



2U SWITCHING POWER SUPPLIES

Acopian 2U switching regulated power supplies include models with outputs up to 1400 watts. They have universal input and power factor correction, and primary outputs can be operated in either constant voltage or constant current mode. Standard features include short circuit, overload, and thermal protection, as well as remote sensing.

INSTALLATION

These power supplies are constructed in the form of assemblies that are front mountable in standard 19" wide RETMA cabinet racks or 17" wide benchtop units with rubber feet. If possible, mount spaced away from other heat dissipating or air blocking assemblies. This will result in cooler running operation, which in turn will maximize stability and reliability. Make all connections before applying AC input power. For installation in a Pollution Degree 2 environment.

OPERATION

THE SENSING TERMINALS **MUST** BE CONNECTED to the output terminals, either at the output return terminals 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'. 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 +Sense to the +Rtn and the -Sense to the -Rtn). However, if the best possible regulation at the load is required, then remove the jumpers and use two lighter gauge 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. (Wide adjust output models compensate up to 0.5 Vdc drop per output line.)

In electrically noisy environments it may be necessary to use shielded wire for remote voltage control and remote sensing. Connect the shields to the ground

terminal on the terminal strip. 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. A 0.1 mfd (100 WVdc) capacitor with good high frequency characteristics (such as Mylar types) is appropriate. Do not use a capacitor unless necessary.

Over Voltage Protection: 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. To reset the output, interrupt the AC input power for 5 seconds.

Overload/Short Circuit Protection: These power supplies function as a constant voltage or constant current source. A short circuit or overload will force the power supply into the constant current mode. The supply will recover automatically when the overload or short circuit is removed.

Output Programming (Wide Adjust models): The output voltage and current may be programmed from 0 to full rating by means of control voltage inputs of 0 to +10Vdc. Voltage mode accuracy: 0.5%. Current mode accuracy: 3% for models with greater than 10 amps output current and 4% for models with less than 10 amps output current. Accuracy percentages do not apply below 5% of output rating.

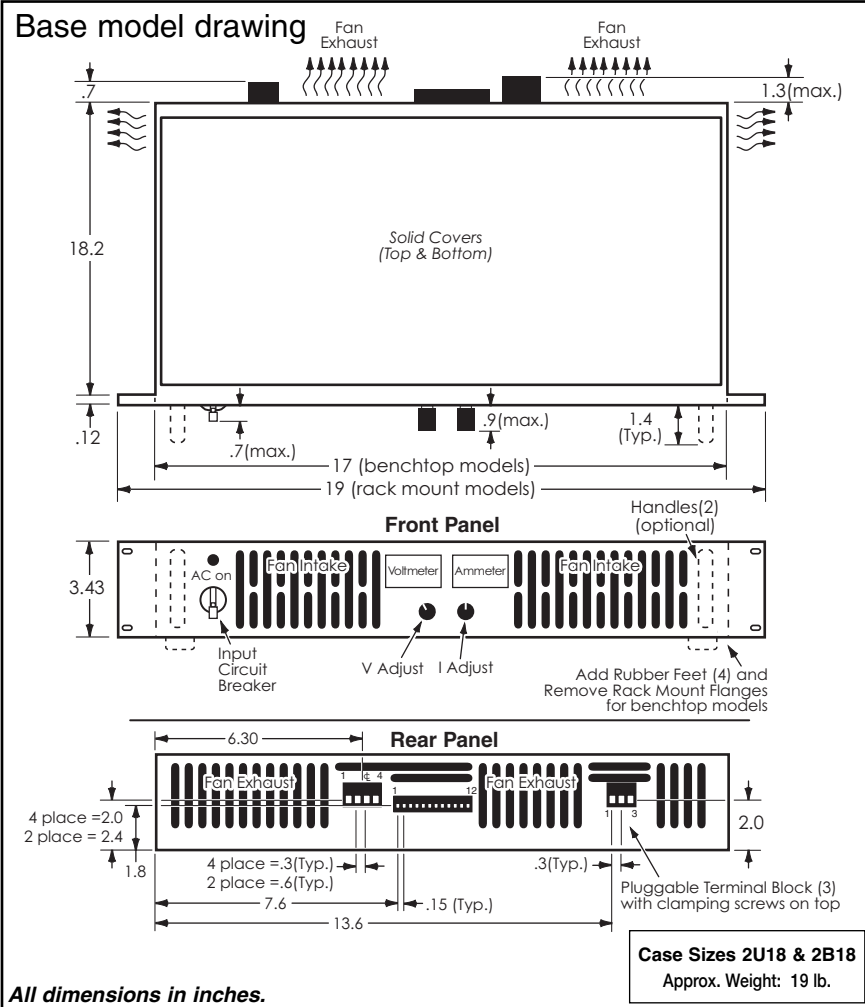
Voltage Monitor Terminal: Permits remote monitoring of output voltage, stepped down by a ratio of 10:1 (for 3.3v to 90v models) or 100:1 (for 100v to 135v models). Accuracy is 0.5% of maximum rated output voltage.

For models with 0-5v programming option "C5": Permits remote monitoring of output voltage, stepped down by a ratio of 10:1 (for 3.3v to 45v models) or 100:1 (for 48v to 135v models). Accuracy is 0.5% of maximum rated output voltage.

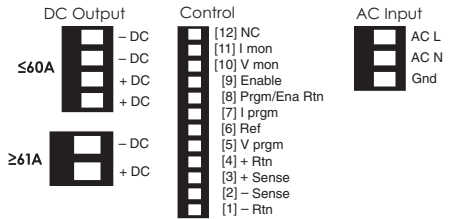
Current Monitor Terminal: For models with greater than 10 amps output current: permits remote monitoring of output current, stepped down by a ratio of 100 mV/Amp (accuracy is 3% of maximum rated output current). For models with less than 10 amps output current: permits remote monitoring of output current, stepped down by a ratio of 1000 mV/Amp (accuracy is 3% of maximum rated output current).

For models with 0-5v programming option "C5": For models with greater than 45 amps output current: permits remote monitoring of output current, stepped down by a ratio of 10 mV/Amp (accuracy is 5% of maximum rated output current). For models with less than 45 amps output current: permits remote monitoring of output current, stepped down by a ratio of 100 mV/Amp (accuracy is 3% of maximum rated output current).

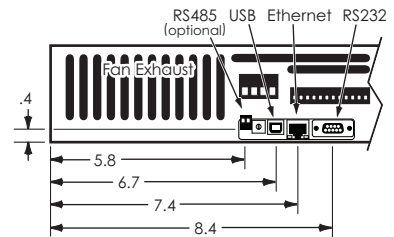
***For models with Digital Interface option "DIO1" or "DIO2":** See 'Digital Interface' instruction sheet (included with option).



Pluggable Terminal Block Connections



Connections for Digital Interface Option with 2U Switching Power Supply (Rear Panel Detail)



All dimensions in inches.

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



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2U SWITCHING POWER SUPPLIES

CONNECTIONS:

DESCRIPTION / WIRING:

WARNING:
HIGH LEAKAGE CURRENT.
EARTH CONNECTION ESSENTIAL
BEFORE CONNECTING SUPPLY



PE / Safety Ground / Case
Neutral
Line (internally protected)

AC INPUT: 100-265 VAC, 49-420Hz, single phase

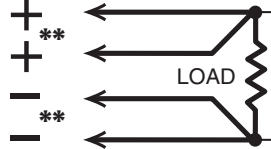
CAUTION: These power supplies are internally protected in the event of power supply failure. When using a line to line input (two high lines as with typical 208 VAC and 230 VAC sources), for safety reasons, it is recommended that an external UL Listed fuse be used in series with the 'N' side of the AC input (20 amps).
These power supplies are NOT RECOMMENDED FOR USE ON GROUND FAULT PROTECTED CIRCUITS.

'Form C Alarm Contacts' Option Connector



G1: Contacts rated at 250V, 8A.
Connector accepts 22 to 16 awg wire size.
Tightening torque = 0.2Nm or 1.7 in-lbs.

Input & output connectors accept 24 to 10 awg wire size.*
Tightening torque = 0.8Nm or 7 in-lbs.*

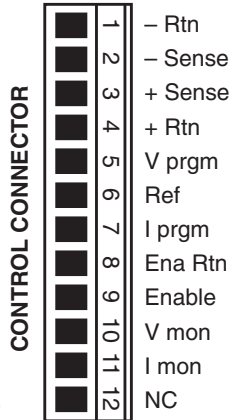


If there is any possibility of voltage from another source (another power supply, a battery, transients, etc.) being applied to the power supply's output terminals, protect the power supply by using a diode in series with either the +OUT or the -OUT.

***High current 2 place terminal block for outputs ≥61A:**

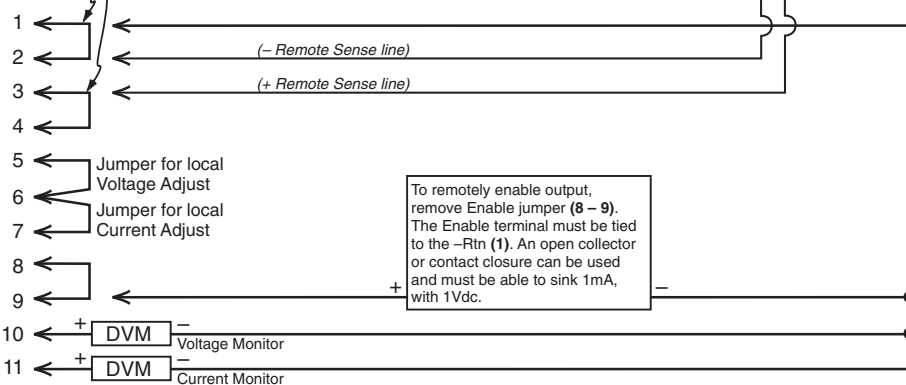
Accepts 16 to 2 awg wire size. Tightening torque = 2.5Nm or 22 in-lbs.

****Use BOTH sets of output terminals for load currents greater than 32 amps**



Connectors accept 22 to 16 awg wire size. Tightening torque = 0.2Nm or 1.7 in-lbs. Screw size M2.

Jumpers for local sense
(remove when using Remote Sense)



To remotely enable output, remove Enable jumper (8 - 9). The Enable terminal must be tied to the -Rtn (1). An open collector or contact closure can be used and must be able to sink 1mA, with 1Vdc.

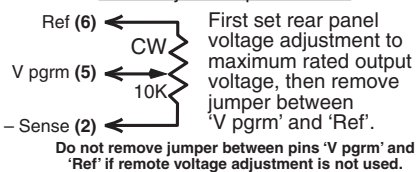
VOLTAGE AND CURRENT MONITOR NOTE:

When monitoring the output voltage and/or current by means of the monitor terminals, the use of an instrument having an input impedance of at least 10 megohms is recommended. See 'Voltage Monitor Terminal' and 'Current Monitor Terminal' on the other side of this page.

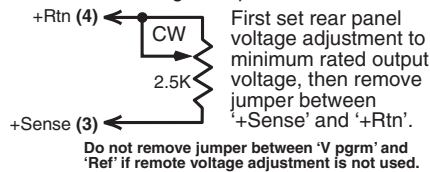
REMOTE OUTPUT ADJUSTMENT & PROGRAMMING NOTES:

REMOTE VOLTAGE ADJUSTMENT:

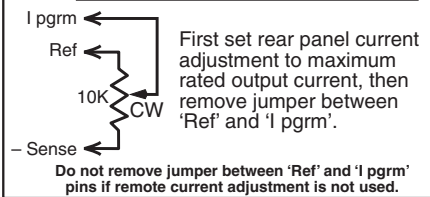
Wide Adjust Output models:



Single Output models:

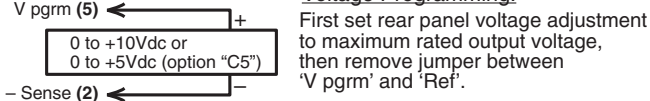


REMOTE CURRENT ADJUSTMENT:

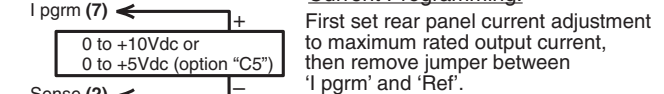


OUTPUT PROGRAMMING (Wide Adjust Output models):

Voltage Programming:



Current Programming:



CAUTION: DO NOT apply negative polarity control voltage to the voltage or current program terminals.