# Inverters

The inverter is the heart of all but the smallest power systems. It is an electronic device that converts direct current DC power from batteries or solar modules into alternating current AC power to operate lights, appliances or anything that normally operates on power supplied by the utility grid. Inverters come in many varieties, sizes and qualities and offer various features that specialize them for particular applications.

## Off-Grid Inverters

Off-grid, or standalone, inverters convert DC power stored in batteries to AC power that can be used as needed. Select an inverter for your power system based on the maximum load you will be powering, the maximum surge required, AC output voltage required, input battery voltage and optional features needed. High quality standalone inverters are available in sizes from 100 watts, for powering notebook computers and fax machines from your car, to 60 kilowatts, for powering a commercial operation. The size of an inverter is measured by its maximum continuous output in watts. This rating must be larger than the total wattage of all of the AC loads you plan to run at one time. Wattage of most AC loads can be determined from a tag or label on the appliance, usually located near where the power cord enters, or from the owner's manual. If the inverter is expected to run induction motors, like the ones found in top loading washers, dryers, dishwashers and large power tools, it must be designed to surge, or deliver power many times its rating for short periods of time while these motors start. Standalone inverters are available with two basic power output waveforms: sine wave, and modified sine wave (the proper term is actually modified square wave, but since modified sine wave is much more commonly used, we use that term in this catalog).


Grid-tie inverters, dual-function inverters and utility companies deliver a sine wave. Exeltech, Xantrex XW Series, SMA Sunny Island, Magnum MS and OutBack FX inverters are sine wave off-grid inverters. Sine wave inverters have a higher cost, but they can operate almost anything that can be operated on utility power. Exeltech sine wave inverters are an excellent choice for power systems running audio or telecommunications equipment and other electronics that are waveform-sensitive. The OutBack and Xantrex XW series inverters can be ganged together for up to 36 kW of output and can operate off-grid or grid-tie. We now carry Samlex sine wave PST inverters for a lower cost, a small-system sine wave alternative.

Xantrex TR series, Magnum, and Samlex PSE inverters have modified sine wave output with harmonic distortion of around 40%. They are an economical choice in power systems where waveform is not critical. Their high surge capacity allows them to start large motors while their high efficiency makes them economical with power when running small loads like a stereo or a small light. They can power most lighting, televisions, appliances and computers very well. Unfortunately, this type of inverter may destroy some rechargeable tools and flashlights, and laser printers and copiers. They may not allow many laser printers, copiers, light dimmers and some variable speed tools to operate. Equipment with silicon controlled rectifiers (SCRs) will not operate. Some audio equipment will have a background buzz that may be annoying to music connoisseurs.

## Grid-Tie Inverters

Grid-tie, or utility intertie, inverters convert DC power from PV modules into AC power to be fed into the utility grid. There are two major types of grid-tie inverters; string inverters and low voltage input inverters.

The SMA Sunny Boy, Fronius and Xantrex GT-3 inverters are string inverters. The name "string" comes from the way the PV modules are wired together, in series to achieve a higher voltage. These inverters are designed to run at voltages up to 600 VDC. String wiring is faster to install, more efficient and allows the use of smaller gauge wire. DC voltage this high can be very dangerous and life-threatening, so string inverters should be installed and serviced by qualified electricians.

A grid-tie PV system uses the utility company, in effect, as its storage battery. When the sun is shining, your electricity comes from the PV array, via the inverter. If the PV array is generating more power than you are using, the excess is sold to the power utility company through your electric meter, by making the meter run backward. When you need more power than the PV array can supply, the utility makes up the difference. This type of system makes the most sense in most cases where you have utility power, because there are no batteries to maintain or replace. Unfortunately, if the utility power goes down, this type of inverter will go off, too, regardless of whether or not the sun is shining.




*Suggested retail prices are subject to change; check with us for latest pricing.*

## Dual-Function Inverters

Using a dual-function inverter allows you to sell excess power to the utility, and also maintain a battery bank for standby power in the event of a utility power failure. The Xantrex XW series, and the OutBack GFX series inverters are primarily standalone inverters

that can function as an intertie inverter at the same time, but with a lower efficiency than an inverter designed for grid-tie only. The new Xantrex XW is a grid-tie inverter designed to provide battery backup when the utility fails. The SMA Sunny Island inverter is designed to work with a Sunny Boy inverter to provide utility intertie (grid-tie) with battery backup.

In a typical installation, the inverter is connected to a battery bank, a sub panel for critical loads that will be powered during a power outage, and the house load center. If the utility is available, the inverter will supply the house loads from the utility. If the utility fails, the inverter will supply power to the loads from the battery. When the utility is available again, the inverter will switch the loads back to the utility, and recharge the batteries. If the batteries become fully charged by another power source, such as photovoltaic modules or a wind or hydroelectric generator, excess power may be sold back to the utility in locations where net metering is allowed.

### Output voltage

Most of the inverters we stock supply standard 120VAC 60 HZ. OutBack and Magnum inverters can be stacked in pairs for 240VAC, such as one gets from utility companies and fuel-powered generators. The Xantrex XW and the Magnum MS4448-AE deliver 120/240VAC power from one inverter. Most of them can be special ordered with other output voltages and frequencies for use anywhere in the world. See our export models and contact us with any special requirements that you have.

### Interference

The electronic circuitry in inverters may cause problems with radio and television reception, noise on telephones and buzz in audio equipment. Sine wave inverters cause the least amount of interference. Interference can be minimized by locating the inverter very close to the batteries, twisting together the cables that connect the inverter to the battery, running AC lines separate from other wiring (such as telephone wires) and locating the inverter away from appliances that are susceptible to interference. All inverters cause interference on AM radio!

### Wiring Considerations

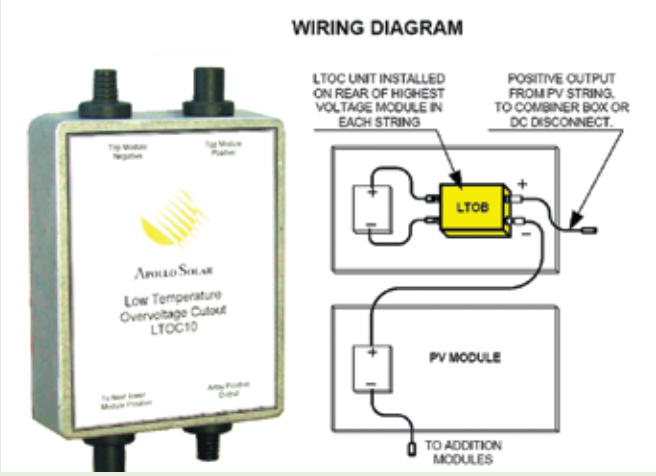
Standalone inverters require very high current from a battery to operate large loads. A 2000 watt inverter running at full power in a 12 volt system will be drawing nearly 200 amps from the battery. Large cables and good connections are required for proper operation.

Use caution when plugging a small inverter into a lighter outlet located far from a battery. Typical DC house wiring may have insufficient wire sizes and too much voltage drop to supply the current required by these inverters. All battery-based inverters require proper fusing between the battery and the inverter.

## Low Temperature Overvoltage Bypass

Protect MPPT charge controllers and grid-tie inverters from high PV open circuit voltage at low temperatures with the new Low Temperature Overvoltage Bypass (LTOB) from Apollo Solar. Solar module voltage rises with drop in temperature. Sometimes when the temperature gets very low, the voltage of a string of several modules in series gets too high and causes damage to a charge controller or inverter. This problem can be solved by putting less modules in series, but sometimes this causes a sacrifice when temperatures are high.

Now you can size the PV array for optimum performance without regard to high open circuit voltages at low temperatures. The Apollo Solar LTOB automatically switches modules out of the circuit if the temperature falls below 10 degrees F. One unit is required for each string of modules. Switch up to 8 amps per string. Installation is simple. Just plug in M-C connectors and stick the LTOB to back of the module. Zero power consumption.




| Description | Item code | Price |
|---|---|---|
| Low temperature overvoltage bypass | 020-07013 | $185 |

# NEW! Enphase

## Grid-Connected Micro-Inverter System

The Enphase Micro-Inverter system is the first commercially available micro-inverter system for residential and commercial solar PV applications. The Enphase Micro-Inverter is a fully-integrated device that converts the DC output from a single solar module into grid-compliant AC power. The micro-inverter system is designed to maximize energy harvest, increase system reliability and dramatically simplify design, installation and system management.

## Easy Design and Installation

System design is a breeze. No more string sizing exercises. No more headaches trying to layout equal lengths of strings to fit on a roof. Each micro-inverter is mounted to the module racking structure and connected directly to the DC wires from each PV module. The micro-inverter AC wire harnesses are connected together to form a continuous AC branch circuit that is connected to the AC utility distribution center.

## Optimal Energy Harvest

Each PV module is now individually power tracked by a micro-inverter, eliminating power loss caused by a few underperforming modules in the array. Now you can realize the full energy potential of every PV array, reducing the power-limiting effects of shading, dust, debris, module mismatch, and thermal differences. Problems are now isolated to a small fraction of the PV array, while the rest of the PV system continues to function normally. Service becomes routine maintenance rather than a costly emergency.

## Reliability

The Enphase Micro-Inverter is qualified to a NEMA6 environment rating and operates at full power up to 65°C (149°F), allowing it to be operated in harsh environments.

## Module Level Monitoring

The Enphase Micro-Inverter system includes advanced communication, performance visualization and data analysis on a per-module basis. Every micro-inverter communicates with the Enphase Enlighten website to show you a physically accurate representation of your individual system and how each PV module is performing in real time. Data is monitored 24/7 and Enlighten will immediately notify you via email of any issues it detects. For example, Enlighten will notify you if an individual module is underperforming compared to its neighboring modules.

## Ordering

There are models below for 240- and 208-volt output and they are available with MC Solarline 1 or Solarline 2 cable connections on them. They are designed for input from a 150- to 200-watt module with 72 5-inch cells. Order the voltage to match your systems and a connector to match your module output cables. Order one install kit for each AC branch circuit of up to 16 inverters in a 240-volt system and one for each 26 inverters in a 208-volt system. One IEMU-01 is required for Internet monitoring on each installation. The IEMU-01 comes with one year of monitoring on residential systems. Call for information about commercial monitoring.

| Enphase model | Module watts | AC output volts | Module MC connector | CEC efficiency | Item code | Price |
|---|---|---|---|---|---|---|
| M175-24-240-SO-01 | 150 - 200 | 240 | Solarline 1 | 94.5% | **030-03728** | **$200** |
| M175-24-208-SO-01 | 150 - 200 | 208 | Solarline 1 | 94.5% | **030-03729** | **$200** |
| M175-24-240-SO-02 | 150 - 200 | 240 | Solarline 2 | 94.5% | **030-03731** | **$200** |
| M175-24-240-SO-02 | 150 - 200 | 208 | Solarline 2 | 94.5% | **030-03733** | **$200** |
| K240-01-001 | Install kit for one AC branch circuit - 240 VAC | | | | **030-03747** | **$89** |
| K208-01-001 | Install kit for one AC branch circuit - 208 VAC | | | | **030-03748** | **$89** |
| IEMU-01 | Internet monitoring gateway with first year of monitoring | | | | **030-03751** | **$350** |
| ECWP-240-06 | ENTENSION CABLE WHIP 240 VAC 6 FOOT | | | | **030-03753** | **$42** |
| ECWP-240-12 | ENTENSION CABLE WHIP 240 VAC 12 FOOT | | | | **030-03754** | **$50** |
| ECWP-240-20 | ENTENSION CABLE WHIP 240 VAC 20 FOOT | | | | **030-03755** | **$67** |
| ECWP-208-06 | ENTENSION CABLE WHIP 208 VAC 6 FOOT | | | | **030-03757** | **$42** |
| ECWP-208-12 | ENTENSION CABLE WHIP 208 VAC 12 FOOT | | | | **030-03758** | **$50** |
| ECWP-208-20 | ENTENSION CABLE WHIP 208 VAC 20 FOOT | | | | **030-03759** | **$67** |
| Residential Service Plan | 5 -year monitoring service for residential systems < 10 kW | | | | **030-03765** | **$650** |
| Commercial Service Plan | 5-year monitoring for commercial installations | | | | | **Call** |



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# [Solar Micro-Inverter System]

## Productive

A Micro-Inverter per Module Ensures Maximum Energy Harvest.

## Reliable

Highest System Availability.

## Smart

Simplifies Design, Installation & Management.
Plug and Play Communication.

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# SMA

## Sunny Boy Grid-Tie Inverters

SMA Sunny Boy inverters are the most widely used grid-tie PV inverters in the world. SMA inverters are available in sizes from 700 watts to 7000 watts, making them ideal for a wide range of applications from small residential systems to very large 3-phase industrial systems.

All SMA inverters come standard with built-in LCD digital monitors that display instantaneous power output, energy delivered during the current day and the total energy produced since installation.

The SB700 and 1800 have 120 VAC output. The SB3000 and SB4000 are auto-sensing for use on 240 VAC and 208 VAC applications. The SB 5000, 6000 and 7000 can be used in 208, 240 and 277 VAC applications. SMA offers a wide range of accessories for communications and monitoring of the system. The SB 3000 and 4000 come with a DC disconnect switch and the SB 5000, 6000, and 7000 come with an AC/DC disconnect switch, each with an integrated fused series string combiner that connects to the bottom of the inverter. The disconnect switches are housed in a NEMA 3R enclosure. All electronic components are in a sealed compartment.

The SB 700 is housed in a completely sealed stainless steel enclosure. Outdoor installation is recommended for the sealed inverters so natural air-flow can cool the heat-sink. The table on page 9 shows a typical module string size for many PV module brands that can be used with each inverter. This number can vary depending on maximum and minimum temperatures in the location where the system is installed. For more details, consult us or visit www.sma-america.com to use SMA's string-sizing software.

All inverters are compliant with UL 1741, UL 1998, IEEE-929, IEEE-1547, FCC Part 15 A & B. The new SMA inverters now have a standard 10-year warranty.

| Model | Maximum AC power | AC output volts | DC array voltage | Peak power tracking | CEC efficiency | Max DC current | Dimensions H" x W" x D" | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| SB700USBD | 700<br>600<br>460 | 120VAC | 150-250<br>125-250<br>95-250 | 123-250<br>100-200<br>77-150 | 91.5% | 7A | 12.7 x 12.6 x 7.1 | 43 | **030-03113** | **$1540** |
| SB3000US | 3000 | 208VAC<br>240VAC | 200-500 | 180-400<br>200-400 | 95.0%<br>95.5% | 17A | 17.8 x 13.8 x 9.3 | 88.6 | **030-03083** | **$3,432** |
| SB4000US | 3500<br>4000 | 208VAC<br>240VAC | 250-600 | 220-480<br>250-480 | 95.5%<br>96.0% | 18A | 17.8 x 13.8 x 9.3 | 88.6 | **030-03084** | **$3,750** |
| SB5000US | 5000 | 208VAC<br>240VAC<br>277VAC | 250-600 | 250-480 | 95.5%<br>95.5%<br>95.5% | 21A | 18.4 x 24.1 x 9.5 | 143 | **030-03085** | **$5,138** |
| SB6000US | 6000 | 208VAC<br>240VAC<br>277VAC | 250-600 | 250-480 | 95.5%<br>95.5%<br>96.0% | 25A | 18.4 x 24.1 x 9.5 | 143 | **030-03086** | **$5,277** |
| SB7000US | 7000 | 208VAC<br>240VAC<br>277VAC | 250-600 | 250-480 | 95.5%<br>96.0%<br>96.0% | 30A | 18.4 x 24.1 x 9.5 | 143 | **030-03087** | **$5,733** |





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## NEW! Sunny Island

The Sunny Island inverters can be used for standalone off-grid systems, and they are a great way to add battery backup to an SMA Sunny Boy inverter based grid-connected system.

### Grid-Tie System Backup

To do this, the grid-tie inverter output and the Sunny Island inverter output both feed circuit breakers in a sub-panel that also powers critical loads —in the event of a grid failure. As long as grid power is present, it feeds the subpanel through the transfer switch in the Sunny Island. If the grid fails, the Sunny Island connected to a bank of batteries acts as the source of AC power, or the "AC grid" for that subpanel. This powers the critical loads connected to the subpanel and keeps grid-connected systems running if the sun is shining. The loads are actually powered directly by the grid-tie system if the sun is shining. If the grid-tie system is putting out more power than the loads need during a grid failure, the Sunny Island charges the batteries. At night or when power production is low and load use is high, the Sunny Island provides power from the battery bank. In the morning, the batteries are recharged and the cycle begins anew until the grid power returns. If the grid-tie inverter has a 240 VAC output, a backup system will require two Sunny Island inverters or one inverter and an autotransformer.

| SMA model | Watts | Battery voltage | AC out volts/hertz | No load draw | Charger amps | Peak AC surge | Weight lbs | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| SI5048U | 5000 | 48 VDC | 120v/60Hz | 25 Watts | 120 | 150 A | 139 | **030-03095** | **$6,540** |

## Sunny WebBox – Sunny Portal Connection

The SMA Sunny WebBox provides a connection between the operator's computer and/or the free Sunny Portal web site (www.sunnyportal.com). The WebBox can be connected to a Sunny Boy, Sunny Tower, Sunny Island, or Sunny Central inverter (up to 50 units). Connection is made with 4-conductor twisted pair cable between the inverter's RS-485 output and the Sunny WebBox terminals. The Sunny WebBox connects to a local area network (LAN) with an Ethernet cable or to a phone line with the optional modem. The Sunny WebBox stores system performance data in its internal 8 MB memory or on a standard SD memory card and can be set to upload the data to the Sunny Portal website at user-selectable intervals. Password protected. 5-year warranty.

| Description | Item code | Price |
|---|---|---|
| SMA WebBox | **030-03141** | **$938** |

## Sunny Beam Bluetooth Wireless System Monitor

Completely updated for 2008, the new Sunny Beam features Bluetooth wireless technology for improved performance and versatility. The Sunny Beam communicates wirelessly with up to 12 Sunny Boy inverters and graphically displays all the key performance data of your solar system. It features fully automatic system monitoring, including an audible alert signal. The Sunny Beam simultaneously displays power output, daily energy production and the total energy production of the system. It may also be configured to display other parameters such as the overall CO2 offset of your system, as well as your earnings in dollars.

| Description | Item code | Price |
|---|---|---|
| Sunny Beam wireless system monitor | **030-03143** | **$563** |
| Additional antenna module for Sunny Beam | **030-03144** | **$198** |

100 days worth of system performance data can be recorded and stored, and can then be simply transferred to a PC via a USB interface. Using the new and included Sunny Beam Webconnect software, the data can in turn be transferred to the Sunny Portal website for long-term storage, display, and evaluation. Setting up the Sunny Beam is fast and easy via an intuitive set of user menus. Simply install an antenna and communication module in each of the Sunny Boy inverters and step through the configuration screens. The Sunny Beam is powered by a set of internal batteries which are kept charged by the integrated solar cell.

Coming 4th Quarter of 2008 - Call for price and availability.

| Model | SMA Sunny Boy communications cards | Item code | Price |
|---|---|---|---|
| RS-232-N | Module for remote communication between Sunny Boy without display and a Windows based PC. Requires cable and Sunny Data software from web. Maximum distance from PC is 50 feet. | **030-03122** | **$183** |
| RS-485-N | Module for remote communication between multiple Sunny Boy Inverter(s) and Sunny WebBox or Fat Spaniel monitoring system.. A 4 conductor cable required between inverters. RS485 Cable is required between one inverter and Sunny WebBox. One module is required for each inverter. | **030-03123** | **$175** |
| RS232 Cable | Cable to connect a PC to single inverter using RS232 modules – 50 feet (15 meter). | **030-03147** | **$114** |
| RS485 Cable | Cable to connect to multiple inverters using RS485 modules – 50 feet (15 meter). | **030-03148** | **$114** |

# Fronius

## IG Inverters


Fronius IG inverters offer high efficiency, precision maximum power point tracking, and intelligent thermal management, all of which result in superior energy output from grid-tie photovoltaic systems. Their wide input voltage range (150-450 volts) permit the use of modules in any power and voltage range. Their light weight and innovative mounting hardware make them very easy to install.

Fronius IG inverters come standard with an integrated LCD that displays and records over 20 parameters pertaining to inverter and system operation. Fronius inverters have 3 expansion slots that allow you to add features like external sensors and remote displays. You can use a personal computer to update the inverter with the latest software upgrades. The larger inverters (over 3 kW) are built with the same power stages as the smaller ones, but use 2 of them. When these inverters see array capacity at less than half, one stage turns off, giving the inverter higher efficiency during periods of low insolation. UL Listed. 10-year warranty. Extended warranty available.

## IG Plus Inverters - Coming at the end of 2008

Fronius IG Plus inverters will be available Q4 2008. They offer all the features of the IG and add a lockable code-compliant DC disconnect with fused string combiner in a separable connection compartment that stays on the wall if the inverter needs to be serviced. The single phase inverters are field settable for 208, 240 or 277 volts. Two true three-phase output units are also available. They can be configured for positive or negative ground. UL Listed. 10 year warranty. 15-year warranty available.

| Model | Maximum AC power | DC Array voltage | LCD display | CEC efficiency | Maximum DC current | AC output volts | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| IG 2000 | 2000 W | 150-450 | Yes | 93.5% | 13.6A | 240VAC | 26 | **030-03402** | **$2,328** |
| IG 2500-LV | 2350 W | 150-450 | Yes | 93.0% | 16.9A | 208VAC | 26 | **030-03410** | **$2,430** |
| IG 3000 | 2700 W | 150-450 | Yes | 94.0% | 18A | 240VAC | 26 | **030-03403** | **$2,588** |
| IG 4000 | 4000 W | 150-450 | Yes | 94.0% | 26.1A | 240 VAC | 42 | **030-03405** | **$3,848** |
| IG 4500-LV | 4500 W | 150-450 | Yes | 93.5% | 29.3A | 208 VAC | 42 | **030-03412** | **$4,110** |
| IG 5100 | 5100 W | 150-450 | Yes | 94.5% | 33.9A | 240 VAC | 42 | **030-03407** | **$4,190** |
| IG Plus 3.0 | 3000 W | | | | | | 55 | **030-03481** | **Call** |
| IG Plus 3.8 | 3800 W | | | | | 208VAC | 55 | **030-03483** | **Call** |
| IG Plus 5.0 | 5000 W | | | | | | 84 | **030-03485** | **Call** |
| IG Plus 6.0 | 6000 W | | | | | 240V | 84 | **030-03487** | **Call** |
| IG Plus 7.5 | 7500 W | | | | | 277V | 84 | **030-03489** | **Call** |
| IG Plus 10.0 | 10,000 W | | | | | | 108 | **030-03491** | **Call** |
| IG Plus 11.4 | 11,400 W | | | | | | 108 | **030-03493** | **Call** |
| IG Plus 11.4-3 | 11,400 W | | | | | 208/240V | 108 | **030-03495** | **Call** |
| IG Plus 12.0-3 | 12,000 W | | | | | 277 | 108 | **030-03497** | **Call** |
| Extended Warranty - 15 years total | | | | | | | | **030-03471** | **$910** |

## Fronius IG Wireless Personal Display

The Fronius IG Personal Display is easy to install and easy to use. The readout and interface are based on the same display that comes standard on all Fronius IG Series inverters. Although tested to 150 feet indoors and 500 feet outdoors, there are many reports from the field of the units transmitting from much farther distances.

The Personal Display can aggregate data for up to 15 Fronius IG inverters or show data for each individual inverter in a system – i.e., data from a system that is over 75 kW AC can be viewed together or as sub-systems. It shows instantaneous data such as power, voltage and current, and it will store the daily and cumulative data. The display offers two levels of access: easy and pro. In the easy level, homeowners can view system basics like power, energy output, CO2 offset, and the number of dollars saved. The pro level offers more advanced information like voltage, current and grid frequency. The unit was designed with a backlit display and a stylish silver case to attract the attention of solar enthusiasts and their visitors alike. The display can mount on a wall near a thermostat or clock, or be placed on a coffee table or night stand. A wireless card is required for each inverter to be monitored.



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## IG Public Display


The Fronius Public Display is constructed on the plug-and-play principle. Just insert the plug-in card or box and any cables supplied, select the display values and away you go. Alphanumeric large-format display. The data from up to 100 inverters can be selected for the rotating display. One value in the group is picked as the favorite and is then displayed every second time the value changes. The following values can be displayed: AC power – total energy; energy/day – energy/year – CO2 total – CO2/year – CO2/day – total earning; earnings/day – earnings/year – date & time. A COM Card (030-03425 below) must be installed in each inverter to be monitored.

## IG DatCom Accessories


Remote data communications and data logging features can easily be added to transform the inverter into a sophisticated data acquisition system and weather monitoring station. DatCom components and accessories connect to the inverter and each other with standard Cat 5 network cables and RS-232 cables.

### Datalogger Boxes and Cards

Datalogging requires a COM card to be installed in each inverter in the system and a Datalogger Box. The Datalogger Box stores the data collected from the inverters and any of the optional weather sensors, and connects to a PC or an external modem to allow you to monitor your PV system from anywhere in the world. Two versions of the Datalogger Box are available. The Datalogger Easy monitors one IG inverter. The Datalogger Pro can monitor up to 100 Fronius IG inverters.

Datalogger cards perform the same function as the Boxes. The Easy card works for one inverter; the Pro card works for up to 100 inverters. Both cards work with a COM card and DatCom systems.

### Sensor Box, Sensor Card and Sensors

A Sensor Box or Sensor Card is required to add weather sensors to your data acquisition system. The Sensor Box and Card each have 6 inputs – two for measuring temperature, one for measuring irradiance, two digital inputs for a wind speed sensor and/or kilowatt hour meter and one 20 mA current interface for a humidity sensor.

| Model | Accessory | Item code | Price |
|---|---|---|---|
| IG Personal Display | Wireless display for IG inverters - wireless card required for each inverter to be monitored | 030-03417 | $287 |
| Wireless Card | Wireless card for personal display | 030-03419 | $131 |
| Public Display | Public Display | 030-03463 | $2,329 |
| COM card, retrofit | Communications card for all Fronius IG inverters | 030-03425 | $137 |
| Datalogger Pro Card | Control and Monitoring data storage and PC interface for up to 100 IG inverters | 030-03432 | $660 |
| Datalogger Pro Box | Control and Monitoring data storage and PC interface for up to 100 IG inverters | 030-03431 | $705 |
| Datalogger Easy Card | Control and Monitoring data storage and PC interface for 1 IG inverter | 030-03434 | $426 |
| Datalogger Easy Box | Control and Monitoring data storage and PC interface for 1 IG inverter | 030-03435 | $446 |
| Datalogger Interface Box | Combines benefits of the Datalogger Pro and interface box | 030-03436 | $798 |
| Interface Box | Use to export real time data without data storage – for up to 100 inverters | 030-03440 | $350 |
| Interface Easy Card | To export data without data storage from 1 inverter – requires Datalogger or COM Card | 030-03441 | $177 |
| TIXI modem | Allows DatCom system to email or fax on standard phone line | 030-03452 | $558 |
| Sensor card | Monitoring interface with 6 sensor input channels | 030-03443 | $659 |
| Sensor box | Monitoring interface with 6 sensor input channels | 030-03442 | $705 |
| Sensor, wind speed | For measuring wind speed. Sensor box (above) is required. | 030-03446 | $85 |
| Sensor, ambient temperature | For measuring outside temperature. Sensor box (above) is required. | 030-03448 | $51 |
| Sensor, module temperature | For measuring module temperature. Sticks to back of PV module. Sensor box (above) is required. | 030-03449 | $106 |
| Sensor, irradiance | Reference PV cells for measuring solar insolation. Sensor box (above) is required. | 030-03444 | $243 |
| RS232 null modem cable | For connection of Datalogger cable to PC or cable. | 030-03453 | $25 |
| Cat 5 cable 3 foot | Network cable for connecting inverters to each or to Sensor Box and Datalogger Box | 030-03455 | $4 |
| Cat 5 cable 65 foot | Network cable for connecting inverter to Datalogger. | 030-03457 | $33 |
| Cat 5 cable 196 foot | Network cable for connecting inverter to Datalogger. | 030-03459 | $129 |

# The next generation grid-tie inverter is here.

## Fronius **IG Plus**

- Models from 3 KW to 12 KW in a single inverter
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- Integrated technology to maximize energy harvest even on cloudy days
- Integrated DC disconnect
- Six circuit supervised string combiner built in
- Field programmable to 208, 240, and 277 volts with no loss in output power
- Field programmable to positive or negative ground
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# Xantrex

## GT Grid-Tie Inverters


Xantrex GT Series grid-tie solar inverters have an integrated, lockable 600-volt PV/utility disconnect switch which may eliminate the need for external disconnects in some jurisdictions. A split-chassis design keeps the wiring box separate from the inverter, allowing for easy access and spacing to the AC and DC string terminals and eliminating exposed wiring during inverter installation and removal. The wiring box includes eight 3/4-inch knockouts and easy access DC and AC terminal blocks that accept wire sizes from #14 to #6 AWG.

The GT enclosure is a NEMA 3R, allowing for both for outdoor and indoor installation. The inverter includes a slotted, hook-style back plate for easy installation. For large systems, multiple inverters can be mounted side by side centered on standard 16" stud spacing to reduce visible conduit and make installations look more attractive.

GT inverters come standard with a backlit 16-character two-line liquid crystal display (LCD). The display provides inverter power, daily and lifetime energy production, PV array voltage and current, utility voltage and frequency, time online "selling" today, fault messages, and two installer-customizable screens. Tapping a finger close to the LCD activates the backlight display. With each tap, the display cycles through the communication screens. The LCD is always on standby, ready to provide information even at night. When inverters are daisy chained using standard Cat 5 Ethernet cable, each inverter display will report the output of the entire system. The GT offers an isolated RS232 port and two Xanbus RJ45 communication ports. No additional communication ports or cards are needed to connect a PC.

### Inverter Monitor

The monitor easily connects to Xantrex GT Series inverters using standard off-the-shelf Cat 5 Ethernet cable. Built-in flash memory stores PV system data and makes software upgrades simple. This connection also provides power to the monitor, removing the need for a monitor power supply. It displays total PV system performance in daily, monthly and lifetime views on a graphical 128 x 64 pixel LCD screen. The display can access detailed individual inverter performance through the device list screen and it can display individual and total system performance for up to five GT Series inverters. Wall mounting bracket and hardware included.

### The Xantrex Communication Gateway

The Communication Gateway bridges the gap between Xantrex solar inverters and the system owner's computer. It logs performance data directly from the Xantrex GT inverters, and transmits it to the included Yahoo™ Widget-based monitoring software for a simple and graphically rich view of system performance. More than a data logger, the Gateway offers a web page with the ability to configure automated email reports and fault status to the user or installer. The Gateway includes both built-in Wi-Fi and Ethernet connectivity allowing for flexible and simple set up for wireless or wired connection to a router or direct to a PC. The Gateway logs and transmits system power production, inverter-specific power production, lifetime power production history (daily, weekly, monthly) and inverter faults. It can monitor a network consisting of up to 20 single-phase GT inverters through a Cat 5 connection between each inverter and the gateway.

| Xantrex Model | Maximum AC output watts 208V / 240V | Maximum AC output amps 208V / 240V | Maximum AC output overcurrent protection | Maximum DC array amps 208W / 240W | MPPT DC output voltage range | Maximum DC voltage | CEC efficiency 208/240 | Itemcode | Price |
|---|---|---|---|---|---|---|---|---|---|
| GT2.8 | 2700W / 2800W | 13.0A / 11.7A | 20A | 14.9A / 15.4A | 195-550VDC | 600 | 94.5% / 95% | **030-01801** | **$2,375** |
| GT3.3N | 3100W / 3300W | 14.9A / 13.8A | 25A | 16.5A / 17.5A | 200-550VDC | 600 | 94.5% / 95% | **030-01803** | **$2,875** |
| GT3.8 | 3500W / 3800W | 16.8A / 15.8A | 20A | 19.5A / 20.0A | 195-550VDC | 600 | 94.5% / 95% | **030-01809** | **$3,130** |
| GT4.0N | 3800W / 4000W | 18.3A / 16.7A | 25A | 17.0A / 18.0A | 240-550VDC | 600 | 94.5% / 95% | **030-01804** | **$3,130** |
| GT5.0 | 4500W / 5000W | 22A / 21A | 30A | 20.0A / 22.0A | 235-550VDC | 600 | 94.5% / 95% | **030-01805** | **$3,950** |
| GT solar inverter monitor - Monitor up to 5 inverters. Use Cat 5 cable to connect | | | | | | | | **030-01838** | **$300** |
| Communications gateway - Monitor up to 20 inverters with a PC. Use Cat 5 cable to connect | | | | | | | | **030-01813** | **$650** |

# NEW! PV Powered

## Residential Grid-Tie Inverters

PV Powered inverters deliver maximum energy harvest from your PV system with high reliability and world-class efficiency. Significant software integration and a modular design combine to create a scalable platform with fewer components and higher uptime. By employing fewer parts and ensuring those parts are of the highest quality, PV Powered has created a line of residential grid-tie inverters that spend more time generating electricity and less time being repaired.

Some models are available in extended and standard voltage range versions to fit the needs of each installation. The Extended Voltage Range (115-500VDC) products offer the industry's lowest MPPT voltage and are the ideal choice for integration with next generation low-voltage and building-integrated (BIPV) modules. The Standard Voltage Range (150-500VDC) products are optimized for traditional modules. Together, the entire product line offers the most design configurations across the widest range of PV modules.

Additional flexibility is provided by PV Powered's new ETL-listed and NEC code-compliant integration platform for both indoor and outdoor installations. Other system options include different mounting methods, AC and DC disconnects, inverter status display and wired or wireless data monitoring. This flexible approach enables visually pleasing, site-specific configurations that reduce permitting and inspection issues and reduce installation time.

Additionally, performance monitoring is available which includes low-cost, secure, web-based access to your system's status and performance history. With the PVM1010 option, you can maximize your system uptime and protect your solar investment. The PVM1010 along with the secure Internet-based server operated by PV Powered is equivalent to a standalone data logging meter and communication interface without the cost and inconvenience of installation and maintenance of a separate metering system. After getting registered you get access to inverter information from anywhere you can connect to the Internet. Reports of power output and energy production trends, local weather conditions and forecasts, verification that your system is working at its full potential and collection and export of data for service and maintenance planning are all included at no charge. Just install the PVM1010 in each inverter to be monitored and connect to a router with Cat 5 cable.

| Model | Maximum AC power | DC array voltage | Maximum DC volts | LCD display | CEC efficiency | Nominal DC current | AC output volts | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| PVP1100 SVR | 1100 W | 150-450 | 500 | Yes | 92.5% | 10A | 120VAC | 55 | **030-03805** | **$2,500** |
| PVP1100EVR | 1100 W | 110-450 | 500 | Yes | 92.0% | 10A | 120VAC | 55 | **030-03804** | **$2,500** |
| PVP2000 SVR | 2000 W | 150-450 | 500 | Yes | 93.0% | 16A | 240VAC | 65 | **030-03408** | **$2,680** |
| PVP2000 EVR | 2000 W | 115-450 | 500 | Yes | 92.5% | 16A | 240VAC | 65 | **030-03806** | **$2,680** |
| PVP2500 | 2500 W | 140-450 | 500 | Yes | 94.5% | 20A | 240VAC | 70 | **030-03809** | **$2850** |
| PVP3000SVR | 3000 W | 170-450 | 500 | Yes | 93.0% | 20A | 240VAC | 80 | **030-03810** | **$3,100** |
| PVP3500 | 3500 W | 200-450 | 500 | Yes | 95.5% | 18A | 240VAC | 85 | **030-03811** | **$3,300** |
| PVP4600 | 4600 W | 205-450 | 500 | Yes | 95.5% | 25A | 208VAC | 135 | **030-03813** | **$4,030** |
| PVP4800 | 4800 W | 200-450 | 500 | Yes | 96.0% | 26A | 240VAC | 135 | **030-03815** | **$4,060** |
| PVP5200 | 5200 W | 240-450 | 500 | Yes | 96.0% | 25A | 240VAC | 135 | **030-03817** | **$4,300** |
| PVM1010 | Monitor card - 1 required for each inverter to be monitored | | | | | | | 1 | **030-03803** | **$399** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

# Solectria

## NEW! PVI Series Residential Inverters

### PVI 1800W and PVI 2500W

The PVI 1800W and PVI 2500W only weigh 34 and 36 pounds, respectively, and have low-profile sealed NEMA 4 enclosures with an interactive menu-driven LCD display. They are available in 208VAC and 240VAC versions.

The inverters are prewired so they do not have to be disassembled for installation. They can be purchased alone or panelized with AC and DC disconnects and utility meter. Call for pricing on panelized inverters.

The PVI 1800W and 2500W are available with 5-, 10- and 15-year warranty options.

### PVI 3000W, 4000W, 5000W, 5300W

The larger inverters in the Solectria line have some of the highest CEC efficiencies, 96% on all models. They have an integrated DC disconnect with a fused DC string combiner in a detachable wiring box. A quick-mount wall bracket makes it a snap to mount this lightweight inverter line. Their universal auto-detect feature allows them to be used on 240 and 208 VAC systems. RS-232 and RS-485 ports allow connection for monitoring. ETL Listed to UL 1741.

A 10-year warranty is standard with the 3000W and larger models.


| Solectria model | Continuous AC power | DC array voltage | Peak power tracking | Max DC current | CEC efficiency | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|
| PVI 1800W | 1800W | 125-400 | 125-350 VDC | 11A | 92.5% | 34 | **030-03852** | **$2,510** |
| PVI 2500W | 2500W | 125-400 | 125-350 VDC | 15A | 93% | 36 | **030-03849** | **$2,889** |
| PVI 3000W | 2900W | 200-600 | 200-550VDC | 16A | 96% | 47 | **030-03848** | **$2,836** |
| PVI 4000W | 3900W | 200-600 | 200-550VDC | 20A | 96% | 48 | **030-03847** | **$3,498** |
| PVI 5000W | 4900W | 200-600 | 200-550VDC | 25A | 96% | 58 | **030-03846** | **$4,188** |
| PVI 5300W | 5300W | 200-600 | 200-550VDC | 25A | 96% | 60 | **030-03845** | **$4,452** |

## NEW! KACO

### Blueplanet 1501xi Grid-Tie Inverter

This high quality German-made inverter has the highest efficiency and lowest cost of any sub-2kw inverter we carry. Its low input voltage makes it easy to accomplish proper string sizing with the small number of modules in series to be used in a 1500-watt or smaller system. It has a CEC efficiency of 94% and weighs only 31 pounds. CSA Listed to UL 1741. 10-year warranty.

| Model | Maximum AC power | DC array voltage | Maximum DC volts | Maximum DC current | AC output volts | Item code | Price |
|---|---|---|---|---|---|---|---|
| Blueplanet 1501xi | 1500 W | 125-300 | 400 | 15A | 240VAC | **030-03515** | **$2,146** |

# Xantrex

## GT 3-Phase Commercial Inverters

The GT Commercial Series grid-tie inverter makes industrial-commercial power production affordable and attractive. These inverters have the highest efficiency of any large commercial inverters on the market. Xantrex GT inverters are available in sizes from 30 kW to 250 kW.

The compact, 220-pound, 30 kW inverter is in a wall-mounted aluminum enclosure and requires a symmetrical array input (split array +/-180-500VDC). 100 kW and 250 kW inverters have pad-mounted epoxy-coated steel enclosures with integrated transformers and disconnects. These inverters can be configured as positive ground for use with SunPower modules. They require zero clearance on back and sides and can fit through standard doors. UL Listed. 5-year warranty; 5-year extension available.

| Xantrex model | Continuous output (kW) | AC output voltage | Max DC amps | Max DC array voltage | MPPT range | CEC efficiency | Dimensions H" x W" x D" | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| GT30-208 | 28.8 | 208 | 100 | 600 | 180-500 | 96% | 44 x 22 x 13 | **030-02003** | **$27,909** |
| GT100-480 | 100 | 480 | 347 | 600 | 300-600 | 96% | 69 x 67 x 42 | **030-02015** | **$74.455** |
| GT100-208 | 100 | 208 | 347 | 600 | 300-600 | 96% | 69 x 67 x 42 | **030-02017** | **$74.455** |
| GT250-480 | 250 | 480 | 867 | 600 | 300-600 | 96% | 84 x 91 x 42 | **030-02026** | **$122,273** |

# Solectria

## 3-Phase Commercial Inverters


Solectria Renewables PVI inverters use rugged DSP-controlled IGBT circuitry to achieve high efficiency, reliability and low installed cost. The NEMA 3R enclosure with forced ventilation allows these inverters to be mounted in full sun, on roof tops or indoors. Inverter electronics are in a sealed enclosure within the housing. Their fully integrated design includes transformer, filters and AC and DC disconnects. Disconnects face to the side. If you are using multiple inverters and need to have the disconnects facing forward to minimize distance required between inverters, contact us for pricing. Optional integrated fused DC sub-combiners are available in all units.

Solectria inverters have an RS485 communication port. Solectria web-based monitoring options available. Also compatible with Fat Spaniel and other third-party monitoring systems. Contact us for information.

Solectria inverters have an RS485 communications ports; Fat Spaniel inverter-direct monitoring ports are optional. Contact us for information. Inverters are listed to UL1741 and IEEE Std 1547 and are certified to IEEE 6241 NY SIR surge test requirements.

Solectria inverters come with a 5-year warranty. 10-year and 15-year warranties are available. These units ship from the Solectria factory in Massachusetts. Made in USA.

| Inverter model | AC power | AC output voltage | Max DC amps | Max. DC array volts | MPPT range volts DC | CEC efficiency | Weight (lbs) | Dimension H"xW"xD" | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| PVI 13kW-208VAC | 13.2 kW | 208 | 60 | 475 | 225-380 | 94.00% | 376 | 34.5x 26x13.6 | **030-03863** | **$15,230** |
| PVI 13kW-480VAC | 13.2 kW | 480 | 60 | 475 | 225-380 | 94.50% | 376 | 34.5x 26x13.6 | **030-03867** | **$15,430** |
| PVI 15kW-208VAC | 15 kW | 208 | 68 | 475 | 225-380 | 94.00% | 398 | 34.5x 26x13.6 | **030-03871** | **$17,230** |
| PVI 15kW-480VAC | 15 kW | 480 | 68 | 475 | 225-380 | 94.50% | 398 | 34.5x 26x13.6 | **030-03875** | **$17,430** |
| PVI 60kW-208VAC | 60 kW | 208 | 190 | 600 | 330-500 | 94.00% | 1526 | 76x56x29.3 | **030-03885** | **$51,900** |
| PVI 60kW-480VAC | 60 kW | 480 | 190 | 600 | 330-500 | 95.50% | 1526 | 76x54x25.3 | **030-03889** | **$50,800** |
| PVI 82kW-208VAC | 82 kW | 208 | 248 | 600 | 330-500 | 94.50% | 1615 | 76x56x29.3 | **030-03893** | **$56,200** |
| PVI 82kW-480VAC | 82 kW | 480 | 248 | 600 | 330-500 | 95.50% | 1615 | 76x54x25.3 | **030-03897** | **$54,960** |
| PVI 95kW-208VAC | 95 kW | 208 | 287 | 600 | 330-500 | 94.50% | 1748 | 76x56x29.3 | **030-03901** | **$63,480** |
| PVI 95kW-480VAC | 95 kW | 480 | 287 | 600 | 330-500 | 95.50% | 1748 | 76x54x25.3 | **030-03905** | **$61,900** |
| Fused combiner option for 13.2 kW and 15 kW inverters, integrated into inverter. Specify 6 or 7 fuses and fuse size (10A or 15A). Add: | | | | | | | | | **030-03859** | **$540** |
| Fused combiner option for 60kW, 82kW and 95kW inverters, integrated into inverter. Specify 2-8 fuses and fuse size (40-250A). Add: | | | | | | | | | **030-03860** | **$540** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

# SatCon

## PowerGate 3-Phase Commercial Inverters

PowerGate inverters offer high reliability, efficiency and ease-of-use for large-scale grid-connected photovoltaic systems. A single-enclosure solution, the utility-grade PowerGate incorporates a high-efficiency transformer and both AC and DC switchgear that disconnect the inverter at night, minimizing tare loss. A highly efficient MPPT tracking algorithm and intelligent wake-up routine further maximize net energy harvest.

The PowerGate is certified to UL 1741 and is available with a variety of local and remote data monitoring options. A 4-line alphanumeric LCD display provides local monitoring.

A single enclosure with integrated high-efficiency transformer and internal AC and DC switchgear simplifies installation.

Price below includes integrated sub-array combiner. See table below for the number of fused 100 sub-array string inputs.

PV View web-enabled data monitoring, PV Zone sub-array performance monitoring and RS485 Modbus are optional. Call for pricing.

Wide input voltage range. SatCon offers a standard 5-year warranty on all inverters. A 10-year warranty costs 15% of the price of inverter plus accessories. A 15-year warranty costs 35% of the price of inverter plus accessories.

| SatCon options | Item code | Price |
|---|---|---|
| SatCon PV view direct monitoring CC00302 | **030-03321** | **$3,780** |
| SatCon PV view direct each additional inverter SF00030 | **030-03323** | **$2,100** |
| SatCon PV weather & environmental monitoring | **030-03331** | **$4,000** |
| SatCon wind speed and direction add to 030-03331 | **030-03333** | **$2,000** |
| SatCon rev grade PV View daisy chain | **030-03327** | **$4,900** |
| SatCon PV Zone monitoring – cost varies based on inverter size | **Call** | |

| Model | Continuous output (kW) | AC output voltage | Max DC amps | Max DC array volts | MPPT range | Fused sub-array inputs | CEC efficiency | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| AE30-60-PV-D | 30 | 208 | 96 | 600 | 295-600 | 3 | 92.5% | 1300 | **030-03210** | **$34,260** |
| AE30-60-PV-A | | 480 | | | | | 93.0% | | **030-03209** | **$33,560** |
| AE50-60-PV-D | 50 | 208 | 160 | 600 | 295-600 | 3 | 94.5% | 1778 | **030-03218** | **$39,280** |
| AE50-60-PV-A | | 480 | | | | | 93.0% | | **030-03216** | **$33,300** |
| AE75-60-PV-D | 75 | 208 | 240 | 600 | 295-600 | 6 | 95.0% | 2600 | **030-03222** | **$59,470** |
| AE75-60-PV-A | | 480 | | | | | 95.5% | | **030-03220** | **$58,290** |
| AE100-60-PV-D | 100 | 208 | 319 | 600 | 295-600 | 6 | 94.5% | 3250 | **030-03226** | **$73,650** |
| AE100-60-PV-A | | 480 | | | | | 94.5% | | **030-03224** | **$72,330** |
| AE135-60-PV-D | 135 | 208 | 431 | 600 | 295-600 | 9 | 95.0% | 3500 | **030-03233** | **$89,280** |
| AE135-60-PV-A | | 480 | | | | | 95.5% | | **030-03231** | **$87,700** |
| AE225-60-PV-A | 225 | 480 | 718 | 600 | 295-600 | 12 | 94.5% | 4800 | **030-03235** | **$117,350** |
| AE500-60-PV-A | 500 | 480 | 1595 | 600 | 295-600 | 30 | 95.0% | 5400 | **030-03237** | **$223,840** |

# PV Powered

## NEW! Commercial Grid-Tie Inverters

PV Powered commercial inverters combine the benefits of high reliability, low lifetime cost and leading efficiency into one easy-to-install system. The design features the latest advances in power technology including an intelligent power module that uses fifth generation, self-protecting IGBT silicon, the most efficient and reliable silicon technology available. System reliability is ensured by superior quality components including an integrated 98%-efficient Energy Star-rated transformer with field-configurable AC voltage output; acid-free, long-life, film-type capacitors; and a medical-grade DC power supply that provides clean, reliable power to system control components.

PV Powered commercial inverters offer a voltage window of 295-600VDC. This is the widest operating range with the lowest standard MPPT voltage of any three-phase inverter in the industry. This provides exceptional stringing capability with all PV modules currently available including new thin film modules. Serviceability is enhanced by a modular design that divides the inverter into easy-to-maintain subsystems. PV Powered backs all their inverters with a 10-year nationwide warranty and top-notch service and support. ETL Listed to UL 1741.

## PVM1010 Monitor

The PV Powered performance monitoring system includes the PVM1010 data monitoring module and user access to inverter performance information on a password-protected website at mypvpower.com. The PVM1010 along with the secure Internet-based server operated by PV Powered is equivalent to a standalone data logging meter and communication interface without the cost and inconvenience of installation and maintenance of a separate metering system.

- Access your information from anywhere you can connect to the Internet
- Reports power output and energy production trends
- View local weather conditions and forecasts
- Verify that your system is working at its full potential
- Collect and export data for service and maintenance planning

| PV Powered model | Continuous output (kW) | AC output voltage | Max DC amps | Max DC array voltage | MPPT range | CEC efficiency | Dimensions H" x W" x D" | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| PVP30-208 | 30 | 208 | 109 | 600 | 295-500 | 93.0% | 47.7 x 30.4 x 25.9 | 760 | **030-03826** | **$27,100** |
| PVP30-480 | 30 | 480 | 109 | 600 | 295-500 | 93.5% | 47.7 x 30.4 x 25.9 | 760 | **030-03828** | **$27,100** |
| PVP75-208 | 75 | 208 | 267 | 600 | 295-500 | 96% | 93 x 63 x 35 | 2750 | **030-03830** | **$54,562** |
| PVP75-480 | 75 | 480 | 267 | 600 | 295-500 | 96% | 93 x 63 x 35 | 2750 | **030-03832** | **$54,562** |
| PVP100-208 | 100 | 208 | 356 | 600 | 295-500 | 96% | 93 x 63 x 35 | 3000 | **030-03833** | **$63,610** |
| PVP100-480 | 100 | 480 | 356 | 600 | 295-500 | 96% | 93 x 63 x 35 | 3000 | **030-03835** | **$63,610** |
| PVM1010 | Performance monitor card | | | | | | | 2 | **030-03803** | **$399** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

# SMA

## Sunny Tower 36kW and 42kW Systems

The Sunny Tower combines the advantages of central inverters with the performance and installation advantages of string inverters by offering assembled 36-kW or 42-kW systems. Each Sunny Tower consists of six 7-kW or 6-kW inverters mounted on a stainless steel structure. Two Sunny Towers can be combined as an 84 kW system. The Sunny WebBox comes standard making the Sunny Tower Internet-ready. This type of system offers the advantage of multiple array MPP tracking, optimum operation under partial load, 96% CEC efficiency and quick delivery. Sunny Towers can be assembled on-site, eliminating the need for specialized heavy equipment. The system is NEMA 3R outdoor rated and is designed for use only in three-phase systems at 208 VAC, 240 VAC or 277 VAC. Total weight is 1,115 lbs. (Tower is 330 lbs, plus six inverters.)

**NOTE**: A Sunny Tower can NOT be used with less than six inverters.

| Model | Max AC power | Max AC output | DC Array voltage | Peak power tracking | Max DC current | Item code | Price |
|---|---|---|---|---|---|---|---|
| ST6000U | 36 kW | 3 x 58A | 250-600 | 250-480 | 6 x 25A | **030-03060** | **$36,422** |
| ST6000U+WebBox | 36 kW | 3 x 58A | 250-600 | 250-480 | 6 x 25A | **030-03061** | **$42,404** |
| ST7000U | 42 kW | 3 x 68A | 250-600 | 250-480 | 6 x 30A | **030-03070** | **$39,160** |
| ST7000+WebBox | 42 kW | 3 x 68A | 250-600 | 250-480 | 6 x 30A | **030-03071** | **$45,142** |

## NEW! Sunny Central 250U Inverters

With the growth of the commercial solar market, SMA has expanded its central inverter line for 2008. The new Sunny Central 250U have integrated isolation transformers and deliver the highest efficiencies available for large PV power plant inverters.

The user interface has been completely updated and now features a large LCD that provides a graphical view of the daily plant production as well as the status of the PV array, inverter, and utility grid. The new 250U now offer optional PV string monitoring that makes the process of troubleshooting the PV array more efficient.

The new Sunny Centrals offer a wide variety of remote monitoring options. Users can now choose from RS485, Ethernet, or wireless communications via Bluetooth or GSM with the optional Web-Box. Daily performance data can be automatically uploaded to the free Sunny Portal website. The accuracy of performance data can be increased through the use of the optional Sunny SensorBox which provides monitoring of local irradiance, temperatures, and wind speed.

The new Sunny Centrals from SMA represent years of innovative design experience by the world's largest manufacturer of PV inverters. Designed for easy installation, operation, and performance monitoring, the new Sunny Centrals are the ideal choice for your large scale PV project.

| SMA model | Continuous output (kW) | AC output voltage | Max DC amps | Max DC array volts | MPPT range | CEC efficiency | Dimensions H" x W" x D" | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|---|
| SC250U | 250 | 480 | 800 | 600 | 300-600 | 97% | 81 x 103 x 34 | 3970 | **030-03041** | **$120,000** |

# OutBack

## GTFX and GVFX Grid-Tie Inverters and Systems

The OutBack G-Series inverters are the grid-interactive versions in OutBack's FX inverter line. Available in either sealed (GTFX) or vented (GVFX) models, these inverters allow you to sell solar, wind, and/or hydro power back to the utility grid. If the utility power goes down, the inverter will automatically switch to battery power and your renewable energy source(s) to run your critical loads. The inverter can be set up so that either utility power, or your renewable source, can be used to recharge the battery bank after an outage. AC power is seamlessly switched between utility and battery power through the inverter's built-in 60A transfer switch. With the OutBack grid-interactive system, backup AC power is made available 24 hours a day in the event of a utility outage, providing reliable power and peace of mind. At night, the inverter's automatic power save mode ensures that energy is not wasted by needlessly charging your batteries from the utility grid. Daily energy production efficiency is within a few percentage points of batteryless grid-intertie systems (depending on the condition of the battery bank). Up to two grid-interactive FXs can be combined and wired or "stacked" for 120/240V output. The Grid-Tie FX Series Inverter/Chargers can be stacked in Classic Series only, which is limited to two grid-interactive FXs. Note: The FW-X240 Auto Transformer cannot be used for stacking with a Grid-Interactive FX system. However, the FW-X240 can be used to step-up the AC output of a single Grid-Interactive FX system from 120VAC to 240VAC. These inverters are not recommended for off-grid use. See page xx for OutBack off-grid inverter models.

OutBack G-Series inverters come with a standard 2-year warranty with an optional 3-year extension (5-years total). A 10-year warranty is available for California residents. ETL Listed to UL standards.

| OutBack model | Continuous watts | Battery voltage | AC out volts/ hertz | No load draw | Charger amps | Peak AC surge | Weight lbs | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| **OutBack Sealed Grid-Tie Inverters** | | | | | | | | | |
| GTFX2524 | 2500 | 24 VDC | 120V/60Hz | 18-20W | 55A | 70A | 56 | **030-04025** | **$2,369** |
| GTFX3048 | 3000 | 48VDC | 120v/60Hz | 21-23W | 35A | 70A | 66 | **030-04030** | **$2,369** |
| **OutBack Vented Grid-Tie Inverters** | | | | | | | | | |
| GVFX3524 | 3500 | 24 VDC | 120V/60Hz | 18-20W | 85A | 70A | 54 | **030-04032** | **$2,569** |
| GVFX3648 | 3600 | 48VDC | 120v/60Hz | 21-23W | 45A | 70A | 54 | **030-04036** | **$2,569** |

## Indoor Systems

We offer pre-assembled, pre-wired and tested, complete one or two inverter OutBack grid-tie power systems based on the OutBack FLEXware 500 power system components. Choose a 24V or 48V system, and either the sealed or vented inverter models. Use without a solar array to provide emergency back-up power, or with the addition of one or two MX-60 MPPT charge controllers, and a solar array, create a fully automated utility-intertie system with battery back-up. OutBack's MATE controller, HUB4, AC and DC surge arrestor, and RTS remote temperature sensor are included with each system. Other options, such as AC and DC circuit breakers, and the FLEXnet battery monitor, can be pre-installed if desired, or field installed later. Batteries are required – the system will not function without them.

Batteries, and battery-to-inverter cables, are not included.

These power systems are not recommended for off-grid use. See page xx for OutBack off-grid pre-assembled power systems. These systems are pre-assembled in our ETL Listed shop. The whole assembly is ETL Listed to UL standards.

| Model | FLEXware type | Inverter(s) qty - model | Rated power kW - AC output | DC voltage | Battery charger | Item code | Price |
|---|---|---|---|---|---|---|---|
| **Indoor Sealed Grid-Tie Systems** | | | | | | | |
| OBFW5-GTFX2524/S | 500 | 1 – GTFX2524 | 2.5kW 120V | 24 VDC | 55 AMP | **033-00201** | **$4,867** |
| OBFW5-GTFX2524/D | 500 | 2 – GTFX2524 | 5kW 120/240V | 24 VDC | 110 AMP | **033-00203** | **$7,930** |
| OBFW5-GTFX3048/S | 500 | 1 – GTFX3048 | 3.0kW 120V | 48 VDC | 35 AMP | **033-00209** | **$4,793** |
| OBFW5-GTFX3048/D | 500 | 2 – GTFX3048 | 6.0kW 120/240V | 48 VDC | 70 AMP | **033-00211** | **$7,659** |
| **Indoor Ventilated Grid-Tie Systems** | | | | | | | |
| OBFW5-GVFX3524/S | 500 | 1 – GVFX3524 | 3.5kW 120V | 24 VDC | 85 AMP | **033-00205** | **$5,082** |
| OBFW5-GVFX3524/D | 500 | 2 – GVFX3524 | 7kW 120/240V | 24 VDC | 170 AMP | **033-00207** | **$8,188** |
| OBFW5-GVFX3648/S | 500 | 1 – GVFX3648 | 3.6kW 120V | 48 VDC | 45 AMP | **033-00213** | **$4,993** |
| OBFW5-GVFX3648/D | 500 | 2 – GVFX3648 | 7.2kW 120/240V | 48 VDC | 90 AMP | **033-00215** | **$8,059** |
| OBFW-O-MX60 | OutBack MX60 charge controller with breaker, installed in power system | | | | | **033-01513** | **$795** |
| OBFW-O-MX60/Dual | Two OutBack MX60 charge controllers with breaker, installed in power system | | | | | **033-01515** | **$1,601** |
| OBDC-GFP | Ground fault interrupter for PV array, installed in power system | | | | | **033-01221** | **$171** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

# Xantrex

## XW Sine-Wave Battery-Based Inverter System – Off-Grid and Grid-Tie

The Xantrex XW Series hybrid inverter/charger offers an innovative, integrated design which minimizes external balance-of-system components allowing for much quicker and easier installation. The XW Series offers pure sine-wave capability as well as split-phase operation right out of the box for 120 VAC and/or 240 VAC solutions. Up to three units can be operated in parallel, offering 18 kW, 120/240 VAC power.

Certified to UL-1741 and CSA for grid-tie applications, the XW can be used as a grid-tie battery-backup inverter or an off-grid inverter. One or two XW MPPT charge controllers are required for PV grid-tie operation.

Unsurpassed surge capacity is achieved by using digital control to regulate the output voltage from dropping during surge. A full 200% rated output power is delivered to load under surge conditions. Efficient, power-factor-corrected, high-current multi-stage battery charging minimizes recharge time and electricity/fuel costs, and prolongs battery life.

The inverter display panel give status-at-a-glance. LEDs indicate AC-in status, faults/warnings, equalize mode, and battery state of charge. Three-character LCD indicates output power or charge current.

The new wall-mount design is easier to install than the SW power panel. The power distribution panel includes all AC/DC disconnects and wiring so there is no need to individually purchase separate components. The distribution panel and conduit box is factory wired and labelled to support one inverter in a code-compliant manner, and it has wiring space and conduit and breaker knockouts to add up to three inverters and/or four charge controllers. Field-reversible door with magnetic catch makes access to wiring easy. Options include an XW connection kit for a second inverter, an XW conduit box for systems with more than two inverters or to retrofit XW inverters into existing systems which already have AC/DC disconnects. Conduit box/raceway has barriers to ensure separation between low-voltage communication cables and AC and DC wires.


XW-MPPT60-150 60A Solar Charge Controller with integrated PV ground fault protection accepts arrays with open-circuit voltage up to 150 VAC and employs dynamic maximum power point tracking. The XW system control panel plugs into Xanbus network and provides a central user interface to configure and monitor all components in the system.

5-year warranty. Dimensions of the inverter are 16" x 23" x 9". The inverter is field-serviceable without needing to remove it from the wall.

| Xantrex model | Continuous watts | Battery voltage | AC out volts/ hertz | No load draw | Charger amps | Peak AC surge | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| XW4024-120/240-60 | 4000 | 24 VDC | 120/240V/60Hz | 24W | 85 | 50A | 115 | **030-01166** | **$3.250** |
| XW4548-120/240-60 | 4500 | 48VDC | 120/240V/60Hz | 26W | 85 | 50A | 115 | **030-01163** | **$3,600** |
| XW6048-120/240-60 | 6000 | 48VDC | 120/240V/60Hz | 28W | 100 | 70A | 125 | **030-01160** | **$4,500** |
| XW power distribution panel | XW Power distribution panel w/ conduit box for 1 XW inverter | | | | | | | **030-01169** | **$1500** |
| XW-connection kit | XW connection kit for second inverter, includes breakers and raceway | | | | | | | **030-01172** | **$850** |
| XW-conduit box | XW empty conduit raceway | | | | | | | **030-01175** | **$250** |
| XW-MPPT60-150 | XW 60A MPPT charge controller | | | | | | | **020-08040** | **$650** |
| XW-auto generator start | Automatic generator start module for the XW system | | | | | | | **030-01183** | **$200** |
| XW-system control panel | Plugs into Xanbus network and provides a central user interface | | | | | | | **030-01181** | **$300** |

Smart choice for power™

xantrex™

# QUALITY. TECHNOLOGY. EXPERIENCE.

**Xantrex™ is a leading developer and manufacturer of inverters, charge controllers, and balance of system components for grid-tie and off-grid solar applications.**

### BATTERY-BASED SOLUTIONS

The Trace Series Inverter/Charger is an economical power conversion solution designed to provide dependable modified sine wave electricity to essential circuits in the home or business during a power outage.

### GRID-TIE THREE PHASE SOLUTIONS

The Xantrex three phase product line includes the new Xantrex GT100 and GT250 Grid-tie Solar Inverters, with output power levels of 100 and 250 kilowatts respectively.

### GRID-TIE SINGLE PHASE SOLUTIONS

With over 140 MW's of GT Series single phase inverters deployed and a 10 year standard warranty, the GT has become the trusted brand of leading installers in North America.

### OFF-GRID SOLUTIONS

Our new XW Series of hybrid inverter-charger systems builds on the success of the legendary SW Series with a new level of performance and ease of installation.

**www.xantrex.com**

# Apollo Solar

## NEW! TSW TrueSineWave Inverter/Chargers


The Apollo Solar models TSW2212, TSW3224 and TSW3648 include a DC to AC true sine wave inverter, battery charger and AC transfer switch in a compact modular housing. These are ideal solutions for off-grid systems in the 2kW-12kW range for residential and commercial battery-based installations. They provide both 120- and 240-volt AC split output from 12-, 24- and 48-volt battery systems.

The output provides 240 volts for well pumps, appliances, or shop tools while providing 120 volts for standard circuits. Either side of the line can supply up to 75% of the total load. The inverter can surge to over 200% of the rated power to allow for intermittent loads for short periods like motor starting without interrupting sensitive computer loads.

The input can accept utility line or 240-volt AC generators. Power factor corrected, the high-current battery-charger circuit is designed to optimize the efficient use of energy from generator or line input. The 5-stage charging algorithm maximizes both battery life and storage capacity.

The Apollo Solar PV charge controllers (page 106) are a perfect match for the TSW2212, TSW3224 and TSW3648 for renewable energy installations. The ASNET ports provide integrated display of system data from all the products. Monitoring of energy used, battery state-of-charge and system performance is included. The ASNET port provides networking capability of multiple units as well as access to the T80 or T100 charge controllers and remote display for enhanced system performance.

**Apollo TrueSineWave Inverter/Chargers**

| Apollo model | Continuous watts | Battery voltage | AC output volts/hertz | No load draw | Charger amps | Peak AC surge | Wt. (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| TSW2212 | 2000 | 12VDC | 120V/240V 60Hz | 20 W | 100 | 4400W | 49 | **030-02611** | **$2,495** |
| TSW3224 | 3200 | 24 VDC | 120V/240V 60Hz | 20 W | 100 | 6400W | 49 | **030-02615** | **$2,495** |
| TSW3648 | 3600 | 48 VDC | 120V/240V 60Hz | 20 W | 70 | 7200W | 49 | **030-02619** | **$2,495** |

## NEW! SPC 120/240 Solar Power Center

The Apollo Solar SPC 120/240 Solar Power Center is a complete off-grid PV power supply, fully wired and tested, ready for quick installation. The installer need only add one of the TSW inverters above and a T-80 charge controller, then connect the PV input, battery cables, and AC load. The inverter, charge controller, and all the circuit breakers are mounted inside a single enclosure.

The SPC features the TrueSineWave Split-Phase Inverter, the T80 MPPT Charge Controller, the SPC front-panel system display, plus integral DC and AC breakers, ground fault protection, lightning arrestors, and generator start/operation capability – all in a clean, compact 3-foot by 2-foot enclosure that stands only 9 inches from the wall. The SPC 120/240 is the turn-key solution for remote, off-grid PV applications.

In addition to the data readout on the front cover of the SPC, the optional wireless remote display can monitor the entire system showing the comprehensive status of the PV array, the controller, the battery system, and the AC load. The wireless data monitor displays PV current/voltage, battery charge/discharge amps, and state-of-charge (SOC) in percent full, amp-hours, and bar-graph formats, an easy-to read "gas gauge" essential for battery-based systems. It shows 90 days of historical energy production, usage, and charging data recorded by the T80 charge controller. The wireless RD100/300 shows all the information at a glance in one convenient location and the data cache can be expanded to a year using the SD memory card. Firmware updates to the battery management system can be downloaded from the web and transmitted to the charge controller.

| Apollo model | Apollo inverter accessories | Item code | Price |
|---|---|---|---|
| SPC 120/240 | Apollo Solar Power Center without inverter or charge controller | **030-02635** | **$1959** |
| RD-WIRED | Wired remote display | **020-07085** | **$199** |
| RD100 | Wireless remote display | **020-07089** | **$399** |

# OutBack

## Off-Grid Inverters

The sealed, fan-cooled OutBack FX is designed to survive harsh environments. The higher powered ventilated VFX version is a better choice in high ambient temperature applications or where generator-powered battery charging is an important part of system battery charging.

Each inverter/charger is a complete power conversion system – DC to AC inverter, battery charger and AC transfer switch. Additional inverter/chargers can be added at any time either in parallel (120VAC), series (120/240VAC), or even three-phase (120Y208 VAC) configurations, allowing the system to be tailored to the specific needs of the application, both at the time of installation and into the future. With the addition of an X-240 autotransformer, multiple inverter systems can be set up to provide 120/240 VAC split-phase output with the ability to provide full power on either 120VAC leg of the system. Up to ten inverters can be connected together to provide up to 36 kW of continuous power capacity with the use of the HUB and the MATE controller. The inverter's powerful battery charger operates in five stages: BULK (constant current output), ABSORB (constant voltage output), FLOAT (reduced voltage output), SILENT (no charger output) and EQUALIZE (constant voltage regulation overcharging). Charge time in each stage is adjustable to provide control and to maximize the performance of the charger and battery system.

Each OutBack inverter has a programmable, auxiliary relay output connection (AUX) that provides 12VDC output to run 12V cooling or ventilation fans or operate an external relay to perform other functions, such as remote generator starting (two-wire), to disconnect external charging sources (such as PV), or to turn on a diversion load for voltage regulation.

The transfer switch is rated for 60 amps. When an external source of AC power (either a generator or the utility grid) is detected at the "AC in" terminal on the inverter, the switch operates to transfer the loads to the external power source, and then activates the battery charger to re-charge the battery bank.

Inverters with an M-suffix are an RV/marine version. They have a transfer switch that switches hot and neutral. Dimensions: 16.25" L x 8.25" W x 11.5" H. ETL Listed to UL 1741. Standard 2-year warranty with an available 5-year extended warranty.

### Conduit Adapters

Use the FX-DCA to connect 2" conduit to the DC side of the inverter.

Use the FX-ACA to connect to the AC side of the inverter. The FX-SP-ACA replaces the FX-ACA and offers surge protection.

| OutBack model | Continuous watts | Battery voltage | AC out volts/hertz | No load draw | Charger amps | Peak AC surge | Wt. (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| **OutBack Sealed/Turbo Cooled Off-Grid Inverters** | | | | | | | | | |
| FX2012T | 2000 | 12VDC | 120V/60Hz | 20 W | 80 | 56A | 56 | **030-04147** | **$2.369** |
| FX2012MT | 2000 | 12VDC | 120V/60Hz | 20 W | 80 | 56A | 56 | **030-04145** | **$2.369** |
| FX2524T | 2500 | 24 VDC | 120V/60Hz | 20 W | 55 | 70A | 56 | **030-04119** | **$2.369** |
| FX3048T | 3000 | 48VDC | 120v/60Hz | 23 W | 35 | 70A | 56 | **030-04121** | **$2.369** |
| **Export Models – can be connected in parallel or 3-phase Y 400VAC** | | | | | | | | | |
| FX2012ET | 2000 | 12VDC | 230V/50Hz | 20 W | 100 | 70A | 56 | **030-04140** | **$2.369** |
| FX2024ET | 2000 | 24 VDC | 230V/50Hz | 20 W | 55 | 70A | 56 | **030-04144** | **$2.369** |
| FX2348ET | 2300 | 48VDC | 230V/50Hz | 23 W | 35 | 70A | 56 | **030-04142** | **$2.369** |
| **OutBack Ventilated Fan Cooled Inverters** | | | | | | | | | |
| VFX2812 | 2800 | 12VDC | 120V/60Hz | 20W | 125 | 56 A | 54 | **030-04149** | **$2,569** |
| VFX2812M | 2800 | 12VDC | 120V/60Hz | 20W | 125 | 56 A | 54 | **030-04146** | **$2,569** |
| VFX3524 | 3500 | 24 VDC | 120V/60Hz | 20W | 85 | 70 A | 54 | **030-04155** | **$2,569** |
| VFX3648 | 3600 | 48VDC | 120v/60Hz | 23W | 45 | 70 A | 54 | **030-04157** | **$2,569** |
| **Export Models – can be connected in parallel or 3-phase Y 400VAC** | | | | | | | | | |
| VFX2612E | 2600 | 12VDC | 230V/50Hz | 20W | 120 | 56 A | 54 | **030-04134** | **$2,569** |
| VFX3024E | 3000 | 24 VDC | 230V/50Hz | 20W | 85 | 70 A | 54 | **030-04136** | **$2,569** |
| VFX3048E | 3000 | 48VDC | 230V/50Hz | 23W | 42 | 70 A | 54 | **030-04138** | **$2,569** |

| OutBack model | OutBack inverter accessories | Item code | Price |
|---|---|---|---|
| FX-DCA | 2" conduit adapter – required to mount inverter to FLEXware 500 or 1000 | **030-04163** | **$45** |
| FW-ACA | AC wiring compartment extension – includes two 1" conduit knockouts and an AC outlet knockout – required to mount FX or VFX to FLEXware 500 or 1000 | **030-04169** | **$45** |
| FX-SP-ACA | AC wiring compartment with surge arrestor for AC and DC side of inverter | **030-04290** | **$259** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

## OutBack MATE Remote Monitors and Hubs

The OutBack MATE is a complete system controller and display for both the OutBack inverter/charger and MX60 MPPT PV charge controller. It provides a display of the operation as well as allows control and adjustment of the setpoints. The OutBack MATE also coordinates the operation of the entire system to maximize performance and to prevent multiple products from conflicting. A single OutBack MATE is able to connect to multiple inverter/chargers, MX60 MPPT PV charge controllers and any other OutBack power conversion and control products offered in the future. A maximum of ten OutBack products will be able to be connected to a single MATE via Cat 5 Ethernet type cabling with 8 wire RJ45 modular connectors and the OutBack HUB communication manager. The OutBack MATE also includes an optoisolated RS232 port with a DB9 jack for connection to the serial port of a PC computer. The MATE2 has a flush-mount black face for panel or in-wall mounting.


## NEW! The FLEXnet DC System Monitor

The FLEXnet DC System Monitor integrates with an OutBack MATE communications device, providing you with the data you need concerning your system's health, performance and efficiency. Easily see your system's current condition with this at-a-glance display. This screen shows current state-of-charge and whether you are currently charging or discharging your batteries. It monitors the amount of power your system is currently producing and consuming as well as the amount of power going IN and OUT of your battery bank. It allows the Mate to display real-time production monitoring of DC sources, such as a solar array or small wind turbine, as well as consumption by loads. It also displays the cumulative energy your system has produced and consumed as well as the total amount of energy that has gone to charging your batteries today. This screen displays today's lowest state-of-charge and allows you to see how your overall system production compares to system consumption. Review historical energy production and consumption data for the most recent 128 days, including the minimum battery state-of-charge reached for each day. This screen can be used to watch power system production and consumption trends.


A **HUB** is required to connect more than one inverter to the same load or to connect inverters, MATEs and MX charge controllers to allow programming and monitoring of the entire system by the MATE.

The **RTS** remote temperature sensor is important for accurate battery charging, especially if the batteries get very warm or cold. If used with a HUB, one temperature sensor can be shared by all inverters and MX charge controllers.

| OutBack model | OutBack MATE system monitor and control | Item code | Price |
|---|---|---|---|
| MATE | System control – shipped with a 50 ft Cat 5 cable | **030-04180** | **$295** |
| MATE-B | Black version of MATE above | **030-04180-B** | **$295** |
| MATE2 | Flush-mount version | **030-04181** | **$295** |
| FlexNet DC | Advanced DC System Monitor - requires a MATE | **030-04187** | **$379** |
| HUB-4 | Stacking kit for up to 4 inverters and/or charge controllers | **030-04185** | **$195** |
| HUB-10 | Stacking kit for up to 10 inverters and/or charge controllers | **030-04188** | **$375** |
| RTS | Remote temperature sensor with 20' cable | **030-04190** | **$29** |

## FLEXware 250

The FLEXware 250 offers the lowest cost solution for single inverter/charger installations where space and budget are of primary concern. The picture at right shows a FLEXware 250 on both ends of an inverter. See next page for circuit breakers to fit FW250.

| OutBack model | FLEXware 250 power system box and IOB kits | Weight | Item code | Price |
|---|---|---|---|---|
| FW250 | FLEXware 250 enclosure with TBB (ground or neutral block) knockouts for breakers | 5 lbs | **030-04205** | **$99** |
| FW-IOB-S-120VAC | IOB kit includes 3 50A 120VAC breakers and AC breaker bypass slide plate | 2 lbs | **030-04230** | **$105** |
| FW-IOB-S-230VAC | IOB kit includes 3 30A 230VAC breakers and AC breaker bypass slide plate – export model | 2 lbs | **030-04233** | **$105** |

# OutBack

## FLEXware 500 and 1000

The FLEXware 500 supports up to two inverter/chargers and two charge controllers in an attractive, versatile and code-compliant package for installations where more power is needed. The FLEXware 1000 accommodates up to four inverter/chargers and four charge controllers. For usage in large systems with multiple power panels for up to 36 kW. Both the FLEXware 500 and 1000 systems provide ample locations for additional breakers, DC-current shunts, an autotransformer and other items required in higher kW systems. The new FLEXware MP mounting plate shows the versatility of the FLEXware line with and is compatible with both FLEXware 500 and FLEXware 1000 enclosures. The picture here shows the FLEXware 1000 AC and DC boxers with 4 inverters and 4 MX60 charge controllers. See the page102 for a picture of the FLEXware 500.

| OutBack model | FLEXware 500 and 1000 | Inverters | Item code | Price |
|---|---|---|---|---|
| **FLEXware Mounting Plate** | | | | |
| FW-MP | Mounting plate for FLEXware 500 and 1000 enclosures (2 required for FW-1000 systems). | 2 | **030-04260** | **$179** |
| **FLEXware 500 Power System Box and IOB Kits** | | | | |
| FW500-AC | FLEXware 500 enclosure with TBB-ground, DIN rail for AC breakers | 2 | **030-04215** | **$309** |
| FW500-DC | FLEXware 500 enclosure with DC breaker bracket, TBB, BBUS, 500A shunt | 2 | **030-04212** | **$309** |
| FW-IOB-D-120/240VAC | IOB kit includes six 60A 120VAC breakers and AC breaker bypass slide plate, bus bars, wire | 2 | **030-04237** | **$249** |
| FW-IOB-D-120VAC | IOB kit includes six 60A 120VAC breakers and AC breaker bypass slide plate, bus bars, wire | 2 | **030-04240** | **$219** |
| FW-IOB-D-230VAC | IOB kit includes six 30A 230VAC breakers and breaker bypass slide plate, TBB, wire - export | 2 | **030-04243** | **$199** |
| **FLEXware 1000 Power System Box and IOB Kits** | | | | |
| FW1000-AC | FLEXware 1000 Enclosure with TBB-ground, DIN Rail for AC breakers | up to 4 | **030-04223** | **$509** |
| FW1000-DC | FLEXware 1000 Enclosure with DC Breaker bracket, TBB, 2 SBUS, BBUS, 500A Shunt | up to 4 | **030-04221** | **$509** |
| FW-IOB-D-120/240VAC | IOB kit includes six 60A 120VAC breakers and AC breaker bypass slide plate, bus bars, wire | 2 | **030-04237** | **$249** |
| FW-IOB-D-120VAC | IOB kit includes six 60A 120VAC breakers and AC breaker bypass slide plate, bus bars, wire | 2 | **030-04240** | **$219** |
| FW-IOB-D-230VAC | IOB kit includes six 30A 230VAC breakers and breaker bypass slide plate, TBB, wire - export | 2 | **030-04243** | **$199** |
| FW-IOB-T-120/208VAC | IOB kit includes nine 60A 120VAC breakers and AC breaker bypass slide plate, bus bars, wire | 3 | **030-04253** | **$309** |
| FW-IOB-T-230/400VAC | IOB kit includes nine 30A 230VAC breakers and breaker bypass slide plate, TBB, wire - export | 3 | **030-04255** | **$309** |
| FW-IOB-Q-120VAC | IOB kit includes twelve 60A 120VAC breakers and AC breaker bypass slide plate, bus bars, wire | 4 | **030-04249** | **$409** |
| FW-IOB-Q-120/240VAC | IOB kit includes twelve 60A 120VAC breakers and AC breaker bypass slide plate, bus bars, wire | 4 | **030-04247** | **$409** |
| FW-IOB-Q-230/AC | IOB kit includes twelve 30A 230VAC breakers and breaker bypass slide plate, TBB, wire - export | 4 | **030-04251** | **$409** |

## FLEXware Components

When assembling FLEXware power systems, the following components may be necessary when adding charge controllers, additional inverters or circuit breakers for additional loads or inputs.

| Model | FLEXware options | Item code | Price |
|---|---|---|---|
| FW-X240 | 4kVA 120/240VAC autotransformer -w/ 25A 2-pole breaker for mounting inside FLEXware 500 and 1000 AC enclosures | **030-04270** | **$390** |
| TBB-GROUND | Ground/neutral terminal bus bar with mounting screws (no insulators). | **030-04356** | **$19** |
| OBDC-GFP | Ground Fault Protection, 2 pole, 80A | **030-04323** | **$129** |
| TBB-black | Bus bar with black insulators | **030-04353** | **$19** |
| TBB-BLUE | Bus bar with blue insulators | **030-04359** | **$19** |
| TBB-RED | Bus bar with red insulators | **030-04355** | **$19** |
| TBB-WHITE | Bus bar with white insulators | **030-04354** | **$19** |
| TBB-BROWN | Bus bar with brown insulators | **030-04352** | **$19** |
| FW-BBUS | Breaker Bus for connection of two 175-250A, three 100-125A, four 1-80A DC breakers or three 500 amp DC shunts | **030-04280** | **$19** |
| FW-CBUS | Combiner Bus connects up to eight DIN mount breakers or four DIN mount fuse holders – includes one 1/0 screw lug | **030-04361** | **$19** |
| FW-SBUS | Shunt bus allows up to four high current cable connections on same side of DC shunt – includes hardware | **030-04360** | **$29** |
| FW-CCB | MX charge controller mounting bracket for one side mounted on FW500 or FW1000 DC enclosures – with hardware | **030-04263** | **$55** |
| FW-CCB2 | MX charge controller mounting bracket for two side mounted on FW500 or FW1000 DC enclosures – with hardware | **030-04265** | **$59** |
| FW-CCB2T | MX charge controller mounting bracket for two top mounted on FW500 or FW1000 DC enclosures – with hardware | **030-04267** | **$59** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

MAGNUM ENERGY

# There is a Magnum Inverter/Charger to meet your needs

## ME Series Inverter/Charger

**Works with:** Marine and RV systems

**Available models:** ME2012, ME2012-15B, ME2012-20B, ME2512, ME3112

## MM Series Inverter/Charger

**Works with:** Marine and RV systems

**Available models:** MM612, MM1212

## MM-AE Series Inverter/Charger

**Works with:** Renewable energy (off-grid and back-up) systems

**Available models:** MM612AE, MM1212AE, MM1524AE

## MMS Series Inverter/Charger

**Works with:** Marine and RV systems

**Available models:** MMS1012

## MS Series Inverter/Charger

**Works with:** Renewable energy (off-grid and back-up), Marine, and RV systems

**Available models:** MS2000, MS2000-20B, MS2012, MS2012-20B, MS2812, MS4024

## MS-AE 120/240V Series Inverter/Charger

**Works with:** Renewable energy (off-grid and back-up) systems

**Available models:** MS4024AE, MS4448AE

## RD Series Inverter/Charger

**Works with:** Renewable energy (off-grid and back-up) systems

**Available models:** RD2212, RD1824, RD2824, RD3924

## Available Accessories:

Automatic Generator Start Module (AGS), Battery Monitor Kit, Conduit Box, DC Disconnect, Fuse Blocks, Ignition Switch Lockout, LCD Remote Displays, Remote Switch Adapter, Series Stacking Cable Kit

**Call and ask for our full catalog for complete product information.**

**Phone: 425-353-8833** **Web: www.magnumenergy.com**

**The Powerful Difference**

# Magnum Energy

## MMS1012

The MMS Series from Magnum Energy is a pure sine wave inverter providing a cost-effective solution for those with smaller power needs in mobile applications. Versatile, easy-to-use and lightweight, the MMS Series provides a reliable base for your energy system. The MMS Series inverter is designed to accommodate entertainment systems and small appliances in smaller RVs and boats in an all new design. Based on the popular ME and MS Series inverters, the MMS is smaller, lighter and less expensive while retaining all the built-in protection and reliability of ME and MS models. The MMS charger uses a PFC (power factor corrected) charger, which is 85% efficient and the same charger topology used in all Magnum models. The MMS Series is ETL Listed to the stringent requirements of UL/cUL 458, CSA C22.2 #107.1-01 and meets the KKK-A-822E standard.

## MS-Series Pure Sine Wave Inverter/Chargers

The MS Series inverter/charger is a pure sine wave inverter designed specifically for the most demanding mobile and off-grid applications. The MS Series is powerful, easy to use, and cost-effective.

MS-series inverter/chargers are available in 12-, 24- and 48-volt versions. The 48-volt MS4448-AE has 120/240VAC output, eliminating the need to stack two units or buy a transformer to run 240-volt loads.

Install the MS Series in four easy steps: simply connect the inverter's output to your distribution circuits or electrical panel, connect AC power from the utility or generator to the inverter's easy-to-reach terminal block, connect the batteries, and switch on the power. Mount the MS Series on a shelf, bulkhead, or even upside down.

The lightweight aluminum base and cover provide noise reduction and corrosion resistance. The MS Series has an RS485 communication port for network expansion and a remote control port. The extra-large AC-access cover with terminal screw block and 360° DC connection terminals with covers make the inverter wiring accessible when it needs to be. The MS Series front panel has an on/off switch with an easy-to-read LED indicator. All models have a 50-amp transfer relay. MS inverters can be series stacked, using the ME-SSI, for 120/240 VAC operations.

The MS Series is ETL Listed to UL/cUL 458 for mobile use and UL 1741 for off-grid installations. Dimensions: 13.75" x 12.65" x 8". 3-year warranty, except MS4024-AE and MS4448-AE which has a 2-year warranty.

| Magnum model | Continuous watts | Battery voltage | AC out volts/hertz | No-load draw | Charger amps | Peak AC surge | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| MMS1012 | 1000 | 12VDC | 120V/60Hz | 16W | 50 | 14A | 20 | **030-02320** | **$1,199** |
| MS2012 | 2000 | 12VDC | 120V/60Hz | 24W | 100 | 50A | 43 | **030-02332** | **$1,899** |
| MS2012-20B | 2000 | 12VDC | 120V/60Hz | 24W | 100 | 50A | 44 | **030-02334** | **$1,949** |
| MS2812 | 2800 | 12VDC | 120V/60Hz | 24W | 125 | 70A | 53 | **030-02336** | **$2,199** |
| MS4024 | 4000 | 24VDC | 120V/60Hz | 15W | 105 | 105A | 58 | **030-02338** | **$2,499** |
| MS4024-AE | 4000 | 24 VDC | 120/240V/60Hz | 24W | 60 | 105A | 58 | **030-02339** | **$2,599** |
| MS4448-AE | 4400 | 48VDC | 120/240V/60Hz | 24W | 60 | 70A | 58 | **030-02340** | **$2,599** |
| **Accessories and Options** | | | | | | | | | |
| ME-RC50 | Remote for all Magnum inverters with 50-foot cable | | | | | | 2 | **030-02351** | **$229** |
| ME-SSI | Series stacking cable for ME, MS and RD only | | | | | | 10 | **030-02362** | **$79** |
| ME-AGS | Automatic generator start – network version for use with Magnum inverters | | | | | | 4 | **020-06377** | **$299** |
| ME-AGS-S | Automatic generator start – standalone version for use with Magnum inverters | | | | | | 4 | **020-06375** | **$299** |
| ME-BMK | Battery monitor kit - ME-RC50 required with this item | | | | | | 4 | **020-06379** | **$179** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

## MM-AE Series 12V Inverters

The MM-AE Series 12VDC inverter/charger is designed to accommodate entertainment systems and small appliances in smaller RVs, boats and cabins. Based on the popular ME and MS Series inverters, the MM is smaller, lighter and less expensive while retaining all the built-in protection and reliability of MS models. The MM models with chargers use a PFC (power factor corrected) charger, which is 85% efficient and uses the same charger topology for all Magnum models. Available in 600- and 1200-watt models, the MM Series inverters are powerful, easy-to-use and cost-effective. 2-year warranty. Dimensions: 16.6" x 8.4" x 4.7"

## ME-Series 12V Inverters

The ME Series 12VDC inverter/charger is designed specifically for RV use. The sine wave charger efficiently charges your batteries even at low AC voltage from low-cost generators, while the modified sine wave inverter keeps the cost down. Additionally, the battery temperature sensor works with the charger for optimum battery charging. It comes in three power levels. ME is ETL Listed to UL458 for RV, marine and mobile use. 3-year warranty. Dimensions: 16.6" x 8.4" x 4.7"


## RD-Series 24V Inverters

The RD Series 24VDC inverter/charger is designed specifically for off-grid use. It is built in the same chassis as the MS sine wave inverters. The power-factor-corrected battery charger efficiently charges your batteries even at low AC voltage from low-cost generators, while the modified sine wave inverter keeps the cost down. Additionally, the battery temperature sensor works with the charger for optimum battery charging. The RD Series comes in three power models. The RD inverters are ETL Listed to UL1741 for solar and off-grid applications. 2-year warranty. Dimensions: 16.6" x 8.4" x 4.7"

| Magnum model | Continuous watts | Battery voltage | AC out volts/hertz | No load draw | Charger amps | Peak AC surge | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| MM612-AE | 600 | 12VDC | 120V/60Hz | 10W | 30 | 10A | 14 | **030-02302** | **$549** |
| MM1212-AE | 1200 | 12VDC | 120V/60Hz | 16W | 70 | 20A | 20 | **030-02304** | **$849** |
| ME2012 | 2000 | 12VDC | 120V/60Hz | 11W | 100 | 37A | 38 | **030-02305** | **$1,592** |
| ME2512 | 2500 | 12VDC | 120V/60Hz | 12W | 130 | 45A | 42 | **030-02311** | **$1,846** |
| ME3112 | 3100 | 12VDC | 120V/60Hz | 12W | 150 | 50A | 45 | **030-02315** | **$1999** |
| RD1824 | 1800 | 24 VDC | 120V/60Hz | 6W | 50 | 33A | 38 | **030-02322** | **$1,289** |
| RD2824 | 2800 | 24 VDC | 120V/60Hz | 6W | 80 | 50A | 42 | **030-02324** | **$1,679** |
| RD3924 | 3900 | 24 VDC | 120/V/60Hz | 6W | 105 | 75 A | 45 | **030-02328** | **$1,979** |

## Accessories and Options (Prices on previous page)


The optional ME-RC remote control is simple to use, yet allows all the set-up features of the ME, MM, MS and RD Series inverters. The ME-RC also has the option of controlling the ME-AGS automatic generator start using a network connection to the inverter. This remote has convenient finger-tip operation, including the new one-knob programming.

The optional Auto Generator Start (AGS) module automatically starts and stops most major generator brands, including Onan, Powertech, Generac and Weterbeke. Please check with us for specific model compatibility based on temperature or battery voltage. The generator can automatically start based on low battery voltage or the inside temperature of a cabin or RV. The temperature start feature is designed to start a generator to run an air conditioner when the inside temperature of an RV or cabin rises to a user-settable level. The network version of the AGS comes with a cable that plugs into the network port of the inverter.

The optional ME-SSI allows series connection of two inverters.

The MS Series accessories work with the ME and RD Series (next page) as well, except where noted. The optional ME-SSI allows series connection of two MS, ME or RD inverters. The ME-SSI is not for use with MM-Series inverters.

ME-BMK monitors battery state-of-charge (SOC) and then provides this information in an easy-to-understand display via the ME-RC remote. Kit includes a sense module, shunt and wiring.

# Morningstar

## SureSine 300W Inverters

The Morningstar SureSine pure sine wave inverter is designed to meet the needs of rural PV electrification requiring AC power for solar home systems, schools, community centers and health clinics. This inverter is also a good choice for small PV systems for telecom, remote cabins and weekend homes, and RV/caravans and boats. It has outstanding surge capability for a small inverter. The SureSine handles a 200% surge during load start-up, to a maximum of 600 watts.

The SureSine uses epoxy encapsulation, conformal coating, stainless steel hardware, and an anodized aluminum enclosure to protect against harsh tropical and marine environments. AC output connection is a hard wire terminal. It does not have an AC receptacle. 2-year warranty. Dimensions are 8.4" x 6" x 4.1"


| Morningstar model | Continuous watts | Battery voltage | AC out volts/hertz | No load draw | Standby draw | Peak AC watts | Wt lbs | Item code | Price |
|---|---|---|---|---|---|---|---|---|---|
| SI-300-115V | 300 | 12VDC | 115/V/60Hz | 450mA | 55 mA | 600 | 10 | **030-08021** | **$308** |
| SI-300-220V | 300 | 12VDC | 220V/50Hz | 450mA | 55 mA | 600 | 10 | **030-08033** | **$308** |

# Exeltech

## XP Series Sine Wave Inverters

Exeltech XP inverters are the most affordable, high-performance true sine wave inverters on the market. They feature sophisticated protection circuitry, making them immune from damage by overloads, short circuits, overtemperature and input polarity reversal. XP series are excellent for telecommunications, audio recording equipment, or any loads that require an excellent waveform. Efficiency = 87-89% (distortion <2%). Exeltech XP inverters can run on the high charging voltages needed to charge alkaline batteries. 120 VAC output. 1-year warranty.

XP 150

XP 250

XP 600

XP 1100

| Model | Battery voltage | Continuous watts | No load watts | Dimensions (inches) | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|
| **XP 125 Series** | | | | | | | |
| XP125/12 | 12V | 125 | 5 | 4.65 x 2 x 6.75 | 2.3 | **030-06021** | **$370** |
| XP125/24 | 24V | 125 | 5 | 4.65 x 2 x 6.75 | 2.3 | **030-06024** | **$370** |
| XP125/48 | 48V | 125 | 5 | 4.65 x 2 x 6.75 | 2.3 | **030-06025** | **$440** |
| XP125/120 | 120V | 125 | 5 | 4.65 x 2 x 6.75 | 2.3 | **030-06026** | **$440** |
| **XP 250 Series** | | | | | | | |
| XP250/12 LI | 12V | 250 | 6 | 5.23 x 2.77 x 10.38 | 5 | **030-06027** | **$672** |
| XP250/24 LI | 24V | 250 | 6 | 5.23 x 2.77 x 10.38 | 5 | **030-06030** | **$672** |
| XP250/48 | 48V | 250 | 8 | 5.23 x 2.77 x 10.38 | 5 | **030-06032** | **$740** |
| XP250/120 | 120V | 250 | 8 | 5.23 x 2.77 x 10.38 | 5 | **030-06035** | **$740** |
| **XP 600 Series** | | | | | | | |
| XP600/12 | 12V | 600 | 5 | 7.7 x 3.6 x 11.77 | 6.5 | **030-06041** | **$938** |
| XP600/24 | 24V | 600 | 5 | 7.7 x 3.6 x 11.77 | 6.5 | **030-06043** | **$938** |
| XP600/48 | 48V | 600 | 5 | 7.7 x 3.6 x 11.77 | 6.5 | **030-06045** | **$1,020** |
| XP600/120 | 120V | 600 | 5 | 7.7 x 3.6 x 11.77 | 6.5 | **030-06048** | **$1,020** |
| **XP 1100 Series** | | | | | | | |
| XP1100/12 LI | 12V | 1100 | 10 | 7.7 x 3.6 x 14.77 | 12 | **030-06072** | **$1,224** |
| XP1100/24 LI | 24V | 1100 | 10 | 7.7 x 3.6 x 14.77 | 12 | **030-06078** | **$1,224** |
| XP1100/48 | 48V | 1100 | 20 | 7.7 x 3.6 x 14.77 | 12 | **030-06075** | **$1,464** |
| XP1100/120 | 120V | 1100 | 20 | 7.7 x 3.6 x 14.77 | 12 | **030-06080** | **$1,464** |



*Suggested retail prices are subject to change; check with us for latest pricing.*

# Samlex

## Sine Wave Inverters

Samlex sine wave inverters offer the first low-cost, high-quality small sine-wave inverters for remote homes, RVs and boats. The output is overload protected. All of these inverters have AC receptacles and low-battery alarms. 120 VAC output. If you plan to use these inverters with reactive load, such as motors and compact fluorescent lights or other ballasted light, size the inverter for 4 times the continuous watts required. 1-year warranty.

| Samlex model | Battery voltage | Continuous watts | Surge watts | Dimensions (inches) | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|
| PST-15S-12A | 12V | 150 | 250 | 2.4 x 4.7 x 7.4 | 2.6 | **030-07123** | **$169** |
| PST-30S-12A | 12V | 300 | 500 | 4.7 x 11.22 x 2.4 | 3.9 | **030-07126** | **$195** |
| PST-60S-12A | 12V | 600 | 1000 | 9.3 x 13.2 x 3.3 | 6.6 | **030-07129** | **$399** |
| PST-100S-12A | 12V | 1000 | 1500 | 9.3 x 15.5 x 3.3 | 8.8 | **030-07130** | **$649** |
| S-1500-112B2 | 12V | 1500 | 2000 | 15.4 X 10.8 X 4.1 | 15.4 | **030-07131** | **$899** |
| PST-60S-24A | 24V | 600 | 1000 | 9.3 x 13.2 x 3.3 | 6.6 | **030-07132** | **$334** |
| PST-100S-24A | 24V | 1000 | 1500 | 9.3 x 15.5 x 3.3 | 8.8 | **030-07134** | **$575** |
| S1500-124B2 | 24V | 1500 | 2000 | 15.4 X 10.8 X 4.1 | 15.4 | **030-07135** | **$985** |
| S1500-148B2 | 48V | 1500 | 2000 | 15.4 X 10.8 X 4.1 | 15.4 | **030-07148** | **$985** |

## NEW! Samlex Sine Wave Inverter/Chargers

The SL inverter is a low-cost, heavy-duty pure sine wave inverter, primarily designed for backup power in places where power is unreliable. It can supply power to various loads such as resistive load (heater), inductive load (air conditioners, refrigerator), motors (vacuum cleaners), and rectifier load (computer). All SL-series inverters are designed to work in heavy load condition. De-rating is not necessary. It has a built-it battery charger and transfer switch. It can be a good choice for remote cabins with small generator backup.


The smart charger can be set with different charging profiles and battery capacities to match various battery types and sizes.

When used for backup to utility power, the internal transfer switch automatically transfers the output between inverter and utility source. When the utility voltage is low or off, it switches to the inverter power. Otherwise the load is connected to the utility source. The transfer time is 1/4~1/2 of the total cycle time. The high-power charger (40A on the SL2024 for example) can charge a 24V/400 Ah battery bank in 10 hours.

SL series is an extremely good choice for utility backup power. It also can be used as a UPS for computers. 1-year warranty.

| SL Series Domestic Voltage Inverters | | | | | | | |
|---|---|---|---|---|---|---|---|
| Samlex model | Battery volts | AC volts / hertz | Continuous watts | Charge amps | Weight (lbs) | Item code | Price |
| SL-1012 | 12 | 120/60 | 1000 | 40 | 16 | **030-07189** | **$684** |
| SL-1512 | 12 | 120/60 | 1500 | 50 | 18 | **030-07191** | **$884** |
| SL2012 | 12 | 120/60 | 2000 | 80 | 23 | **030-07193** | **$978** |
| SL1024 | 24 | 120/60 | 1000 | 20 | 15 | **030-07196** | **$684** |
| SL1524 | 24 | 120/60 | 1500 | 25 | 18 | **030-07197** | **$884** |
| SL2024 | 24 | 120/60 | 2000 | 40 | 20 | **030-07198** | **$978** |
| SL3024 | 24 | 120/60 | 3000 | 60 | 25 | **030-07199** | **$1,260** |

# Xantrex

## NEW! Trace Series Inverter/Charger

Based on the proven technology of the Xantrex DR Series, the Xantrex Trace Series Inverter/Charger is an economical power conversion solution designed to provide dependable modified sine wave electricity to essential circuits in the home or business during a power outage. It can also be used in conjunction with a generator or any renewable energy source in an off-grid application. In addition to providing new features, the Trace Series improves on the key features that have made the DR Series the most robust and reliable inverter/charger line for backup power and off-grid applications.

The front panel features an ON/OFF membrane switch, status indicator LEDs and a digital display that shows kilowatts when inverting and amps when charging. Other controls are protected by a snap-on cover that prevents settings from being accidentally changed.

Power factor corrected (PFC) charging, combined with a more sophisticated multi-stage battery charging algorithm, reduces electricity draw and generator run-time during generator-powered battery charging and its outstanding thermal performance allows full inverter output power to 50°C (122°F) without derating. A temperature sensor is included. High surge capacity starts more difficult loads and handles overload conditions reliably. Domestic voltage inverters can be series stacked for 120/240 VAC output using the cable supplied with each inverter. The TR has a durable powder-coated, corrosion-resistant steel chassis and its circuit boards are conformally coated to protect them from corrosion for longer life and improved reliability.

Optional accessories include a Remote On/Off Switch with an LED status indicator and a Conduit Box that connects to the DC side of the inverter and accepts ¾-inch, 1-inch or 2-inch conduit.

| TR Series Domestic Voltage Inverters | | | | | | | |
|---|---|---|---|---|---|---|---|
| Xantrex model | Battery volts | AC volts/ hertz | Continuous watts | Charge amps | Weight (lbs) | Item code | Price |
| TR1512 | 12 | 120/60 | 1500 | 70 | 40 | 030-01301 | $880 |
| TR2412 | 12 | 120/60 | 2400 | 100 | 42 | 030-01305 | $1,145 |
| TR1524 | 24 | 120/60 | 1500 | 35 | 40 | 030-01303 | $880 |
| TR2424 | 24 | 120/60 | 2400 | 70 | 45 | 030-01307 | $1,145 |
| TR3624 | 24 | 120/60 | 3600 | 70 | 45 | 030-01309 | $1,425 |
| **TR Series Export Voltage Inverters** | | | | | | | |
| Xantrex model | Battery volts | AC volts/ hertz | Continuous watts | Charge amps | Weight (lbs) | Item code | Price |
| TR1512E | 12 | 230/50 | 1500 | 70 | 42 | 030-01312 | $1,000 |
| TR1524E | 24 | 230/50 | 1500 | 35 | 42 | 030-01313 | $1,000 |
| TR2424E | 24 | 230/50 | 2400 | 70 | 42 | 030-01315 | $1,250 |
| **TR Series Accessories** | | | | | | | |
| TR-CB | Conduit box for DR series | | | | 5 | 030-01318 | $250 |
| TR-RC | Remote on/off switch w/LED indicator | | | | 2 | 030-01316 | $150 |

# Samlex

## Modified Sine Wave Inverters

Samlex modified sine wave inverters are a value-priced solution to mobile power requirements. They provide modified sine wave output with over voltage, under voltage, overload and thermal protection, and low-voltage alarm. Samlex 1000-, 1500- and 2500-watt inverters have dual LED bar graph meters indicating battery current and voltage. Cigarette plug included only on 140 and 300. Larger units need to be hard-wired to battery. If you plan to use these inverters with reactive loads, such as motors and compact fluorescent lights or other ballasted lights, size the inverter for 4 times the continuous watts required. 1-year warranty.

| Model | Battery voltage | Continuous watts | Surge watts | Dimensions (inches) | Weight (lbs) | Item code | Price |
|---|---|---|---|---|---|---|---|
| SI-175HP | 12V | 175 | 300 | 1.6 x 4.7 x 5.4 | 1.8 | 030-07220 | $40 |
| SI-400HP | 12V | 400 | 600 | 2.4 x 6.3 x 6.3 | 2.9 | 030-07223 | $67 |
| SI-750HP | 12V | 750 | 1500 | 2.4 x 6.3 x 11.4 | 5.3 | 030-07227 | $164 |
| PSE-12125A | 12V | 1250 | 2500 | 3.5 x 9.4 x 12.3 | 8 | 030-07229 | $366 |
| PSE-12175A | 12V | 1750 | 3500 | 3.5 x 9.4 x 17 | 10 | 030-07232 | $470 |
| PSE-12275A | 12V | 2750 | 4500 | 6.3 x 9.4 x 18.2 | 19 | 030-07235 | $806 |
| PSE-24100A | 24V | 1000 | 2000 | 3.5 x 9.4 x 13.5 | 9 | 030-07238 | $448 |
| PSE-24150A | 24V | 1500 | 3000 | 3.5 x 9.4 x 18.2 | 12.4 | 030-07241 | $530 |
| PSE-24250A | 24V | 2500 | 4500 | 6.3 x 8.5 x 19.5 | 22 | 030-07244 | $866 |



*Suggested retail prices are subject to change; check with us for latest pricing.*

# Xantrex

## PowerHub 1800

The Xantrex PowerHub is designed with the do-it-yourselfer in mind. The PowerHub is an inverter/battery charger combination with an attached battery box for two 100 amp-hour 12-volt batteries. One or two battery boxes can be attached to the PowerHub. The battery box holds two 12.74L x 8.0W x 13.0H batteries. Use Group 27 sized batteries. The PowerHub 1800 comes with one battery box. Order PH1800-BBX if you need more battery capacity.

The PowerHub with two fully charged 100 Ah batteries can deliver up 950 watt-hours of electricity to run small appliances in a weekend cabin or during a power failure. The PowerHub allows batteries to be recharged with a small wind generator and/or PV systems, with a gas generator or with utility power. It does not have a built-in charge controller for PV modules but it has two DC charging inputs, one at 32 amps maximum, labeled PV and one at 80 amps labeled wind. Both could be used for PV with the addition of a charge controller. The 80-amp input is suitable for an AirX wind turbine (page 61) which has a built-in regulator.

When AC power is available from a generator or utility grid, the PowerHub will function as an automatic backup power unit. It will sit in bypass mode and will pass the power through to support the loads and/or the battery charger. When AC power is connected to the unit, input from wind or solar will not be used for powering the loads. When the AC input fails, the PowerHub's automatic transfer relay de-energizes and will switch the unit to inverter mode within 40 milliseconds.

Once AC input is restored, after a 20-second delay the relay energizes and qualifies the AC input and the load is automatically reconnected to the primary AC source.

When no AC power is available from a generator or utility grid, the inverter draws power from the battery bank and delivers a modified-sine wave AC output voltage. This output voltage can be accessed by using the four outlets on the front of the unit or by hard wiring the unit to the AC distribution panel which provides AC power to AC outlets at the site.

The inverter control panel provides a user interface for monitoring power levels, battery levels, and controlling the inverter functions and displays. Four 120VAC outlets on the front panel provide up to 1440W (continuous) output power. One 15 A supplemental protector provides over-load protection to the four AC outlets on the front panel. CSA Listed. 1-year warranty.

| Xantrex model | Description | Item code | Price |
|---|---|---|---|
| PH1800-UL | Xantrex PowerHub 1800 with ground fault protection | **030-00020** | **$899** |
| PH1800-BBX | Xantrex PowerHub battery box | **030-00023** | **$150** |

## XPower 1500 Powerpack

The XPower Powerpack 1500 is a portable power system that can supply up to 1500 watts of household electricity. It consists of a battery pack that stores electrical energy, an inverter that converts 12 volts from the battery pack to household power, two standard AC outlets, and a DC power outlet that is used to run 12-volt products. These components are packaged into a rugged cart with a removable waist handle that allows XPower Powerpack 1500 to be wheeled from room-to-room or outdoors over rough terrain. Recharge XPower from a standard wall outlet with the included AC charger or recharge from your car, truck or RV with the included DC charging cable. Battery capacity is 60 Ah. 1-year warranty.

## XPower Powerpack 300Plus

Powered by a rechargeable battery, the XPower Powerpack 300Plus provides up to 300 watts of AC power and can jump-start a car, truck, boat or small RV. It can also operate a wide range of 12-volt automotive and marine products. Ideal for power emergencies, XPower Powerpack 300Plus comes with a built-in fluorescent emergency light and jump-start cables. The 20 amp-hour battery will power a cordless telephone for up to 40 hours, a laptop computer for six hours, and a portable stereo for 17 hours. The fluorescent light that comes with it will run for up to 25 hours on a fully charged battery. Recharge XPower from a standard wall outlet with the included AC charger. 1-year warranty.


| Description | Item code | Price |
|---|---|---|
| XPower Powerpack 1500 | **030-01518** | **$370** |
| XPower Powerpack 300 plus | **030-01513** | **$130** |

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# Xantrex

## T-240 Autotransformer

Use this to power 240-volt appliances on 120-volt inverters. Indoor enclosure, steel powder-coated white. Maximum load is 4.5 kilowatts. (For smaller or larger loads, see the toroid autotransformers below. Consumes 12 watts at idle. Includes 2-pole 25-amp QOU circuit breaker/disconnect and has room for 3 other QOU AC breakers. #14 to #2 hookup wire size. Dimensions: 6.3" x 21" x 7". UL Listed. 2-year warranty.

| Xantrex model | Description | Item code | Price |
|---|---|---|---|
| T240 | 4 kW autotransformer | **030-01402** | **$650** |

## Toroid Autotransformers

These AC step-up and step-down transformers are greater than 98% efficient and cause less than 0.2% idle loss at no load. They are nearly silent when operating. Use an autotransformer as a step-down to connect the 240-volt output of a generator to the 120-volt input on an inverter. This allows full output power of a 240-volt generator to be used for battery charging. Autotransformers can step-up voltage to operate 240-volt appliances and motors from the 120-volt output of an inverter. NEMA3R enclosures with knockouts for conduit. 2-year warranty.

| Description | Size (inches) | Item code | Price |
|---|---|---|---|
| 2.5 kW autotransformer | 8 x 8 x 4 | **038-09437** | **$400** |
| 4 kW autotransformer | 10 x 10 x 4 | **038-09440** | **$500** |
| 8 kW autotransformer | 12 x 10 x 6 | **038-09445** | **$825** |

# OutBack

## PSX-240 Autotransformer

The OutBack PSX-240 autotransformer can be used for step-up, step-down, generator and split phase output balancing or as a series stacked inverter to load balancing auto-former.

| OutBack model | Description | Item code | Price |
|---|---|---|---|
| PSX-240 | 4 kW autotransformer | **030-04429** | **$539** |

## DC Step-Down Power Converters

These DC-DC converters are designed to decrease the DC voltage that is inputted into the unit. These switching converters have a high efficiency and provide regulated 13.8 VDC output from and input of 20 -30 VDC. Use them to power 12-volt lights and appliances from a 24-volt system.

| Samlex model | Output max amps | Item code | Price |
|---|---|---|---|
| SDC-15 | 12 | **030-08720** | **$82** |
| SDC-23 | 20 | **030-08725** | **$103** |

# Samlex

## Isolated DC-DC Converters

These isolated, enclosed DC-DC converters are designed to increase, or decrease, the DC voltage that is inputted to the unit. We have 100W, 200W, and 360W versions.

| Samlex model | Input voltage | Output voltage | Output amps | Item code | Price |
|---|---|---|---|---|---|
| IDC-100B-12 | 20-35 | 12.5 | 8 | **030-08741** | **$140** |
| IDC-100C-12 | 30-60 | 12.5 | 8 | **030-08742** | **$140** |
| IDC-100A-24 | 9-18 | 24 | 4 | **030-08744** | **$140** |
| IDC-100C-24 | 30-60 | 24 | 4 | **030-08746** | **$140** |
| IDC-200B-12 | 20-35 | 12.5 | 16 | **030-08748** | **$166** |
| IDC-200C-12 | 30-60 | 12.5 | 16 | **030-08749** | **$166** |
| IDC-200A-24 | 9-18 | 24 | 8 | **030-08751** | **$166** |
| IDC-200B-24 | 20-35 | 24 | 8 | **030-08752** | **$166** |
| IDC-200C-24 | 30-60 | 24 | 8 | **030-08753** | **$166** |
| IDC-360A-12 | 9-18 | 12.5 | 30 | **030-08755** | **$329** |
| IDC-360B-12 | 20-35 | 12.5 | 30 | **030-08756** | **$329** |
| IDC-360C-12 | 30-60 | 12.5 | 30 | **030-08757** | **$329** |
| IDC-360A-24 | 9-18 | 24 | 15 | **030-08758** | **$329** |
| IDC-360C-24 | 30-60 | 24 | 15 | **030-08760** | **$329** |

## Solar Converters DC Autotransformers


These high-efficiency DC to DC converters can be used to step-up or step-down battery voltage. These converters are bi-directional so they can be used to increase or decrease voltage. They can be used to operate 12-volt loads on a 24- or 48-volt battery system or to run a 24-volt refrigerator on a 48-volt battery system. See the table below for up and down voltage and current limits. 1-year warranty.

| Solar Converters model | Voltage | Amps @ low voltage | Amps @ high voltage | Item code | Price |
|---|---|---|---|---|---|
| EQ 12/24-20 | 12/24 | 20 | 10 | **038-08209** | **$262** |
| EQ 12/24-50 | 12/24 | 50 | 25 | **038-08751** | **$560** |
| EQ 12/48-10 | 12/48 | 10 | 2.5 | **038-08745** | **$296** |
| EQ 12/48-30 | 12/48 | 30 | 7.5 | **038-08760** | **$610** |
| EQ 24/48-10 | 24/48 | 10 | 5 | **038-08748** | **$296** |
| EQ 24/48-30 | 24/48 | 30 | 15 | **038-08754** | **$610** |