

# Metal Diaphragm Switches

**D1X/D2X**

Mechanical single/dual pressure switch  
Repeatability  $\pm 1.0$  % at constant temperature

## Features

- ▶ Metal diaphragm pressure switch
- ▶ Wetted parts welded
- ▶ Direct action, no friction, high accuracy
- ▶ Approvals: Ex ia, Ex d, UL, SIL2/3 (IEC 61508)

## Adjustment ranges

0.012 ... 10.3 bar and  
-0.006 ... -1 bar (Vacuum)

## Applications

Petrochemical industry,  
Process technology



## Technical Data

|   |   |
|---|---|
| <b>Wetted parts:</b>                      | Stainless steel 17 - 7PH / SS304  |
| <b>Repeatability:</b>                     | $\pm 1$ % at constant temperature   |
| <b>Switching rate:</b>                    | max. 20/min   |
| <b>Temperature range:</b>                 | -40 °C... +75 °C  |
| <b>Protection class:</b>                  | IP65  |
| <b>Housing:</b>                           | Explosion proof housing, aluminum anodized and lacquered  |
| <b>Process connection:</b>                | 1/4" NPT female thread<br>Optional: 1/2" NPT female thread (P2)   |
| <b>Electrical connection:</b>             | Internal terminal strip (0.5 - 2.5 mm <sup>2</sup> ), approved cable gland has to be provided by the customer |
| <b>Electrical ratings and hysteresis:</b> | A large variety of micro switches offers different electrical ratings and hysteresis for many applications.   |

|                              |   |
|------------------------------|---|
| <b>Weight</b>                | D1X-...: approx. 2.7 kg<br>D2X-...: approx. 2.8 kg  |
| <b>Set point adjustment:</b> | Turn the adjustment screw clockwise to decrease the set point   |
| <b>Intrinsically safe:</b>   | The switches are designed for intrinsically safe applications. In this case we recommend gold contacts. Please add "Exi" to your ordering details when placing an order. To comply with the intrinsically safe approval following max. ratings must not be exceeded:<br>U <sub>max</sub> = 28 V<br>I <sub>max</sub> = 50 mA |
| <b>Approval:</b>             | Ex: Ex d II C T6 acc. to ATEX<br>cULus: Class I, Groups B, C, D<br>Class II, Groups E, F, G<br>acc. to Underwriter Laboratories Inc. and Canadian Standard Assn.  |

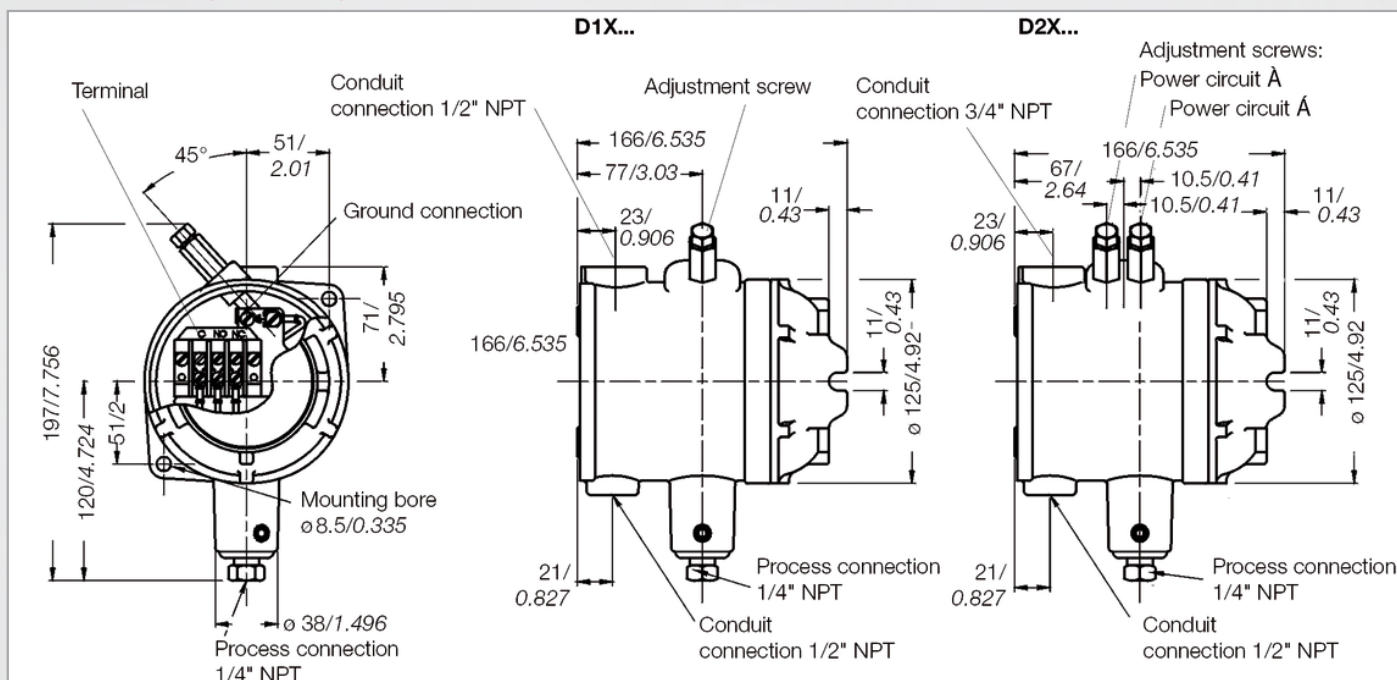
## Pressure Ranges

| Pressure range code | Adjustment range [bar] |                   | Max. operating pressure [bar] | Proof pressure [bar]<br>(short term) | Max. hysteresis of switch types in bar (end of range) |             |
|---------------------|------------------------|-------------------|-------------------------------|--------------------------------------|---|-------------|
|                     | Increasing press.      | Decreasing press. |                               |                                      | H, GH [bar]   | M, GM [bar] |
| Overpressure        |                        |                   |                               |                                      |   |             |
| 3SS                 | 0.012 ... 0.2          | 0.002 ... 0.196   | 0.5                           | 0.7                                  | 0.004   | 0.010       |
| 18SS                | 0.050 ... 1.2          | 0.030 ... 1.2     | 3.0                           | 4.0                                  | 0.010   | 0.040       |
| 80SS                | 0.300 ... 5.5          | 0.030 ... 5.3     | 8.0                           | 10.7                                 | 0.100   | 0.220       |
| 150SS               | 0.500 ... 10.3         | 0.100 ... 9.9     | 15.0                          | 20.0                                 | 0.180   | 0.400       |
| Vacuum              |                        |                   |                               |                                      |   |             |
| 3SS                 | -0.006 ... -0.2        | -0.002 ... -0.196 | 0.15                          | 0.2                                  | 0.004   | 0.009       |
| 18SS                | -0.040 ... -1.0        | -0.020 ... -0.970 | 0.5                           | 1.0                                  | 0.020   | 0.060       |

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### Dimensions (mm / inch)



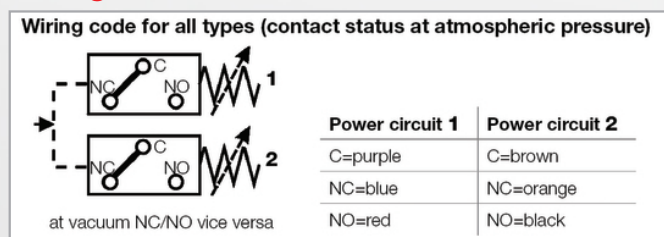
### Approvals

|     |                |
|-----|----------------|
| EX  | Ex d approval  |
| UL  | cULus approval |
| EXI | Ex i approval  |

### Options

P2 = 1/2" NPT F SS Process connection

### Wiring Code 1



### Electrical Ratings

| Micro switch | Special features   | Volt AC<br>50/60 Hz | Ind. load<br>A | Res. load<br>A | Volt DC | Ind. load<br>A | Res. load<br>A | Comments                                       |
|--------------|--|---------------------|----------------|----------------|---------|----------------|----------------|--|
| H            | Micro switch with silver contacts  | 125                 | 10             | 10             | 6       | 0.50           | 0.5            | Small hysteresis;<br>High AC /<br>low DC loads |
|              |  | 250                 | 10             | 10             | to      |                |                |  |
|              |  | 480*                | 3              | 3              | 24      |                |                |  |
| M            | Micro switch with silver contacts  | 125                 | 10             | 10             | 12      | 5.00           | 15.0           | Medium hysteresis;<br>High AC and<br>DC loads  |
|              |  | 250                 | 10             | 10             | 24      | 1.00           | 2.0            |  |
|              |  | 480*                | 3              | 3              | 250     | 0.25           | 0.4            |  |
| GH           | Micro switch with gold contacts  | 125                 | 1              | 1              | 24      | 1.00           | 1.00           | Small hysteresis                               |
| GM           | Micro switch with gold contacts for low voltage and/or low current (e. g. "Exi") | 30                  | 0.1            | 0.1            | 30      | 0.10           | 0.1            | Medium hysteresis                              |

### Order Code

Example for order number

|      |    |              |   |                |   |         |   |          |   |    |
|------|----|--------------|---|----------------|---|---------|---|----------|---|----|
| Type |    | Micro switch |   | Pressure range |   | Options |   | Approval |   |    |
| D1X  | or | D2X          | - | GH             | - | 3SS     | - | P2       | - | EX |

Your order number

|      |    |              |   |                |   |         |   |          |
|------|----|--------------|---|----------------|---|---------|---|----------|
| Type |    | Micro switch |   | Pressure range |   | Options |   | Approval |
|      | or |              | - |                | - |         | - |          |