

## SOLAREEDGE RESIDENTIAL POWER OPTIMISERS

S440, S500B



The SolarEdge Power Optimiser is a DC/DC converter that connects to a single panel to monitor and control its individual performance. This level of control mitigates panel mismatch losses due to partial shading and improves the performance of the PV system. It also allows for more flexible system designs and greater roof space utilisation.

- Specifically designed to work with SolarEdge inverters.
- Detects abnormal PV connector behaviour, preventing potential safety issues.\*
- Panel-level voltage shutdown for installer and firefighter safety.
- Superior efficiency (99.5%) mitigates all types of panels mismatch-loss, from manufacturing tolerance to partial shading.
- Flexible system design and compatible with bifacial PV panels for maximum space utilisation.
- Faster installations with simplified cable management and easy assembly using a single bolt.

\* Functionality subject to inverter model and firmware version.

### How you benefit:



#### HIGH EFFICIENCY

Superior efficiency of up to 99.5%, generating more power from your PV system.



#### FLEXIBLE DESIGN

Individual panel monitoring and management allow flexible designs and increased power production.



#### SAFE OPERATION

Automatic panel-level voltage shutdown feature for installer and firefighter safety.



#### INNOVATIVE

Next generation maintenance with panel-level monitoring.



#### SOLAHART WARRANTY

Enjoy a 25-year warranty, for peace of mind.

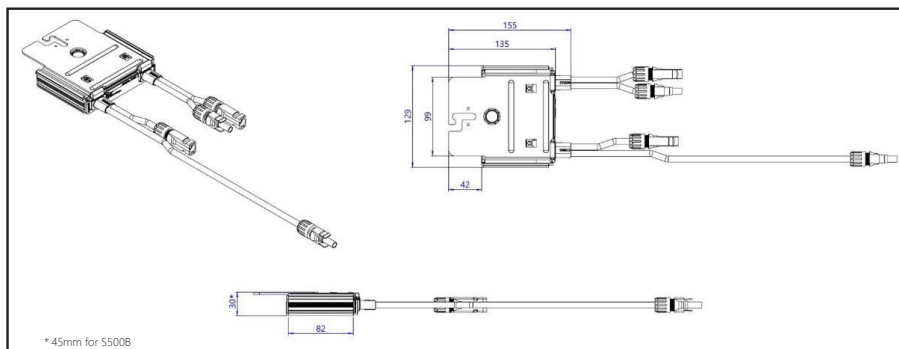
	S440	S500B	Units
<b>INPUT</b>			
Rated Input DC Power <sup>(1)</sup>	440	500	W
Absolute Maximum Input Voltage (V <sub>oc</sub> )	60	125	Vdc
MPPT Operating Range	8 – 60	12.5 – 105	Vdc
Maximum Short Circuit Current (I <sub>sc</sub> ) of connected PV Module	14.5	15	Adc
Maximum Efficiency		99.5	%
Weighted Efficiency		98.8	%
Overvoltage Category		II	
Input Overcurrent Protection		15	Adc
<b>OUTPUT DURING OPERATION</b>			
Maximum Output Current		15	Adc
Maximum Output Voltage	60	80	Vdc
<b>OUTPUT DURING STANDBY (POWER OPTIMISER DISCONNECTED FROM INVERTER OR INVERTER OFF)</b>			
Safety Output Voltage per Power Optimiser		1 ± 0.1	Vdc
<b>STANDARD COMPLIANCE</b>			
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		
<b>CATEGORY TABLE HEADER</b>			
Maximum Allowed System Voltage		1000	Vdc
Dimensions (W x L x H)	129 x 155 x 30	129 x 155 x 45	mm
Weight	720	790	gr
Input Connector	MC4 <sup>(2)</sup>		
Input Wire Length	0.1 / 0.9 <sup>(3)</sup>		
Output Connector	MC4		
Output Wire Length	(+) 2.3, (-) 0.10		
Operating Temperature Range <sup>(4)</sup>	-40 to +85		
Protection Rating	IP68 / NEMA6P		
Relative Humidity	0 – 100		

- (1) Rated power of the module at STC will not exceed the Power Optimiser Rated Input DC Power. Modules with up to +5% power tolerance are allowed.  
 (2) For other connector types please contact SolarEdge. Please note that with other connector types, the wire length will be 0.16m. The Sense Connect feature will not detect thermal events on these connectors.  
 (3) The Sense Connect feature will not detect thermal events on input connectors when the input wire length is 0.9m.  
 (4) For ambient temperatures above +70°C / +158°F power de-rating is applied. Refer to Power Optimisers [Temperature De-Rating Technical Note](#) for more details.

PV System Design Using a SolarEdge Inverter		SolarEdge Home Genesis / SolarEdge Home Hub	Three Phase Residential	Three Phase Commercial	Units
Minimum String Length (Power Optimisers)	S440, S500	8	9	16	
	S500B	6	8	14	
Maximum String Length		25		50	
Maximum Nominal Power per String <sup>(5)</sup>		5700 (6000 with SE8250H / SE10000H)	5625	11250 <sup>(6)</sup>	W

If the inverter's 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.

- (5) When using more than a single string, it is allowed to install up to 13500W per string when the maximum power difference between each string is up to 2000W.  
 (6) It is not allowed to mix S-series and P-series Power Optimisers in new installations.



Specifications and designs included in this data sheet are subject to change without notice.