



## REDUNDANT POWER PACKAGES - Linear Regulated (Rack Mounting & Wall Mounting)

**Case sizes 3R14 & 317R18  
with Volt/Ammeters**

**Output Redundancy:** Each Redundant Power Package contains two identical power supplies with their outputs interconnected through a diode switching arrangement that will detect any fault condition, isolate the output of the defective supply from the Power Package output, and pass only the output of the other supply, with no interruption of the Power Package output power during the transition. (A defective power supply can be rapidly and safely changed while the Redundant Power Package continues to furnish uninterrupted power to the load.)

**Input Redundancy:** Two isolated sets of AC input connections permit using two independent sources of input power, to obtain the advantage of input redundancy. By connecting a battery-backup power source (UPS) and/or a second line from the power utility to AC Input 2, output power will be maintained without interruption even when the power to AC Input 1 fails. If a second source of AC power is not available, connect the available source to both sets of input connections.

**Polarity:** Output is floating; either positive or negative output terminal may be grounded or floated up to 300 volts above ground.

### INSTALLATION AND OPERATION

Even a relatively small amount of air flowing around and through a power supply will significantly reduce the rise in its temperature resulting from operation, and therefore the temperature of the critical components within it, improving both reliability and stability. If possible, keep the Redundant Power Package spaced away from other heat dissipating or air blocking assemblies. For Rack Mounting models, use blank front panels above and below; for Wall Mounting models, be sure not to block the ventilation holes on the top of the units that have them.

Make all connections before applying AC input power.

Do not use in series or parallel.

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 Redundant Power Package should include some means of transient suppression. Otherwise, a portion of the noise may be coupled through it to the load, and both 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 each set of AC input terminals. In extremely severe cases, the use of RF chokes in series with each side of the line may also be required.

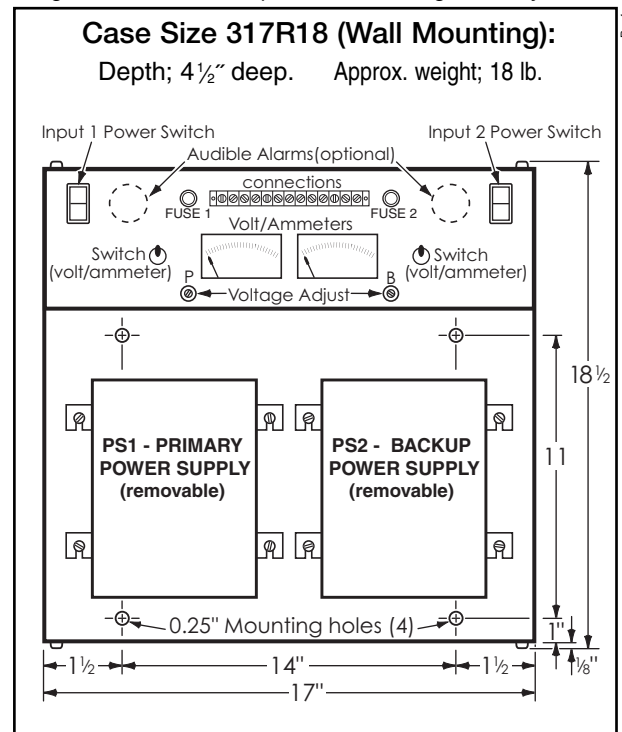
THE SENSING TERMINALS MUST BE CONNECTED to the output terminals, either on the panel of the Redundant Power Package or at the load. Failure to have the sense terminals connected will affect the output voltage (usually causing it to be higher than the rating of the supply, and unadjustable), and may result in permanent damage to both the Redundant Power Package and its load. 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 on the Redundant Power Package (connecting the +S to the +V terminal and the -S to the -V terminal). 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 Redundant Power Package 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 specified output voltage range for the voltage at the load to remain within the load regulation specification.

The Redundant Power Package contains two voltage monitoring circuits with relays which may be used to control external failure alarms or other circuitry. The contact wiring of the two relays is connected in cascade, to simulate a single set of Form C contacts which switches if the output voltage of either power supply decreases by more than 2.0 volts (3.0 volts for outputs over 48 volts) from the nominal rating. With the 'R' option (Separate Alarm Contacts for each Power Supply) the contact wiring of each relay is brought out separately, to permit remotely identifying the specific supply with an abnormal output.

Each power supply contains an overvoltage protection circuit with automatic reset, to assure that neither power supply output will significantly exceed the nominal output voltage rating under any condition, including incorrect application and misadjustment.

The power supplies have overload and short circuit protection. They operate as constant voltage sources when used at load currents equal to or less than their ratings. However if the power supply is overloaded, the current limit circuit will automatically reduce the output voltage, and it will then attempt to recover to its normal operating point. **EVEN A TRANSITORY OVERLOAD RESULTS IN A MOMENTARY DROP IN OUTPUT VOLTAGE.** If the overload is still present when the voltage attempts to recover, the voltage will continue to alternately drop and recover, which will appear as a sawtooth oscillation of the output. Do not operate the power supply in this mode; reduce the load so that an output current equal to or less than the rating of the supply will be drawn.

Frequent fuse failure is symptomatic of overload, a short circuited output, a tripped overvoltage protector, or power supply failure. Do not overfuse; this can result in damage to the power supplies.



**Case Size 3R14 (Rack Mounting):**  
3 1/2" x 19" panel, 14 13/16" deep. (15 lb.)

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

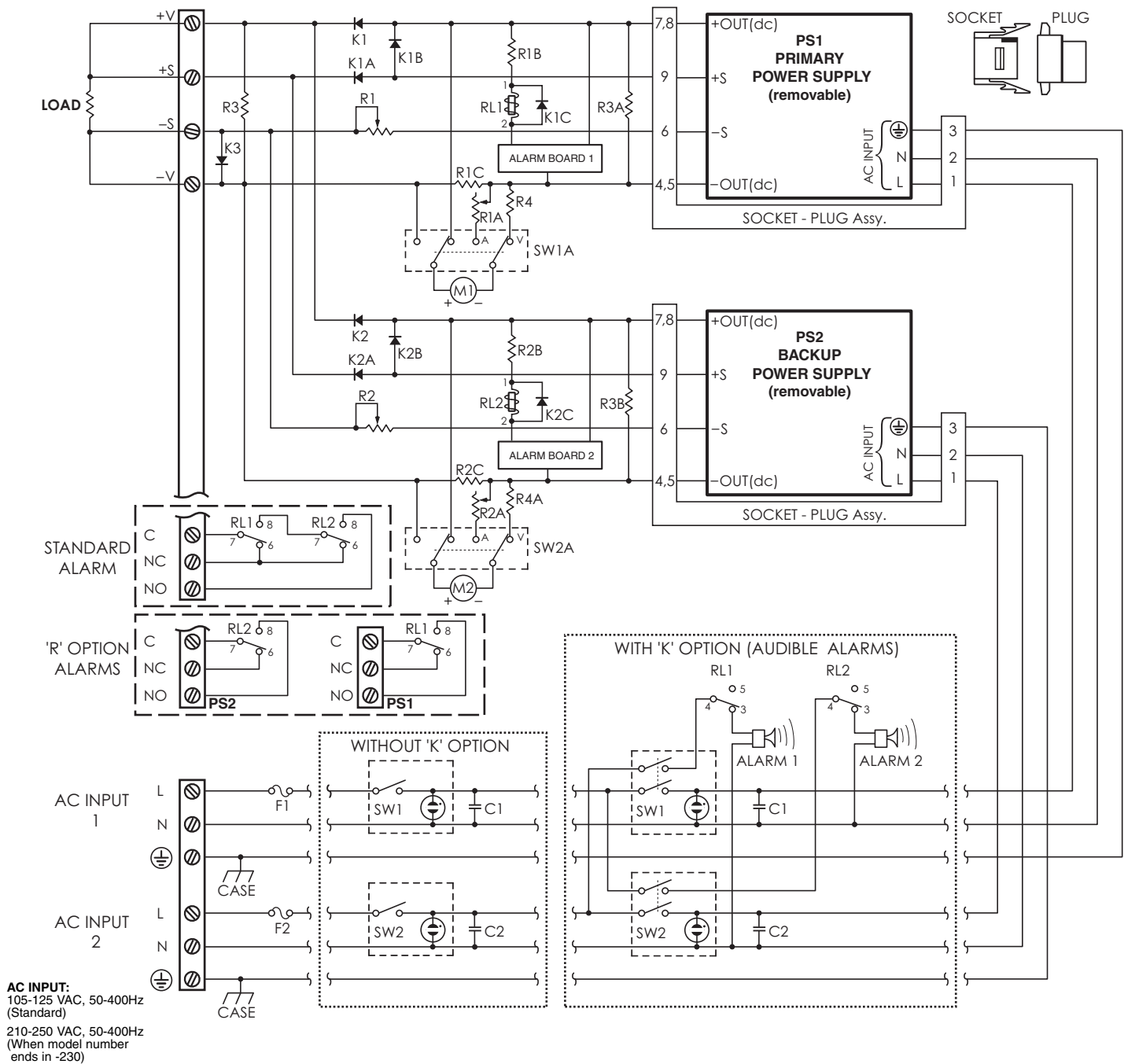


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P.O. Box 638, Easton, PA 18044 • Phone: (610) 258-5441 • FAX: (610) 258-2842



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6-32 screws are used on barrier strip.

## SET-UP

1. Be certain AC input switches are off.
2. Connect the Redundant Power Package as shown, but temporarily without the load. (The sensing lines must remain connected to the respective output. Failure to do so may result in permanent damage.)
3. Turn on Primary power supply (PS1) and set its output to the nominal output voltage. (For greatest accuracy, using a digital voltmeter connected to the output terminals is recommended.) Then switch off this supply.
4. Turn on Backup power supply (PS2) and set its output to 0.2 volts below the nominal output voltage. Then switch off this supply.
5. Connect the load, then switch on both power supplies. The Redundant Power Package is now operational.
6. If the audible alarm (optional) sounds due to a failure, it can be silenced by turning off the failed supply's input switch.

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