

SPECIFICATIONS

12 V DC to DC CONVERTER



Application

The environmentally sealed converter reduces truck battery volts to a 12 V output to supply power for vehicle lighting and accessories, including head lights, warning lights, blowers, windshield wipers and horns.

The converter is designed to work with an electric vehicle with a traction battery supply between 24 and 80 volts. The converter output is normally energized when the key switch is closed, and will cease to operate when the key switch is opened. All terminals and circuitry are isolated from the converter cover. The converter output terminals are not isolated from battery input.

Ratings

	IC4486CNV4LF (without key input)	IC4486CNV4HF (without key input)
Voltage Input	24–48 volts DC	72–80 volts DC
Voltage Output	12.5 volts DC	12.5 volts DC
Current Limit Curve	16 amps continuous 20 amps at 80% on time 22 amps at 65% on time 25 amps at 50% on time	16 amps continuous 20 amps at 80% on time 22 amps at 65% on time 25 amps at 50% on time
Input Filter	Included for use with SCR and transistor traction controls	Included for use with SCR and transistor traction controls
Frequency	Constant - 15 kHz	Constant - 15 kHz
Dimensions (H x W x L)	2.88" x 6.86" x 5.0"	2.88" x 6.86" x 5.0"
Ambient Temperature	0 ° to 40 ° C	0 ° to 40 ° C

Installation:

The converter base is drilled with four mounting holes suitable for No. 10 or M6 screws. All four holes should be used to insure optimum thermal transfer to the mounting surface. For the converter to be most effective, it should be mounted to the vehicle frame. The metal vehicle frame will act as an additional heatsink, keeping the converter package cooler. Ideally, the converter should be mounted (in any plane) in an area protected from water, oil and battery acid. Apply a thin layer of heat-transfer grease (such as Dow Corning 340) between the converter heatsink and the vehicle frame, prior to converter installation.

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Maintenance:

Exposed control connections should be kept free of dirt, paint and contamination that could change the effective resistance between points. Wiring should not be directly steam cleaned. In dusty areas, blow low pressure air over the converter to remove dust. In oily or greasy areas, a mild solution of detergent or denatured alcohol, can be used to wash the control, and then low pressure air should be used to completely dry the control.

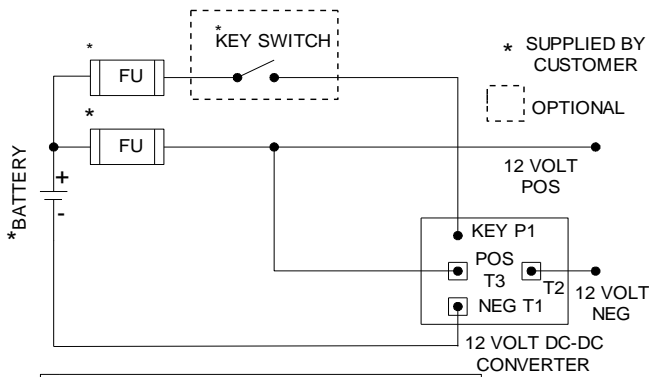
Caution

Before any adjustment, troubleshooting, or activity requiring physical contact with the converter is performed, raise the vehicle drive wheels off of the floor, disconnect the battery and discharge the capacitors. Reconnect the battery, as needed, for specific measurements. Capacitors should be discharged by connecting a 200-ohm 2-watt resistor between the positive and negative terminals on the converter.

Excessive loads on the converter, such as a continuous current draw in excess of 16 amps, will cause the thermally protected converter to operate at reduced output. The converter will automatically resume full operation when the excessive current draw is reduced.

The converter is normally energized when the key switch is closed and ceases operation when the key switch is open.

Typical Connection Diagram:



CONTROL PLUG CONNECTIONS

TERMINAL	POWER CONNECTIONS
T1	BATTERY NEGATIVE
T2	12V NEGATIVE
T3	BATTERY POSITIVE
	12V POSITIVE

TAB	CONTROL CONNECTIONS
P1	KEY SWITCH INPUT (OPTIONAL)

DEVICE OR PART TO PART	HARDWARE	HARDWARE TYPE	TORQUE LBS/IN
T1 CABLE	M8 x 1.25	BOLT	75
T2 CABLE	M8 x 1.25	BOLT	75
T3 CABLE	M8 x 1.25	BOLT	75

Trouble Shooting:

Symptom: No Output

1. Check for battery voltage between battery negative and battery positive on the converter. This voltage should be above 18 V.
2. Check for battery voltage at the key input (if available).
3. Unplug the battery and remove the load cable from the negative 12 V connection, without allowing the cable to come in contact with the frame or any other object. Reconnect the battery. If 12 V is not present between the negative and positive 12 V terminals, replace the converter. If 12 V is present, a short exists at some other point in the system.

Symptom: Output of <12 V or >13 V

1. Check for battery voltage between battery negative and battery positive on the converter. This voltage should be above 18 V.
2. Unplug the battery and remove the load cable from the negative 12 V connection, without allowing the cable to come in contact with the frame or any other object. Reconnect the battery. If 12 V is not present between the negative and positive 12 V terminals, replace the converter. If 12 V is present, a short or an excessive load exists at some other point in the system, and the converter is operating in current limit. If output continues to exceed 13 V, replace the converter.

Typical Outline:

