



Precision Sensors Division

Differential Pressure Switches

For High Purity Applications

Precision Sensors' High Purity Differential Pressure Switches complement their line of Vacuum, Gauge, and Absolute Pressure Switches designed and manufactured specifically for clean processes requiring reliability and longevity.

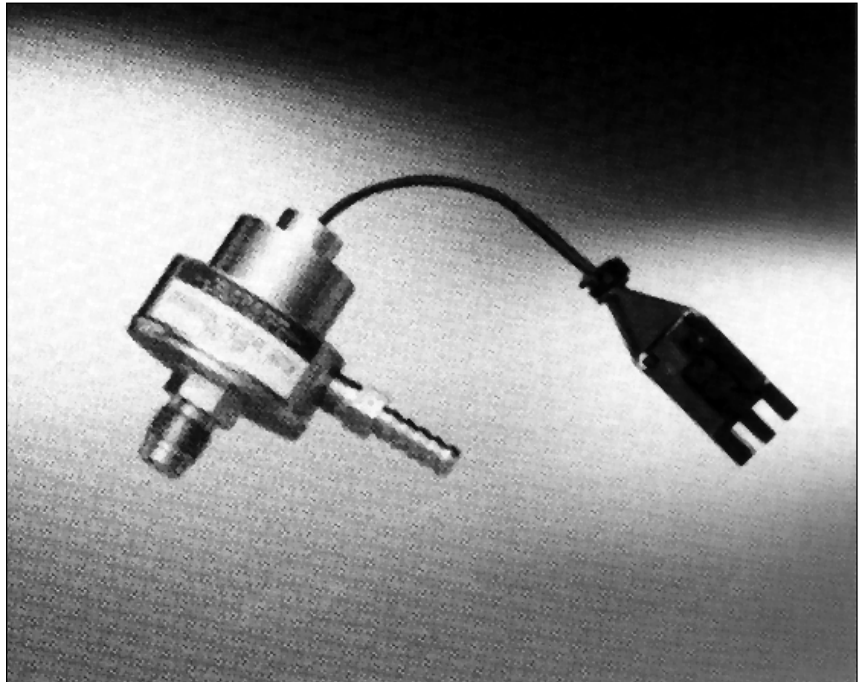
Factory set to your specification

Port 1 has electropolished 316L stainless steel wetted surfaces

Electron beam welded construction

100% Helium leak tested

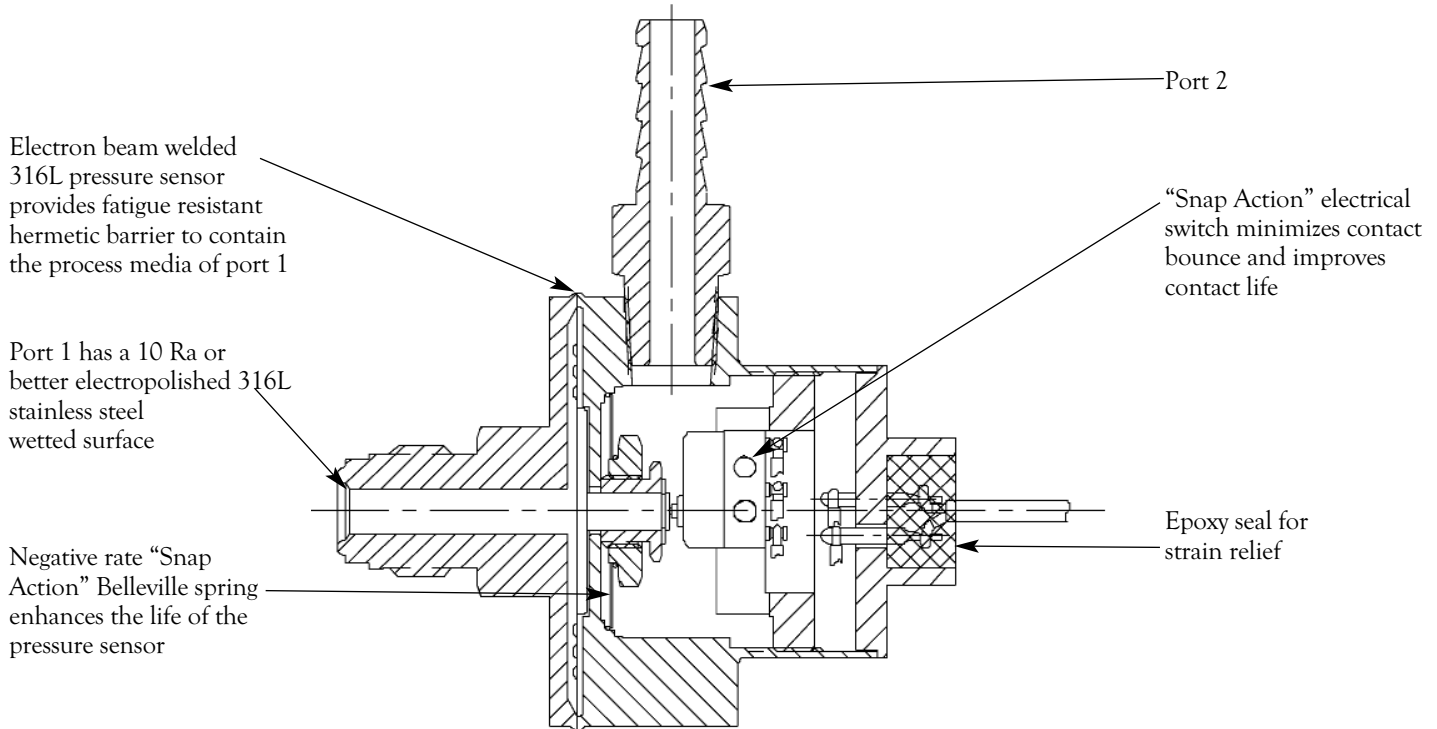
**Highly repeatable
"Snap Action" Belleville
spring design**



These switches feature 2 ports: port 1 is suitable for high purity gases and other media compatible with 316L stainless steel; port 2 is suitable for dry air or inert gases. Common applications include load-lock chambers, gas delivery systems and mini environments.

All products comply with European safety requirements, bear the CE part mark and are UL recognized under file number E 179859.

Features



Performance

Available Settings	Hysteresis (Deadband)	Repeatability	Proof Pressure Differential	Proof Pressure Both Ports Simultaneously
20 to 250 mm Hg differential	20 mm HG + 5% of setting	±5 mm + 2% of setting	100 PSID	300 PSIG

Specifications

Calibration	All units are factory set to customer specifications
Construction	Electron beam welded diaphragm; negative rate "Snap Action" Belleville load spring
Media	Port 1: any liquid or gas compatible with 316L stainless steel Port 2: dry air or inert gas
Leakage	100% helium leak tested to 1×10^{-9} std cc/sec (Port 1)
Surface Finish	Port 1: 10 Ra or better
Temperature	Operating: 0 to 130°F Non-operating: -40 to 180°F Higher temperature constructions are available
Electrical	All units utilize a UL recognized and CSA listed electrical switch. Gold contacts: 1 amp resistive, 0.5 amp inductive at 28 VDC Silver contacts: 5 amp resistive., 3 amp inductive at 28 VDC, 5 amp resistive at 250 VAC; mechanical contact life up to 10 million cycles
Enclosure	The mechanism, electrical switch and wiring are exposed to the media of Port 2
Installation	Insensitive to mounting attitude

How to Order

- Create a part description by using the system below.
The part description will follow this form:

	MODEL	SETTING				END FITTING		FINISH	ELECTRICAL			
	D48W = 20 to 400 mm Hg differential	Port Layout 1H = Port 1: High pressure 1L = Port 1: Low pressure	Actuation I = Increasing differential pressure D = Decreasing differential pressure	Units P = PSI I = Inches of mercury ("Hg) M = mm of Hg	Setting Enter the setting	Port 1 VM = 1/4 Male VCR® type (standard) VF = 1/4 Female VCR® type	Port 2 VM = 1/4 Male VCR® type VF = 1/4 Female VCR® type 2P = 1/8 - 27 Male NPT 4P = 1/4 - 18 Male NPT 4B = 1/4 Barb fitting (standard)	10 = 10 Ra (standard) 5 = 5 Ra	Contact Position NC = Normally closed (0 PSID) NO = Normally open (0 PSID) DT = SPDT (3 wires)	Contact Material G = Gold S = Silver	Lead Length Enter the lead length (24" standard)	Electrical Interface L = Free leads C = Crimp type connector; specify manufacturer and P/N [Amp MR 1-- 640507 (or 8) - 0 standard]
Example	D48W	1H	I	M	100	VM	4B	10	NC	G	11	C

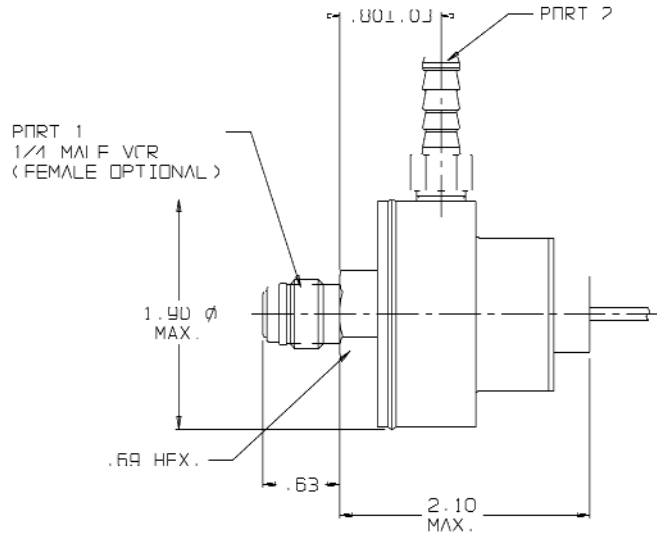
Model - Setting - End Fitting - Finish - Electrical

This above description is for a differential pressure switch whose gold contacts open on increasing differential pressure at 100 mm Hg. Port 1 is the high pressure port and has a 1/4 male VCR type fitting with a standard 10 Ra finish. Port 2 has a 1/4 barb fitting. The switch also has 11" leads with an AMP Miniature Rectangular connector (p/n 1-640507-0).

A factory part number will be assigned upon completion of a drawing based on the part description. When ordering, use this drawing number as the part number.

☆ **Other options such as custom pressure connections and different materials are available upon request. Please consult the factory or your distributor for more assistance.**

Dimensions



D48W

Recommended Practices

United Electric Controls recommends careful consideration of the following factors when specifying and installing UE pressure units. Before installing a unit, the Installation and Maintenance instructions provided with unit must be read and understood.

To avoid damaging unit, proof pressure limits stated in literature and on nameplates must never be exceeded, even by surges in the system. Operation of the unit up to proof pressure is acceptable on a limited basis (i.e.start-up, testing) but continuous operation must be restricted to the designated range. Excessive cycling at proof pressure limits could reduce sensor life.

A back-up unit is necessary for applications where damage to a primary unit could endanger life, limb or property. A high or low limit switch is necessary for applications where dangerous runaway condition could result.

The range must be selected so that incorrect, inadvertent or malicious setting at any range point can not result in an unsafe system condition.

Install unit where shock, vibration and ambient temperature fluctuations will not damage unit or affect operation. Orient unit so that moisture does not enter the enclosure via the electrical connection.

Unit must not be altered or modified after shipment. Consult UE if

modification is necessary.

Monitor operation to observe warning signs of possible damage to unit, such as drift in set point. Check unit immediately.

Preventative maintenance and periodic testing is necessary for critical applications where damage to unit could endanger property or personnel.

For all applications, a factory set unit should be tested before use.

Electrical ratings stated in literature and on nameplate must not be exceeded. Overload on a switch can cause damage, possible on the first cycle. Wire unit according to local and national electrical codes, using wire size recommended in installation sheet.

Use only factory authorized replacement parts and procedures.

Do not mount unit in ambient temperature exceeding published limits

Limited Warranty

UE warrants that the product thereby purchased is, upon delivery, free from defects in material and workmanship and that any such product which is found to be defective in such workmanship or material will be repaired or replaced by UE (F.O.B. UE); provided, however, that this warranty applies only to equipment found to be so defective within a period of 12 months after installation by buyer but

not to exceed 18 months after delivery by the seller. Except for the limited warranty of repair and replacement stated above, UE disclaims all warranties whatsoever with respect to the product, including all implied warranties of merchantability or fitness for any particular purpose.

Liability Limitation

The sole and exclusive remedy of buyer for any liability or seller for any claim, including incurred in connection with (I) breach of any warranty whatsoever expressed or implied, (II) a breach of contract, (III) a negligent act or acts (or negligent failure to act) committed by seller, or (IV) an act for which strict liability will be imputed to seller, is limited to the limited warranty or repair and replacement stated herein. In no event shall the seller be liable for any special, indirect, consequential or other damages or like general nature, including, without limitation, loss of profits or production, or loss or expenses of any nature, incurred by the buyer or any third party.



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