Power Optimizer

S440, S500



POWER OPTIMIZER

PV power optimization at the module level

- Specifically designed to work with SolarEdge residential inverters
- Superior efficiency (99.5%)
- Mitigates all types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Detects abnormal PV connector behavior, preventing potential safety issues*
- Module-level voltage shutdown for installer and firefighter safety
- Flexible system design for maximum space utilization
- Compatible with bifacial PV modules



^{*} Functionality subject to inverter model and firmware version

/ Power Optimizer

S440, S500

	S440	\$500	UNIT		
INPUT					
Rated Input DC Power ⁽¹⁾	440	500	W		
Absolute Maximum Input Voltage (Voc)	60				
MPPT Operating Range	8 - 60				
Maximum Short Circuit Current (Isc) of Connected PV Module	14.5				
Maximum Efficiency	99.5				
Weighted Efficiency	98	98.6			
Overvoltage Category	II				
OUTPUT DURING OPERATION					
Maximum Output Current	15				
Maximum Output Voltage	60				
OUTPUT DURING STANDBY (POWER OPTIMIZER D	ISCONNECTED FROM INVERTER OF	R INVERTER OFF)	11		
afety Output Voltage per Power Optimizer 1					
STANDARD COMPLIANCE					
EMC	FCC Part 15 Class B, IEC61000-6-2	FCC Part 15 Class B, IEC61000-6-2, IEC61000-6-3, CISPR11, EN-55011			
Safety	IEC62109-1 (class	IEC62109-1 (class II safety), UL1741			
Material	UL94 V-0,	UL94 V-0, UV Resistant			
RoHS	Yes				
Fire Safety	VDE-AR-E 2100-712:2013-05				
INSTALLATION SPECIFICATIONS					
Maximum Allowed System Voltage	1000		Vdc		
Dimensions (W x L x H)	129 x 153 x 30		mm		
Weight (including cables)	655 / 1.5				
Input Connector	MC4 ⁽²⁾				
Input Wire Length	0.1		m		
Output Connector	MC4				
Output Wire Length	(+) 2.3, (-) 0.10				
Operating Temperature Range ⁽³⁾	-40 to +85				
Protection Rating	IP68 / NEMA6P				
Relative Humidity	0 - 100				

⁽¹⁾ Rated power of the module at STC will not exceed the power optimizer Rated Input DC Power. Modules with up to +5% power tolerance are allowed

⁽²⁾ For other connector types please contact SolarEdge
(3) 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 Usir Inverter	ng a SolarEdge	Single Phase HD-Wave	Single Phase	Three Phase	Three Phase for 277/480V grid	
Minimum String Length (Power Optimizers)	S440, S500	8		16	18	
Maximum String Length (Power Optimizers)		25	25		50	
Maximum Nominal Power per S	String ⁽⁴⁾	5700	5250	11250(5)	12750(6)	W
Parallel Strings of Different Leng	gths or Orientations Yes					

⁽⁴⁾ 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 (4) It he inverters rated AL power & maximum nominal power per string, then the maximum power per string will be able to reach up to the Refer to: https://www.solaredge.com/sites/default/files/se-power-optimizer-single-string-design-application-note.pdf
(5) 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
(6) 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
(7) It is not allowed to mix S-series and P-series power optimizers in new installations



