



## FREEDOM EX INVERTER/CHARGER/CONVERTER DATASHEET



AVAILABLE IN:  
48V

**4000W/  
80A chg/45A cvt**

### ALL IN ONE PACKAGE

Power Inverter, Lithium Ion ready Battery Charger, 12VDC Converter Power Supply, 50A Transfer Relay in One Package.

The new FREEDOM EX 4000 is a truly unique, true sine wave power solution packing a powerful 48VDC, 4000W (8000W [5s]) inverter, 80A 48VDC battery charger, 50A transfer relay and a 48VDC to 12VDC, 45A converter inside one box. Designed for mobile applications that utilize 48VDC battery systems, the FREEDOM EX 4000 is designed to work as a standalone AC and DC power solution or supplement an existing generator to create a hybrid system.

The FREEDOM EX 4000 features the most widely used communication protocols – RV-C (RV), J1939 (Truck) and NMEA 2000 (Marine) enabling it to be used in virtually any application that requires integration with 3rd party MFPs and software.



Parallel and Series Stacking



Extended Surge Rating



Highly configurable charger specifically designed for lithium ion batteries



48 to 12VDC Voltage Converter Output



Built-in 50A Transfer Relay

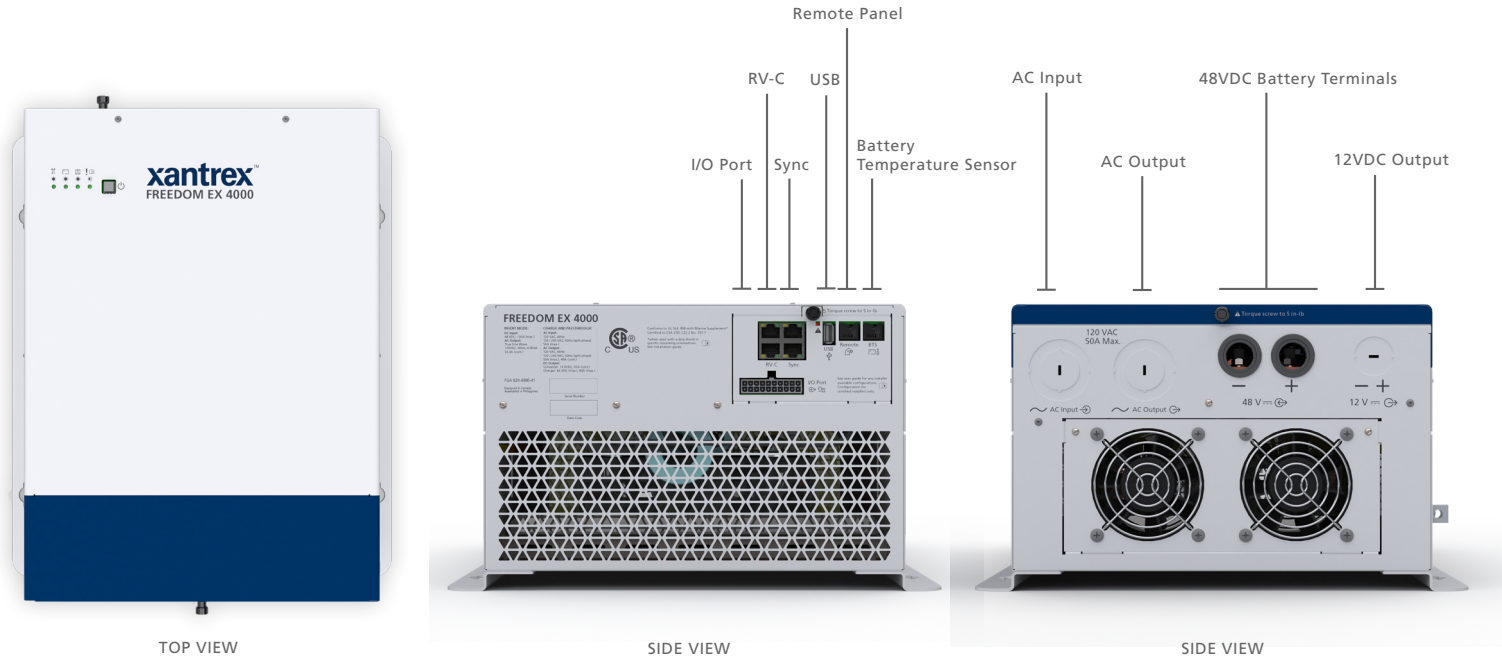


Ignition Control

#### APPLICATIONS:



**3 YEAR  
WARRANTY**



## PRODUCT FEATURES

### DC-DC Voltage Converter

- 48VDC to 12VDC output, simplifies installation, fewer components, fewer cables, reduced installation time

### Highly configurable charger specifically designed for lithium ion batteries

- Power factor correction, temperature compensation, power share, battery equalization and the ability to configure charging profile and stages and set charge output to desired amps

### Built-in 50A Transfer Relay

- 50A split input (split phase dual out - SPDO)  
All 120V loads and 240V loads are powered up in this case
- 30A dual single-phase input through a Dogbone Adapter (dual in dual out - DIDO)  
All 120V loads get powered up
- 30A single phase input (single in single out - SISO)  
Only 120V loads connected to L1 get powered up

### Extended Surge Rating

- Surges to 2X continuous power for 5 seconds for motor loads

### True Sine Wave AC Power

- For operation of sensitive and motor loads

### Ignition Control

- Feature to turn inverter on/off via a 12VDC signal and to minimize battery drain by switching the inverter off when the ignition key is turned off

### Stacking Support

- Stack up to 3 units in parallel; up to 2 units in series

## RECOMMENDED ACCESSORIES

COMPLETE YOUR ELECTRICAL SYSTEM



FREEDOM EX REMOTE PANEL  
808-0817-03

## ELECTRICAL SPECS - INVERTER

FREEDOM EX 4000 (820-4080-41) DATASHEET

	FREEDOM EX 4000
AC Output Operating Voltage Options	105 - 130VAC
Continuous Output Power	Continuous Power 4000 W @40°C True sine wave (TSW) at 120Vac
Continuous AC Output Current	33A
Surge Power	8000W(5 sec)
Frequency	60Hz

## ELECTRICAL SPECS - BATTERY CHARGER/PASS-THROUGH

CHARGER MODE:	FREEDOM EX 4000
Nominal DC Output Voltage	48VDC
Charger Voltage Range	40 - 64VDC
Maximum DC Output Current (user configurable down to 5 A)	80A
Supported Battery Types	Flooded, Gel, AGM, Lithium Ion, Custom
PASSTHROUGH:	
AC Input Voltage: - Single-phase (L1 - N and L2 - N) - Split-phase* (L1 - L2)	80 - 138Vac 160 - 276Vac
Frequency (input/output)	60Hz
Continuous AC current (input/output)	40A

\* L1-N must be within the single-phase qualification voltage range.

## ELECTRICAL SPECS - 12 VDC POWER SUPPLY

	FREEDOM EX 4000
Nominal DC Output Voltage (fully regulated)	13.5VDC
Maximum DC Output Current	45ADC continuous (at 77°F (25°C) ambient) 50ADC for 15 minutes (at 77°F (25°C) ambient) 70ADC for 6 minutes (at 77°F (25°C) ambient)
Typical Application*	Powering 12 VDC Loads

\*Not to be used as a battery charger

## ELECTRICAL SPECS - COMMUNICATIONS SUPPORTED

	FREEDOM EX 4000
Recreational Vehicles (RV)	RV-C Protocol
Trucking Vehicles (future offering)	J-1939 Protocol
Marine Vessels (future offering)	NMEA-2000 Protocol

## GENERAL SPECS

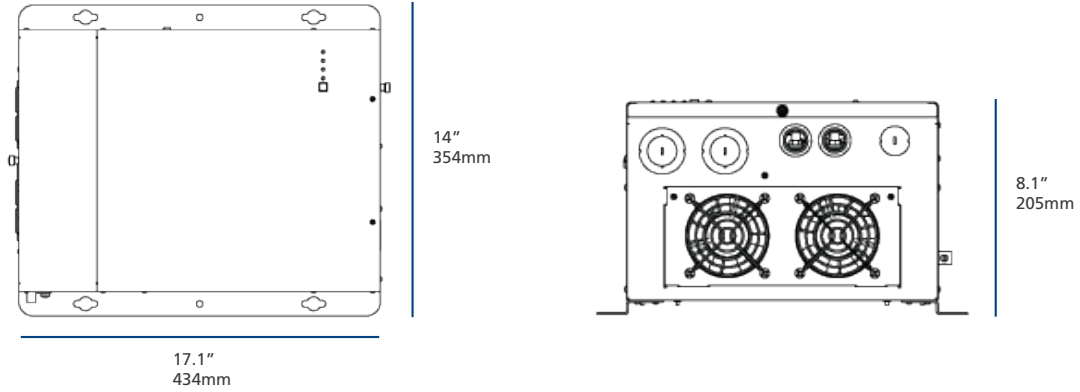
	FREEDOM EX 4000
Operating Temperature Range	14 to 140°F (-10 to 60°C), with output derated above 104°F (40°C)
Storage Temperature Range	-40 to 158°F (-40 to 70°C)
Operating Humidity Range	5 to 95% RH, non-condensing
Transfer Relay AC Current Rating	50A (40A continuous)
Part Number	820-4080-41
L x W x H	17.1" (434mm) x 14" (354mm) x 8.1" (205mm)
Net Weight	79.4lbs (36.0kg)

## REGULATORY APPROVALS

### FREEDOM EX 4000

Safety	CSA certified to CSA Std. to CSA 107.1 and, conforms to UL Std. UL458 and UL458 Marine Supplement (drip shield with product number 808-9004 required) ABYC E-11, A-31, A-32
EMC	47 CFR (FCC) Part 15B, Class B and CAN ICES-3(B) / NMB-3(B)

### FREEDOM EX 4000 DIMENSIONS



### ACCESSORIES

Mfg Part #	Description
808-0232-01	BTS (battery temperature sensor)
809-0901	network terminator
023-0189-01	ferrite core
808-0817-03	remote panel
808-0820	20-pin communication harness
808-9004	drip shield

NOTE: Contact Xantrex or your dealer to order these accessories.