



Model 695 CE Rev 9, DC-DC Converter
Owner's Manual

March 8, 2017

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I Introduction

Model 695CE is shipped in fully assembled form. After removing the unit from its packaging and ensuring that it has suffered no damage in shipment, it is important to read this manual and follow its instructions to ensure proper connection and mounting.

Model 695CE is a high power 12 Volt to 24 Volt DC-DC converter capable of delivering 55A to its load. It has designed for mounting in vehicles of all types and is capable of enduring harsh vibration and shock conditions

II Installation

2.1 Mounting

Model 695CE has an overall length of 17.8 inches with mounting flanges included in this dimension. Mounting hole centers are 17.3 x 3.93 (inches)

2.2 Connections

Tools Required - 1 flat blade screw driver (1/4 in. wide)

Figure 1 shows the connection panel view of the 695CE.

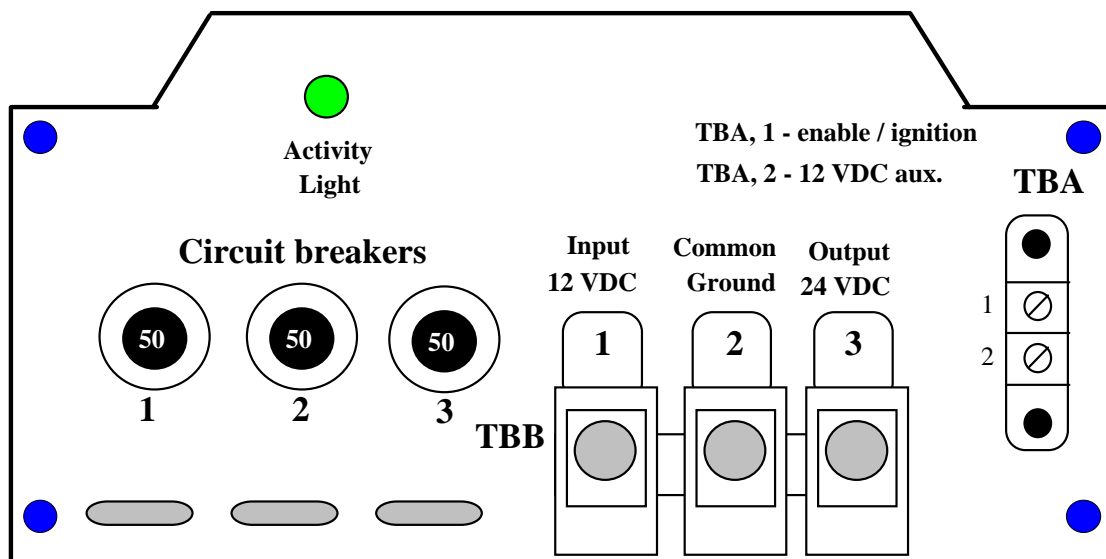


Figure 1

Prior to Main Input Power Connections:

Prior to hook up to the vehicular power source, the buttons on the three circuit breakers shown in Figure 1 should be pulled out into the disconnect position. This position is indicated by the exposure of the white portion of the breaker button shaft. This ensures that there is no sparking from the source of power and also allows a reprieve incase there is a hook up error. (This error would have to be detected prior to energizing the unit).

Once the breaker buttons are pulled, and the source power is OFF, proceed to make connections as follows:

- A) Connect input Ground to position #2 of TBB
- B) Connect output Ground to position #2 of TBB.
- C) Connect input .+12V line to position #1 of TBB.
- D) Connect output +24 V line to position #3 of TBB.

Prior to depressing the circuit breaker buttons, installer should:

- 1) Ensure that hook up in steps A through D is correct.
- 2) Select the suitable method of converter activation.

2.3 Methods of Converter Activation

- A) Connect terminal #1 to terminal #2 on terminal block TBA. The 695CE is so configured when shipped from the factory. This configuration allows for converter activation by turning the source power ON and OFF.
- B) The converter can be switched from the vehicle's ignition system. For this method, remove the shorting jumper between terminals #1 and #2 on TBA and connect terminal 1 to the ignition switch or other switch that can enable terminal 1 to access 12 VDC. When the ignition switch supplies 12V to pin #1, the Activity light will illuminate indicating an enable command.
- C) Terminal #1 can be connected to terminal #2 through a remote ON/OFF switch or relay thereby activating the converter and illuminating the Activity light.

III Internal Adjustments

Varying the adjustments of the Model 695CE require the technician to have a stable DC power supply variable from at least 10 VDC to 15 VDC with a minimum 20A current capability.

To access adjustments turn the unit upside down and remove the base plate by unscrewing the 4 corner screws.

Orient the converter upside down and horizontally with the connection panel to the left as shown in figure #2.

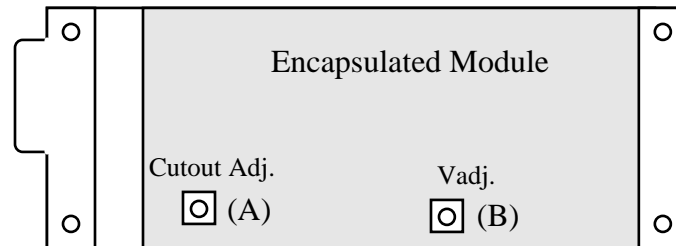


Figure #2

Two adjustments (A) and (B) can be noticed.

Adjustment (A) is used to adjust the converter's low voltage cutout point. This point corresponds to the minimum input voltage necessary to keep the converter "ON" (maintaining approximately 26V at the output).

When the converter is in the "OFF" state, the output voltage is zero.

Adjustment (B) is used to adjust output voltage.

3.1) Voltage Adjustment

a) Connect the 695 as shown in Figure #3. This adjustment is performed at no load.

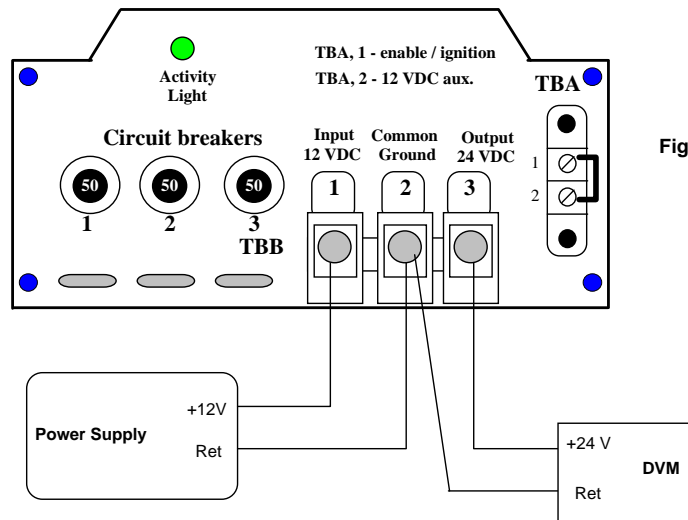


Figure #3

b) Make sure terminals 1 & 2 on TBA are connected and that the Power supply is turned off. Set the DVM to the appropriate scale to read 24 VDC at the desired accuracy.

c) Energize power supply and adjust its output voltage to +12 VDC. Turn adjustment (B) to the desired output voltage (between 24 VDC and 28 VDC) as observed on the DVM.

d) Turn off power supply.

3.2) Low Input Voltage Cutout Adjustment

The Model 695CE is provided with a circuit to protect against destructively deep battery discharges, or discharges beyond the point where the vehicle battery can no longer produce ignition.

695CE's are adjusted at factory to a low voltage cutout (LVC) of 11.0 V. When the vehicle voltage is drawn below 11.0 Volts, the converter shuts off and automatically stops drawing current from its source. When this occurs a concurrent audible click can be heard.

The low voltage cutout adjustment set up is as shown in Figure #4.

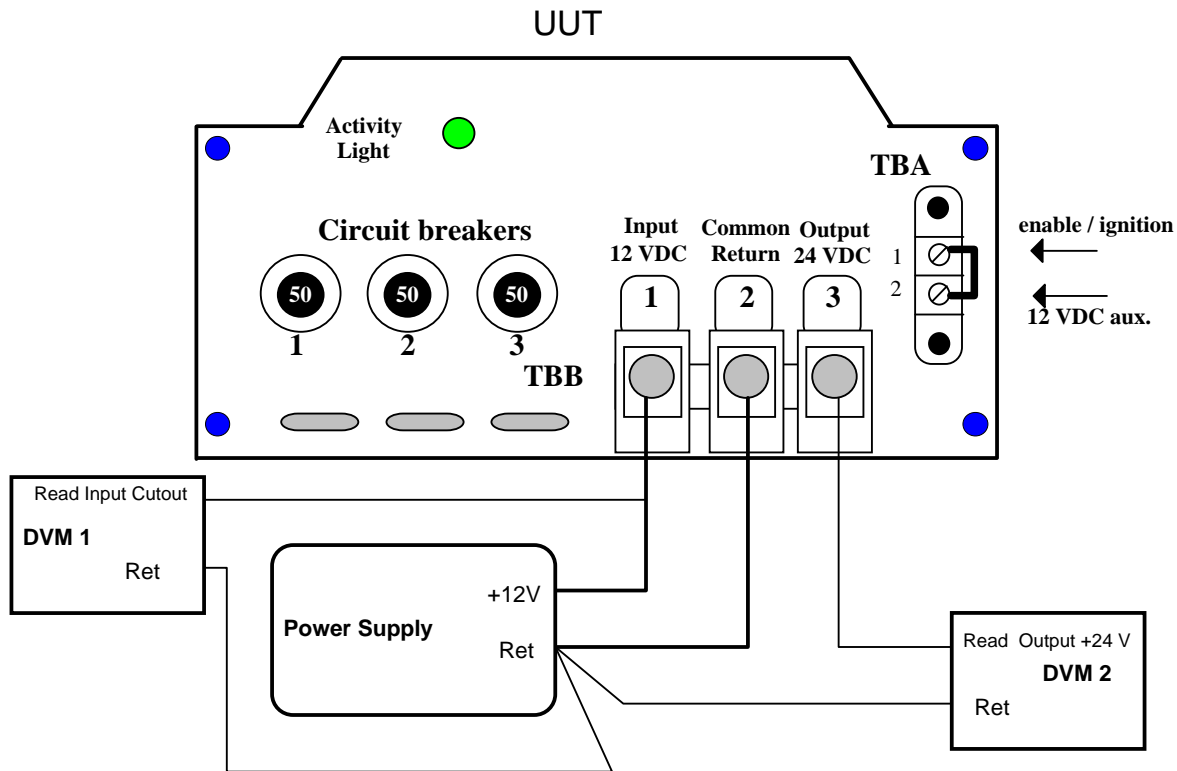


Figure #4

- Turn adjustment (A) completely clock wise (see figure #2)
- Activate converter by turning "ON" the power supply and setting it to the desired cutout voltage (typically 10.8 VDC).
- Very gradually turn adjustment (A) counter clockwise until a click can be heard.
- Confirm that the output is off.

There is approximately 0.8 Volts of Hysteresis between the cutout and turn on voltages of Model 695CE.

e.g. if 11 VDC is selected for cutout, that unit will turn back on when an input of at least 11.8 Volts is reapplied. This design serves to prevent cyclical switching when battery voltage recovers with load removal.

IV Warranty and Repair

Should your investigations indicate that your Model 695CE is defective or damaged and your unit is still under warranty, contact SEC America, LLC at 802-865-8388 and obtain return merchandise authorization for exchange or repair. If the defective unit is new a credit may be issued at the discretion of SEC America Corp.

If the warranty period has expired or if the warranty has been violated due to operator error or misuse, then call:

SEC America Corp., Repair Department, at **802-865-8388** or fax SEC America, LLC at 802-865-8389 to receive authorization for shipment back to factory for a survey and possible repair.

Warranty

The Model 695CE has a 2 year warranty covering parts and labor. The warranty is as follows:

LIMITED WARRANTY

We warrant each instrument, sold by us, or our authorized agents, to be free from defects in material and workmanship and that it will perform within applicable specifications for a period of two years after original date of sale. Our obligation under this guarantee is limited to repairing or replacing any instrument or any part thereof, except fuses and pilot lights, which shall within one year after delivery to the original purchaser, be returned to us with transportation charges prepaid, prove after our examination to be thus defective.

The above limited warranties take the place of all other warranties, expressed or implied, and correction of such defects by replacement or repair shall constitute a fulfillment of all obligations under the terms of the warranties. The warranties do not cover any unit that has been damaged either in transit or by misuse, accident or negligence. No warranty or representation by anyone other than this Company shall be binding on us.

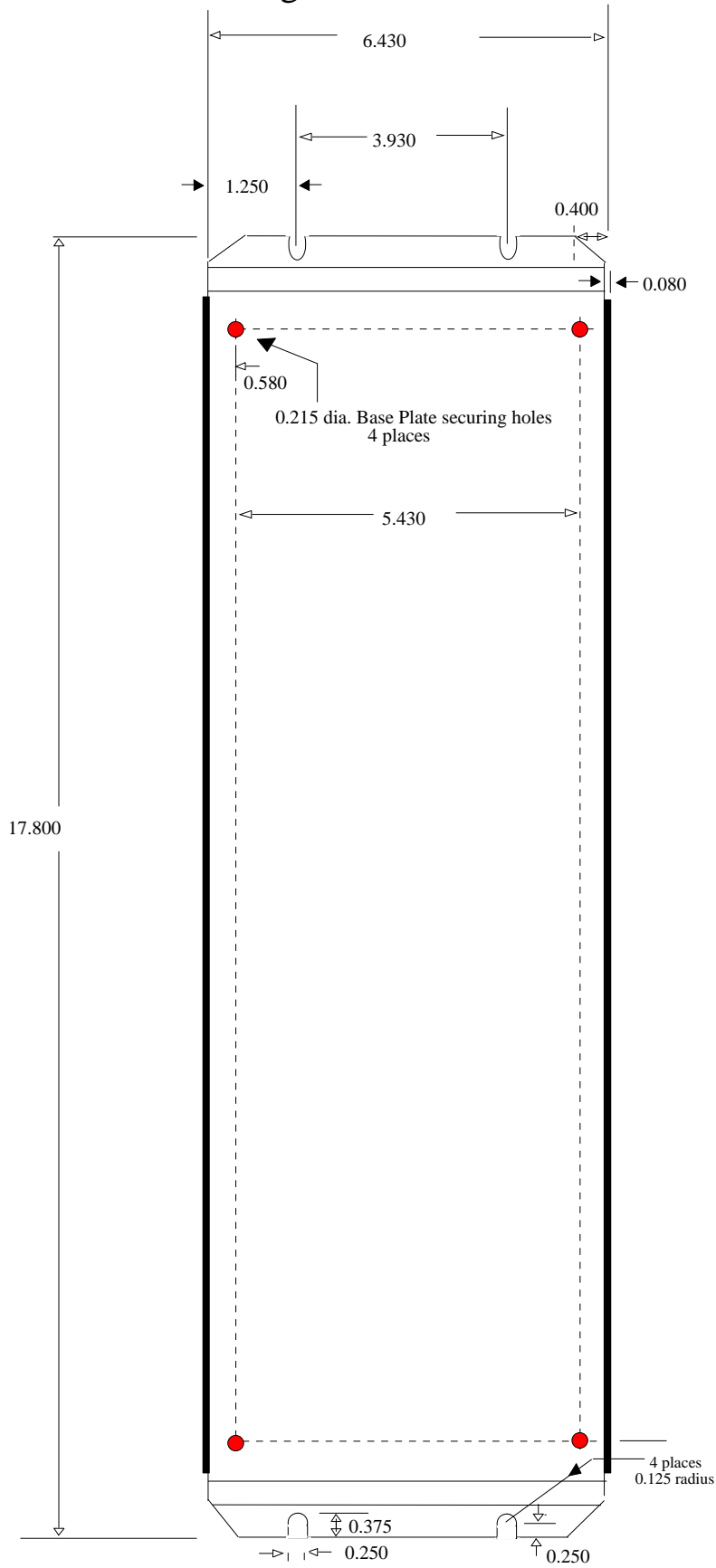
To return a unit send only to the following address:

**SEC America Corp.
78 Ethan Allen Drive
S. Burlington, VT 05403**

NOTE: This warranty does not cover any collateral damage to circuits or components upstream or downstream which may result from failure of this device.

PLEASE RETAIN YOUR ORIGINAL BILL OF SALE. IT MUST BE SUBMITTED WHEN MAKING ANY WARRANTY CLAIM

V Base Plate Mechanical Drawing



VI Electrical Specifications:

Output Voltage:	26.4 VDC Nominal
Output Voltage Adjust Range	24.5 VDC to 28.0 VDC
Continuous Max Load Amps:	55 ADC @ 40C ambient (Input 12.5 VDC) 40 ADC @ 60C ambient
Maximum Power Dissipation:	90 Watts @ Full Load (55A, 26.4 VDC out)
Maximum Input Current:	125 A (12 VDC in)
Overload Protection:	Electronically current limited (primary protection) Magnetic Circuit Breakers at the Input (secondary protection)
Cooling:	Convection or Forced Air Thermostat Controlled Fan
Output Ripple Voltage:	10 mV RMS (20C to 75C) 50 mV RMS (-30C)
Input Voltage Range:	10.5 to 15 VDC
Input/Output Isolation:	Input and Output returns are Common
Low Voltage Cutout Circuit:	
Low Voltage cutout point:	Adjustable from 10.5 to 13.0 VDC (internally adjustable)
Low Voltage cutout Hysteresis:	0.8 VDC @ 13.0 V/ 0.7 VDC @ 10.5 VDC

Activation Circuits:

- 1) The unit may be activated through the command terminal #1 of terminal block TBA which when connected to +12 VDC of the vehicle will turn on the converter.
- 2) The converter may be turned on by activating the source power with the jumper between terminal #1 and terminal #2 connected.

Ambient Operating Temperature:	-30C to + 60C
Maximum Humidity:	100% non condensing
Maximum Elevation:	15000 ft. above sea level

Mechanical Specifications:

Dimensions:	16.3 L x 7.0W x 3.5 H (inches overall maximum)
Shipping Weight:	13 lb.
Construction:	Aluminum housing with painted steel base and ends plates
Mounting Method:	#12 Hardware via front and rear mounting flanges
Mounting Centers:	16.5 x 3.93 (inches)
Hook Up:	3 Position Splicer Terminal Blocks