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# Power Optimizer For North America

P730 / P801 / P850 / P800p



**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
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Use with two PV modules connected in series or in parallel

# Power Optimizer For North America

P730 / P801 / P850 / P800p

Optimizer Model (Typical Module Compatibility)	P730 (for 2 x 72-cell PV modules)	P801 (for 2 x 72-cell PV modules)	P850* (for 2x high power or bi-facial modules)	P800p (for 2x 96-cell 5" PV modules)	
<b>INPUT</b>					
Rated Input DC Power <sup>(1)</sup>	730	800	850	800	W
Connection Method	Single input for series connected modules			Dual input for independently connected modules <sup>(2)</sup>	
Absolute Maximum Input Voltage (Voc at lowest temperature)	125			83	Vdc
MPPT Operating Range	12.5 - 105			12.5 - 83	Vdc
Maximum Short Circuit Current per input (Isc)	11	11.75	12.5	7	Adc
Maximum DC Input Current per input	13.75	14.65	15.6	8.75	Adc
Maximum Efficiency	99.5				%
Weighted Efficiency	98.6				%
Overvoltage Category	II				
<b>OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)</b>					
Maximum Output Current	15		18		Adc
Maximum Output Voltage	85				Vdc
<b>OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)</b>					
Safety Output Voltage per Power Optimizer	1 ± 0.1				Vdc
<b>STANDARD COMPLIANCE</b>					
Photovoltaic Rapid Shutdown System	NEC 2014			NEC 2014 & 2017 <sup>(3)</sup>	
EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3				
Safety	IEC62109-1 (class II safety), UL1741				
Material	UL94 V-0, UV Resistant				
RoHS	Yes				
<b>INSTALLATION SPECIFICATIONS</b>					
Compatible SolarEdge Inverters	Three phase inverters				
Maximum Allowed System Voltage	1000				
Dimensions (W x L x H)	129 x 153 x 49.5 / 5.1 x 6 x 1.9		129 x 162 x 59 / 5.1 x 6.4 x 2.3	129 x 168 x 59 / 5.1 x 6.6 x 2.3	mm / in
Weight	933 / 2.05		1064 / 2.34		gr / lb
Input Connector	MC4 <sup>(4)</sup>				
Input Wire Length	0.16 / 0.52	0.16 / 0.52 , 1.3 / 4.27	0.16 / 0.52, 1.6 / 5.24 <sup>(5)</sup>	0.16 / 0.52	m / ft
Output Wire Type / Connector	Double Insulated / MC4				
Output Wire Length	2.1 / 6.9 <sup>(6)</sup>	2.2 / 7.22	2.1 / 6.9 <sup>(6)</sup>		m / ft
Operating Temperature Range <sup>(7)</sup>	-40 - +85 / -40 - +185				
Protection Rating	IP68 / NEMA6P				
Relative Humidity	0 - 100				

<sup>(1)</sup> Rated power of the module at STC will not exceed the optimizer "Rated Input DC Power". Modules with up to +5% power tolerance are allowed.

<sup>(2)</sup> In a case of odd number of PV modules in one string it is allowed to install one P730/P801/P850/P800p 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.

<sup>(3)</sup> NEC 2017 requires max combined input voltage be not more than 80V.

<sup>(4)</sup> For other connector types please refer to: <https://www.solaredge.com/sites/default/files/optimizer-input-connector-compatibility.pdf>.

<sup>(5)</sup> Longer inputs wire length are available for use with split junction box modules. (For 1.6m/5.24ft order P850-xxxYxxY. For 1.3m/4.27ft order P801-xxxxXxxX).

<sup>(6)</sup> When using the P850 with longer input option (1.6m/5.24ft), the output wire length is 2.2m / 7.2ft

<sup>(7)</sup> 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 <sup>(8)</sup>		Three Phase for 208V Grid		Three Phase for 277/480V Grid		
Compatible Power Optimizers		P730/P801 <sup>(9)</sup>	P850/P800p <sup>(9)</sup>	P730/P801	P850/P800p	
Minimum String Length	Power Optimizers	8		14		
	PV Modules	16		27		
Maximum String Length	Power Optimizers	30		30		
	PV Modules	60		60		
Maximum Power per String		6000 <sup>(10)</sup>	7200 <sup>(10)</sup>	12750 <sup>(11)</sup>	15300 <sup>(11)</sup>	W
Parallel Strings of Different Lengths or Orientations		Yes				

<sup>(8)</sup> P800p and P850 can be mixed in the same string. It is not allowed to mix P730/P801 with P850/P800p in one string or to mix P730/P801/P850/P800p with P320/P340/P370/P400/P485/P505 in one string.

<sup>(9)</sup> P730/P801/P850/P800p design with three phase 208V inverters is limited. Use the SolarEdge Designer for verification.

<sup>(10)</sup> For 208V grid: with P730/P801 it is allowed to install up to 7,200W per string and with P850/P800p it is allowed to install up to 8,400W per string when the maximum power difference between each string is 1,000W

<sup>(11)</sup> For the 277/480V grid: with P730/P801 up to 15,000W per string may be installed and with P850/P800p up to 17,550W per string may be installed when the maximum power difference between each string is 2,000W.

\* P850 replaced the P800s; they can be used interchangeably and can be connected in the same string.