



FREEDOM EX INVERTER/CHARGER/CONVERTER DATASHEET



AVAILABLE IN:
RV-C | NMEA2000, 48V $\equiv$
**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, with 50A transfer relay, 80A 48VDC battery charger, 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), NMEA 2000 (Marine) and J1939 for Trucks (future-ready) enabling it to be used in virtually any application that requires integration with 3rd party MFPs and software.



Parallel and Series Stacking



Highly configurable charger designed for lithium ion batteries



Built-in 50A Transfer Relay



Seamless Operation with Generator (or Shore Power) Assist



Extended Surge Rating



48 to 12VDC Voltage Converter Output



Ignition Control



Power Share prioritizes AC Loads

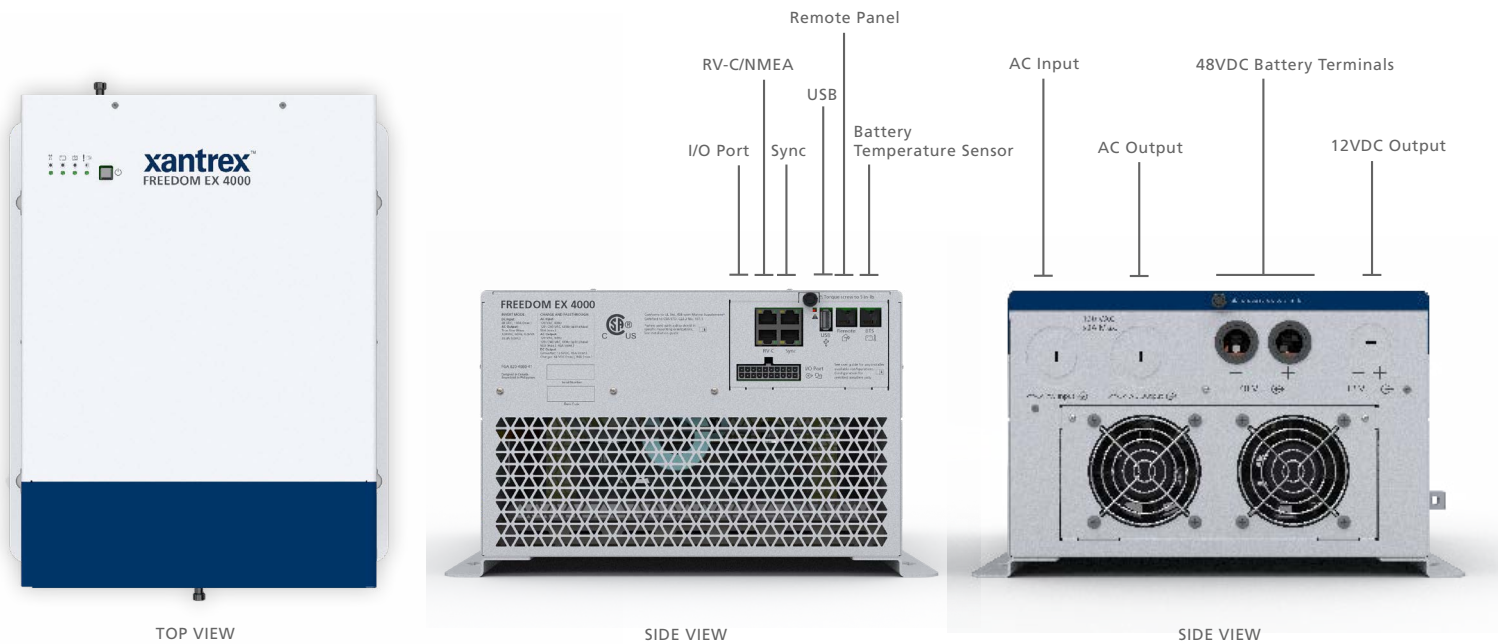
APPLICATIONS:



**3 YEAR
WARRANTY**

www.xantrex.com
CUSTOMER CARE: 1.800.670.0707

Copyright © 2025 Xantrex LLC. All Rights Reserved. All trademarks are owned by Xantrex LLC.



PRODUCT FEATURES

DC-DC Voltage Converter

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

Highly configurable charger 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 (for RV-C)

- 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, 820-4085-41) 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
Transfer Relay AC Current Rating	50A (40A continuous)

* 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 (820-4080-41)
Marine Vessels	NMEA-2000 Protocol (820-4085-41)
Trucking Vehicles (future offering)	J01939 Protocol

GENERAL SPECS

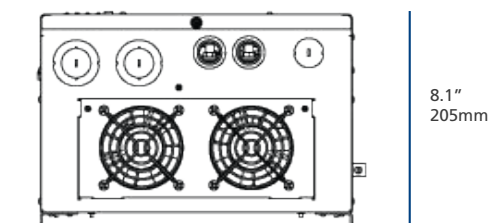
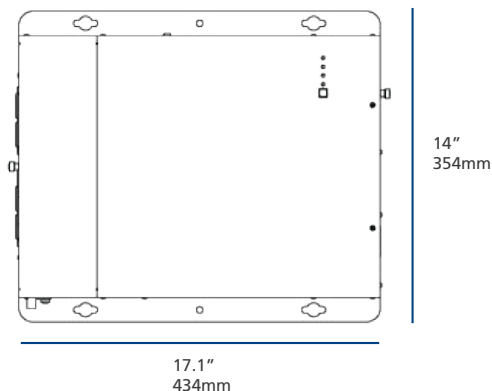
	FREEDOM EX 4000
Operating Temperature Range	14 to 140°F (-10 to 60°C), with output derated above 104°F (40°C)
Storage Temperature Range	-40 to 158°F (-40 to 70°C)
Operating Humidity Range	5 to 95% RH, non-condensing
Part Number	820-4080-41 (RV-C) 820-4085-41 (NMEA)
L x W x H	17.1" (434mm) x 14" (354mm) 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	RJ45 plug CANbus network terminator
023-0189-01	ferrite core
808-0817-03	remote panel
808-0820	20-pin communication harness
808-9004	drip shield
808-1893	RJ45 to NMEA2000 Micro-C connector cable 1m length

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

CONTACT

CUSTOMER SERVICE

1.800.670.0707
 customerservice@xantrex.com
Hours of operation:
 6:30am - 4:30pm PST, Monday to Friday



facebook.com/Xantrex



@Xantrex



youtube.com/XantrexTechnology

LEARN MORE ON:

www.xantrex.com