# PVI-12.0-OUTD-Isolated

## GENERAL SPECIFICATIONS
## OUTDOOR MODELS

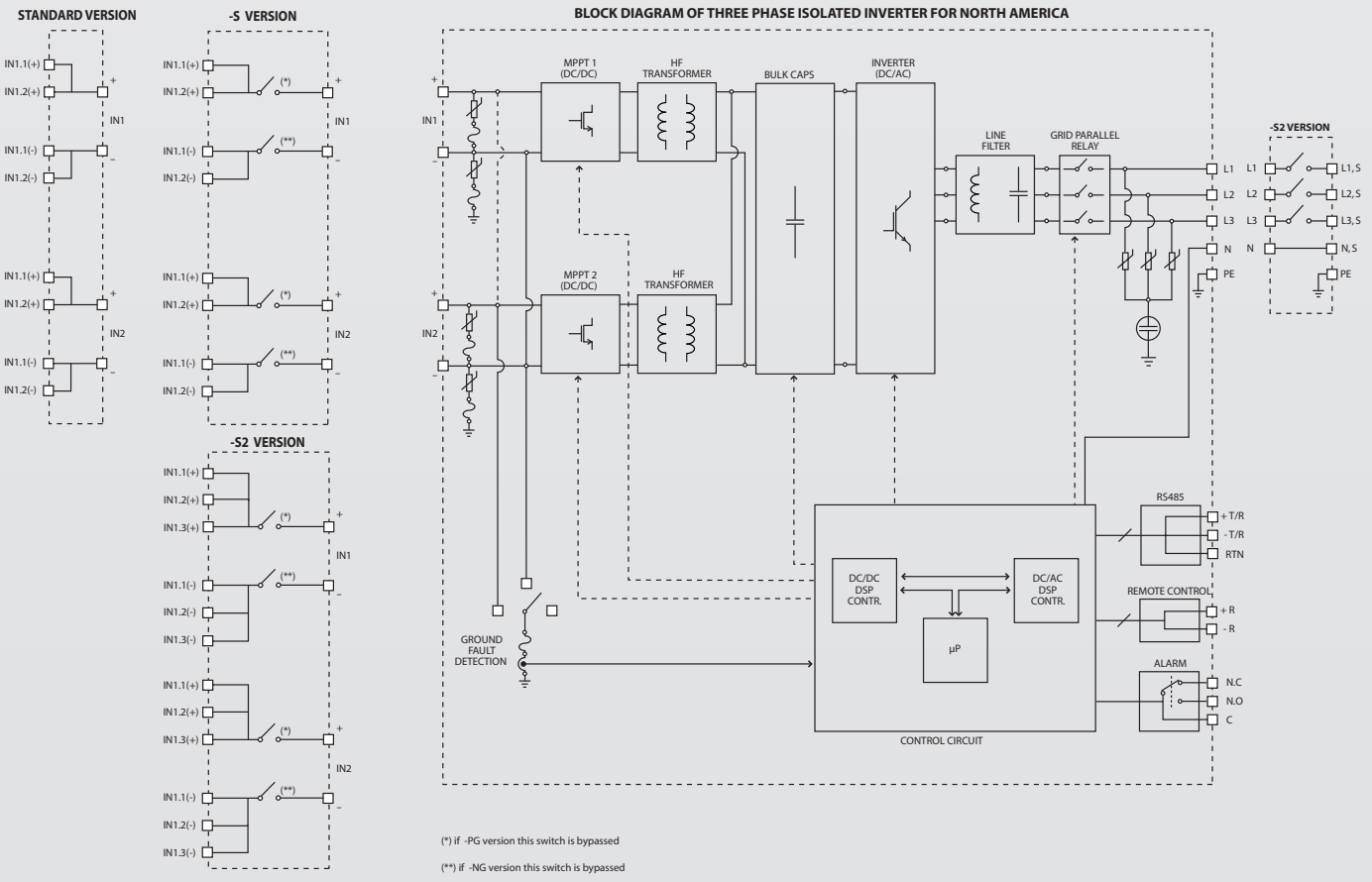
PVI-12.0-I-OUTD-US
PVI-12.0-I-OUTD-CAN

Designed for commercial usage, this three-phase inverter is unique in its ability to control the performance of the PV panels, especially during periods of variable weather conditions. This device has two independent MPPTs and efficiency ratings of up to 97.3%.

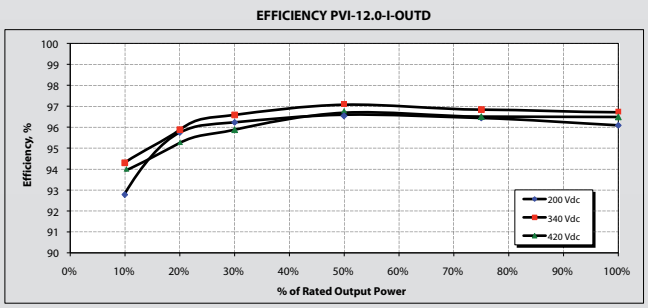
The HF isolation allows positive or negative ground configuration. Versions are available with fully-integrated DC and AC disconnect options. The unit is free of electrolytic capacitors, leading to a longer product lifetime.

# Features

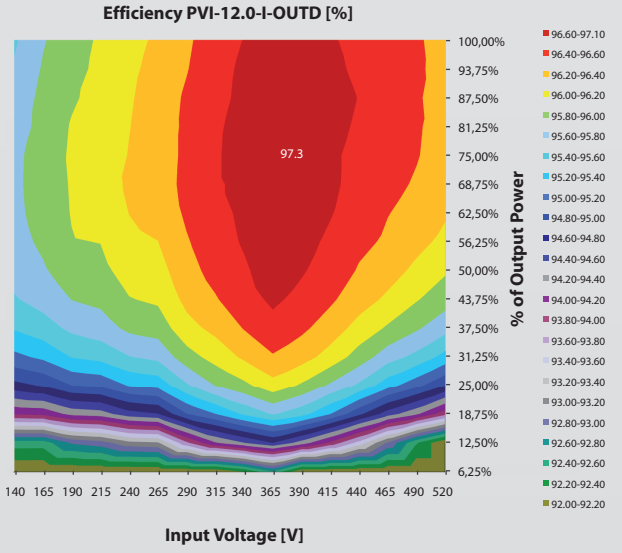
- 'Electrolyte-free' power converter to further increase the life expectancy and long term reliability
- True 3-phase bridge topology for DC/AC output converter
- Night Wake up button to access energy harvesting data and error log
- Dual input sections with independent MPP tracking, allow optimal energy harvesting from two sub-arrays oriented in different directions
- High speed and precise MPPT algorithm for real time power tracking and improved energy harvesting
- Flat efficiency curves ensure high efficiency at all output levels insuring consistent and stable performance across the entire input voltage and output power range
- Anti-Islanding Protection
- Watertight NEMA 4X enclosure
- Integrated disconnect in compliance with NA Standards (-S and -S2 Versions)
- RS-485 communication interface (for connection to laptop or datalogger)
- Compatible with PVI-RADIOMODULE for wireless communication with Aurora PVI-DESKTOP




# Block Diagram and Typical Efficiency




Preliminary data subjet to change




Preliminary data subjet to change

| PARAMETER | PVI-12.0-I-OUTD-US-480 | PVI-12.0-I-OUTD-CAN-600 |
|---|---|---|
| **Input Side** | | |
| **Start-up Input Voltage ($V_{dcstart}$)** | adj. 120...350 V | adj. 120...350 V |
| **Operating Input Range ($V_{dcmin}$...$V_{dcmax}$)** | 0.7 x $V_{dcstart}$...520 V | 0.7 x $V_{dcstart}$...520 V |
| **MPP Input range ($V_{mppmax,f}$-$V_{mppmin,f}$) at full power** | 250...470 V | 250...470 V |
| **Input Voltage Range for Full Power Operation with Parallel Configuration of MPPT** | 250...470 V | 250...470 V |
| **Input Voltage Range for Full Power Operation with Independent Configuration of MPPT** | 260...470 V (@6,500W) / 240...470 V (@5,800W) | 260...470 V (@6,500W) / 240...470 V (@5,800W) |
| **Absolute Maximum Input Voltage $V_{max,abs}$** | 520 V | 520 V |
| **Number of Independent MPPT** | 2 | 2 |
| **Maximum Input Current ($I_{dcmax}$)** | 25.0 A | 25.0 A |
| **Number of DC Inputs Pairs** | 2 (3 on -S2 version) for each MPPT | 2 (3 on -S2 version) for each MPPT |
| **Input Protection** | | |
| **Reverse Polarity protection** | Yes | Yes |
| **Input Short Circuit Current** | 29.0 A | 29.0 A |
| **Input Side Varistors** | 4 (2 for each MPPT) | 4 (2 for each MPPT) |
| **Photovoltaic Array Isolation Control** | GFDI | GFDI |
| **DC Switch** | 600 V /32 A | 600 V /32 A |
| **Output Side** | | |
| **AC Grid Connection ($V_{acmin}$...$V_{acmax}$)** | Three Phases | Three Phases |
| **Rated Power ($P_{ac,r}$)** | 12,000 W | 12,000 W |
| **Power at 50°C/122°F** | 11,160 W | 11,230 W |
| **Power at 60°C/140°F** | 8,950 W | 9,020 W |
| **Rated Grid Voltage ($V_{ac,r}$)** | 480 Vac | 600 Vac |
| **AC Voltage Range** | 422...528 V | 544...660 V |
| **Maximum Output Current ($I_{ac,max}$)** | 16.0 A | 13.3 A |
| **Rated Frequency ($f_r$)** | 60 Hz | 60 Hz |
| **Nominal Power Factor** | > 0.99 | > 0.99 |
| **Total Harmonic Distortion** | < 2% | < 2% |
| **Output Protection** | | |
| **Anti-islanding protection** | According to UL 1741 | According to UL 1741 |
| **Maximum AC Overcurrent Protection** | 20.0 A | 20.0 A |
| **AC Side Varistors** | 3 plus gas arrester | 3 plus gas arrester |
| **Night Time Disconnect** | Yes | Yes |
| **Operating Performance** | | |
| **Maximum Efficiency ($\eta_{max}$)** | 97.3 % | 97.3 % |
| **Weighted Efficiency (EURO/CEC)** | - / 97.0 % | - / 97.0 % |
| **Feed In Power Threshold** | 30 W | 30 W |
| **Stand-by Consumption** | < 8 W | < 8 W |
| **Night-time power loss** | < 0.3 W | < 0.3 W |
| **Communication** | | |
| **Monitoring System (PC/Data logger)** | RS485/232 (opt.), Aurora Desktop (opt.) | RS485/232 (opt.), Aurora Desktop (opt.) |
| **Remote Control** | RS 485, Wireless (opt.) | RS 485, Wireless (opt.) |
| **User Interface** | 16 characters x 2 lines LCD display | 16 characters x 2 lines LCD display |
| **Environmental** | | |
| **Ambient Temperature Range** | -25...+60°C /-13...140°F with derating above 45°C/113°F | -25...+60°C /-13...140°F with derating above 45°C/113°F |
| **Relative Humidity** | < 100 % condensing | < 100 % condensing |
| **Noise Emission** | < 50 db(A) | < 50 db(A) |
| **Operating Altitude** | 2000 m / 6560 ft | 2000 m / 6560 ft |
| **Physical** | | |
| **Environmental Protection Rating** | NEMA 4X | NEMA 4X |
| **Cooling** | Natural | Natural |
| **Dimension (H x W x D)** | 716mm x 645mm x 208mm / 28.2" x 25.4" x 8.2"<br>958 mm x 645mm x 222m / 37.7"x12.8"x8.7" (-S/-S2) | 716mm x 645mm x 208mm / 28.2" x 25.4" x 8.2"<br>958 mm x 645mm x 222m / 37.7"x12.8"x8.7" (-S/-S2) |
| **Weight** | 45.8 kg / 99.0 lb<br>48.5 kg / 107 lb (-S Version)<br>51.7 / 114 lb (-S2 Version) | 45.8 kg / 99.0 lb<br>48.5 kg / 107 lb (-S Version)<br>51.7 / 114 lb (-S2 Version) |
| **Mounting System** | Bracket support | Bracket support |
| **Warranty** | 10 std up to 15/20 years opt. | 10 std up to 15/20 years opt. |
| **Safety** | | |
| **Isolation Level** | HF transformer | HF transformer |
| **Marking** | cCSAus | cCSAus |
| **Safety and EMC Standard** | UL 1741, CSA - C22.2 N. 107.1-01 | UL 1741, CSA - C22.2 N. 107.1-01 |
| **Grid Standard** | IEEE 1547 | IEEE 1547 |
| **Available Products Variants** | | |
| **Standard - Positive Ground** | PVI-12.0-I-OUTD-US-480-PG | PVI-12.0-I-OUTD-CAN-600-PG |
| **Standard - Negative Ground** | PVI-12.0-I-OUTD-US-480-NG | PVI-12.0-I-OUTD-CAN-600-NG |
| **With DC Switch - Positive Ground** | PVI-12.0-I-OUTD-S-US-480-PG | PVI-12.0-I-OUTD-S-CAN-600-PG |
| **With DC Switch - Negative Ground** | PVI-12.0-I-OUTD-S-US-480-NG | PVI-12.0-I-OUTD-S-CAN-600-NG |
| **With AC and DC Switches - Positive Ground** | PVI-12.0-I-OUTD-S2-US-480-PG | PVI-12.0-I-OUTD-S2-CAN-600-PG |
| **With AC and DC Switches - Negative Ground** | PVI-12.0-I-OUTD-S2-US-480-NG | PVI-12.0-I-OUTD-S2-CAN-600-NG |

Please note: All data for PVI-12.0-I-OUTD-CAN is preliminary

Above data is subject to change at any time.