Power Optimizer

For North America

P400 / P401 / P485 / P505

POWER OPTIMIZER

25 YEAR WARRANTY

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
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch losses, from manufacturing tolerance to partial shading
- Flexible system design for maximum space utilization
- Fast installation with a single bolt
- Next generation maintenance with module-level monitoring
- Meets NEC requirements for arc fault protection (AFCI) and Photovoltaic Rapid Shutdown System (PVRSS)
- Module-level voltage shutdown for installer and firefighter safety

solaredge

/ Power Optimizer

For North America

P400 / P401 / P485 / P505

Optimizer model (typical module compatibility)	P400 (for 72 & 96-cell modules)	P401 (for high power 60 and 72-cell modules)	P485 (for high-voltage modules)	P505 (for higher current modules)	
INPUT					
Rated Input DC Power(1)	400	430	485	505	W
Absolute Maximum Input Voltage (Voc at lowest temperature)	80	60	125(2)	83(2)	Vdc
MPPT Operating Range	8 – 80	8 – 60	12.5 – 105	12.5 – 83	Vdc
Maximum Short Circuit Current (Isc)	10.1	12.5	11	14	Adc
Maximum Efficiency	99.5				%
Weighted Efficiency	98.8				%
Overvoltage Category	II				
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING SOLAREDGE INVERTER)					
Maximum Output Current	15				Adc
Maximum Output Voltage	60		80		Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM SOLAREDGE INVERTER OR 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, NEC/PVRSS				
Material	UL94 V-0, UV Resistant				
RoHS	Yes				
INSTALLATION SPECIFICATIONS					
Maximum Allowed System Voltage	1000				Vdc
Compatible inverters	All SolarEdge Single Phase and Three Phase inverters				
Dimensions (W x L x H)	129 x 153 x 33.5 / 5.1 x 6 x 1.3	129 x 153 x 29.5 / 5.1 x 6 x 1.16	129 x 159 x 49.5 / 5.1 x 6.3 x 1.9	129 x 162 x 59 / 5.1 x 6.4 x 2.3	mm / in
Weight (including cables)	750 / 1.7	655 / 1.5	845 / 1.9	1064 / 2.3	gr / lb
Input Connector	MC4(3)				
Input Wire Length(4)	0.16 / 0.5				m / ft
Output Wire Type / Connector	Double Insulated / MC4				
Output Wire Length	1.2 / 3.9				m / ft
Operating Temperature Range(5)	-40 to +85 / -40 to +185				°C / °F
Protection Rating	IP68 / NEMA6P				
Relative Humidity	0 – 100				%

(1) The 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) NEC 2017 requires that the maximum input voltage not be more than 80V.
(3) For other connector types please contact SolarEdge.
(4) Longer input wire lengths are available for use. For 0.9m input wire length order P401-xxxLxxx.
(5) For ambient temperatures above +85°C / +185°F power de-rating is applied. Refer to the Power Optimizers Temperature De-Rating Technical Note for more details.

PV System Design Using a SolarEdge Inverter(6)		SolarEdge Home Wave Single Phase	Single phase	Three Phase for 208V grid	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	P400, P401	8		10	18	
	P485, P505	6		8	14	
Maximum String Length (Power Optimizers)		25		25	50	
Maximum Power per String		5700(7) (6000 with SE7600-US – SE11400-US)	5250(7)	6000(8)	12750(9)	W
Parallel Strings of Different Lengths or Orientations		Yes				

(6) It is not allowed to mix P485/P505 with P400/P401 in one string.
(7) A string with more than 30 optimizers does not meet NEC rapid shutdown requirements, safety voltage will be above the 30V requirement.
(8) For the 208V grid, it is allowed to install up to 6,500W per string when the maximum power difference between each string is 1,000W.
(9) For 277/480V grid: it is allowed to install up to 15,000W per string when the maximum power difference between each string is 2,0000.

CE RoHS