

Power Optimizer

P600 / P650 / P730 / P850 / P800p



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 two PV modules connected in series or in parallel

Power Optimizer

P600 / P650 / P730 / P850 / P800p

Optimizer Model (Typical Module Compatibility)	P600 (for 2 x 60-cell PV modules)	P650 (for 2 x 60-cell PV modules)	P730 ⁽¹⁾ (for 2 x 72-cell PV modules)	P850 ⁽¹⁾ (for series connection of 2x high power or bi-facial modules)	P800p (for parallel connection of 2x 96-cell 5" PV modules)	
INPUT						
Rated Input DC Power ⁽²⁾	600	650	730	850	800	W
Connection Method	Single input for series connected modules				Dual input for independently connected ⁽⁷⁾	
Absolute Maximum Input Voltage (Voc at lowest temperature)	96		125		83	Vdc
MPPT Operating Range	12.5 - 80		12.5 - 105		12.5 - 83	Vdc
Maximum Short Circuit Current per Input (Isc)	10.25	11		12.5	7	Adc
Maximum Efficiency				99.5		%
Weighted Efficiency				98.6		%
Overvoltage Category				II		
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREEDGE INVERTER)						
Maximum Output Current	15			18		Adc
Maximum Output Voltage				85		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREEDGE INVERTER OR SOLAREEDGE INVERTER OFF)						
Safety Output Voltage per Power Optimizer				1 ± 0.1		Vdc
STANDARD COMPLIANCE						
EMC				FCC Part15 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 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	129 x 162 x 59 / 5.1 x 6.4 x 2.32	129 x 168 x 59 / 5.1 x 6.61 x 2.32	mm / in
Weight	834 / 1.8		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 ⁽⁴⁾	0.16 / 0.52, 0.9 / 2.95, 1.3 / 4.26, 1.6 / 5.24 ⁽⁴⁾	0.16 / 0.52	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		Landscape Orientation: 1.8 / 5.9	
Operating Temperature Range ⁽⁵⁾				-40 - +85 / -40 - +185		°C / °F
Protection Rating				IP68 / NEMA6P		
Relative Humidity				0 - 100		%

⁽¹⁾ P730 replaced the P700; P850 replaced the P800s; each pair can be used interchangeably and can be connected in the same string.

⁽²⁾ 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.

⁽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 P730-xxxLxxx or P850-xxxLxxx. For 1.3m/4.26ft order P850-xxxXxxx. For 1.6m/5.24ft order P850-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					
		P600	P650	P600	P650	P730	P850	P800p	P600	P650	P730	P850	P800p
Compatible Power Optimizers		P600	P650	P600	P650	P730	P850	P800p	P600	P650	P730	P850	P800p
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⁾ P600, P650 and P730 can be mixed in one string. It is not allowed to mix P600/P650/P730 with P850/P800p or to mix P600/P650/P730/P850/P800p with P300/P370/P404/P405/P500/P505 in one string.

⁽⁷⁾ In a case of odd number of PV modules in one string it is allowed to install one P600/P650/P730/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.

⁽⁸⁾ For SE15k and above, the minimum DC power should be 11KW.

⁽⁹⁾ For the 230/400V grid: When three strings are connected to the inverter (when using three phase inverters with synergy technology – three strings per unit), with a maximum power difference of 2,000W between each string, then up to 13,500W per string may be installed with P600/P650/P730 and up to 15,750W per string may be installed with P850/P800p.

⁽¹⁰⁾ For the 277/480V grid: When three strings are connected to the inverter (when using three phase inverters with synergy technology – three strings per unit), with a maximum power difference of 2,000W between each string, then up to 15,000W per string may be installed with P600/P650/P730 and up to 17,550W per string may be installed with P850/P800p.