



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

RAYSTECH
Your Trusted Solar Partner

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.

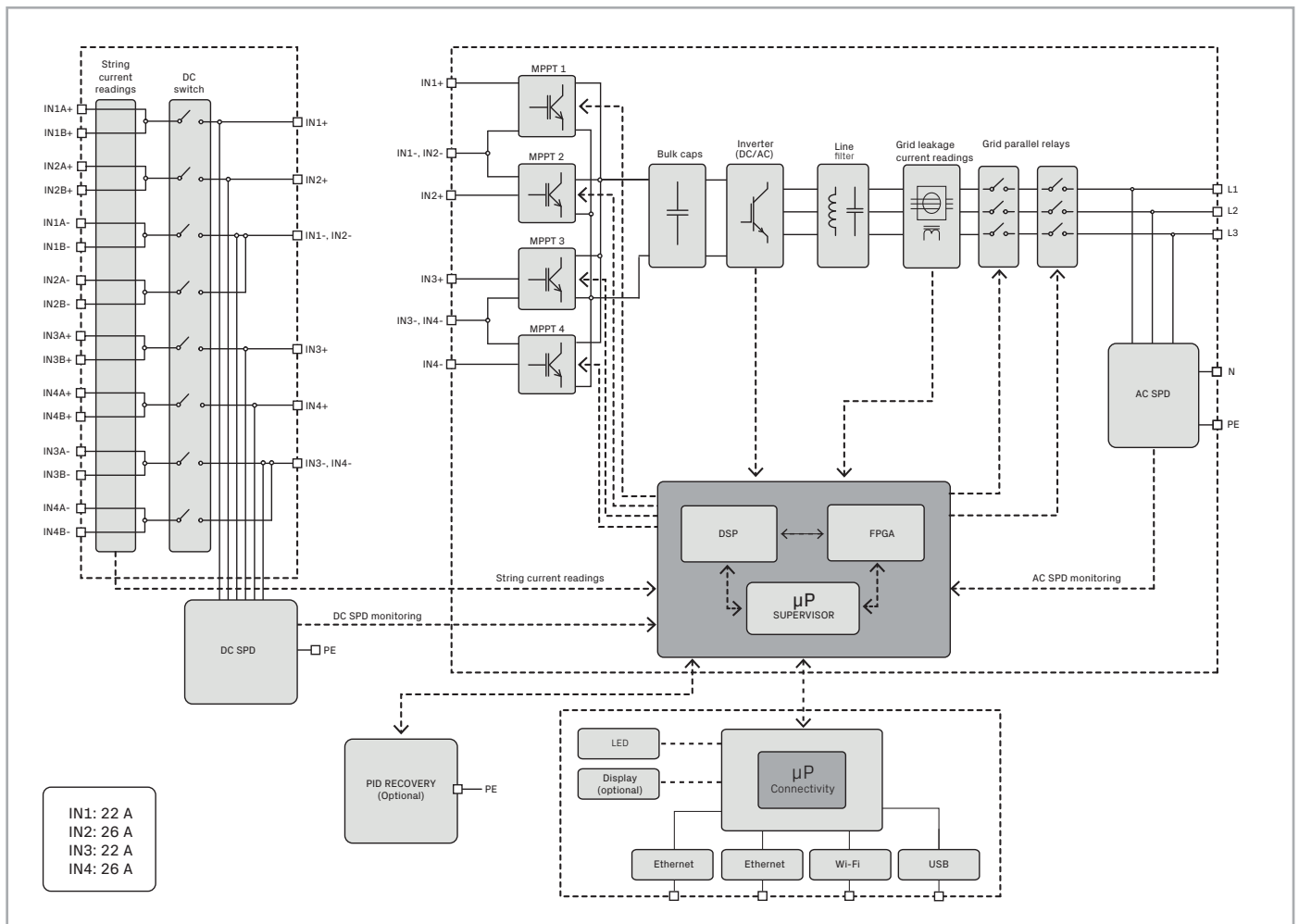
The single string current monitoring allows to keep the status of the PV generator under control and to detect potential faults in real time.

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, P_{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_{dcr} | | 460-850V | |
| Maximum DC input current ($I_{dcr,max}$) 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 ($P_{acr} @\cos\varphi=1$) | 20000 W | 30000 W | 33000 W |
| Maximum AC output power ($P_{ac,max} @\cos\varphi=1$) | 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 up 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 ($V_{acr,r}$) | | 380V, 400V ³⁾ | |
| Maximum AC output current ($I_{acr,max}$) | 33,4 A | 50,1 A | 55,1 A |
| Rated output frequency (fr) | | 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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