

I-PS24 (POWER SUPPLY)

Installation & Operation Instructions

GENERAL INFORMATION

The I-PS24 adjustable power supply is a low cost, dependable external power supply. This unit will accept an input of up to 26 VAC or 36 VDC, and provides an adjustable 1.5 to 26 VDC output. Field voltage adjustment is done by adjusting a potentiometer using a flat-head screwdriver. The I-PS24 is setup for Half-wave rectification from factory, but can be set to Full-wave rectification via jumpers.

MOUNTING

I-PS24 is supplied with a snap track for mounting. The circuit board may be mounted in any position. In equipment / electrical compartments, mounting upside down at top of the enclosure is not recommended as heat build-up could be a problem when running higher current loads.

Use only fingers to remove board from snap track. Slide out of snap track or push against side of snap track and lift that side of the circuit board to remove. Do not flex board or use tools.

WIRING INSTRUCTIONS

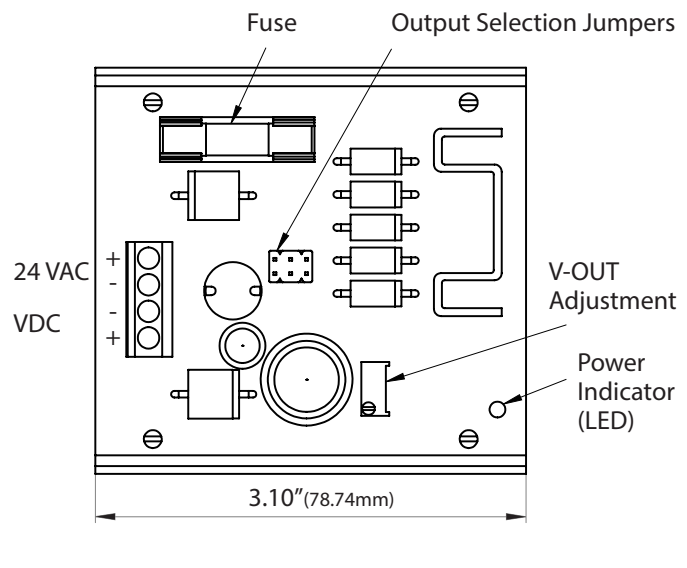
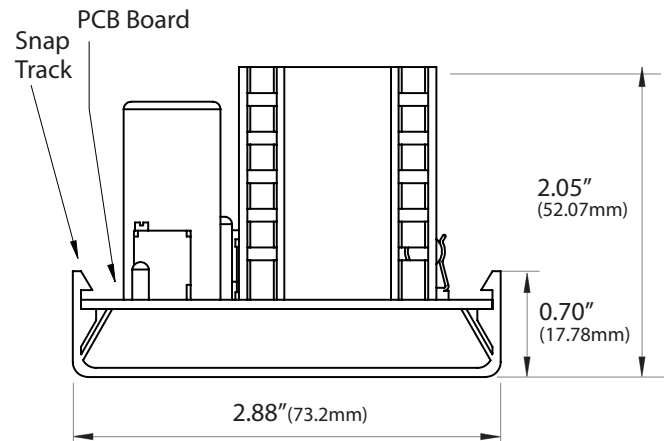
PRECAUTIONS

- **Remove power before wiring. Never connect or disconnect wiring with power applied.**
- **All wiring must comply with local and National Electric Codes.**

• **It is recommended you use an isolated UL-listed class 2 transformer when powering the unit with 24 VAC. Failure to wire the devices with the correct polarity when sharing transformers may result in damage to any device powered by the shared transformer.**

• **In applications where a Pilot Duty or remote relay is required, the I-DO008 transorb can be placed across the coil of the relay to snub electrical spikes when the relays are de-energized. An external transorb may not be required if the relay and I-PS24 power supply is mounted within the same control panel.**

FIGURE 1: DIMENSIONS



WIRING INSTRUCTIONS *(Continued)*

1) Supply Voltage - The input voltage to the I-PS24 should come from an isolated 24 VAC transformer or a 30 to 36 VDC power supply. Connect this to the + 24 VAC – Terminal blocks.

Note: A grounded DC (-) terminal and a grounded 24 VAC Input transformer will blow the unit's fuse in the Full-Wave mode. Also, in half-wave mode, the 24 VAC connections are POLARITY SENSITIVE. Be sure to insure that all 24 VAC minus (-) terminals are connected to the the same lead on the 24 VAC transformer.

Without any load attached, the I-PS24 uses 1.5 VA when powered. Be sure to size the 120 VAC to 24 VAC transformer to handle the power (VA) required by both the I-PS24 and the load connected to the I-PS24. The I-PS24 is 65% efficient with a 24 VDC output voltage setting.

Derate the transformer VA to x%. Determine output power required from the equation (voltage output x current draw from load) = VA load. Example: (24 VDC * 0.2A) = 4.8 VA load. Determine transformer power from the equation (output VA / efficiency) = VA transformer (or similar). Example: (4.8 VA / 0.65) = 7.4 VA transformer.

2) Output Connections – Connect your load to – VDC + Terminal Blocks. Be mindful of polarity.

OUTPUT SELECTION JUMPERS

HALF WAVE - FULL WAVE RECTIFICATION

• The I-PS24 comes with the option of selecting either a Full-Wave or Half-Wave output depending on your application needs. **All power supplies are shipped from the factory in Half-Wave mode.**

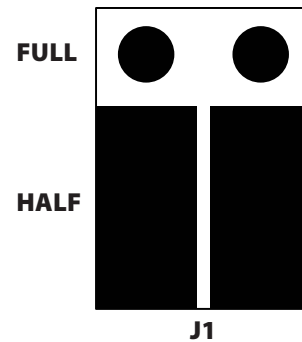
• Make sure there is no power applied to the unit when changing jumpers. Failure to do so may harm the unit or cause damage to any other device connected to the power supply.

HALF-WAVE VERSUS FULL-WAVE IDENTIFICATION

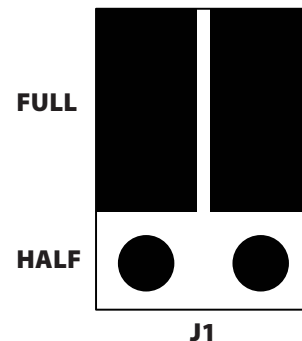
• If a device is half-wave, the signal common will typically be connected to the AC minus (-) terminal on the device. Therefore, with no power applied, take an ohmic measure between signal common and AC (-) using a DMM; the reading should measure less than two (2) ohms.

• If a device is full-wave, the signal common and the AC (-) will read overload or open when measured with a DMM.

HALF-WAVE JUMPER SETTING



FULL-WAVE JUMPER SETTING

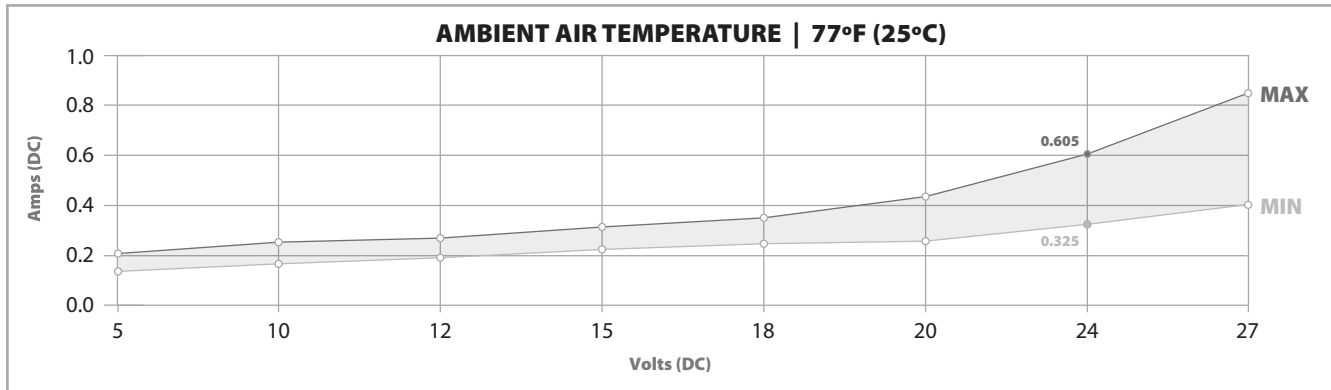


VOLTAGE OUTPUT ADJUSTMENT

The output is factory set to 24 VDC, but can be adjusted from 1.5 to 26 VDC. The voltage output can be changed by adjusting the P1 turn pot with a flat-head screwdriver. Rotate the turn pot screw clockwise to increase the voltage output, or rotate the turn pot screw counter-clockwise to decrease the voltage output.

OUTPUT CURRENT

The maximum output current (mA) will be dependent on multiple factors, including ambient room temperature, voltage, etc. The graph below shows the minimum (bottom line) and maximum (top line) current output.



PRODUCT SPECIFICATIONS

Supply Power	22 VAC to 26 VAC, 50/60Hz; or 30 VDC to 36 VDC
Output Voltage – Factory Set	24 VDC
Output Adjustment Range	1.5 VDC to 26 VDC
Half-Wave/Full-Wave Selection	Jumper Selectable
Overload Protection	Built-in current limiting thermal protection
Ground-Loop Protection	Fuse, 3.15A/250 VAC, 5x20 mm, fast acting (Littelfuse 02173.15MXP or equivalent)
Operating Temperature Range:	32°F to 158°F (0°C to 70°C)
Operating Humidity Range:	5% to 95% RH non-condensing
Connections Wire Size:	Screw Terminal Blocks 14 AWG (2.1 mm ²) to 22 AWG (0.33 mm ²)
Terminal Block Torque Rating:	4 lb-in (0.5 Nm) maximum

W.E.E.E. DIRECTIVE

At the end of their useful life the packaging and product should be disposed of via a suitable recycling centre. Do not dispose of with household waste. Do not burn.

