

SOLAR INVERTERS

# ABB residential inverter

PVI-5000/6000-TL-OUTD 5kW to 6kW



Designed for residential and small commercial PV installations, this inverter fills a specific niche in the ABB product line to cater for those installations producing between 5kW and 20kW.

This inverter includes dual input section to process two strings with independent MPPT. The high speed and precise MPPT algorithm offers real-time power tracking and energy harvesting.

The wide input voltage range makes the inverter suitable to low power installations with reduced string size.

The transformerless operation offers high performance efficiencies of up to 97.1%.

Flat efficiency curves ensure high efficiency at all output levels ensuring consistent and stable performance across the entire input voltage and output power range.

This outdoor inverter has been designed as a completely sealed unit to withstand the harshest environmental conditions.

Free remote monitoring capability available with every installation. This enables homeowners to view their energy production and offers installers a proactive and economic way of maintaining and troubleshooting the system.

## Highlights:

- Single phase and split phase output grid connection.
- Wide input range for increased stringing flexibility.
- The high speed and precise MPPT algorithm offers real time power tracking and improved energy harvesting.
- Outdoor NEMA 4X rated enclosure for unrestricted use under any environmental conditions.
- Integrated DC disconnect switch in compliance with international Standards (-S Version).

## Additional highlights:

- RS-485 communication interface (for connection to laptop or data logger).
- Integrated Arc Fault Detection and Interruption (-A Version).

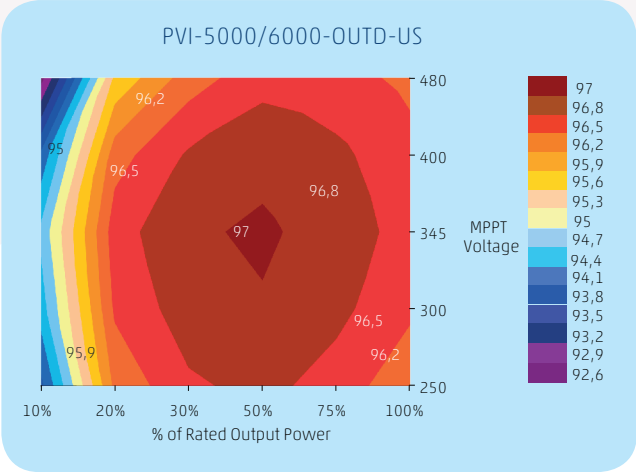
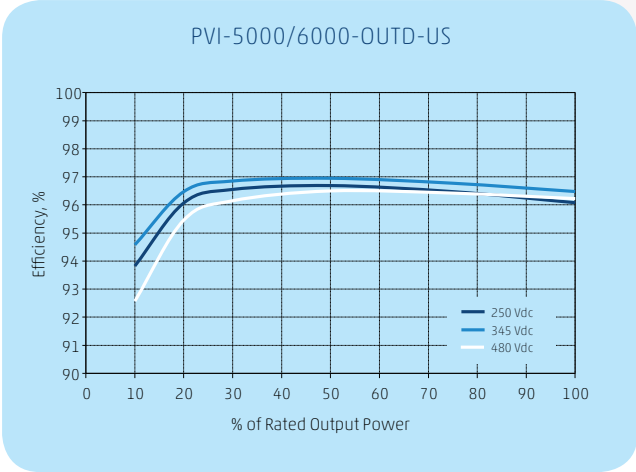
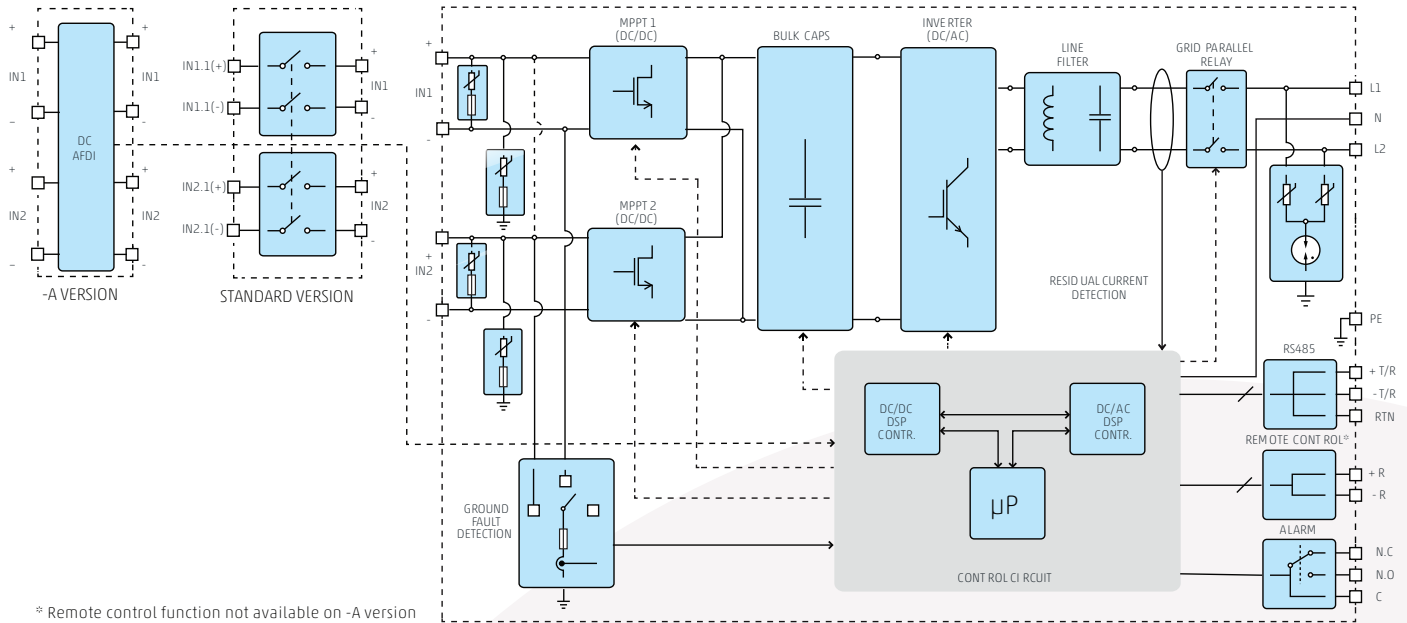


## Technical data and types

Type code	PVI-5000-OUTD-US			PVI-6000-OUTD-US		
<b>Input side</b>						
Nominal output power	5000W			6000W		
Maximum output power	5000W			6000W		
Rated grid AC voltage	208V	240V	277V	208V	240V	277V
<b>Input side (DC)</b>						
Number of independent MPPT channels	2					
Maximum usable power for each channel	4000W					
Absolute maximum voltage (Vmax)	600V					
Start-up voltage (Vstart)	200V (adj. 120-350)					
Full power MPPT voltage range	200 - 530V					
Operating MPPT voltage range	0.7 x Vstart - 580V					
Maximum current (Idcmax) for both MPPT in parallel	36A					
Maximum usable current per channel	22A					
Number of wire landing terminals per channel	2 Pairs					
Array wiring termination	Terminal block, pressure clamp, AWG16-AWG6					
<b>Output side (AC)</b>						
Grid connection type	1Ø/2W	Split-Ø/3W	1Ø/2W	1Ø/2W	Split-Ø/3W	1Ø/2W
Adjustable voltage range (Vmin-Vmax)	183V-228V	221V-264V	244V-304V	183V-228V	211V-264V	244V-304V
Grid frequency	60Hz					
Adjustable grid frequency range	57-60.5Hz					
Maximum current (Iac,max) ARMS	27A <sub>RMS</sub>	23A <sub>RMS</sub>	20A <sub>RMS</sub>	30A <sub>RMS</sub>	28A <sub>RMS</sub>	24A <sub>RMS</sub>
Power factor	> 0.995					
Total harmonic distortion at rated power	< 2%					
Contributory fault current1	36.25 A <sub>pk</sub> / 25.63A <sub>RMS</sub>	36.5 A <sub>pk</sub> / 25.81A <sub>RMS</sub>	31.75 A <sub>pk</sub> / 22.45A <sub>RMS</sub>	36.25 A <sub>pk</sub> / 25.63A <sub>RMS</sub>	36.5 A <sub>pk</sub> / 25.81A <sub>RMS</sub>	31.75 A <sub>pk</sub> / 22.45A <sub>RMS</sub>
Grid wiring termination type	Terminal block, pressure clamp, AWG14-AWG4					
<b>Input</b>						
Reverse polarity protection	Yes					
Over-voltage protection type	Varistor, 2 for each channel					
PV array ground fault detection	Pre start-up Riso and Dynamic GFDI (requires floating arrays)					
<b>Output</b>						
Anti-islanding protection	Meets UL 1741/IEEE1547 requirements			Meets UL 1741/IEEE1547 requirements		
Over-voltage protection type Maximum	Varistor, 2 (L1 - L2 / L1 - G)			Varistor, 2 (L1 - L2 / L1 - G)		
AC OCPD Rating	35A	30A	25A	40A	35A	30A
<b>Efficiency</b>						
Maximum efficiency	97.1%					
CEC efficiency	96%	96.5%	96.5%	96%	96.5%	96.5%
User interface	Graphic display			Graphic display		
<b>Operating performance</b>						
Stand-by consumption	<8W <sub>RMS</sub>			<8W <sub>RMS</sub>		
Night time consumptionat	<0.6W <sub>RMS</sub>			<0.6W <sub>RMS</sub>		
<b>Communication</b>						
User-interface	16 characters x 2 lines LCD display					
Remote monitoring (1xRS485 incl.)	VSN700 Data Logger (opt)					
Wired local monitoring (1xRS485 incl.)	PVI-USB-RS485_232 (opt.)					
<b>Environmental</b>						
Ambient air operating temperature range	-13°F to +140°F (-25°C to +60°C)			-13°F to +140°F (-25°C to +60°C) with derating above 122°F (50°C)		
Ambient air storage temperature range	-40°F to +176°F (-40°C to +80°C)			-40°F to +176°F (-40°C to +80°C)		
Relative humidity	0-100% RH condensing			0-100% RH condensing		
Acoustic noise emission level	< 50 db (A) @1m			< 50 db (A) @1m		
Maximum operating altitudte without derating	6560 ft (2000 m)			6560 ft (2000 m)		

2. Inverter can apply that much current - Breaker will open

# Block diagram of PVI-5000/6000-TL-OUTD



## Technical data and types

Type code	PVI-5000-OUTD-US	PVI-6000-OUTD-US
Mechanical specifications	NEMA 4X	
Enclosure rating	Natural convection	
Cooling	41.4x12.8x8.6 in (1052 x 325 x 218 mm)	
Dimensions (H x W x D)	<59.5lb (27.0 kg)	
Weight	< 78lb (35.4 kg)	
Shipping weight	Wall bracket	
Mounting system	Trade size KOs: (2ea x 1/2") and (2ea x 1-1/4", 3 places side, front, rear)	
Conduit connections	25A / 600V	
DC switch rating (per contact)	Transformerless (floating array)	
Safety	UL1741, IEE1547, IEE1547.1, CSA-C22.2N. 107.1-01, UL1998 UL 1699B, FCC Part 15 Class B	
Isolation level	Safety Approval	
Safety and EMC standard	cCSA <sub>us</sub>	
Safety Approval	Warranty	
Warranty	Standard warranty	
Standard warranty	Extended warranty	
Extended warranty	Available models	
Available models	Standard - with DC switch - floating Array	
Standard - with DC switch - floating Array	PVI-5000-OUTD-US	PVI-6000-OUTD-US
With DC switch, wiring box and arc fault detector and interruptor	PVI-5000-OUTD-US-A	PVI-6000-OUTD-US-A

\*All data is subject to change without notice



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a complete range of life cycle services.

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