

## INSTALLATION, OPERATION & MAINTENANCE INSTRUCTIONS

### POWER SUPPLY, **PS-3**

### **WATER ALERT POWER SUPPLY, MODEL **PS-3****

DC power supply eliminates batteries in "SS" Series Water Alert detectors - ideal for large installations where accessibility to Water Alert is inconvenient or battery operation is not acceptable. Output- 9vdc



PS-3 w/ Model SS Water Alert

#### FEATURES

- Operates up to 24 Water Alert detectors, wiring instructions furnished.
- Internal self-recharging battery provides back up power to system in event of line failure or power cord removal.
- **UL Listed** input transformer.
- Flashing LED indicating power to Water Alerts.
- Large screw-type terminal blocks at rear of enclosure for convenient wiring. Connection to Water Alerts is made by means of wire nuts.
- Short circuit, overload and over voltage protected.
- Rugged, attractive enclosure 8.5" W x 9.5" D x 2.5" H.

**GENERAL:** The PS-3 is designed to provide 9VDC power to Dorlen Products' Water Alert detectors. The 9V alkaline batteries normally used in the Water Alerts are eliminated when the PS-3 is used, thereby avoiding the need for battery replacement.

The PS-3 operates off 120VAC line power and has, in addition, an internal rechargeable battery which will supply 9V power to the Water Alerts in the event of line power failure. The rechargeable battery will recharge when 120VAC is reapplied.

The PS-3 is short circuit protected and will recover immediately upon removal of the short condition. The maximum current that can be drawn from the PS-3 is 1.5 amp. The power supply will automatically shut down due to thermal overload if excess current is drawn. Upon removal of the excess load and a cooling period, the power supply will recover.

A 2-amp fuse is also included in the 9V output circuit. Since pulling the 120VAC plug will still leave the 9V power on (because of the internal battery), the fuse is removed when shipping (or storing) the PS-3. In the unlikely event of failure of the power supply, short circuit or overload protective circuitry the fuse will provide final protection of the system wiring in the event of short or overload. See paragraph 5, page 2 for initial power on procedure.

**NOTE:** When connecting Water Alerts to the PS-3, it is preferable to have the power supply on (power on lamp flashing). As each Water Alert is connected to the 9V PS-3 power, it may momentarily buzz. Wait approximately 30 seconds after the Water Alert is connected and test with wet fingers across probes.

#### **CAUTION**

The power supply enclosure and the 9V output is tied to earth ground by means of the grounding prong on the AC line plug. To insure absolute safety, this grounding arrangement should not be modified in any way.

#### **WIRING**

1. All Water Alert models contain either one or two battery connectors. When substituting the PS-3 in place of the internal batteries **do not** cut these battery connectors off. Rather, use a similar connector to make a connector/connector arrangement for hook-up to the PS-3. This arrangement avoids modifying the Water Alert in any way.

2. **CAUTION: When making this connector/connector arrangement, the polarity of the wires becomes reversed. So when hooking up the PS-3 to the Water Alert, the (+) lead is the Black wire and (-) lead is the Red wire. See Drawing No. B-3066 attached.**

It may be desirable to bring the twisted red/black lead of the added connector(s) out thru the opening(s) at the top of the Water Alert. This is especially true if the pair of wires from the PS-3 are run physically above the Water Alerts; i.e., as on the underside of a raised computer room floor.

\*If the water leakage to be detected is or may be seawater (highly conductive) the power supply leads **must** be run at an elevated level to avoid the leakage water from shorting out the power supply

3. In connecting the power supply to the array of Water Alerts it is necessary that the maximum total line resistance to the farthest Water Alert not exceed 50 ohms. The wire chart below may be helpful in determining the minimum wire size to use for a given installation.

Wire Ga. No. (AWG)	Resistance Ohms/1000 Ft.
22	16
20	10
18	6.4
16	4
14	2.5

There are 3 (+) terminals and 3 (-) terminals on the rear panel of the PS-3. The (+)'s are tied together on the inside of the panel. The (-)'s are also tied together on the inside. The purpose of the three pins on each output is for wiring convenience. It may be desirable, as example, to run more than a single pair of wires to the Water Alerts.

4. The maximum number of Water Alerts that can be handled by one PS-3 is 24. In the standby or monitoring condition the current draw is negligible (approx. 1 micro-amp per Water Alert). When activated however, approximately .005 to .02 amp (depending on model) is drawn per Water Alert during the "buzzer on" interval.

If AC line power is lost and the system is being powered by the internal battery, the system will monitor for approximately one month (the limitation due to the small amount of battery current required by the regu-

If a Water Alert is activated when on internal battery, the approximate duration of buzzer operation can be estimated as:

$$\begin{aligned} \frac{2.6 \text{ Amp-hr Rating}}{.02 \text{ amp unit}} &= 130 \text{ hr.} \times \frac{10}{3} \text{ (duty cycle)} \\ &= \frac{1300}{3} = 433 \text{ hr.} \\ &= 18 \text{ days, plus} \end{aligned}$$

If two Water Alerts were activated when on battery, the buzzer duration would be approximately 9 days, three Water Alerts activated 6 days, etc.

5. PS-3's have an "on-off" battery switch on the back of the unit. (Units are shipped with switch in "off" position.) When initially applying power to the PS-3, it is necessary to do so in the following sequence:

1. Battery switch to "off"
2. Front panel fuse inserted
3. AC line plugged in (green light flashing)
4. Battery switch to "on"

If the front panel fuse is removed for any reason, power should be reapplied by: first removing AC line cord and then reapplying power in the above manner.

6. The PS-3, when properly installed, should function year-in/year-out without maintenance. In the event of problems during the initial setup, establish clearly what the unit does or does not do that is improper and call Dorlen Products for technical assistance.

If you have installation questions, call **toll free** 1-800-533-6392

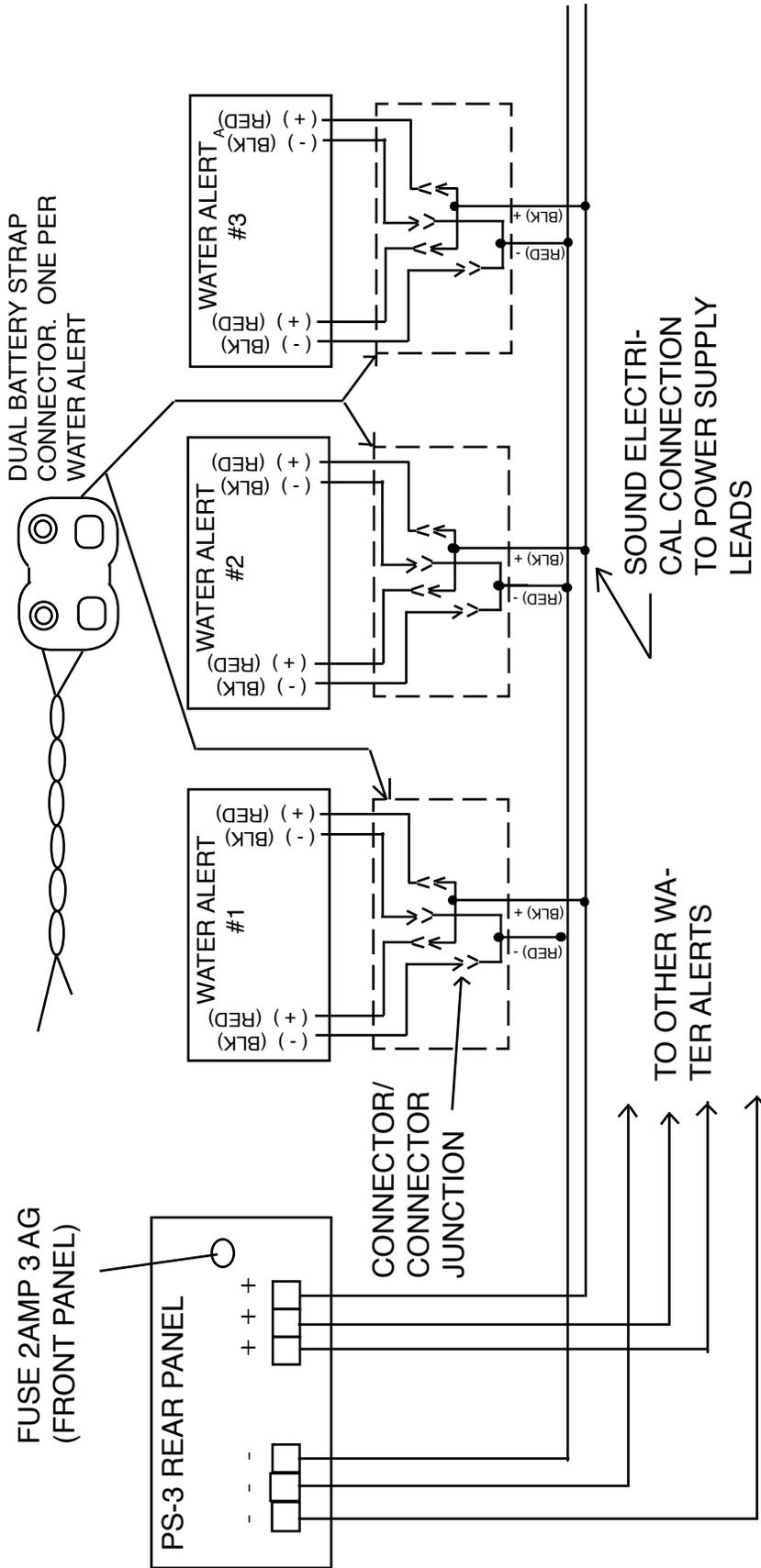


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NOTE: IF MORE THAN ONE PS-3 IS USED IN A GIVEN INSTALLATION, DO NOT PARALLEL THE PS-3'S . . . RATHER OPERATE GIVEN GROUPS OF WATER ALERTS ON INDIVIDUAL PS-3'S. WATER ALERTS FROM DIFFERENT GROUPS MAY TIE INTO THE SAME RI-2'S OR AD-5'S.

CAUTION: AFTER MAKING CONNECTOR/CONNECTOR JUNCTION, THE BLACK PIGTAIL ENDS ARE CONNECTED TO THE (+) OUTPUT OF THE PS-3, [RED PIGTAIL ENDS TO THE PS-3 (-) OUTPUT].

## PS-3/WATER ALERT WIRING DIAGRAM

3-94/7-96REV-A

B-3066