SWITCHING POWER SUPPLIES

ALL ACOPIAN POWER SUPPLIES MADE IN U.S.A.

Acopian switching power supplies are high performance units that are unusually compact relative to their output ratings. Features include short circuit, overvoltage and thermal protection, 'soft start' operation, automatic shutdown in the event of low input voltage, and status lights that show operational status at a glance: a green indicator signals normal operation, and extinguishes when the current limit control is activated by a short circuit; a red indicator signals shutdown due to latchup of the overvoltage protection circuit, due to an overvoltage condition.

INSTALLATION

Threaded holes on the bottom or right side surface may be used for mounting. The supply may also be rear mounted using the same holes that attach the rear cover plate, provided air intake is not blocked; use standoffs (at least 1" long) or punch holes in the mounting surface. An accessory Mounting Kit (model GB8) is available to enable mounting the power supply when the opposite side of the mounting surface is inaccessible.

It is very important to allow for the free circulation of air around and THROUGH the power supply. Failure to do so will result in thermal shutdown or possible damage to the power supply.

Space at least one inch away from surrounding objects.

CONNECTIONS

Make all connections before applying AC input power.

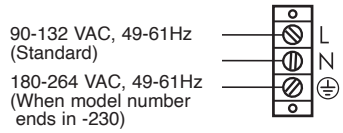
THE SENSING TERMINALS MUST BE CONNECTED to the output terminals, either at the output studs of the power supply or at the load. Failure to have the sense terminals connected will affect the output voltage (usually causing it to be higher than the rating of the supply, and unadjustable), or may result in the overvoltage protection circuit latching the output 'off' and turning on the red OVP indicator. If voltage drops in the output voltage leads (which degrade regulation) are not objectionable, local sensing can be used; leave in place the jumpers provided with the power supply (connecting the +S (sense) to the +OUT stud and the -S (sense) to the -OUT stud). However, if the best possible regulation at the load is required, then remove the jumpers and use two additional leads to connect the sense terminals to the output leads at the load, as shown in the schematic. This configuration permits the power supply to sense and compensate the voltage actually across the load. Note that remote sensing is capable of compensating only limited wiring drops. The voltage across the load, plus the voltage drops through the wiring, must be within the output voltage range of the supply for the voltage at the load to remain within the load regulation specification. Therefore, the wire gauge used for the output lines MUST BE LARGE ENOUGH to assure that their combined voltage drops will not exceed the difference between the maximum output voltage of the supply and the voltage to be maintained across the load.

Keep the EXT ADJ terminals jumpered together except when it is desired to remotely control the output voltage. For remote voltage control, remove the jumper and connect a 2.5K potentiometer (0.5 watt) between the EXT ADJ terminals (for wide adjust output models use a 50K pot, 0.5 watt). Set the remote voltage control fully clock-wise (zero resistance) and then adjust the internal voltage control to the maximum rated output voltage. The remote voltage control resistance is inversely related to the output voltage. Use a high quality Cermet or composition potentiometer to obtain the best output stability. Note; if EXT ADJ terminals are not jumpered or a remote pot is not connected, the power supply will have no output.

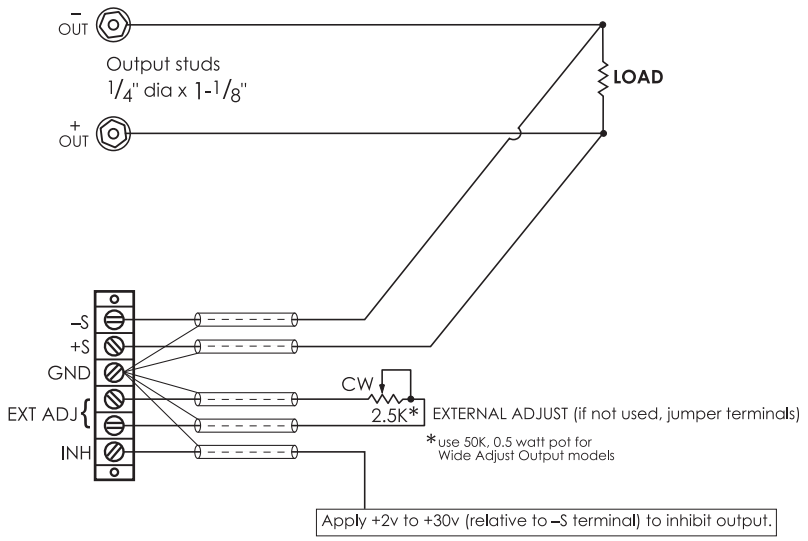
The power supply's output may be inhibited by applying between +2 and +30 Vdc (relative to the -S (sense) terminal) to the inhibit terminal.

Shielded wire should be used for remote voltage control, remote sensing, and inhibit signal wiring. Connect the shields to the ground terminal on the terminal strip that includes the sensing and inhibit terminals. Usually, the lowest level of output noise results when the load ends of the shield are *not* connected. Noise can be reduced in some applications with the use of a capacitor connected across the sense lines at the power supply; and in other applications, when one is connected across the load. Use 0.1 mfd capacitor with good high frequency characteristics (such as Mylar types) with the appropriate voltage rating. Do not use a capacitor unless necessary.

AC INPUT:



CONNECTING POWER SUPPLY TO THE LOAD:



The complete Acopian catalog is available on the Internet at ***www.acopian.com***
131 Loomis Street, Easton, PA 18045 • Phone: (610) 258-5441 • FAX: (610) 258-2842

E1800-830 Rev0

OPERATION

These power supplies operate as constant voltage sources when used at load currents equal to or less than their ratings. If a power supply is overloaded, the current limit circuit will automatically reduce the output voltage until the overload is removed, and will then recover. Under high overload or shorted conditions, the green Output Voltage Indicator is not on.

A higher than normal output voltage (even if momentary, as when caused by a transient induced into the output wiring) will result in the overvoltage protection circuit latching the output OFF and turning on the OVP indicator light. To reset the output, momentarily interrupt the AC input power.

If there is any possibility of voltage from another source (another power supply, a battery, transients, etc) being applied to the power supply's output terminals, protect the power supply by using a diode in series with one of the output leads.

Do not attempt to directly parallel the outputs of two power supplies. This would result in current flowing from the higher-set output into the lower-set output, and probable damage to both circuits. Outputs may be connected in series to obtain a higher voltage provided that a reverse-biased diode, having PIV and current ratings exceeding the combined output, is used across each output; however, keep in mind that the output current to be drawn cannot exceed the output current rating of the lowest rated supply used.

Frequent fuse failure is symptomatic of power supply failure or possible overload. Do not overfuse; this can result in damage to the power supply.

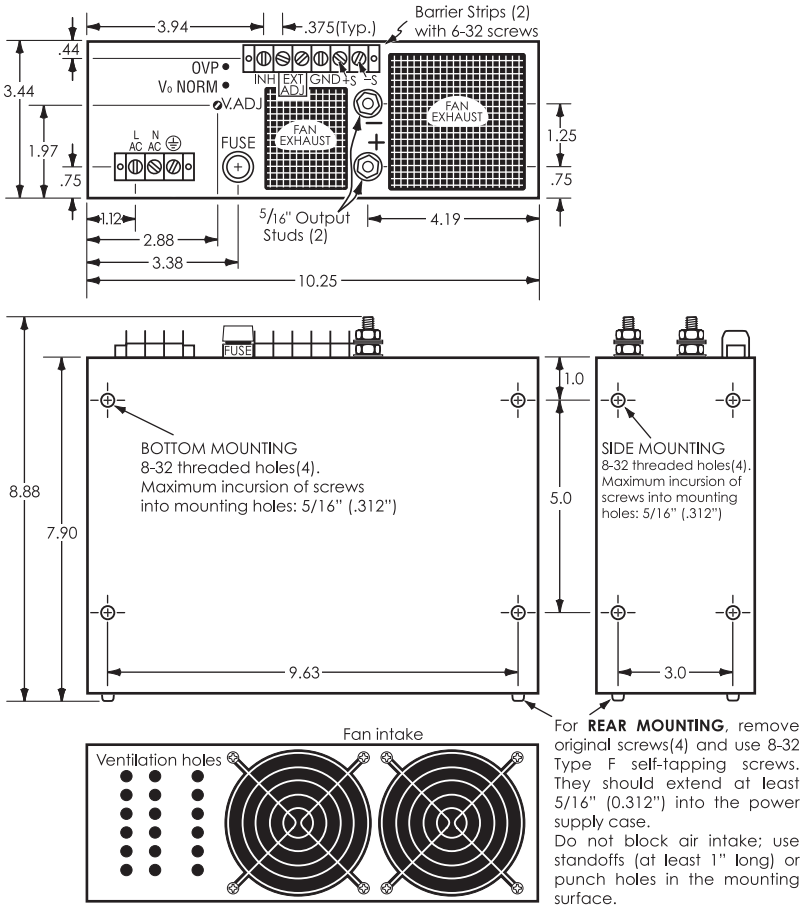
If the AC input power contains large voltage spikes ('noise') induced by the switching of high currents, inductive loads, electro-mechanical components, etc., the input power leads to the supply should include some means of transient suppression. Otherwise, a portion of the noise may be coupled through 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.

TROUBLE ANALYSIS

Whenever an operating problem is experienced, systematically check for external causes first, including all fuses, primary power lines, external circuit elements, and external wiring. Failures and malfunctions often can be traced to simple causes such as improper wiring or connections. Lack of output may result from no AC input voltage or voltage too low, tripped overvoltage protection, presence of an inhibit signal, a blown fuse, thermal shutdown (self-resetting), no jumper or pot connected at EXT ADJ terminals or a damaged power supply.

Case Size WG7

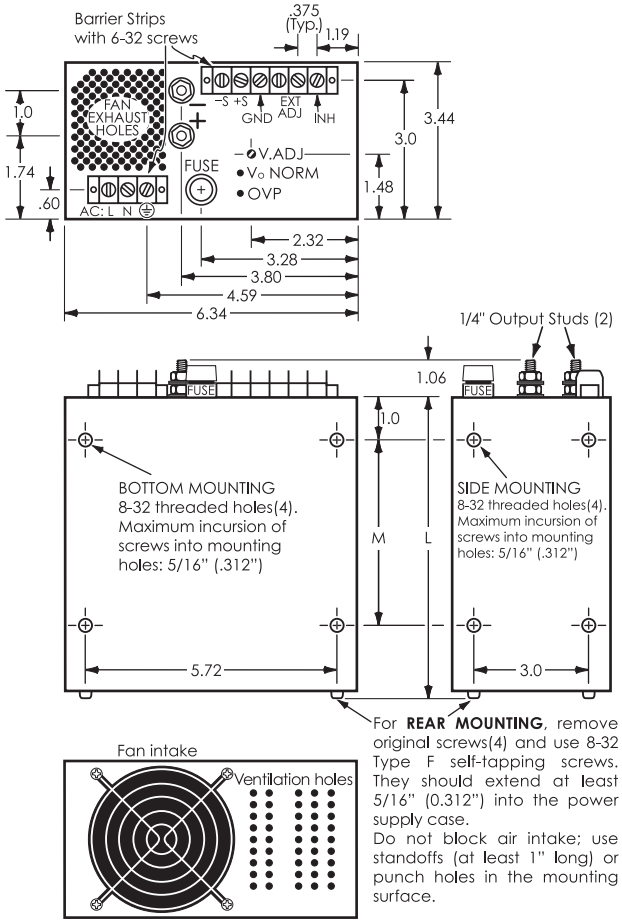
Approx. Weight: 10 lb. 6 oz.



For **REAR MOUNTING**, remove original screws(4) and use 8-32 Type F self-tapping screws. They should extend at least 5/16" (0.312") into the power supply case.
Do not block air intake; use standoffs (at least 1" long) or punch holes in the mounting surface.

All dimensions in inches.

Case Size	L	M	Approx. Weight
WM6	6.34	4.0	5 lb. 10 oz.
WM9	9.15	6.0	7 lb. 15 oz.



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