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

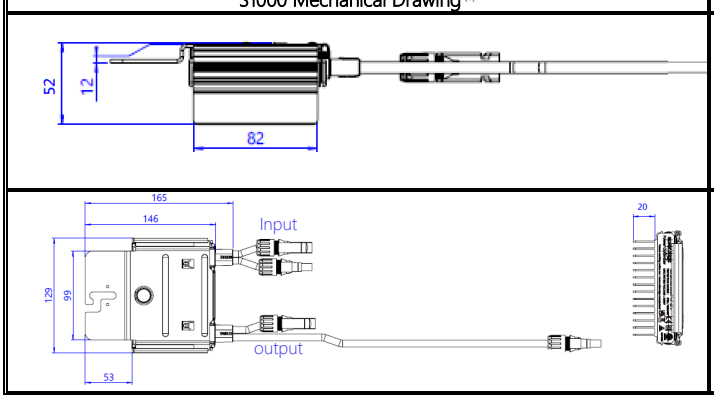
/ Power Optimizer

S1000 / S1200

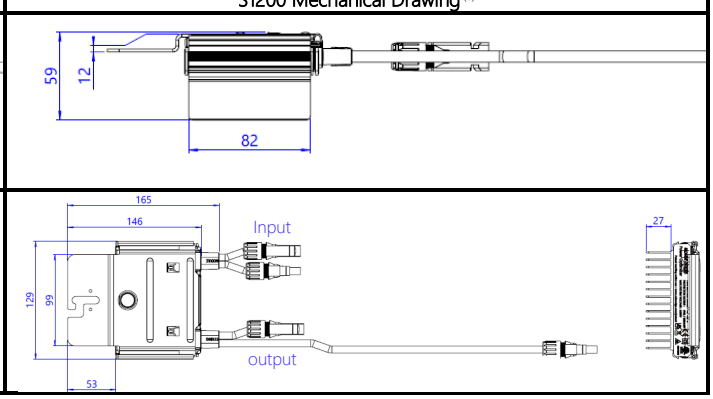
	S1000	S1200	Unit
INPUT			
Rated Input DC Power[1]	1000	1200	W
Absolute Maximum Input Voltage (Voc)	125		Vdc
MPPT Operating Range	12.5 – 105		Vdc
Maximum Short Circuit Current (Isc) of connected PV Module	15		Adc
Maximum Efficiency	99.5		%
Weighted Efficiency	98.8		%
Overvoltage Category	II		
OUTPUT DURING OPERATION			
Maximum Output Current	18	20	Adc
Maximum Output Voltage	80		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR OFF)			
Safety Output Voltage per Power Optimizer	1		Vdc
STANDARD COMPLIANCE			
EMC	FCC Part 15, IEC 61000-6-2, and IEC 61000-6-3 - Class B, EN 55011		
Safety	IEC62109-1 (class II safety)		
Material	UL94 V-0, UV Resistant		
RoHS	Yes		
Fire Safety	VDE-AR-E 2100-712:2013-05		
INSTALLATION SPECIFICATIONS			
Maximum Allowed System Voltage	1000		Vdc
Dimensions (W x L x H)	129 x 155 x 52 / 5.08 x 6.10 x 2.047	129 x 155 x 59 / 5.08 x 6.10 x 2.32	mm / in
Weight	1064 / 2.3	1106 / 2.4	gr / lb
Input Connector	MC4[2]		
Input Wire Length	Short Input Option: 0.1 / 0.32 Long Input Option: 1.3 / 4.26 [3]	Short Input Option: 0.1 / 0.32 Long Input Option: 1.6 / 5.24 [3]	m / ft
Output Connector	MC4		
Output Wire Length [4]	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[5]	-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 connector.
(4) 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.
(5) For ambient temperatures above +65°C / +149°F power de-rating is applied.

S1000 Mechanical Drawing [6]



S1200 Mechanical Drawing [6]



(6) When installing SolarEdge Power Optimizers maintaining Clearance is required Visit Application Note: Power Optimizer Clearance for more details.

PV System Design

S1000

PV System Design Using a SolarEdge Inverter[1][2][3][4]		230/400V Grid SE16K, SE17K, SE25K*	230/400V Grid SE27.6K*	230/400V Grid SE30K*	230/400V Grid SE33.3K*	277/480V Grid SE40K*	unit
Compatible Power Optimizers		S1000					
Minimum String Length	Power Optimizers	14	14	15	14	15	
	PV Modules	27	27	29	27	29	
Maximum String Length	Power Optimizers	30	30	30	30	30	
	PV Modules	60	60	60	60	60	
Maximum Continuous Power per String		13,500	13,950	15,300	13,500	15,300	W
Maximum Allowed Connected Power per String[4]		1 string – 15,750 2 strings or more – 18,500	1 string – 16,200 2 strings or more – 18,950	1 string – 17,550 2 strings or more – 20,300	2 string – 15,750 3 strings or more – 18,500	1-2 strings – 17,550 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 is with 1:1 configuration)
2) it is the only Power Optimizer connected to a single PV module.
(3) For SE16K and above, the minimum STC DC connected power should be 11KW.
(4) To connect more STC power per string, design your project using SolarEdge Designer.

S1200

PV System Design Using a SolarEdge Inverter[5][6][7][8]		230/400V Grid SE16K, SE17K, SE25K*	230/400V Grid SE27.6K*	230/400V Grid SE30K*	230/400V Grid SE33.3K* [9]	277/480V Grid SE40K*	unit
Compatible Power Optimizers		S1200					
Minimum String Length	Power Optimizers	14	14	15	15	15	
	PV Modules	27	27	29	29	29	
Maximum String Length	Power Optimizers	30	30	30	30	30	
	PV Modules	60	60	60	60	60	
Maximum Continuous Power per String		15,000	15,500	17,000	17,000	17,000	W
Maximum Allowed Connected Power per String[7] [8]		1 string – 17,250 2 strings or more – 20,000	1 string – 17,750 2 strings or more – 20,500	1 string – 19,250 2 strings or more – 23,000	1 string – 19,250 2 strings or more – 23,000	1-2 strings – 19,250 3 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.
(5) S1200 cannot be mixed with any other power optimizer in the same string.
(6) 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 is with 1:1 configuration)
2) it is the only Power Optimizer connected to a single PV module.
(7) For SE16K and above, the minimum STC DC connected power should be 11KW.
(8) To connect more STC power per string, design your project using SolarEdge Designer.

(9) Connecting S1200 with SE33.3K/SE66.6K/SE100K requires setting the Fixed String Voltage via SolarEdge SetApp: How to Toggle SolarEdge Commercial Inverters' Fixed String Voltage from 750Vdc to 850Vdc

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