

PVI-250 PVI-500

GENERAL SPECIFICATIONS CENTRALIZED MODELS

PVI-250.0-TL-CN
PVI-500.0-TL-CN

This product offers high performance with affordable capital expenditure and has been specifically designed for the fast growing Asian market.

Power-One's new 250kW and 500kW utility grade central inverters have a number of key features, including a very high efficiency of 98.5%, electrolytic capacitor-free leading to longer MTBF (mean time between failures), compact size and weight; touch screen display, and 1000 Voc (open circuit voltage) rating.

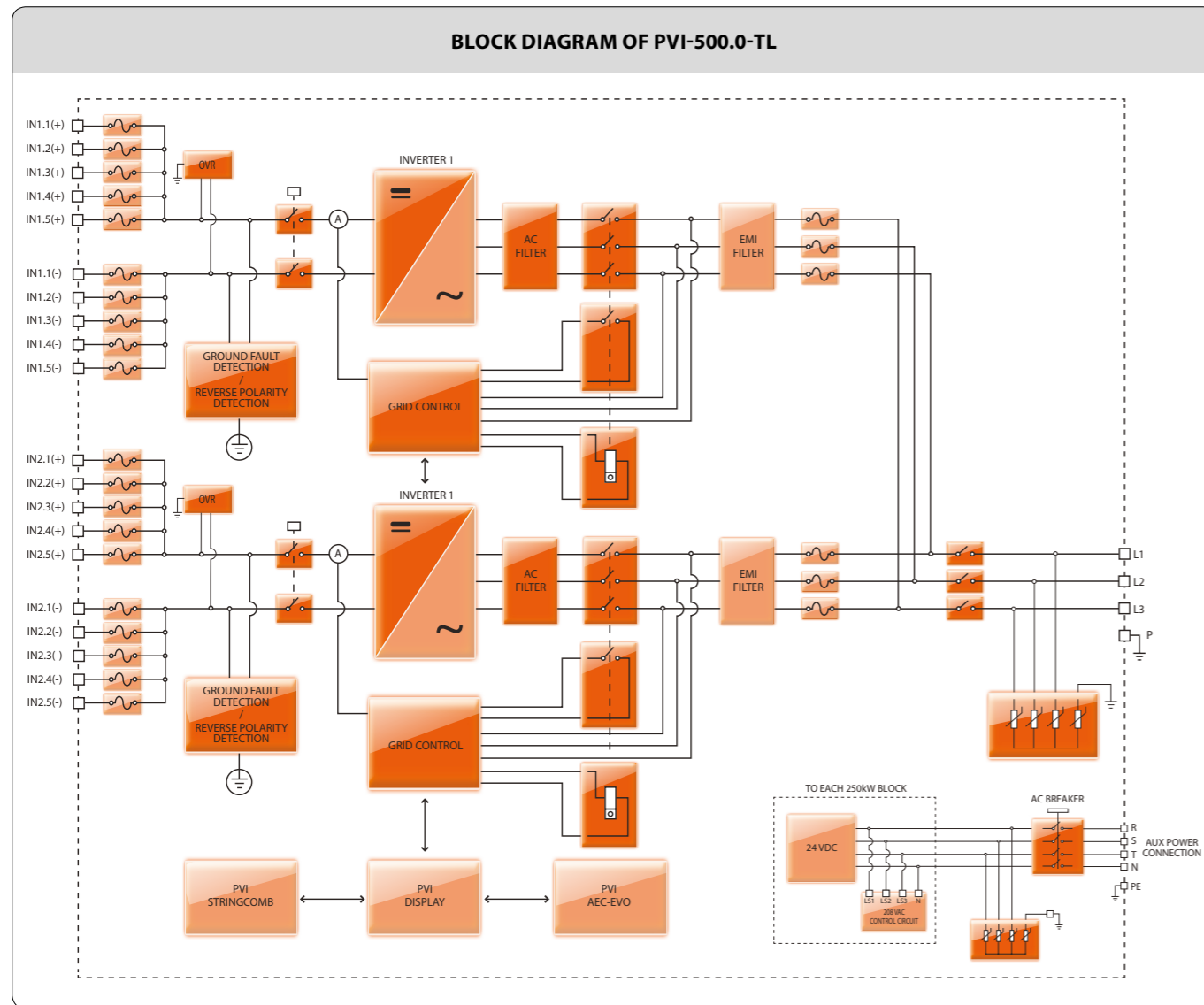
This product design is the result of the experience we have acquired with more than 50MW of installation in the challenging Asian market.



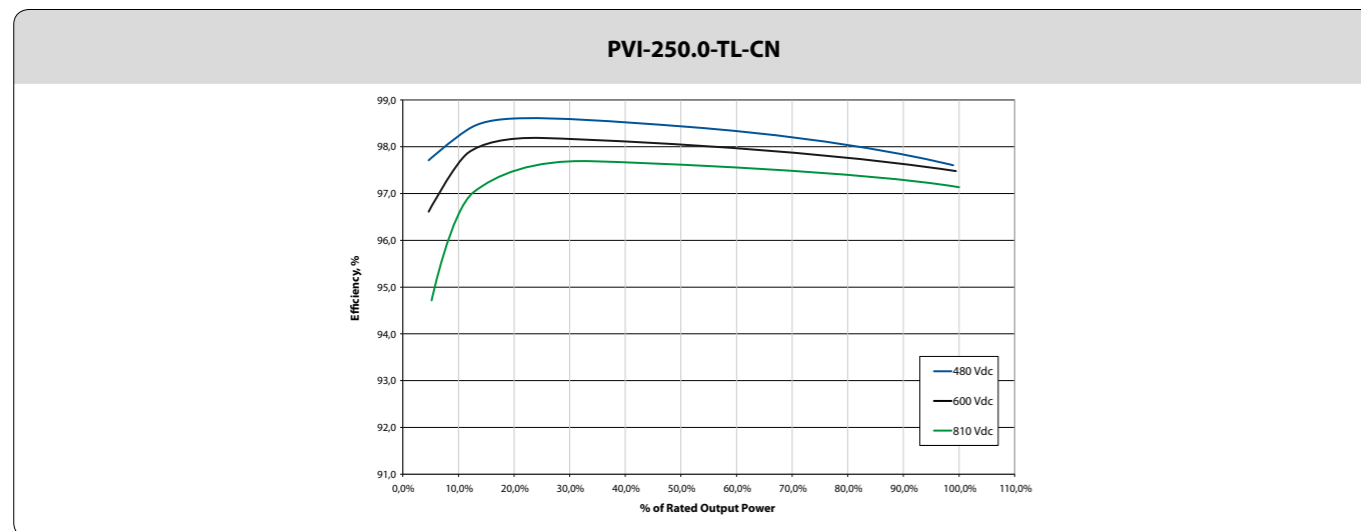
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Features

- Reverse-polarity protection minimizes potential damage caused by array mis-wiring
- Maximum input voltage up to 1000 Vdc, high design flexibility and reduced DC distribution losses for large scale PV plants
- Transformer-less inverter for direct connection to MV transformer
- Integrated DC and AC distribution and protection. Fully equipped for connection, additional accessories not required
- High efficiencies deliver more energy
- Two independent RS-485 communication interfaces for inverter and intelligent string combiner monitoring



Block Diagram and Efficiency Curves



PARAMETER	PVI-250.0-TL-CN	PVI-500.0-TL-CN
Input Side		
MPPT Input Range ($V_{MPPTmin,r} \dots V_{MPPTmax,r}$)	475...900 V	475...900 V
MPPT Input Range ($V_{MPPTmin,r} \dots V_{MPPTmax,r}$) at Full Power	475...900 V	475...900 V
Absolute Maximum Input Voltage ($V_{max,abs}$)	1000 V	1000 V
Number of Independent MPPT Multi-Master	1	2
Number of Independent MPPT Master/Slave	Not applicable	1
Maximum Combined Input Current ($I_{dc,max,c}$)	550 A	1100 A
Maximum Input Current for Each Module ($I_{dc,max,m}$)	550 A	550 A
Number of DC Inputs Pairs	5	10
DC Connections Type	10 x 70 mm ² (M10)	20 x 70 mm ² (M10)
Input Protection		
Reverse Polarity Protection	Yes	Yes
Input Over Voltage Protection - Varistor	2 for each input, class II	2 for each input, class II
Photovoltaic Array Isolation Control	According to local standard	According to local standard
Fuse Size for Each Input Pair	125 A / 1100 V	125 A / 1100 V
Output Side		
AC Grid Connection ($V_{ac,min} \dots V_{ac,max}$)	Three phase	Three phase
Rated Power ($P_{ac,r}$)	250 kW	500 kW
Rated Grid Voltage ($V_{ac,r}$)	320 Vac / PE	320 Vac / PE
AC Voltage Range ($V_{ac,min} \dots V_{ac,max}$)	272...368 Vac	272...368 Vac
Maximum Output Current ($I_{ac,max}$)	450 A	900 A
Rated Frequency (f_r)	50/60 Hz	50/60 Hz
Frequency Range ($f_{min} \dots f_{max}$)	47...53 / 57...63 Hz ¹	47...53 / 57...63 Hz ¹
Nominal Power Factor ($\cos\phi_{ac,r}$)	> 0.995 (adj. ± 0.9) ²	> 0.995 (adj. ± 0.9) ²
Total Harmonic Distortion	< 3% (@ $P_{ac,r}$)	< 3% (@ $P_{ac,r}$)
AC Connection Type	3 x 240 mm ² (M10)	3 x 240 mm ² (M10)
Output Protection		
Anti-Islanding Protection	According to local standard	According to local standard
Output Overvoltage Protection - Varistor	3 star connected, class II	3 star connected, class II
AC Circuit Breaker	690 V / 630 A (T5)	690 V / 1kA (T6)
Night Time Disconnect	Yes	Yes
Operating Performance		
Maximum Efficiency (η_{max})	98.5%	98.5%
Weighted Efficiency (EURO/CEC)	98.2% / -	98.2% / -
Stand-by Consumption/Night-time power loss	< 33 W	< 66 W
Auxiliary Supply	3 x 400 Vac / N / PE	3 x 400 Vac / N / PE
Auxiliary Supply Consumption	< 405 W	< 810 W
Auxiliary Supply Consumption without Cooling	< 100 W	< 220 W
Inverter Switching Frequency	9 kHz	9 kHz
Communication		
Wired Local Monitoring	1 x RS485 (inc.)	PVI-USB-RS485_232 (opt.)
Remote Monitoring	1 x RS485 (inc.)	PVI-AEC-EVO (opt.), AURORA-UNIVERSAL (opt.)
AURORA String Combiner	1 x RS485 (inc.)	PVI-STRINGCOMB (opt.)
User Interface		TFT LCD 5.7"
Environmental		
Ambient Temperature Range	-20...+ 55°C/-4...131°F with derating above 45°C/113°F	-20...+ 55°C/-4...131°F with derating above 45°C/113°F
Relative Humidity	0...95% non condensing	0...95% non condensing
Noise Emission	<62 dB(A) @ 1 m	<62 dB(A) @ 1 m
Maximum Operating Altitude without Derating	1000 m / 3280 ft	1000 m / 3280 ft
Physical		
Environmental Protection Rating	IP 20	IP 20
Cooling	Air Forced	Air Forced
Required Air Cooling Flow	4000 m ³ /h - 2360 CFM	8000 m ³ /h - 4720 CFM
Dimension (H x W x D)	2280mm x 1200mm x 800mm / 89.8" x 47.2" x 31.5"	2280mm x 2000mm x 800mm / 89.8" x 78.7" x 31.5"
Weight	< 800 kg / 1765 lb	< 1200 kg / 2645 lb
Safety		
Transformer	No	No
Marking	CE, CQC	CE, CQC
Safety and EMC Standard	EN 50178, EN 61000-3-12, EN61000-6-2, EN61000-6-4, IEC 62109-1	EN 50178, EN 61000-3-12, EN61000-6-2, EN61000-6-4, IEC 62109-1
Grid Standard	CNCA/CTS0004, GB/T 19939, IEC 62116	CNCA/CTS0004, GB/T 19939, IEC 62116

¹ The AC Voltage Range may vary depending on specific country grid standard

² Power factor variations beyond ± 0.9 imply a reduction of the active power

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