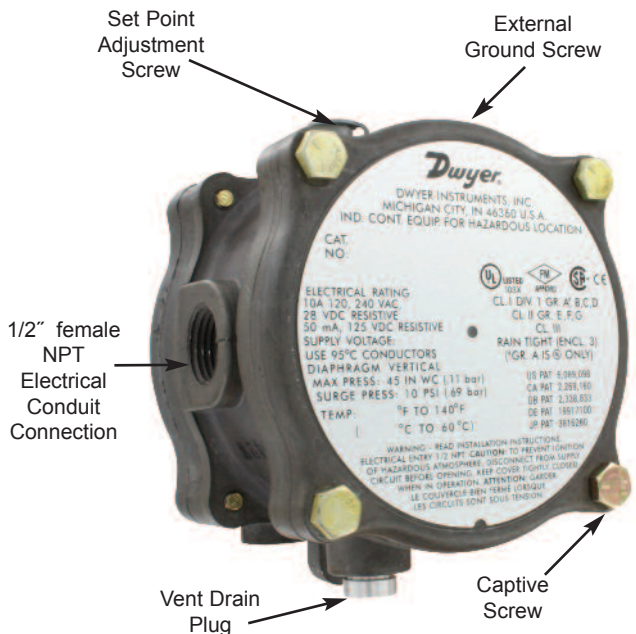




# Series 1950G – Integral Explosion-Proof Pressure Switches

## Specifications - Installation and Operating Instructions



**UL, CSA, FM Listed For**  
CL, I GR. A\*, B, C, D - CL. II GR. E, F, G - CL. III

**Directive 94/9/EC (ATEX) Compliant For**  
CE 0518 Ex II 2G Ex d IIB + H<sub>2</sub> T6 Gb

**EC-Type Certificate Number:** KEMA 03ATEX2402 X

ATEX Standards:

EN60079-0: 2009

EN60079-1: 2007

IECEx Certified for:

Ex d IIB + H<sub>2</sub> T6 Gb (-40°C < Ta < +60°C)

IECEx Certificate of Conformity:

IECEX DEK 11.0092X

IECEx Standards:

IEC 60079-0: 2007

IEC 60079-1: 2007

**Model 1950G Switches:**

Operating ranges and deadbands

To order specify Model Number*	Operating Range Inches, W.C.	Approximate Dead Band	
		At Min. Set Point	At Max. Set Point
1950G-00-B-__	0.07 to 0.15	0.04	0.06
1950G-0-B-__	0.15 to 0.5	0.06	0.11
1950G-1-B-__	0.4 to 1.6	0.11	0.29
1950G-5-B-__	1.4 to 5.5	0.4	0.9
1950G-10-B-__	3.0 to 11.0	0.9	1.8
1950G-20-B-__	4.0 to 20.0	1.2	3.0

\* Specify either 24 for 24 VDC, 120 for 120 VAC or 240 for 240 VAC when ordering. Example: 1950G-00-B-120

\* Add "NA" suffix for models with UL, CSA and FM approvals only. Example: 1950G-00-B-120-NA

**SPECIFICATIONS**

**Service:** Air and compatible combustible gases.

**Wetted Materials:** Contact Factory.

**Temperature Limits:** 0 to 140°F (-17 to 60°C). Note: Set point drift may occur with ambient temperature changes.

**Pressure Limits:** 45" w.c. (11.2 kPa) continuous; 10 psig (68.95 kPa) surge.

**Enclosure Rating:** IP54, NEMA 3, 7 and 9.

**Switch Type:** 1 Form C relay (SPDT).

**Electrical Rating:** 10A, 120/240 VAC, 28 VDC. Resistive 50mA, 125 VDC.

**Power Requirements:** 24 VDC ±10%. 120 or 240 VAC ±10% optional.

**Electrical Connections:** Internal Terminal Block.

**Process Connections:** 1/8" female NPT.

**Mounting Orientation:** Diaphragm in vertical position. Consult factory for other position orientations.

**Set Point Adjustment:** Screw type on top of housing.

**Weight:** 2 lb, 15.7 oz (1.35 kg).

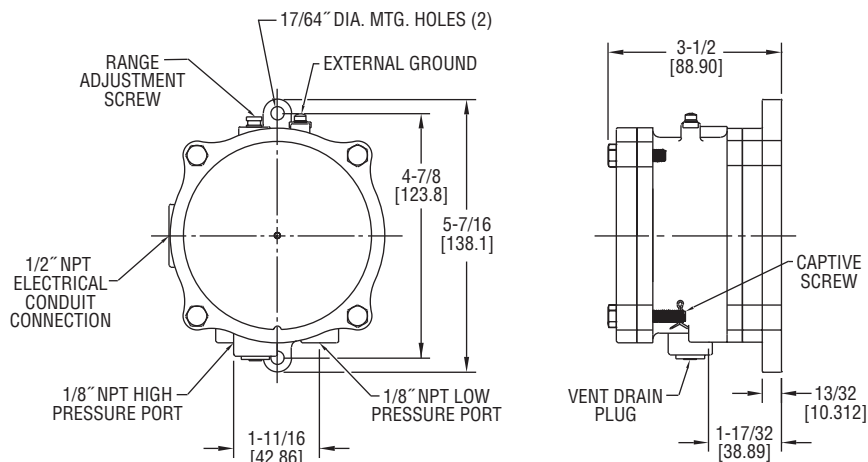
The **Model 1950G Explosion-Proof Switch** combines the best features of the popular Series 1900 Pressure Switch with a compact explosion-proof housing.

This unit is UL, CSA, FM listed for use in Class I, Groups A\*, B, C, D, Class II, Groups E, F, & G and Class III atmospheres and Directive 94/9/EC (ATEX) Compliant for CE Ex II 2G Ex d IIB + H<sub>2</sub> T6 Gb. IECEx and KC certified Ex d IIB + H<sub>2</sub> T6 Gb (-40°C < Ta < +60°C) units are available. It is also totally rain-tight for outdoor installations. Six models allow set-points from 0.07 to 20 inches W.C. ( 1.78 mm to 508.0 mm W.C.).

Easy access to the SPDT relay for electrical hook-up is provided by removing the top plate of the aluminum housing. A captive screw allows the cover to swing aside while remaining attached to the unit. 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.

**Attention:** Units with the "NA" suffix are not Directive 94/9/EC (ATEX) compliant. These units are not intended for use in potentially explosive atmospheres in the EU. These units may be CE marked for other Directives of the EU.

\*GR. A is Only.



1950G Switch Outline Dimensions

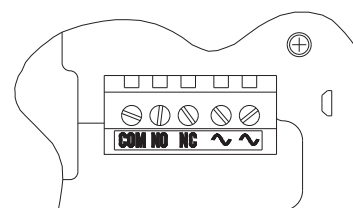


Fig. A

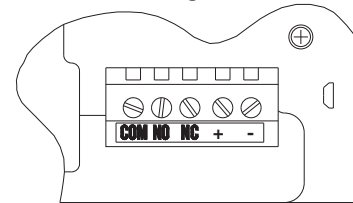


Fig. B

### 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 nameplate in an upright position. Some switches are position sensitive and may not reset properly unless they are mounted with the diaphragm vertical.

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" female NPT pressure ports as noted below.

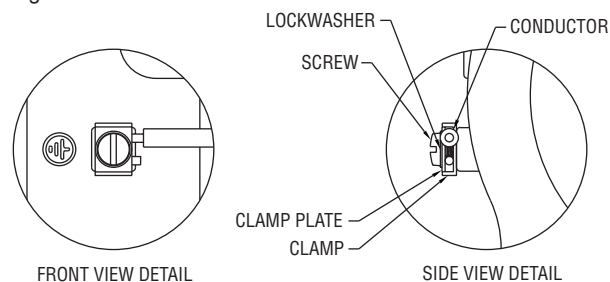
A. Differential pressures - connect pipes or tubes from source of greater pressure to high pressure port marked HIGH PRESS, and from source of lower pressure to low pressure port marked LOW PRESS.

B. Pressure only (above atmospheric pressure) - connect tube from source of pressure to high pressure port. The low pressure port is left open to atmosphere.

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 relay and AC supply voltage connections to the unit, are provided by means of terminals marked "COM", "NO", "NC", "~" and "~" (See Fig. A). Electrical connections to the standard single pole, double throw relay and DC supply voltage connections to the unit, are provided by means of terminals marked "COM", "NO", "NC", "+" and "-" (See Fig. B). 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 ratings as stated on page 1. For ATEX, IECEx compliance, cables and cable glands suitable for temperature of at least 95°C shall be used. The cable entry device shall be of certified flameproof type, suitable for the conditions of use and be correctly installed. Refer to Certificate No.: IECEx DEK 11.0092X for conditions of safe use for IECEx Compliant units. Switch capabilities decrease with an increase in ambient temperature, load inductance, or cycling rate.

For units supplied with both internal and external bonding terminals, the ground screw inside the housing must be used to ground the control. The external bonding screw is for supplementary bonding when allowed or required by local code. When external bonding conductor is required, conductor must be wrapped a minimum of 180° about the external bonding screw. See below.



FRONT VIEW DETAIL

SIDE VIEW DETAIL

### ADJUSTMENT

To change 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. Repairs to be conducted by Dwyer Instruments, Inc. Cover bolts are Class 10.9 35 mm long.