

Series 142P8 Ultra Low Vacuum/Pressure Switch

Ultra low pressure and vacuum to pressure crossover switch. Unique construction using efficient Nega-Rate® Belleville disc spring for stable set points and high proof pressure. Explosion proof enclosure and wide range of wetted materials makes this switch especially well suited for hazardous or corrosive atmospheres.

Operating Pressure Data

Adjustable Range Number	Adjustable Set Point Range		Deadband * (approximate)	Maximum Recommended System Pressure	Proof Pressure
	Increasing	Decreasing			
0	1" to 10" H ₂ O	0.25" to 9.25" H ₂ O	.75" H ₂ O (1.13" MAX)	30" H ₂ O Vacuum to 30" H ₂ O Pressure	30" H ₂ O Vacuum to +5 psig
1	2" to 40" H ₂ O	1" to 39" H ₂ O	1" H ₂ O (1.5" MAX)	30" H ₂ O Vacuum to +5 psig	30" H ₂ O Vacuum to +15 psig
2	1.5" to 40" H ₂ O Vacuum 1.5" to 40" H ₂ O Pressure (1.5" vacuum to 1.5" H ₂ O pressure**)	1" to 39" H ₂ O Vacuum 1" to 39" H ₂ O Pressure (1" vacuum to 1" H ₂ O pressure**)	1" H ₂ O (1.5" MAX)	Full Vacuum to +15 psig	Full Vacuum to 100 psig

*Deadband 50% wider with "CC" (DPDT) **Deadband may be wider than set point.

Standard Specifications

Electrical

Snap action electrical switch listed by Underwriters' Laboratories, Inc., Factory Mutual and CSA International

Electrical Connection

1/2 NPT male conduit connection with PVC insulated 18 AWG, 18" long leads

Pressure Connection

1/2 NPT Female

Temperature Range*

Ambient: -40°F to +180°F
(-40°C to +82°C)

Media: -50°F to +250°F
(-46°C to +121°C)

*Temperature limits change with O-Ring selection. See Electrical Assembly specification sheet for Temperature Class Ratings.

Adjustment

Concealed wrench flat adjustment with range scale

Shipping Weight

Approximately 3.5 pounds



Order Miscellaneous Option "D"



Explosion Proof Hermetically Sealed (NEMA 4X, 7, 9 and 13)

Ordering Sequence — Select desired option for each category

OPTIONS

Adjustable Range

- 0 .25" H₂O (.62 mbar) dec. to 10" (24.9 mbar) H₂O inc.
- 1 1" H₂O (2.49 mbar) dec. to 40" (99.6 mbar) H₂O inc.
- 2 40" H₂O (99.6 mbar) inc. vac. to 40" (99.6 mbar) H₂O inc. pressure

Electrical Form

- C 11 amp, 1/4 hp at 125 or 250 VAC; 5 amp resistive, 3 amp inductive at 28 VDC; .5 amp resistive at 125 VDC
- CC 11 amp, 1/4 hp at 125 or 250 VAC; 5 amp resistive, 3 amp inductive at 28 VDC; .5 amp resistive at 125 VDC

Enclosure

- 6 Explosion proof, hermetically-sealed electrical assembly, EX d IIC. Part Numbers 057-0770 & 057-0772 (Form C) and 057-0771 & 057-0773 (Form CC). Agency listings include Underwriters Laboratories, Inc., CSA International, Factory Mutual, and Inmetro. Division 1 and 2, Class I, Groups A, B, C, and D; Class II, Groups E, F, and G. NEMA 4X, 7, and 9; IP66. Leads are factory sealed and Pressure Switches are Dual Seal Certified.

Miscellaneous

- A Epoxy paint exterior — extra protection for severe environments
- D SIL approval and marking, per IEC61508 (includes FMEA report)
- I 3/4 NPT conduit box with terminal strip (Groups C & D only, not available with N option)
- M Gold electrical contacts for extremely low current applications
- N ATEX and IECEx with CE Mark
- R 72" Electrical free leads
- U M20 x 1.5 Electrical Conduit Adapter

Port Material

- 4 316 Stainless Steel
- 7 Hastelloy C

Diaphragm

- 1 Polyimide
- 4 316 Stainless Steel
- 6 Tantalum
- 7 Hastelloy C

O-Rings

- 2 Kalrez
- 3 Viton
- 5 EPR
- 8 Buna-N

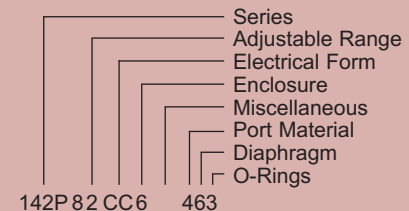
Special (Consult representative or factory)

- Non-catalog adjustable range and/or set point, deadband and proof pressure
- Media temperature capabilities from -65°F to +400°F

Ordering Procedure

- When factory presetting is desired, stipulate set point, increasing or decreasing
- Insert available option number or letter designation as required

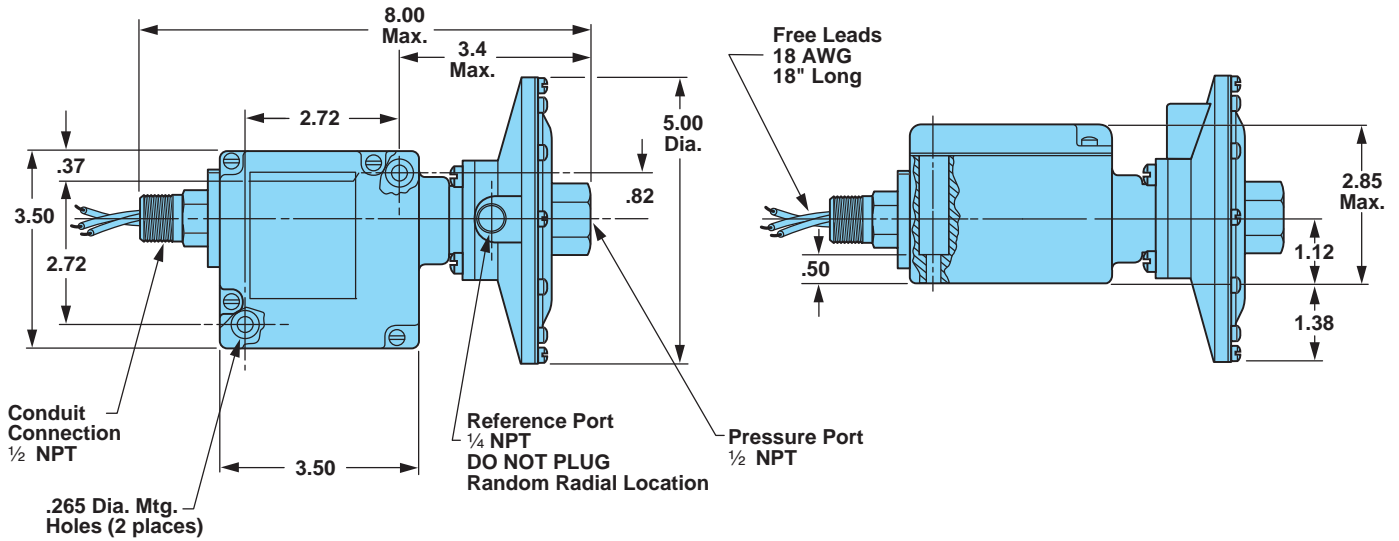
Example



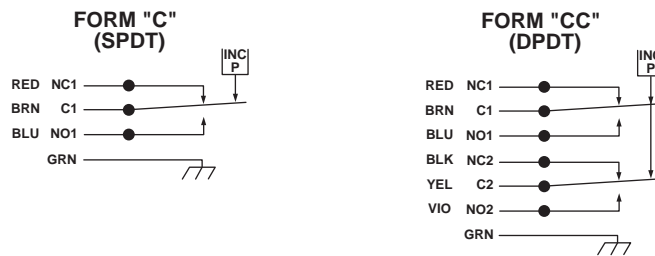
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Field Adjustable
40" H₂O vac. to 40" H₂O

Envelope Dimensions



Electrical Form



Basic Principles of Design

