

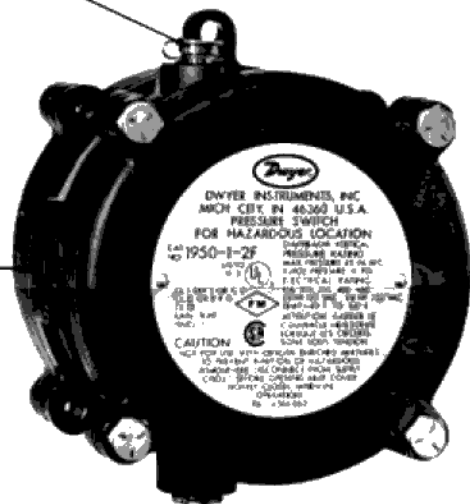
## SERIES 1950

# INTEGRAL EXPLOSION-PROOF PRESSURE SWITCHES

## Specifications - Installation and Operating Instructions

SET POINT  
ADJUSTMENT SCREW

1/2" NPT  
ELECTRICAL  
CONDUIT  
CONNECTION



VENT DRAIN PLUG

UL and CSA Listed, FM Approved For  
CL. I GR. C,D - CL. II GR. E,F,G - CL. III

Model 1950 Switches: Operating ranges and dead bands.

To order specify Model Number	Operating Range Inches, W.C.	Approximate Dead Band	
		At Min. Set Point	At Max. Set Point
1950-02	0.03 to 0.10	0.025	0.05
1950-00	0.07 to 0.15	0.04	0.05
1950-0	0.15 to 0.5	0.10	0.15
1950-1	0.4 to 1.6	0.15	0.20
1950-5	1.4 to 5.5	0.3	0.4
1950-10	3.0 to 11.0	0.4	0.5
1950-20	4.0 to 20.0	0.4	0.6
Model Number	Operating Range PSI	Approximate Dead Band	
		Min. Set Point	Max. Set Point
1950P-2	5 to 2.0	0.3 PSI	0.3 PSI
1950P-8	1.5 to 8.0	1.0 PSI	1.0 PSI
1950P-15	3.0 to 15.0	0.9 PSI	0.9 PSI
1950P-25	4.0 to 25.0	0.7 PSI	0.7 PSI
1950P-50	15.0 to 50	1.0 PSI	1.5 PSI

### PHYSICAL DATA

**Temperature Limits:** -40° to 140°F (-40° to 60°C), 1950P-8, 15, 25 & 50: 0° to 140°F (-17.8° to 60°C), 1950-02: -30° to 130°F (-34.4° to 54.4°C).

**Rated Pressure:** 1950 - 45 IN. W.C., 1950P - 35 PSI, 1950P-50 only - 70 PSI.

**Maximum surge pressure:** 1950 - 10 PSI, 1950P - 50 PSI, 1950P-50 only - 90 PSI.

**Pressure Connections:** 1/8" NPT.

**Electrical Rating:** 15 amps, 125, 250, 480 volts, 60 Hz. A.C. Resistive 1/8 H.P. @ 125 volts, 1/4 H.P. @ 250 volts, 60 Hz. A.C.

**Wiring connections:** 3 screw type; common, norm. open and norm. closed.

**Conduit connections:** 1/2" NPT.

**Set point adjustment:** Screw type on top of housing. Field adjustable.

**Housing:** Anodized cast aluminum.

**Diaphragm:** Molded fluorosilicone rubber. 02 model, silicone on nylon.

**Calibration Spring:** Stainless Steel.

**Installation:** Mount with diaphragm in vertical position.

**Weight:** 3 1/4 lbs. 02 model, 4 lbs., 7 oz.

**Response Time:** Because of restrictive effect of flame arrestors, switch response time may be as much as 10-15 seconds where applied pressures are near set point.

**NOTE:** The last number-letter combination in the 1950 model number identifies the switch electrical rating (number) and diaphragm material (letter). The 2F combination is standard as described in the physical data above. In the case of special models, a number 1 rating is the same as 2; a number 3 or 4 rating is 10A 125, 250, 480 VAC - 1/8 HP 125 VAC, 1/4 HP 250 VAC; and a number 5 or 6 rating is 1A 125 VAC. A letter B indicates a Buna-N diaphragm, N; Neoprene, S; Silicone, and V; Viton.

The New Model 1950 Explosion-Proof Switch combines the best features of the popular Dwyer Series 1900 Pressure Switch with a compact explosion-proof housing.

The unit is U.L. and CSA listed, FM approved for use in Class I, Groups C & D, Class II, Groups E, F, & G and Class III atmospheres. It is also totally rain-tight for outdoor installations. Twelve models allow set-points from .03 to 20 inches W.C. and from .5 to 50 PSI.

Easy access to the SPDT switch for electrical hook-up is provided by removing the top plate of the three-part aluminum housing. Adjustment to the set point of the switch can be made without disassembly of the housing. The unit is very compact, about half the weight and bulk of equivalent conventional explosion-proof switches.

**CAUTION:** For use only with air or compatible gases. Use of the Model 1950 switch with explosive media connected to the Low pressure port (including differential pressure applications in such media) is not recommended. Switch contact arcing can cause an explosion inside the switch housing which, while contained, may render the switch inoperative. If switch is being used to sense a single positive pressure relative to atmosphere, run a line from the low pressure port to a non-hazardous area free of combustible gases. This may increase response time on -0 and -00 models.

**DWYER INSTRUMENTS, INC.**

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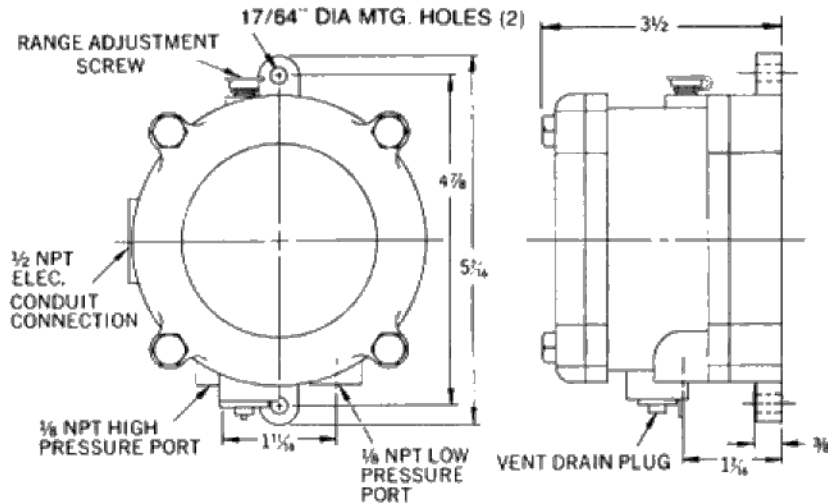
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# SERIES 1950

## INTEGRAL EXPLOSION-PROOF PRESSURE SWITCHES

### Installation and Operating Instructions



**1950-02:** 7-3/4" dia. x 4-11/32" depth.  
For complete dimensions request drawing 28-700175-00 from our Customer Service Department.

**1950 SWITCH OUTLINE DIMENSIONS**

#### INSTALLATION

1. Select a location free from excess vibration and corrosive atmospheres where temperatures will be within the limits noted under Physical Data on page 1. Switch may be installed outdoors or in areas where the hazard of explosion exists. See page 1 for specific types of hazardous service.
2. Mount standard switches with the diaphragm in a vertical plane and with switch lettering and Dwyer nameplate in an upright position. Some switches are position sensitive and may not reset properly unless they are mounted with the diaphragm vertical. Special units can be furnished for other than vertical mounting arrangements if required.
3. Connect switch to source of pressure, vacuum or differential pressure. Metal tubing with 1/4" O.D. is recommended, but any tubing which will not restrict the air flow can be used. Connect to the two 1/8" NPT female pressure ports as noted below:
  - A. Differential pressures - connect pipes or tubes from source of greater pressure to high pressure port marked HIGH PRESS. and from source of lower pressure to low pressure port marked LOW PRESS.
  - B. Pressure only (above atmospheric) - connect tube from source of pressure to high pressure port. The low pressure port is left open to atmosphere. See CAUTION on page 1.
  - C. Vacuum only (below atmospheric pressure) - connect tube from source of vacuum to low pressure port. The high pressure port is left open to atmosphere.
4. To make electrical connections, remove the three hex head screws from the cover and after loosening the fourth captive screw, swing the cover aside. Electrical connections to the standard single pole, double throw snap switch are provided by means of screw terminals marked "common," "norm open," and "norm closed." The normally open contacts close and the normally closed contacts open when pressure increases beyond the setpoint. Switch loads for standard models should not

exceed the maximum specified current rating of 15 amps resistive. Switch capabilities decrease with an increase in ambient temperature, load inductance, or cycling rate. Whenever an application involves one or more of these factors, the user may find it desirable to limit the switched current to 10 amps or less in the interest of prolonging switch life.

#### ADJUSTMENT

To change the setpoint:

- A. Remove the plastic cap and turn the slotted Adjustment Screw at the top of the housing clockwise to raise the setpoint pressure and counter-clockwise to lower the setpoint. After calibration, replace the plastic cap and re-check the setpoint.
- B. The recommended procedure for calibrating or checking calibration is to use a "T" assembly with three rubber tubing leads, all as short as possible and the entire assembly offering minimum flow restriction. Run one lead to the pressure switch, another to a manometer of known accuracy and appropriate range, and apply pressure through the third tube. Make final approach to the setpoint very slowly. Note that manometer and pressure switch will have different response times due to different internal volumes, lengths of tubing, fluid drainage, etc. Be certain the switch is checked in the position it will assume in use, i.e. with diaphragm in a vertical plane and switch lettering and Dwyer nameplate in an upright position.
- C. For highly critical applications check the setpoint adjustment and if necessary, reset it as noted in step A.

#### MAINTENANCE

The moving parts of these switches need no maintenance or lubrication. The only adjustment is that of the setpoint. Care should be taken to keep the switch reasonably clean. Periodically the vent drain plug should be rotated then returned to its original position. This will dislodge deposits which could accumulate in applications where there is excessive condensation within the switch.



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