

BZ PRODUCTS, INC. INSTALLATION MANUAL

VERSION 1.5

MODEL X8 and X16 VOLTAGE CONVERTERS

**CAUTION! READ ALL INSTRUCTIONS PRIOR TO
INSTALLING OR USING THIS EQUIPMENT**

SAFETY INSTRUCTIONS

Refer service to qualified service personal. Incorrect installation may result in risk of fire. Remove all sources of electrical power before servicing this equipment. Reverse polarity connection to the load may cause damage to the load and the converter. Provide input over current protection to the converter.

**CONNECTING BATTERY REVERSE POLARITY TO THE BATTERY INPUT
WILL DAMAGE THE CONTROLLER AND VOID THE WARRANTY.**

**CAUTION: ATTEMPTING TO USE THE X8/X16 CONVERTER TO CHARGE A
BATTERY MAY DAMAGE THE CONVERTER AND VOID THE WARRANTY.**

DESCRIPTION The X8 and X18 are high efficient step down voltage converters. Design of the converter is optimized for nominal 24 and 48 volt battery systems. The converters feature an internal Low Voltage Shutoff, load fuse, input and output indicators, manual on/remote/off switch and NEMA 3R enclosure.

SYSTEM LAYOUT Plan your installation. Install the converter near the battery bank. Avoid installing the converter in wet, damp or small confined locations. Do not install the converter in direct sunlight. Use short direct wiring. Install the converter in accordance with state, local and national electrical codes. Securely fasten the converter to a wall or other suitable structure. Provide support for all wiring.

WIRING Use high quality stranded wire only. Solid wire is not recommended. The X8/X16 wire connector will accept up to # 2 wire. Protect wire from damage. Clearly labeling all wiring will simplify installation and help prevent wiring errors. Permanent wire labels are available from electrical parts suppliers. Rout wiring as directly as possible to the load and battery. Take care to follow the wiring diagram exactly.

CAUTION REMOVE ALL SOURCES OF ELECTRICAL POWER BEFORE REPLACING FUSE

FUSES The converter features an internal ATO type output fuse. Replace fuse with the same type and rating. See wiring diagram for fuse location. A 20 amp fuse and fuse holder should be installed in the battery positive wire within 9" of the battery positive terminal. See wiring diagram for more details.

DURING OPERATION THE X8/X16 MAY FEEL WARM

OPERATION X8/X16 operation is fully automatic. When the battery voltage is above the operating voltage of the converter output power will be produced. If the battery voltage falls below the operating voltage the converter will turn off. When the battery is recharged the converter will turn on and produce output power. See specification for shutoff and turn on voltages. Refer to the wiring diagram for remote on/off connections. Refer to wiring diagram to determine switch positions for input and output voltages. **The low voltage disconnect may be disabled. See SW-1 settings.**

X8/X16 SPECIFICATIONS:

Enclosure	NEMA 3R 8"X 8"X 4"	Knock outs	1/2" & 3/4"
Input Voltage	100 VDC Max	Output voltage	13.8 and 27.6 VDC
Output current X8	8 amps 14 amp surge	Output noise	< 100mv @ 6 amps
Output current X16	16 amps 22 amp surge	Output noise	< 100mv @ 14 amps
Shut off voltage 24 VDC	20 VDC ± 1 VDC	Shutoff voltage 48 VDC	44 VDC ± 2 VDC
Turn on voltage 24 VDC	22 VDC ± 1VDC	Turn on voltage 48 VDC	48 VDC ± 1VDC
Control switch	on/remote/off	Remote logic	open=on closed= off
Standby current	.05 amps nominal	Efficiency	>95% @ 75% full load
Output fuse X8	10 amp ATO type	Output fuse x16	20 amp ATO type
Input indicator	Red led lights when battery voltage is present		
Output indicator	Yellow led lights when output voltage is present		

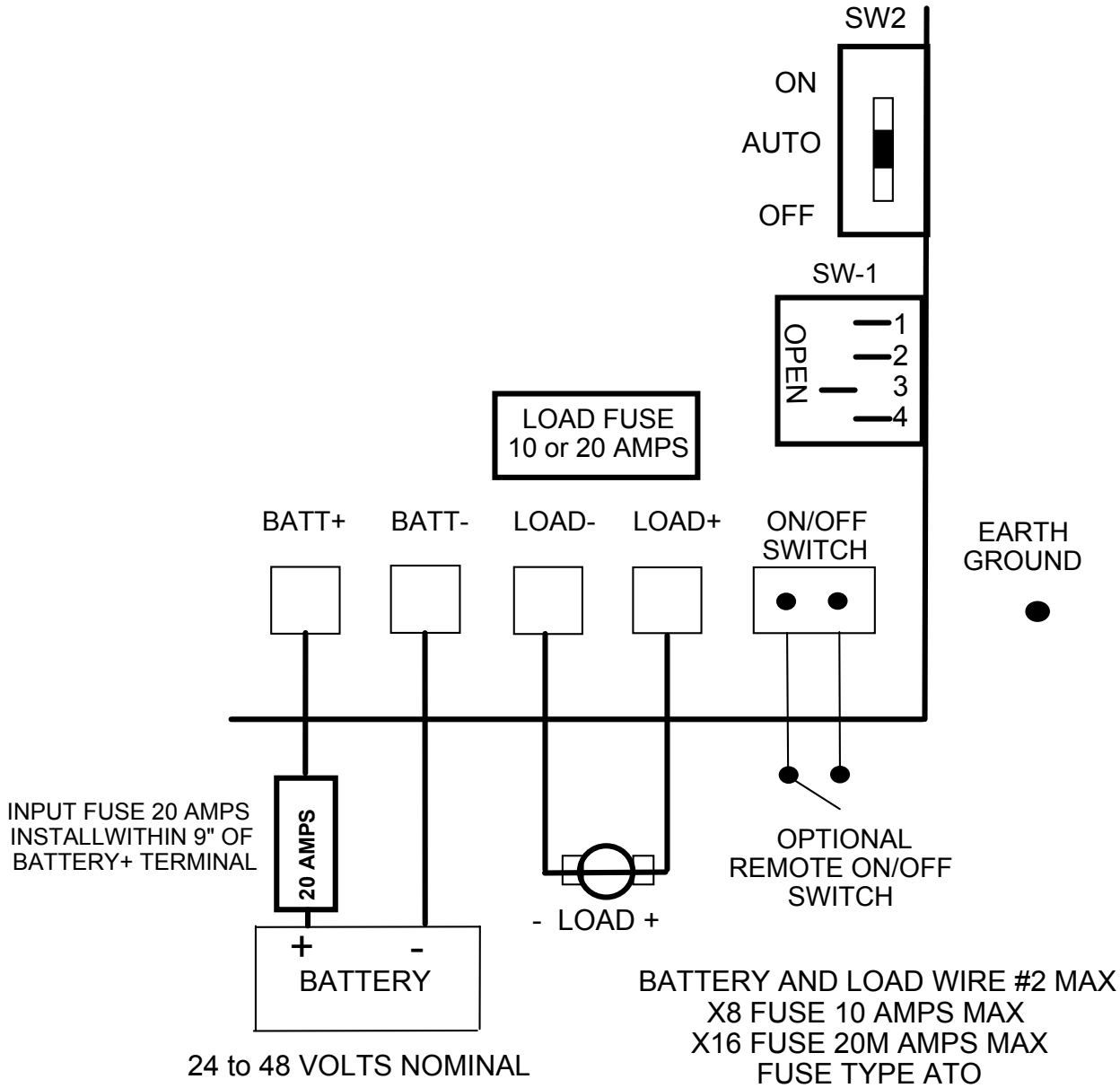
MAINTENANCE The converter requires little maintenance. Clean the converter with a damp cloth. Inspect all wire connections. Tighten all connections as required. Keep batteries clean.

WARRANTY BZ Products, Inc. Model X8 and X16 are warranted to be free of defects in material and workmanship for five years from the date of purchase. Failure to provide correct installation, operation or care for this product, in accordance with the instruction manual, will void the warranty. Product liability shall be limited to repair or replacement, at the discretion of the manufacture. The manufacture is not responsible for the labor or other charges necessitated by the removal, transportation, or reinstallation of any defective product. Warranty does not cover damage due to, mishandling, abusive conditions, lightning, or exposure to weather. No specific claim of merchantability shall be assumed or implied beyond what is printed in this manual. No liability shall exist from circumstances arising from the inability to use this product, or it's inappropriateness for any specific purpose. In all cases, it shall be the responsibility of the customer to insure a safe installation in compliance with local, state and national electrical codes.

RETURN PROCEDURE To return a model X8/X16 converter for repair provide the following information. Name/Company name, return address, daytime phone number, description of failure, copy of sales receipt. Return shipping charges collected via COD.

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X8/X16 VOLTAGE CONVERTER
 WIRING INSTRUCTIONS VER 1.5
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SW 1 SETTINGS

