

## PVI-12.0-I

### GENERAL SPECIFICATIONS OUTDOOR MODELS

Designed for commercial usage, this three-phase inverter is highly unique in its ability to control the performance of the PV panels, especially during periods of variable weather conditions.

This device has two independent MPPTs and efficiency ratings of up to 97.3%.

The input voltage range makes the inverter suitable to installations with reduced string size. The HF isolation allows positive or negative ground configuration.

It is available with an optional fully-integrated DC combiner box equipped with DC or AC and DC disconnect switches and DC fuses. The unit is free of electrolytic capacitors, leading to a longer product lifetime and reliability.



-S1 version

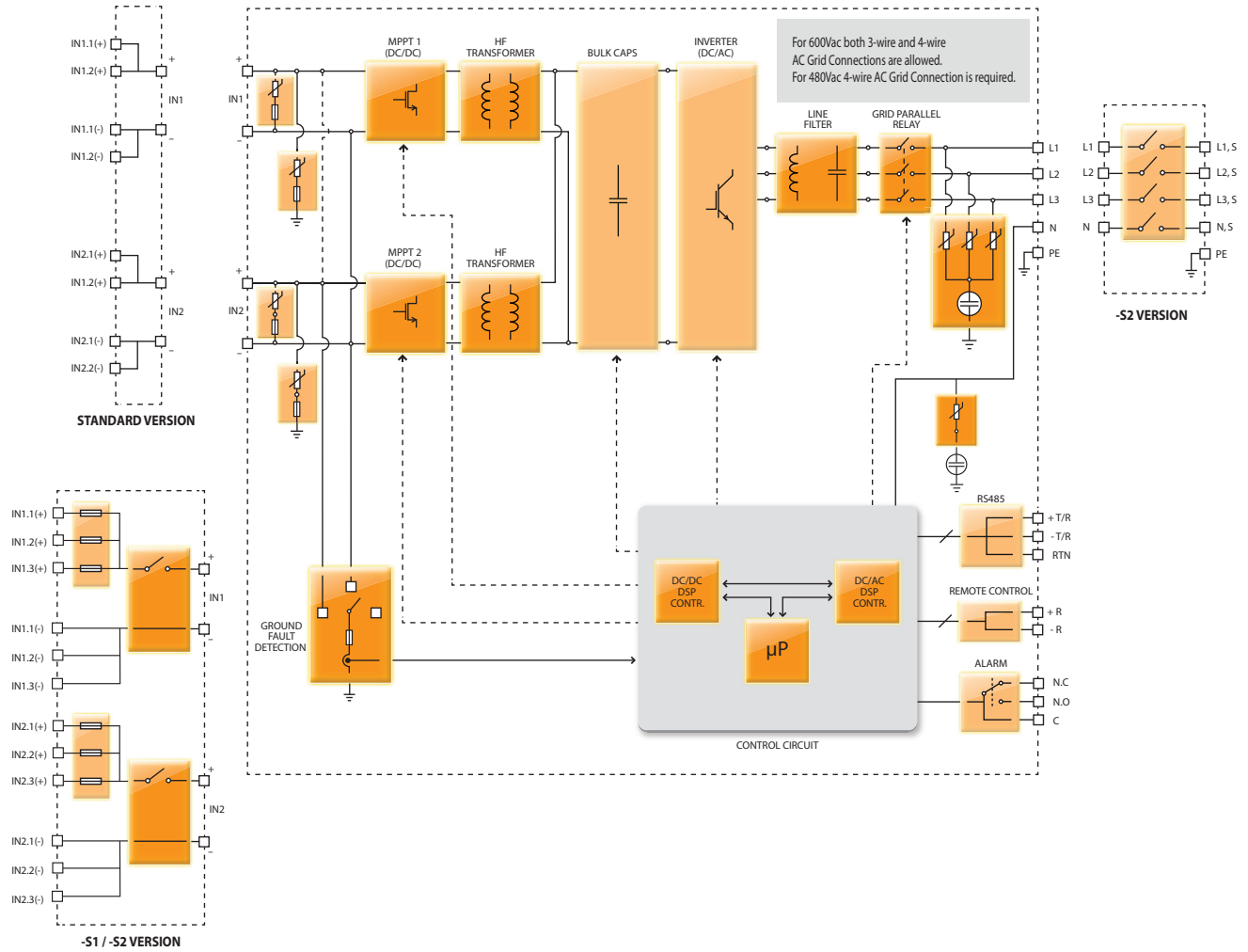


-S2 version

## Features

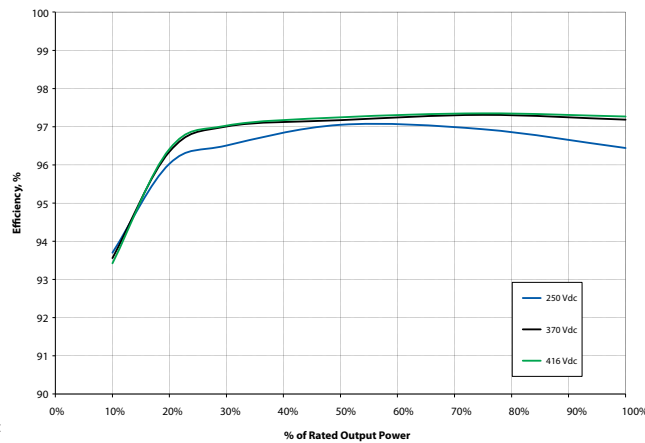
- High speed and precise MPPT algorithm for real time power tracking and improved energy harvesting
- Flat efficiency curves ensure high efficiency at all output levels ensuring consistent and stable performance across the entire input voltage and output power range
- 'Electrolyte-free' power converter to further increase the life expectancy and long term reliability
- True three-phase bridge topology for DC/AC output converter
- Night wake up button to access energy harvesting data and error log when inverter is sleeping
- Dual input sections with independent MPPT, allows optimal energy harvesting from two sub-arrays oriented in different directions
- NEMA 4X outdoor enclosure for unrestricted use under any environmental conditions
- Integrated combiner box equipped with a DC switch in compliance with international standards (-S1,-S2)
- 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-12.0-I FOR NORTH AMERICA



## Block Diagram and Efficiency Curves

PVI-12.0-I\*



\* Efficiency shown for inverters operating at 480Vac

TECHNICAL DATA	VALUES	PVI-12.0-I-OUTD-US	PVI-12.0-I-OUTD-CAN	
Nominal Output Power	W	12000	12000	12000
Maximum Output Power	W	13200**	12000***	12000***
Rated Grid AC Voltage	V	480	480	600
<b>Input Side (DC)</b>				
Number of Independent MPPT Channels		2; programmable as a single paralleled input	2; programmable as a single paralleled input	
Maximum Usable Power for Each Channel	W	6800	6800	
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	250-470	250-470	
Operating MPPT Voltage Range	V	0.7 x Vstart-520	0.7 x Vstart-520	
Maximum Current (Idcmax) for both MPPT in Parallel	A	50	50	
Maximum Usable Current per Channel	A	25	25	
Maximum Short Circuit Current Limit per Channel	A	29	29	
Number of Wire Landing Terminals per Channel		Standard version: 2; -S1/-S2 version: 3	Standard version: 2; -S1/-S2 version: 3	
Array Wiring Termination Type		Terminal Block, Pressure Clamp, 20AWG-6AWG	Terminal Block, Pressure Clamp, 20AWG-6AWG	
<b>Output Side (AC)</b>				
Grid Connection Type		3Ø/4W+Ground	3Ø/4W+Ground	3Ø/3W or 4W+Ground
Adjustable Voltage Range (Vmin-Vmax)	V	422-528	422-528	528-660
Grid Frequency	Hz	60	60	
Adjustable Grid Frequency Range	Hz	57-63	57-63	
Maximum Current (Iac max)	A <sub>RMS</sub>	16.0	16.0	12.8
Power Factor		>0.995 (+/-0.9)	>0.995 (+/-0.9)	
Total Harmonic Distortion At Rated Power	%	<2	<2	
Grid Wiring Termination Type		Terminal Block, Pressure Clamp, 12AWG-4AWG	Terminal Block, Pressure Clamp, 12AWG-4AWG	
<b>Protection Devices</b>				
<b>Input</b>				
Reverse Polarity Protection		Yes	Yes	
Over-Voltage Protection Type		Varistor, 2 for each channel	Varistor, 2 for each channel	
PV Array Ground Fault Detection		GFDI (GFD fuse) per UL1741/NEC690.5 (A)	GFDI (GFD fuse) per UL1741/NEC690.5 (A)	
<b>Output</b>				
Anti-Islanding Protection		Meets UL1741/IEEE1547 requirements 3 + gas arrester	Meets UL1741/IEEE1547 requirements 3 + gas arrester	
Over-Voltage Protection Type		Varistor, One per line + spark gap to Ground	Varistor, One per line + spark gap to Ground	
<b>Efficiency</b>				
Maximum Efficiency	%	97.3	97.3	
CEC Efficiency	%	97.0	97.0	
<b>Operating Parameters</b>				
Feed-In Power Threshold	W <sub>RMS</sub>	30	30	
Stand-by Consumption	W <sub>RMS</sub>	< 8	< 8	
<b>Communication</b>				
User-Interface (Display)		16 Characters X 2 lines LCD display	16 Characters X 2 lines LCD display	
Remote Monitoring (1xRS485 incl.)		AURORA-UNIVERSAL (opt.)	AURORA-UNIVERSAL (opt.)	
Wired Local Monitoring (1xRS485 incl.)		PVI-USB-RS485_232 (opt.), PVI-DESKTOP (opt.)	PVI-USB-RS485_232 (opt.), PVI-DESKTOP (opt.)	
Wireless Local Monitoring		PVI-DESKTOP (opt), with PVI-RADIO MODULE (opt)	PVI-DESKTOP (opt), with PVI-RADIO MODULE (opt)	
<b>Environmental</b>				
Ambient Air Operating Temperature Range	F(°C)	-13 to +140 (-25 to +60) Derating above +113 (+45)	-13 to +140 (-25 to +60) Derating above +113 (+45)	
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)	
<b>Mechanical Specifications</b>				
Enclosure rating		NEMA 4X	NEMA 4X	
Cooling		Natural Convection	Natural Convection	
Dimensions (H x W x D)	in//mm	28.2" x 25.4" x 8.7" / 716mm x 645mm x 222mm // 37.7" x 25.4" x 8.7" / 958mm x 645mm x 222mm (-S/-S1/-S2 version)	28.2" x 25.4" x 8.7" / 716mm x 645mm x 222mm // 37.7" x 25.4" x 8.7" / 958mm x 645mm x 222mm (-S/-S1/-S2 version)	
Unit Weight	lbs(kg)	101(45.8) (US version); 107(48.5) (S1 version); 114(51.7)(S2 version)	101(45.8) (US version); 107(48.5) (S1 version); 14(51.7)(S2 version)	
Shipping Weight	lbs(kg)	with pallet: 254(<115); without pallet: 143 (<65)	with pallet: 254(<115); without pallet: 143 (<65)	
Conduit Connections		Bottom: (1) 1/2" EKO,(2) 1" pluggable opening, (4) 1/2" pluggable openings / Left and Right Side: (1) Concentric EKO's 3/4", 1" Back: (2) Concentric EKO's 3/4", 1"	Bottom: (1) 1/2" EKO,(2) 1" pluggable opening, (4) 1/2" pluggable openings / Left and Right Side: (1) Concentric EKO's 3/4", 1" Back: (2) Concentric EKO's 3/4", 1", (2) Concentric EKO's 3/4", 1"	
Mounting System		Wall Brackett	Wall Brackett	
Ground Fault Detector Fuse Size/Type	A/V / mm	1/600/10x38	1/600/10x38	
Optional String Combiner Fuse Size/Type	A, A/V / mm	12, 15/600/10x38	12, 15/600/10x38	
DC Switch Current Rating (Per Contact)	A	32	32	
<b>Safety</b>				
Isolation Level		Isolated - High Frequency transformer	Isolated - High Frequency transformer	
Safety and EMC Standard		UL1741, CSA22.2 #107.1-01	UL1741, CSA22.2 #107.1-01	
Safety Approval		cCSA <sub>us</sub>	cCSA <sub>us</sub>	
<b>Warranty</b>				
Standard Warranty	Years	10	10	
Extended Warranty	Years	15 & 20	15 & 20	
<b>Available Models</b>				
Standard		PVI-12.0-I-OUTD-US-480-NG	PVI-12.0-I-OUTD-CAN-480-NG	PVI-12.0-I-OUTD-CAN-480-NG
With DC Switch and DC Fuses		PVI-12.0-I-OUTD-S1-US-480-NG	PVI-12.0-I-OUTD-S1-CAN-480-NG	PVI-12.0-I-OUTD-S1-CAN-600-NG
With AC and DC Switches and DC Fuses		PVI-12.0-I-OUTD-S2-US-480-NG	PVI-12.0-I-OUTD-S2-CAN-480-NG	PVI-12.0-I-OUTD-S2-CAN-600-NG

\*All data is subject to change without notice

\*\*Capability enabled at power-factor of +/-0.995 and with sufficient DC power available.

\*\*\*Inverter can be field configured to output up to 110% of rated power under certain conditions



[www.power-one.com](http://www.power-one.com)

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