

**OPERATING INSTRUCTIONS FOR
MINI ENCAPSULATED
Linear Power Supplies & DC-DC Converters**

INPUT VOLTAGE: AC input models operate on 105-125 VAC, 47-420 Hz. (Models with numbers ending in "-230" operate on an input of 210-250 VAC, 47-420 Hz.) DC input models operate in a range to $\pm 10\%$ of the nominal input voltage, and must be **connected with polarity as marked**.

OUTPUT VOLTAGE ADJUSTMENT (Trim): Output(s) factory set to within $\pm 1\%$ of the nominal output voltage rating. (AC input models having outputs of 1 to 9 volts, within 2%.) If necessary, single output models can be more precisely calibrated to the nominal value by the use of an external trim resistor connected between the T/C* pin and one of the output pins. With certain units, connecting the resistor from the T/C pin to the (+) output pin increases voltage, and connecting to the (-) output pin decreases it; with other units, the reverse applies. Begin trimming with approximately 1 megohm resistance, and decrease resistance until calibration is attained. Do not use a resistance value of less than 20K. Trimming the output to a voltage other than the nominal rating may adversely affect performance and may result in damaging the supply.

Duals having a three-terminal output configuration provide balanced plus/minus outputs which track within 1%. The center (T/C*) terminal is common. Outputs are not trimable.

*T/C terminal: T = 'Trim' on single output models.
C = 'Common' on dual output models.

SHORT CIRCUIT PROTECTION: All Acopian Mini Encapsulated power supplies are of rugged construction and designed to withstand substantial overloads or short circuits for reasonable lengths of time. Prolonged operation under overloaded or shorted conditions is not recommended.

TRANSIENT INFORMATION: If the AC input power contains large voltage spikes ('noise') induced by the switching of high currents, inductive loads, electro-mechanical components, etc., the input power leads to the supply should include some means of transient suppression. Otherwise, a portion of the noise may be coupled through the supply to the load. Also, the supply could be damaged. The means of suppression that is easiest to install is a 1 mfd capacitor or a metal oxide surge suppressor (MOV) across the AC input terminals of the supply. In extremely severe cases, the use of RF chokes in series with each side of the line may also be required.

INSTALLATION: 4-40 threaded holes are provided for mounting. Holes in the mounting surface must be in alignment with the power supply mounting holes and mounting screws should not be tightened excessively; otherwise the resultant stress may damage the case.

CAUTION: To provide protection from risk of fire, include in the input wiring a UL Listed 250V time-delay fuse with the amp rating listed below (contact factory for fuse ratings for 230V input models):

115 VAC Input Models

Case Size	Fuse Size
ES-10	0.1A
EL-10, EB-10	0.2A
EL-13, EB-13	0.25A
EL-20, EB-20	0.375A

DC Input Models

Vdc Input	Case Size	
	ESC-10	EBC-10 ELC-10
5Vdc	2.5A	5A
12Vdc	1A	2.5A
15Vdc	0.8A	2A
24Vdc	0.6A	1.25A
28Vdc	0.5A	1A
48Vdc	0.25A	----

Applies to -certified models:

CE Marked To:
 Directive 2011/65/EU (ROHS Recast)
 Directive 2006/95/EC (Low Voltage Directive)
 Regulation (EC) No 1907/2006 (REACH)
SPECIAL MEASURES AND LIMITATIONS
 To maintain compliance with the Low Voltage Directive, the following special measures and limitations must be observed when the product is placed into service:
 • Evaluated for use in Pollution Degree 2 environment.
 • Intended for connection to Class 1, TN power system.
 • Models with outputs of 36 volts or less are considered to have SELV outputs.
 • Models with outputs greater than 36 volts are considered to have hazardous voltage outputs and should not be located in an Operator Access area in the end product.
 • All models are considered to have non-hazardous energy levels.
 • All models require an external fuse to be used in the ungrounded (hot) side of the AC line.
 • See catalog for electrical and mechanical specifications.
 • Intended to be installed within end-use equipment.

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