

## ABB central inverters

PVI-55.0/110.0 - PVI-165.0/220.0 - PVI-275.0/330.0

55 to 330 kW



**ABB's central inverters are extremely scalable, modular-inverter systems that are based on 55kW modular blocks. This increases usable power and improves availability. The reduction of performance in any individual module will not impact the energy harvesting capabilities of the other modules.**

The product is available with and without a transformer. The industry-leading power conversion efficiencies of up to 98% (-TL), combined with high-speed Maximum Power Point Tracking (MPPT) channels, optimize energy harvesting across a wide array of operating conditions.

These commercial inverters provide maximum DC input voltage up to 1000 Vdc, high design flexibility and reduced DC distribution losses for large scale PV plants.

**Delivered pre-configured and pre-tested which reduces on-site wiring and testing**

The inverter systems are delivered pre-configured and pre-tested, which significantly reduces on-site wiring and testing. In the case of an ungrounded application, the unit can be configured as a single or multiple MPPT (with the exception of the PVI-55.0/-TL).

These inverters provide easy installation and maintenance procedures due to the front extractible DC/AC converters and accessibility to all critical parts.

### Highlights

- Reduced susceptibility to a single fault in case of a component failure, a maximum of 55kW will be lost
- Reduced acoustic noise due to the high switching frequency
- Reverse-polarity protection minimizes potential damage caused by array miswiring
- Integrated DC and AC distribution and protection fully equipped for connection, additional accessories not required

## Technical data and types

| Type code  | PVI-55.0   | PVI-55.0-TL   | PVI-110.0  | PVI-110.0-TL  |
|--|--|---|--|---|
| <b>Input side</b>  |  |   |  |   |
| Absolute maximum DC input voltage ( $V_{max,abs}$ )                                | 1000 V   |   | 1000 V   |   |
| MPPT input DC voltage range ( $V_{MPPTmin} \dots V_{MPPTmax}$ ) at $V_{acr}$       | 485...950 V<br>Linear derating from max to 31,8%<br>[800< $V_{MPPT}$ <950V]            |   | 485...950 V<br>Linear derating from max to 31,8%<br>[800< $V_{MPPT}$ <950V]            |   |
| MPPT input DC range ( $V_{MPPTmin} \dots V_{MPPTmax}$ ) at $P_{acr}$ and $V_{acr}$ | 485...800 V  |   | 485...800 V  |   |
| Number of independent MPPT multi-master  | 1  |   | 2  |   |
| Number of independent MPPT multi-master/slave                                      | Not applicable   |   | Not applicable   |   |
| Number of independent MPPT master/slave  | 1  |   | 1  |   |
| Maximum combined DC input current ( $I_{d,max,c}$ )                                | 123 A  |   | 246 A  |   |
| Maximum DC input current for each module ( $I_{d,max,m}$ )                         | 123 A  |   | 123 A  |   |
| Number of DC inputs pairs  | 1  |   | 2  |   |
| DC connection type   | 2x185mm <sup>2</sup> (M10)   |   | 2x185mm <sup>2</sup> (M10) + 2x300mm <sup>2</sup> (M10)                                |   |
| <b>Input protection</b>  |  |   |  |   |
| Reverse polarity protection  | Yes, with series diode   |   | Yes, with series diode   |   |
| Input overvoltage protection - varistor  | 1 for each input pair, Class II  |   | 1 for each input pair, Class II  |   |
| Photovoltaic array leakage control, floating neutral, floating panels              | No; proprietary control available <sup>(3)</sup>                                       |   | No; proprietary control available <sup>(3)</sup>                                       |   |
| Residual current protection, grounded neutral, floating panels                     | Not included; dimension output ground fault device with $\Delta I=400\text{mA/module}$ |   | Not included; dimension output ground fault device with $\Delta I=400\text{mA/module}$ |   |
| Fuse size for each input pair  | 125 A / 1000 V   |   | 125 A / 1000 V   |   |
| <b>Output side</b>   |  |   |  |   |
| AC grid connection type  | Three phases 4W+PE   | Three phases 3W+PE                                  | Three phases 4W+PE   | Three phases 3W+PE                                  |
| Rated AC power ( $P_{acr} @ \cos\phi=1$ )  | 55 kW  |   | 110 kW   |   |
| Maximum AC output power ( $P_{ac,max} @ \cos\phi=1$ )                              | 55 kW  |   | 110 kW   |   |
| Maximum apparent power ( $S_{max}$ )   | 61 kVA   |   | 122kVA   |   |
| Rated grid voltage ( $V_{acr}$ )   | 400 V  | 320 V   | 400V   | 320 V   |
| AC voltage range ( $V_{ac,min} \dots V_{ac,max}$ )                                 | 320...480 V <sup>(1)</sup>   | 256...368 V <sup>(1)</sup>                          | 320...480 V <sup>(1)</sup>   | 256...368 V <sup>(1)</sup>                          |
| Maximum output current ( $I_{ac,max}$ )  | 81 A   | 101 A   | 160 A  | 202 A   |
| Contributory fault current   | 90 A   | 112,5 A   | 180 A  | 225 A   |
| Rated frequency ( $f_r$ )  | 50/60 Hz   |   | 50/60 Hz   |   |
| Frequency range ( $f_{min} \dots f_{max}$ )  | 47...53 / 57...63 Hz <sup>(2)</sup>  |   | 47...53 / 57...63 Hz <sup>(2)</sup>  |   |
| Nominal power factor and adjustable range  | > 0.995 (adj. $\pm$ 0.90)  |   | > 0.995 (adj. $\pm$ 0.90)  |   |
| Total harmonic distortion  | < 3% (@ $P_{ac,r}$ )   |   | < 3% (@ $P_{ac,r}$ )   |   |
| AC connection type (for each phase)  | 1 x 95 mm <sup>2</sup> (M8)  | 1 x 300 mm <sup>2</sup> (M12)                       | 1 x 95 mm <sup>2</sup> (M8)  | 1 x 300 mm <sup>2</sup> (M12)                       |
| <b>Output protection</b>   |  |   |  |   |
| Anti-islanding protection  | According to local standard  |   | According to local standard  |   |
| Output overvoltage protection (varistor)   | Yes, Class II  |   | Yes, Class II  |   |
| Night time disconnect  | Yes  | No  | Yes  | No  |
| AC circuit breaker   | 50 kA  |   | 50 kA  |   |
| <b>Operating performance</b>   |  |   |  |   |
| Maximum efficiency ( $\eta_{max}$ )  | 96.3% <sup>(4)</sup>   | 98.0% <sup>(4)</sup>                                | 96.4% <sup>(4)</sup>   | 98.0% <sup>(4)</sup>                                |
| Weighted efficiency ( $\eta_{EURO} / \eta_{CEC}$ )                                 | 95.1% / 96.0% <sup>(4)</sup>   | 97.7% / 97.5% <sup>(4)</sup>                        | 95.2% / 96.0% <sup>(4)</sup>   | 97.7% / 97.5% <sup>(4)</sup>                        |
| Stand-by consumption/night-time power loss   | < 17 W   | < 23 W  | < 24 W   | < 19 W  |
| AC auxiliary supply  | 3x400 Vac +N, 50/60 Hz   |   | 3 x 400 Vac +N, 50/60 Hz   |   |
| Auxiliary supply consumption   | < 0.36% of $P_{ac,r}$  | < 0.24% of $P_{ac,r}$                               | < 0.31% of $P_{ac,r}$  | < 0.24% of $P_{ac,r}$                               |
| Auxiliary supply consumption without cooling                                       | < 0.25% of $P_{ac,r}$  | < 0.22% of $P_{ac,r}$                               | < 0.23% of $P_{ac,r}$  | < 0.22% of $P_{ac,r}$                               |
| Inverter switching frequency   | 18 kHz   |   | 18 kHz   |   |
| <b>Communication</b>   |  |   |  |   |
| Wired local monitoring   | PVI-USB-RS232_485 (opt.)   |   | PVI-USB-RS232_485 (opt.)   |   |
| Remote monitoring  | PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)  |   | PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)  |   |
| String Combiner  | PVI-STRINGCOMB (opt.)  |   | PVI-STRINGCOMB (opt.)  |   |
| User interface   | 16 characters x 2 line LCD display for each module                                     |   | 16 characters x 2 line LCD display for each module                                     |   |
| <b>Environmental</b>   |  |   |  |   |
| Ambient temperature range  | -10...+ 60°C/+14...140°F<br>with derating above 50°C/122°F                             |   | -10...+ 60°C/+14...140°F<br>with derating above 50°C/122°F                             |   |
| Relative humidity  | 0...95% non condensing   |   | 0...95% non condensing   |   |
| Noise emission   | <62 dB(A) @ 1 m  | <62 dB(A) @ 1 m                                     | <65 dB(A) @ 1 m  | < 63 db (A) @ 1 m                                   |
| Maximum operating altitude without derating  | 1000 m / 3280 ft   |   | 1000 m / 3280 ft   |   |
| <b>Physical</b>  |  |   |  |   |
| Environmental protection rating  | IP 20  |   | IP 20  |   |
| Cooling  | Air forced   |   | Air forced   |   |
| Required air cooling flow  | 1600 m <sup>3</sup> /h - 944 CFM   | 1600 m <sup>3</sup> /h - 944 CFM                    | 2800 m <sup>3</sup> /h - 1652 CFM  | 2400 m <sup>3</sup> /h - 1416 CFM                   |
| Dimension (H x W x D)  | 1675mm x 1250mm x 850mm / 69.5" x 49.2" x 33.5"  | 1077mm x 1250mm x 850mm / 42.4" x 49.2" x 33.5"     | 1675mm x 1250mm x 850mm / 65.9" x 49.2" x 33.5"  | 1077mm x 1250mm x 850mm / 42.4" x 49.2" x 33.5"     |
| Weight   | < 700 kg / 1543 lb   | < 350 kg / 771 lb                                   | < 800 kg / 1765 lb   | < 480 kg / 1058 lb                                  |
| Weight of the module   | < 60 kg / 132 lb   |   | < 60 kg / 132 lb   |   |
| <b>Safety</b>  |  |   |  |   |
| Transformer  | Yes  | No  | Yes  | No  |
| Marking  | CE (50 Hz only)  |   | CE (50 Hz only)  |   |
| Safety and EMC standard  | EN 50178, EN61000-6-2, EN61000-6-4, EN61000-3-11, EN61000-3-12                         |   | EN 50178, EN61000-6-2, EN61000-6-4, EN61000-3-11, EN61000-3-12                         |   |
| Grid standard (check your sales channel for availability)                          | CEI 0-21, CEI 0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3                          | CEI-0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3 | CEI 0-21, CEI 0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3                          | CEI-0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3 |

1. The AC voltage range may vary depending on specific country grid standard

2. The Frequency range may vary depending on specific country grid standard

3. Missing symmetry with respect to ground results in AC disconnection (disabled function by default)

4. Power consumption of the auxiliary services not included

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

## Technical data and types

| Type code  | PVI-165.0  | PVI-165.0-TL  | PVI-220.0  | PVI-220.0-TL  |
|--|--|---|--|---|
| <b>Input side</b>  |  |   |  |   |
| Absolute maximum DC input voltage ( $V_{max,abs}$ )                                | 1000 V   |   | 1000 V   |   |
| MPPT input DC voltage range ( $V_{MPPTmin} \dots V_{MPPTmax}$ ) at $V_{acr}$       | 485...950 V<br>Linear derating from max to 31,8%<br>[800< $V_{MPPT}$ <950V]            |   | 485...950 V<br>Linear derating from max to 31,8%<br>[800< $V_{MPPT}$ <950V]            |   |
| MPPT input DC range ( $V_{MPPTmin} \dots V_{MPPTmax}$ ) at $P_{acr}$ and $V_{acr}$ | 485...800 V  |   | 485...800 V  |   |
| Number of independent MPPT multi-master  | 3  |   | 4  |   |
| Number of independent MPPT multi-master/slave                                      | 2  |   | 2  |   |
| Number of independent MPPT master/slave  | 1  |   | 1  |   |
| Maximum combined DC input current ( $I_{dcmax,c}$ )                                | 369 A  |   | 492 A  |   |
| Maximum DC input current for each module ( $I_{dcmax,m}$ )                         | 123 A  |   | 123 A  |   |
| Number of DC inputs pairs  | 3  |   | 4  |   |
| DC connection type   | 4x185mm <sup>2</sup> (M10) + 2x300mm <sup>2</sup> (M10)                                |   | 4x185mm <sup>2</sup> (M10) + 4x300mm <sup>2</sup> (M10)                                |   |
| <b>Input protection</b>  |  |   |  |   |
| Reverse polarity protection  | Yes, with series diode   |   | Yes, with series diode   |   |
| Input overvoltage protection - varistor  | 1 for each input pair, Class II  |   | 1 for each input pair, Class II  |   |
| Photovoltaic array leakage control, floating neutral, floating panels              | No; proprietary control available <sup>(3)</sup>                                       |   | No; proprietary control available <sup>(3)</sup>                                       |   |
| Residual current protection, grounded neutral, floating panels                     | Not included; dimension output ground fault device with $\Delta I=400\text{mA/module}$ |   | Not included; dimension output ground fault device with $\Delta I=400\text{mA/module}$ |   |
| Fuse size for each input pair  | 125 A / 1000 V   |   | 125 A / 1000 V   |   |
| <b>Output side</b>   |  |   |  |   |
| AC grid connection type  | Three phases 4W+PE   | Three phases 3W+PE                                  | Three phases 4W+PE   | Three phases 3W+PE                                  |
| Rated AC power ( $P_{acr} @ \cos\phi=1$ )  | 165 kW   |   | 220 kW   |   |
| Maximum AC output power ( $P_{acmax} @ \cos\phi=1$ )                               | 165 kW   |   | 220 kW   |   |
| Maximum apparent power ( $S_{max}$ )   | 183 kVA  |   | 244 kVA  |   |
| Rated grid voltage ( $V_{acr}$ )   | 400 V  | 320 V   | 400 V  | 320 V   |
| AC voltage range ( $V_{acmin} \dots V_{acmax}$ )                                   | 320...480 V <sup>(1)</sup>   | 256...368 V <sup>(1)</sup>                          | 320...480 V <sup>(1)</sup>   | 256...368 V <sup>(1)</sup>                          |
| Maximum output current ( $I_{acmax}$ )   | 240 A  | 303 A   | 320 A  | 404 A   |
| Contributory fault current   | 270 A  | 337,5 A   | 360 A  | 450 A   |
| Rated frequency (f)  | 50/60 Hz   |   | 50/60 Hz   |   |
| Frequency range ( $f_{min} \dots f_{max}$ )  | 47...53 / 57...63 Hz <sup>(2)</sup>  |   | 47...53 / 57...63 Hz <sup>(2)</sup>  |   |
| Nominal power factor and adjustable range  | > 0.995 (adj. $\pm$ 0.90)  |   | > 0.995 (adj. $\pm$ 0.90)  |   |
| Total harmonic distortion  | < 3% (@ $P_{acr}$ )  |   | < 3% (@ $P_{acr}$ )  |   |
| AC connection type (for each phase)  | 1 x 185 mm <sup>2</sup> (M10)  | 2 x 300 mm <sup>2</sup> (M12)                       | 1 x 185 mm <sup>2</sup> (M10)  | 2 x 300 mm <sup>2</sup> (M12)                       |
| <b>Output protection</b>   |  |   |  |   |
| Anti-islanding protection  | According to local standard  |   | According to local standard  |   |
| Output overvoltage protection (varistor)   | Yes, Class II  |   | Yes, Class II  |   |
| Night time disconnect  | Yes  | No  | Yes  | No  |
| AC circuit breaker   | 50 kA  |   | 50 kA  |   |
| <b>Operating performance</b>   |  |   |  |   |
| Maximum efficiency ( $\eta_{max}$ )  | 96.5% <sup>(4)</sup>   | 98.0% <sup>(4)</sup>                                | 96.5% <sup>(4)</sup>   | 98.0% <sup>(4)</sup>                                |
| Weighted efficiency ( $\eta_{EURO} / \eta_{CEC}$ )                                 | 95.3% / 96.0% <sup>(4)</sup>   | 97.7% / 97.5% <sup>(4)</sup>                        | 95.3% / 96.0% <sup>(4)</sup>   | 97.7% / 97.5% <sup>(4)</sup>                        |
| Stand-by consumption/night-time power loss   | < 31 W   | < 26 W  | < 28 W   | < 33 W  |
| AC auxiliary supply  | 3 x 400 Vac +N, 50/60 Hz   |   | 3 x 400 Vac +N, 50/60 Hz   |   |
| Auxiliary supply consumption   | < 0.30% of $P_{acr}$   | < 0.24% of $P_{acr}$                                | < 0.28% of $P_{acr}$   | < 0.24% of $P_{acr}$                                |
| Auxiliary supply consumption without cooling                                       | < 0.23% of $P_{acr}$   | < 0.22% of $P_{acr}$                                | < 0.22% of $P_{acr}$   | < 0.22% of $P_{acr}$                                |
| Inverter switching frequency   | 18 kHz   |   | 18 kHz   |   |
| <b>Communication</b>   |  |   |  |   |
| Wired local monitoring   | PVI-USB-RS232_485 (opt.)   |   | PVI-USB-RS232_485 (opt.)   |   |
| Remote monitoring  | PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)  |   | PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)  |   |
| String Combiner  | PVI-STRINGCOMB (opt.)  |   | PVI-STRINGCOMB (opt.)  |   |
| User interface   | 16 characters x 2 line LCD display for each module                                     |   | 16 characters x 2 line LCD display for each module                                     |   |
| <b>Environmental</b>   |  |   |  |   |
| Ambient temperature range  | -10...+ 60°C/+14...140°F<br>with derating above 50°C/122°F                             |   | -10...+ 60°C/+14...140°F<br>with derating above 50°C/122°F                             |   |
| Relative humidity  | 0...95% non condensing   |   | 0...95% non condensing   |   |
| Noise emission   | < 68 db (A) @ 1 m  | < 66 db (A) @ 1 m                                   | < 72 db (A) @ 1 m  | < 69 db (A) @ 1 m                                   |
| Maximum operating altitude without derating  | 1000 m / 3280 ft   |   | 1000 m / 3280 ft   |   |
| <b>Physical</b>  |  |   |  |   |
| Environmental protection rating  | IP 20  |   | IP 20  |   |
| Cooling  | Air forced   |   |  |   |
| Required air cooling flow  | 4000 m <sup>3</sup> /h - 2360 CFM  | 3200 m <sup>3</sup> /h - 1888 CFM                   | 4800 m <sup>3</sup> /h - 2832 CFM  | 4000 m <sup>3</sup> /h - 2360 CFM                   |
| Dimension (H x W x D)  | 2184mm x 1250mm x 850mm / 86.0" x 49.2" x 33.5"  | 1675mm x 1250mm x 850mm / 65.9" x 49.2" x 33.5"     | 2184mm x 1250mm x 850mm / 86.0" x 49.2" x 33.5"  | 1675mm x 1250mm x 850mm / 65.9" x 49.2" x 33.5"     |
| Weight   | < 1200 kg / 2646 lb  | < 680 kg / 1500 lb                                  | < 1300 kg / 2867 lb  | < 780 kg / 1720 lb                                  |
| Weight of the module   | < 60 kg / 132 lb   |   | < 60 kg / 132 lb   |   |
| <b>Safety</b>  |  |   |  |   |
| Transformer  | Yes  | No  | Yes  | No  |
| Marking  | CE (50 Hz only)  |   | CE (50 Hz only)  |   |
| Safety and EMC standard  | EN 50178, EN61000-6-2, EN61000-6-4, EN61000-3-11, EN61000-3-12                         |   | EN 50178, EN61000-6-2, EN61000-6-4, EN61000-3-11, EN61000-3-12                         |   |
| Grid standard (check your sales channel for availability)                          | CEI 0-21, CEI 0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3                          | CEI-0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3 | CEI-0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3                                    | CEI-0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3 |

1. The AC voltage range may vary depending on specific country grid standard

2. The Frequency range may vary depending on specific country grid standard

3. Missing symmetry with respect to ground results in AC disconnection (disabled function by default)

4. Power consumption of the auxiliary services not included

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

## Technical data and types

| Type code  | PVI-275.0   | PVI-275.0-TL                                    | PVI-330.0   | PVI-330.0-TL                                    |
|--|---|---|---|---|
| <b>Input side</b>  |   |   |   |   |
| Absolute maximum DC input voltage ( $V_{max,abs}$ )                                | 1000 V  |   | 1000 V  |   |
| MPPT input DC voltage range ( $V_{MPPTmin} \dots V_{MPPTmax}$ ) at $V_{acr}$       | 485...950 V<br>Linear derating from max to 31,8%<br>[800< $V_{MPPT}$ <950V]     |   | 485...950 V<br>Linear derating from max to 31,8%<br>[800< $V_{MPPT}$ <950V]     |   |
| MPPT input DC range ( $V_{MPPTmin} \dots V_{MPPTmax}$ ) at $P_{acr}$ and $V_{acr}$ | 485...800 V   |   | 485...800 V   |   |
| Number of independent MPPT multi-master  | 5   |   | 6   |   |
| Number of independent MPPT multi-master/slave                                      | 3   |   | 3   |   |
| Number of independent MPPT master/slave  | 1   |   | 1   |   |
| Maximum combined DC input current ( $I_{dc,max}$ )                                 | 615 A   |   | 738 A   |   |
| Maximum DC input current for each module ( $I_{dc,max,m}$ )                        | 123 A   |   | 123 A   |   |
| Number of DC inputs pairs  | 5   |   | 6   |   |
| DC connection type   | 6x185mm <sup>2</sup> (M10) +4x300mm <sup>2</sup> (M10)                          |   | 6x185mm <sup>2</sup> (M10) +6x300mm <sup>2</sup> (M10)                          |   |
| <b>Input protection</b>  |   |   |   |   |
| Reverse polarity protection  | Yes, with series diode  |   | Yes, with series diode  |   |
| Input overvoltage protection - varistor  | 1 for each input pair, Class II   |   | 1 for each input pair, Class II   |   |
| Photovoltaic array leakage control, floating neutral, floating panels              | No; proprietary control available <sup>(3)</sup>                                |   | No; proprietary control available <sup>(3)</sup>                                |   |
| Residual current protection, grounded neutral, floating panels                     | Not included; dimension output ground fault device with $\Delta I=400mA/module$ |   | Not included; dimension output ground fault device with $\Delta I=400mA/module$ |   |
| Fuse size for each input pair  | 125 A / 1000 V  |   | 125 A / 1000 V  |   |
| <b>Output side</b>   |   |   |   |   |
| AC grid connection type  | Three phases 4W+PE  |   | Three phases 3W+PE  |   |
| Rated AC power ( $P_{acr} @ \cos\phi=1$ )  | 275 kW  | 275 kW  | 330 kW  | 330 kW  |
| Maximum AC output power ( $P_{ac,max} @ \cos\phi=1$ )                              | 275 kW  | 275 kW  | 330 kW  | 330 kW  |
| Maximum apparent power ( $S_{max}$ )   | 305 kVA   | 305 kVA   | 366 kVA   | 366 kVA   |
| Rated grid voltage ( $V_{acr}$ )   | 400 V   |   | 400 V   |   |
| AC voltage range ( $V_{ac,min} \dots V_{ac,max}$ )                                 | 320...480 V <sup>(1)</sup>  | 256...368 V <sup>(1)</sup>                      | 320...480 V <sup>(1)</sup>  | 256...368 V <sup>(1)</sup>                      |
| Maximum output current ( $I_{ac,max}$ )  | 400 A   | 505 A   | 480 A   | 606 A   |
| Contributory fault current   | 450 A   | 562,5 A   | 540 A   | 675 A   |
| Rated frequency ( $f_r$ )  | 50/60 Hz  |   | 50/60 Hz  |   |
| Frequency range ( $f_{min} \dots f_{max}$ )  | 47...53 / 57...63 Hz <sup>(2)</sup>   |   | 47...53 / 57...63 Hz <sup>(2)</sup>   |   |
| Nominal power factor and adjustable range  | > 0.995 (adj. $\pm$ 0.90)   |   | > 0.995 (adj. $\pm$ 0.90)   |   |
| Total harmonic distortion  | < 3% (@ $P_{ac,r}$ )  |   | < 3% (@ $P_{ac,r}$ )  |   |
| AC connection type (for each phase)  | 1 x 240 mm <sup>2</sup> (M12)   | 2 x 300 mm <sup>2</sup> (M12)                   | 1 x 240 mm <sup>2</sup> (M12)   | 2 x 300 mm <sup>2</sup> (M12)                   |
| <b>Output protection</b>   |   |   |   |   |
| Anti-islanding protection  | According to local standard   |   | According to local standard   |   |
| Output overvoltage protection (varistor)   | Yes, Class II   |   | Yes, Class II   |   |
| Night time disconnect  | Yes   | No  | Yes   | No  |
| AC circuit breaker   | 50 kA   |   | 50 kA   |   |
| <b>Operating performance</b>   |   |   |   |   |
| Maximum efficiency ( $\eta_{max}$ )  | 96.7% <sup>(4)</sup>  | 98.0% <sup>(4)</sup>                            | 96.7% <sup>(4)</sup>  | 98.0% <sup>(4)</sup>                            |
| Weighted efficiency ( $\eta_{EURO} / \eta_{CEC}$ )                                 | 95.5% / 96.0% <sup>(4)</sup>  | 97.7% / 97.5% <sup>(4)</sup>                    | 95.5% / 96.0% <sup>(4)</sup>  | 97.7% / 97.5% <sup>(4)</sup>                    |
| Stand-by consumption/night-time power loss   | < 45 W  | < 40 W  | < 52 W  | < 47 W  |
| AC auxiliary supply  | 3 x 400 Vac +N, 50/60 Hz  |   | 3 x 400 Vac +N, 50/60 Hz  |   |
| Auxiliary supply consumption   | < 0.29% of $P_{ac,r}$   | < 0.24% of $P_{ac,r}$                           | < 0.28% of $P_{ac,r}$   | < 0.24% of $P_{ac,r}$                           |
| Auxiliary supply consumption without cooling                                       | < 0.22% of $P_{ac,r}$   | < 0.22% of $P_{ac,r}$                           | < 0.22% of $P_{ac,r}$   | < 0.22% of $P_{ac,r}$                           |
| Inverter switching frequency   | 18 kHz  |   | 18 kHz  |   |
| <b>Communication</b>   |   |   |   |   |
| Wired local monitoring   | PVI-USB-RS232_485 (opt.)  |   | PVI-USB-RS232_485 (opt.)  |   |
| Remote monitoring  | PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)                                   |   | PVI-AEC-EVO (opt.), VSN700 Data Logger (opt.)                                   |   |
| String Combiner  | PVI-STRINGCOMB (opt.)   |   | PVI-STRINGCOMB (opt.)   |   |
| User interface   | 16 characters x 2 line LCD display for each module                              |   | 16 characters x 2 line LCD display for each module                              |   |
| <b>Environmental</b>   |   |   |   |   |
| Ambient temperature range  | -10...+60°C/+14...140°F<br>with derating above 50°C/122°F                       |   | -10...+60°C/+14...140°F<br>with derating above 50°C/122°F                       |   |
| Relative humidity  | 0...95% non condensing  |   | 0...95% non condensing  |   |
| Noise emission   | < 75 db (A) @ 1 m   | < 72 db (A) @ 1 m                               | < 78 db (A) @ 1 m   | < 75 db (A) @ 1 m                               |
| Maximum operating altitude without derating  | 1000 m / 3280 ft  |   | 1000 m / 3280 ft  |   |
| <b>Physical</b>  |   |   |   |   |
| Environmental protection rating  | IP 20   |   | IP 20   |   |
| Cooling  | Air forced  |   | Air forced  |   |
| Required air cooling flow  | 6800 m <sup>3</sup> /h - 4012 CFM   | 4800 m <sup>3</sup> /h - 2832 CFM               | 7600 m <sup>3</sup> /h - 4484 CFM   | 5600 m <sup>3</sup> /h - 3304 CFM               |
| Dimension (H x W x D)  | 2184mm x 1250mm x 850mm / 86.0" x 49.2" x 33.5"                                 | 2184mm x 1250mm x 850mm / 86.0" x 49.2" x 33.5" | 2184mm x 1250mm x 850mm / 86.0" x 49.2" x 33.5"                                 | 2184mm x 1250mm x 850mm / 86.0" x 49.2" x 33.5" |
| Weight   | < 1600 kg / 3527 lb   | < 1000 kg / 2205 lb                             | < 1750 kg / 3858 lb   | < 1150 kg / 2535 lb                             |
| Weight of the module   | < 60 kg / 132 lb  |   | < 60 kg / 132 lb  |   |
| <b>Safety</b>  |   |   |   |   |
| Transformer  | Yes   | No  | Yes   | No  |
| Marking  | CE (50 Hz only)   |   | CE (50 Hz only)   |   |
| Safety and EMC standard  | EN 50178, EN61000-6-2, EN61000-6-4, EN61000-3-11, EN61000-3-12                  |   | EN 50178, EN61000-6-2, EN61000-6-4, EN61000-3-11, EN61000-3-12                  |   |
| Grid standard (check your sales channel for availability)                          | CEI-0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3                             |   | CEI-0-16, BDEW, RD 661/2007, RD 1565/2010, P.O.12.3                             |   |

1. The AC voltage range may vary depending on specific country grid standard

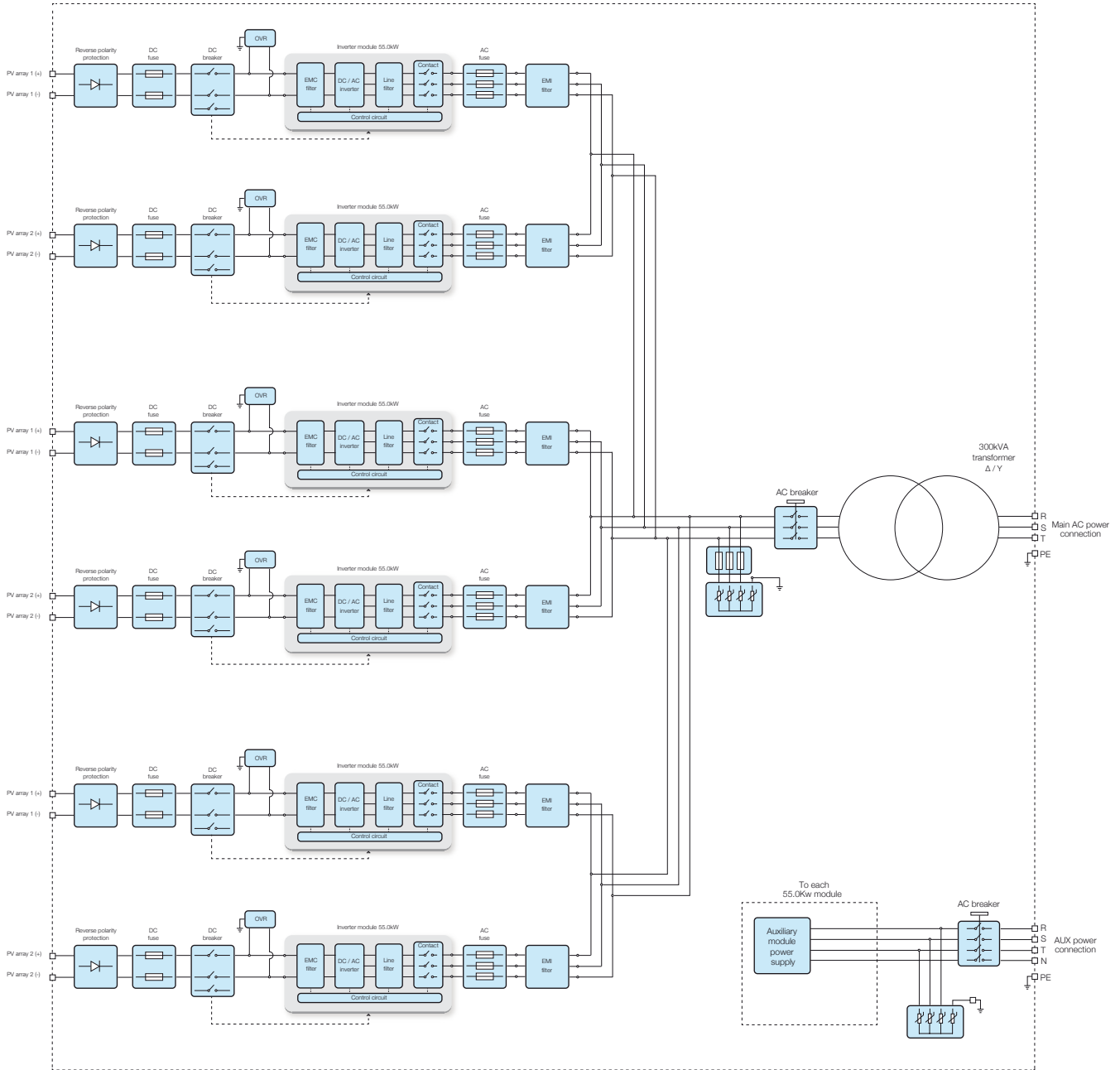
3. Missing symmetry with respect to ground results in AC disconnection (disabled function by default)

2. The Frequency range may vary depending on specific country grid standard

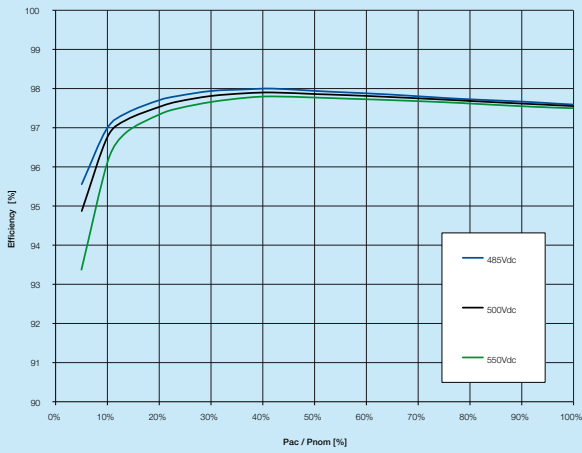
4. Power consumption of the auxiliary services not included

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

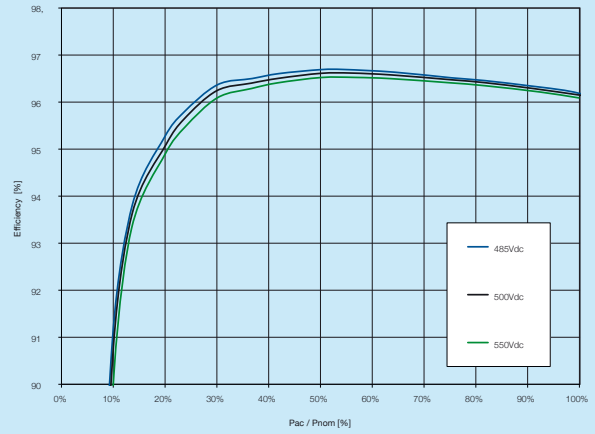
# Block diagram of PVI-330.0 with transformer (multi master)



Efficiency curves of PVI-55.0/330.0-TL



Efficiency curves of PVI-275.0/330.0-TL



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