Power Optimizer

P370 / P401 / P404 / P485 / P500 / P505 / P601

POWER OPTIMIZER

PV power optimization at the module level

- Specifically designed to work with SolarEdge inverters
- High efficiency with module-level MPPT, for maximized system energy production and revenue, and fast project ROI
- Next generation maintenance with module-level monitoring
- Mitigates all types of modules mismatch-loss, from manufacturing tolerance to partial shading
- Superior efficiency (99.5%)
- Flexible system design for maximum space utilization
- Module-level voltage shutdown for installer and firefighter safety
- Fast installation with a single bolt

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/ Power Optimizer

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Optimizer Model (typical module compatibility)	P370 (60 & 70 cell modules)	P401 (60 & 70 cell modules)	P404 (60 & 72 cell short strings)	P485 (high voltage modules)	P500 (96 cell modules)	P505 (higher current modules)	P601 (1 x high power PV module)	Units
INPUT								
Rated Input DC Power[1]	370	420	405	485	500	505	600	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	60		80	125	80	83	65	Vdc
MPPT Operating Range	8 – 60		12.5 – 80	12.5 – 105	8 – 80	12.5 – 83	12.5 – 65	Vdc
Maximum Short Circuit Current (Isc)	11	12.5	11.75	11	10.1	14		Adc
Maximum Efficiency	99.5							%
Weighted Efficiency	98.8						98.6	%
Overvoltage Category	II							
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)								
Maximum Output Current	15							Adc
Maximum Output Voltage	60		80		60	80		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), UL1741							
RoHS	Yes							
Fire Safety	VDE-AR-E 2100-712:2018-12							
INSTALLATION SPECIFICATIONS								
Maximum Allowed System Voltage	1000							Vdc
Dimensions (W x L x H)	129 x 153 x 27.5 / 5.1 x 6 x 1.1	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 153 x 42.5 / 5.1 x 6 x 1.7	129 x 159 x 49.5 / 5.1 x 6.2 x 1.9	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 162 x 59 / 5.1 x 6.4 x 2.3	129 x 153 x 52 / 5.1 x 6 x 2	mm / in
Weight (including cables)	655 / 1.5		775 / 1.7	845 / 1.9	750 / 1.7	1064 / 2.3		gr / lb
Input Connector	MC4[2]			Single or Dual MC4[2][3]	MC4[2]			
Input Wire Length	0.16 / 0.52, 0.9 / 2.95		0.16 / 0.52					m / ft
Output Connector	MC4							
Output Wire Length	1.2 / 3.9						1.4 / 4.5	m / ft
Operating Temperature Range[4]	-40 to +85 / -40 to +185							°C / °F
Protection Rating	IP68							
Relative Humidity	0 – 100							%

(1) 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.
(2) For other connector types please contact SolarEdge.
(3) For dual version for parallel connection of two modules use the P485. In the case of an odd number of PV modules in one string, installing one P485 dual version power optimizer connected to one PV module is supported. When connecting a single module, seal the unused input connectors using the supplied pair of seals.
(4) For ambient temperatures 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[5]		SolarEdge Home Wave Inverter – Single Phase	SolarEdge Home Short String Inverter – Three Phase	Three Phase for 230/400V Grid	Three Phase for 277/480V Grid	
Minimum String Length (Power Optimizers)	P370, P401, P500	8	9	16	18	
	P404, P485, P505, P601	6	8	14 (15 with SE30K)	14	
Maximum String Length (Power Optimizers)		25	20	50		
Maximum Nominal Power per String		5700[6]	5625[6]	11250[7]	12750[8]	W
Parallel Strings of Different Lengths or Orientations		Yes				

(5) It is not allowed to mix P404/P485/P505/P601 with P370/P401/P500 in one string.
(6) If the inverters rated AC power ≤ maximum nominal power per string, then the maximum power per string will be able to reach up to the inverters maximum input DC power Refer to the Single String Design Guidelines Application Note for more details.
(7) For the 230/400V grid, it is allowed to install up to 13,500W per string when the maximum power difference between each string is 2,000W.
(8) For the 277/480V grid, it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,000W.

CE RoHS