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# Power Optimizer For North America

P860



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 parallel

# Power Optimizer

## For North America

### P860

Optimizer Model (Typical Module Compatibility)	P860 (for 2 x 72 cell modules)			
<b>INPUT</b>				
Rated Input DC Power <sup>(1)</sup>	860		W	
Connection Method	Dual input for independently connected modules <sup>(2)</sup>			
Absolute Maximum Input Voltage (Voc at lowest temperature)	60		Vdc	
MPPT Operating Range	12.5 - 60		Vdc	
Maximum Short Circuit Current (Isc)	22		Adc	
Maximum Short Circuit Current per input (Isc)	11		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	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	Compliant with 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		Vdc	
Dimensions (W x L x H)	129 x 168 x 59 / 5.1 x 6.61 x 2.32		mm / in	
Weight	1064 / 2.34		gr / lb	
Input Connector	MC4 <sup>(4)</sup>			
Input Wire Length <sup>(5)</sup>	Lengths options	<b>Input #1</b>	<b>Input #2</b>	m / ft
	(1)	(-) 0.16 / 0.52, (+) 0.16 / 0.52	(-) 0.16 / 0.52, (+) 0.16 / 0.52	
	(2)	(-) 1.6 / 5.24, (+) 0.16 / 0.52	(-) 0.16 / 0.52, (+) 1.6 / 5.24	
	(3)	(-) 1.6 / 5.24, (+) 1.6 / 5.24	(-) 1.6 / 5.24, (+) 1.6 / 5.24	
Output Wire Type / Connector	Double Insulated; MC4			
Output Wire Length	2.1 / 6.8 <sup>(6)</sup>		m / ft	
Operating Temperature Range <sup>(7)</sup>	-40 - +85 / -40 - +185		°C / °F	
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 P860 power optimizer connected to one PV module. When connecting a single module to P860, 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 option 2 order P860-xxxYxxY. For option 3 order P860-xxxZxxY).

<sup>(6)</sup> When using longer input wire length (options 2 and 3), 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 Application Note for more details.

PV System Design Using a SolarEdge Inverter <sup>(8)</sup>		Three Phase for 208V Grid <sup>(9)</sup>	Three Phase for 277/480V Grid	
Minimum String Length	Power Optimizers	8	14	
	PV Modules	16	27	
Maximum String Length	Power Optimizers	30		
	PV Modules	60		
Maximum Power per String		7200 <sup>(10)</sup>	15300 <sup>(11)</sup>	W
Parallel Strings of Different Lengths or Orientations		Yes		

<sup>(8)</sup> It is not allowed to mix P860 with P730/P800p/P850 in one string or to mix with P320/P340/P370/P400/P405/P505 in one string.

<sup>(9)</sup> P860 design with three phase 208V inverters is limited. Use the SolarEdge Designer for verification.

<sup>(10)</sup> For 208V grid: it is allowed to install up to 7,700W per string when the maximum power difference between each string is 1,000W

<sup>(11)</sup> For 277/480V grid: it is allowed to install up to 17,550W per string when the maximum power difference between each string is 2,000W