

PVI-10.0-TL PVI-12.5-TL

GENERAL SPECIFICATIONS OUTDOOR MODELS

The three-phase 10.0 and 12.5 kW non-isolated inverter is an industry leader.

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 transformerless device has two independent MPPTs and efficiency ratings of up to 97.8%.

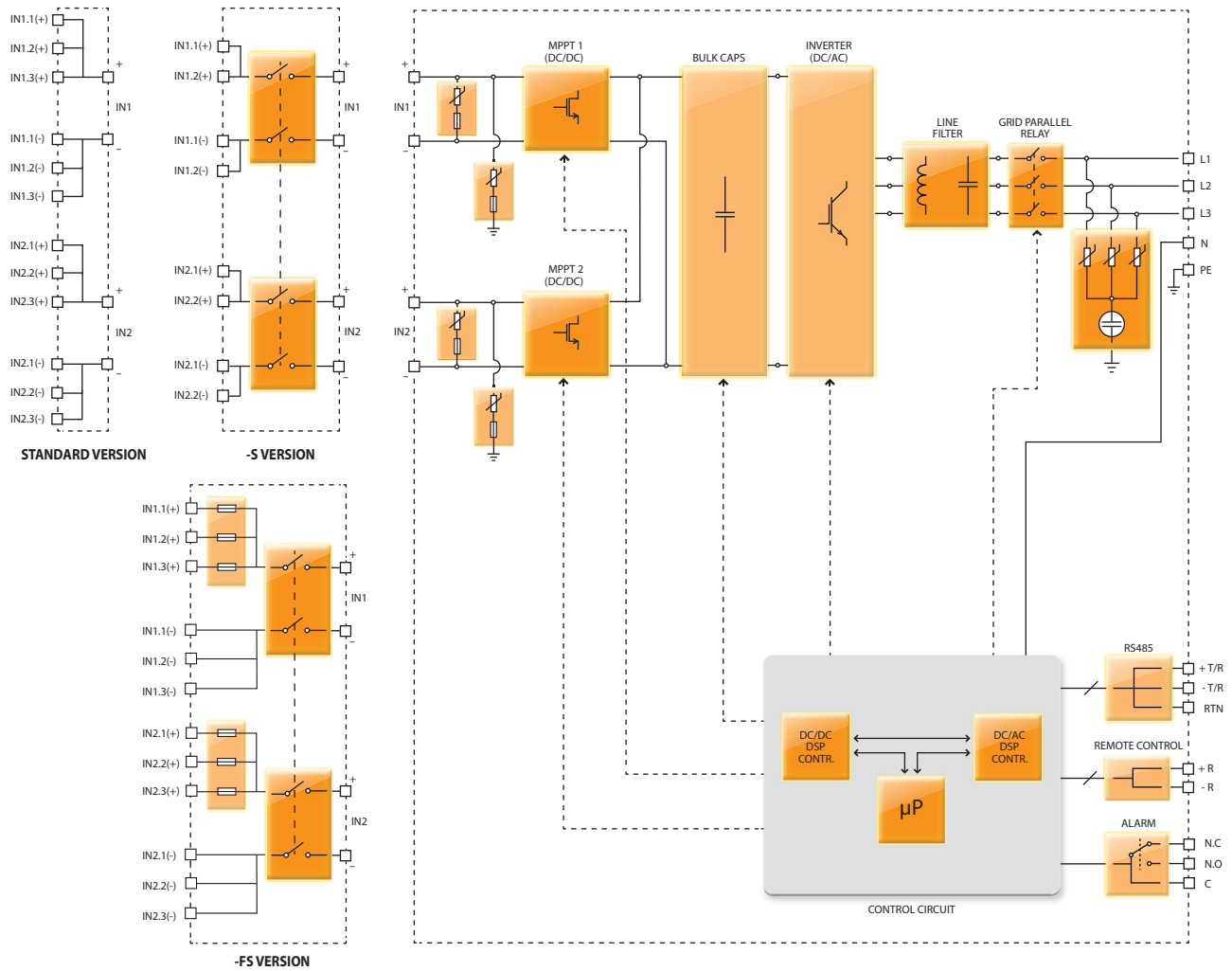
The wide input voltage range makes the inverter suitable to low power installations with reduced string size. It is available with an optional fully-integrated DC switch, fuse and remote controlled DC disconnect function. The unit is free of electrolytic capacitors, leading to a longer product lifetime.



Features

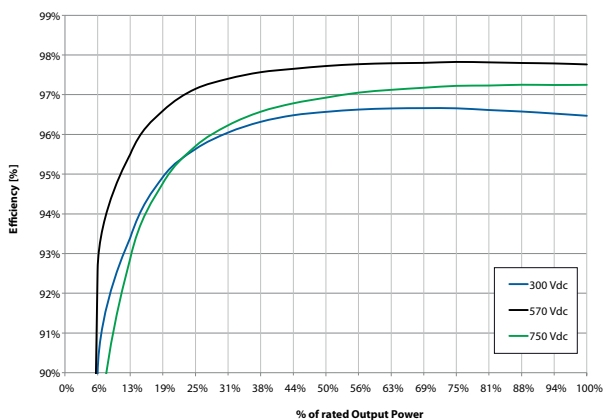
- 'Electrolyte-free' power converter to further increase the life expectancy and long term reliability
- True three-phase bridge topology for DC/AC output converter
- Each inverter is set on specific grid codes which can be selected in the field
- Dual input sections with independent MPP tracking, allows 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 and -FS Versions)
- 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-10.0-TL-OUTD AND PVI-12.5-TL-OUTD

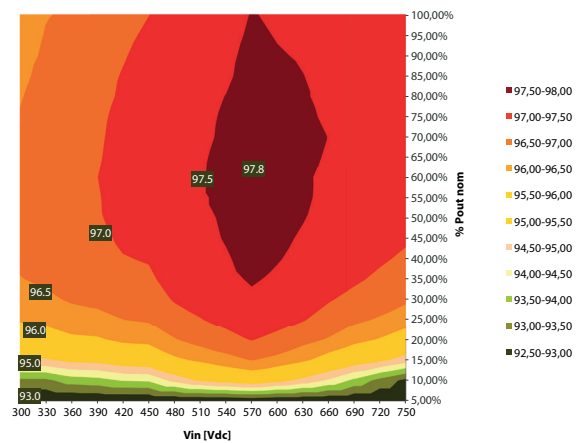


Block Diagram and Efficiency Curves

PVI-10.0-TL-OUTD



PVI-12.5-TL-OUTD



PARAMETER	PVI-10.0-TL-OUTD	PVI-12.5-TL-OUTD
Input Side		
Absolute Maximum DC Input Voltage ($V_{max,abs}$)	900 V	900 V
Start-up DC Input Voltage (V_{start})	360 V (adj. 250...500 V)	360 V (adj. 250...500 V)
Operating DC Input Voltage Range ($V_{dcmin}...V_{dcmax}$)	0.7 x $V_{start}...850$ V	0.7 x $V_{start}...850$ V
Rated DC Input Power (P_{dcr})	10300 W	12800 W
Number of Independent MPPT	2	2
Maximum DC Input Power for each MPPT ($P_{MPPTmax}$)	6500 W	8000 W
DC Input Voltage Range with Parallel Configuration of MPPT at P_{acr}	300...750 V	360...750 V
DC Power Limitation with Parallel Configuration of MPPT	Linear Derating From MAX to Null [$750V \leq V_{MPPT} \leq 850V$]	Linear Derating From MAX to Null [$750V \leq V_{MPPT} \leq 850V$]
DC Power Limitation for each MPPT with Independent Configuration of MPPT at P_{acr} , max unbalance example	6500 W [$380V \leq V_{MPPT} \leq 750V$] the other channel: $P_{dcr} - 6500W$ [$195V \leq V_{MPPT} \leq 750V$]	8000 W [$445V \leq V_{MPPT} \leq 750V$] the other channel: $P_{dcr} - 8000W$ [$270V \leq V_{MPPT} \leq 750V$]
Maximum DC Input Current ($I_{dcr,max}$) / for each MPPT ($I_{MPPTmax}$)	36.0 A / 17.0 A	36.0 A / 18.0 A
Maximum Input Short Circuit Current for each MPPT	22.0 A	22.0 A
Number of DC Inputs Pairs for each MPPT	2 (-S Version) 3 (Standard or -FS Version)	2 (-S Version) 3 (Standard or -FS Version)
DC Connection Type	Tool Free PV Connector WM / MC4	Tool Free PV Connector WM / MC4
Input Protection		
Reverse Polarity protection	Yes, from limited current source	Yes, from limited current source
Input Over Voltage Protection for each MPPT - Varistor	2	2
Photovoltaic Array Isolation Control	According to local standard	According to local standard
DC Switch Rating for each MPPT (Version with DC switch)	25 A / 1000 V	25 A / 1000 V
Fuse Rating (Versions with fuses)	12 A / 1000 V	12 A / 1000 V
Output Side		
AC Grid Connection Type	Three phase 3W or 4W+PE	Three phase 3W or 4W+PE
Rated AC Power (P_{acr})	10000 W	12500 W
Maximum AC Output Power (P_{acmax})	11000 W ⁽³⁾	13800 W ⁽⁴⁾
Rated AC Grid Voltage (V_{acr})	400 V	400 V
AC Voltage Range	320...480 V ⁽¹⁾	320...480 V ⁽¹⁾
Maximum AC Output Current ($I_{ac,max}$)	16.6 A	20.0 A
Rated Output Frequency (f_r)	50 Hz	50 Hz
Output Frequency Range ($f_{min}...f_{max}$)	47...53 Hz ⁽²⁾	47...53 Hz ⁽²⁾
Nominal Power Factor ($\cos\phi_{I_{ac,r}}$)	> 0.995 (adj. ± 0.9 , or fixed by display down to ± 0.8 with max 11 kVA)	> 0.995 (adj. ± 0.9 , or fixed by display down to ± 0.8 with max 13.8 kVA)
Total Current Harmonic Distortion	< 2%	< 2%
AC Connection Type	Screw terminal block	Screw terminal block
Output Protection		
Anti-Islanding Protection	According to local standard	According to local standard
Maximum AC Overcurrent Protection	19.0 A	22.0 A
Output Overvoltage Protection - Varistor	3 plus gas arrester	3 plus gas arrester
Operating Performance		
Maximum Efficiency (η_{max})	97.8%	97.8%
Weighted Efficiency (EURO/CEC)	97.1% / -	97.2% / -
Feed In Power Threshold	30.0 W	30.0 W
Stand-by Consumption	< 10.0 W	< 10.0 W
Communication		
Wired Local Monitoring	PVI-USB-RS232_485 (opt.), PVI-DESKTOP (opt.)	PVI-USB-RS232_485 (opt.), PVI-DESKTOP (opt.)
Remote Monitoring	PVI-AEC-EVO (opt.), AURORA-UNIVERSAL (opt.)	PVI-AEC-EVO (opt.), AURORA-UNIVERSAL (opt.)
Wireless Local Monitoring	PVI-DESKTOP (opt.) with PVI-RADIOMODULE (opt.)	PVI-DESKTOP (opt.) with PVI-RADIOMODULE (opt.)
User Interface	16 characters x 2 lines LCD display	16 characters x 2 lines LCD display
Environmental		
Ambient Temperature Range	-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	0...100% condensing
Noise Emission	< 50 dB(A) @ 1 m	< 50 dB(A) @ 1 m
Maximum Operating Altitude without Derating	2000 m / 6560 ft	2000 m / 6560 ft
Physical		
Environmental Protection Rating	IP 65	IP 65
Cooling	Natural	Natural
Dimension (H x W x D)	716mm x 645mm x 222mm / 28.2" x 25.4" x 8.7"	716mm x 645mm x 222mm / 28.2" x 25.4" x 8.7"
Weight	< 41.0 kg / 90.4 lb	< 41.0 kg / 90.4 lb
Mounting System	Wall bracket	Wall bracket
Safety		
Isolation Level	Transformerless	Transformerless
Marking	CE	CE
Safety and EMC Standard	EN 50178, AS/NZS3100, AS/NZS 60950, EN61000-6-2, EN61000-6-3, EN61000-3-11, EN61000-3-12	EN 50178, AS/NZS3100, AS/NZS 60950, EN61000-6-2, EN61000-6-4, EN61000-3-11, EN61000-3-12
Grid Standard	Enel Guideline (CEI 0-21 + Attachment A70 Terna, CEI 0-16) ⁽⁵⁾ , VDE 0126-1-1, VDE-AR-N 4105, G59/2, EN 50438, RD1663, AS 4777, BDEW	Enel Guideline (CEI 0-21 + Attachment A70 Terna, CEI 0-16) ⁽⁵⁾ , VDE 0126-1-1, VDE-AR-N 4105, G59/2, EN 50438, RD1663, AS 4777, BDEW
Available Products Variants		
Standard	PVI-10.0-TL-OUTD	PVI-12.5-TL-OUTD
With DC Switch	PVI-10.0-TL-OUTD-S	PVI-12.5-TL-OUTD-S
With DC Switch and Fuse	PVI-10.0-TL-OUTD-FS	PVI-12.5-TL-OUTD-FS

- The AC voltage range may vary depending on specific country grid standard
- The Frequency range may vary depending on specific country grid standard
- Limited to 10000 W for Benelux and Germany
- Limited to 12500 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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