

# 86010-01

## POWER SUPPLY

### 48Vdc 2AMP

#### 1. General

1.01 The 86010-01 is a 48 volt DC, 2 Amp, high efficiency power supply. The primary power source is standard 115 Volt ac, 60 Hz.

1.02 The unit is enclosed in an all-metal container with removable, interchangeable mounting brackets to allow it to be KTU mounted, inserted into a single slot of a standard 400 type shelf, or to be mounted on a flat surface. Figure 1 shows the various mounting bracket positions. The front panel includes an LED that provides a visual power on-power off indication.

1.03 The 48 Vdc is floated so that either terminal of the terminal strip output may be grounded for positive or negative operation.

#### 2. Operating Description

2.01 A current mode switched regulator design is used for reliability and efficiency. The input 60 HZ AC power is routed through an internal fuse and RFI filter to a rectifier circuit. The fuse provides protection in the event of an internal component failure. The rectified power supplies the converter which runs at approximately 100 kHz to provide a good balance between efficiency and component size. The converter provides current mode control and overvoltage lock-out to protect the power MOS-FET switching element.

2.02 The converter's output is an isolated AC signal which is shaped and rectified to produce the DC output. The shaping is used to reduce the current rise time during switching. This reduces peak current values and switching losses to provide higher efficiency. An isolated control winding on the filter choke provides feedback to the primary side regulator/converter. The current mode design protects against output overloads.

2.03 The DC output is routed through an additional RFI filter to the output pins. A front mounted LED is powered by the 48 Vdc output to indicate POWER ON.

#### 3. Installation

3.01 When the 86010-01 is used in a 400 shelf (refer to figure 1 for the mounting bracket position for this application) the card edge connector at the rear of the unit plugs into the shelf connector providing 48V on pin 35 and ground pin 17.



3.02 When the unit is used in the KTU mount (refer to figure 1), the power is supplied through the binding post terminals on the rear panel. Care must be taken to size the interconnect wiring to accommodate the current requirements. In any case, the wiring should be at least 20 gauge.

3.03 When the unit is ready for operation, it is turned on simply by plugging the AC cord into a standard three-prong wall outlet. There are no on-off or option switches to be set. If the unit is working properly, the LED indicator on the front panel will illuminate after approximately 5 seconds. If, for some reason, it does not light, check the output terminals for 48V with a VOM. If there is no voltage, or low voltage present, check the 115 Vac source. If that's okay, then remove the power supply and return it to the factory, along with a nasty note, for repair or replacement. Field repair of the unit is not recommended and may void the warranty.

#### 4. Maintenance

4.01 The 86010-01 has no adjustments or test points other than the output terminals. It either works or it doesn't, so the only maintenance is to replace it if it fails.

#### 5. Warranty

5.01 All Electro-Tech products are guaranteed to be free of defects and to operate as specified for a period of

5 years (unless otherwise stated) from date of purchase. Abuse or misuse of the product may void the warranty.

- 5.02 The warranty will be voided if the unit is repaired or modified by anyone other than the factory or its authorized representative.
- 5.03 Quick turn-around replacements are available from the factory:

**ELECTRO-TECH PRODUCTS**

2001 East Gladstone Street, Building A  
 Glendora, CA 91740  
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**6. Specifications**

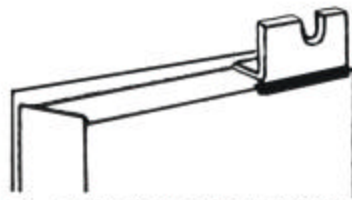
- 6.01 Input voltage = 115 Vac  $\pm$  20 Vac, 60 Hz. 113 watts.
- 6.02 Output voltage = 48 Vdc  $\pm$  2V.
- 6.03 Output current = 2 Amps maximum.
- 6.04 Heat dissipation at maximum current = 113 watts.
- 6.05 Efficiency = 85% minimum.
- 6.06 EMI/RFI conforms to FCC Docket Part 15.
- 6.07 Talk battery requirement conform to FCC Part 68.306 and 68.308.
- 6.08 Line/load regulation = .05 minimum to maximum current, 95 to 135 Vac.
- 6.09 Minimum load current for full regulation = 50 MA.



A. 400 SHELF MOUNTING



B. KTJ MOUNTING



C. SURFACE MOUNTING

Figure 1  
 Mounting Bracket configurations

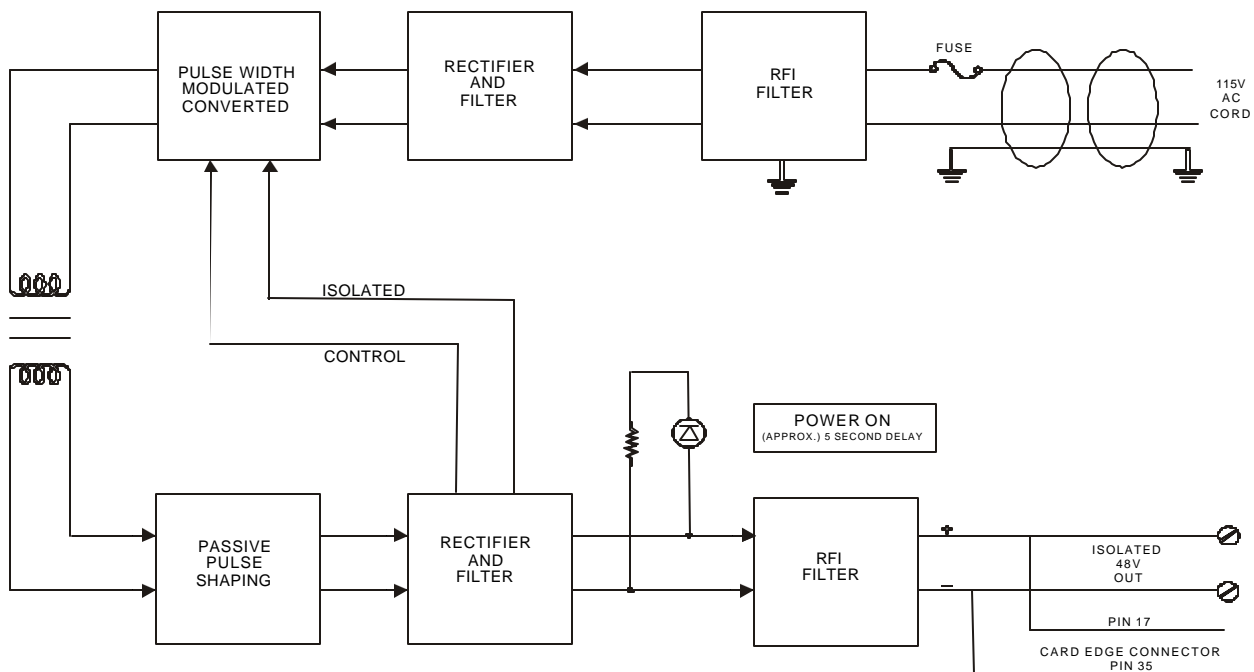


FIGURE – 2 86010-01 48V 2 AMP POWER SUPPLY FUNCTIONAL BLOCK DIAGRAM