FIMER

Solar inverter
PVS-60-TL-US

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

60 kW

This member of 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 inverter configuration settings.

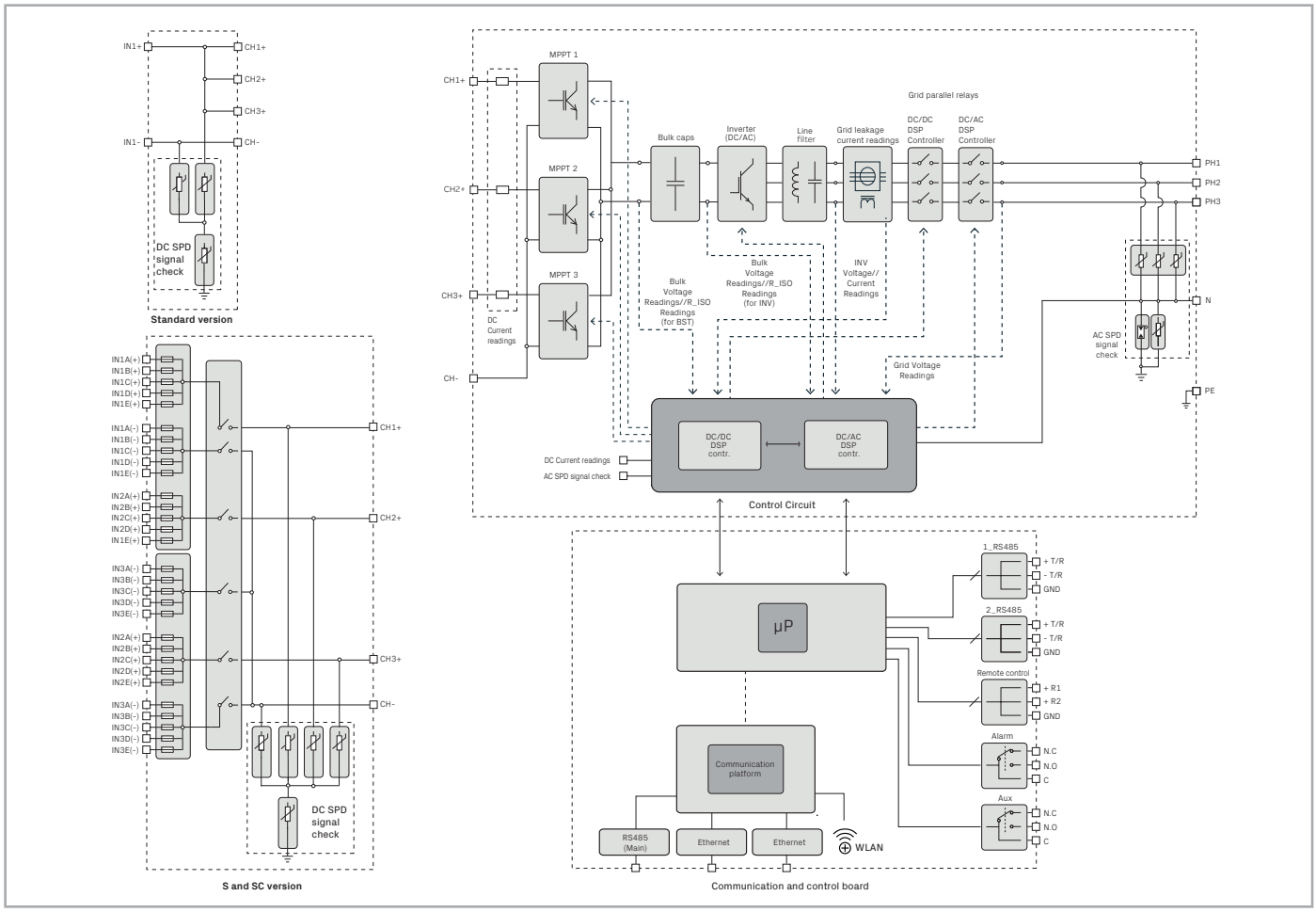
The Installer for Solar Inverters mobile app and configuration wizard enable a quick multi-inverter installation, saving up to 70% commissioning time.

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.

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.

Highlights
- Up to 3 independent MPPT - 60 kW power ratings
- Vertical and horizontal installations and any angle in between
- 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
- Remote monitoring and firmware upgrade via Aurora Vision platform (logger free)
- Improved operating altitude
- Built-in dynamic export limitation control algorithm

PVS-60-TL-US string inverter block diagram



Technical data and types

Type code	PVS-60-TL-US
Input side	
Absolute maximum DC input voltage ($V_{max,abs}$)	1000 V
Start-up DC input voltage (V_{start})	420...700 V (Default 500 V)
Operating DC input voltage range (V_{dcmin}...V_{dcmax})	0.7xV_{start} ...950 V (min 360 V)
Rated DC input voltage (V_{dcr})	720 Vdc
Rated DC input power (P_{dcr})	61800 W
Number of independent MPPT	3 (S and SC version) / 1 (standard version)
Maximum DC input power for each MPPT ($P_{MPPTmax}$)	21000W@45°C
MPPT input DC voltage range ($V_{MPPTmin}$ ... $V_{MPPTmax}$) at P_{acr}	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 (S and SC version) / 1 (Standard version)
DC connection type	Screw terminal block (Standard and -S version) or PV quick fit connector [1] (-SC version)
Input protection	
Reverse polarity protection	Yes, from limited current source
Input over voltage protection for each MPPT	Type 2
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 (180A in case of parallel MPPT)
Fuse rating (version with fuses)	15 A / 1000 V
Output side	
AC grid connection type	Three-phase (3PH/N/PE or 3PH/PE), grounded WYE system only
Rated AC power (P_{acr} @cosφ=1)	60000 W
Maximum AC output power (P_{acmax} @cosφ=1)	60000 W
Maximum apparent power (S_{max})	60000 VA
Nominal power factor and adjustable range	> 0.995; 0...1 inductive/capacitive with maximum Sn
Rated AC grid voltage ($V_{ac,r}$)	480 V
AC voltage range	384...571 V [2]
Maximum AC output current ($I_{ac,max}$)	77 A
Contributory fault current	92 A
Rated output frequency (f_r)	60 Hz
Output frequency range (f_{min}...f_{max})	50...64 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	AWG 3/0 copper/aluminum
AC connection type	Screw terminal block
Output protection	
Anti-islanding protection	According IEEE 1547
Maximum external AC overcurrent protection	100 A
Output overvoltage protection - plug In modular surge arrester	Type 2
Operating performance	
Maximum efficiency (hmax)	98.5%
CEC efficiency	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; Embedded logging and direct transferring of data to Cloud

Technical data and types

Type code	PVS-60-TL-US
Environmental	
Ambient temperature range	-25...+60°C (-13...140 °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
Physical	
Environmental protection rating	NEMA 4X (NEMA 3R for Fan tray)
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	68 kg / 150 lbs (SC version)
Mounting system	Wall mounting bracket (vertical or horizontal)
Safety	
Isolation level	Transformerless
Marking	TUV
Safety and EMC standard	UL 1741, Rule 21, HECO tester per UL 1741 SA, UL1699B, UL 62109-1:2014, UL 50E (Type 4x), IEEE1547, IEEE1547.1, CSA C22.2 107.1-01-2001, CSA TIL M-07, FCC Part 15 Sub-part B Class B Limited
Available product variants	
Input lugs for use with external combiner, DC disconnect switch, SPD type II, conduit entry	PVS-60-TL-US
Touch-safe fuse holder 15 strings, DC disconnect switch, AFCI, SPD type II, conduit entry	PVS-60-TL-S-US
Quick input connection protected by fuses in both poles, DC disconnect switch, AFCI, SPD type II, conduit entry	PVS-60-TL-SC-US
Version compliant to NEC 2017 for (external) rapid shut down devices	
Input lugs for use with external combiner, DC disconnect switch, SPD type II, conduit entry	PVS-60-TL-R-US
Touch-safe fuse holder 15 strings, DC disconnect switch, AFCI, SPD type II, conduit entry	PVS-60-TL-S-R-US
Quick input connection protected by fuses in both poles, DC disconnect switch, AFCI, SPD type II, conduit entry	PVS-60-TL-SC-R-US

1) Please refer to the document "String inverters – Product manual appendix" available at www.fimer.con 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

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

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

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