

PVI-3.8-I PVI-4.6-I

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 96.9%. The wide input voltage range makes the inverter suitable to low power installations with reduced string size.

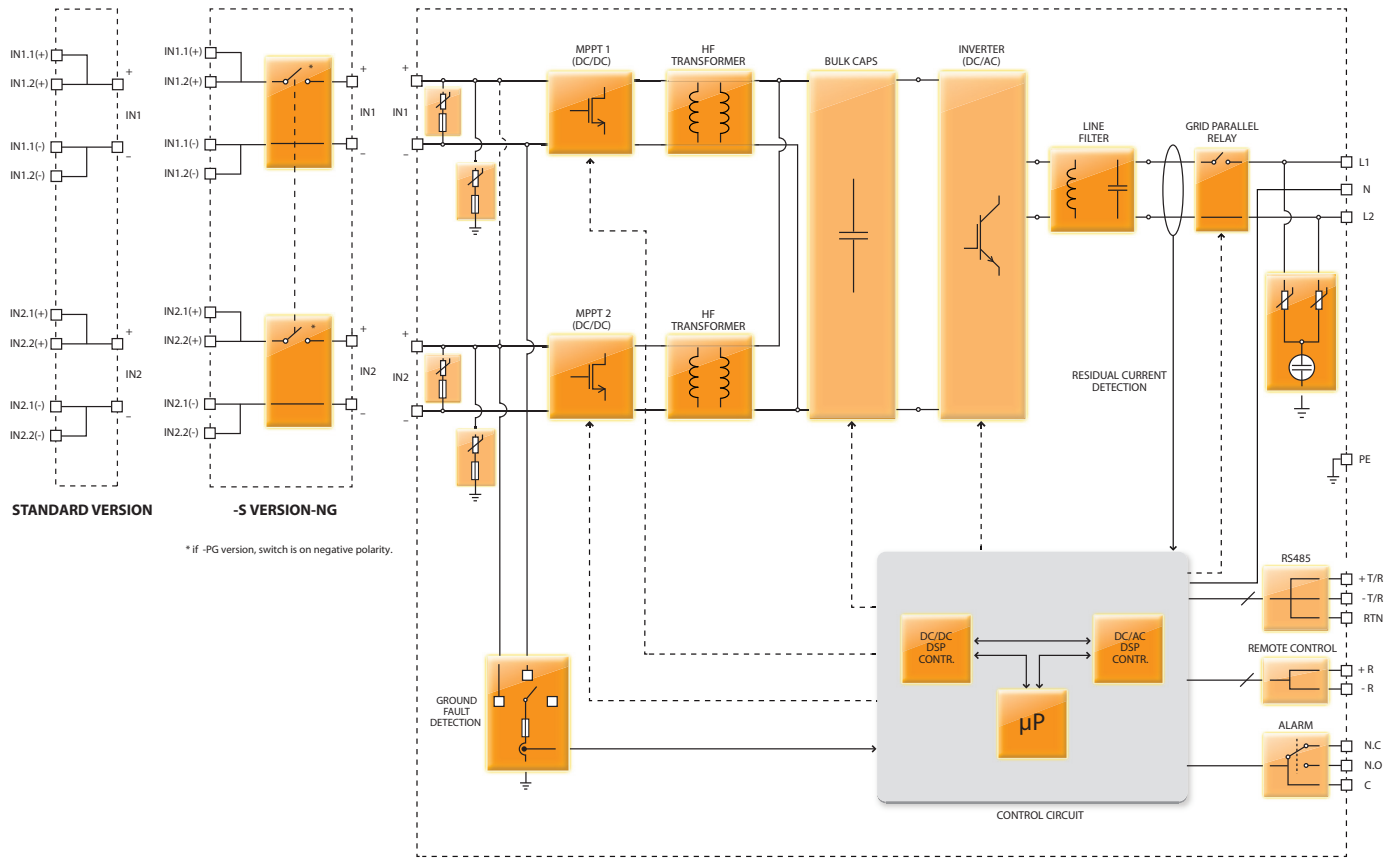
Its high frequency isolated topology allows this unit to be light weight and compact in size to help with transportation and installation. This rugged outdoor inverter has been designed as a completely sealed unit to withstand the harshest environmental conditions.



Features

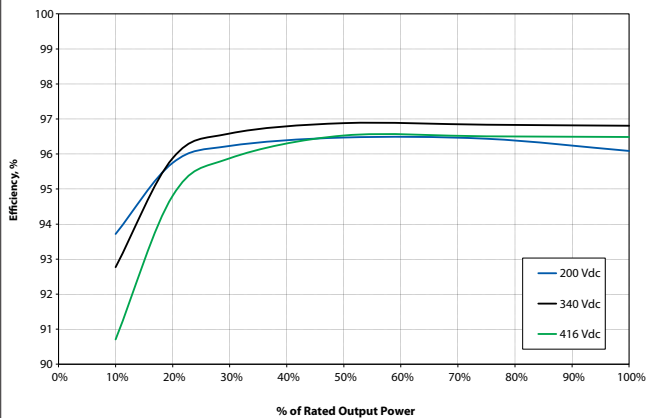
- Each inverter is set on specific grid codes which can be selected in the field
- Single phase output
- Night Wake up button to access energy harvesting data and error log
- Dual input sections with independent MPPT, allows optimal energy harvesting from two sub-arrays oriented in different directions
- 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-I-OUTD AND PVI-4.6-I-OUTD FOR NORTH AMERICA

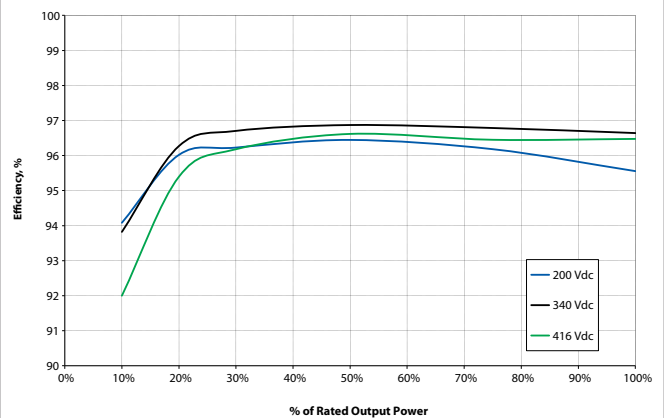


Block Diagram and Efficiency Curves

PVI-3.8-I-OUTD-US



PVI-4.6-I-OUTD-US



TECHNICAL DATA	VALUES	PVI-3.8-I-OUTD-US			PVI-4.6-I-OUTD-US		
Nominal Output Power	W	3300	3800		4600		
Maximum Output Power	W	3300	3800	4200**	5000**	5000**	5000**
Rated Grid AC Voltage	V	208	240	277	208	240	277
Input Side (DC)							
Number of Independent MPPT Channels****		2			2		
Maximum Usable Power for Each Channel	W	3000			3000		
Absolute Maximum Voltage (Vmax)	V	520			520		
Start-Up Voltage (Vstart)	V	200 (adj. 120-350)			200 (adj. 120-350)		
Full Power MPPT Voltage Range	V	200-470			200-470		
Operating MPPT Voltage Range	V	0.7xVstart-520			0.7xVstart-520		
Maximum Current (Idcmax) for both MPPT in Parallel	A	25			28		
Maximum Usable Current per Channel	A	12.5			14		
Maximum Short Circuit Current Limit per Channel	A	15.6			17		
Number of Wire Landing Terminals Per Channel		2 Pairs (1 Pair on -S Version)			2 Pairs (1 Pair on -S Version)		
Array Wiring Termination		Screw Terminal block, AWG8-AWG4					
Output Side (AC)							
Grid Connection Type		1Ø/2W	Split-Ø/3W	1Ø/2W	1Ø/2W	Split-Ø/3W	1Ø/2W
Adjustable Voltage Range (Vmin-Vmax)	V	183-228	211-264	244-304	183-228	211-264	244-304
Grid Frequency	Hz	60			60		
Adjustable Grid Frequency Range	Hz	57-60.5			57-60.5		
Maximum Current (Iacmax)	A _{RMS}	16			23	20	20
Power Factor		> 0.995			> 0.995		
Total Harmonic Distortion At Rated Power	%	< 2			< 2		
Grid Wiring Termination Type		Screw Terminal block, AWG8-AWG4					
Protection Devices							
Input							
Reverse Polarity Protection		Yes			Yes		
Over-Voltage Protection Type		Varistor, 2 for each channel			Varistor, 2 for each channel		
PV Array Ground Fault Detection		Meets UL1741/NEC 690.5 requirements GFDI (for use with either Positive or Negative Grounded Arrays)			Meets UL1741/NEC 690.5 requirements GFDI (for use with either Positive or Negative Grounded Arrays)		
PV Array Isolation Control							
Output							
Anti-Islanding Protection		Meets UL 1741/IEEE 1547 requirements			Meets UL 1741/IEEE 1547 requirements		
Over-Voltage Protection Type		Varistor, 2 (L ₁ - L ₂ / L ₁ - G)			Varistor, 2 (L ₁ - L ₂ / L ₁ - G)		
Maximum AC OCPD Rating	A	20	20	20	30	25	25
Efficiency							
Maximum Efficiency	%	96.9			96.9		
CEC Efficiency	%	96	96.5	96.5	96	96.5	96.5
Operating Performance							
Stand-by Consumption	W _{RMS}	< 8			< 8		
Night time consumption	W _{RMS}	< 0.6			< 0.6		
Communication							
User-Interface		16 characters x 2 lines LCD display					
Remote Monitoring (1xRS485 incl.)		AURORA-UNIVERSAL (opt.)					
Wired Local Monitoring (1xRS485 incl.)		PVI-USB-RS485_232 (opt.), PVI-DESKTOP (opt.)					
Wireless Local Monitoring		PVI-DESKTOP (opt.) with PVI-RADIOMODULE (opt.)					
Environmental							
Ambient Air Operating Temperature Range	°F (°C)	-13 to +140 (-25 to +60)			-13 to +140 (-25 to +60) with derating above 122 (50)		
Ambient Air Storage Temperature Range	°F (°C)	-40 to 176 (-40 to +80)			-40 to 176 (-40 to +80)		
Relative Humidity	% RH	0-100 condensing			0-100 condensing		
Acoustic Noise Emission Level	db (A) @1m	< 50			< 50		
Maximum Operating Altitude without Derating	ft(m)	6560 (2000)			6560 (2000)		
Mechanical Specifications							
Enclosure rating		NEMA 4X			NEMA 4X		
Cooling		Natural Convection			Natural Convection		
Dimensions (H x W x D)	in (mm)	37.5 x 12.8 x 8.7 (952 x 325 x 222) -S Version					
Weight	lb/(kg)	< 61.0 (28.0) -S version			< 61.0 (28.0) -S version		
Shipping Weight	lb/(kg)	72.0 (32.7) -S version			72.0 (32.7) -S version		
Mounting System		Wall bracket			Wall bracket		
Conduit Connections***		Trade Size Kos: 3/4" or 1" (w/ Ring Reducer); 3 places (side, front, rear) 2ea x 1/2" KO for monitoring					
DC Switch Rating (Per Contact)	A/V	25 / 600			25 / 600		
Safety							
Isolation Level		HF Transformer			HF Transformer		
Safety and EMC Standard		UL 1741, CSA - C22.2 N. 107.1-01			UL 1741, CSA - C22.2 N. 107.1-01		
Safety Approval		cCSA _{us}			cCSA _{us}		
Warranty							
Standard Warranty	years	10			10		
Extended Warranty	years	15 & 20			15 & 20		
Available Models							
Standard - Positive Ground		PVI-3.8-I-OUTD-US-PG			PVI-4.6-I-OUTD-US-PG		
Standard - Negative Ground		PVI-3.8-I-OUTD-US-NG			PVI-4.6-I-OUTD-US-NG		
With DC Switch - Positive Ground		PVI-3.8-I-OUTD-US-S-PG			PVI-4.6-I-OUTD-US-S-PG		
With DC Switch - Negative Ground		PVI-3.8-I-OUTD-US-S-NG			PVI-4.6-I-OUTD-US-S-NG		

*All data is subject to change without notice

** Capability enabled at nominal AC voltage and with sufficient DC power available

*** When equipped with optional DC Switch and Wiring Box

****Independent MPPT only with negative ground



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