

PVI-3.0-TL PVI-3.6-TL PVI-4.2-TL

GENERAL SPECIFICATIONS OUTDOOR MODELS

The most common residential inverter is the ideal size for an average-sized family home. This family of single-phase string inverter complements the typical number of rooftop solar panels, allowing home-owners to get the most efficient energy harvesting for the size of the property. This rugged outdoor inverter has been designed as a completely sealed unit to withstand the harshest environmental conditions.

One of the key benefits of the Uno family of single-phase inverters is the dual input section to process two strings with independent MPPT especially useful for rooftop installations with two different orientations (ie East and West). The high speed MPPT offers real-time power tracking and improved energy harvesting.

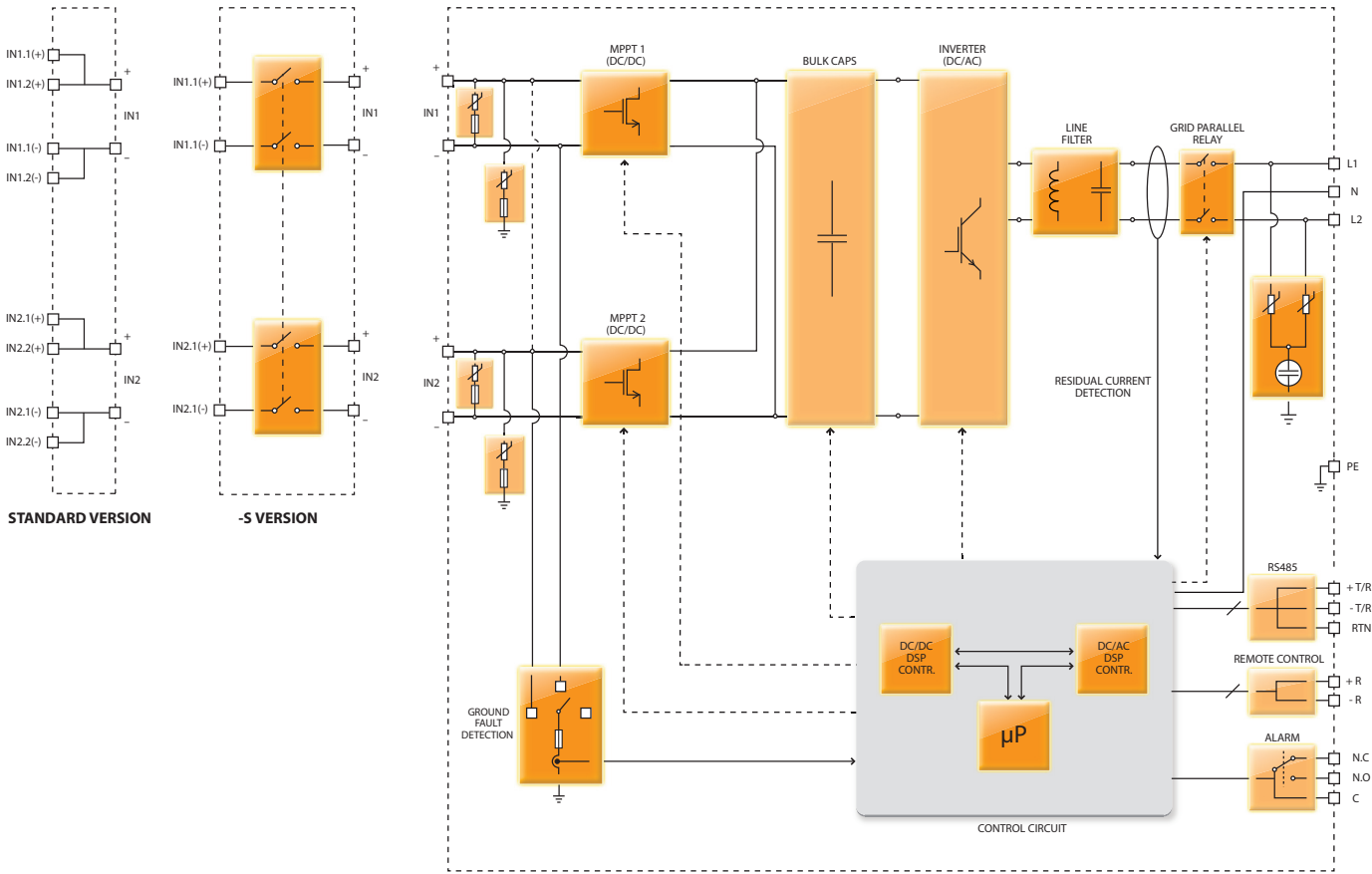
The transformerless operation gives the highest efficiency of up to 97.0%. The wide input voltage range makes the inverter suitable to low power installations with reduced string size.



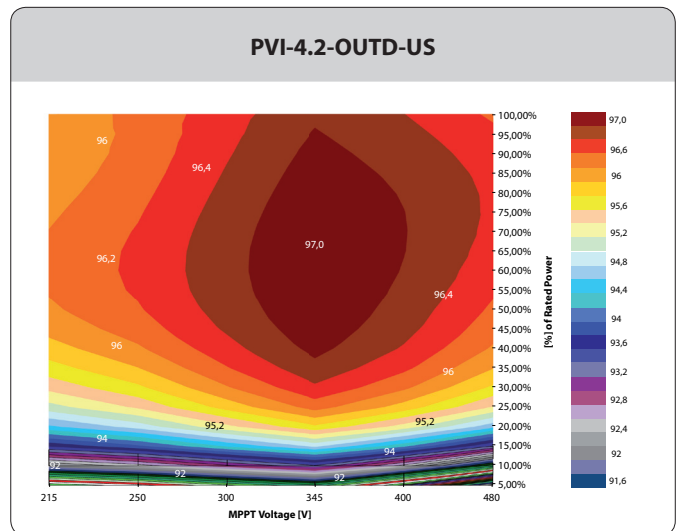
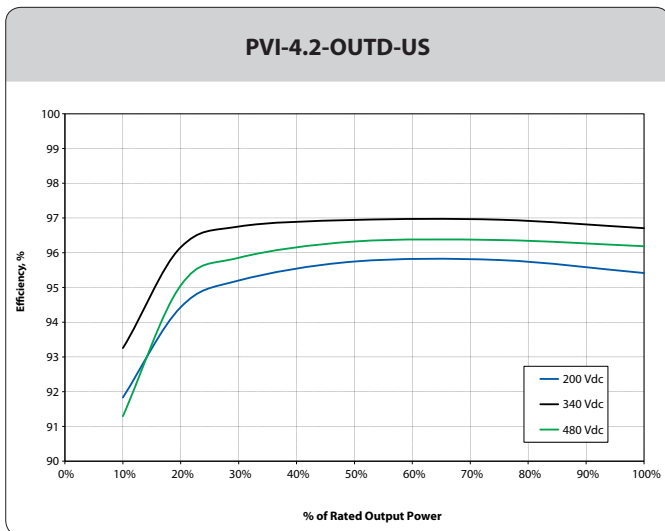
Features

- Each inverter is set on specific grid codes which can be selected in the field
- Single phase output
- 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
- Integrated DC disconnect switch in compliance with international Standards (-S Version)
- 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-3.0-OUT, PVI-3.6-OUT AND PVI-4.2-OUT FOR NORTH AMERICA



Block Diagram and Efficiency Curves



TECHNICAL DATA	VALUES	PVI-3.0-OUTD-US			PVI-3.6-OUTD-US			PVI-4.2-OUTD-US		
Nominal Output Power	W	3000			3600			4200		
Maximum Output Power	W	3000	3300**	3300**	3600	4000**	4000**	4200	4600**	4600**
Rated Grid AC Voltage	V	208	240	277	208	240	277	208	240	277
Input Side (DC)										
Number of Independent MPPT Channels		2			2			2		
Maximum Usable Power for Each Channel	W	2000			3000			3000		
Absolute Maximum Voltage (Vmax)	V	600			600			600		
Start-Up Voltage (Vstart)	V	200 (adj. 120-350)			200 (adj. 120-350)			200 (adj. 120-350)		
Full Power MPPT Voltage Range	V	160-530			120-530			140-530		
Operating MPPT Voltage Range	V	0.7xVstart-580			0.7xVstart-580			0.7xVstart-580		
Maximum Current (Idcmax) for both MPPT in Parallel	A	20			32			32		
Maximum Usable Current per Channel	A	10			16			16		
Maximum Short Circuit Current Limit per Channel	A	12.5			20			20		
Number of Wire Landing Terminals Per Channel		2 Pairs (1 on -S version)			2 Pairs (1 on -S version)			2 Pairs (1 on -S version)		
Array Wiring Termination		Terminal block, Pressure Clamp, AWG10-AWG4								
Output Side (AC)										
Grid Connection Type		1Ø/2W	Split-Ø/3W	1Ø/2W	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	183-228	211-264	244-304
Grid Frequency	Hz	60			60			60		
Adjustable Grid Frequency Range	Hz	57-60.5			57-60.5			57-60.5		
Maximum Current (Iacmax)	A _{RMS}	14.5	14.5	12	17.2	16	16	20	20	20
Power Factor		> 0.995			> 0.995			> 0.995		
Total Harmonic Distortion At Rated Power	%	< 2			< 2			< 2		
Grid Wiring Termination Type		Terminal block, Pressure Clamp, AWG10-AWG4								
Protection Devices										
Input										
Reverse Polarity Protection		Yes			Yes			Yes		
Over-Voltage Protection Type		Varistor, 2 for each channel			Varistor, 2 for each channel			Varistor, 2 for each channel		
PV Array Ground Fault Detection		Pre start-up Riso and dynamic GFDI (Requires Floating Arrays)								
Output										
Anti-Islanding Protection		Meets UL 1741/IEE1547 requirements			Meets UL 1741/IEE1547 requirements			Meets UL 1741/IEE1547 requirements		
Over-Voltage Protection Type		Varistor, 2 (L ₁ - L ₂ / L ₁ - G)			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	15	25	20	20	25	25	25
Efficiency										
Maximum Efficiency	%	96.9			97			97		
CEC Efficiency	%	96			96			96		
Operating Performance										
Stand-by Consumption	W _{RMS}	< 8			< 8			< 8		
Night time consumption	W _{RMS}	< 0.6			< 0.6			< 0.6		
Communication										
User-Interface										
Remote Monitoring (1xRS485 incl.)		16 characters x 2 lines LCD display 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) with derating above 131 (55)			-13 to +140 (-25 to +60) with derating above 131 (55)			-13 to +140 (-25 to +60) with derating above 113 (45)		
Ambient Air Storage Temperature Range	°F (°C)	-40 to 176 (-40 to +80)			-40 to 176 (-40 to +80)			-40 to 176 (-40 to +80)		
Relative Humidity	% RH	0-100 condensing			0-100 condensing			0-100 condensing		
Acoustic Noise Emission Level	db (A) @1m	< 50			< 50			< 50		
Maximum Operating Altitude without Derating	ft(m)	6560 (2000)			6560 (2000)			6560 (2000)		
Mechanical Specifications										
Enclosure rating		NEMA 4X			NEMA 4X			NEMA 4X		
Cooling		Natural Convection			Natural Convection			Natural Convection		
Dimensions (H x W x D)	in (mm)	33.8 x 12.8 x 8.7 (859 x 325 x 222) -S Version								
Weight	lb/(kg)	< 47.3 (21.3) -S version			< 47.3 (21.3) -S version			< 47.3 (21.3) -S version		
Mounting System		Wall bracket			Wall bracket			Wall bracket		
Conduit Connections***		Trade size KOs: (2ea x 1/2") and (2ea x 1-1/4", 3 places side, front, rear)			Trade size KOs: (2ea x 1/2") and (2ea x 1-1/4", 3 places side, front, rear)			Trade size KOs: (2ea x 1/2") and (2ea x 1-1/4", 3 places side, front, rear)		
DC Switch Rating-(Per Contact)	A/V	25 / 600			25 / 600			25 / 600		
Safety										
Isolation Level		Transformerless (Floating Array)			Transformerless (Floating Array)			Transformerless (Floating Array)		
Safety and EMC Standard		UL 1741, CSA - C22.2 N. 107.1-01			UL 1741, CSA - C22.2 N. 107.1-01			UL 1741, CSA - C22.2 N. 107.1-01		
Safety Approval		cCSA _{us}			cCSA _{us}			cCSA _{us}		
Warranty										
Standard Warranty	years	10			10			10		
Extended Warranty	years	15 & 20			15 & 20			15 & 20		
Available Models										
Standard - Without DC Switch and Wiring Box		PVI-3.0-OUTD-US			PVI-3.6-OUTD-US			PVI-4.2-OUTD-US		
With DC Switch and Wiring Box		PVI-3.0-OUTD-S-US			PVI-3.6-OUTD-S-US			PVI-4.2-OUTD-S-US		

*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



www.power-one.com

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