

## **SolarEdge Power Optimizer** Module Add-On





- Up to 25% increase in power output
- Superior efficiency (99.5%) peak performance in both mismatched and unshaded conditions
- Flexible system design for maximum space utilization
- Next generation maintenance with module level monitoring and smart alerts
- Unprecedented installer and firefighter safety
- The most cost effective solution for residential, commercial and large field installations





## **SolarEdge Power Optimizer** OP250-LV OP300-MV Module Add-On OP400-EV OP400-MV

## **HIGHLIGHTS**

- Module level MPPT optimizes each module independently
- Dynamically tracks the global maximum operating point for both modules and PV inverter
- Module-level monitoring for automatic module and string level fault detection allowing easy maintenance
- Electric arc detection reduces fire hazards
- Unprecedented installer and firefighter safety mode safe module voltage when inverter is disconnected or off
- Connection of one or more modules to each <u>power optimizer</u>
- Lower installation costs with faster design, less wiring, DC disconnects and fuses
- Easy and flexible installation use the same installation methods as exist today
- Allows parallel uneven length strings and multi-faceted installations
- Allows connection of different module types simplifying inventory considerations
- Immediate installation feedback for quick commissioning

## **TECHNICAL DATA**

Rated Input DC power		OP250-LV	OP300-MV/OP400-MV	OP400-EV (Q4 2011)	
Absolute Maximum Input Voltage (Voc)	INPUT				
MPPT Operating Range         5 - 55         5 - 75         60 - 125         Vdc           Maximum Input Current         10         10         5.5         Adc           Reverse-Polarity Protection         Yes	Rated Input DC power	250	300 / 400	400	W
Maximum Input Current         10         10         5.5         Adc           Reverse-Polarity Protection         Yes	Absolute Maximum Input Voltage (Voc)	55	75	125	Vdc
Reverse Polarity Protection	MPPT Operating Range	5 - 55	5 - 75	60 - 125	Vdc
Maximum Efficiency	Maximum Input Current	10	10	5.5	Adc
European Weighted Efficiency   98.8	Reverse-Polarity Protection	Yes			
CEC Weighted Efficiency	Maximum Efficiency	99.5			%
Inductive Lightning Protection	European Weighted Efficiency	98.8			%
DUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING INVERTER)   Maximum Output Current   15	CEC Weighted Efficiency	98.7			%
OUTPUT DURING OPERATION (POWER OPTIMIZER CONNECTED TO OPERATING INVERTER)         Add           Maximum Output Current         15         Adc           Operating Output Voltage         5 · 60         Vdc           Total Maximum String Voltage (Controlled by Inverter) - US and EU 1-ph         500         Vdc           Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph         950         Vdc           OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OF INVERTER OFF)         Vdc           Safety Output Voltage per Power Optimizer Power Optimizer Power Optimizers per String (1 or More Modules per power optimizer)         8 (1-ph system) / 16 (3-ph system)         Vdc           Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)         Module power dependent; typically 20 · 25 (1-ph system) / 45 · 50 (3-ph system)         Ves           Parallel Strings of Different Lengths or Orientations         Yes         Yes           STANDARD COMPLIANCE         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3         Safety           EMC         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3         Safety           INSTALLATION SPECIFICATIONS         Yes           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         0.95 m / 3 ft length; 6 mm²; MC4         Input Connector         MC4 / Tyco / H+S / Amphenol – H4	Inductive Lightning Protection	1			m / ft
Maximum Output Current         15         Adc           Operating Output Voltage         5 - 60         Vdc           Total Maximum String Voltage (Controlled by Inverter) - US and EU 1-ph         500         Vdc           Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph         950         Vdc           OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)           Safety Output Voltage per Power Optimizer Pox System Design           Minimum Number of Power Optimizers per String (1 or More Modules per power optimizer)         8 (1-ph system) / 16 (3-ph system)         Vdc           Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)         Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)         Yes           Faran Lengths or Orientations         Yes           STANDARD COMPLIANCE           EMC         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3           Safety         IEC-62103 (class II safety), UL1741           Material         UL-94 (5-VA), UV Resistant           RoHS         Yes           INSTALLATION SPECIFICATIONS           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         0.95 m / 3 ft length; 6 mm²; MC4	Overvoltage Category	II			
Operating Output Voltage         5 - 60         Vdc           Total Maximum String Voltage (Controlled by Inverter) - US and EU 1-ph         500         Vdc           Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph         950         Vdc           OUTPUT DURING STANDBY (Power OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)           Safety Output Voltage per Power Optimizer per String (1 or More Modules per power optimizer)         8 (1-ph system) / 16 (3-ph system)         Vdc           Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Vec           Parallel Strings of Different Lengths or Orientations         Yes         Vec           STANDARD COMPLIANCE         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3         Safety           EMC         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3         Safety           Material         UL-94 (5-VA), UV Resistant           RoHS         Yes           INSTALLATION SPECIFICATIONS         Yes           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         0.95 m / 3 ft length; 6 mm²; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         'C / °F </td <td>OUTPUT DURING OPERATION (POWER OPTIMIZER O</td> <td>CONNECTED TO OPERATION</td> <td>NG INVERTER)</td> <td></td> <td></td>	OUTPUT DURING OPERATION (POWER OPTIMIZER O	CONNECTED TO OPERATION	NG INVERTER)		
Total Maximum String Voltage (Controlled by Inverter) - US and EU 1-ph  Total Maximum String Voltage (Controlled by Inverter) - US and EU 1-ph  Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph  OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OR INVERTER OFF)  Safety Output Voltage per Power Optimizer  Safety Output Voltage per Power Optimizer prover optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Parallel Strings of Different Lengths or Orientations  Torientations  Tabloard Compliance  EMC  FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3  Safety  IEC-62103 (class II safety), UL1741  Material  UL-94 (5-VA), UV Resistant  RoHS  Yes  INSTALLATION SPECIFICATIONS  Dimensions (WXLH)  120x130x37 / 4.72x5.11x1.45  mm / i  Weight  0.95 m / 3 ft length; 6 mm²; MC4  Input Connector  MC4 / Tyco / H+S / Amphenol – H4  Operating Temperature Range  -40 - +65 / -40 - +150  'C / °F  Protection Rating	Maximum Output Current	15			Adc
Inverter) - US and EU 1-ph  Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph  Output During Standby (Power Optimizer Disconnected From Inverter or Inverter of Safety Output Voltage per Power Optimizer  Safety Output Voltage per Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Module power dep	Operating Output Voltage	5 - 60			Vdc
Inverter) - EU 3-ph  OUTPUT DURING STANDBY (POWER OPTIMIZER DISCONNECTED FROM INVERTER OF INVERTER OFF)  Safety Output Voltage per Power Optimizer  PV SYSTEM DESIGN  Minimum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Parallel Strings of Different Lengths or Orientations  STANDARD COMPLIANCE  EMC FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3  Safety IEC-62103 (class II safety), UL1741  Material UL-94 (5-VA), UV Resistant  ROHS Yes  INSTALLATION SPECIFICATIONS  Dimensions (WXLXH) 120x130x37 / 4.72x5.11x1.45 mm / i  Weight 450 / 1.0 gr / Ib  Output PV Wire 0.95 m / 3 ft length; 6 mm²; MC4  Input Connector MC4 / Tyco / H+S / Amphenol – H4  Operating Temperature Range -40 - +65 / -40 - +150 °C / °F  Protection Rating IP65 / NEMA 4	Total Maximum String Voltage (Controlled by Inverter) - US and EU 1-ph	500			Vdc
Safety Output Voltage per Power Optimizer         1         Vdc           PV SYSTEM DESIGN         Winimum Number of Power Optimizers per String (1 or More Modules per power optimizer)         8 (1-ph system) / 16 (3-ph system)         Section (1 or More Modules per power optimizer)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system) / 45 - 50 (3-ph system)         Module power dependent; typically 20 - 25 (1-ph system)         Module power dependent; typically 20 - 25 (1-ph system)         Module power dependent; typically 20 - 25 (1-ph system)         Module power dependent; typically 20 - 25 (1-ph system)         Module power dependent; typically 20 - 25 (1-ph system)         Module power dependent; typically 20 - 25 (1-ph system)         Module power dependent; typically 20 - 25 (1-ph s	Total Maximum String Voltage (Controlled by Inverter) - EU 3-ph	950			Vdc
PV SYSTEM DESIGN  Minimum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Module power dependent; typically 20 - 25 (1-ph system) / String (1 or More Modules per power optimizer)  Parallel Strings of Different Lengths or Orientations  STANDARD COMPLIANCE  EMC FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3  Safety IEC-62103 (class II safety), UL1741  Material UL-94 (5-VA), UV Resistant  RoHS Yes  INSTALLATION SPECIFICATIONS  Dimensions (WXLXH) 120x130x37 / 4.72x5.11x1.45 mm / i  Weight 450 / 1.0 gr / lb  Output PV Wire 0.95 m / 3 ft length; 6 mm²; MC4  Input Connector MC4 / Tyco / H+S / Amphenol – H4  Operating Temperature Range -40 - +65 / -40 - +150 °C / °F  Protection Rating IP65 / NEMA 4	OUTPUT DURING STANDBY (POWER OPTIMIZER DIS	SCONNECTED FROM INVE	RTER OR INVERTER OFF)		
Minimum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)  Parallel Strings of Different Lengths or Orientations  STANDARD COMPLIANCE  EMC FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3  Safety IEC-62103 (class II safety), UL1741  Material UL-94 (5-VA), UV Resistant  ROHS Yes  INSTALLATION SPECIFICATIONS  Dimensions (WxLxH) 120x130x37 / 4.72x5.11x1.45 mm / i  Weight 450 / 1.0 gr / lb  Output PV Wire 0.95 m / 3 ft length ; 6 mm²; MC4  Input Connector MC4 / Tyco / H+S / Amphenol – H4  Operating Temperature Range -40 - +65 / -40 - +150 °C / °F  Protection Rating	Safety Output Voltage per Power Optimizer		1		Vdc
String (1 or More Modules per power optimizer)  Maximum Number of Power Optimizers per String (1 or More Modules per power optimizers)  Parallel Strings of Different Lengths or Orientations  STANDARD COMPLIANCE  EMC FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3  Safety IEC-62103 (class II safety), UL1741  Material UL-94 (5-VA), UV Resistant  RoHS  INSTALLATION SPECIFICATIONS  Dimensions (WxLxH)  Weight 120x130x37 / 4.72x5.11x1.45  Mmm / i Weight 450 / 1.0  Output PV Wire 0.95 m / 3 ft length; 6 mm²; MC4  Input Connector MC4 / Tyco / H+S / Amphenol – H4  Operating Temperature Range 1P65 / NEMA 4	PV SYSTEM DESIGN				
String (1 or More Modules per power optimizer)         45 - 50 (3-ph system)           Parallel Strings of Different Lengths or Orientations         Yes           STANDARD COMPLIANCE           EMC         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3           Safety         IEC-62103 (class II safety), UL1741           Material         UL-94 (5-VA), UV Resistant           ROHS         Yes           INSTALLATION SPECIFICATIONS         Technology           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         450 / 1.0         gr / lb           Output PV Wire         0.95 m / 3 ft length; 6 mm²; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         "C / °F           Protection Rating         IP65 / NEMA 4	Minimum Number of Power Optimizers per String (1 or More Modules per power optimizer)	8 (1-ph system) / 16 (3-ph system)			
Tes           STANDARD COMPLIANCE           EMC         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3           Safety         IEC-62103 (class II safety), UL1741           Material         UL-94 (5-VA), UV Resistant           RoHS         Yes           INSTALLATION SPECIFICATIONS         Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         450 / 1.0         gr / lb           Output PV Wire         0.95 m / 3 ft length ; 6 mm² ; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	Maximum Number of Power Optimizers per String (1 or More Modules per power optimizer)				
EMC         FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3           Safety         IEC-62103 (class II safety), UL1741           Material         UL-94 (5-VA), UV Resistant           RoHS         Yes           INSTALLATION SPECIFICATIONS           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         450 / 1.0         gr / lb           Output PV Wire         0.95 m / 3 ft length ; 6 mm² ; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol - H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	Parallel Strings of Different Lengths or Orientations	Yes			
Safety         IEC-62103 (class II safety), UL1741           Material         UL-94 (5-VA), UV Resistant           ROHS         Yes           INSTALLATION SPECIFICATIONS           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         450 / 1.0         gr / lb           Output PV Wire         0.95 m / 3 ft length ; 6 mm² ; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol - H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	STANDARD COMPLIANCE				
Material         UL-94 (5-VA), UV Resistant           ROHS         Yes           INSTALLATION SPECIFICATIONS           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         450 / 1.0         gr / lb           Output PV Wire         0.95 m / 3 ft length ; 6 mm² ; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	EMC	FCC Part15 Class B, IEC61000-6-2, IEC61000-6-3			
Yes   INSTALLATION SPECIFICATIONS	Safety	IEC-62103 (class II safety), UL1741			
RoHS         Yes           INSTALLATION SPECIFICATIONS           Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         450 / 1.0         gr / lb           Output PV Wire         0.95 m / 3 ft length ; 6 mm² ; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	Material	UL-94 (5-VA), UV Resistant			
Dimensions (WxLxH)         120x130x37 / 4.72x5.11x1.45         mm / i           Weight         450 / 1.0         gr / lb           Output PV Wire         0.95 m / 3 ft length ; 6 mm² ; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	RoHS	Yes			
Weight         450 / 1.0         gr / Ib           Output PV Wire         0.95 m / 3 ft length; 6 mm²; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	INSTALLATION SPECIFICATIONS				
Output PV Wire         0.95 m / 3 ft length; 6 mm²; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	Dimensions (WxLxH)	120x130x37 / 4.72x5.11x1.45			mm / in
Output PV Wire         0.95 m / 3 ft length; 6 mm²; MC4           Input Connector         MC4 / Tyco / H+S / Amphenol – H4           Operating Temperature Range         -40 - +65 / -40 - +150         °C / °F           Protection Rating         IP65 / NEMA 4	Weight	450 / 1.0			gr / lb
Input Connector MC4 / Tyco / H+S / Amphenol – H4  Operating Temperature Range -40 - +65 / -40 - +150 °C / °F  Protection Rating IP65 / NEMA 4	Output PV Wire	0.95 m / 3 ft length ; 6 mm² ; MC4			
Operating Temperature Range -40 - +65 / -40 - +150 °C / °F Protection Rating IP65 / NEMA 4	Input Connector	MC4 / Tyco / H+S / Amphenol – H4			
Protection Rating IP65 / NEMA 4	Operating Temperature Range	-40 - +65 / -40 - +150			°C / °F
	Protection Rating	IP65 / NEMA 4			
	Relative Humidity	0 - 100			%

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