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Solar inverter PVS-20/30/33-TL

The PVS-20/30/33-TL is the new FIMER three-phase string inverter solution, ideal for the optimization of installation and operational costs in commercial and industrial PV plants.

From 20 to 33 kW

This new PVS string inverter family, with power ratings of up to 33 kW, has been designed with the objective to maximize the ROI in commercial and industrial applications such as rooftop plants, carports and trackers.

Ease of installation and maintenance

The compact design of the product allows savings on installation costs. The installation is quick and easy, without the need to open the front cover.

Moreover, being fuse-free, this inverter guarantees further savings on maintenance costs and time, reducing on site interventions to a minimum.

Maximum flexibility and integration

The input voltage range and all DC-side specs as a whole allow for the greatest plant design flexibility within both new and existing installations.

This new inverter family guarantees maximum integration with the latest PV technologies, including bifacial modules.

Advanced communication

Fast commissioning thanks to the Solar Inverters installer app which enable a quick multi-inverter installation, saving up to 70% commissioning time.

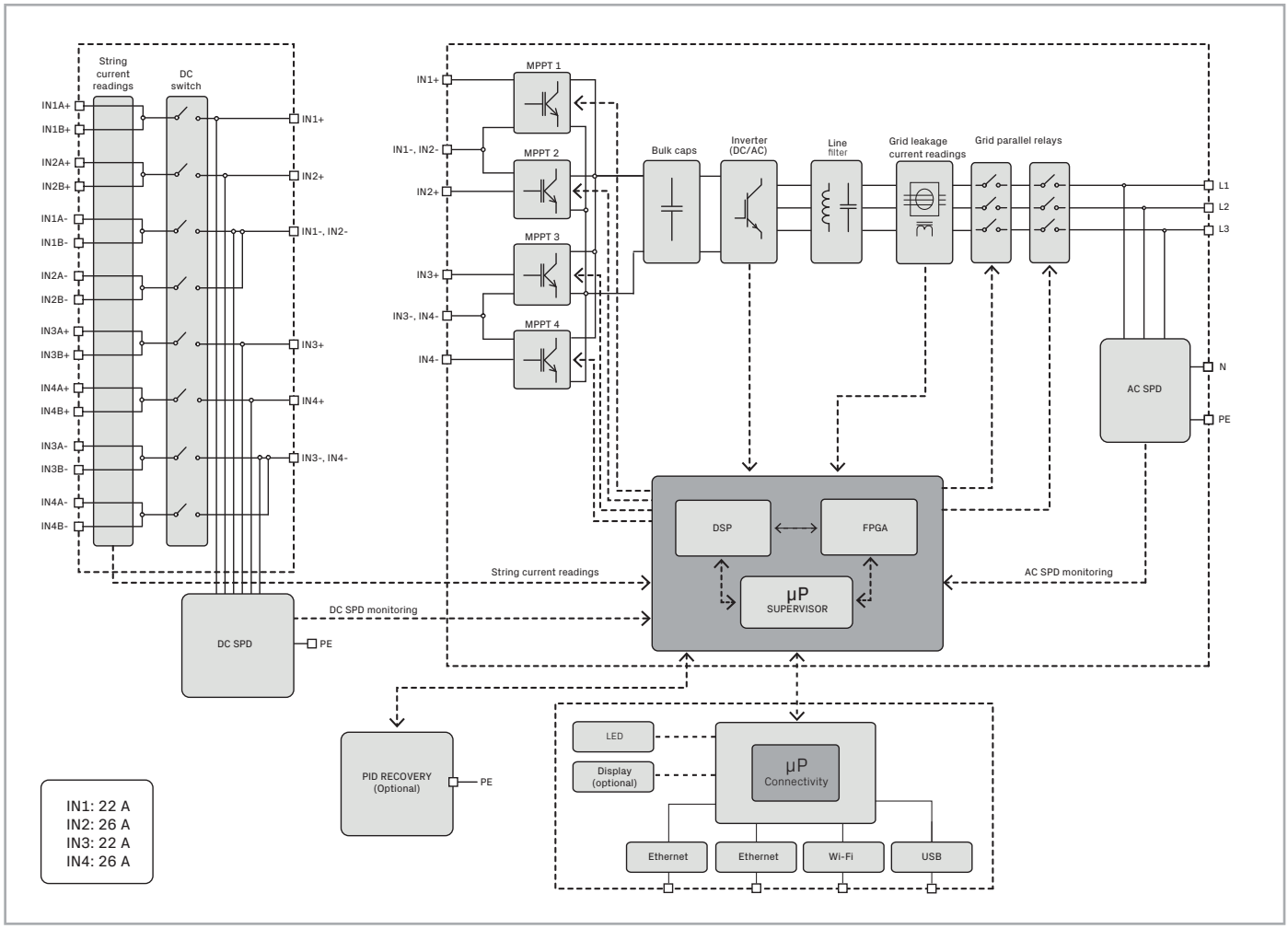
The single string current monitoring allows to keep the status of the PV generator under control and to detect potential faults in real time.

The built-in FIMER Export Limitation solution allows to comply with any power export constraints established by utilities, without any additional devices to be installed.

Highlights

- Compact inverter suitable for vertical and horizontal installation
- Fuse-free design
- Installation on new and existing plants
- Maximum string voltage 1100 Vdc
- Compatible with bifacial PV modules
- PID recovery function (optional)
- Commissioning through the Solar Inverters installer app
- Integrated Export Limitation function
- Single string current monitoring
- Arc fault detection system (optional)

Block diagram PVS-20-30-33-TL



Technical data and types

Type code	PVS-20-TL	PVS-30-TL	PVS-33-TL
Input side			
Absolute maximum DC input voltage ($V_{max,abs}$)		1100 V	
Start-up DC input voltage (V_{start})		250...500V (default 430V)	
Operating DC input voltage range (V_{dcmin}...V_{dcmax})		200-1000 V	
Rated DC input voltage (V_{dcr})		620V	
Rated DC input power (P_{dcr})	20500 W	30600 W	33700 W
Number of independent MPPT		4	
Maximum photovoltaic power recommended (PPV, max)	34000 Wp	44000 Wp	48000 Wp
Maximum DC input power for each MPPT ($P_{MPPT,max}$)		12000W@26A, 10000W@22A	
MPPT input DC voltage range ($V_{MPPTmin}$ ... $V_{MPPTmax}$) at P_{acr}		460-850V	
Maximum DC input current (I_{dcmax}) for each MPPT		2x26A,2x22A	
Maximum input short circuit current for each MPPT		40 A[1)]	
Number of DC input pairs for each MPPT		2	
DC connection type		PV quick fit connector	
Input protection			
Reverse polarity protection		Yes, from limited current source	
Input over voltage protection for each MPPT		SPD Type II / Type I+II (optional)	
Isolation control		According to local standard	
Output side			
AC grid connection type		Three-phase (3W+PE or 4W+PE)	
Earthing system	TN-S, TN-C, TN-CS, TT	TN-S, TN-C, TN-CS, TT	TN-S, TN-C, TN-CS, TT and IT [2)]
Rated AC power (P_{acr} @cosφ=1)	20000 W	30000 W	33000 W
Maximum AC output power (P_{acmax} @cosφ=1)	22000 W up to 30°C	33000 W up to 30°C	36300 W up to 30°C
Maximum apparent power (S_{max})	22000 VA up to 30°C	33000 VA fup to 30°C	36300 VA up to 30°C
Maximum reactive power (Q_{max})	20000 VAR	30000 VAR	33000 VAR
Nominal power factor and adjustable range		> 0.995; 0...1 inductive/capacitive	
Rated AC output voltage ($V_{ac,r}$)		380V, 400V [3)]	
Maximum AC output current ($I_{ac,max}$)	33,4 A	50,1 A	55,1 A
Rated output frequency (f_r)		50 Hz / 60 Hz	
Output frequency range (f_{min}...f_{max})		47...53 Hz / 57...63 Hz [4)]	
Total current harmonic distortion		<3%	
Maximum AC cable		35 mm^2 copper/aluminum	
AC connection type		Detachable terminal block	
Output protection			
Anti-islanding protection		According to local standard	
Maximum external AC overcurrent protection	63 A	80 A	80 A
Output overvoltage protection		SPD Type II	
Operating performance			
Maximum efficiency (η_{max})	98,4%	98,4%	98,4%
Weighted efficiency (EURO)	98,2%	98,2%	98,2%
Communication			
Embedded communication interfaces		Double Ethernet port, WLAN, advanced RS-485 port (optional)	
Communication protocol		Modbus TCP Sunspec, Modbus RTU Sunspec (optional)	
Local user interface		LEDs, Web User Interface, Installer APP, Display (optional)	
Cloud services		Aurora Vision Plant Management Platform, Rest API	
Advanced features		Embedded export limitation control (in combination with external meter), 24h self-consumption monitoring	

Technical data and types

Type code	PVS-20-TL	PVS-30-TL	PVS-33-TL
Environmental			
Ambient temperature range	-25...+60°C (-13...140 °F) with derating above 45 °C (113 °F)		
Relative humidity	4%... 100% with condensation		
Maximum operating altitude	4000	4000	4000 (derating above 3000)
Physical			
Inverter type	Grid connected, double stage, transformerless		
Environmental protection rating	IP65		
Environmental classification	4K26 (IEC 60721-3-4)		
Cooling	Forced air		
Dimension (H x W x D)	675 (799,2 with connection boxes) x 591,8 x 227,5 mm		
Weight	50 Kg		
Mounting system	Single mounting bracket (vertical and horizontal installation)		
Safety			
Marking	CE, RCM		
Safety and EMC standard	"IEC/EN 62109-1, IEC/EN 62109-2, EN 61000-6-1, EN 61000-6-2, EN 61000-3-11, EN 61000-3-12 EN 62311, EN 301 489-1, EN 301 489-17, EN 300 328		
Certificates and compliance (check your sales channel for availability)	IEC 61683, EN 50530, IEC 62116, IEC 61727, AS/NZS 4777.2, VDE-AR-N 4105, VDE-AR-N 4110, VDE V 0124-100, DIN VDE V 0126-1-1, VFR 2019, UTE C15-712-1, CEI 0-21, CEI 0-16, PEA, MEA, EN 50438 (including Ireland deviation), EN 50549-1/-2, CNS 15382, DRRG (DUBAI), CLC/TS 50549-1/-2, TOR Erzeuger, G99, Synergrid C10/11, RD 413, RD 1565, RD244, P.O. 12.3, NTS 631, UNE 206006 IN (ITC-BT-40), PPDS-priloha, Denmark Type A/B, IRR-DCC-MV, ABNT NBR 16149, ABNT NBR 16150, Chile LV/MV, NRS 097-2-1, SII, ISO/IEC Guide 67, Netherlands Type A/B, EIFS Type A		
Available product variants			
8 inputs with PV quick fit connectors + SPD Type 2 on the DC and AC side	PVS-20-TL-SXD	PVS-30-TL-SX	PVS-33-TL-SX
8 inputs with PV quick fit connectors + SPD Type 1+2 on the DC side and Type 2 on the AC side	-	PVS-30-TL-SY	PVS-33-TL-SY
8 inputs with PV quick fit connectors + SPD Type 2 AC and DC for IT systems	-	-	PVS-33-TL-SI

1) 30 A for Australia and New Zealand
2) Available with the dedicated "SI" version only, with 33 kW power
3) The AC output voltage range may vary depending on specific country grid standards
4) The output 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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