power Optimizers | 14 | 14 | 14 | 14 | 15 | 14 | 15 |
| | PV Modules | 27 | 27 | 27 | 27 | 29 | 27 | 29 |
| Maximum String Length | Power Optimizers[6] | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | PV Modules | 60 | 60 | 60 | 60 | 60 | 60 | 60 |
| Maximum Continuous Power per String | | 18,600 | 18,000 | 18,000 | 18,600 | 20,400 | 18,000 | 20,400 |
| Maximum Allowed Connected Power per String[7] | | 1 string or more: 28,600 | 1 string or more: 28,000 | 1 string: 20,250 | 1 string: 20,850 | 1 string: 22,650 | 1 string: 20,250 | 1 string: 22,650 |
| | | | | 2 strings or more: 28,000 | 2 strings or more: 28,600 | 2 strings or more: 30,400 | 2 strings or more: 28,000 | 2 strings or more: 30,400 |
| Parallel Strings of Different Lengths or Orientations | | Yes | | | | | | |
| Maximum Difference in Number of Power Optimizers Allowed Between the Shortest and Longest String Connected to the Same Inverter Unit | | 5 Power Optimizers | | | | | | |

* The same rules apply for Synergy units of equivalent power ratings that are part of the modular Synergy Technology inverter.

(1) S1400 cannot be mixed with any other Power Optimizers models in the same string.

(2) For each string, a Power Optimizer may be connected to a single PV module if
   1) each Power Optimizer is connected to a single PV module or
   2) it is the only Power Optimizer connected to a single PV module in the string.

(3) For SE15K and above, the minimum STC DC connected power should be 11KW.

(4) SE15K is compatible with S1400 only in India.

(5) SE16K and SE17K are compatible with S1400 only in Taiwan, South Africa, India, and Israel.

(6) When connecting to inverters that support Rapid Shutdown, each string must contain fewer than 28 power optimizers to meet NEC Rapid Shutdown requirements.

(7) To connect more STC power per string, design your project using SolarEdge Designer.

SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.

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