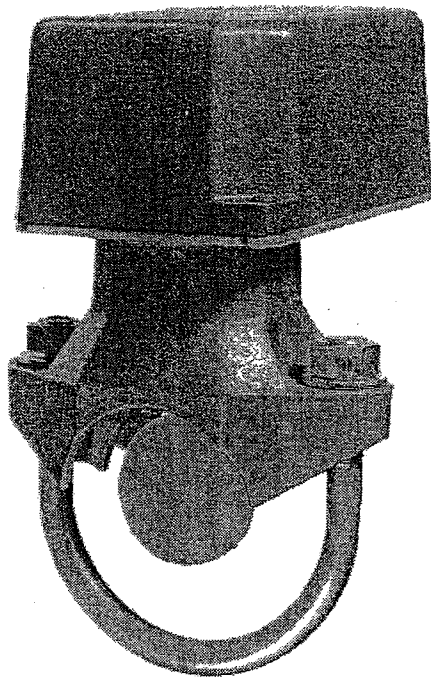




## VSR-F

### VANE TYPE WATERFLOW ALARM SWITCH WITH RETARD



J.S. Pat. No. 3921989  
Canadian Pat. No. 1009680  
Other Patents Pending  
Potter Electric, Rd., 1990

#### GENERAL INFORMATION

The Model VSR-F is a vane type waterflow switch for use on wet sprinkler systems. It is UL Listed and FM Approved for use on steel pipe; schedules 10 through 40, sizes 2" thru 8". LPC approved sizes are 2" thru 8" (50mm thru 200mm).

The unit may also be used as a sectional waterflow detector on large systems.

The unit contains two single pole, double throw, snap action switches and an adjustable, instantly recycling pneumatic retard. The switches are actuated when a flow of 10 gallons per minute or more occurs downstream of the device. The flow condition must exist for a period of time necessary to overcome the selected retard period.

**ENCLOSURE:** The unit is enclosed in a general purpose, die-cast housing. The cover is held in place with two tamper resistant screws which require a special key for removal. A field installable cover tamper switch is available as an option which may be used to indicate unauthorized removal of the cover. See bulletin no. 5400775 for installation instructions of this switch.

UL, ULC and CSFM Listed, FM and LPC Approved, NYMEA Accepted, CE Marked

**Service Pressure:** Up to 450 PSI

**Minimum Flow Rate for Alarm:** 10 GPM

**Maximum Surge:** 18 FPS

**Contact Ratings:** Two sets of SPDT (Form C)  
15.0 Amps at 125/250VAC  
2.0 Amps at 30VDC Resistive

**Conduit Entrances:** Two knockouts provided for 1/2" conduit

#### Environmental Specifications:

- Suitable for indoor or outdoor use with factory installed gasket and die-cast housing.
- NEMA 4/IP54 Rated Enclosure - use with appropriate conduit fitting.
- Temperature Range: 40°F/120°F, 4.5°C/49°C
- Non-corrosive sleeve factory installed in saddle.

**Caution:** This device is not intended for applications in explosive environments.

**Sizes Available:** Steel Pipe schedules 10 thru 40, sizes 2" thru 8"  
BS 1387 pipe 50mm thru 200mm  
Note: For copper or plastic pipe use Model VSR-CF.

#### Service Use:

Automatic Sprinkler	NFPA-13
One or two family dwelling	NFPA-13D
Residential occupancy up to four stories	NFPA-13R
National Fire Alarm Code	NFPA-72

**Optional:** Cover Tamper Switch Kit, Stock No. 0090018

#### INSTALLATION: See Fig.2

These devices may be mounted on horizontal or vertical pipe. On horizontal pipe they should be installed on the top side of the pipe where they will be accessible. The units should not be installed within 6" of a fitting which changes the direction of the waterflow or within 24" of a valve or drain.

Drain the system and drill a hole in the pipe using a circular saw in a slow speed drill. The 2" (50mm) and 2 1/2" (65mm) devices require a hole with a diameter of 1 1/4" + 1/8" - 1/16" (33mm ±2mm). All other sizes require a hole with a diameter of 2" ±1/8" (50mm ±2mm).

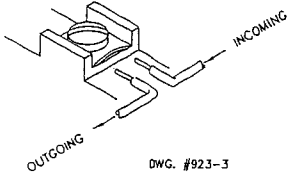
Clean the inside pipe of all growth or other material for a distance equal to the pipe diameter on either side of the hole.

Roll the vane so that it may be inserted into the hole; do not bend or crease it. Insert the vane so that the arrow on the saddle points in the direction of the waterflow. Install the saddle strap and tighten nuts alternately to an eventual 50 ft-lbs. of torque (see Fig. 2). The vane must not rub the inside of the pipe or bind in any way.

Specifications subject to change without notice.

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**FIG. 1**  
**SWITCH TERMINAL  
CONNECTIONS  
CLAMPING PLATE  
TERMINAL**



**CAUTION:**

An uninsulated section of a single conductor should not be looped around the terminal and serve as two separate connections. The wire must be severed, thereby providing supervision of the connection in the event that the wire becomes dislodged from under the terminal.

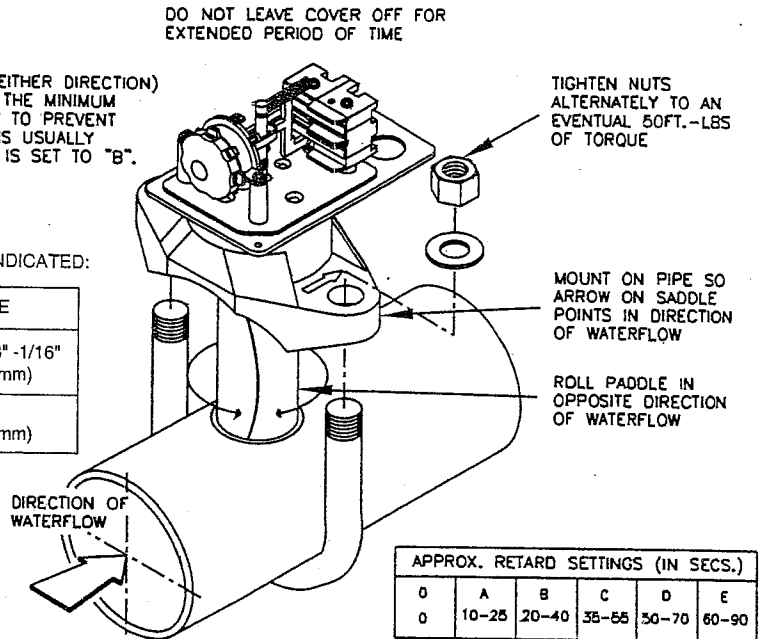
**FIG. 2**

**RETARD ADJUSTMENT:**  
TO CHANGE TIME TURN KNOB (EITHER DIRECTION) FOR DESIRED TIME DELAY. USE THE MINIMUM AMOUNT OF RETARD NECESSARY TO PREVENT FALSE ALARMS. A "B" SETTING IS USUALLY ADEQUATE FOR THIS. FACTORY IS SET TO "B".

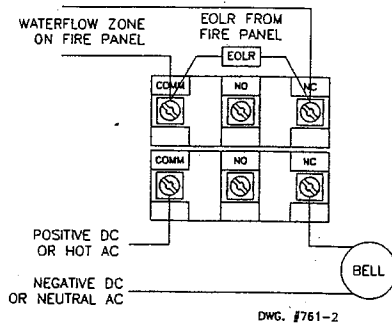
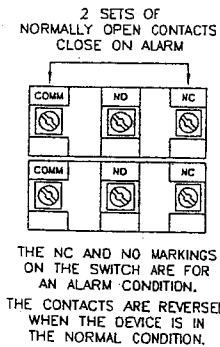
TO INSTALL, DRILL A HOLE AS INDICATED:

PIPE SIZE	HOLE SIZE
2" to 2 1/2" (50mm to 65mm)	1 1/4" + 1/8" - 1/16" (33mm ±2mm)
3" to 8" (80mm to 200mm)	2" ±1/8" (50mm ±2mm)

DWG. #761-30



**TYPICAL ELECTRICAL CONNECTIONS**

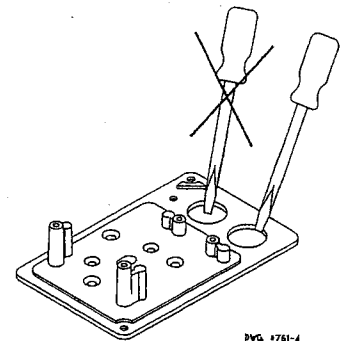


**NOTES:**

1. The Model VSR-F has two switches, one can be used to operate a central station, proprietary or remote signaling unit, while the other contact is used to operate a local audible or visual annunciator.
2. A condition of LPC Approval of this product is that the electrical entry must be sealed to exclude moisture.
3. For supervised circuits see "Switch Terminal Connections" drawing and caution note (Fig. 1).

**FIG. 4**

To remove knockouts: Place screwdriver at edge of knockouts, not in the center.



**TESTING**

The frequency of inspection and testing for the model VSR-F and its associated protective monitoring system should be in accordance with applicable NFPA Codes and Standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).

If provided, the inspector's test valve, that is usually located at the end of the most remote branch line, should always be used for test purposes. If there are no provisions for testing the operation of the flow detection device on the system, application of the VSR-F is not recommended or advisable.

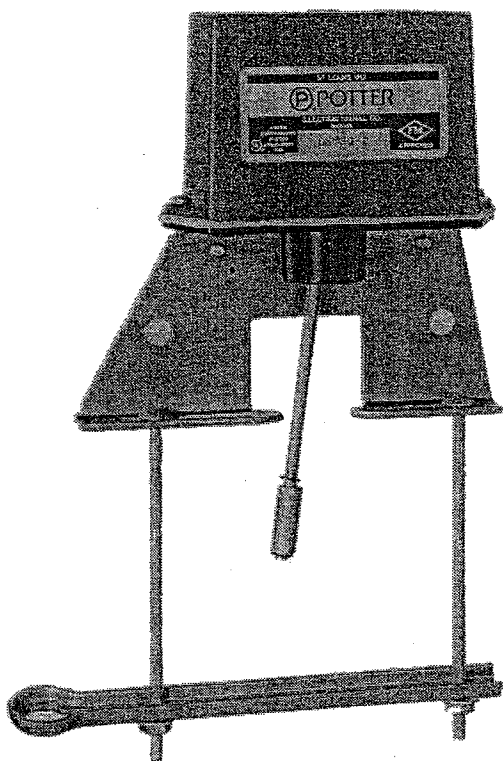
A minimum flow of 10 gpm is required to activate this device.

**TANT NOTICE:** Please advise the person responsible for testing of the fire protection system that this system must be tested in accordance with the testing instructions.



## OSYSU-1, -2

### OUTSIDE SCREW AND YOKE VALVE SUPERVISORY SWITCH



**OSYSU-1 Stock No. 1010106**  
**OSYSU-2 Stock No. 1010206**

#### GENERAL INFORMATION

The OSYSU is used to monitor the open position of an OS & Y (outside screw and yoke) type gate valve. This device is available in two models; the OSYSU-1, containing one set of SPDT (Form C) contacts and the OSYSU-2, containing two sets of SPDT (Form C) contacts. These switches mount conveniently to most OS & Y valves ranging in size from 2" to 12". They will mount on some valves as small as 1/2".

The cover is held in place by two tamper resistant screws that require a special tool to remove. The tool is furnished with each device and should be left with the building owner or responsible party. Replacement or additional

UL and CSFM Listed, FM Approved, NYMEA Accepted, CE Marked

**Dimensions:** 6.19"L X 2.25"W X 5.88"H  
15.7cm L X 5.7cm W X 14.6cm H

**Weight:** 2 lbs. (.9 kg.)

**Enclosure:** Cover - Die-Cast  
Finish - Red Spatter Enamel  
Base - Die Cast Zinc  
All parts have corrosion resistant finishes.

**Cover Tamper:** Tamper resistant screws,  
Optional cover tamper kit available.

#### Contact Ratings:

OSYSU-1: One set of SPDT (Form C)  
OSYSU-2: Two sets of SPDT (Form C)  
15.00 Amps at 125/250VAC  
2.50 Amps at 30VDC resistive

#### Environmental Limitations:

- NEMA 4 and NEMA 6P Enclosure (IP67) when used with appropriate watertight conduit fittings.
- Indoor or Outdoor use (Not for use in hazardous locations. See bulletin no. 5400705 OSYS-U-EX for hazardous locations.)
- Temperature Range: -40°F to 140°F (-40°C to 60°C)

#### Conduit Entrances:

2 knockouts for 1/2" conduit provided

#### Service Use:

Automatic Sprinkler	NFPA-13
One or two family dwelling	NFPA-13D
Residential occupancy up to four stories	NFPA-13R
National Fire Alarm Code	NFPA-72

cover screws and hex keys are available. See ordering information on page 4.

#### OPTIONAL COVER TAMPER SWITCH

A field installable cover tamper switch is available as an option which may be used to indicate removal of the cover. See ordering information on page 4.

#### TESTING

The OSYSU and its associated protective monitoring system should be inspected and tested in accordance with applicable NFPA codes and standards and/or the authority having jurisdiction (manufacturer recommends quarterly or more frequently).



## BELLS PBA-AC & PBD-DC



6" BELL SHOWN

UL Listed, FM Approved

Sizes Available: 6" (150mm), 8" (200mm) and 10" (250mm)

Voltages Available: 24VAC  
120VAC  
12VDC (10.2 to 15.6) Polarized  
24VDC (20.4 to 31.2) Polarized

Service Use: Fire Alarm  
General Signaling  
Burglar Alarm

Environment: Indoor or outdoor use (See Note 1)  
-40° to 150°F (-40° to 66°C)  
(Outdoor use requires weatherproof  
backbox.)

Termination: 4 No. 18 AWG stranded wires

Finish: Red powder coating

Optional: Model BBK-1 weatherproof backbox

These vibrating type bells are designed for use as fire, burglar or general signaling devices. They have low power consumption and high decibel ratings. The unit mounts on a standard 4" (101mm) square electrical box for indoor use or on a model BBK-1 weatherproof backbox for outdoor applications. Weatherproof backbox model BBK-1, Stock No. 1500001.

ALL DC BELLS ARE POLARIZED AND HAVE BUILT-IN TRANSIENT PROTECTION:

SIZE INCHES (mm)	VOLTAGE	MODEL NO.	STOCK NO.	CURRENT (MAX.)	TYPICAL dB AT 10 FT. (3m) (2)	MINIMUM dB AT 10 FT. (3m) (1)
6 (150)	12VDC	PBD126	1706012	.12A	85	76
8 (200)	12VDC	PBD128	1708012	.12A	90	76
10 (250)	12VDC	PBD1210	1710012	.12A	92	76
6 (150)	24VDC	PBD246	1706024	.06A	87	76
8 (200)	24VDC	PBD248	1708024	.06A	91	79
10 (250)	24VDC	PBD2410	1710024	.06A	94	79
6 (150)	24VAC	PBA246	1806024	.17A	91	76
8 (200)	24VAC	PBA248	1808024	.17A	94	76
10 (250)	24VAC	PBA2410	1810024	.17A	94	76
6 (150)	120VAC	PBA1206	1806120	.05A	92	82
8 (200)	120VAC	PBA1208	1808120	.05A	99	82
10 (250)	120VAC	PBA12010	1810120	.05A	99	85

### Notes:

1. Minimum dB ratings are calculated from integrated sound pressure measurements made at Underwriters Laboratories as specified in UL Standard 464. UL temperature range is -30° to 150°F (-34° to 66°C).
2. Typical dB ratings are calculated from measurements made with a conventional sound level meter and are indicative of output levels in an actual installation.

### DIMENSIONS INCHES (mm)

FIG. 1 BELLS

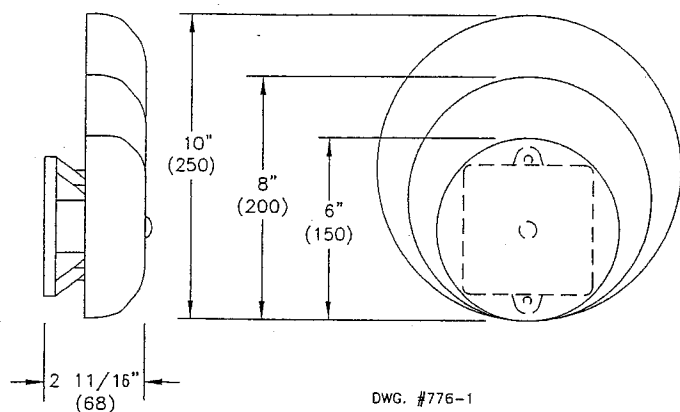


FIG. 2 WEATHERPROOF BACKBOX  
BOX HAS ONE THREADED 1/2" CONDUIT ENTRANCE

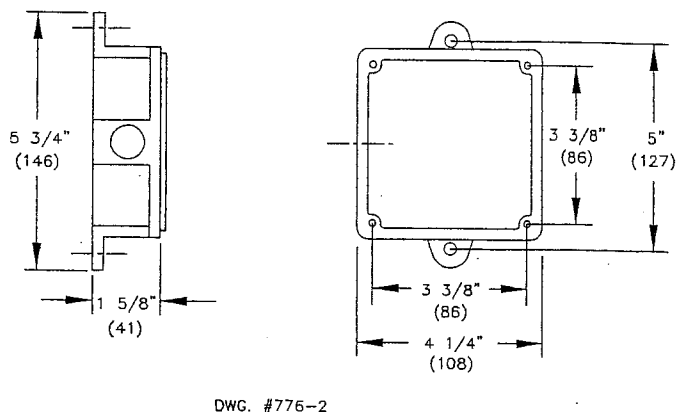
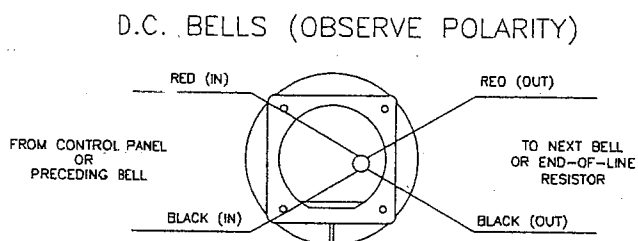


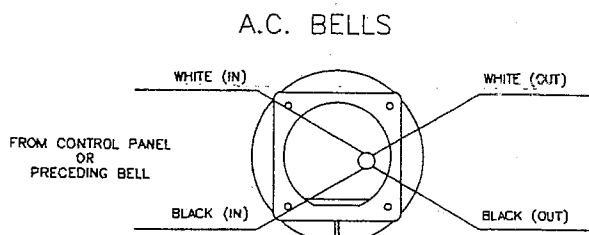
FIG. 3 WIRING (REAR VIEW)



**CAUTION:**  
WHEN ELECTRICAL SUPERVISION IS REQUIRED USE IN AND OUT LEADS AS SHOWN.

**NOTES:**

1. OBSERVE POLARITY TO RING D.C. BELLS.
2. RED WIRES POSITIVE (+)
3. BLACK WIRES NEGATIVE (-)



**CAUTION:**  
WHEN ELECTRICAL SUPERVISION IS REQUIRED USE IN AND OUT LEADS AS SHOWN.

**NOTES:**

1. WHEN USING A.C. BELLS, TERMINATE EACH EXTRA WIRE SEPARATELY AFTER LAST BELL.
2. END-OF-LINE RESISTOR IS NOT REQUIRED ON A.C. BELLS.

DWG. #776-3

### INSTALLATION

1. The bell should be mounted a minimum of 8 ft. (2.4m) from the floor or as close to the ceiling as possible.
  2. Remove the gong.
  3. Connect wiring (see Fig. 3).
  4. Mount bell mechanism to backbox (bell mechanism must be mounted with the striker pointing down).
  5. Reinstall the gong (be sure that the gong positioning pin, in the mechanism housing, is in the hole in the gong).
- Test all bells for proper operation and observe that they can be heard where required (bells must be heard in all areas as designated by the authority having jurisdiction).