Power Optimizer

For Residential Installations

S650A



POWER OPTIMIZER

Designed for short string residential rooftops with compatible SolarEdge inverters*

- Small and multifaceted rooftops segment solution:
  - Reduced number of modules per inverter
  - Extended voltage, reducing yield factor losses
  - Improved design flexibility of multifaceted, complex roofs by reducing yield factor losses on the entire system
- Superior efficiency (99.5%)
- Mitigates diverse types of module mismatch loss, from manufacturing tolerance to partial shading
- Faster installations with simplified cable management and easy assembly using a single bolt
- Flexible system design for maximum space utilization
- Compatible with a wide range of modules, including high-powered and bifacial PV modules
- Advanced safety:
  - Patented Sense Connect technology- designed to automatically detect and prevent potential electric arcs at the connector level before an arc is created**
  - Patented SafeDC™ – module-level voltage shutdown, for installer and firefighter safety

* For compatible inverter information, see the Installation Specifications section in the specification table on the next page.
** Functionality subject to inverter model and firmware version.

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		UNIT
INPUT		
Rated Input DC Power(1)	650	W
Absolute Maximum Input Voltage (Voc)	80	Vdc
MPPT Operating Range	12.5 – 80	Vdc
Maximum Short Circuit Current (Isc) of Connected PV Module	15	Adc
Maximum Efficiency	99.5	%
Weighted Efficiency	98.6	%
Overvoltage Category	II	
OUTPUT DURING OPERATION		
Maximum Output Current	15	Adc
Maximum Output Voltage	110	Vdc
OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)		
Safety Output Voltage per Power Optimizer	1 ± 0.1	Vdc
STANDARD COMPLIANCE(2)		
EMC	FCC Part 15 Class B; IEC 61000-6-2; IEC 61000-6-3; CISPR11; EN 55011	
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		
Compatible SolarEdge Inverters(3)	SolarEdge Home Wave Inverter – Three Phase (SExxK-RW0TEBxN4) SolarEdge Home Hub Inverter – Three Phase (SExxK-RWB48BFN4)	
Maximum Allowed System Voltage	1000	Vdc
Dimensions (W x L x H)	129 x 165 x 45	mm
Weight	790	gr
Input Connector	MC4	
Input Wire Length	0.1	m
Output Connector	MC4	
Output Wire Length	(+) 2.3, (-) 0.10	m
Operating Temperature Range(4)	-40 to +85	˚C
Protection Rating	IP68	
Relative Humidity	0 – 100	%

(1) The 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 details about CE compliance, see Declaration of Conformity – CE.
(3) S650A is only compatible with:
- SolarEdge Home Wave Inverter – Three Phase (SExxK-RW0TEBxN4) from firmware version 4.23.XX and above, for inverters produced after WW42/2020. You can find the production date in the serial number on the inverter label (S/N: SJWWYY-xxxxxxxxx-xx).
- SolarEdge Home Hub Inverter – Three Phase (SExxK-RWB48BFN4) from firmware version 4.23.XX and above.

(4) Power derating is applied for ambient temperatures above +75°C for S650A.

PV System Design Using a SolarEdge Inverter(5)	SolarEdge Home Wave / Home Hub Inverters – Three Phase for 230/400V Grid(3)	Units
Minimum String Length (Power Optimizers)	10	
Maximum String Length (Power Optimizers)	38	
Maximum Continuous Power per String	11,250	W
Maximum Allowed Connected Power per String	13,500(6)	W
Parallel Strings of Different Lengths or Orientations	Yes	
Maximum Difference in Number of Power Optimizers Allowed Between the Shortest and Longest Parallel Strings	5 Power Optimizers	

(5) It is not allowed to mix S650A Power Optimizers with any other Power Optimizers on the same inverter.
(6) 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 inverter's maximum input DC power. Refer to the Single String Design Guidelines application note.

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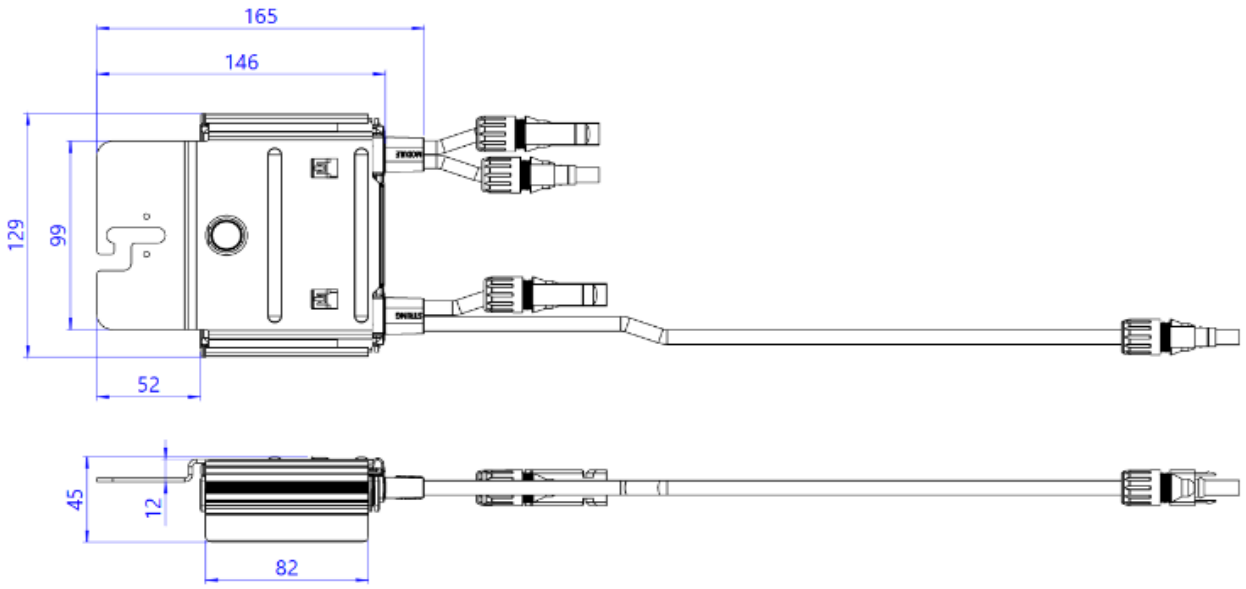
RoHS CE

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S650A (Bent Bracket)



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