

## PVI-10.0-I-OUTD PVI-12.0-I-OUTD

### 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 and AC disconnect (-S2 version). The unit is free of electrolytic capacitors, leading to a longer product lifetime.



-S Version



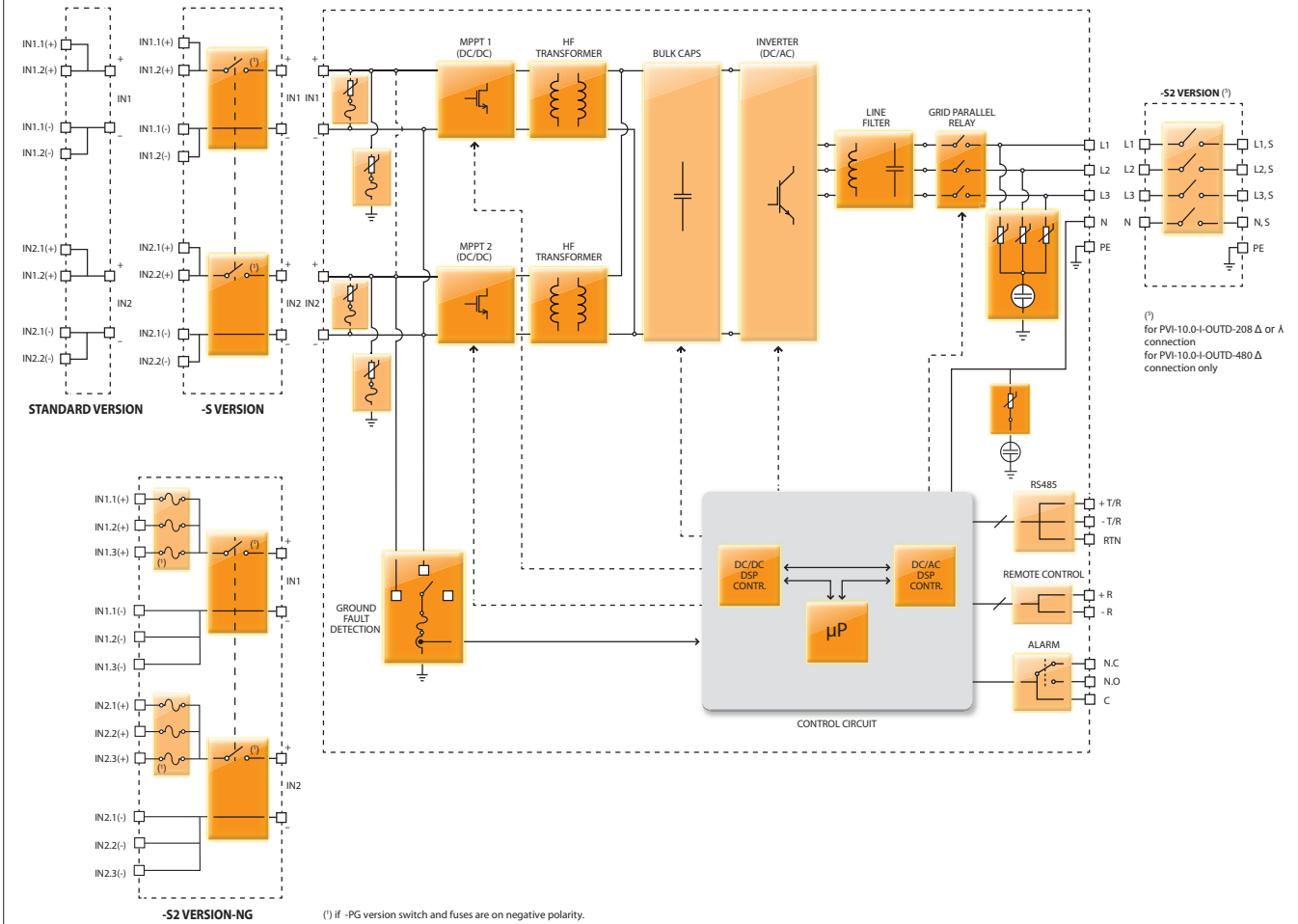
-S2 Version

## Features

- 'Electrolyte-free' power converter to further increase the life expectancy and long term reliability
- True three-phase bridge topology for DC/AC output converter
- 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
- 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 and -S2 version)
- RS-485 communication interface (for connection to laptop or datalogger)
- Compatible with PVI-RADIOMODULE for wireless communication with Aurora PVI-DESKTOP

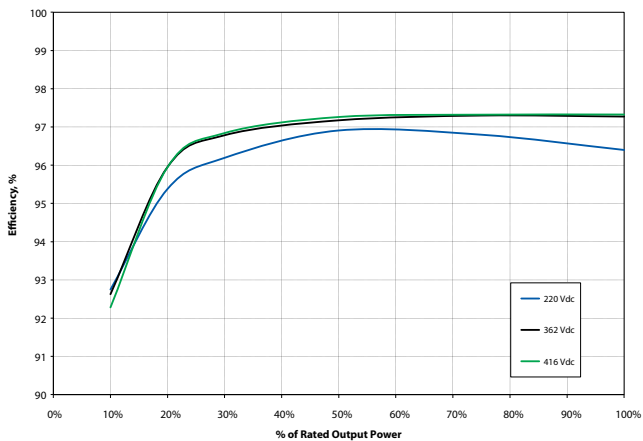
AURORA TRIO

## BLOCK DIAGRAM OF PVI-10.0-I AND PVI-12.0-I FOR NORTH AMERICA

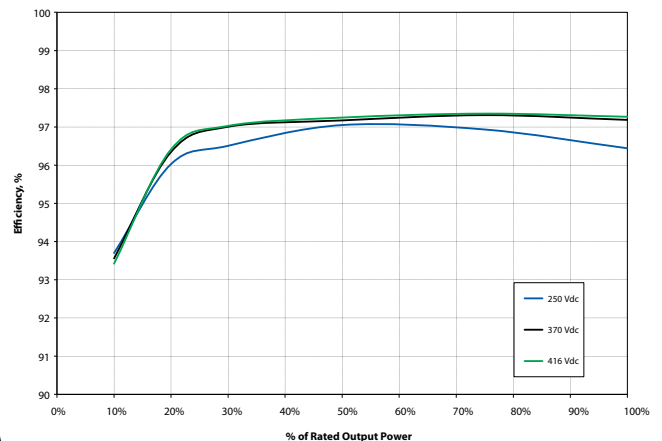


## Block Diagram and Efficiency Curves

**PVI-10.0-I-OUTD**



**PVI-12.0-I-OUTD**



PARAMETER	PVI-10.0-I-OUTD-US-208	PVI-10.0-I-OUTD-US-480	PVI-10.0-I-OUTD-CAN-600
<b>Input Side</b>			
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 ( $V_{dmin}...V_{dmax}$ )	0.7 x $V_{start}...520$ V		
Rated DC Input Power ( $P_{dc}$ )	10500 W		
Number of Independent MPPT <sup>(4)</sup>	2		
Maximum DC Input Power for each MPPT ( $P_{MPPTmax}$ )	6800 W		
DC Input Voltage Range with Parallel Configuration of MPPT at $P_{acr}$	220...470 V		
DC Power Limitation with Parallel Configuration of MPPT	Linear Derating From MAX to Null [ $470V \leq V_{MPPT} < 520V$ ]		
DC Power Limitation for each MPPT with Independent Configuration of MPPT at $P_{acr}$ , max unbalance example	6800 W [ $285V \leq V_{MPPT} < 470V$ ] the other channel: $P_{dc} < 6800W$ [ $155V \leq V_{MPPT} < 470V$ ]	6800 W [ $285V \leq V_{MPPT} < 470V$ ] the other channel: $P_{dc} < 6800W$ [ $220V \leq V_{MPPT} < 470V$ ]	6800 W [ $285V \leq V_{MPPT} < 470V$ ] the other channel: $P_{dc} < 6800W$ [ $155V \leq V_{MPPT} < 470V$ ]
Maximum DC Input Current ( $I_{dmax}$ ) / for each MPPT ( $I_{MPPTmax}$ )	48.0 A / 24.0 A		
Maximum Input Short Circuit Current for each MPPT	29.0 A		
Number of DC Inputs Pairs for each MPPT	2 (3 on -S2 Version)		
DC Connection Type	Screw Terminal Block, 3 Knock-Outs: ¾" or 1" w/ring red.)		
<b>Input Protection</b>			
Reverse Polarity protection	Yes, from limited current source		
Input Over Voltage Protection for each MPPT - Varistor	2		
Photovoltaic Array Isolation Control	GFDI (for use with either Positive or Negative Grounded Arrays)		
DC Switch Rating for each MPPT (-S Version)	32 A / 600 V		
Fuse Rating (-FS Version)	12 A or 15 A / 600 V <sup>(1)</sup>		
<b>Output Side</b>			
AC Grid Connection Type	Trifase ( $\Delta/Y$ )		
Rated AC Power ( $P_{acr}$ )	10000 W		
Maximum AC Output Power ( $P_{acmax}$ )	11000 W		
Rated AC Grid Voltage ( $V_{acr}$ )	208 V	480 V	600 V
AC Voltage Range	183...228 V	422...528 V	528...660 V
Maximum AC Output Current ( $I_{ac,max}$ )	30.0 A	14.0 A	10.6 A
Rated Output Frequency (f.)	60 Hz		
Output Frequency Range ( $f_{min}...f_{max}$ )	59.3...60.5 Hz		
Nominal Power Factor ( $\cos\phi_{i,acr}$ )	> 0.995		
Total Current Harmonic Distortion	< 2%		
AC Connection Type	Screw Terminal Block, 3 Knock-Outs: ¾"		
<b>Output Protection</b>			
Anti-Islanding Protection	According to UL 1741/IEE1547		
Maximum AC Overcurrent Protection	35.0 A	20.0 A	20.0 A
Output Overvoltage Protection - Varistor	3 plus gas arrester		
<b>Operating Performance</b>			
Maximum Efficiency ( $\eta_{max}$ )	96.5%	97.3%	97.3%
Weighted Efficiency (EURO/CEC)	- / 96.0%	- / 97.0%	- / 97.0%
Feed In Power Threshold	30 W		
Stand-by Consumption	< 8 W		
<b>Communication</b>			
Wired Local Monitoring	PVI-USB-RS485_232 (opt.), PVI-DESKTOP (opt.)		
Remote Monitoring	PVI-AEC-EVO (opt.), AURORA-UNIVERSAL (opt.)		
Wireless Local Monitoring	PVI-DESKTOP (opt.) with PVI-RADIOMODULE (opt.)		
User Interface	16 characters x 2 lines LCD display		
<b>Environmental</b>			
Ambient Temperature Range	-25...+60°C / -13...140°F with derating above 40°C/104°F	-25...+60°C / -13...140°F with derating above 50°C/122°F	-25...+60°C / -13...140°F with derating above 45°C/113°F
Relative Humidity	0...100% condensing		
Noise Emission	< 50 db(A) @ 1 m		
Maximum Operating Altitude without Derating	2000 m / 6560 ft		
<b>Physical</b>			
Environmental Protection Rating	NEMA 4X		
Cooling	Natural		
Dimension (H x W x D)	716mm x 645mm x 222mm / 28.2" x 25.4" x 8.7" 958mm x 645mm x 222mm / 37.7" x 25.4" x 8.7" (-S/-S2 version)		
Weight	< 45.8 kg / 99.0 lb < 48.5 kg / 107 lb (-S Version) < 51.7 / 114 lb (-S2 Version)		
Mounting System	Wall bracket		
<b>Safety</b>			
Isolation Level	HF transformer		
Marking	cCSAus		
Safety and EMC Standard	UL 1741, CSA - C22.2 N. 107.1-01		
Grid Standard	IEEE 1547		
<b>Available Products Variants</b>			
Standard - Positive Ground	PVI-10.0-I-OUTD-US-208-PG	PVI-10.0-I-OUTD-US-480-PG	PVI-10.0-I-OUTD-CAN-600-PG
Standard - Negative Ground	PVI-10.0-I-OUTD-US-208-NG	PVI-10.0-I-OUTD-US-480-NG	PVI-10.0-I-OUTD-CAN-600-NG
With DC Switch - Positive Ground	PVI-10.0-I-OUTD-S-US-208-PG	PVI-10.0-I-OUTD-S-US-480-PG	PVI-10.0-I-OUTD-S-CAN-600-PG
With DC Switch - Negative Ground	PVI-10.0-I-OUTD-S-US-208-NG	PVI-10.0-I-OUTD-S-US-480-NG	PVI-10.0-I-OUTD-S-CAN-600-NG
With AC and DC Switches - Positive Ground	PVI-10.0-I-OUTD-S2-US-208-PG	PVI-10.0-I-OUTD-S2-US-480-PG	PVI-10.0-I-OUTD-S2-CAN-600-PG
With AC and DC Switches - Negative Ground	PVI-10.0-I-OUTD-S2-US-208-NG	PVI-10.0-I-OUTD-S2-US-480-NG	PVI-10.0-I-OUTD-S2-CAN-600-NG

1. Order separately

2. Just for -480 version, the inverter applies current limit derating below 220V down to 2A/1A at 90V

4. Independent MPPT just with negative ground

PARAMETER	PVI-12.0-I-OUTD-US-480	PVI-12.0-I-OUTD-CAN-600
<b>Input Side</b>		
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 ( $V_{dmin}...V_{dmax}$ )	0.7 x $V_{start}...520$ V	
Rated DC Input Power ( $P_{dcr}$ )	12300 W	
Number of Independent MPPT <sup>(4)</sup>	2	
Maximum DC Input Power for each MPPT ( $P_{MPPTmax}$ )	6800 W	
DC Input Voltage Range with Parallel Configuration of MPPT at $P_{acr}$	250...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	6800 W [275V ≤ $V_{MPPT}$ ≤ 470V] the other channel: $P_{dcr}$ - 6800W [220V ≤ $V_{MPPT}$ ≤ 470V]	
Maximum DC Input Current ( $I_{dmax}$ ) / for each MPPT ( $I_{MPPTmax}$ )	50.0 A / 25.0 A <sup>(2)</sup>	
Maximum Input Short Circuit Current for each MPPT	29.0 A	
Number of DC Inputs Pairs for each MPPT	2 (3 on -S2 Version)	
DC Connection Type	Screw Terminal Block, 3 Knock-Outs: ¾" or 1" / w/ring red.)	
<b>Input Protection</b>		
Reverse Polarity protection	Yes, from limited current source	
Input Over Voltage Protection for each MPPT - Varistor	2	
Photovoltaic Array Isolation Control	GFDI (for use with either Positive or Negative Grounded Arrays)	
DC Switch Rating for each MPPT (-S Version)	32 A / 600 V	
Fuse Rating (-FS Version)	12 A or 15 A / 600 V <sup>(1)</sup>	
<b>Output Side</b>		
AC Grid Connection Type	Trifase (Δ/Y)	
Rated AC Power ( $P_{acr}$ )	12000 W	
Maximum AC Output Power ( $P_{acmax}$ )	12500 W	
Rated AC Grid Voltage ( $V_{acr}$ )	480 V	600 V
AC Voltage Range	422...528 V	528...660 V
Maximum AC Output Current ( $I_{ac,max}$ )	16.0 A	
Rated Output Frequency ( $f_r$ )	60 Hz	
Output Frequency Range ( $f_{min}...f_{max}$ )	59.3...60.5 Hz	
Nominal Power Factor ( $\cos\phi_{i_{acr}}$ )	> 0.995	
Total Current Harmonic Distortion	< 2%	
AC Connection Type	Screw Terminal Block, 3 Knock-Outs: ¾"	
<b>Output Protection</b>		
Anti-Islanding Protection	According to UL 1741/IEE1547	
Maximum AC Overcurrent Protection	20.0 A	
Output Overvoltage Protection - Varistor	3 plus gas arrester	
<b>Operating Performance</b>		
Maximum Efficiency ( $\eta_{max}$ )	97.3%	
Weighted Efficiency (EURO/CEC)	- / 97.0%	
Feed In Power Threshold	30 W	
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Standard - Negative Ground	PVI-12.0-I-OUTD-US-480-NG	PVI-12.0-I-OUTD-CAN-600-NG
With AC and DC Switches - Positive Ground	PVI-12.0-I-OUTD-S2-US-480-PG	PVI-12.0-I-OUTD-S2-CAN-600-PG
With AC and DC Switches - Negative Ground	PVI-12.0-I-OUTD-S2-US-480-NG	PVI-12.0-I-OUTD-S2-CAN-600-NG

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