
INVERTER INFORMATION

Inverters change Direct Current (DC) to Alternating Current (AC). Stand-Alone inverters can be used to convert DC from a battery to AC to run electronic equipment, motors, appliances, etc. Synchronous Inverters can be used to convert the DC output of photovoltaic (PV) modules, a wind generator or a fuel cell to AC power to be sold to the utility grid. Multifunction inverters perform both functions.

Output Voltage

All of our inverters supply standard 120 volt 60 cycle (HZ) AC power, such as one gets from the utility companies and fuel powered generators. Most of them can be special ordered with other output voltages and frequencies for use anywhere in the world. Please contact us with any special requirements that you may have.

Interference

The electronic circuitry in inverters may, in some cases, cause problems with radio and television reception, noise on telephones and buzz in audio equipment. Sinewave 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 bank and locating the inverter away from appliances that are susceptible to interference. All inverters cause some interference on AM radio, especially on the lower frequencies.

What Size Inverter Do You Need?

It may be a good idea to buy a larger inverter than you think you need. The efficiency of any inverter decreases as more electrical loads are operating at the same time. Also addition of larger loads in the future should not require upgrading to a larger model at that time. If you plan to run AC motors, the extra surge capacity of a larger inverter will be helpful. For example: Running a 1/2 horsepower motor in a washer requires at least 2400 watts of surge to start.

SINEWAVE INVERTERS

Sinewave inverters have higher costs, but they can power almost anything that can be operated on utility power. Xantrex Sinewave inverters are available in sizes from 500 watts to 5500 watts, and a pair of them can synchronize to deliver up to 11,000 watts at 120/240 VAC. These are an excellent choice for a "whole house" inverter. The smaller units are an excellent choice for power systems operating audio equipment and other electronics that are waveform-sensitive.

MULTIFUNCTION INVERTERS

Xantrex Technology Inc. and Outback Power Systems Inc. produce true sinewave inverters which can operate as Stand-Alone inverters and as Synchronous inverters at the same time! In a typical installation, the inverter is connected to a battery bank, the utility power lines, a stand-by generator and the house load center. When the batteries are fully charged, the inverter supplies AC power to the house from the battery bank. If the batteries become discharged, the inverter supplies the house loads from the utility lines, while charging the battery bank at the same time. If the batteries become fully charged by another power source, such as PV modules or a wind generator or a hydroelectric turbine, excess power may be sold back to the power company. If utility power fails, the inverter can still operate, supplying critical loads. If a stand-by generator is started, it can also supply power to the house loads. The inverter will synchronize to the generator and allow loads to be powered that are too large for either the generator or inverter to supply alone.

STAND ALONE INVERTERS

Stand-Alone inverters convert DC power stored in batteries to AC power that can be used as required. Selecting the inverter for your power system is based on the maximum load you will be powering, the maximum surge required, output voltage required, input battery voltage and optional features needed. High quality stand-alone inverters are available in sizes from 100 watts, for powering notebook computers and fax machines from your car, to 11,000 watts, for powering an entire house or small 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 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 automatic 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 and reach their operating speed.

Stand-alone inverters are available with three basic power output waveforms: square wave, modified square wave (sometimes called modified sinewave) and pure sinewave. Synchronous Inverters, Utility companies and generator sets deliver a pure sinewave.

Square wave inverters have the lowest cost and efficiency and not sold from this catalogue. The price of the better quality inverters is low enough to make square wave inverters an unattractive choice.

SCHNEIDER-ELECTRIC - FORMER XANTREX SINEWAVE MULTIFUNCTION INVERTERS

CONEXT XW HYBRID INVERTER/CHARGER

The NEXT generation inverter/charger for renewable energy systems and backup power applications

Xantrex brings the next generation of inverter/charger to market, with the XW Hybrid Inverter/Charger, the heart of the XW System. The XW Hybrid Inverter/Charger (XW) is a true sine wave, 120/240-volt AC, split-phase, inverter/charger that incorporates a DC to AC inverter, a battery charger, and an AC auto-transfer switch. It is the foundation for battery-based residential and commercial applications up to 18 kilowatts (kW). Capable of being grid-interactive or grid-independent, the XW can operate with generators and renewable energy sources to provide full time or backup power.

Description

Designed with consultation and input from industry experts, dealers, and installers, the XW sets a new standard for battery-based inverter/chargers. Integrating the best features available in the market, innovative new features by Xantrex and balance-of-systems components, the XW Hybrid Inverter/Charger's design makes installation quicker and easier. The XW offers high efficiency and unprecedented surge capacity to maximize the owner's return on investment. No other inverter/charger looks or performs like the XW.

Features

- True sine wave output
- 120/240 volt AC split-phase operation
- Dual AC inputs
- Capability to work with two-wire and three-wire generator..... starting systems
- Integrated design to minimize external balance-of-system components
- XanBus™-enabled network communication
- Certified to UL1741 and CSA for utility-interactive applications
- Unprecedented surge capacity
- Efficient, power factor corrected, high-current, multistage battery charging



XW Inverter Models, Specifications and Pricing

XW Model	Description	Item code	Price
XW4024	4.0 kW 24 Vdc 120/240 vac 60 Hz output with 150 amp charger	30-200	\$4,775
XW4548	4.5 kW 48 Vdc 120/240 vac 60 Hz output with 85 amp charger	30-201	\$ n/a
XW6048	6.0 kW 48 Vdc 120/240 vac 60 Hz output with 100 amp charger	30-202	\$6,295
XW5548+NA	5.5 kW 48 Vdc 120/240 vac 60 Hz output with 110 amp charger	30-203	\$5,145
XW6848+NA	6.8 kW 48 Vdc 120/240 vac 60 Hz output with 140 amp charger	30-204	\$6,095

XW Accessories

XW Power Distribution Panel (Factory-wired, labelled to support a code compliant single inverter installation)	30-210	\$1,769
XW Connection Kit (to connect additional inverters)	30-211	\$1,074
XW System Control Panel (Display for, and single point of control to set up and monitor an entire XW Power System)	30-212	\$ 375
XW Automatic Generator Start	30-213	\$ 249
Conext/XW Combox (ethernet device to monitor and access XW systems remotely)	30-214	\$ 645
Conext Battery Monitor	30-217	\$ 579

OUTBACK MULTIFUNCTION INVERTERS

New! OutBack Radian Series Inverter Charger

The Radian Series Inverter/Charger introduces a radical new feature to the world of renewable energy: Simplicity. Sure, OutBack's newest inverter/charger is a powerful solution. But it's also engineered from the ground up to make design and installation a breeze.

From the sunniest day to the storm that knocks out the grid for a week—this system is built to carry the load.

Powerful features

- Grid-interactive and stand-alone capability in the same package
- 8000 Watts of continuous power
- Unsurpassed surge capacity
- 120/240V split-phase power
- Dual AC inputs
- Field serviceable modular design
- Flexible design for systems from 8 to 80kW
- GSLC load center option allows for quick and easy installation
- Built on our core FX FET board technology— the industry standard for reliability

The most versatile inverter/charger in a single smart package

Simple integrated design: For the first time, nearly all of the components you need are combined in a single package. No matter what the application, no matter what the power requirement, OutBack makes it easy: Everything's seamless. Easy to install. Simple and intuitive to live with.

Unsurpassed engineering to handle load surges: Keeping the lights on is easy. But what happens to the computer, wide-screen TV and other sensitive electronics loads if you need to power the well pump? The Radian Series is unique in its ability to support large dynamic load variations without voltage spikes or sags.

True energy independence: Basic grid-tie systems can sell back power from a renewable energy source, but only grid-interactive systems can power the load if the grid fails. The Radian Series Inverter/Charger's dual AC inputs also provide the flexibility to connect to the grid and recharge the batteries from a generator. So you have a continuous power supply, even if emergency conditions last a week or more.

A power solution that scales: Finally, our customers can get the security of a grid-interactive solution combined with the ease of a basic grid-direct PV system. 120/240V output integrates directly into standard home wiring, while the modular, parallel architecture combined with OutBack's robust HUB Communications Manager provides the ability to build a system to power nearly any load imaginable.

The power of one

Integration means simplicity. Thanks to the Radian Series Inverter/Charger, the power's always there when you need it. No matter what the weather is doing, you can go about your business, running the tools and appliances you need. Hot coffee and cold beer: *The new generation of renewable energy has arrived.*



Radian Series Pricing and Accessories

30-830	GS8048 inverter/charger, 8kW,120/240VAC, 48VDC, 115A charger	\$7,895
30-831	GSLC175-AC-120/240, Radian prewired AC coupling GS Load Center	\$2,359
30-832	GSLC175-PV-120/240, Prewired load center for GS8048 inverter w/PV disconn. for 2 chargers, FLEXnetDC w/3 shunts, inverter disconnects, -bypass, dual inputs etc	\$2,359
30-833	GSLC175-120/240, Prewired load center w/inverter disconnects, -bypass, dual inputs etc	\$1,938
30-835	MATE-3, Graphical Display and Controller for OutBack Systems	\$ 985

OUTBACK MULTIFUNCTION INVERTERS

OutBack Power Systems

OutBack inverter/chargers are the next generation in advanced power management. Each is a DC to AC sinewave inverter, battery charger and AC transfer switch housed within a tough die-cast aluminum chassis.

Just like the local utility grid, the inverter produces true sinewave AC electricity for your stand-alone or backup power needs. Computers, TVs and pumps are just some of the examples of modern electronics that last longer and run better when powered with true sinewave electricity from an OutBack inverter. Starting up your air conditioning, washing machine or well pump is worry-free because of our high surge power capability. Batteries and generators are the costly consumables when using inverters to generate electricity. The integrated smart battery charger uses multiple stages to perform quick recharging while prolonging battery life, saving your batteries and generator from unnecessary wear. Automatic switching between AC power sources is seamless due to an AC transfer switch that reacts in less than 16 milliseconds.

Unique networked communication is built into all OutBack products providing complete integration. Expanding your system with your growing power needs is as simple as adding additional inverters with modular architecture. Further flexibility is provided with the ability to be connected at any time in either parallel, series or three-phase power configurations. Industry leading OutBack reliability is achieved through simplified design and rugged construction.

OutBack FX & VFX Inverters

These inverters are the cornerstones of OutBack's durable, dependable power systems packed with features that add up to outstanding performance and value.

- Multifunction: off-grid or utility intertie
- Sealed die cast aluminum chassis makes these rugged & durable performers
- Efficient and miserly: with 90% efficiency and 18-23 W standby consumption
- True Sine Wave
- Built in 3 stage battery charger
- 60 Amp AC Transfer Switch is standard
- Outstanding programmability
- Expandable to 240VAC or 3 phase applications at anytime
- Designed to operate as a co-ordinated system
- FX Series now comes with Turbo Kit Cooling Fan as standard equipment
- Shipping Weight: 62lbs



30-803	OutBack FX2012	\$2,995
30-804	OutBack FX2524	\$2,995
30-805	OutBack FX3048	\$2,665
30-806	OutBack VFX2812	\$3,295
30-807	OutBack VFX3524	\$3,295
30-809	OutBack VFX3648	\$3,295
30-841	OutBack GTFX2524	\$2,995
30-842	OutBack GTFX3048	\$2,995
30-843	OutBack GVFX3524	\$3,295
30-844	OutBack GVFX3648	\$3,295

Inverter/Charger Model No.	FX2012	FX2524	FX3048	VFX2812	VFX3524	VFX3648
Continuous Power Rating	2000W	2500W	3000W	2800W	3500W	3600W
Nominal DC Input Voltage	12	24	48	12	24	48
Nominal AC Input Voltage/Freq			120VAC/60Hz			
Single Power Peak(1mSec)AC	56amps	70amps	70amps	56amps	70amps	70amps
Recommended DC Breaker	OBDC-250	OBDC-175	OBDC-175	OBDC-250	OBDC-175	OBDC-175
Continuous Battery Charger amps DC	80	55	35	125	85	45

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 and the OutBack HUB communication manager. The MATE 2 has a flush-mount black face for panel or in-wall mounting.

30-821	MATE	\$489
30-822	MATE 2	\$489
30-825	HUB-4	\$334
30-826	HUB-10.3	\$635
30-829	RTS (remote temp. sensor)	\$ 49



MAGNUM ENERGY MS/MS-AE INVERTERS

MS Series

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 MS4024-AE and the MS4448-AE have 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 degree DC connection terminals with cover 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.

The MS Series come with a 3-year warranty, except MS4024-AE and MS4448-AE which come with a 2-year warranty.



MS Series Inverter Models, Specifications and Pricing

Model	Description	Item code	Price
MS2012	2.0 kW 12 Vdc 120 vac 60 Hz output with 100 amp charger	30-401	\$2,449
MS2812	2.8 kW 12 Vdc 120 vac 60 Hz output with 125 amp charger	30-402	\$2,875
MS4024	4.0 kW 24 Vdc 120 vac 60 Hz output with 105 amp charger	30-403	\$2,985
MS4024PAE	4.0 kW 24 Vdc 120/240vac 60Hz output w/105amp charger	30-404	\$3,139
MS4448PAE	4.4 kW 48 Vdc 120/240vac 60Hz output w/60 amp charger	30-405	\$3,179

MS Series Accessories

ME-RC50	Remote for all Magnum inverters w/50' cable	30-410	\$315
ME-RTR	Remote needed for stacking multiple MS-PAE inverters	30-415	\$558
ME-AGS	Automatic generator start for use with Magnum inverters	30-411	\$459
ME-SSI	Series stacking interface (fits 2 MS4024 only)	30-412	\$110
ME-BMK	Battery monitor kit - ME-RC50 required with this item	30-413	\$304

MORNINGSTAR

SureSine 300W Inverter

The SureSine inverter, a pure sine wave inverter was designed specifically to meet the needs of rural PV electrification requiring AC power including 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.

Features:

- Outstanding Surge Capability - Handles a 200% surge during load start-up, to a maximum of 600 watts.
- High Efficiency - A high peak efficiency will reduce heating and make more solar energy available for powering loads.
- Low Self-Consumption - The SureSine consumes 450mA while powering loads. During no load conditions, solar energy is not wasted because the SureSine automatically powers down to stand-by mode, reducing self-consumption to one tenth of operating consumption. Self-consumption: No load = 450mA, Off = 25mA, Standby = 55mA.
- Extensive Electronic Protections - The SureSine has extensive electronic protections that will automatically protect against faults and user mistakes such as short circuit, overload, high temperature and low voltage disconnect.
- No Internal Cooling Fan - A key design objective since fans often fail in harsh environments and are noisy, consume power and blow dirt into the electronics.
- Tropicalization The SureSine uses epoxy encapsulation, conformal coating, stainless steel hardware, and an IP20 cast anodized aluminum enclosure to protect against harsh tropical and marine environments.
- Operating temperature range: -40°C to +45°C



SI-300-115V	Morningstar SureSine inverter	30-601	\$445
RM-1	Remote meter w/30' cord	30-611	\$149

XANTREX PROSINE STAND ALONE INVERTERS

The Xantrex Prosine 2.0 or 2000 watt true sine wave inverter/charger. It has a 100 amp multistage battery charging capability and is ideal for upgrading your electrical system in a boat, RV or utility vehicle and for incorporating an energy system in a remote home.

The Xantrex Prosine 1000 and 1800 watt true sine wave stand alone inverters do not have a built in battery charger, and are ideal for systems that already have a quality multistage battery charger. It is designed for recreational and industrial applications but has been successfully incorporated into residential systems.

Prosine 2000 Product Features:



- True sine wave output
- 100 amp multistage battery charger@ 12VDC
- built in 30 A transfer switch automatically transfers between inverter power and incoming AC power
- Series stackability
- LCD remote control panel and temperature sensor included



Prosine 1000 and 1800 Product Features

- True sine wave output
- Removable LCD display can be mounted remotely for control and monitoring
- Powersave mode draws only 1.5 watts under no load
- For systems already with 3 stage battery chargers.

Xantrex Model	Description	Item code	Price
Prosine 1000	1000 Watt Inverter	30-390	\$1,229
Prosine 1800	1800 Watt Inverter	30-391	\$2,189
Prosine 2.0	2000 Watt Inverter	30-392	\$2,689

MODIFIED SINEWAVE INVERTERS

Modified sinewave inverters have modified square 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. We do not recommend them for computer systems with laser printers. Unfortunately, this type of inverter may destroy some low cost rechargeable tools, flashlights, and stereos and their waveform will not allow many laser printers, photocopiers, light dimmers and audio equipment to operate. Some audio equipment will have a background buzz that may be annoying to music connoisseurs.

TR Series Inverters

The TR series inverters have plenty of power to run microwave ovens, refrigerators, vacuum cleaners and power tools. The TR Series inverters have powerful built in battery chargers to quickly charge batteries and hold them in float voltage condition. With parallel charging and inverting functions large gensets serving with a TR Inverter can simultaneously and continuously operate AC loads and charge batteries each at the fully rated capacity of the model. The TR inverters are made for 12 volt battery systems in 1500 and 2400 watt versions. For 24 volt systems they are available in 1500, 2400 and 3600 watt versions.

The output is 120 volt AC, but with the optional stacking cable, two units can be connected for up to 7200 watts of 120/240 volt AC power, allowing the pair to operate large 240 volt appliances like deep-well pumps, as well as typical 120 volt appliances. Dimensions are 20" x 8.5" x 8". ETL listed to cUL standards.

Xantrex Model	AC Volts Hz	Battery Volts	Continuous Watts	Surge Amps	Charge Amps	Catalog Number	Price
TR1512	120 Volts	12	1500	3300	0-70	30-115	\$ 949
TR2412	60 Hz	12	2400	6200	0-120	30-116	\$1,149
TR1524		24	1500	4800	0-35	30-117	\$ 949
TR2424		24	2400	8500	0-70	30-120	\$1,149
TR3624		24	3600	12000	0-70	30-121	\$1,449
TRCB	Conduit Box for all TR's					30-109	\$ 269
TR-Rem	Remote On/Off with LED indicator					30-110	\$ 164



POWER CENTERS



Power Centers provide a code compliant way to install your inverter. Beside the inverter they include: one or AC and DC separate enclosure, AC input/output bypass breaker, heavy duty main DC battery breaker, mounting brackets resp.back plate, space for additional AC and DC input/output breakers and mounting brackets for solar charge controllers.

Powercenters are available factory assembled and tested, ready to mount on the wall and hook up to battery and AC load center - or they can be ordered in pieces to be assembled by you.

Complete kits to assemble on site are UPS shippable, where as factory-assembled units require truck freight.

For applications with medium power requirements such as homes or light commercial power systems, the FLEXware 500 supports up to two OutBack inverter/chargers and two FM60 or FM80 controllers. Standard FW500 power center assemblies include all of the protective over current devices, two AC bypass breakers, two AC input breakers, two AC output breakers, AC I/O bus bars, and DC main breaker(s). Also included are a 500A DC negative shunt, negative bus bar, ground bus bar, positive/negative DC bus bar, DC main breaker bus bar, and a remote battery temperature sensor. Dual inverter assemblies include a HUB4 communications manager.

The FW500-AC section functions as a 120/240V AC load breaker sub-panel with space for adding eight OB-AC DIN mount breakers. The FW500-DC section allows DC load circuit breakers by the addition of eight OB-DC panel mount breakers. Space limited when used with FM60 charge controllers and/or PV-GFP. Size: 20.3 H x 46.3 W. Unit weight: 177 lbs.

MidNite Solar E-Panel



Compact E-Panel is for mounting a single inverter in a code compliant installation. Can be stacked horizontally or vertically. Standard configuration is left-hand hinge & breaker placement, right-hand also available. Includes a prewired 50 amp AC-bypass switch and 50 amp AC input disconnect, pre-wired 125, 175 or 250 amp inverter battery breaker with cables, 500A/50mv shunt and DC cable covers. Battery plus plate included for attaching DC circuits. DIN rails are installed for up to 6 additional MNEAC and MNEPV AC and DC breakers. Also included: charge controller and wall mounting brackets, battery cable cover, inverter mounting hardware, grommets, bushings & installation instructions. 277 Vac breakers are suitable for 120 Vac 60Hz or 230 Vac 50Hz. ETL listed for US and Canada.

POWER CENTERS

OutBack

FLEXware Complete Power Systems

For applications with medium power requirements such as homes, light commercial or larger back-up power systems. The FLEXware 500 system architecture can support up to two OutBack FX Series Inverter/Chargers, up to two OutBack charge controllers and all the associated AC and DC components. Thanks to a very compact design, FLEXware 500 AC and DC enclosures mount with a FLEXware MP in either a horizontal or vertical orientation to allow installation in more space-limited locations for a fast and professional looking wall-mounted installation. The FLEXware 500 accommodates all of the essential protective devices in two enclosures. Solar charge controller extra.



FLEXpower ONE, Prewired AC and DC boxes with 120VAC Bypass and Type B Outlet, 250ADC breaker, GFDI, 80 amp charge controller breaker, VFX3524 or VFX3648, MATE2, HUB4, RTS, FLEXmax 80, FLEXnet DC and surge protector for 120V 60Hz applications. FOB Edmonton

FlexWare model	Inverter	Rated power		Battery charger	Assembled and tested	
		AC output	DC Volt.		Item #	Price
FP1-1	VFX3524	3,5kW	24VDC	85Amp	31-031	\$ ask
FP1-2	VFX3648	3.6kW	48VDC	45Amp	31-032	\$ ask

7 kW or 7,2kW FLEXpower TWO, Pre-wired AC and DC boxes with 120VAC Bypass, two 250ADC breakers, two VFX3524 or VFX3648 inverter/chargers, MATE2, HUB10, RTS, X-240 and surge protector for 120V/240V 60Hz applications. FOB Edmonton

FP2-12	VFX3524	7kW	24VDC	170Amp	31-035	\$ ask
FP2-10	VFX3648	7.2kW	48VDC	90Amp	31-036	\$ ask
FP2-31	FX3048	6kW	48VDC	70Amp	31-033	\$ ask

Radian Series Complete Power Systems

8kW GS8048 incl 1 FM60, PV load center, HUB10 and Mate 3 33-351 \$11,245



POWER CENTERS

Xantrex

XW Complete Power Systems

Including XW MPPT-60, Power Distribution Panel, System Control Panel, Battery Monitor and Autogenstart

Inverter model		Item #	Price
XW 4024	4.0kW 120/240VAC 24VDC	33-401	\$ 8,365
XW 5548+	4.5kW 120/240VAC 48VDC	33-402	\$ 8,835
XW 6848+	6.0kW 120/240VAC 48VDC	33-403	\$ 9,745
XW 4024-2	8.0kW 120/240VAC 24VDC	33-404	\$14,985
XW 6848+-2	12kW 120/240VAC 48VDC	33-405	\$17,795



Magnum Energy Power Panels

Mini-Magnum-Panel MMP

Features:

- small footprint: only 12.5" wide x 18" tall x 8" deep
- money-saving design: not only is the MMP less expensive, but it is pre-wired for fast installation
- easy access: front-mounted breakers and remote (optional)
- choices: can be wired for 120VAC or 120/240VAC output
- inclusive: works with non-Magnum inverter/chargers (stand-alone parts included)

33-551	MMP-250-30D	\$1,128
33-552	MMP-250-60S	\$1,128
33-553	BP-MMP single back plate	\$ 169



Magnum-Panel MPSL

Features:

- Expandable: start with the enclosure and just one inverter and in the future expand to two inverters with ease, using the MPX.
- Easy installation: all connections are frontmounted, including AC and DC breakers and the MPX.
- Labor saving: panel is prewired for fast installation, saving labor costs.
- DC load breakers: fits either din rail or backmount DC load breakers.
- Convenient knockouts: knockouts on the side of the enclosure are compatible with most charge controllers

33-554	MPSL-30D for up to 2 inverters	\$1,319
33-555	MPSL-60S for up to 2 inverters	\$1,319
33-556	MPSH-30D for 3 inverters	\$1,849
33-557	MPX extension box	\$ 719
33-558	BP-S single back plate for MPSL	\$ 186
33-559	BP-D dual back plate for two inverters	\$ 269



POWER CENTERS

MidNite Solar E-Panel

Compact E-Panel is for mounting a single inverter in a code compliant installation. Can be stacked horizontally or vertically. Standard configuration is left-hand hinge & breaker placement, right-hand also available. Includes a pre-wired 50 amp AC-bypass switch and 50 amp AC input disconnect, pre-wired 125, 175 or 250 amp inverter breaker with cables, 500A/50mv shunt and DC cable covers. Battery plus plate included for attaching DC circuits. DIN rails are installed for up to 6 additional MNEAC and MNEPV AC and DC breakers. Also included: charge controller and wall mounting brackets, battery cable cover, inverter mounting hardware, grommets, bushings & installation instructions. 277 Vac breakers are suitable for 120 Vac 60Hz or 230 Vac 50Hz. ETL listed for US and Canada.



Magnum E-panels

Include the Magnum ME-RC50 remote control/display.

Inverter model		Item #	Price
MS-2012	2.0kw 120VAC 12VDC	33-501	\$3,749
MS-2812	2.8kw 120VAC 12VDC	33-502	\$4,669
MS-4024	4.0kw 120VAC 24VDC	33-503	\$5,159
MS-4024AE	4.0kw 120/240VAC 24VDC	33-508	\$5,729
MS-4448AE	4.4kw 120/240VAC 48VDC	33-509	\$5,789



OutBack E-panels

Including Inverter		Item #	Price
FX-2012	2.0kw 120VAC 12VDC	33-601	\$5,749
FX-2524	2.5kw 120VAC 24VDC	33-602	\$5,749
FX-3048	3.0kw 120VAC 48VDC	33-603	\$5,749
VFX-2812	2.8kw 120VAC 12VDC	33-604	\$5,915
VFX-3524	3.5kw 120VAC 24VDC	33-605	\$5,915
VFX-3648	3.6kw 120VAC 48VDC	33-606	\$5,915



E-panel for XW Inverters

MNE-XW E-Panel	31-615	\$1,769
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E-Panel Lite (Same size as OutBack narrow)

The E-Panel Lite comes with a left-hand door, inverter breaker, pre-wired AC input and bypass, 500-amp/50mV shunt, AC terminal blocks, DIN rails, wall mounting brackets, instructions and lots of hardware

33-610 MNE-LT E-Panel Lite	\$859
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DC DISCONNECTS

You can use DC Disconnect/Breakers to assemble your own custom power safety and control system. There are knockouts on the sides for up to four smaller disconnect/breakers to protect DC load circuits and act as solar array disconnects. The bond block allows easy connection of all negative cables and wires in the system at the same point without having to install crimp-on terminals. There are predrilled positions inside the enclosure if you want to add a shunt for a remote amp-hour meter. There are knockouts on the top to match one MPPT solar charge controllers, or two C Series or Tri-Star charge controls.

There are variable sized knockouts, for up to 2" openings, on the sides and bottom of the enclosure to mate with conduit boxes from one or two TR series or other inverters and for entry of inverter supply cables from the battery bank allowing clean and simple connections. Add disconnects from 15 amp up to 75 amp for DC load and PV array breaker/disconnects.

Xantrex DC Disconnect/Breaker Switches

These Xantrex DC Disconnects allow you to assemble a complete power system to go with your inverter(s). It comes with a main disconnect circuit breaker and is pre-drilled to accept the options listed below. There is room for a second main disconnect breaker if your system has two inverters. Use a 2" offset nipple to attach the disconnect to any TR series conduit box. Weighs 7 kg.



30-102	250 Amp Disconnect	\$399
30-101	175 Amp Disconnect	\$399
30-103	DC Bond Block	\$ 90
53-400	250 Amp 2nd Breaker	\$239
53-401	175 Amp 2nd Breaker	\$239
53-406	15 Amp Breaker	\$ 39
53-404	20 Amp Breaker	\$ 39
53-407	30 Amp Breaker	\$ 45
53-409	60 Amp Breaker	\$ 49
53-410	75 Amp Breaker	\$ 55
53-490	Offset Switch	\$ 15

MidNite Solar

Mini-DC Disconnect Power Center

Use this small DC disconnect, which includes the inverter breaker, to provide overcurrent protection for any single inverter. It has a DIN rail for additional rail mounted breakers for DC inputs or loads and it is pre-drilled for a shunt and optional bus bars. The white powder-coated aluminum chassis measures 10" X 5" X 18" and weighs 7 pounds. Three main breakers sizes are available.

30-130	MNDC-175 Amp Disconnect	\$399
30-131	MNDC-250 Amp Disconnect	\$399
30-132	MNDC-250PLUS, with space for additional breakers	\$449



OutBack Power Systems

FLEXware FW250

For single inverter applications the FW250 enclosure accommodates all of the essential protective devices in the smallest possible space. Utilizing an extremely compact design, one FW250 enclosure can be mounted on each end of a single FX Series Inverter/Charger. The FW250 enclosure is Type-1 indoor (IP30) constructed of silver powder-coated aluminum, includes a generous collection of wiring knockouts and has been ETL listed to UL specifications for USA and Canada. It provides eight breaker spaces (3/4 W PNL mount) for battery, PV array or PV GFP breakers and mounting locations for AC GFCI outlet, AC breakers and an Input-Output-Bypass Assembly. Also space for one 175A or 250 Amp panel mount breaker and a GFCI-AC outlet (not included). Unit size - inches (H x W x D) = 7.5 x 6.5 x 8.6. Includes: Ground bus bar, DC breaker handle guard, breaker mounting hardware and enclosure mounting hardware.



30-140	FLEXWare FW250 enclosure	\$ 139
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INVERTER ACCESSORIES

Inverter Supply Cable Sizing

Low voltage DC power systems with inverters can have very high current flows in the cables that connect the inverter to the battery bank. Large AC loads like microwave ovens, well pumps, toasters, irons and washers can cause an inverter to draw well over 100 amps in normal operation. Large motors may draw 300 to 500 amps at start up. Using the proper size supply cables to the inverter and for connections between battery cells, will effect the operation of appliances. Cables that are too small will limit the current available to the inverter and may prevent a large load from operating or cause the inverter to shut-down.

All cables used to connect battery cells together in series to increase voltage, and batteries parallel connected together to increase total capacity in inverter power supply systems larger than 1000 watts should not be sized smaller than #2/0 or the inverter may not function properly.

Power systems with 12 volt inverters with outputs of less than 1000 watts can use #2 or larger supply cables; 12 Volt inverters from 1000 to 2000 watts should use #2/0 cables; 12 volt 2500 watt inverters should use #2/0 to #4/0 cables; 24 volt inverters from 2600 to 4000 watts should use #2/0 cables; 48 volt inverters from 3000 to 5500 watts should use #2/0 cables. We recommend using #4/0 cables with all dual inverter systems above 2500 watts, regardless of input voltage.

Recommended Cable, Fuse and Breaker Sizes for Inverters

Size & Model Inverter	Maximum Continuous Amps	Recommended Breaker Size	Recommended Cl. T Fuse Size	Minimum Cable Size
1512	160	175	200	2/0
1524	80	175	200	1/0
2424	128	175	200	2/0
2812	275	250*	400	4/0
4024	214	250	400	4/0
4548	107	175	200	2/0

* May not allow maximum continuous operation at full power

Use Larger cables for long wire runs

Inverter Power Supply Cables

We make these inverter power cable, in-house, from the finest quality materials available .All cable sizes have fine-stranded very low resistant soft copper wires enclosed in a CSA approved insulated neoprene cover. The cable terminal ends are low-resistance, heavy tinned copper, double crimped onto the cable and covered with color coded self-sealing heat shrink tubing to prevent oxidation and corrosion. Order the cable gauge specified for your inverter size, and a length which will allow installing the inverter as near your battery bank as possible. We provide these cables in Color Coded sets—Red is positive and Black is negative. The split cable option allows inserting a Class `T` or other type of safety fuse into the positive inverter cable.

Inverter Cable Sets Specifications & Pricing

Catalog #	Description	Gauge	Length	Price
50-970	Cable Set	1/0	5`	\$95
50-971	Cable Set	1/0	10`	\$135
50-976	Cable Set	2/0	5`	\$135
50-978	Cable Set	2/0	10`	\$215
50-982	Cable Set	4/0	5`	\$175
50-984	Cable Set	4/0	10`	\$315
50-985	Split For Fuse1/0			\$10
50-986	Split For Fuse2/0			\$15
50-987	Split for Fuse4/0			\$20



Inverter Bypass Switch

This item is wired between your inverter, generator and load center, it allows you to bypass the inverter in case of an inverter failure. After the bypass switch is thrown, the inverter can be removed for repair and the generator is connected directly to the load center, without the power passing through the inverter. This is designed for inverters with built-in transfer switches. Maximum current rating for the switch is 60 amps. All components are cUL listed. It can also be used to shut down a wind generator by shorting to output leads from the generator.

53-650 Inverter Bypass

\$

SYNCHRONOUS (UTILITY INTERTIE) INVERTERS

Synchronous inverters change DC power into AC power to be fed into the utility grid. A power system with this type of inverter uses the utility company as a storage battery. When the sun is shining, your electricity comes from the PV array, via the inverter. If the PV array is making more power than you are using, the excess is sold to the utility power company through a second electric kilowatt hour meter. If you use more power than the PV array can supply, the utility makes up the difference. This type of system makes the most sense if you have utility power already at your location, because there are no batteries to maintain or replace, but it has a very long payback period and may not be cost-effective at today's electric power rates. You will also need the approval of your utility provider to intertie with their service.



Xantrex Conext TX Series Grid Tie Solar Inverter

A grid tie inverter, with greater than 94% average efficiency to maximize your PV investment. Best price/performance ratio in the industry topped up by low installation costs and outstanding aesthetics. LCD display of instantaneous power, daily & lifetime energy production, PV array voltage, utility voltage, "selling" online today time, and fault messages. Modular design allows easy expansion. Available in 2.8kw, 3.3kw, 3.8kw, 4.0kw and 5.0kw models with 240 volt AC output.

30-915	Conext TX 2.8	2.7kWAC-208V, 2.8kWAC-240V output	\$2,824
30-916	Conext TX 3.3	3.1kWAC-208V, 3.3kWAC-240V output	\$3,298
30-917	Conext TX 3.8	3.5kWAC-208V, 3.8kWAC-240V output	\$3,546
30-919	Conext TX 5.0	4.5kWAC-208V, 5kWAC-240V output	\$ n/a
30-920	GT Solar Inverter Monitor		\$



SMA America's Sunny Boy Grid Tie Inverter

SMA inverters are available in sizes from 700 to 7000 watts, making them ideal for a wide range of applications from small residential 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 SB 700US has 3 DC input voltage ranges with 120 Vac output. The SB3000 and SB4000 are auto sensing for 208 or 240 Vac applications. The SB 5000, 6000 and 7000 can be field configured for use in 208, 240 and 277 Vac applications. The SB 3000 through 7000 come with a DC disconnect switch with an integrated 4 input fused series string combiner. The DC disconnect connects to the bottom of the inverter for easy installation or service. The SB 3000 through 7000 are field configurable for positive ground arrays.



Indoor/outdoor NEMA 3R Enclosure, powder coated aluminum (convection with regulated fan cooling). All sensitive electronic components are in a sealed compartment to ensure long life in harsh environments.

Ambient temperature range: -13°F, +114°F.

New SB10000TL-US with operating range to -40C.

All models have a 10-year standard warranty and are certified to the new UL-1741/IEEE 1547 standards.

Item #	Model	Efficiency	DC Input Voltage	Contin. Watts	AC Output Voltage	Price
30-950	SB 700USBD	91.5%	75 - 150	460	120	\$ n/a
30-951	SB 3000US	95.0%	200 - 500	3000	208/240	\$2,995
30-952	SB 4000US	95.5%	250 - 600	4000	208/240	\$3,495
30-953	SB 5000US	95.5%	250 - 600	5000	208/240/277	\$4,139
30-954	SB 6000US	95.5%	250 - 600	6000	208/240/277	\$4,629
30-955	SB 7000US	95.5%	250 - 600	7000	208/240/277	\$4,989
30-956	SB 8000US	96.0%	300 - 600	8000	240/277	\$5,395
30-957	SB10000TL-US	96.8%	300 - 600	10,000	208/240/277	\$5,595
30-959	SI5048 Sunny Island Inverter, 5000 W, 48VDC					\$ ask

