

Power Optimizer

P600 / P650 / P730 / P800p / P850



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

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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)	P800p (for parallel connection of 2x 96-cell 5" PV modules)	P850 ⁽¹⁾ (for series connection of 2x high power or bi-facial modules)		
INPUT							
Rated Input DC Power ⁽²⁾	600	650	730	800	850	W	
Absolute Maximum Input Voltage (Voc at lowest temperature)	96		125	83	120	Vdc	
MPPT Operating Range	12.5 - 80		12.5 - 105	12.5 - 83	12.5 - 105	Vdc	
Maximum Short Circuit Current (Isc)	10.25	11	11	14	12.5	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 168 x 59 / 5.1 x 6.61 x 2.32	129 x 162 x 59 / 5.1 x 6.4 x 2.32	mm / in	
Weight (including cables)	834 / 1.8		933 / 2.1	1019 / 2.2	1064 / 2.3	gr / lb	
Input Connector ⁽³⁾	MC4			MC4 Dual Input ⁽⁷⁾	MC4		
Input Wire Length	0.16 / 0.52		0.16, 0.9 ⁽⁴⁾ / 0.52, 2.95 ⁽⁴⁾	0.16 / 0.52	0.16, 0.9 ⁽⁴⁾ , 1.3 ⁽⁴⁾ / 0.52, 2.95 ⁽⁴⁾ , 4.26 ⁽⁴⁾	m/ft	
Output Connector						MC4	
Output Wire Length	Portrait Orientation: 1.2 / 3.9 Landscape Orientation: 1.8 / 5.9		Portrait Orientation: 1.2 / 3.9 Landscape Orientation: 2.1 / 6.9	Portrait Orientation: 1.2 / 3.9 Landscape Orientation: 1.8 / 5.9	Portrait Orientation: 1.2 / 3.9 Landscape Orientation: 2.1 / 6.9	m / ft	
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 STC power of the module. Module of up to +5% power tolerance 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).

⁽⁵⁾ 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 ⁽⁶⁾⁽⁷⁾	Three Phase SE15K and larger		Three Phase SE16K and larger					Three Phase for 277/480V grid					
	P600	P650	P600	P650	P730	P800p	P850	P600	P650	P730	P800p	P850	
Compatible Power Optimizers													
Minimum String Length	Power Optimizers		13										
	PV Modules		26										
Maximum String Length	Power Optimizers		30										
	PV Modules		60										
Maximum Power per String	11250 ⁽⁸⁾					13500		12750 ⁽⁹⁾			15300		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 P800p/P850 or to mix P600/P650/P730/P800p/P850 with P300/P370/P500/P404/P405/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/P800p/P850 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 SE27.6K, SE55K, SE82.8K: It is allowed to install up to 13,500W per string when 3 strings are connected to the inverter and when the maximum power difference between the strings is up to 2,000W; inverter max DC power: 37,250W.

⁽⁹⁾ For inverters for 277/480V grid: It is allowed to install up to 15,000W per string when 3 strings are connected to the inverter (3 strings per unit when using SE66.6K and SE100K) and when the maximum power difference between the strings is up to 2,000W; inverter max DC power: 45,000W.