Power Optimizer

For Europe

P605 / P650 / P701 / P730 / P800p /
P801 / P850 / P950 / P1100

POWER OPTIMIZER

PV power optimization at the module level

The most cost-effective solution for commercial and large field installations

- Specifically designed to work with SolarEdge inverters
- Up to 25% more energy
- Superior efficiency (99.5%)
- Balance of System cost reduction; 50% less cables, fuses, and combiner boxes, and over 2x longer string lengths possible
- Fast installation with a single bolt
- Advanced maintenance with module level monitoring
- Module level voltage shutdown for installer and firefighter safety
- Use with two PV modules connected in series or in parallel

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/ Power Optimizer

For Europe

P605 / P650 / P701 / P730 / P801

Power Optimizer Module (Typical Module Compatibility)	P605 (for 1 x highpower PV module)	P650 (for up to 2 x 60-cell PV modules)	P701 (for up to 2 x 60/120-cell PV modules)	P730 (for up to 2 x 72-cell PV modules)	P801 (for up to 2 x 72/144 cell PV modules)	
INPUT						
Rated Input DC Power[1]	605	650	700*	730**	800	W
Connection Method	Single input for series connected modules					
Absolute Maximum Input Voltage (Voc at lowest temperature)	65	96		125		Vdc
MPPT Operating Range	12.5 – 65	12.5 – 80		12.5 – 105		Vdc
Maximum Short Circuit Current per Input (Isc)	14.1	11	11.75	11**	12.5***	Adc
Maximum Efficiency	99.5					%
Weighted Efficiency	98.6					%
Overvoltage Capacity	II					
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER						
Maximum Output Current	15					Adc
Maximum Output Voltage	80					Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF						
Safety Output Voltage per Power Optimizer	1 ± 0.1					Vdc
STANDARD COMPLIANCE[2]						
EMC	FCC Part 15 Class B, IEC 61000-6-2, IEC 61000-6-3	FCC Part 15, IEC 61000-6-2, IEC 61000-6-3 – Class B, EN 55011[3]				
Safety	IEC 62109-1 (class II safety)					
RoHS	Yes					
Fire Safety	VDE-AR-E2100-712:2013-05					
INSTALLATION SPECIFICATIONS						
Compatible SolarEdge Inverters	Three Phase Inverter SE16K & larger					
Maximum Allowed System Voltage	1000					Vdc
Dimensions (W x L x H)	129 x 153 x 52	129 x 153 x 42.5		129 x 153 x 49.5		mm
Weight	1064	834		933		gr
Input Connector	MC4[4]					
Input Wire Length	0.16			0.16 / 0.9[5]		m
Output Connector	MC4					
Output Wire Length	Portrait Orientation: 1.4	Portrait Orientation: 1.2				m
	-	Landscape Orientation: 1.8		Landscape Orientation: 2.2		
Operating Temperature Range[6]	-40 to +85					°C
Protection Rating	IP68 / NEMA6P					
Relative Humidity	0 – 100					%

* For P701 models manufactured after work week 06/2020, the rated DC input is 740W.
** For P730 models manufactured after work week 06/2020, the rated DC input is 760W and the maximum Isc per input is 11.75A.
*** For P801 models manufactured in work week 40/2020 or earlier, the maximum Isc per input in 11.75A.
(1) The rated power of the module at STC will not exceed the Power Optimizer's Rated Input DC Power. Modules with up to +5% power tolerance are allowed.
(2) For details about CE Compliance, see Declaration of Conformity – CE.
(3) For compliance with EN55011 class A (when required), installation shall be done using an inverter with a rated power of > 20kVA, and comply with the requirements in the EMC section of the installation manual.
(4) For other connector types, please contact SolarEdge.
(5) Longer input wire lengths are available for use with split junction box modules. For 0.9m/2.95ft order P730-xxxLxxx.
(6) For ambient temperatures above +70ºC / +158ºF, power derating is applied. For details, see the Power Optimizers Temperature Derating technical note.

PV System Design Using a SolarEdge Inverter[7][8][9][10]		230/400V Grid SE20K, SE25K*, SE33.3K*		230/400V Grid SE27.6K*		230/400V Grid SE30K*		277/480V Grid SE33.3K*, SE40K*		
Compatible Power Optimizers		P605	P650, P701, P730, P801	P605	P650, P701, P730, P801	P605	P650, P701, P730, P801	P605	P650, P701, P730, P801	
Minimum String Length	Power Optimizers	14		14		15		14		
	PV Modules	14	27	14	27	15	29	14	27	
Maximum String Length	Power Optimizers	30		30		30		30		
	PV Modules	30	60	30	60	30	60	30	60	
Maximum Continuous Power per String		11,250		11,625		12,750		12,750		W
Maximum Allowed Connected Power per String[10]		13,500		13,875		15,000		15,000		W
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.
(7) P650/P701/P730/P801 can be mixed in one string only with P650/P701/P730/P801. P605 cannot be mixed with any other Power Optimizer in the same string.
(8) 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.
(9) For SE16K and above, the minimum STC DC connected power should be 11KW.
(10)To connect more STC power per string, design your project using SolarEdge Designer.

/ Power Optimizer

For Europe

P800p / P850 / P950 / P1100

Power Optimizer Module (Typical Module Compatibility)	P800p (for up to 2 x 96- cell 5'' PV modules)	P850 (for up to 2 x high power or bi-facial modules)	P950 (for up to 2 x high power or bi-facial modules)	P1100 (for up to 2 x high power or bi-facial modules)	Unit
INPUT					
Rated Input DC Power[1]	800	850	950	1100	W
Connection Method	Dual input for independently connected modules	Single input for series connected modules			
Absolute Maximum Input Voltage (Voc at lowest temperature)	83	125			Vdc
MPPT Operating Range	12.5 – 83	12.5 – 105			Vdc
Maximum Short Circuit Current per Input (Isc)	7	14.1*		14.1	Adc
Maximum Efficiency	99.5				%
Weighted Efficiency	98.6				%
Overvoltage Capacity	II				
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER					
Maximum Output Current	18				Adc
Maximum Output Voltage	80				Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR SOLAREDGE INVERTER OFF					
Safety Output Voltage per Power Optimizer	1 ± 0.1				Vdc
STANDARD COMPLIANCE[2]					
EMC	FCC Part 15, IEC61000-6-2, IEC61000-6-3 – Class B, EN55011[3]				
Safety	IEC62109-1 (class II safety)				
RoHS	Yes				
Fire Safety	VDE-AR-E2100-712:2013-05				
INSTALLATION SPECIFICATIONS					
Compatible SolarEdge Inverters	Three Phase Inverter SE16K & larger			Three Phase Inverter SE20K & larger	
Maximum Allowed System Voltage	1000				Vdc
Dimensions (W x L x H)	129 x 168 x 59	129 x 162 x 59			mm
Weight	1064				gr
Input Connector	MC4[4]				
Input Wire Length	0.16	0.16, 0.9, 1.3, 1.6[5]	0.16, 1.3, 1.6[5]	0.16 / 1.3[5]	m
Output Connector	MC4				
Output Wire Length	Portrait Orientation: 1.2			2.4	m
	Landscape Orientation: 1.8	Landscape Orientation: 2.2			
Operating Temperature Range[6]	-40 to +85				ºC
Protection Rating	IP68 / NEMA6P				
Relative Humidity	0 – 100				%

* For P850/P950 models manufactured in work week 06/2020 or earlier, the maximum Isc per input is 12.5A. The manufacture code is indicated in the Power Optimizer's serial number.
Example: S/N SJ0620A-xxxxxxxx (work week 06 in 2020)

(1) The rated power of the module at STC will not exceed the Power Optimizer's Rated Input DC Power. Modules with up to +5% power tolerance are allowed.

(2) For details about CE Compliance, see Declaration of Conformity – CE.

(3) For compliance with EN55011 class A (when required), installation shall be done using an inverter with a rated power of > 20kVA and comply with the requirements in the EMC section of the installation manual.

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

(5) Longer input wire lengths are available for use with split junction box modules.
For 0.9m / 2.95ft order P801 / P850-xxxLxxx. For 1.3m / 2.95ft order P850 / P950 / P1100-xxxXxxx. For 1.6m / 5.24ft order P850 / P950-xxxYxxx.

(6) For ambient temperatures above +70ºC / +158ºF, power derating is applied. For details, see the Power Optimizers Temperature Derating technical note.

PV System Design Using a SolarEdge Inverter[7][8][9][10]		230/400V Grid SE16K, SE17K	230/400V Grid SE20K, SE25K*	230/400V Grid SE27.6K*	230/400V Grid SE30K*	230/400V Grid SE33K*	277/480V Grid SE33.3K*, SE40K*	
Compatible Power Optimizers		P800p, P850, P950	P800p, P850, P950, P1100	P800p, P850, P950, P1100	P800p, P850, P950, P1100	P800p, P850, P950, P1100	P800p, P850, P950, P1100	
Minimum String Length	Power Optimizers	14	14	14	15	14	14	
	PV Modules	27	27	27	29	27	27	
Maximum String Length	Power Optimizers	30	30	30	30	30	30	
	PV Modules	60	60	60	60	60	60	
Maximum Continuous Power per String		13,500	13,500	13,950	15,300	13,500	15,300	W
Maximum Allowed Connected Power per String[10]		1 string – 15,750	1 string – 15,750	1 string – 16,200	1 string – 17,550	2 strings or less – 15,750	2 strings or less – 17,550	W
		2 strings or more – 18,500	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.

(7) P800p/P850/P950/P1100 can be mixed in one string only with P800p/P850/P950/P1100.

(8) 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.

(9) For SE16K and above, the minimum STC DC connected power should be 11KW.

(10) 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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CE

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