Residential Power Optimiser

For Australia

S440 / S500 / S500B / S650B

POWER OPTIMISER

PV power optimisation at the module level

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

* Functionality subject to inverter model and firmware version

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	S440	S500	S500B	S650B	Units
INPUT					
Rated Input DC Power(1)	440(2)	500(3)		650	W
Absolute Maximum Input Voltage (Voc)	60		125	85	Vdc
MPPT Operating Range	8 – 60		12.5 – 105	12.5 – 85	Vdc
Maximum Short Circuit Current (Isc) of Connected PV Panel	14.5(2)	15			Adc
Maximum Efficiency	99.5				%
Weighted Efficiency	98.8				%
Overvoltage Category	II				
Input Overcurrent Protection	15				Adc
OUTPUT DURING OPERATION					
Maximum Output Current	15				Adc
Maximum Output Voltage	60		80		Vdc
OUTPUT DURING STANDBY (POWER OPTIMISER DISCONNECTED FROM INVERTER OR INVERTER OFF)					
Safety Output Voltage per Power Optimiser	1 ± 0.1				Vdc
STANDARD COMPLIANCE					
EMC	FCC Part 15 Class B; IEC 61000-6-2; IEC 61000-6-3				
Safety	IEC 62109-1 (class II safety); UL 1741				
Material	UL 94 V-0, UV Resistant				
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 155 x 30			129 x 165 x 45	mm
Weight	720			790	gr
Input Connector	MC4(4)				
Input Wire Length	0.1				m
Output Connector	MC4				
Output Wire Length	(+) 2.3, (-) 0.10				m
Operating Temperature Range(5)	-40 to +85				˚C
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 installations after August 1st, 2024, the Rated Input DC Power for S440 is 490W, and the Maximum Short Circuit Current (Isc) of Connected PV Panel is 15A.
(3) For installations after September 1st, 2024, the Rated Input DC Power for S500 and S500B is 550W.
(4) 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.
(5) Power derating is applied for ambient temperatures above +85°C for S440 and S500, and for ambient temperatures above +75°C for S500B and S650B. For details, refer to the Power Optimisers Temperature Derating technical note.

PV System Design Using a SolarEdge Inverter(6)		SolarEdge Home Genesis / SolarEdge Home Hub	Three Phase Residential	Three Phase Commercial	Units
Minimum String Length (Power Optimisers)	S440, S500	8	9	16	
	S500B, S650B	6	8	14	
Maximum String Length		25	25	50	
Maximum Nominal Power per String		5700	5625	11,250	W
Maximum Allowed Connected Power per String(7) (In multiple string designs, the maximum is permitted only when the difference in connected power between strings is 2,000W or less)		6800(8)	6800(8)	13,500(9)	
Parallel Strings of Different Lengths or Orientations		Yes			

(6) It is not allowed to mix S-series and P-series Power Optimisers in new installations in the same string.
(7) If the inverter's rated AC power ≤ maximum nominal power per string, then the maximum connected power per string will be able to reach up to the inverters maximum input DC power. For details, refer to the Single String Design Guidelines application note.
(8) For inverters with a rated AC power ≥ 7000W that are connected to at least two strings.
(9) In multiple string designs, it is allowed to install up to 13,500W per string when the difference in the connected power between strings is 2000W or less.

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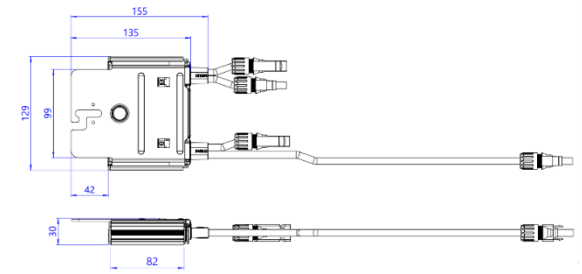
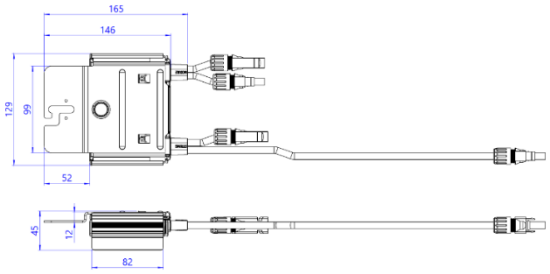
For Australia

S440 / S500 / S500B / S650B

S440, S500 (Flat Bracket)	S500B, S650B (Bent Bracket)
	

SolarEdge is a global leader in smart energy technology. By leveraging world-class engineering capabilities and with a relentless focus on innovation, SolarEdge creates smart energy solutions that power our lives and drive future progress.

SolarEdge developed an intelligent inverter solution that changed the way power is harvested and managed in photovoltaic (PV) systems. The SolarEdge DC optimized inverter maximizes power generation while lowering the cost of energy produced by the PV system.

Continuing to advance smart energy, SolarEdge addresses a broad range of energy market segments through its PV, storage, EV charging, UPS, and grid services solutions.

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