

## 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.

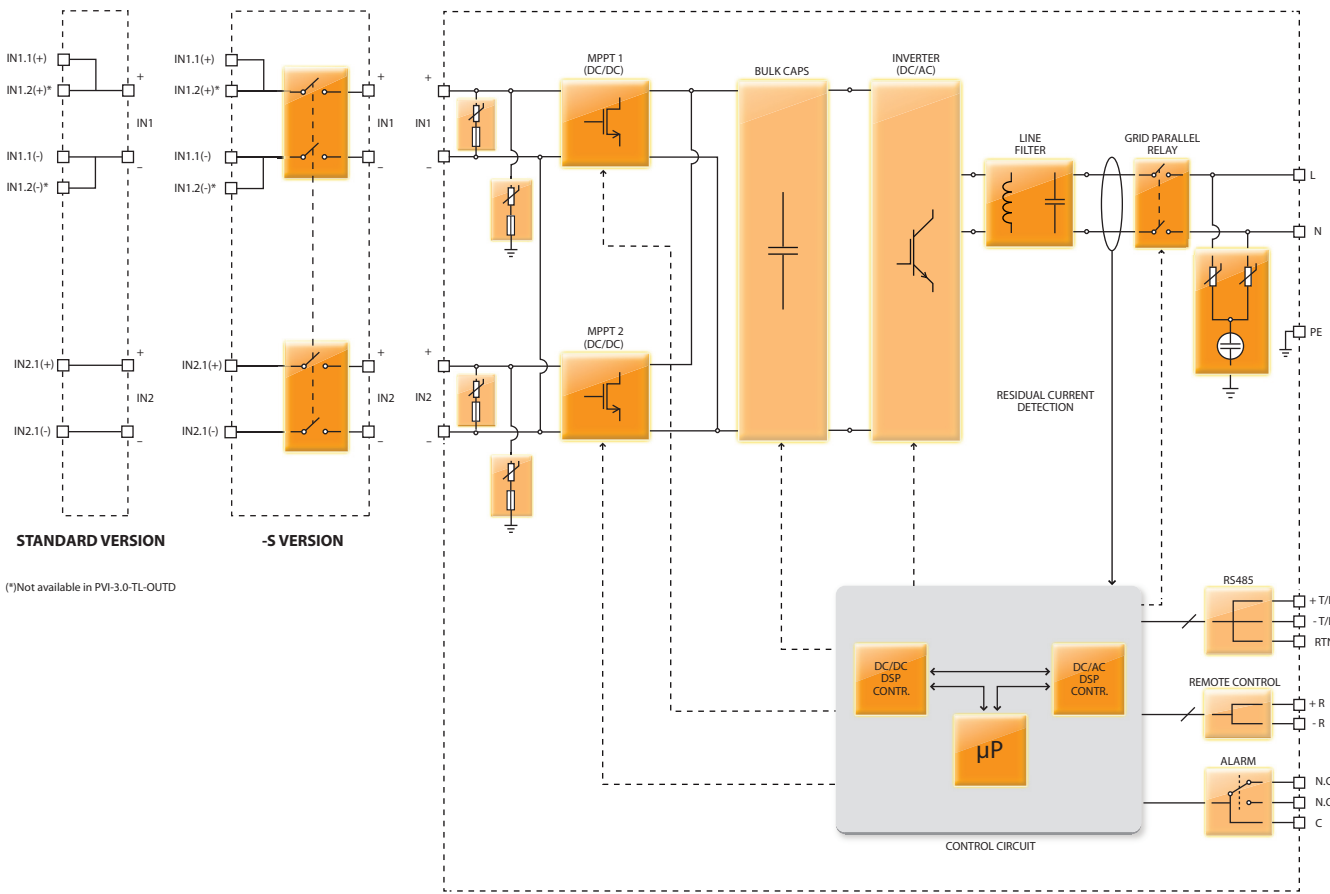
The transformerless operation gives the highest efficiency of up to 96.8%. The wide input voltage range makes the inverter suitable to low power installations with reduced string size.



## Features

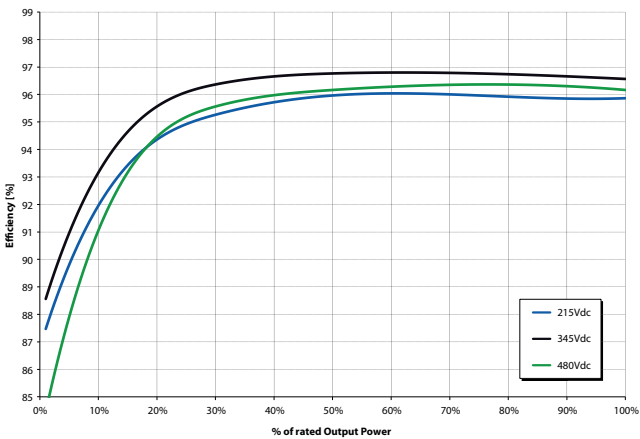
- Each inverter is set on specific grid codes which can be selected in the field
- Single phase output
- Dual input sections with independent MPP tracking, allows optimal energy harvesting from two sub-arrays oriented in different directions
- Wide input range
- High speed and precise MPPT algorithm 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
- 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-TL-OUTD, PVI-3.6-TL-OUTD AND PVI-4.2-TL-OUTD

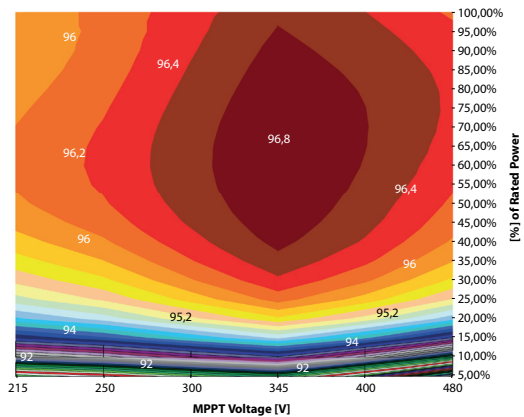


## Block Diagram and Efficiency Curves

PVI-4.2-TL-OUTD



PVI-4.2-TL-OUTD



PARAMETER	PVI-3.0-TL-OUTD	PVI-3.6-TL-OUTD	PVI-4.2-TL-OUTD
<b>Input Side</b>			
Absolute Maximum DC Input Voltage ( $V_{max,abs}$ )	600 V		
Start-up DC Input Voltage ( $V_{start}$ )	200 V (adj. 120...350 V)		
Operating DC Input Voltage Range ( $V_{dcmin}...V_{dcmax}$ )	0.7 x $V_{start}...580$ V		
Rated DC Input Power ( $P_{dcr}$ )	3120 W	3750 W	4375 W
Number of Independent MPPT	2		
Maximum DC Input Power for each MPPT ( $P_{MPPTmax}$ )	2000 W	3000 W	3000 W
DC Input Voltage Range with Parallel Configuration of MPPT at $P_{acr}$	160...530 V	120...530 V	140...530 V
DC Power Limitation with Parallel Configuration of MPPT	Linear Derating From MAX to Null [ $530V \leq V_{MPPT} \leq 580V$ ]		
DC Power Limitation for each MPPT with Independent Configuration of MPPT at $P_{acr}$ , max unbalance example	2000 W [ $200V \leq V_{MPPT} \leq 530V$ ] the other channel: $P_{dcr} = 2000W$ [ $112V \leq V_{MPPT} \leq 530V$ ]	3000 W [ $190V \leq V_{MPPT} \leq 530V$ ] the other channel: $P_{dcr} = 3000W$ [ $90V \leq V_{MPPT} \leq 530V$ ]	3000 W [ $190V \leq V_{MPPT} \leq 530V$ ] the other channel: $P_{dcr} = 3000W$ [ $90V \leq V_{MPPT} \leq 530V$ ]
Maximum DC Input Current ( $I_{dcmax}$ ) / for each MPPT ( $I_{MPPTmax}$ )	20.0 A / 10.0 A	32.0 A / 16.0 A	32.0 A / 16.0 A
Maximum Input Short Circuit Current for each MPPT	12.5 A	20.0 A	20.0 A
Number of DC Inputs Pairs for each MPPT	1	2 for MPPT1 and 1 for MPPT2	2 for MPPT1 and 1 for MPPT2
DC Connection Type	Tool Free PV Connector WM / MCA		
<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	According to local standard		
DC Switch Rating for each MPPT (Version with DC switch)	25 A / 600 V		
<b>Output Side</b>			
AC Grid Connection Type	Single phase		
Rated AC Power ( $P_{acr}$ )	3000 W	3600 W	4200 W
Maximum AC Output Power ( $P_{acmax}$ )	3300 W <sup>(4)</sup>	4000 W <sup>(5)</sup>	4600 W <sup>(6)</sup>
Rated AC Grid Voltage ( $V_{ac,r}$ )	230 V		
AC Voltage Range	180...264 V <sup>(1)</sup>		
Maximum AC Output Current ( $I_{ac,max}$ )	14.5 A	17.2 A <sup>(2)</sup>	20.0 A
Rated Output Frequency ( $f_r$ )	50 Hz		
Output Frequency Range ( $f_{min}...f_{max}$ )	47...53 Hz <sup>(3)</sup>	47...53 Hz <sup>(3)</sup>	47...53 Hz <sup>(3)</sup>
Nominal Power Factor ( $\cos\phi_{iac,r}$ )	> 0.995 (adj. $\pm 0.9$ <sup>(7)</sup> )		
Total Current Harmonic Distortion	< 3.5 %		
AC Connection Type	Screw terminal block		
<b>Output Protection</b>			
Anti-Islanding Protection	According to local standard		
Maximum AC Overcurrent Protection	16.0 A	19.0 A	22.0 A
Output Overvoltage Protection - Varistor	2 (L - N / L - PE)		
<b>Operating Performance</b>			
Maximum Efficiency ( $\eta_{max}$ )	96.8%		
Weighted Efficiency (EURO/CEC)	96.0% / -		
Feed In Power Threshold	10.0 W		
Stand-by Consumption	< 8.0 W		
<b>Communication</b>			
Wired Local Monitoring	PVI-USB-RS232_485 (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 50°C/122°F	-25...+60°C / -13...140°F with derating above 55°C/131°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		
<b>Physical</b>			
Environmental Protection Rating	IP 65		
Cooling	Natural		
Dimension (H x W x D)	617mm x 325mm x 222mm / 24.3" x 12.8" x 8.7"		
Weight	17.5 kg / 38.5 lb		
Mounting System	Wall bracket		
<b>Safety</b>			
Isolation Level	Transformerless	Transformerless	Transformerless
Marking	CE	CE	CE
Safety and EMC Standard	EN 50178, AS/NZS3100, AS/NZS 60950, EN61000-6-1, EN61000-6-3, EN61000-3-2, EN61000-3-3	EN 50178, AS/NZS3100, AS/NZS 60950, EN61000-6-1, EN61000-6-3, EN61000-3-11, EN61000-3-12	EN 50178, AS/NZS3100, AS/NZS 60950, EN61000-6-1, EN61000-6-3, EN61000-3-11, EN61000-3-12
Grid Standard	Enel Guideline (CEI 0-21 + Attach- ment A70 Terna) <sup>(7)</sup> , VDE 0126-1-1, VDE-AR-N 4105, G83/1, EN 50438, RD1663, AS 4777	Enel Guideline (CEI 0-21 + Attach- ment A70 Terna) <sup>(7)</sup> , VDE 0126-1-1-1, VDE-AR-N 4105, G83/1, G59/2, EN 50438, RD1663, AS 4777	Enel Guideline (CEI 0-21 + Attach- ment A70 Terna) <sup>(7)</sup> , VDE 0126-1-1-1, VDE-AR-N 4105, G59/2, EN 50438, RD1663, AS 4777
<b>Available Products Variants</b>			
Standard	PVI-3.0-TL-OUTD	PVI-3.6-TL-OUTD	PVI-4.2-TL-OUTD
With DC Switch	PVI-3.0-TL-OUTD-S	PVI-3.6-TL-OUTD-S	PVI-4.2-TL-OUTD-S

- The AC voltage range may vary depending on specific country grid standard
  - Maximum Output power limited to 16amps up to a maximum power of 3.68kW, for UK G83/1 models.
  - The Frequency range may vary depending on specific country grid standard
  - Limited to 3000 W for Germany
  - Limited to 3600 W for Germany
  - Limited to 4200 W for Germany
  - Since their applicability dates
- 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>
<b>Australia</b>	Asia Pacific	+61 2 9735 3111	sales.australia@power-one.com
<b>China (Shenzhen)</b>	Asia Pacific	+86 755 2988 5888	sales.china@power-one.com
<b>China (Shanghai)</b>	Asia Pacific	+86 21 5505 6907	sales.china@power-one.com
<b>India</b>	Asia Pacific	+65 6896 3363	sales.india@power-one.com
<b>Singapore</b>	Asia Pacific	+65 6896 3363	sales.singapore@power-one.com
<b>Belgium / The Netherlands / Luxembourg</b>	Europe	+32 2 206 0338	sales.belgium@power-one.com
<b>France</b>	Europe	+33 (0) 141 796 140	sales.france@power-one.com
<b>Germany</b>	Europe	+49 7641 955 2020	sales.germany@power-one.com
<b>Italy</b>	Europe	00 800 00287672 Opt. n°5	sales.italy@power-one.com
<b>Spain</b>	Europe	+34 91 879 88 54	sales.spain@power-one.com
<b>United Kingdom</b>	Europe	+44 1903 823 323	sales.UK@power-one.com
<b>Dubai</b>	Middle East	+971 50 100 4142	sales.dubai@power-one.com
<b>Canada</b>	North America	+1 877 261-1374	sales.canada@power-one.com
<b>USA East</b>	North America	+1 877 261-1374	sales.usaeast@power-one.com
<b>USA Central</b>	North America	+1 877 261-1374	sales.usacentral@power-one.com
<b>USA West</b>	North America	+1 877 261-1374	sales.usawest@power-one.com