



Solar inverter

PVS-100/120-TL

The PVS-100/120-TL is FIMER's cloud connected three-phase string solution for cost efficient decentralized photovoltaic systems for both ground mounted and large commercial applications.

From 100 to 120 kW

String inverter - PVS-100/120-TL

This platform, for extreme high power string inverters with power ratings up to 120 kW, maximizes the ROI for decentralized ground mounted and large rooftop applications. With six MPPT, energy harvesting is optimized even in shading situations.

Extreme power with high integration level

The extreme high power module up to 120 kW saves installation resources as less units are required.

Due to its compact size further savings are generated in logistics and in maintenance. Thanks to the integrated DC/AC disconnection, 24 string connections, fuses and surge protection no additional boxes are required.

Ease of installation

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

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

The installer mobile APP, available for Android/iOS devices, further simplifies multi-inverter installations.

The design supports both copper and aluminum cabling even up to 185 mm² cross section to minimize the energy losses.

Fast system integration

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

Plant portfolio integration

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

Design flexibility and shade tolerance

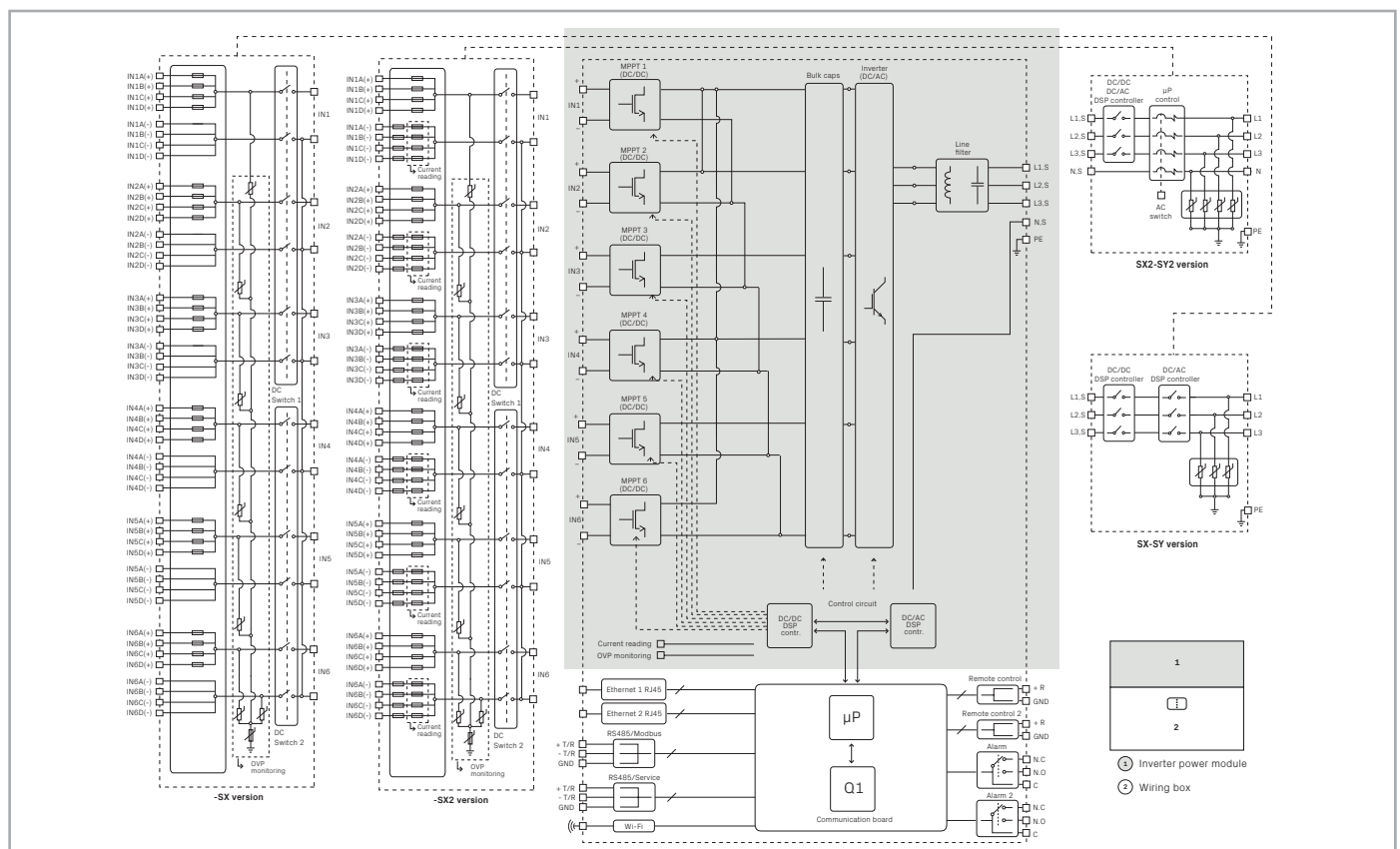
The double stage conversion topology and six MPPT guarantee maximum flexibility for the system design on rooftops or hilly ground.

With this technological choice energy harvesting is optimized even in shading situations.

Highlights

- 6 independent MPPT
- Transformerless inverter
- 120 kW for 480 Vac and 100 kW for 400 Vac
- Wi-Fi as standard for configuration
- Two ethernet ports for plant level communication
- Large set of specific grid codes available which can be selected directly in the field
- Double stage topology for a wide input range
- Both vertical and horizontal installation
- Separate wiring compartment for fast swap and replacement
- IP66 Environmental protection
- Maximum efficiency up to 98.9%

PVS-100/120-TL string inverter block diagram



Technical data and types

Type code	PVS-100-TL	PVS-120-TL
Input side		
Absolute maximum DC input voltage ($V_{\text{max,abs}}$)		1000 V
Start-up DC input voltage (V_{start})		420 V (400...500 V)
Operating DC input voltage range ($V_{\text{dcmin}}...V_{\text{dcmax}}$)		360...1000 V
Rated DC input voltage (V_{dcr})	620 V	720 V
Rated DC input power (P_{dcr})	102 000 W	123 000 W
Number of independent MPPT		6
MPPT input DC voltage range at ($V_{\text{MPPTmin}}...V_{\text{MPPTmax}}$) at P_{acr}	480...850 V	570...850 V
Maximum DC input power for each MPPT ($P_{\text{MPPT,max}}$)	17500 W [480 V ≤ V_{MPPT} ≤ 850 V]	20500 W [570 V ≤ V_{MPPT} ≤ 850 V]
Maximum DC input current for each MPPT (I_{dmax})		36 A
Maximum input short circuit current (I_{scmax}) for each MPPT		50 A ¹⁾
Number of DC input pairs for each MPPT		4
DC connection type		PV quick fit connector ²⁾
Input protection		
Reverse polarity protection		Yes, from limited current source
Input over voltage protection for each MPPT - replaceable surge arrester		Type II with monitoring only for SX and SX2 versions; Type I+II with monitoring only for SY and SY2 versions
Photovoltaic array isolation control		as per IEC62109
DC switch rating for each MPPT		50 A / 1000 V
Fuse rating (versions with fuses)		15 A / 1000 V ³⁾
String current monitoring		SX2, SY2: (24ch) Individual string current monitoring; SX, SY: (6ch) Input current monitoring per MPPT
Output side		
AC Grid connection type		Three phase 3W+PE or 4W+PE
Rated AC power ($P_{\text{acr}} @ \cos\varphi=1$)	100 000 W	120 000 W
Maximum AC output power ($P_{\text{acmax}} @ \cos\varphi=1$)	100 000 W	120 000 W
Maximum apparent power (S_{max})	100 000 VA	120 000 VA
Rated AC grid voltage (V_{acr})	400 V	480 V
AC voltage range	320...480 V ⁴⁾	384...576 ³⁾
Maximum AC output current ($I_{\text{ac,max}}$)		145 A
Rated output frequency (f_i)		50 Hz / 60 Hz
Output frequency range ($f_{\text{min}}...f_{\text{max}}$)		45...55 Hz / 55...65 Hz ⁵⁾
Nominal power factor and adjustable range		> 0.995, 0...1 inductive/capacitive with maximum S_{max}
Total current harmonic distortion		< 3%
Maximum AC cable		185mm ² Aluminum and copper
AC connection type		Provided bar for lug connections M10, single core cable glands 4xM40 and M25, multi core cable gland M63 as option
Output protection		
Anti-islanding protection		According to local standard
Maximum external AC overcurrent protection		225 A
Output overvoltage protection - replaceable surge protection device		Type 2 with monitoring
Operating performance		
Maximum efficiency (η_{max})	98.4%	98.9%
Weighted efficiency (EURO)	98.2%	98.6%
Communication		
Embedded communication interfaces		1x RS485, 2x Ethernet (RJ45), WLAN (IEEE802.11 b/g/n @ 2.4 GHz)
User interface		4 LEDs, Web User Interface
Communication protocol		Modbus RTU/TCP (Sunspec compliant)
Commissioning tool		Web User Interface, Mobile APP/APP for plant level
Remote monitoring services		Aurora Vision® monitoring portal
Advanced features		Embedded logging, direct telemetry data transferring to FIMER cloud

Technical data and types

Type code	PVS-100-TL	PVS-120-TL
Environmental		
Ambient temperature range	-25...+60°C / -13...140°F with derating above 40°C / 104 °F	
Relative humidity	4%...100% condensing	
Sound pressure level, typical	68dB(A) @ 1m	
Maximum operating altitude without derating	2000 m / 6560 ft	
Physical		
Environmental protection rating	IP 66 (IP54 for cooling section)	
Cooling	Forced air	
Dimension (H x W x D)	869x1086x419 mm / 34.2" x 42.8" x 16.5"	
Weight	70kg / 154 lbs for power module ; ~55kg / 121 lbs for wiring box Overall max 125 kg / 276 lbs	
Mounting system	Mounting bracket vertical & horizontal support	
Safety		
Isolation level	Transformerless	
Marking & EMC	CE conformity according to LV and EMC directives	
Safety	IEC/EN 62109-1, IEC/EN 62109-2	
Grid standard (check your sales channel for availability)	CEI 0-16, CEI 0-21, IEC 61727, IEC 62116, IEC 60068, IEC 61683, JORDAN IRR-DCC-MV, AS/ NZS4777.2, VDE-AR-N 4105, VDE V 0-126-1-1, VFR 2014, Belg C10-C11, UK59/3, P.O. 12.3, ITC-BT-40, EN50438 Generic +Ireland, CLC-TS 50549-1/2	
Available products variants		
Inverter power module	PVS-100-TL-POWERMODULE-400	PVS-120-TL-POWERMODULE-480
Input with 24 quick fit connectors pairs + String fuses (both positive and negative pole) + DC disconnect switches + AC disconnect switch + AC and DC overvoltage surge arresters (Type II) + individual string monitoring (24 ch.)	WB-SX2-PVS-100-TL	WB-SX2-PVS-120-TL
Input with 24 quick fit connectors pairs + String fuses (positive pole) + DC disconnect switches + AC and DC overvoltage surge arresters (Type II) + MPPT level input current monitoring (6 ch.)	WB-SX-PVS-100-TL	WB-SX-PVS-120-TL
Input with 24 quick fit connectors pairs + String fuses (positive pole) + DC disconnect switches + AC and DC overvoltage surge arresters (Type II for AC and Type I+II for DC) + MPPT level input current monitoring (6 ch.)	WB-SY-PVS-100-TL	WB-SY-PVS-120-TL
Input with 24 quick fit connectors pairs + String fuses (both positive and negative pole) + DC disconnect switches + AC disconnect switch + AC and DC overvoltage surge arresters (Type II for AC and Type I+II for DC) + individual string monitoring (24 ch.)	WB-SY2-PVS-100-TL	WB-SY2-PVS-120-TL
Optional available		
Support for multi core AC cable M63 + M25 (PE)	AC output panel M63 for wiring box	
AC multicore cable gland plate	Supports M63 Ø 37...53mm + M25 Ø 10...17mm	

- 1) Maximum number of opening 5 under overloading
- 2) Please refer to the document "String inverters – Product manual appendix" available at www.fimer.com for information on the quick-fit connector brand and model used in the inverter
- 3) Maximum fuse size supported 20A. Additionally two strings input per MPPT supports 30A fuse size for connecting two strings per input

- 4) The AC voltage range may vary depending on country specific country grid standard
- 5) The Frequency range may vary depending on specific country grid standards

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



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

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