**Introduction**

Diaphragm Seals (or Chemical Seals) use a flexible barrier, or diaphragm, to isolate a pressure sensor (switch or transducer) from adverse effects of the process fluid.

**Diaphragm seals are useful to:**

- Protect the sensor from the process media (corrosive, abrasive, viscous, crystallizing media, or high process temperature)
- Protect the process from the contaminants (sanitary process requiring clean-out, or high purity media).

**HOW IT WORKS**

A diaphragm seal, when properly mounted to a sensor and filled, will accurately transmit process pressure to the instrument. The pressure applied by the process media is hydraulically transmitted from the flexible diaphragm, through the fill fluid between the diaphragm and the instrument, to the pressure element, thus engaging the switch or transducer.

**TARGET MARKETS & APPLICATIONS**

- Oil, gas & petrochemical refining
- Food & beverage processing
- Waste water facilities
- Pharmaceutical
- Pulp & paper
- Chemical
- Sanitary/High Purity applications
- Power generation
- Automotive/Paint
Application Considerations

The following should be considered when choosing a diaphragm seal:

- Process Characteristics: Pressure, temperature, chemical compatibility, and viscosity.
- Seal Mounting: Connection to process (threaded, flanged, clamped, or remote) and connection to instrument (usually NPT).
- Ambient Characteristics: Temperature, corrosive atmosphere, etc.
- Instrument Considerations: Sufficient fluid displacement is required to drive instrument through its full range. This means, for example, you can’t put an instrument with a large displacement on a seal with a small displacement. Remote instrument placement requires a capillary connecting instrument to seal.
- Vacuum Considerations: High vacuums (over 25" Hg) or vacuums with high temperatures require special fill selection, preparation, and procedures, as well as careful diaphragm selection.

NOTE

Improper seal selection may result in increased system error, system failure, and possible damage or injury. Barksdale can provide application assistance, but final compatibility is the responsibility of the buyer.

HOW TO ORDER

Follow the Barksdale switch, transducer or solid state part number with a slash (/) and then the diaphragm seal part number.

Examples:

D1H-H18SS/TS5
E1H-H250-BR/FF1
BPS34NVM015OP/SSI
425X-03/MS6

SEAL TYPES

Threaded Off-line Seals:
Threaded off-line and flanged off-line seals are commonly used in a variety of applications. These have a standard cleanout feature, allowing removal of the process flange or lower housing without losing the fill. Mounted on a nipple off the line or using a standard ANSI flange.

Flush Face Seals:
Designed for low displacement applications where a build-up of solids across the diaphragm is a concern. Threaded process connection.

Sanitary Seals:
Designed for food, pharmaceutical and other sanitary applications. Available to fit most standard piping systems with “Tri-clamp” connection. Standard fill is food grade glycerin.

Mini-Seals:
Designed for low displacement applications where size or economy are the primary considerations.

Special Designs:
Barksdale is ready to work with you on any high-performance diaphragm seal application, (that might exceed the stated limits) such as high vacuum, high temperature, high sterility, custom design, high static pressure with a low differential span, or high vacuum with high temperature.
The following Barksdale pressure switches are approved for use with diaphragm seals.

Barksdale’s electro-mechanical switches use a sensor such as a diaphragm, dia-seal piston, or bourdon tube which actuates an electro-mechanical limit switch that opens or closes a circuit. Mechanical switches do not require any power input to operate, and thus make excellent fail-safe devices.

### Dia-Seal Piston

**Explosion Proof Dia-Seal Piston**

- E1H
- P1H
- P1X

### Diaphragm Switches

**Explosion Proof Diaphragm Switch**

- D1H / D2H
- D1T / D2T
- D1X / D2X
- CD1H / CD2H

### Bourdon Tube

**Explosion Proof Bourdon Tube**

- B1T / B2T
- B1X / B2X

### Differential Pressure Switches

- CDPD1H / CDPD2H
- DPD1T / DPD2T

### Explosion Proof Compact Switch

- 9671X / 9681X

**NOTE**

Adding a diaphragm seal to Barksdale’s pressure instruments will affect some of the product’s performance and accuracy - the degree of variability depends on the environmental, installation, service, and/or measurement methods and conditions. The end user should determine the final overall product suitability and acceptability in the specific application.
The following Barksdale transducer and solid state products are approved for use with diaphragm seals.

Barksdale’s electronic switches use a piezo-resistive pressure sensing technology that transmits a voltage or current signal proportional to the system pressure or vacuum. These switches provide added functionality to any system they are used in.

**Solid State Products**
Electronic Pressure Switches

- BPS3000
- UDS3

**Diaphragm Seals**

**Applicable Electronic Products**

- 423 / 425 / 426
- 423X / 425X / 426X
- 433 / 435 / 436
- 443 / 445 / 446

**NOTE**
Adding a diaphragm seal to Barksdale’s pressure instruments will affect some of the product’s performance and accuracy - the degree of variability depends on the environmental, installation, service, and/or measurement methods and conditions. The end user should determine the final overall product suitability and acceptability in the specific application.
Threaded Off Line Diaphragm Seals are a popular choice for most applications. The flush port is recommended for applications where there may be a build up of solids and requires a simple means of cleaning. These seals are available in all stainless steel construction, as well as a carbon steel upper flange for a more economical choice.

Materials

Lower housings: 316SS standard. Other materials available for custom applications.

Diaphragms: Standard metal diaphragms are convoluted and made of 316SS. Other materials (such as Teflon or tantalum) are available for corrosion resistance or extra sensitivity.

Gaskets: Standard Teflon gaskets are on the process side of diaphragm (grafoil for high temperature.) Other materials are available.
# Threaded Off-Line Diaphragm Seals

## Seal Specifications

- **Diaphragm Seals**
- **Threaded Off-Line Diaphragm Seals**
- **Series TS & TC**

1. Seals not recommended for transducers and solid state devices with ranges lower than 15 psi. Use higher pressure ranges, or absolute ranges.
2. The maximum working pressure is the lower of the maximum seal working pressure and the maximum adjustable range of the switch.
3. Diaphragm differential pressure switches will require two seals and two capillaries for remote mounting. Consult Factory.
4. Do not use diaphragm switches in the -2SS pressure range.
5. Use the size 6 switch with diaphragm switches.
6. Cleanout style configuration: the lower housing can be removed without losing the fill.
7. Recommend selecting brass or stainless steel process fittings only for pressure switch or transducer.
8. 3/4" NPT and 1" NPT also available. Consult factory.
9. Standard steel bolting is rated at 2500 psi maximum pressure.
10. Seals have standard 316 SS diaphragm. Pressure and temperature limits for metal diaphragms apply. Other metals such as hastelloy, tantalum, as well as viton and Teflon diaphragms are available for customized applications. Please consult factory.

### Diaphragm Size

<table>
<thead>
<tr>
<th>Diaphragm Size</th>
<th>Upper Housing Material</th>
<th>Process Connection (NPTF)</th>
<th>Flush Port Configuration</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 (2-1/4&quot;</td>
<td>diaphragm)</td>
<td>Carbon Steel</td>
<td>1/4&quot;</td>
<td>With flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2&quot;</td>
<td>Without flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flanged (specify pipe size and rating)</td>
<td>With flush port</td>
</tr>
<tr>
<td>6 (3&quot;</td>
<td>diaphragm)</td>
<td>316 S.S.</td>
<td>1/4&quot;</td>
<td>With flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2&quot;</td>
<td>Without flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flanged (specify pipe size and rating)</td>
<td>With flush port</td>
</tr>
<tr>
<td>5 (2-1/4&quot;</td>
<td>diaphragm)</td>
<td></td>
<td>1/4&quot;</td>
<td>With flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2&quot;</td>
<td>Without flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flanged (specify pipe size and rating)</td>
<td>With flush port</td>
</tr>
<tr>
<td>6 (3&quot;</td>
<td>diaphragm)</td>
<td></td>
<td>1/4&quot;</td>
<td>With flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>1/2&quot;</td>
<td>Without flush port</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Flanged (specify pipe size and rating)</td>
<td>With flush port</td>
</tr>
</tbody>
</table>

### Recommended Control Device:

- **Solid State**: BPS3000, UDS3
- **Bourdon Tube**: B1T/B2T, B1X/B2X
- **Diaphragm Switches**: D1H/D2H, D1T/D2T, D1X/D2X, CD1H/CD2H, DPD1T/DPD2T, CDPD1H/CDPD2H
- **Dia-Seal Piston**: E1H, P1H, P1X
- **Compact Explosion Proof**: 9681X

### Temperature Limits (for reference)

<table>
<thead>
<tr>
<th>Maximum Temperature</th>
<th>Diaphragm Material</th>
<th>Lower Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>650°F</td>
<td>Welded metal&lt;sup&gt;10&lt;/sup&gt;</td>
<td>Metal</td>
</tr>
<tr>
<td>450°F</td>
<td>Teflon option&lt;sup&gt;10&lt;/sup&gt;</td>
<td>Metal</td>
</tr>
<tr>
<td>300°F</td>
<td>Viton option&lt;sup&gt;10&lt;/sup&gt;</td>
<td>Metal</td>
</tr>
<tr>
<td>140°F</td>
<td>-</td>
<td>Nonmetal</td>
</tr>
</tbody>
</table>

<sup>1</sup> Seals not recommended for transducers and solid state devices with ranges lower than 15 psi. Use higher pressure ranges, or absolute ranges.

### Pressure Limits (for reference)

<table>
<thead>
<tr>
<th>psi</th>
<th>Lower Housing</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,500</td>
<td>metal, with ss bolting (at 100°F)</td>
</tr>
<tr>
<td>2,500</td>
<td>metal, std bolting (at 100°F)</td>
</tr>
<tr>
<td>5,000</td>
<td>metal, hi-press bolting (at 100°F)</td>
</tr>
<tr>
<td>300</td>
<td>non-metallic (at 140°F)</td>
</tr>
</tbody>
</table>

### Minimum Working Pressure (at 100°F)

<table>
<thead>
<tr>
<th>Diaphragm Size</th>
<th>Size 5 Seal</th>
<th>Size 6 Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal&lt;sup&gt;10&lt;/sup&gt;</td>
<td>25 psi</td>
<td>10 psi</td>
</tr>
<tr>
<td>Teflon option&lt;sup&gt;10&lt;/sup&gt;</td>
<td>20 psi</td>
<td>5 psi</td>
</tr>
<tr>
<td>Viton option&lt;sup&gt;10&lt;/sup&gt;</td>
<td>3 psi</td>
<td>n/a</td>
</tr>
</tbody>
</table>

### Maximum Working Pressure (at 100°F)

<table>
<thead>
<tr>
<th>Diaphragm Size</th>
<th>Size 5 Seal</th>
<th>Size 6 Seal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metal&lt;sup&gt;10&lt;/sup&gt;</td>
<td>-21&quot; Hg</td>
<td>-24&quot; Hg</td>
</tr>
<tr>
<td>Teflon option&lt;sup&gt;10&lt;/sup&gt;</td>
<td>-23&quot; Hg</td>
<td>-26&quot; Hg</td>
</tr>
<tr>
<td>Viton option&lt;sup&gt;10&lt;/sup&gt;</td>
<td>-29&quot; Hg</td>
<td>n/a</td>
</tr>
</tbody>
</table>

<sup>10</sup>Seals have standard 316 SS diaphragm. Pressure and temperature limits for metal diaphragms apply. Other metals such as hastelloy, tantalum, as well as viton and Teflon diaphragms are available for customized applications. Please consult factory.

---

39
Flush Face Diaphragm Seals are useful in applications where a continuous flow of process media across the diaphragm is required to prevent solids buildup.

**Seal Specifications**

- All 316 SS construction
- Welded 316 SS diaphragm
- DC200 silicone fill fluid
- 1/4" NPT instrument connection

<table>
<thead>
<tr>
<th>Diaphragm Size</th>
<th>Process Connection (NPTM)</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>Same as Process Connection</td>
<td>1&quot;</td>
<td>FF1</td>
</tr>
<tr>
<td></td>
<td>1/2&quot;</td>
<td>FF2</td>
</tr>
<tr>
<td></td>
<td>3/4&quot;</td>
<td>FF3</td>
</tr>
</tbody>
</table>


1. Seals not recommended for transducers and solid state devices with ranges lower than 15 psi. Use higher pressure ranges, or absolute ranges.
2. The maximum working pressure is the lower of the maximum seal working pressure and the maximum adjustable range of the switch.
3. Do not use E1H pressure range 15 with flush face seal.
4. FF2 only recommended for high pressure applications.
5. Use only FF1 seal with P1H / P1X pressure range 30.
6. Do not use 9681X with FF2 seal.
7. Recommend selecting brass or stainless steel process fittings only for pressure switch or transducer.
Sanitary Diaphragm Seals

Sanitary Diaphragm Seals are specially designed to meet the demanding sanitary requirements of food, dairy, beverage, pharmaceutical, and biotech applications.

Seal Specifications

- All 316 SS welded diaphragm construction
- Certified for 3A sanitary standards
- Food grade glycerin fill
- Weld mount control device to seal
- 1/4" NPT instrument connection

Seal Specifications

- All 316 SS welded diaphragm construction
- Certified for 3A sanitary standards
- Food grade glycerin fill
- Weld mount control device to seal
- 1/4" NPT instrument connection

Process Connection | Part # |
--- | --- |
1 1/2" Tri-clamp | SS1 |
2" Tri-clamp | SS2 |
3/4" Tri-clamp | C/F |

Recommended Control Device:
- Solid State: BPS3000, UDS3
- Bourdon Tube: B1T/B2T, B1X/B2X
- Dia-Seal Piston: E1H+, P1H+, P1X
- Compact Explosion Proof: 9681X

1 Seals not recommended for transducers and solid state devices with ranges lower than 15 psi. Use higher pressure ranges, or absolute ranges.
2 The maximum working pressure is the lower of the maximum seal working pressure and the maximum adjustable range of the switch.
3 Do not use E1H pressure range 15 with seal SS1.
4 Do not use P1H / P1X pressure range 30 with seal SS1.
5 1000 psi maximum pressure with customer supplied heavy duty clamp. Not to exceed the instrument pressure rating.
6 Recommend selecting brass or stainless steel process fittings only for pressure switch or transducer.
Mini Diaphragm Seals

Series MS

Mini-Seals are all-welded, gasketless, threaded off-line seals. The mini-seal is an economical choice for isolation of smaller instruments, or where high sensitivity is not required.

Seal Specifications

- All welded, gasketless, 316 SS construction
- 1/4" NPT instrument connection
- DC200 silicone fill fluid

<table>
<thead>
<tr>
<th>Seal Size</th>
<th>Process Connection (NPTF)</th>
<th>Flush Port Configuration</th>
<th>Part #</th>
</tr>
</thead>
<tbody>
<tr>
<td>4G</td>
<td>1/4&quot;</td>
<td>With flush port</td>
<td>MS1</td>
</tr>
<tr>
<td>4G</td>
<td>1/2&quot;</td>
<td>With flush port</td>
<td>MS2</td>
</tr>
<tr>
<td>6G</td>
<td>1/4&quot;</td>
<td>With flush port</td>
<td>MS3</td>
</tr>
<tr>
<td>6G</td>
<td>1/2&quot;</td>
<td>With flush port</td>
<td>MS4</td>
</tr>
<tr>
<td>6G</td>
<td>1/4&quot;</td>
<td>Without flush port</td>
<td>MS5</td>
</tr>
<tr>
<td>6G</td>
<td>1/2&quot;</td>
<td>Without flush port</td>
<td>MS6</td>
</tr>
</tbody>
</table>

Recommended Control Device:
- Solid State: BPS3000, UDS3
- Compact Explosion Proof: 9681X

1 Seals not recommended for transducers and solid state devices with ranges lower than 15 psi. Use higher pressure ranges, or absolute ranges.
2 The maximum working pressure is the lower of the maximum seal working pressure and the maximum adjustable range of the switch.
3 Do not use 9681X pressure range 1 with MS1, MS2, MS3, MS4 seals.
4 Recommend selecting brass or stainless steel process fittings for pressure switch or transducer.
Diaphragm Seals

Application Worksheet

1. SEAL INFORMATION:
   Description (or Model) of Seal Requested:
   Process Connection:
   - [ ] Threaded: [ ] 1/4" NPT [ ] 1/2" NPT
   - [ ] Flanged: ____________ inches ____________ lbs.
   - [ ] Sanitary Tri-clamp connection: [ ] 1-1/2" [ ] 2" [ ] 3/4"
   - [ ] Capillary (remote mount): ____________ feet
   - [ ] Other ________________________________
   Seal Materials: Upper ____________________ Lower ____________________ Diaphragm ____________________

2. PROCESS INFORMATION:
   Maximum Working Minimum Setpoint
   Process Pressure (psi): [ ] [ ] [ ]
   Process Temperature (°F): [ ] [ ] N/A
   Process Fluid: ________________________________
   Process Pulsation: [ ] Yes [ ] No If yes, specify ________________________________
   Vibration: [ ] Yes [ ] No If yes, specify ________________________________

3. SENSOR INFORMATION:
   - [ ] Switch
   - [ ] Transducer
   - [ ] Solid State
   Barksdale part number or family: ________________________________
   Adjustable pressure range: ________________________________
   Other: ________________________________

4. AMBIENT CONDITIONS:
   Temperature Range: High ____________ Low ____________
   Check where applicable:
   - [ ] Indoor [ ] Outdoor
   - [ ] Sunny [ ] Shaded
   - [ ] Wet [ ] Dry
   - [ ] Corrosive

NOTE
Adding a diaphragm seal to Barksdale’s pressure instruments will affect some of the product’s performance and accuracy - the degree of variability depends on the environmental, installation, service, and/or measurement methods and conditions. The end user should determine the final overall product suitability and acceptability in the specific application.

5. APPLICATION DESCRIPTION:
   __________________________________________________________________________
   __________________________________________________________________________

6. OTHER INFORMATION, SPECIAL NEEDS, AND NOTES:
   __________________________________________________________________________

**NOTE: Barksdale Inc. is glad to provide applications assistance, based on limited information, but final compatibility is the responsibility of the buyer.**
Diaphragm Switch

**Features**
- Stripped and housed versions available
- High accuracy
- Ideal for pressure or vacuum
- Easy setpoint adjustment
- NEMA 4 (Housed Models)
- Up to 3 setpoints available in one switch

**Applications**
- Pump & compressor monitoring
- Engine monitoring
- Machine tools
- Hydraulic power units
- Medical equipment
- Waste management
- Food & beverage
- Factory automation
- Metal working

**General Specifications**

| Accuracy: | ± 0.5% of the adjustable range |
| Switch: | Single pole double throw (SPDT) Snap Action; single or dual circuit |
| Type: | 10 amps @ 125/250 VAC; 3 amps @ 480 VAC (Class A or H limit switch). Consult sales drawing for ratings of optional limit switches. |
| Rating: | |
| Wetted Parts: | 304 stainless steel |
| Process Fitting: | 17-7 PH stainless steel |
| Diaphragm: | Anodized aluminum (housed models) |
| Enclosure: | |
| Electrical Connection: | Free leads approximately 18" long, #16 AWG and 1/2” NPT conduit connection for housed models |
| Enclosure Ratings: | Housed Models: NEMA 4 |
| Stripped Models: NEMA 1 |
| Pressure Connection: | 1/4” NPT Female |
| Approvals: | Stripped (D1S and D2S) models may be ordered as UL Recognized components (UR) on request. Housed (D1H and D2H) models may be ordered as UL Listed on request (UL File No. E42816). |
| UL (optional): | |
| Approvals (cont.): | All models may be ordered as CSA listed under Class 3231 02, File LR22355 on request. |
| CSA (optional): | Compliant to PED 97/23/EC |
| PED (European): | |
| Temperature Range: | Operating: -40° to +165°F (-40° to +74°C) |
| Storage: | -65° to +200°F (-54° to +93°C) |
| Adjustment Instructions: | Pressure: Turn adjustment screw counterclockwise to raise actuation point. |
| Vacuum: | Turn adjustment screw clockwise to increase setpoint (higher vacuum). |
| Options: | - NEMA 4X enclosure (housed models only) |
| - Cleaned for oxygen service |
| - Factory pre-set |
| Shipping Weight: | Stripped Versions: 1.5 lbs. approximate |
| Housed Versions: 1.75 lbs. approximate |

**Wiring Code**

<table>
<thead>
<tr>
<th>Lead</th>
<th>Circuit #1</th>
<th>Circuit #2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pressure</td>
<td>Vacuum</td>
</tr>
<tr>
<td>Normally Closed</td>
<td>Blue</td>
<td>Red</td>
</tr>
<tr>
<td>Common</td>
<td>Purple</td>
<td>Purple</td>
</tr>
<tr>
<td>Normally Open</td>
<td>Red</td>
<td>Blue</td>
</tr>
</tbody>
</table>

**Wiring Diagram**

![Wiring Diagram]
**Product Configurator**

<table>
<thead>
<tr>
<th>Example</th>
<th>D1H</th>
<th>-A</th>
<th>80SS</th>
<th>-CS</th>
</tr>
</thead>
<tbody>
<tr>
<td>H</td>
<td>Hermetically sealed limit switch option - Class I, Division II (requires AA, CC, GH or HH limit switch; not available on vacuum models; no agency approval on D1S and D2S models)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Base Configuration

- **D1H**: Single setpoint housed version
- **D1S**: Single setpoint stripped version
- **D2H**: Dual setpoint housed version
- **D2S**: Dual setpoint stripped version
- **D3H**: Triple setpoint housed version

#### Limit Switch

- **-A**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC (standard for pressure range 3S8, 80SS or 150SS)
- **-B**: 10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.50 amps @ 125 VDC; 0.30 amps @ 250 VDC
- **-C**: 10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.30 amps @ 125 VDC; 0.05 amps @ 250 VDC
- **-H**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC (standard for pressure range 2SS or 18SS)
- **-M**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; 0.50 amps @ 125 VDC; 0.25 amps @ 250 VDC (not UL approved)
- **-GH**: 1 Amp @ 125 VAC; 1 Amp @ 24 VDC with gold contacts (not UL approved)
- **-AA**: Hermetically sealed; 4 amps @ 125/250 VAC (not available on 2SS or vacuum models)
- **-CC**: Hermetically sealed; 10 amps @ 125/250 VAC (not available on 2SS or vacuum models)
- **-GH**: Hermetically sealed; 1 Amp @ 125 VAC with gold contacts (not available on 2SS or vacuum models)
- **-HH**: Hermetically sealed; 5 amps @ 125/250 VAC (not available on 2SS or vacuum models)
- **-AA**: Triple setpoint limit switch 4 amps @ 125/250 VAC (not available on hermetically sealed models)

### Options

- **-FX**: NEMA 4X enclosure
- **-Z1**: Oxygen cleaned
- **-U**: UL Approved (Industrial Control)
- **-CS**: CSA Approved Model
- **-Wxxx**: Extra wire length (XXX = inches)
- **-Sxxx**: Factory pre-set (consult factory)

### Pressure Connection

- **Blank**: Std 1/4” NPT female pressure connection
- **-P2**: 1/2” NPT female pressure connection

---

**Adjustable Range**

<table>
<thead>
<tr>
<th>Adjustable Range (PRESSURE)</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
<th>Approx. Deadband² (Actuation Value) psi (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - psi (bar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing - psi (bar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proof Pressure psi (bar)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 2S8²                      | 0.018 (0.00) | 1.65 (1.1) | 0.068 (0.0) | 1.7 (1.1) | .02 - .05 (0.0 - 0.7) |
| 3S8                      | .03 (0.00)   | 2.85 (2.0) | .08 (0.02)  | 3.2 (2.0)   | .07 - .15 (0.01 - 1.0) |
| 18B8                     | .4 (0.03)    | 17.74 (1.2) | .66 (0.05) | 18 (1.2) | .12 - .26 (0.01 - 0.22) |
| 80B8                     | .5 (0.03)    | 76.6 (5.3)  | 3.9 (0.3)   | 80 (5.5) | 1.6 - 3.4 (1.0 - 2.2) |
| 150B8                    | 1.5 (1.0)    | 144 (9.9)   | 7.5 (0.5)   | 150 (10.3) | 2.3 - 6 (2 - 4) |

<table>
<thead>
<tr>
<th>Adjustable Range (VACUUM)</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
<th>Approx. Deadband² (Actuation Value) In. Hg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - In. Hg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Increasing - In. Hg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Proof Pressure In. Hg</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| 3S8                       | 0.06    | 5.72    | 0.34    | 6.0     | .14 - .28                                  |
| 18B8                      | 0.8     | 29.2    | 1.6     | 30.0    | .4 - .8                                    |

**NOTES:**

1 Consult Supplemental Guide for specific deadband values
2 Deadband values indicated when used with the “standard” limit switch
3 Not available with hermetically sealed limit switches (no CSA)
4 Available only with AA (not hermetically sealed) limit switch
Terminal Block Diaphragm Switch

**Features**
- High reliability
- High accuracy
- NEMA 4
- Ideal for pressure and vacuum applications
- Single and dual switching capability
- Tamper-proof external adjustment

**Applications**
- Machine tools
- Pneumatics
- Medical
- Marine & shipbuilding
- Pump & compressor monitoring
- Oil & gas
- Water equipment
- Mining
- Lubrication equipment

**General Specifications**

<table>
<thead>
<tr>
<th>Specification</th>
<th>D1T, D2T Series</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy:</strong></td>
<td>± 0.5% of the adjustable range</td>
</tr>
</tbody>
</table>
| **Switch:**
  Type:                         | Single pole double throw (SPDT) Snap Action; single circuit |
  Rating:                       | 10 amps @ 125/250 VAC; 3 amps @ 480 VAC (Class A or H limit switch). Consult sales drawing for ratings of optional limit switches. |
| **Wetted Parts:**
  Process Fitting:             | 304 stainless steel |
  Diaphragm:                   | 17-7 PH stainless steel |
  Enclosure:                   | Anodized aluminum |
| **Electrical Connection:**    | Terminal block through 1/2" NPT conduit connector |
| **Enclosure Rating:**         | NEMA 4 |
| **Pressure Connection:**      | 1/4" NPT Female |
| **Approvals:**
  UL (Optional):               | D1T models may be ordered as UL listed on request. D2T models may be ordered as UL Recognized components on request. File No. E42816 |
  CSA (Optional):               | All models may be ordered as CSA listed under Class 3231 02, File LR22355 on request. |

**Approvals (cont.):**
- Compliant to PED 97/23/EC
- Temperature Range:
  - Operating: -40° to +165°F (-40° to +74°C)  
  - Hermetic Div. 2 models: -4° to +140°F (-20° to +60 °C)  
  - Storage: -65° to +200°F (-54° to +93°C) |
| **Adjustment Instructions:**
  Pressure:                     | Turn adjustment screw counterclockwise to raise actuation point. |
  Vacuum:                       | Turn adjustment screw clockwise to increase setpoint (higher vacuum). |
| **Options:**                  | - NEMA 4X enclosure  
  - Cleaned for oxygen service  
  - Factory pre-set  
  - Six-pin terminal block |
| **Shipping Weight:**          | 2.0 lbs. approximate |

**Wiring Code**

<table>
<thead>
<tr>
<th>Lead</th>
<th>Circuit #1</th>
<th>Circuit #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normally Closed</td>
<td>Blue</td>
<td>Red</td>
</tr>
<tr>
<td>Common</td>
<td>Purple</td>
<td>Purple</td>
</tr>
<tr>
<td>Normally Open</td>
<td>Red</td>
<td>Blue</td>
</tr>
</tbody>
</table>

**Wiring Diagram**

![Wiring Diagram](image-url)
Terminal Block Diaphragm Switch

**D1T, D2T Series**

**Technical Drawing**

**Product Configurator**

**Example** | **D1T** | **-A** | **80SS** | **-U**
---|---|---|---|---
**H** | Hermetically sealed limit switch option - Class I, Division II (requires AA, CC, GH or HH limit switch)

**Base Configuration**

**D1T** | Single setpoint housed with terminal block

**D2T** | Dual setpoint housed with terminal block

**Limit Switch**

- **A**
  - 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; 0.05 amps @ 125 VDC (requires 3SS, 80SS or 150SS) (standard for pressure range 5SS, 80SS or 150SS)
- **B**
  - 10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.05 amps @ 125 VDC; 0.03 amps @ 250 VDC
- **C**
  - 10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.1 amps @ 125 VDC; 0.05 amps @ 250 VDC
- **H**
  - 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; (standard for pressure range 2SS or 18SS)
- **M**
  - 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; 0.5 amps @ 125 VDC; 0.25 amps @ 250 VDC (not -U or -UL approved)
- **GH**
  - 1 amp @ 125 VAC; 1 amp @ 24 VDC with gold contacts (not available on 2SS or vacuum models)
- **AA**
  - Hermetically sealed; 4 amps @ 125/250 VAC (not available on 2SS or vacuum models)
- **CC**
  - Hermetically sealed; 10 amps @ 125/250 VAC (not available on 2SS or vacuum models)
- **GH**
  - Hermetically sealed; 1 amp @ 125 VAC with gold contacts (not available on 2SS or vacuum models)
- **HH**
  - Hermetically sealed; 5 amps @ 125/250 VAC (not available on 2SS or vacuum models)

**Adjustable Range**

<table>
<thead>
<tr>
<th>Adjustable Range (PRESSURE)</th>
<th>Approx. Deadband (^2) (Actuation Value)</th>
<th>Proof Pressure (\text{psi (bar)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - psi (bar)</td>
<td>Increasing - psi (bar)</td>
<td>psi (bar)</td>
</tr>
<tr>
<td>Min</td>
<td>Max</td>
<td>Min</td>
</tr>
<tr>
<td>2SS (^3)</td>
<td>0.018 (.0)</td>
<td>1.65 (1.1)</td>
</tr>
<tr>
<td>3SS</td>
<td>.03 (.00)</td>
<td>2.85 (2)</td>
</tr>
<tr>
<td>18SS</td>
<td>.4 (.03)</td>
<td>17.74 (1.2)</td>
</tr>
<tr>
<td>80SS</td>
<td>.5 (.03)</td>
<td>76.6 (5.3)</td>
</tr>
<tr>
<td>150SS</td>
<td>1.5 (.1)</td>
<td>144 (9.9)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjustable Range (VACUUM)</th>
<th>Approx. Deadband (^2) (Actuation Value)</th>
<th>Proof Pressure (\text{in. Hg (psi/bar)})</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - in. Hg</td>
<td>Increasing - in. Hg</td>
<td>psi (bar)</td>
</tr>
<tr>
<td>Min</td>
<td>Max</td>
<td>Min</td>
</tr>
<tr>
<td>3SS</td>
<td>.06</td>
<td>5.72</td>
</tr>
<tr>
<td>18SS</td>
<td>8</td>
<td>29.2</td>
</tr>
</tbody>
</table>

**Options**

- **-U** UL Approved (Industrial Control)
- **-CS** CSA Approved Model
- **-Z1\(^3\)** Oxygen cleaned
- **-FX** NEMA 4X enclosure
- **-TC** Temperature stabilization and pre-cycle (non-agency)
- **-L6** 6-Pin Terminal Block (for D2T models only, Non-UL listed)
- **-Sxxx** Factory pre-set (consult factory)

**Pressure Connection**

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Blank</td>
<td>Std 1/4&quot; NPT female pressure connection</td>
<td>-P2</td>
</tr>
<tr>
<td>-P2</td>
<td>1/2&quot; NPT female pressure connection</td>
<td></td>
</tr>
</tbody>
</table>

**NOTES:**
1. Consult Supplemental Guide for specific deadband values
2. Deadband values indicated when used with the standard “H” limit switch
3. Not available with hermetically sealed limit switches (no CSA)
Explosion Proof Diaphragm Switch  

**D1X, D2X Series**

**Features**
- Hermetically sealed
- Explosion proof housing for hazardous location
- Tamper proof setpoint adjustment
- Ideal for pressure or vacuum
- UL, CSA, ATEX approved
- NEMA 4, 7, 9 & IP66

**Applications**
- Pump & compressor monitoring
- Hydraulic power units
- Oil & gas
- Food & beverage
- Utility & power generation
- Mining

**General Specifications**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Accuracy</strong></td>
<td>± 0.5% of the adjustable range</td>
</tr>
<tr>
<td><strong>Switch</strong></td>
<td>Single pole double throw (SPDT) Snap Action; single circuit</td>
</tr>
<tr>
<td><strong>Rating</strong></td>
<td>10 amps @ 125/250 VAC; 3 amps @ 480 VAC (Class A or H limit switch). Consult sales drawing for ratings of optional limit switches.</td>
</tr>
<tr>
<td><strong>Wetted Parts</strong></td>
<td></td>
</tr>
<tr>
<td>Process Fitting</td>
<td>303 stainless steel</td>
</tr>
<tr>
<td>Diaphragm</td>
<td>17–7 PH stainless steel</td>
</tr>
<tr>
<td>Enclosure</td>
<td>Die-cast aluminum, anodized and painted</td>
</tr>
<tr>
<td><strong>Electrical Connection</strong></td>
<td>Screw terminals on covered terminal strip via 1/2&quot; NPT (D1X) and 3/4&quot; NPT (D2X) conduit connection.</td>
</tr>
<tr>
<td><strong>Enclosure Ratings</strong></td>
<td>NEMA 4, 7, 9</td>
</tr>
<tr>
<td><strong>Pressure Connection</strong></td>
<td>1/4&quot; NPT Female</td>
</tr>
<tr>
<td><strong>Approvals</strong></td>
<td>All models are UL approved for use in hazardous locations Class I, Groups B, C &amp; D; Class II, Groups E, F, &amp; G. UL File No. E37043</td>
</tr>
<tr>
<td><strong>ATEX (optional):</strong></td>
<td>EX models are ATEX marked as follows:</td>
</tr>
<tr>
<td><strong>Temperature Range:</strong></td>
<td>Operating: -40° to +165°F (-40° to +74°C)</td>
</tr>
<tr>
<td></td>
<td>Storage: -65° to +200°F (-54° to 93°C)</td>
</tr>
<tr>
<td><strong>Adjustment Instructions:</strong></td>
<td>Pressure: Turn adjustment screw counterclockwise to raise actuation point.</td>
</tr>
<tr>
<td></td>
<td>Vacuum: Turn adjustment screw clockwise to increase setpoint (higher vacuum).</td>
</tr>
<tr>
<td><strong>Options:</strong></td>
<td>Factory pre-set</td>
</tr>
<tr>
<td><strong>Shipping Weight:</strong></td>
<td>Single - approximate 5.0 lbs. Double - approximate 5.5</td>
</tr>
</tbody>
</table>

**Wiring Code**

<table>
<thead>
<tr>
<th>Lead</th>
<th>Circuit #1</th>
<th>Circuit #2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pressure</td>
<td>Vacuum</td>
</tr>
<tr>
<td>Normally Closed</td>
<td>Blue</td>
<td>Red</td>
</tr>
<tr>
<td>Common</td>
<td>Purple</td>
<td>Purple</td>
</tr>
<tr>
<td>Normally Open</td>
<td>Red</td>
<td>Blue</td>
</tr>
</tbody>
</table>

**Wiring Diagram**

* See product configurator for additional options.
Explosion Proof Diaphragm Switch

**Technical Drawing**

**Example D1X -A 3SS -P2 -UL**

**Limit Switch**
- **-A**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; (standard for pressure range 3SS, 80SS or 150SS)
- **-H**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; (standard for pressure range 18SS)
- **-J**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; (comes with an elastomer boot)
- **-M**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; 0.5 amps @ 125 VDC; 0.25amps @ 250 VDC
- **-GH**: 1 amp @ 125 VAC; 1 amp @ 24 VDC with Gold Contacts
- **-AA**: Hermetically sealed; 4 amps @ 125/250 VAC (not available on vacuum models)
- **-CC**: Hermetically sealed; 10 amps @ 125/250 VAC (not available on vacuum models)
- **-HH**: Hermetically sealed; 5 amps @ 125/250 VAC (not available on vacuum models)

**Adjustable Pressure Range**

<table>
<thead>
<tr>
<th>Adjustable Range (PRESSURE)</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - psi (bar)</td>
<td>3</td>
<td>1.2</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>Increasing - psi (bar)</td>
<td>.18</td>
<td>.01</td>
<td>.15</td>
<td>.01</td>
</tr>
<tr>
<td>Approx. Deadband2</td>
<td>.07</td>
<td>.15</td>
<td>10</td>
<td>1.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjustable Range (VACUUM)</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - In. Hg</td>
<td>.14</td>
<td>.28</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Increasing - In. Hg</td>
<td>.4</td>
<td>.8</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

**NOTES:**
1. Consult Supplemental Guide for specific deadband values
2. Deadband values indicated when used with the “standard” limit switch

**Product Configurator**

**Base Configuration**
- **D1X**: Single setpoint housed version
- **D2X**: Dual setpoint housed version

**Options**
- **-UL**: UL & CSA Approval
- **-EX**: ATEX Certified, -EX in place of UL for ATEX only
- **-SXXX**: Factory pre-set (consult factory)

**Pressure Connection**
- **-P2**: 1/2” NPT female pressure connection

**Adjustable Range**

<table>
<thead>
<tr>
<th>Adjustable Range (PRESSURE)</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - psi (bar)</td>
<td>3</td>
<td>1.2</td>
<td>3</td>
<td>1.2</td>
</tr>
<tr>
<td>Increasing - psi (bar)</td>
<td>.18</td>
<td>.01</td>
<td>.15</td>
<td>.01</td>
</tr>
<tr>
<td>Approx. Deadband2</td>
<td>.07</td>
<td>.15</td>
<td>10</td>
<td>1.7</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Adjustable Range (VACUUM)</th>
<th>Min</th>
<th>Max</th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Decreasing - In. Hg</td>
<td>.14</td>
<td>.28</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td>Increasing - In. Hg</td>
<td>.4</td>
<td>.8</td>
<td>30</td>
<td>30</td>
</tr>
</tbody>
</table>

**Dimension in inches (mm)**

**Language**: English

**Address**: 3211 Fruitland Avenue • Los Angeles, CA 90058 • 800-835-1060 • Fax: 323-589-3463 • www.barksdale.com

**Copyright**: ©2016 Barksdale Control Products

**Printed in the U.S.A.**
Diaphragm Switch

**CD1H, CD2H Series**

**Features**
- High reliability
- Extremely versatile
- Calibrated dial for easy setpoint adjustment
- Ideal for pressure or vacuum

**Applications**
- Medical
- Water equipment
- Food & beverage
- Air proving in HVAC systems
- Engine monitoring
- Factory automation

**General Specifications***

<table>
<thead>
<tr>
<th>Accuracy:</th>
<th>+/- 0.5% of the adjustable range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switch:</td>
<td></td>
</tr>
<tr>
<td>Type:</td>
<td>Single pole double throw (SPDT)</td>
</tr>
<tr>
<td></td>
<td>single or dual circuit</td>
</tr>
<tr>
<td>Rating:</td>
<td>10 amps @ 125/250 VAC, 3 amps @ 480</td>
</tr>
<tr>
<td></td>
<td>VAC (Class A or H limit switch); Consult</td>
</tr>
<tr>
<td></td>
<td>sales drawing for ratings of optional limit</td>
</tr>
<tr>
<td></td>
<td>switches.</td>
</tr>
</tbody>
</table>

**Wetted Parts:**
- Process Fitting: 304 stainless steel
- Diaphragm: 17-7 PH stainless steel
- Enclosure: Anodized aluminum

**Electrical Connection:**
- Free leads approximately 18” long, 16 AWG through 3/4” NPT conduit connector.

**Enclosure Ratings:** NEMA 4

**Pressure Connection:** 1/4” NPT female

**Approvals:**
- All models are Underwriters’ Laboratories listed in the Electrical Construction Materials Directory under Industrial Control Equipment, float and pressure-operated; File E42816, and Canadian Standards Association listed under Guide 380-W-1.16, Class 3231, File 22355.

**Approval (Cont.):**
- Listed under Guide 380-W-1.16, Class 3231, File 22355

**Temperature Range:**
- Operating: -40° to +165°F (-40° to +74°C)
- Storage: -65° to +200°F (-54° to +93°C)

**Adjustment Instructions:**
- Pressure: Turn self-locking adjustment screw counterclockwise to increase pressure setting
- Vacuum: Turn self-locking adjustment screw clockwise to increase vacuum setting

**Options:**
- Cleaned for Oxygen Service
- 1/2” NPT Pressure Port
- NEMA 4X enclosure

**Shipping Weight:** Approximate 1.75 lbs.

***Wiring Diagram***

**Wiring Code**

<table>
<thead>
<tr>
<th>Lead</th>
<th>Circuit #1</th>
<th>Circuit #2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Pressure</td>
<td>Vacuum</td>
</tr>
<tr>
<td>Normally Closed</td>
<td>Blue</td>
<td>Red</td>
</tr>
<tr>
<td>Common</td>
<td>Purple</td>
<td>Purple</td>
</tr>
<tr>
<td>Normally Open</td>
<td>Red</td>
<td>Blue</td>
</tr>
</tbody>
</table>

* See product configurator for additional options.
### Adjusting Screw

- To adjust, CKT #1
- To adjust, CKT #2

### Adjustable Range (VACUUM)

<table>
<thead>
<tr>
<th></th>
<th>CD1H</th>
<th>-A</th>
<th>3SS</th>
<th>Options</th>
<th>Pressure Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Min</strong></td>
<td><strong>Max</strong></td>
<td><strong>Min</strong></td>
<td><strong>Max</strong></td>
<td><strong>Proof</strong></td>
<td><strong>Blank</strong></td>
</tr>
<tr>
<td><strong>In. Hg</strong></td>
<td><strong>In. Hg</strong></td>
<td><strong>psi</strong></td>
<td><strong>psi</strong></td>
<td><strong>Pressure</strong></td>
<td><strong>NPT</strong></td>
</tr>
<tr>
<td><strong>-2SS</strong></td>
<td><strong>Approx. Deadband</strong></td>
<td><strong>(Actuation Value)</strong></td>
<td><strong>Psi (bar)</strong></td>
<td><strong>H2O</strong></td>
<td><strong>-P2</strong></td>
</tr>
<tr>
<td>3SS</td>
<td>0.06</td>
<td>5.72</td>
<td>0.34</td>
<td>6</td>
<td>1/2″ NPT female</td>
</tr>
<tr>
<td>18SS</td>
<td>0.8</td>
<td>29.2</td>
<td>1.6</td>
<td>30</td>
<td>1/2″ NPT female</td>
</tr>
</tbody>
</table>

**NOTES:**
- Consult Supplemental Guide for specific deadband values
- Deadband values indicated when used with the standard “H” limit switch
- The -2SS range is specified in inches of H2O

### Adjustable Range (PRESSURE)

<table>
<thead>
<tr>
<th></th>
<th>CD1H</th>
<th>-A</th>
<th>3SS</th>
<th>Options</th>
<th>Pressure Connection</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Min</strong></td>
<td><strong>Max</strong></td>
<td><strong>Min</strong></td>
<td><strong>Max</strong></td>
<td><strong>Proof</strong></td>
<td><strong>Blank</strong></td>
</tr>
<tr>
<td><strong>psi</strong></td>
<td><strong>psi</strong></td>
<td><strong>psi (bar)</strong></td>
<td><strong>bar</strong></td>
<td><strong>H2O</strong></td>
<td><strong>NPT</strong></td>
</tr>
<tr>
<td><strong>2SS</strong></td>
<td>3.50</td>
<td>88.9</td>
<td>0.63</td>
<td>0.7</td>
<td>106.4</td>
</tr>
<tr>
<td>3SS</td>
<td>4.13</td>
<td>109.4</td>
<td>.63</td>
<td>10.9</td>
<td>106.4</td>
</tr>
<tr>
<td>18SS</td>
<td>3.50</td>
<td>88.9</td>
<td>2.25</td>
<td>10.9</td>
<td>106.4</td>
</tr>
<tr>
<td>80SS</td>
<td>3.50</td>
<td>88.9</td>
<td>1.13</td>
<td>10.9</td>
<td>106.4</td>
</tr>
<tr>
<td>150SS</td>
<td>3.50</td>
<td>88.9</td>
<td>1.13</td>
<td>10.9</td>
<td>106.4</td>
</tr>
</tbody>
</table>

**NOTES:**
- Consult Supplemental Guide for specific deadband values
- Deadband values indicated when used with the standard “H” limit switch
- The -2SS range is specified in inches of H2O

### Technical Drawing

**Diaphragm Switch**

**CD1H, CD2H Series**

**Product Configurator**

- **Example**: Example CD1H -A 3SS
- **H**: Hermetically sealed limit switch option - Class I, Division II (requires AA, CC, GH, HH limit switch, not available in vacuum models)

**Base Configuration**

- **CD1H**: Single setpoint housed
- **CD2H**: Dual setpoint housed
- **VCD1H**: Single setpoint housed - Vacuum
- **VCD2H**: Dual setpoint housed - Vacuum

**Limit Switch**

- **-A**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; (standard for pressure range 3SS, 80SS or 150SS; not available on 2SS option)
- **-C**: 10 amps @ 125/250/480 VAC; 2 amps @ 600 VAC; 0.1 amps @ 125 VDC; 0.05 amps @ 250 VDC
- **-H**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; (standard for pressure range 2SS or 18SS)
- **-M**: 10 amps @ 125/250 VAC; 3 amps @ 480 VAC; 0.5 amps @ 125 VDC; 0.25 amps @ 250 VDC
- **-GH**: 1 amp @ 125 VAC; 1 amp @ 24 VDC with gold contacts
- **-CC**: Hermetically sealed; 10 amps @ 125/250 VAC (not available on 2SS or vacuum models)
- **-GG**: Hermetically sealed; 1 amp @ 125 VAC with gold contacts (not available on 2SS or vacuum models)
- **-HH**: Hermetically sealed; 5 amps @ 125/250 VAC (not available on 2SS or vacuum models)

**Limit Switch Options**

- **-Z1**: Oxygen cleaned
- **-FX**: NEMA 4X Enclosure
- **-Wxx**: Extra wire length (XXX = inches)
- **-Sxxx**: Factory pre-set (consult factory)

**Pressure Connection**

- **Blank**: Standard 1/4″ NPT female
- **-P2**: 1/2″ NPT female pressure fitting

**Adjustable Range**

- **Decreasing**
  - psi (bar)
  - Increasing
  - psi (bar)
- **Approx. Deadband**
  - (Actuation Value)
- **Proof Pressure**
  - psi (bar)

**NOTES:**
- Consult Supplemental Guide for specific deadband values
- Deadband values indicated when used with the standard “H” limit switch
- The -2SS range is specified in inches of H2O