



## Model 240 Diaphragm Type Indicating/Nonindicating Differential Pressure Switch for Service In Hazardous Locations

Range: 0-20 IN. H<sub>2</sub>O to 0-100 PSID (0-50 mbar to 0-7 bar)

### Certified for CSA and UL:

Class I, Division 1, Groups B, C & D  
Class II, Division 1, Groups E, F & G  
Class I, Division 2, Groups A, B, C & D  
Class II, Division 2, Groups F & G

### Certified for ATEX:

Ex d IIB + H<sub>2</sub>  
Ex II 2GD IP65



- A low cost diaphragm type differential pressure gauge with one or two switches for use in measuring or controlling the pressure drop across filters, strainers, separators, valves, and pumps.
- Simple, rugged, compact design.
- Working pressure 1500 P.S.I.G. (275 bar).
- Over-range protection to maximum pressure.
- Aluminum or 316 wetted pressure containing body assembly.
- Wetted Internals – 316 S.S. and ceramic moving components.
- Weather-resistant gauge construction standard.
- Shatter Resistant lens.
- Accuracy ± 2% standard.\*
- Five Year Limited Warranty.

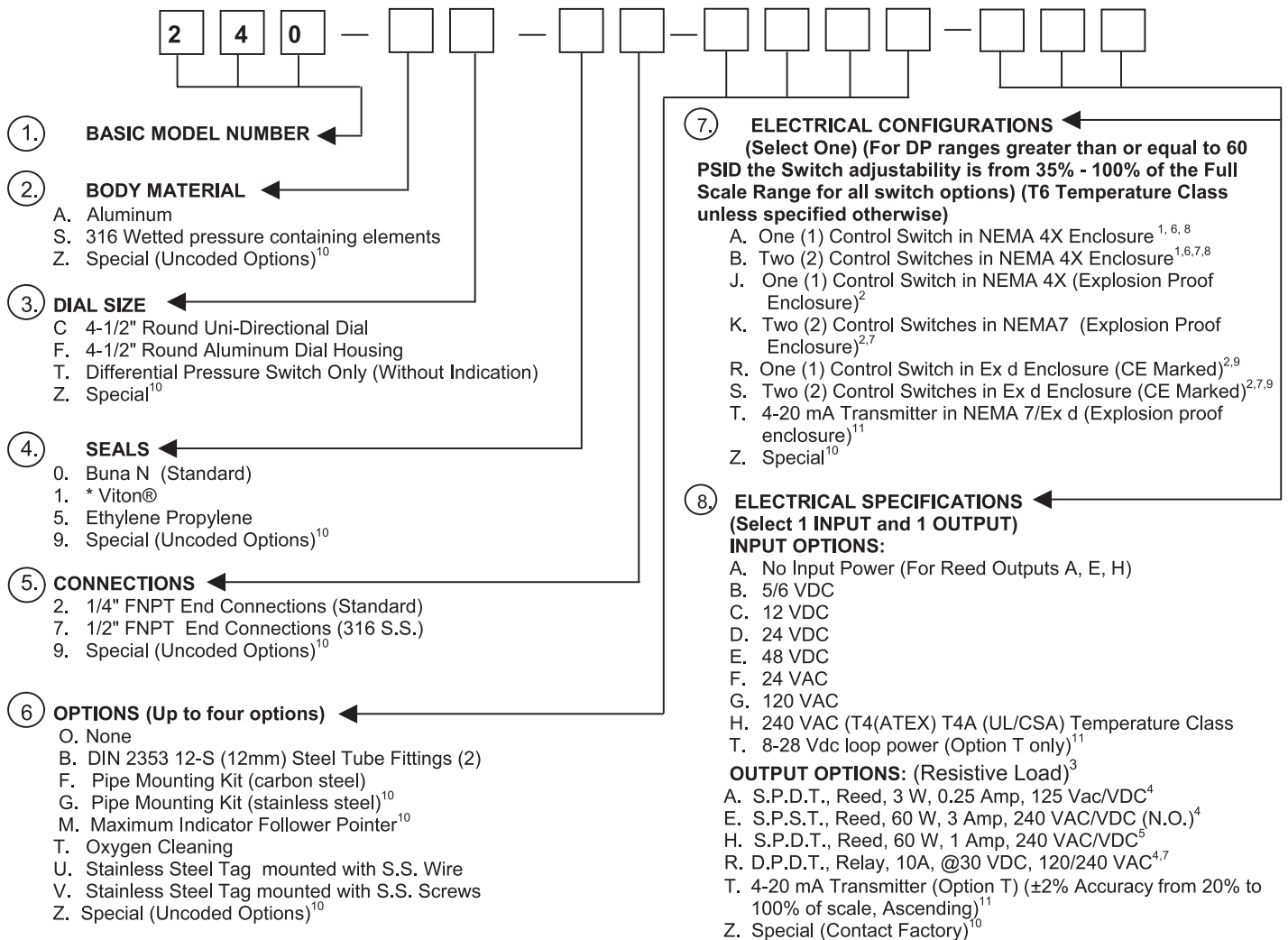
- Field wireable terminal strip interface.
- Up to 10A 120/240 VAC switching with DPDT Relay outputs.
- Hermetically Sealed Switch Outputs up to 3 Amps in SPST configuration and up to 1 amp in SPDT configuration.
- SPST outputs available in Normally Open configuration.
- Up to two independent adjustable switch points.
- ½" Conduit Interface.
- CSA Certified to **Canadian and US** standards.
- Certified for CSA and UL:
  - Class I, Division 1, Groups B, C & D
  - Class II, Division 1, Groups E, F & G
  - Class I, Division 2, Groups A, B, C & D
  - Class II, Division 2, Groups F & G
- Certified for ATEX:
  - Ex d IIB + H<sub>2</sub>
  - Ex II 2GD IP65

Division 2 Unit is NEMA 4X



\*ASME B40.100 Grade B

## Part Numbering System



**Note: Not all options available in combination with other options.**

\*Viton® is a Registered Trademark of DuPont Dow Elastomers

- (1) Complete Assembly CSA & UL Certified, Rated Class I Div 2, Groups A, B, C & D; Class II Div 2, Groups F & G (R Output option excluded)
- (2) Complete Assembly CSA & UL Certified, Rated Class I Div 1, Groups B, C & D; Class II Div 1, Groups E, F & G
- (3) For Output Options A through H, the product of the switching voltage and current shall not exceed the power rating.
- (4) Switch adjustable range 15-100% of the gauge full scale range.
- (5) Switch adjustable range 25-100% of the gauge full scale range.
- (6) Enclosure Type 4/4X
- (7) For Electrical configurations B, K & S, S.P.D.T. relay output only.
- (8) Electrical configuration A & B in combination with Output Option R is not rated for hazardous locations.
- (9) ATEX rated CE marked: Ex d IIB + H2 IP65
- (10) Not available with electrical configurations R & S.
- (11) Not yet CSA & UL Listed or ATEX rated.

## STANDARD MODEL SPECIFICATIONS

Range: 0-20 IN. H<sub>2</sub>O to 0-100 PSID (0-50 mbar to 0-7 bar)

**240-AC-02-O(JAA)**, 1500 P.S.I.G. Working Pressure, Aluminum wetted pressure containing body assembly, 1/4" FNPT end connections, stainless steel/ceramic magnet internals, Buna-N seals, 4 1/2" round dial, engineered plastic gauge case with shatter resistant acrylic lens. One 3W, 125 VAC/VDC SPDT reed switch with terminal strip, aluminum explosion proof switch enclosure with 1/2" FNPT electrical access. **CSA Certified and UL Listed.**

**240-SC-02-O(JAA)**, 1500 P.S.I.G. Working Pressure, 316/316L S.S. wetted pressure containing body assembly, 1/4" FNPT end connections, stainless steel/ceramic magnet internals, Buna-N seals, 4 1/2" round dial, engineered plastic gauge case with shatter resistant lens. One 3W, 125 VAC/VDC SPDT reed switch with terminal strip, aluminum explosion proof switch enclosure with 1/2" FNPT electrical access. **CSA Certified and UL Listed.**

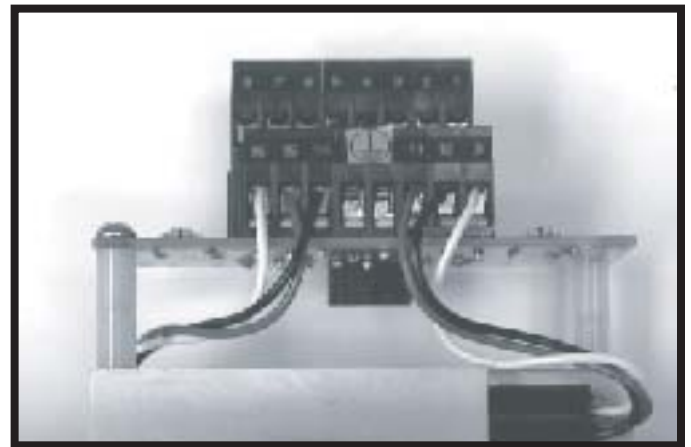
**Operation & Description:** Differential pressure is sensed by a flexible elastomer diaphragm and a calibrated range spring. The diaphragm assures total separation between the high and low pressure signals. Magnetically operated reed switches, also located outside the pressure housing, actuate dependent upon the positional relationship between the reed switch and the internal driver magnet. The reed contact(s) can be positioned to actuate within a defined percentage of the full-scale range of the gauge. For switching higher currents, the reed switches are used to control output relay(s).

**Switches:** The switching components are housed under a copper free Aluminum cover. The combination of the gauge body and the cover make up the flame-proof seal. Electrical interface to the internal field wire terminal strip is via a ½" NPT industry standard conduit connection located through the gauge body.

The hazardous environment indicating differential pressure switch is available with one or two hermetically sealed reed switches with optional one or two DPDT relay outputs. Each switch is independently adjustable within a defined percentage of the full scale range of the gauge and is available in SPDT and SPST (normally open or normally closed configurations) for various load power ratings. The switches can be set to activate or deactivate on rising or falling differential pressure. If the optional relay output is specified, an input operating voltage **must also be specified**.

#### OUTPUT RATINGS (Resistive Load)

Type	SPST	SPDT	SPDT	DPDT Relay
ELEC Spec.	A	A	A	B,C,D,E,F,G,H
Output Option Code	E H		A	R
*Power	60 W	60 W	3W	N/A
Max. Current	3 Amps	1.0 Amps	0.25 Amps	10 Amps
Max. Volts VAC/ VDC	240	240	125	277 / 30
Setting (F.S.)	15% to 100%	25% to 100%	10% to 100%	15% to 100%
Hysteresis (Max/Nom)	20% / 9% Full Scale(F.S.)	20% / 18% Full Scale(F.S.)	10% / 6% Full Scale(F.S.)	20% / 10% Full Scale(F.S.)
Repeatability	1% F.S.	1% F.S.	1% F.S.	1% F.S.



\* Product of the switching voltage and current shall not exceed the power rating of the device.

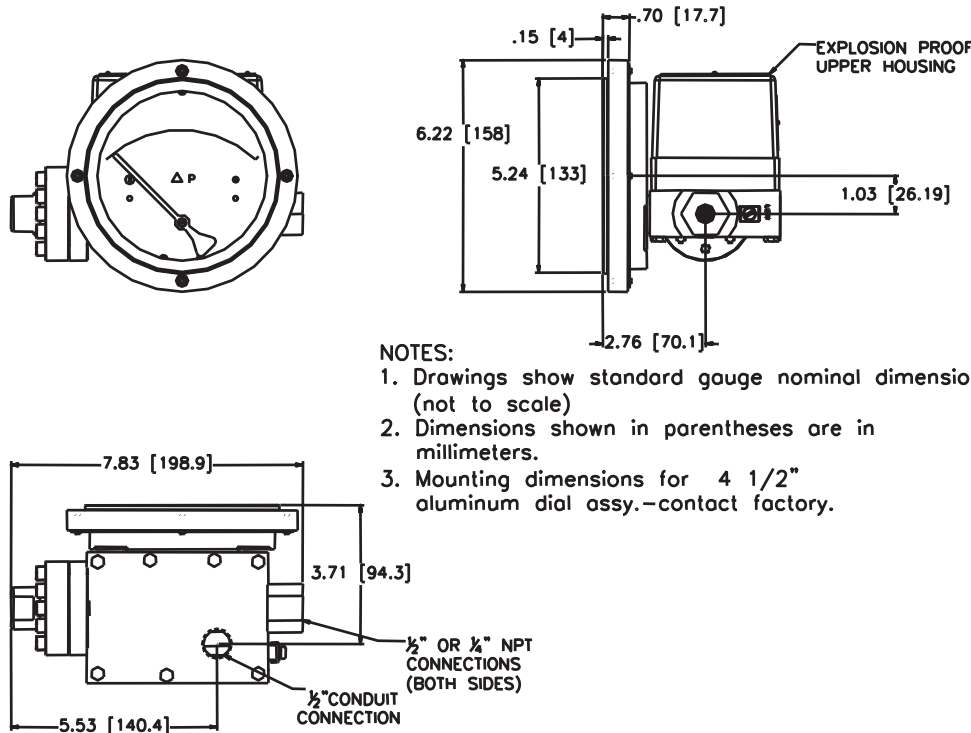
#### Hazardous Locations Certifications:

Electrical Configurations	Class I, Div. 2 Groups A, B, C & D Class II, Div. 2 Groups F & G NEMA 4X	Class I, Div. 1 Groups B, C & D Class II, Div. 1 Groups E, F & G	Ex d IIB + H2 IP65
<b>A</b>	<b>X</b>		
<b>B</b>	<b>X</b>		
<b>J</b>		<b>X</b>	<b>X</b>
<b>K</b>		<b>X</b>	<b>X</b>
<b>R</b>			<b>X</b>
<b>S</b>			<b>X</b>

Configurations are Certified for both the U.S. and Canadian markets, to the applicable U.S. and Canadian standards.

# MOUNTING INFORMATION & DIMENSIONAL DATA

MODEL 240 4 1/2" PLASTIC DIAL ASSY.



## NOTES:

1. Drawings show standard gauge nominal dimensions. (not to scale)
2. Dimensions shown in parentheses are in millimeters.
3. Mounting dimensions for 4 1/2" aluminum dial assy.-contact factory.

## PROOF PRESSURE: 6,000 PSI

-40°C < Ta < 70°C for output option R (Relay Output).

-40°C < Ta < 85°C for Electrical Input Options A in combination with Electrical Output options A, E, F, G & H.

These limits are based on the entire instrument being saturated to these temperatures. System (process) temperatures may exceed these limitations with proper installation. Contact our customer service representative for details.

**STANDARDS:** All Model 240 Series differential pressure gauges either conform to and/or are designed to the requirements of the following standards.

ASME B1.20.1  
ASME B40.100  
CSA-C22.2 No. 14, 25 and 30  
UL Std. No. 50, 508, 698 and 1203

NACE MR017  
NEMA Std. No. 250  
SAE J514  
EN50079-0, EN60079-1, EN50281-1, and EN13463-1

**For information on 4-20mA Transmitter Options refer to Bulletin 220-240T/06.**

**Mid-West<sup>®</sup>**

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