Power Optimizer

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

POWEROPTIMIZER

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 two PV modules connected in series or in parallel

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P650 / P701 / P730

Power Optimizer Model (Typical Module Compatibility)	P650 (for 2 x 60-cell PV modules)	P701 (for 2 x 60/120-cell PV modules)	P730 (for 2 x 72-cell PV modules)	
INPUT				
Rated Input DC Power[1]	650	700	730	W
Connection Method	Single input for series connected modules			
Absolute Maximum Input Voltage (Voc at lowest temperature)	96		125	Vdc
MPPT Operating Range	12.5 - 80		12.5 - 105	Vdc
Maximum Short Circuit Current per Input (Isc)	11	11.75	11	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	85			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 A, IEC61000-6-2, IEC61000-6-3			
Safety	IEC62109-1 (class II safety)			
RoHS	Yes			
Fire Safety	VDE-AR-E 2100-712:2013-05			
INSTALLATION SPECIFICATIONS				
Compatible SolarEdge Inverters	Three phase inverters SE15K & larger	Three phase inverters SE16K & larger		
Maximum Allowed System Voltage	1000			Vdc
Dimensions (W x L x H)	129 x 153 x 42.5 / 5.1 x 6 x 1.7		129 x 153 x 49.5 / 5.1 x 6 x 1.9	mm / in
Weight	834 / 1.8		933 / 2.1	gr / lb
Input Connector	MC4[2]			
Input Wire Length	0.16 / 0.52		0.16 / 0.52 , 0.9 / 2.95[3]	m / ft
Output Connector	MC4			
Output Wire Length	Portrait Orientation: 1.2 / 3.9	-		m / ft
	Landscape Orientation: 1.8 / 5.9		Landscape Orientation: 2.2 / 7.2	
Operating Temperature Range[4]	-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) Longer inputs wire length are available for use with split junction box modules. (For 0.9m/0.52ft order P730-xxxLxxx).
(4) 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.

/ Power Optimizer

P800p / P801 / P850 / P950

Power Optimizer Model (Typical Module Compatibility)	P800p (for 2 x 96-cell 5" PV modules)	P801 (for 2 x 72-cell PV modules)	P850[1] (for 2 x high power or bi-facial modules)	P950 (for 2 x high power or bi-facial modules)	
INPUT					
Rated Input DC Power[2]	800	800	850	950	W
Connection Method	Dual input for independently connected[7]	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	11.75	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	18	15	18		Adc
Maximum Output Voltage	85				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				
Safety	IEC62109-1 (class II safety)				
RoHS	Yes				
Fire Safety	VDE-AR-E 2100-712:2013-05				
INSTALLATION SPECIFICATIONS					
Compatible SolarEdge Inverters	Three phase inverters SE16K & larger				
Maximum Allowed System Voltage	1000				Vdc
Dimensions (W x L x H)	129 x 168 x 59 / 5.1 x 6.61 x 2.32	129 x 153 x 49.5 / 5.1 x 6 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.32		mm / in
Weight	1064 / 2.3	933 / 2.1	1064 / 2.3		gr / lb
Input Connector	MC4[3]				
Input Wire Length	0.16 / 0.52	0.16 / 0.52 , 0.9 / 2.95	0.16 / 0.52, 0.9 / 2.95, 1.3 / 4.26, 1.6 / 5.24[4]	0.16 / 0.52, 1.3 / 4.26, 1.6 / 5.24	m / ft
Output Connector	MC4				
Output Wire Length	Portrait Orientation: 1.2 / 3.9				m / ft
	Landscape Orientation: 1.8 / 5.9	Landscape Orientation: 2.2 / 7.2			
Operating Temperature Range[5]	-40 to +85 / -40 to +185				°C / °F
Protection Rating	IP68 / NEMA6P				
Relative Humidity	0 - 100				%

(1) P850 replaced the P800s; They can be used interchangeably and can be connected in the same string.
(2) 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.
(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/0.52ft order P801/ P850-xxxLxxx. For 1.3m/4.26ft order P850-xxxXxxx or P950-xxxXxxx. For 1.6m/5.24ft order P850-xxxYxxx or 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]		Three Phase SE15K and larger	Three Phase SE16K and larger						Three Phase for 277/480V grid						
Compatible Power Optimizers		P650	P650	P701	P730	P801	P800p / P850	P950	P650	P701	P730	P801	P800p / P850	P950	
Minimum String Length	Power Optimizers	14													
	PV Modules[7]	27													
Maximum String Length	Power Optimizers	30													
	PV Modules[7]	60													
Maximum Power per String		11250[9]					13500[9]		12750[10]				15300[10]		W
Parallel Strings of Different Lengths or Orientations		Yes													

(6) P650/P701/P730/P801 can be mixed in one string, and P850/P800p/P950 can also be mixed in one string. It is not allowed to mix P650/P701/P730/P801 with P850/P800p/P950, nor is it allowed to mix P650-P950 with P300-P505 in one string.
(7) In a case of odd number of PV modules in one string it is allowed to install one P650/P701/P730/P850/P800p/P801/P950 power optimizer connected to one PV module. When connecting a single module to the P800p seal the unused input connectors with the supplied pair of seals.
(8) For SE15k and above, the minimum DC power should be 11KW.
(9) For the 230/400V grid: With P650/P701/P730/P801 up to 13,500W per string may be installed, with P850/P800p up to 15,750W and with P950 up to 18,500W per string may be installed when the maximum power difference between each string is 2,000W.
For the P950, minimum two string are required for SE16K-SE27.6K inverters, and for SE30K and up minimum three string are required.
(10) For the 277/480V grid: With 650/P701/P730/P801 up to 15,000W per string may be installed, with P850/P800p up to 17,550W and with P950 up to 20,300W per string may be installed when the maximum power difference between each string is 2,000W.
For the P950, minimum three string are required for SE33.3K and SE40K inverters.

CE RoHS

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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Cautionary Note Regarding Market Data and Industry Forecasts:This brochure may contain market data and industry forecasts from certain third-party sources. This information is based on industry surveys and the preparer's expertise in the industry and there can be no assurance that any such market data is accurate or that any such industry forecasts will be achieved. Although we have not independently verified the accuracy of such market data and industry forecasts, we believe that the market data is reliable and that the industry forecasts are reasonable.

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