

SOLAR INVERTERS

ABB string inverters

PVS-50/60-TL



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PVS-50/60-TL
string inverter

This new addition to the PVS string inverter family, with 3 independent MPPT and power ratings of up to 60 kW, has been designed with the objective to maximize the ROI in large systems with all the advantages of a decentralized configuration for both rooftop and ground-mounted installations.

Compact design

Thanks to technological choices aimed at optimizing installation times and costs, the product design features the power module and wiring box enclosed in a single compact chassis thus saving installation resources and costs.

The inverter comes in multiple versions also allowing the possibility to connect to third-party DC string combiners.

Ease of installation

The horizontal and vertical mounting possibility creates flexibility for both rooftop and ground mounted installations.

Moreover the cover is equipped with hinges and locks that are fast to open and reduce the risk of damaging the chassis and interior components when commissioning and performing maintenance actions.

Advanced cloud connected features

Standard wireless access from any mobile device makes the configuration of inverter and plant easier and faster. Improved user experience thanks to a built-in User Interface (UI) enables access to advanced

The PVS-50/60-TL is ABB's cloud connected three-phase string solution enabling cost efficient large decentralized photovoltaic systems for both commercial and utility applications.

inverter configuration settings.

The Installer for Solar Inverters mobile app and configuration wizard enable a quick multi-inverter installation, saving up to 70% commissioning time.

Fast system integration

Industry standard Modbus (RTU/TCP)/SUNSPEC protocol enables fast system integration. Two ethernet ports enable fast and future-proof communication for PV plants.

ABB plant portfolio integration

Monitoring your assets is made easy, as every inverter is capable to connect to ABB cloud platform to secure your assets and profitability in long term.

Highlights

- Up to 3 independent MPPT - 50/60 kW power ratings
- Horizontal and vertical installation
- Easy access to wiring box thanks to hinges and cam latches positioned on cover
- Power module and wiring box in one compact chassis
- Wi-Fi interface for commissioning and configuration
- Reactive power management capability
- Remote monitoring and firmware upgrade via ABB Cloud platform (logger free)
- Provides 10% more power in case of reduced ambient temperature
- Improved operating altitude. Can work up to 4000 mt.
- Built-in dynamic feed-in control algorithm

ABB string inverters

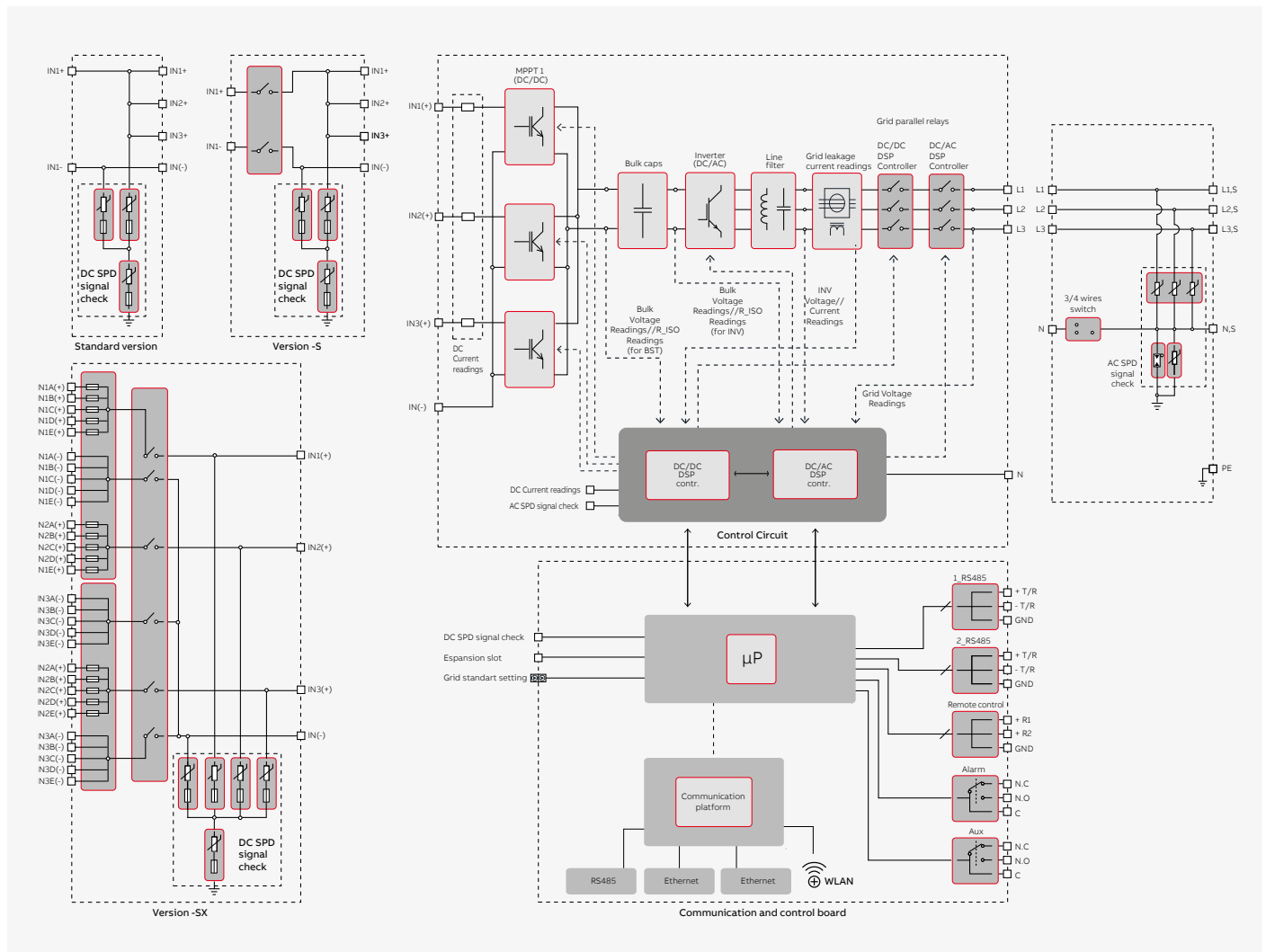
PVS-50/60-TL



Technical data and types

Type code	PVS-50-TL	PVS-60-TL
Input side		
Absolute maximum DC input voltage ($V_{max,abs}$)	1000 V	
Start-up DC input voltage (V_{start})	420...700 V (Default 420 V)	420...700 V (Default 500 V)
Operating DC input voltage range ($V_{dcmin}...V_{dcmax}$)	0,7x V_{start} ...950 V (min 300 V)	0,7x V_{start} ...950 V (min 360 V)
Rated DC input voltage (V_{dcr})	610 Vdc	720 Vdc
Rated DC input power (P_{dcr})	52000 W	61800 W
Number of independent MPPT	3 (version SX and SX2) / 1 (versione standard e S)	
Maximum DC input power for each MPPT (PMPPT, max)	19300W@30°C / 17500W@45°C	23100W@30°C / 21000W@45°C
MPPT input DC voltage range ($V_{MPPTmin}...V_{MPPTmax}$) at P_{acr}	480-800 Vdc	570-800 Vdc
Maximum DC input current (I_{dcmax}) for each MPPT	36 A	
Maximum input short circuit current for each MPPT	55 A (165 A in case of parallel MPPT)	
Number of DC input pairs for each MPPT	5	
DC connection type	Screw terminal block (Standard and -S version) or PV quick fit connector ¹⁾ (-SX and SX2 version)	
Input protection		
Reverse polarity protection	Yes, from limited current source	
Input over voltage protection for each MPPT	Type 2 / Type 1 + 2 (option)	
Photovoltaic array isolation control	According to local standard	
DC switch rating for each MPPT (version with DC switch)	75 A / 1000 V for each MPPT	
Fuse rating (version with fuses)	15 A / 1000 V	
Output side		
AC grid connection type	Three-phase (3W+PE or 4W+PE), grounded WYE system only	
Rated AC power (P_{acr} @cosf=1)	50000 W	60000 W
Maximum AC output power (P_{acmax} @cosf=1)	55000 W up to 30°C	66000 W up to 30°C
Maximum apparent power (S_{max})	55000 VA up to 30°C	66000 VA up to 30°C
Rated AC grid voltage ($V_{acr,r}$)	400 V	480 V
AC voltage range	320...480 V ²⁾	384...571 V ²⁾
Maximum AC output current ($I_{ac,max}$)	80 A	
Contributory fault current	92 A	
Rated output frequency (f_r)	50 Hz / 60 Hz	
Output frequency range ($f_{min}...f_{max}$)	47...53 Hz / 57...63 Hz ³⁾	
Nominal power factor and adjustable range	> 0.995; 0...1 inductive/capacitive with maximum Sn	
Total current harmonic distortion	<3%	
Maximum AC cable	95mm ² copper/alluminum	
AC connection type	Screw terminal block, cable gland	
Output protection		
Anti-islanding protection	According to local standard	
Maximum external AC overcurrent protection	100 A	
Output overvoltage protection	Type 2	
Operating performance		
Maximum efficiency (η_{max})	98.3%	98.5%
CN efficiency	98.2%	98.3%
Euro efficiency	98.0%	98.0%
Communication		
Embedded communication interfaces	3x RS485, 2X Ethernet (RJ45), WLAN (IEEE802.11 b/g/n @ 2,4 GHz)	
Communication protocol	Modbus RTU / TCP (Sunspec compliant); Aurora Protocol	
Remote monitoring services	Standard level access to Aurora Vision monitoring portal	
Advanced features	Integrated Web User Interface; Display (option); Embedded logging and direct transferring of data to Cloud	
Environmental		
Ambient temperature range	-25...+60°C (-13...140 °F) with derating above 45 °C (113 °F) with derating above 45 °C (113 °F)	
Relative humidity	4%... 100% condensing	
Sound pressure level, typical	75 dB(A) @1 m	
Maximum operating altitude	4000 m (13123 ft) with derating above 2000 m / 6561 ft	

ABB PVS-50/60-TL string inverter block diagram



Technical data and types

Type code	PVS-50-TL	PVS-60-TL
Physical		
Environmental protection rating	IP65 (IP54 for cooling section)	
Cooling	Forced air	
Dimension (H x W x D)	750 mm x 1100 mm x 261,5 mm / 29.5" x 43.3" x 10.27"	
Weight	70 kg / 154 lbs (SX version)	
Mounting system	Wall bracket	
Safety		
Isolation level	Transformerless	
Marking	CE	
Safety and EMC standard	IEC/EN 62109-1, IEC/EN 62109-2, EN 61000-6-2, EN 61000-6-3, EN 61000-3-11, EN 61000-3-12, EN 62311, EN 301 489-1, EN 301 489-17, EN 300 328	
Grid standard (check your sales channel for availability)	CEI 0-21, CEI 0-16, DIN V VDE V 0126-1-1, VDE-AR-N 4105, G59/3, DRRG/DEWA, Chile LV/MV EN 50438 (Including Ireland deviations), RD 1565, RD 413, UTE C15-7-712-1 P.O. 12.3, AS/NZS 4777.3, BDEW, NRS-097-2-1, MEA, PEA, IEC 61727, ISO/IEC Guide 67(System 5) IEC 61683, VFR-2014, IEC 62116, Synergrid C10/11, IRR-DCC-MV, CLC-TS-50549-1/-2	
Available product variants		
Input connections with terminal blocks + surge arrester Type 2	PVS-50-TL	PVS-60-TL
Input connections with terminal blocks + DC switch + surge arrester Type 2	PVS-50-TL-S	PVS-60-TL-S
15 quick Input connections + fuses (single pole) + DC switch + surge arresters Type 2	PVS-50-TL-SX	PVS-60-TL-SX
15 quick Input connections + fuses (both poles) + DC switch + surge arresters Type 2	PVS-50-TL-SX2	PVS-60-TL-SX2
Optional available		
SPD Type 1 + 2 ⁴⁾	Available	Available

³⁾Please refer to the document "String inverters – Product manual appendix" available at www.abb.com/solarinverters for information on the quick-fit connector brand and model used in the inverter

²⁾ The AC voltage range may vary depending on specific country grid standards

³⁾ The Frequency range may vary depending on specific country grid standards

⁴⁾ Article with dedicated part number, only for SX2 version

Remark. Features not specifically listed in the present data sheet are not included in the product

For more information please contact
your local ABB representative or visit:

www.abb.com/solarinverters
www.abb.com

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