



Solar inverter

FIMER PVR-65/75/80-TL

PVR-65/75/80-TL is the new solar platform designed by FIMER for the efficient revamping of PV systems equipped with central inverters with output voltage ranging from 270 V_{ac} to 320 V_{ac}.

From 65 to 80 kW

These three-phase string inverters with power sizes up to 80 kW, maximize the return on investment in large existing PV systems while enjoying all the advantages of a decentralized setup. Thanks to a structure with up to 6 MPPTs, the energy production is optimized even in shading conditions.

High power and integration level

The high-power module, of up to 80 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 devices are required.

Ease of installation

The horizontal and vertical mounting possibility guarantees improved flexibility. Covers are equipped with hinges and locks that are fast to open and reduce the risk of damaging the chassis and interior components during commissioning and whilst 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 built-in User Interface (UI) which 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 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.

Compatible with FIMER's cloud platform

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

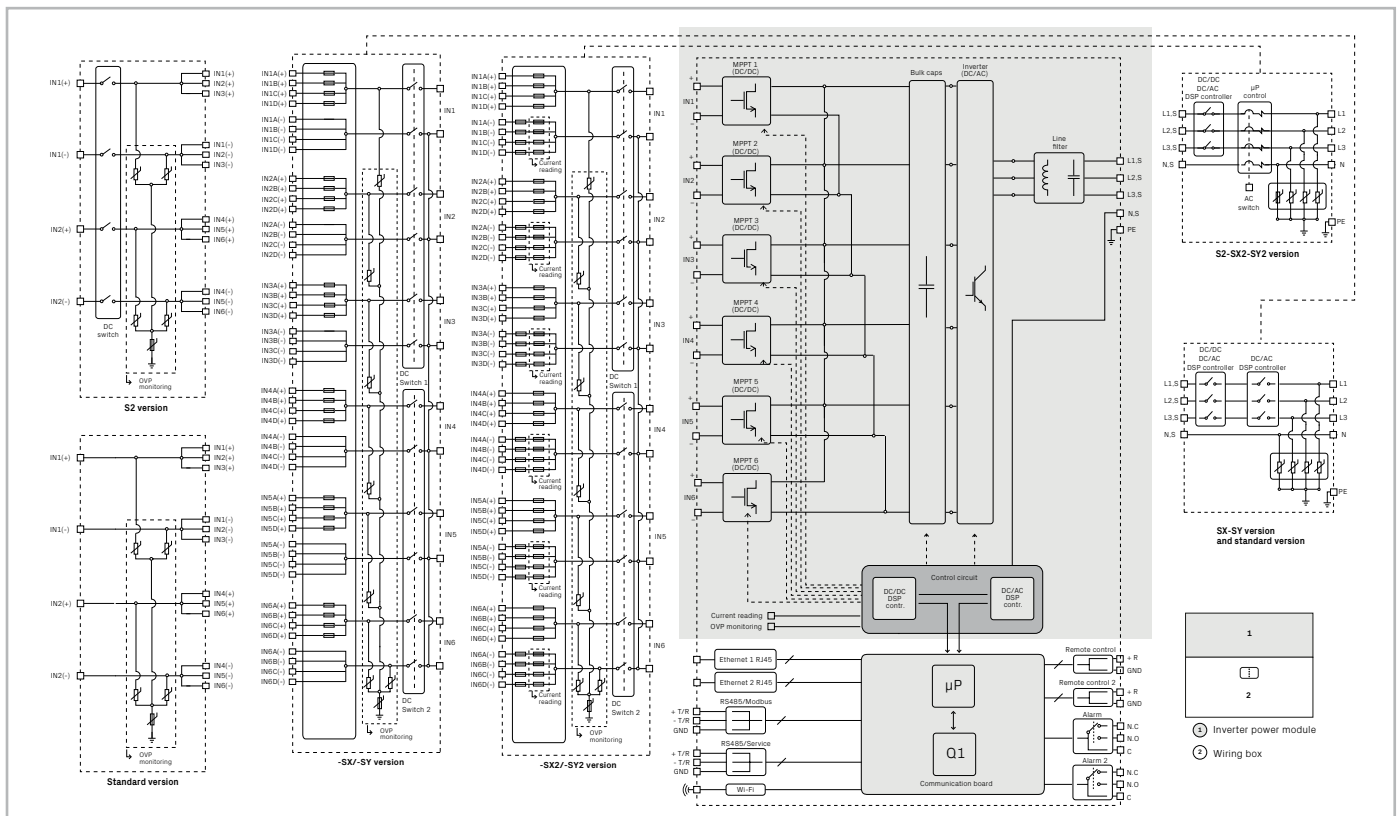
Design flexibility and shade tolerance

Available in different versions, thanks to the double stage conversion topology and the modular design, PVS-65/75/80-TL guarantees maximum flexibility for the system design. The separate and configurable wiring compartment, available with six MPPTs as well as with two parallelable MPPTs, allows the inverter to satisfy any plant condition and any customer need. With this technological choice energy harvesting is optimized even in shading situations.

Highlights

- Up to 6 independent MPPTs
- Transformerless inverter
- 65 kW power with 270 Vac, 75 kW with 300 Vac and 80 kW with 320 Vac
- Wi-Fi as standard for configuration
- Two ethernet ports for plant level communication
- Double stage topology for a wide input range
- Both vertical and horizontal installation
- Separate wiring compartment for fast replacement
- IP66 Environmental protection
- Maximum efficiency up to 98.9%

PVS-65/75/80-TL string inverter block diagram



Technical data and types

Type code	FIMER PVR-65-TL			
Wiring Box version	SX, SX2	SY, SY2	Standard	S2
Input side				
Absolute maximum DC input voltage ($V_{max,abs}$)			1000 V	
Start-up DC input voltage (V_{start})			400...500 V (default 420V)	
Operating DC input voltage range ($V_{dcmin}...V_{dcmax}$)			360-1000 V	
Rated DC input voltage (V_{dcr})			460 V	
Rated DC input power (P_{dcr})			69200 W	
Number of independent MPPT	6		2 (Parallelable)	
MPPT input DC voltage range at ($V_{MPPTmin}...V_{MPPTmax}$) at P_{acr}	36 A		108 A	
Maximum DC input power for each MPPT ($P_{MPPT,max}$)	21000 W		63000 W	
MPPT input DC voltage range ($V_{MPPTmin}...V_{MPPTmax}$) at P_{acr}			385-800 V	
Maximum input short circuit current ($I_{sc,max}$) for each MPPT ¹⁾	50 A		150 A	
Number of DC input pairs for each MPPT	4		1	
DC connection type	PV quick fit connector ²⁾		4 x M40 cable glands (Ø 19...28mm) with M10 Cable lugs	
Input protection				
Reverse polarity protection			Yes, from limited current source	
Input over voltage protection for each MPPT-surge arrester with monitoring	Type II	Type I+II	Type II	
Photovoltaic array isolation control			Yes, in compliance with IEC 62109-2	
Residual Current Monitoring Unit (leakage current protection)			Yes, in compliance with IEC 62109-2	
DC switch rating for each MPPT	50 A-1000 V		Not present	150A - 1000V
Fuse rating (versions with fuses)			20 A / 1000 V ³⁾	
Input current monitoring	Single string level (24ch.): SX2, SY2 / MPPT level: Standard, S2, SX, SY			
Output side				
AC Grid connection type	Three phase 3W+PE or 4W+PE			
Rated AC power ($P_{acr} @ \cos\phi=1$)	67800 W			
Maximum AC output power ($P_{ac,max} @ \cos\phi=1$)	67800 W			
Maximum apparent power (S_{max})	67800 VA			
Rated Apparent Power (S_r)	65000 VA			
Maximum reactive power (Q_{max})	67800 VAR			
Rated AC grid voltage (V_{acr})	270 V			
AC voltage range	216...324 V ⁴⁾			
Maximum AC output current ($I_{ac,max}$)	145 A			
Rated output current	145 A			
Output inrush current (peak and duration)	10% of I_{max} for 5 m _{sec}			
Rated output frequency (f)	50 Hz / 60 Hz			
Output frequency range ($f_{min}...f_{max}$)	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%			
Max DC Current Injection (% of I_n)	< 0.5%* I_n			
Maximum AC cable	185 mm ² Aluminum or copper			
AC connection type	Bar provided for M10 lug connections. Single core cable glands 4xM40 and M25. Multi core cable gland M63 (optional)			
Output protection				
Anti-islanding protection	According to local standard			
Maximum external AC overcurrent protection	225 A			
Output overvoltage protection - replaceable surge protection device	Type II with monitoring			
Operating performance				
Maximum efficiency (η_{max})	98.4%			
Weighted efficiency (EURO)	98.2%			
Communication				
Embedded communication interfaces	2x Ethernet (RJ45), WLAN (IEEE802.11 b/g/n @ 2,4 GHz), 1x RS485			
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 Aurora Vision			
Environmental				
Operating 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			

Technical data and types

Type code	FIMER PVR-65-TL			
Wiring Box version	SX, SX2	SY, SY2	Standard	S2
Physical				
Inverter typology	Grid connected, dual stage, transformerless			
Environmental protection rating	IP 66 (IP54 for cooling section)			
Cooling	Forced air			
Dimension (H x W x D)	869x1086x419 mm / 34.2" x 42.7" x 16.5"			
Weight	70kg / 154 lbs for each power module ; ~55kg / 121 lbs for the wiring box; Overall max 125 kg / 276 lbs			
Mounting system	Mounting bracket vertical or horizontal support			
Safety				
Isolation level	Transformerless			
Marking	CE, RCM			
Safety and EMC standard	IEC/EN 62109-1, IEC/EN 62109-2, EN 61000-6-2, EN 61000-6-4			
Grid standard (check your sales channel for availability)	CEI 0-16			
PVS-100/120 Grounding Kit ⁶⁾	Allow to connect the negative input pole to ground			

Technical data and types

Type code	FIMER PVS-75-TL			
Wiring Box version	SX, SX2	SY, SY2	Standard	S2
Input side				
Absolute maximum DC input voltage ($V_{max,abs}$)	1000 V			
Start-up DC input voltage (V_{start})	400...500 V (default 420V)			
Operating DC input voltage range ($V_{demin}...V_{dcmx}$)	360-1000 V			
Rated DC input voltage (V_{dcr})	480 V			
Rated DC input power (P_{dcr})	76500 W			
Number of independent MPPT	6		2 (Parallelable)	
MPPT input DC voltage range at ($V_{MPPTmin}...V_{MPPTmax}$) at P_{acr}	36 A		108 A	
Maximum DC input power for each MPPT ($P_{MPPT,max}$)	21000 W		63000 W	
MPPT input DC voltage range ($V_{MPPTmin}...V_{MPPTmax}$) at P_{acr}	385-800 V			
Maximum input short circuit current ($I_{sc,max}$) for each MPPT ¹⁾	50 A		150 A	
Number of DC input pairs for each MPPT	4		1	
DC connection type	PV quick fit connector ²⁾		4 x M40 cable glands (Ø 19...28mm) with M10 Cable lugs	
Input protection				
Reverse polarity protection	Yes, from limited current source			
Input over voltage protection for each MPPT-surge arrester with monitoring	Type II	Type I+II	Type II	
Photovoltaic array isolation control	Yes, in compliance with IEC 62109-2			
Residual Current Monitoring Unit (leakage current protection)	Yes, in compliance with IEC 62109-2			
DC switch rating for each MPPT	50 A-1000 V		Not present	150 A - 1000 V
Fuse rating (versions with fuses)	20 A / 1000 V ³⁾			
Input current monitoring	Single string level (24ch.): SX2, SY2 / MPPT level: Standard, S2, SX, SY			
Output side				
AC Grid connection type	Three phase 3W+PE or 4W+PE			
Rated AC power ($P_{acr}@cos\phi=1$)	75000 W			
Maximum AC output power ($P_{ac,max}@cos\phi=1$)	75000 W			
Maximum apparent power (S_{max})	75000 VA			
Rated Apparent Power (S)	75000 VA			
Maximum reactive power (Q_{max})	75000 VAR			
Rated AC grid voltage (V_{acr})	300 V			
AC voltage range	240...360 V ⁴⁾			
Maximum AC output current ($I_{ac,max}$)	145 A			
Rated output current	145 A			
Output inrush current (peak and duration)	10% of I_{max} for 5 m_{sec}			
Rated output frequency (f)	50 Hz / 60 Hz			
Output frequency range ($f_{min}...f_{max}$)	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%			
Max DC Current Injection (% of I_n)	< 0.5% I_n			
Maximum AC cable	185 mm ² Aluminum or copper			
AC connection type	Bar provided for M10 lug connections, Single core cable glands 4xM40 and M25, Multi core cable gland M63 (optional)			
Output protection				
Anti-islanding protection	According to local standard			
Maximum external AC overcurrent protection	225 A			
Output overvoltage protection - replaceable surge protection device	Type II with monitoring			
Operating performance				
Maximum efficiency (η_{max})	98.4%			
Weighted efficiency (EURO)	98.2%			
Communication				
Embedded communication interfaces	2x Ethernet (RJ45), WLAN (IEEE802.11 b/g/n @ 2.4 GHz), 1x RS485			
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 Aurora Vision			
Environmental				
Operating 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			

Technical data and types

Type code	FIMER PVS-75-TL			
Wiring Box version	SX, SX2	SY, SY2	Standard	S2
Physical				
Inverter typology	Grid connected, dual stage, transformerless			
Environmental protection rating	IP 66 (IP54 for cooling section)			
Cooling	Forced air			
Dimension (H x W x D)	869x1086x419 mm / 34.2" x 42.7" x 16.5"			
Weight	70kg / 154 lbs for each power module ; ~55kg / 121 lbs for the wiring box; Overall max 125 kg / 276 lbs			
Mounting system	Mounting bracket vertical or horizontal support			
Safety				
Isolation level	Transformerless			
Marking	CE, RCM			
Safety and EMC standard	IEC/EN 62109-1, IEC/EN 62109-2, EN 61000-6-2, EN 61000-6-4			
Grid standard (check your sales channel for availability)	CEI 0-16			
PVS-100/120 Grounding Kit ⁶⁾	Allow to connect the negative input pole to ground			

Technical data and types

Type code	FIMER PVR-80-TL			
Wiring Box version	SX, SX2	SY, SY2	Standard	S2
Input side				
Absolute maximum DC input voltage ($V_{max,abs}$)	1000 V			
Start-up DC input voltage (V_{start})	400...500 V (420 V (default 420 V))			
Operating DC input voltage range ($V_{dcrmin}...V_{dcrmax}$)	360...1000 V			
Rated DC input voltage (V_{dcr})	500 V			
Rated DC input power (P_{dcr})	82000 W			
Number of independent MPPT	6		2 (Parallelable)	
Maximum DC input current for each MPPT ($I_{dcr,max}$)	36 A		108 A	
Maximum DC input power for each MPPT ($P_{MPPT,max}$)	21000 W		63000 W	
MPPT input DC voltage range at ($V_{MPPTmin}...V_{MPPTmax}$) at P_{dcr}	385...800 V			
Maximum input short circuit current ($I_{sc,max}$) for each MPPT ¹⁾	50 A		150 A	
Number of DC input pairs for each MPPT	4		1	
DC connection type	PV quick fit connector ²⁾		4 x M40 cable glands (Ø 19...28mm) with M10 Cable lugs	
Input protection				
Reverse polarity protection	Yes, from limited current source			
Input over voltage protection for each MPPT-surge arrester with monitoring	Type II	Type I-II	Type II	
Photovoltaic array isolation control	Yes, in compliance with IEC 62109-2			
Residual Current Monitoring Unit (leakage current protection)	Yes, in compliance with IEC 62109-2			
DC switch rating for each MPPT	50 A-1000 V		Not present	150 A - 1000 V
Fuse rating (versions with fuses)	20 A / 1000 V ³⁾			
Input current monitoring	Single string level (24ch.): SX2, SY2 / MPPT level: Standard, S2, SX, SY			
Output side				
AC Grid connection type	Three phase 3W+PE or 4W+PE			
Rated AC power ($P_{acr} @ \cos\phi=1$)	80000 W			
Maximum AC output power ($P_{ac,max} @ \cos\phi=1$)	80000 W			
Maximum apparent power (S_{max})	80000 VA			
Rated Apparent Power (S)	80000 VA			
Maximum reactive power (Qmax)	80000 VAR			
Rated AC grid voltage (V_{acr})	320 V			
AC voltage range	256...360 V ⁴⁾			
Maximum AC output current ($I_{acr,max}$)	145 A			
Rated output current	145 A			
Output inrush current (peak and duration)	10% of I_{max} for 5 mSec			
Rated output frequency (f)	50 Hz / 60 Hz			
Output frequency range ($f_{min}...f_{max}$)	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%			
Max DC Current Injection (% of In)	< 0.5%*In			
Maximum AC cable	185 mm ² Aluminum or copper Bar provided for M10 lug connections, Single core cable glands 4xM40 and M25, Multi core cable gland M63 (optional)			
AC connection type				
Output protection				
Anti-islanding protection	According to local standard			
Maximum external AC overcurrent protection	225 A			
Output overvoltage protection - replaceable surge protection device	Type II with monitoring			
Operating performance				
Maximum efficiency (η_{max})	98.4%			
Weighted efficiency (EURO)	98.2%			
Communication				
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Advanced features	Embedded logging, direct telemetry data transferring to Aurora Vision			
Environmental				
Operating 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			

Technical data and types

Type code	FIMER PVR-80-TL			
Wiring Box version	SX, SX2	SY, SY2	Standard	S2
Physical				
Inverter typology	Grid connected, dual stage, transformerless			
Environmental protection rating	IP 66 (IP54 for cooling section)			
Cooling	Forced air			
Dimension (H x W x D)	869x1086x419 mm / 34.2" x 42.7" x 16.5"			
Weight	70kg / 154 lbs for each power module ; ~55kg / 121 lbs for the wiring box; Overall max 125 kg / 276 lbs			
Mounting system	Mounting bracket vertical or horizontal support			
Safety				
Isolation level	Transformerless			
Marking	CE			
Safety and EMC standard	IEC/EN 62109-1, IEC/EN 62109-2, EN 61000-6-2, EN 61000-6-4			
Grid standard (check your sales channel for availability)	CEI 0-16			
PVS-100/120 Grounding Kit ⁶⁾	Allow to connect the negative input pole to ground			

- 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
- 6) When grounding-kit is installed, Residual Current Monitoring does not fully operate. Inverter must be installed and operate in "restricted areas (access limited to qualified personnel)" according to IEC 62109-2

Remarks:

- **Designed and manufactured in Italy**
- **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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