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# Power Optimizer

S1000 / S1200



POWER OPTIMIZERS

SolarEdge's most advanced, cost-effective 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 high power and bifacial PV modules, and high string current for more power per string

**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, allowing continuous monitoring to detect overheating due to installation issues or connector-level wear and tear

**Lower BoS Costs**

- Flexible system design enables maximum space utilization and up to 2x longer string lengths, 50% less cables, fuses and combiner boxes
- Supports connection of two PV modules in series with easy cable management and fast installation times

**Simpler O&M**

- Module-level system monitoring enabling pinpointed fault detection and remote, time-saving troubleshooting

# / Power Optimizer

## S1000 / S1200

Power Optimizer Model (Typical Module Compatibility)	S1000 (for up to 2 x high power or bifacial modules)	S1200	Units
<b>INPUT</b>			
Rated Input DC Power <sup>(1)</sup>	1000	1200	W
Absolute Maximum Input Voltage (Voc)	125		Vdc
MPPT Operating Range	12.5 – 105		Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	15		Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.8		%
Oversoltage Category	II		
<b>OUTPUT DURING OPERATION</b>			
Maximum Output Current	18	20	Adc
Maximum Output Voltage	80		Vdc
<b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)</b>			
Safety Output Voltage per Power Optimizer	1±0.1		Vdc
<b>STANDARD COMPLIANCE</b>			
EMC	FCC Part 15, IEC 61000-6-2, and IEC 61000-6-3 – Class B, EN 55011		
Safety	IEC 62109-1 (class II safety), UL 3741		
Material	UL 94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
<b>INSTALLATION SPECIFICATIONS</b>			
Compatible SolarEdge Inverters	All commercial three phase inverters		
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 165 x 52 / 5.08 x 6.49 x 2.047	129 x 165 x 59 / 5.08 x 6.49 x 2.32	mm / in
Weight (including cables)	1064 / 2.3	1106 / 2.4	gr / lb
Input Connector	MC4 <sup>(2)</sup>		
Input Wire Length	Short Input: 0.1 / 0.32 Long Input: 1.3 / 4.26 <sup>(3)</sup>	Short Input: 0.1 / 0.32 Long Input: 1.6 / 5.24 <sup>(3)</sup>	m / ft
Output Connector	MC4		
Output Wire Length <sup>(4)</sup>	Option 1: (+) 4.7 (-) 0.10 / (+) 15.41 (-) 0.32 Option 2: (+) 2.7 (-) 0.10 / (+) 8.8 (-) 0.32	Option 1: (+) 5.3 (-) 0.10 / (+) 17.38 (-) 0.32 Option 2: (+) 2.7 (-) 0.10 / (+) 8.8 (-) 0.32	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.

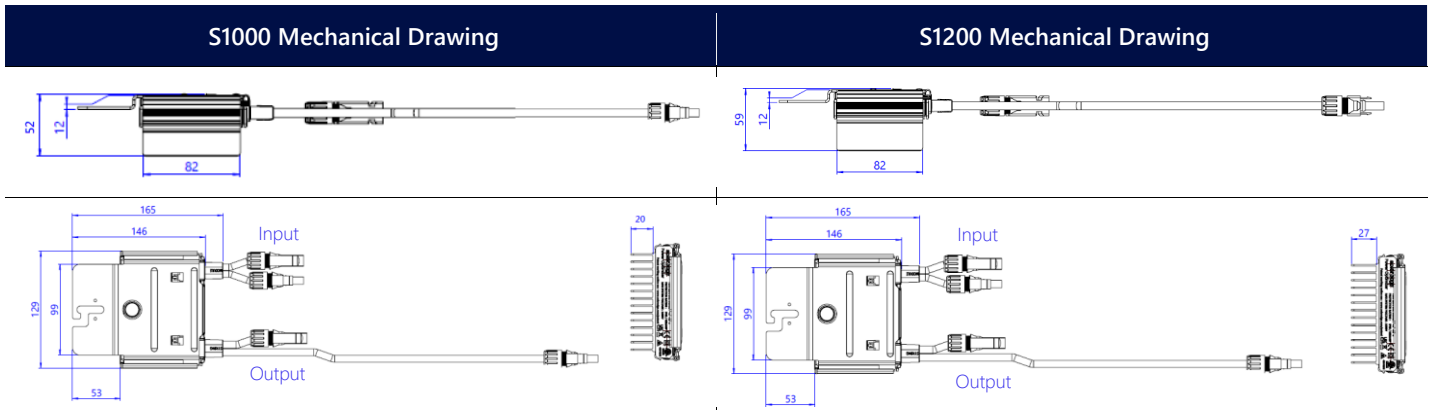
(2) For other connector types please contact SolarEdge.

(3) For S-Series models with long input cables (1.3m / 4.26ft or 1.6m / 5.24ft), the Sense Connect feature is only enabled on the output cable connectors.

(4) Option 1 best fits when modules are placed in landscape orientation or in portrait orientation with power optimizers connected in leapfrog wiring method.

Option 2 best fits when modules are placed in portrait orientation.

(5) For ambient temperatures above +65°C / +149°F power derating is applied.



\* When installing SolarEdge power optimizers, maintaining clearance is required. Refer to the [Power Optimizer Clearance Application Note](#) for more details.

# / PV System Design

## S1000

PV System Design Using a SolarEdge Inverter <sup>(1)(2)(3)</sup>		230/400V Grid SE15K <sup>(4)</sup>	230/400V Grid SE16K <sup>(5)</sup> , SE17K <sup>(5)</sup> , SE25K*	230/400V Grid SE27.6K*	230/400V Grid SE30K*	230/400V Grid SE33.3K*	277/480V Grid SE40K*	Units
Compatible Power Optimizers		S1000						
Minimum String Length	Power Optimizers	14	14	14	15	14	15	
	PV Modules	27	27	27	29	27	29	
Maximum String Length	Power Optimizers <sup>(6)</sup>	30	30	30	30	30	30	
	PV Modules	60	60	60	60	60	60	
Maximum Continuous Power per String [W]		13,950	13,500	13,950	15,300	13,500	15,300	
Maximum Allowed Connected Power per String <sup>(7)</sup>	1 string: 16,200	1 string: 15,750	1 string: 16,200	1 string: 17,550	2 strings: 15,750	1 – 2 strings: 17,550		W
	2 strings or more: 18,950	2 strings or more: 18,500	2 strings or more: 18,950	2 strings or more: 20,300	3 strings or more: 18,500	3 strings or more: 20,300		
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) S1000 cannot be mixed with S1200 in the same string. For P-series compatibility please refer to the [SolarEdge Power Optimizer Inter-Compatibility Technical Note](#).

(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 (the entire string has a 1:1 configuration).

2) It is the only Power Optimizer connected to a single PV module.

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

(4) SE15K is compatible with S1000 only in India.

(5) SE16K and SE17K are compatible with S1000 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](#).

## S1200

PV System Design Using a SolarEdge Inverter <sup>(8)(9)(10)</sup>		230/400V Grid SE15K <sup>(11)*</sup>	230/400V Grid SE16K <sup>(12)</sup> , SE17K <sup>(12)</sup> , SE25K*	230/400V Grid SE27.6K*	230/400V Grid SE30K, SE33.3K <sup>(13)</sup>	277/480V Grid SE40K*	Units	
Compatible Power Optimizers		S1200						
Minimum String Length	Power Optimizers	14	14	14	15	15		
	PV Modules	27	27	27	29	29		
Maximum String Length	Power Optimizers <sup>(14)</sup>	30	30	30	30	30		
	PV Modules	60	60	60	60	60		
Maximum Continuous Power per String [W]		15,500	15,000	15,500	17,000	17,000		
Maximum Allowed Connected Power per String <sup>(15)</sup>	1 string or more: 20,500	1 string: 17,250	1 string: 17,750	1 string: 19,250	1 string: 19,250		W	
		2 strings or more: 20,000	2 strings or more: 20,500	2 strings or more: 23,000	2 strings or more: 23,000			
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.

(8) S1200 cannot be mixed with any other power optimizer in the same string.

(9) 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 (the entire string has a 1:1 configuration).

2) It is the only Power Optimizer connected to a single PV module.

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

(11) SE15K is compatible with S1200 only in India.

(12) SE16K and SE17K are compatible with S1200 only in Taiwan, South Africa, India, and Israel.

(13) To connect an S1200 power optimizer with an SE33.3K inverter, you must toggle the Fixed String Voltage from 750Vdc to 850Vdc via SolarEdge SetApp. For details, see [this application note](#).

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

(15) 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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