

US PATENT NO. 6,926,023

**UL Listed** for Fire Sprinkler Branch line applications per UL subject 2573—"Automatic Air Release Valves for Fire Protection Service"

**FM Approved** "Automatic Air Release Valve for Sprinkler Systems"

**Service Pressure:** Up to 175 PSIG

**Temperature Range:** 40°F to 120°F (4.5°C to 49°C)

**PAV - Potter Air Vent:** 1/2" NPT inlet  
5/64" Orifice  
UL Listed  
Brass Construction

**Water Shutoff Valve:**

Activation indicated by red pop-up tab on the shutoff valve. Single set of NC contacts rated 24V AC/DC at 2A (contacts open upon activation of shutoff valve) and 6' Lg. wiring harness supplied for supervision of shutoff valve.

**Optional Accessories:**

Ball valve supervisory switch Model RBVS (Supervisory switch only). Used to monitor the position of the isolation valve.

Potter System Trouble Alarm Model PSTA for local system trouble alarm.

ORDERING INFORMATION	
Stock No.	Model / Description
1030001	PAAR-B Potter Automatic Air Release
<i>OPTIONAL EQUIPMENT</i>	
1000040	RBVS Retrofit Ball Valve Switch (w/o cover tamper)
1000035	RBVS-T Retrofit Ball Valve Switch (with cover tamper)
2040001	PSTA Potter System Trouble Alarm
<i>REPLACEMENT PARTS</i>	
1119720	PAV-Potter Air Vent
5510137	Shutoff valve

**GENERAL DESCRIPTION**

The PAAR-B is an automatic float type air vent used to reduce the amount of air trapped in a pressurized fire sprinkler system. Reducing the amount of air in a fire sprinkler system is essential to help protect the system piping from the effects of corrosion that is often found at the air/water interface in the fire sprinkler system piping.

Removing as much air as possible will also have a positive effect on the performance of vane type waterflow detectors. The operation of vane type waterflow detectors can be delayed or prevented if too much air is trapped in the system piping.

The intent of the product is to vent as much air from the fire sprinkler system as possible. The PAAR-B provides automatic venting of air as the system is being filled. Furthermore, trapped air can also be vented as the air in the system migrates to the vent location over time. The air vent will automatically close when water reaches the vent.

Discharge piping from the air vent valve is piped to a shutoff valve mounted in a water retention pan. The pan retains small amounts of water discharged from the air vent valve during normal operation. If failure of the air vent occurs, discharged water will reach a specified depth in the pan (approximately 1") and a water-soluble fiber element in the shutoff valve dissolves and closes the valve preventing further water discharge. The shutoff valve has a visual indication of operation and a single set of NC contacts rated 24V AC/DC@2A for electronic supervision (Recommended). The shutoff valve is a single-use device and contains no user serviceable parts.

The PAAR-B provides a 1/2" NPT connection in the bottom of the pan which shall be used to pipe to a drain.

INSTALLATION (See Figs. 1 - 3)

**NOTICE**

- It is strongly recommended to install a ball valve in line with the PAV to assist in servicing the strainer without disabling the sprinkler system.
- The PAAR-B Automatic Shut off valve should be supervised and connected to the building's fire alarm or to the PSTA. After notification of operation the control valve should be closed and remain closed until replacement parts are installed.

1. Read and understand the instructions provided before you proceed with installation. The PAAR-B shall be installed in accordance with local ordinances and the applicable NFPA13, NFPA13D, or NFPA13R standard.
2. The Engineer of Record should select the Model PAAR-B, Potter Automatic Air Release installation location. Usually at a point in the system that will vent the most air.
3. The location of the PAAR-B must not interfere with the spray pattern of any sprinkler head. The connection point must be off the top of the pipe. (See Fig. 2)
4. Install the PAAR-B in a level position at the recommended location of the sprinkler system. Use 3/8" threaded rod hangers thru the (2) holes provided in the flange of the pan for additional support.
5. Remove the 1/2" NPT plug from the bottom of the water retention pan and make piping connection to drain.
6. For supervision of the shutoff valve activation, remove and discard the fuse cover from the shutoff valve terminals. Connect the supplied 6'-0" wiring harness connectors to the shutoff valve terminals and make appropriate connections to the fire alarm panel or local annunciator Model PSTA (ordered separately) in an approved junction box. An "end of line resistor" (EOLR) must be installed according to the wiring diagram in Fig. 1.
7. Inspection of the PAAR-B should be performed after installation and filling of the sprinkler system and periodically thereafter in accordance with the applicable NFPA codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently). Note: Inspection shall include checking for activation of the shutoff valve indicated by the red pop-up tab and checking for blockage in the strainer before the air vent and in the cap screen on the outlet pipe. Remove the screens and flush with clean water. Use a wire brush to remove any particles trapped in the screens, if necessary.

**PAV and Shutoff Valve Replacement** (See Figs. 2 & 3)

If inspection reveals activation of the shutoff valve, indicated by a red pop-up tab on the shutoff valve, the air vent valve has failed and must be replaced. The shutoff valve is a single-use device that can not be reset or repaired and must be replaced.

1. Close the ball valve installed between the PAAR-B and the sprinkler system.
2. If the automatic shutoff valve is electrically supervised, disconnect the electrical connections from the automatic shutoff valve.
3. Remove the pan drain plug from the bottom of water retention pan and carefully drain any water that may have collected in the bottom of the pan. Reinstall the plug using teflon tape or other pipe sealant.

4. Disconnect the 1/2" union in the piping between the PAAR-B and the automatic shutoff valve from the retention pan.
5. Loosen the two screws from vent clamp, disconnect any hanger supports and remove the pan from the vent.
6. Disconnect the 1/2" union located between the strainer and the vent and remove the vent.
7. Remove the piping from the existing vent; reinstall into the replacement vent and reconnect to the union.
8. Remove the 1/2" brass piping from the old activated shutoff valve and reinstall on the new shutoff valve using teflon tape on all connections. Be sure to match up the piping from the inlet (1 1/2" lg. nipple, elbow, close nipple and union) and outlet (1 1/2" lg. nipple, elbow, close nipple and 4" lg. nipple) of the old shutoff valve to the inlet and outlet of the new shutoff valve.
9. Reconnect the pan to the vent using the vent clamp. Make sure that the pan is square and level, reattach any hanger supports.
10. Place the shutoff valve into the retention pan and connect with the union provided. The shutoff valve must be installed straight and level in the retention pan. Adjust and secure the vent clamp in a manner that allows the shutoff valve to rest on the spacer bosses cast into the bottom of the pan.
11. Reconnect the wiring following the instructions provided in paragraph 2 under Installation Instructions and Fig. 1
12. Remove and clean the strainer screen by rinsing in clean water, use a wire brush if necessary, and reinstall.
13. Open the ball valve and check for proper operation of the air vent valve.
14. Inspection of the PAAR-B should be performed after installation and periodically thereafter in accordance with the applicable NFPA codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently). Note: Inspection shall include checking for activation of the shutoff valve indicated by the red Pop-up tab and checking for blockage in the strainer before the air vent and in the cap screen on the outlet pipe.

**FIG. 1 WIRING**

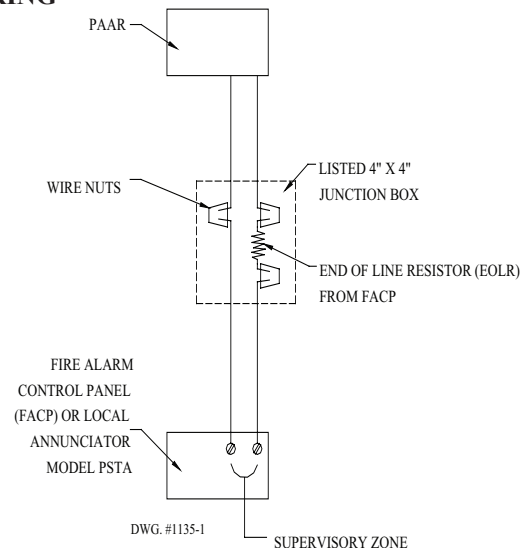


FIG. 2 PAAR-B OUTLINE DRAWING

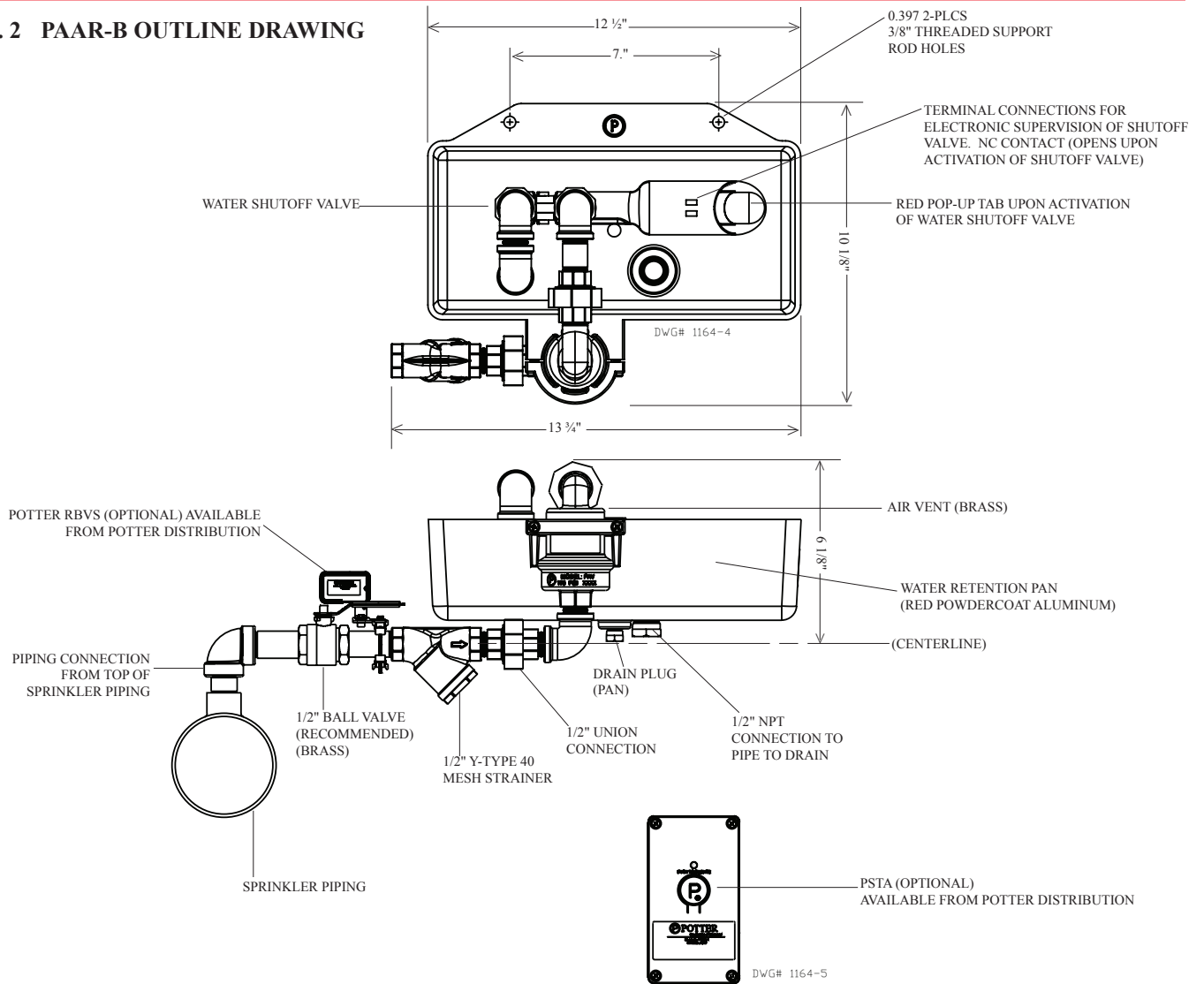


FIG. 3 PAAR-B ASSEMBLY

