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, 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 up to two PV modules connected in series or in parallel

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Power Optimizer

For Europe

P605 / P650 / P701 / P730 / P801

Power Optimizer Model (Typical Module Compatibility)	P605 (for 1 x high power 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 Category	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						
EMC	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3	FCC Part 15, IEC 61000-6-2, and IEC 61000-6-3 - Class B, EN 55011				
Safety	IEC62109-1 (class II safety)					
RoHS	Yes					
Fire Safety	VDE-AR-E2100-712:2013-05					
INSTALLATION SPECIFICATIONS						
Compatible SolarEdge Inverters	Three Phase Inverters SE16K & larger(2)					
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(3)					
Input Wire Length	0.16			0.16 / 0.9(4)		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(5)	-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 with manufactured date greater than working week 06 of 2020 the rated DC input is 760W and maximum Isc per Input is 11.75A

*** For P801 models manufactured in work week 40/2020 or earlier, the maximum Isc per input is 11.75A

The manufacture code is indicated in the Power Optimizer's serial number. Example: S/N SJ0620A-xxxxxxxx (working week 06 in 2020)

(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 compliance with EN 55011 class A (where required), installation shall be done with inverter 20kVA or larger, and comply with the requirements in the EMC section of the installation manual

(3) For other connector types please contact SolarEdge

(4) Longer inputs wire lengths are available for use with split junction box modules. (For 0.9m/2.95ft order P730-xxxLxxx)

(5) For ambient temperature above +70°C/ +158°F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

PV System Design Using a SolarEdge Inverter(6)(7)(8)		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	27	
Maximum String Length	Power Optimizers	30		30		30		30	
	PV Modules	30	60	30	60	30	60	60	
Maximum Continuous Power per String		11250		11625		12750		12750	W
Maximum Allowed Connected Power per String(9) (Permitted only when the difference in connected power between strings is 2,000W or less)		13500		13875		15000		15000	W
Parallel Strings of Different Lengths or Orientations		Yes							

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

(6) 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

(7) 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

(8) For SE25K and above, the minimum STC DC connected power should be 11KW

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

/ Power Optimizer

For Europe

P800p / P850 / P950 / P1100

Power Optimizer Model (Typical Module Compatibility)	P800p (for up to 2 x 96-cell5″ 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)	
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 Category	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					
EMC	FCC Part 15, IEC 61000-6-2, and IEC 61000-6-3 - Class B, EN 55011				
Safety	IEC62109-1 (class II safety)				
RoHS	Yes				
Fire Safety	VDE-AR-E2100-712:2013-05				
INSTALLATION SPECIFICATIONS					
Compatible SolarEdge Inverters	Three Phase Inverters SE16K& larger[2]			Three Phase Inverters SE25K &larger	
Maximum Allowed System Voltage	1000				Vdc
Dimensions (W x L x H)	129x 168 x 59	129x 162 x 59			mm
Weight	1064				gr
Input Connector	MC4[3]				
Input Wire Length	0.16	0.16, 0.9,1.3, 1.6[4]	0.16, 1.3, 1.6[4]	0.16, 1.3[4]	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[5]	-40 to +85				˚C
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) 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 compliance with EN 55011 class A (where required), installation shall be done with inverter 20kVA or larger, and comply with the requirements in the EMC section of the installation manual

(3) For other connector types please contact SolarEdge

(4) Longer inputs wire length 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)

(5) For ambient temperature above +70˚C/+158˚F power de-rating is applied. Refer to Power Optimizers Temperature De-Rating Technical Note for more details

PV System Design Using a SolarEdge Inverter[6][7][8]		230/400V Grid SE20K, SE25K*	230/400V Grid SE27.6K*	230/400V Grid SE30K*	230/400V Grid SE33.3K*	277/480V Grid SE33.3K*, SE40K*	
Compatible Power Optimizers		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	15	14	14	
	PV Modules	27	27	29	27	27	
Maximum String Length	Power Optimizers	30	30	30	30	30	
	PV Modules	60	60	60	60	60	
Maximum Continuous Power per String		13500	13950	15300	13500	15300	W
Maximum Allowed Connected Power per String[9] (Permitted only when the difference in connected power between strings is 2,000W or less)		1 string - 15750	1 string - 16200	1 string - 17550	2 strings or less - 15750	2 strings or less - 17550	W
		2 strings or more - 18500	2 strings or more - 18950	2 strings or more - 20300	3 strings or more - 18500	3 strings or more - 20300	
Parallel Strings of Different Lengths or Orientations		Yes					

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

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

(7) 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

(8) For SE25K and above, the minimum STC DC connected power should be 11KW

(9) 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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