

PVI-3.8-I-OUTD PVI-4.6-I-OUTD

GENERAL SPECIFICATIONS OUTDOOR MODELS

This isolated inverter is optimized for use in residential applications requiring PV array grounding, such as some thin-film modules. This inverter has also been designed to serve all countries and regions with specific field-configurable set-ups available for all major country grid codes and display languages.

The 3.8 and 4.6kW isolated inverters have all the usual Aurora benefits including dual input section to process two strings with independent MPPT, high speed and precise MPPT algorithm for real-time power tracking and energy harvesting, as well as regular high performance efficiencies of up to 96.8%. The wide input voltage range makes the inverter suitable to low power installations with reduced string size.

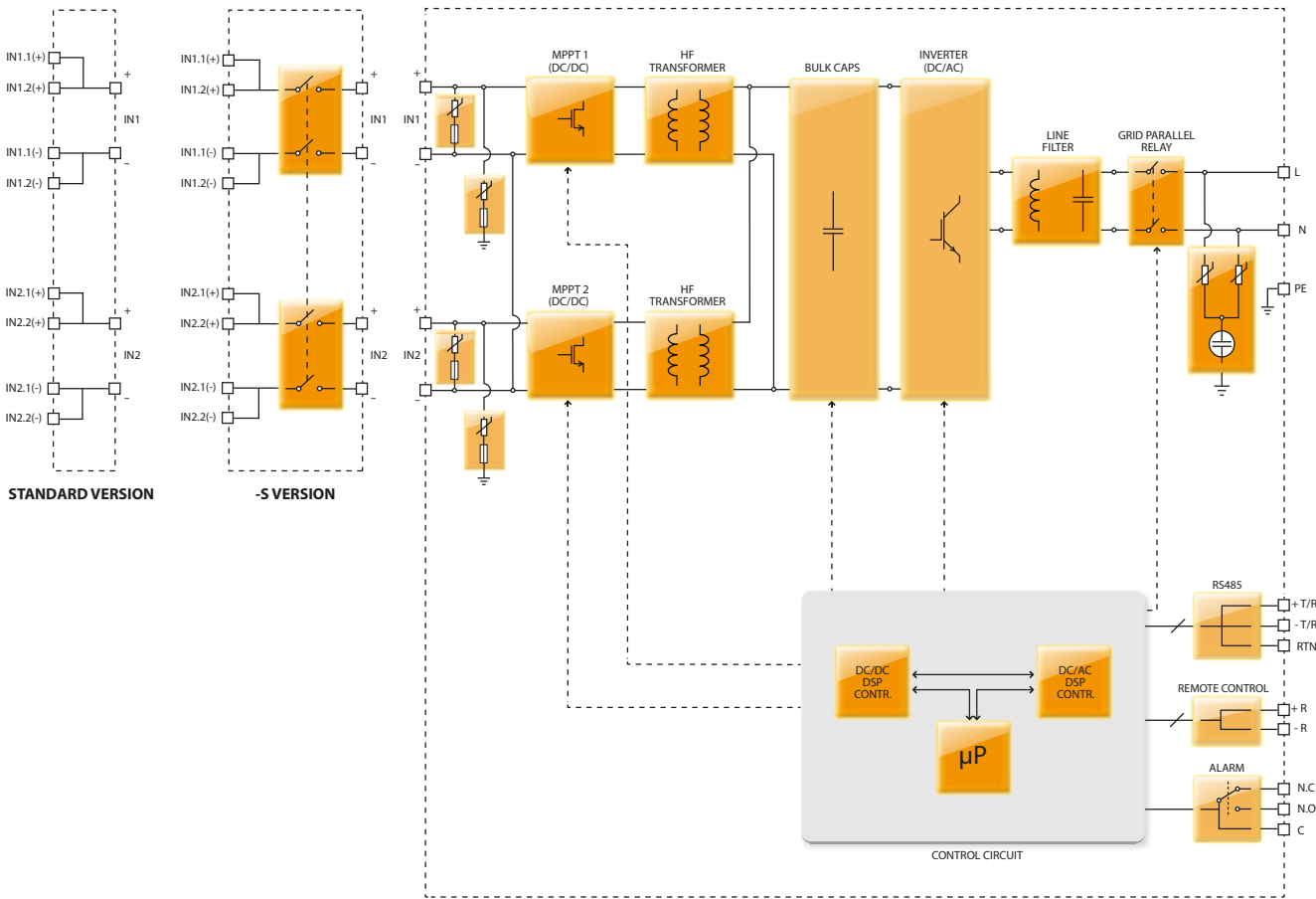
Its high frequency isolated topology allows this unit to be lightweight and compact in size to help with transportation and installation. This rugged outdoor inverter has been designed as a completely sealed unit to withstand the harshest environmental conditions.



Features

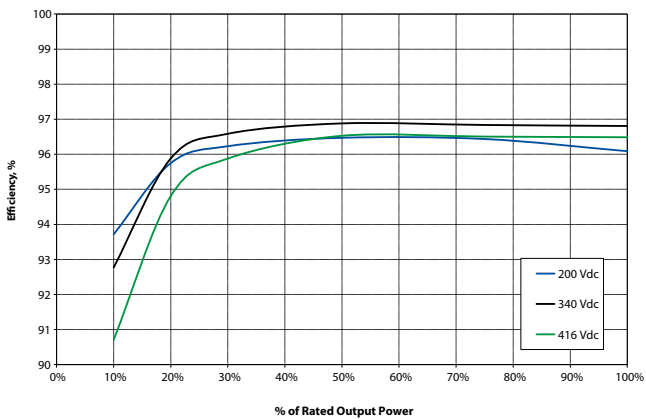
- Single phase output
- Each inverter is set on specific grid codes which can be selected in the field
- Night Wake up button to access energy harvesting data and error log
- Dual input sections with independent MPP tracking, allows optimal energy harvesting from two sub-arrays oriented in different directions
- Wide input range
- High speed and precise MPPT algorithm for real time power tracking and improved energy harvesting
- Flat efficiency curves ensure high efficiency at all output levels ensuring consistent and stable performance across the entire input voltage and output power range
- Outdoor enclosure for unrestricted use under any environmental conditions
- RS-485 communication interface (for connection to laptop or datalogger)
- Compatible with PVI-RADIOMODULE for wireless communication with Aurora PVI-DESKTOP

BLOCK DIAGRAM OF PVI-3.8/4.6-I-OUTD

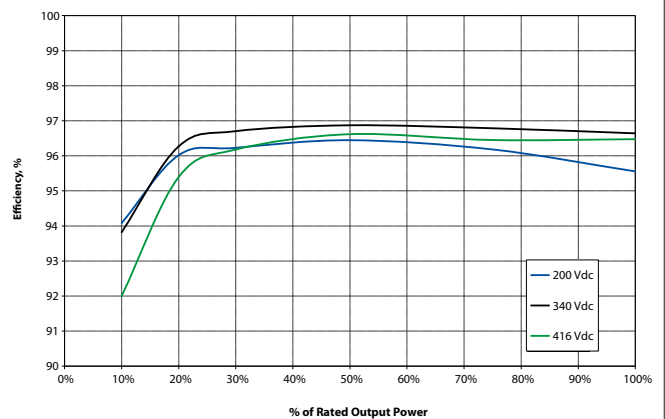


Block Diagram and Efficiency Curves

PVI-3.8-I-OUTD



PVI-4.6-I-OUTD



PARAMETER	PVI-3.8-I-OUTD	PVI-4.6-I-OUTD
Input Side		
Absolute Maximum DC Input Voltage ($V_{max,abs}$)	520 V	
Start-up DC Input Voltage (V_{start})	200 V (adj. 120...350 V)	
Operating DC Input Voltage Range ($V_{dcmi...}V_{dcmax}$)	0.7 x V_{start} ...520 V	
Rated DC Input Power (P_{dcr})	4000 W	4800 W
Number of Independent MPPT	2 ⁽⁴⁾	
Maximum DC Input Power for each MPPT ($P_{MPPTmax}$)	3000 W	
DC Input Voltage Range with Parallel Configuration of MPPT at P_{acr}	160...470 V	180...470 V
DC Power Limitation with Parallel Configuration of MPPT	Linear Derating From MAX to Null [470V ≤ V_{MPPT} ≤ 520V]	
DC Power Limitation for each MPPT with Independent Configuration of MPPT at P_{acr} , max unbalance example	3000 W [210V ≤ V_{MPPT} ≤ 470V] the other channel: P_{dcr} -3000W [90V ≤ V_{MPPT} ≤ 470V]	3000 W [210V ≤ V_{MPPT} ≤ 470V] the other channel: P_{dcr} -3000W [130V ≤ V_{MPPT} ≤ 470V]
Maximum DC Input Current (I_{dcmx}) / for each MPPT ($I_{MPPTmax}$)	25.0 A / 12.5 A	28.0 A / 14.0 A
Maximum Input Short Circuit Current for each MPPT	22.0 A	
Number of DC Inputs Pairs for each MPPT	2	
DC Connection Type	Tool Free PV Connector WM / MC4	
Input Protection		
Reverse Polarity protection	Yes, from limited current source	
Input Over Voltage Protection for each MPPT - Varistor	2	
Photovoltaic Array Isolation Control	According to local standard	
DC Switch Rating for each MPPT (Version with DC Switch)	25 A / 600 V	
Output Side		
AC Grid Connection Type	Single phase	
Rated AC Power ($P_{acr}@cos\phi=1$)	3800 W	4600 W
Maximum AC Output Power ($P_{acmax}@cos\phi=1$)	4200 W ⁽⁵⁾	5000 W ⁽⁶⁾
Maximum Apparent Power (S_{max})	4220 VA	5110 VA
Rated AC Grid Voltage (V_{acr})	230 V	
AC Voltage Range	180...264 V ⁽¹⁾	
Maximum AC Output Current ($I_{ac,max}$)	18.2 A ⁽²⁾	22.5 A
Contributory fault current	25.0 A	32.0 A
Rated Output Frequency (f)	50 Hz / 60 Hz	
Output Frequency Range ($f_{min...}f_{max}$)	47...53 Hz / 57...63 Hz ⁽³⁾	
Nominal Power Factor and adjustable range	> 0.995, adj. ± 0.9 with P_{acr} =3.8 kW	> 0.995, adj. ± 0.9 with P_{acr} =4.6 kW
Total Current Harmonic Distortion	< 2%	
AC Connection Type	Screw terminal block	
Output Protection		
Anti-Islanding Protection	According to local standard	
Maximum AC Overcurrent Protection	20.0 A	25.0 A
Output Overvoltage Protection - Varistor	2 (L - N / L - PE)	
Operating Performance		
Maximum Efficiency (η_{max})	96.8%	
Weighted Efficiency (EURO/CEC)	96.5% / -	
Feed In Power Threshold	24.0 W	
Stand-by Consumption	< 8.0 W	
Communication		
Wired Local Monitoring	PVI-USB-RS232_485 (opt.), PVI-DESKTOP (opt.)	
Remote Monitoring	PVI-AEC-EVO (opt.), AURORA LOGGER (opt.)	
Wireless Local Monitoring	PVI-DESKTOP (opt.) with PVI-RADIOMODULE (opt.)	
User Interface	16 characters x 2 lines LCD display	
Environmental		
Ambient Temperature Range	-25...+60°C (-13...+ 140°F)	-25...+60°C (-13...+ 140°F) with derating above 50°C (122°F)
Relative Humidity	0...100 % condensing	
Noise Emission	< 50 dB(A) @ 1 m	
Maximum Operating Altitude without Derating	2000 m / 6560 ft	
Physical		
Environmental Protection Rating	IP 65	
Cooling	Natural	
Dimension (H x W x D)	712mm x 325mm x 222mm / 28.0" x 12.8" x 8.7"	
Weight	< 24.0 kg / 53.0 lb	
Mounting System	Wall bracket	
Safety		
Isolation Level	HF Transformer	
Marking	CE	
Safety and EMC Standard	EN 50178, EN62109-1, EN62109-2, AS/NZS3100, AS/NZS 60950, EN61000-6-2, EN61000-6-3, EN61000-3-2, EN61000-3-6	EN 50178, EN62109-1, EN62109-2, AS/NZS3100, AS/NZS 60950, EN61000-6-2, EN61000-6-3, EN61000-3-11, EN61000-3-15
Grid Standard	CEI 0-21, VDE 0126-1-1, VDE-AR-N 4105, G83/1, G59/2, EN 50438 (not for all national appendices), RD1699, AS 4777, C10/11, IEC 61727, ABNT NBR 16149	CEI 0-21, VDE 0126-1-1, VDE-AR-N 4105, G59/2, EN 50438 (not for all national appendices), RD1699, AS 4777, C10/11, IEC 61727, ABNT NBR 16149
Available Products Variants		
Standard	PVI-3.8-I-OUTD	PVI-4.6-I-OUTD
With DC Switch	PVI-3.8-I-OUTD-S	PVI-4.6-I-OUTD-S

- The AC voltage range may vary depending on specific country grid standard
- For UK G83/1 setting, maximum output current limited to 16A.
- The Frequency range may vary depending on specific country grid standard
- Independent MPPT just with negative ground
- Limited to 3800 W for Germany
- Limited to 4600 W for Germany

Remark. Features not specifically listed in the present data sheet are not included in the product



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Power-One Renewable Energy

Worldwide Sales Offices

<u>Country</u>	<u>Name/Region</u>	<u>Telephone</u>	<u>Email</u>
Australia	Asia Pacific	+61 2 9735 3111	sales.australia@power-one.com
China (Shenzhen)	Asia Pacific	+86 755 2988 5888	sales.china@power-one.com
China (Shanghai)	Asia Pacific	+86 21 5505 6907	sales.china@power-one.com
India	Asia Pacific	+65 6896 3363	sales.india@power-one.com
Japan	Asia Pacific	03-4580-2714 / +81-3-4580-2714	sales.japan@power-one.com
Singapore	Asia Pacific	+65 6896 3363	sales.singapore@power-one.com
Belgium / The Netherlands / Luxembourg	Europe	+32 2 206 0338	sales.belgium@power-one.com
France	Europe	+33 (0) 141 796 140	sales.france@power-one.com
Germany	Europe	+49 7641 955 2020	sales.germany@power-one.com
Greece	Europe	00 800 00287672	sales.greece@power-one.com
Italy	Europe	00 800 00287672	sales.italy@power-one.com
Spain	Europe	+34 91 879 88 54	sales.spain@power-one.com
United Kingdom	Europe	+44 1903 823 323	sales.uk@power-one.com
Dubai	Middle East	+971 50 100 4142	sales.dubai@power-one.com
Israel	Middle East	+972 0 3 544 8884	sales.israel@power-one.com
Canada	North America	+1 877 261-1374	sales.canada@power-one.com
USA East	North America	+1 877 261-1374	sales.usaeast@power-one.com
USA Central	North America	+1 877 261-1374	sales.usacentral@power-one.com
USA West	North America	+1 877 261-1374	sales.usawest@power-one.com

Ver. 2013-04.0-EN - All products are subject to technical improvements without notice.