Pressure Switches

Type Z
The actual results prove of reliability.

A Total Supplier of Pressure Switches
Taihei Boeki Co., Ltd.
High-performance Pressure Switches supported by the original technology of Taihei Boeki

Z Family

Taihei Boeki has always moved through with the history of pressure switches of Japan. The type Z pressure switches were originated by Taihei Boeki, which have been developed with its long time study respecting to various requirements of customers. Utilizing its original technology and establishing simple design structure, improvement of the reliability, compact size and price-reduction have been realized at the same time.

The Z family fully lined up with the “Z series” that is, so to say, a standard of pressure switches, the “New Z series” featuring high proof pressure and extremely small differential, and the “TEX-Z series” for explosion-proof applications, has become reliable brand boasting the sales result of more than 700,000 units since its first release in 1980.
New Z Series

Diaphragm Actuated Small Differential and High Proof Pressure Type Pressure Switches and Differential Pressure Switches

TEX-Z Series

Explosion-proof (ExdIIC T6) Pressure Switches and Differential Pressure Switches
<table>
<thead>
<tr>
<th>Name of Product</th>
<th>Pressure Switches (Diaphragm Actuator)</th>
<th>Pressure Switches (Piston Actuator)</th>
<th>Pressure Switches (Piston Actuator)</th>
</tr>
</thead>
</table>
| Model          | TCZ□□  
TCZ□□□F  
TCZ□□□K  | TDZ□□  
TDZ□□□F  
TDZ□□□K  | Z□□□PM  
Z□□□PMW  |
| Appearance     | ![Pressure Switches Image 1]  
 ![Pressure Switches Image 2]  
 ![Pressure Switches Image 3]  | ![Pressure Switches Image 1]  
 ![Pressure Switches Image 2]  
 ![Pressure Switches Image 3]  | ![Pressure Switches Image 1]  
 ![Pressure Switches Image 2]  
 ![Pressure Switches Image 3]  |
| Pressure Range | 0.005-1.8 MPa  
0.05-18 kgf/cm² | 0.1-63.5 MPa  
1-635 kgf/cm² | 1-50 MPa  
10-500 kgf/cm² |
| Pressure Medium| Air, Water, Oil, Gases, Steam  | Oil  | Water, Steam, Oil |
| Actuator       | Diaphragm  | Piston  | Piston |
| Material of the Pressure Sensing Element | Nitrile Rubber  | Cylinder : Brass (Nickel plated), SUS303  
Piston : Brass, SUS420F | SUS420F - SUS316 |
| Micro Switch   | SPDT (1a, 1b)  
In addition to a standard type, a micro-load type (for 24VDC) and a sealed type (environment resistance) are also available. | SPDT(1c)  
DPDT is also available. |
| Applicable Standards | CCC approved * and CE approved **  
* Except with the pilot lamps  
** Except an outside adjustable type and a sealed type |
| Remarks        | An outside adjustable type (model “K”) and a fixed differential type (model “F”) are also available. | Differential is not adjustable. |

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Product List

Reference Chart of The Z Family Products

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# New Z Series

<table>
<thead>
<tr>
<th>Pressure Switches (Small differential, high proof pressure)</th>
<th>Differential Pressure Switches (Small differential, high proof pressure)</th>
<th>Differential Pressure Switches (Small differential, high proof pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z□□□□D</td>
<td>Z□□□□DD</td>
<td>Z1/4DD</td>
</tr>
<tr>
<td>Z□□□□DW</td>
<td>Z□□□□DDW</td>
<td>Z1/4DDW</td>
</tr>
<tr>
<td>Z□□□□DDEX</td>
<td>Z□□□□DDWEX</td>
<td>Z1/30DD</td>
</tr>
</tbody>
</table>

### Specifications

- **Air**, **Water**, **Oil**, **Gases**, **Steam**
- **Diaphragm**
  - SUS316L
  - Polyimide, SUS316
  - Nitrile Rubber, Aluminum
- **SPDT(1c)**
- DPDT is also available.
- **SPDT(1c) only**
- **CCC approved**

<table>
<thead>
<tr>
<th>Pressure Range</th>
<th>Differential Range</th>
<th>Dead Band Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.002-28 MPa</td>
<td>0.002-21 MPa</td>
<td>0.0005-6.6 MPa</td>
</tr>
<tr>
<td>0.02-280 kgf/cm²</td>
<td>0.02-210 kgf/cm²</td>
<td>0.005-66 kgf/cm²</td>
</tr>
<tr>
<td>0-46 kPa</td>
<td>0-0.46 kgf/cm²</td>
<td></td>
</tr>
</tbody>
</table>

- Differential is not adjustable.
- Dead band is not adjustable.

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Reference Chart of The Z Family Products

New Z Series

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- p.30
## TEX-Z Series

<table>
<thead>
<tr>
<th>Name of Product</th>
<th>Standard Type (Diaphragm Actuator)</th>
<th>Micro-Pressure Switches (Diaphragm Actuator)</th>
<th>Standard Type (Piston Actuator)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model</td>
<td>TEX□-Z□□□D</td>
<td>TEX□-Z1/4D</td>
<td>TEX□-Z□□□P</td>
</tr>
<tr>
<td>Appearance</td>
<td><img src="image1.png" alt="TEX-Z Series" /></td>
<td><img src="image2.png" alt="TEX-Z Series" /></td>
<td><img src="image3.png" alt="TEX-Z Series" /></td>
</tr>
<tr>
<td>Pressure Range</td>
<td>0.005-1.8 MPa</td>
<td>3-25 kPa</td>
<td>0.1-63.5 MPa</td>
</tr>
<tr>
<td></td>
<td>0.05-18 kgf/cm²</td>
<td>0.03-0.25 kgf/cm²</td>
<td>1-635 kgf/cm²</td>
</tr>
<tr>
<td>Pressure Medium</td>
<td>Air, Water, Oil, Gases, Steam</td>
<td>Oil</td>
<td></td>
</tr>
<tr>
<td>Actuator</td>
<td>Diaphragm</td>
<td></td>
<td>Piston</td>
</tr>
<tr>
<td>Material of the Pressure Sensing Element</td>
<td>Nitrile Rubber</td>
<td>Cylinder : Brass (Nickel plated), SUS303</td>
<td>Piston : Brass, SUS420F</td>
</tr>
<tr>
<td>Micro Switch</td>
<td>SPDT (1a, 1b)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remarks</td>
<td>In addition to a standard type, a micro-load type (for 24VDC) and a sealed type (environment resistance) are also available.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**ExdIICT6 (explosion-proof class) approved**
<table>
<thead>
<tr>
<th>Standard Type (Bellows Actuator)</th>
<th>Compound Vacuum Pressure Switches</th>
<th>Pressure Switches (Small differential, high proof pressure)</th>
<th>Differential Pressure Switches (Small differential, high proof pressure)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEX□-Z□□□BS</td>
<td>TEX□-Z□□□BR</td>
<td>TEX-Z□□□DH</td>
<td>TEX-Z□□□DDTEX-Z□□□DDEX</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0.005-11.5 MPa</td>
<td>80kPaVac-900kPa</td>
<td>0.002-28MPa</td>
<td>0.0005-21MPa</td>
</tr>
<tr>
<td>0.05-115 kgf/cm^2</td>
<td>600mmHgV-9kgf/cm^2</td>
<td>0.02-280kgf/cm^2</td>
<td>0.005-210kgf/cm^2</td>
</tr>
</tbody>
</table>

Air, Water, Oil, Gases, Steam

<table>
<thead>
<tr>
<th>Bellows</th>
<th>Diaphragm</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUS316L</td>
<td>Phosphor Bronze</td>
</tr>
<tr>
<td></td>
<td>SUS316L</td>
</tr>
<tr>
<td></td>
<td>Polymide, SUS316</td>
</tr>
</tbody>
</table>

In addition to a standard type, a micro-load type (for 24VDC) and a sealed type (environment resistance) are also available.

ExdIICT6 (explosion-proof class) approved

Differential is not adjustable. Dead band is not adjustable.
General-purpose Pressure Switches

Z Series

A standard of pressure switches brought forth by the original technology of Taihei Boeki.

The Z series are compact, high-performance and high general purpose pressure switches.
High reliability and outstanding cost performance

Adopted a simple and robust original-structure generated from the long-time research and development of Taihei Boeki, the Z series pressure switches have realized compatibility of high reliability and outstanding cost performance.

An adjustable differential type, an outside adjustable type, or a fixed differential type can be selected in accordance with your applications.

A diaphragm or a piston has been adopted as the actuator.

A diaphragm actuator for low pressure applications and a piston actuator for high pressure applications have been adopted respectively. The piston actuator has adopted a sealed piston configuration sealed with an O-ring and a cup seal.

Slim and compact design

An external appearance of the Z series is exceptionally slim and compact. The common design of all types gives good impression of uniformity. And, all encapsulated module parts in the housing realize user-friendly operation and safety.
Structural Drawing of the Z Series

Conduit
A G1/2 parallel thread is provided. Using a commercially available water-proof connector enhances sealing capability.

Built-in Switch
The built-in micro switch consists of 1a (N.O.)-1b (N.C.) double-throw contacts, and has more than 15 million-time duration of mechanical life.

Adjusting differential (dead band) pressure
The differential can be set at any point within the differential adjustment range. The set point is self-locked and does not come lose.

Adjusting set-pressure
Rotate the range adjusting nut using a flat-blade screw driver. The set point is self-locked and does not come lose.

Optional Lamp Assembly

Actuator
Diaphragm actuators are for low-pressure applications and piston actuators are for high-pressure applications. The eight kinds of actuators comprise twelve different ranges. This drawing shows a diaphragm actuator type.

Housing Gasket
The housing material is robust die-cast aluminum, and inner modules are sealed with a nitrile rubber gasket. This configuration makes the Z pressure switch dust-proof, oil-proof and drip-proof.

Mounting
Equipped four mounting holes outside of the cover facilitate mounting of a pressure switch without removing its cover.

Factory Setting ③
The snap is pre-set at the factory so that it actuates at the most suitable point.

Differential Lock Spring

Differential Spring
Factory Setting ②
The differential pick-up point is pre-set at the factory.

Lock Spring doubling as Range Scale
The accuracy of the range scale is approximate ±10%.

Operating Rod

Lower Spring Sheet

Belleville Spring

Built-in Switch
The built-in micro switch consists of 1a (N.O.)-1b (N.C.) double-throw contacts, and has more than 15 million-time duration of mechanical life.

Pressure Port
The pressure port connection is Rc1/4 for all types.
Specifications

Operating Ambient Temperature: −10〜+80℃
Operating Ambient Humidity: Less than or equal to 95%RH
Allowable Operating Frequency: 120 cycles / minute
Enclosure Type: IP65 (Outside Adjustable Type is excluded)
Insulation Resistance: Between discontinuous terminals, and between each terminal and non-charging metal; Over 100MΩ (at DC500V)
Withstand Voltage: Between discontinuous terminals; 1000VAC, 50/60Hz, 1 minute
Contact Resistance: Less than or equal to 25 Ω (initial value)
Surge Dumper Orifice: Diaphragm actuator Φ 1.5 × 1.5
Piston actuator Φ 0.8 × 1.5
(Except TDZ-1 that has no orifice)
Electrical Lifetime: Refer to the electrical lifetime curve in the diagram shown below.
Repeatability: ±0.5% of max range

Material of the Pressure Sensing Element
TCZ-5, 1, 2
Diaphragm: Nitrile rubber (Buna-N)
Flange: Die-cast aluminum
Cup Seal: Teflon*

TCZ-3, 4, 7, 13, 34, 47
Diaphragm: Nitrile rubber (Buna-N)
Cylinder: Brass (nickel plated)
Piston: SUS420F
Bushing: SUS420F
Bushing: Brass
O-ring: Nitrile rubber (Buna-N)
Cup Seal: Viton

TDZ-8, 78
Cylinder: SUS303
Piston: SUS420F
O-ring: Nitrile rubber (Buna-N)
Cup Seal: Teflon*

Z350PM(W), Z500PM(W)
Cylinder: SUS316
Piston: SUS420F
O-ring: Viton

* Teflon is the registered trademark of DuPont.

How to order

Type of Actuators
TCZ: Diaphragm
TDZ: Piston

Micro Switches
- Standard
0 Micro-load

Range Indication
S Sealed Type Micro Switch (not CE Approved)
F Adjustable Differential Type
K Fixed Differential Type

Adjustable Differential Type

Fixed Differential Type

Outside Adjustable Type (not CE Approved)

Pilot Lamp
(not CCC Approved)
L 100V/200V AC or DC
L24 DC24V
LF Free Voltage DC 30V MAX

Upside-down Name Plate
N

Special Type (not CE Approved)

Collective Designation of the series
Z High Pressure Steam and water correspondence
P Special Type
M Micro switch type
W SPDT Standard

* An outside adjustable type (symbol "K"), a sealed micro switch type (symbol "S"), a switch equipped with a free-voltage pilot lamp (symbol "LF"), and a pressure switch with custom specifications are not CE approved.

* CCC approved products is not available for the with pilot lamps.

When CCC approved is needed, add appendix of -C to the end of model number.
Example : An approved of TCZ-1 ----> TCZ-1-C
Pressure Switches

(Diaphragm Actuator)

TCZ□□□/TCZ□□□F

Features

- The pressure switches have adopted a nitrile rubber diaphragm as the pressure sensing element.
- The pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
- The pressure switches are applicable to pressure ranging from 0.005 to 1.8MPa.
- The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24V DC), and a sealed type (environment resistance).
- A fixed differential type (symbol "F") is also available.
- CCC and CE approved.

(Please note that CE approved switches is not available for the sealed type. CCC certified products is not available for the with pilot lamps.)

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Differential (Dead Band)</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN.</td>
<td>MAX.</td>
<td>Add to the Range Value</td>
</tr>
<tr>
<td></td>
<td>MIN.</td>
<td>MAX.</td>
<td>MPa (kgf/cm²)</td>
</tr>
<tr>
<td>Adjustable</td>
<td>TCZ-5</td>
<td>0.005-0.52</td>
<td>(0.05-5.2)</td>
</tr>
<tr>
<td>Differential</td>
<td>TCZ-1</td>
<td>0.005-1</td>
<td>(0.05-10)</td>
</tr>
<tr>
<td>(Dead Band)</td>
<td>TCZ-2</td>
<td>0.02 - 1.8</td>
<td>(0.2-18)</td>
</tr>
<tr>
<td>Fixed</td>
<td>TCZ-5F</td>
<td>0.005-0.52</td>
<td>(0.05-5.2)</td>
</tr>
<tr>
<td>Differential</td>
<td>TCZ-1F</td>
<td>0.005-1</td>
<td>(0.05-10)</td>
</tr>
<tr>
<td>(Dead Band)</td>
<td>TCZ-2F</td>
<td>0.02 - 1.8</td>
<td>(0.2-18)</td>
</tr>
</tbody>
</table>

- The differential (dead band) becomes larger to a certain extent in accordance with increase of the pressure. The above chart shows the differential adjustable range related to the pressure ranges divided into three stages.
- Select a type of your pressure switch so that it can be used within the middle of the range as much as possible.
- The differential (dead band) of Min. of adjustable differential type and fixed differential type indicates value at the middle of the pressure range.

The differential (dead band) becomes smaller than the indicated value within the lower range, and larger within the higher range.
TCZ-5 (F)  
TCZ-1 (F)  
TCZ-2 (F)  

Mass: approx. 0.7kg
# Pressure Switches

## Pressure Switches (Piston Actuator)

**TDZ□□□/TDZ□□□F**

### Features

- The pressure switches have adopted a brass (nickel plated) or SUS420F piston as the pressure sensing element.
- An O-ring and a Teflon cup seal have been adopted as a seal of the piston, and this configuration realizes long-time duration of the pressure switches.
- The pressure switches are applicable to pressure ranging from 0.1 to 63.5MPa.
- The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24V DC), and a sealed type (environment resistance).
- A fixed differential type (symbol “F”) is also available.
- CCC and CE approved.

### Models Range

- **MIN.** : Minimum setting point of falling pressure.
- **MAX.** : Maximum setting point of rising pressure.

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Differential (Dead Band)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Lower Range</td>
</tr>
<tr>
<td></td>
<td>MIN.</td>
<td>MAX.</td>
</tr>
<tr>
<td>TDZ-1</td>
<td>0.1-3.2 (1-32)</td>
<td>0.2-0.7 (2-7)</td>
</tr>
<tr>
<td>TDZ-3</td>
<td>0.2-7 (2-70)</td>
<td>0.25-1.3 (2.5-13)</td>
</tr>
<tr>
<td>TDZ-4</td>
<td>0.5-20.5 (5-205)</td>
<td>0.6-3.8 (6-38)</td>
</tr>
<tr>
<td>TDZ-7</td>
<td>1-40 (10-400)</td>
<td>1.4-7.8 (14-78)</td>
</tr>
<tr>
<td>TDZ-8</td>
<td>2-63.5 (20-635)</td>
<td>2-11 (20-110)</td>
</tr>
<tr>
<td>TDZ-13</td>
<td>0.2-3.5 (2-35)</td>
<td>0.25-1.3 (2.5-13)</td>
</tr>
<tr>
<td>TDZ-34</td>
<td>0.5-10 (5-100)</td>
<td>0.6-3.8 (6-38)</td>
</tr>
<tr>
<td>TDZ-47</td>
<td>1-20 (10-200)</td>
<td>1.4-7.5 (14-75)</td>
</tr>
<tr>
<td>TDZ-78</td>
<td>2-30 (20-300)</td>
<td>2-11 (20-110)</td>
</tr>
</tbody>
</table>

- **Adjustable Differential (Dead Band)** Type
- **Fixed Differential (Dead Band)** Type

### Adjustments

- The differential (dead band) becomes larger to a certain extent in accordance with increase of the pressure. The above chart shows the differential adjustable range related to the pressure ranges divided into three stages.
- Select a type of your pressure switch so that it can be used within the middle of the range as much as possible.
- The differential (dead band) of Min. of adjustable differential type and fixed differential type indicates value at the middle of the pressure range.
- The differential (dead band) becomes smaller than the indicated value within the lower range, and larger within the higher range.
- A PT1/8 drain port is equipped on the side of the body so that the pressure switch is used with piping for drains beforehand, in an environment that will not allow even a small amount of seepage. The drain port must be opened to the atmospheric pressure.
Pressure Switches

TDZ-1 (F) / TDZ-3 (F)
TDZ-4 (F) / TDZ-7 (F)
TDZ-8 (F) / TDZ-13 (F)
TDZ-34 (F) / TDZ-47 (F)
TDZ-78 (F)

Mass: approx. 0.7kg

(Unit: millimeter)
Pressure Switches (Outside Adjustable type) (Diaphragm Actuator / Piston Actuator)  

TCZ□□□K / TDZ□□□K

Features

● Working pressure can be adjusted at fixed width by external handle. The adjustable pressure is based on setting by range adjust nut.
● It can’t adjust full range by external handle.
● The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24VDC), and a sealed type (environment resistance).
● CCC approved (except with the pilot lamps).

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Outside Adjustable Range</th>
<th>Differential (Dead Band)</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN. : Minimum setting point of falling pressure. MAX. : Maximum setting point of rising pressure. MPa (kgf/cm²)</td>
<td>Add to the Range Value (Central Value of Middle Range) MPa (kgf/cm²)</td>
<td>Lower Range Middle Range Higher range</td>
<td>MPa (kgf/cm²)</td>
</tr>
<tr>
<td>TCZ-5K</td>
<td>0.005-0.52 (0.05-5.2)</td>
<td>0.03 (0.3) 0.04 (0.4) 0.05 (0.5)</td>
<td>1.8 (18)</td>
<td></td>
</tr>
<tr>
<td>TCZ-1K</td>
<td>0.005-1 (0.05-10)</td>
<td>0.05 (0.5) 0.08 (0.8) 0.09 (0.9)</td>
<td>3 (30)</td>
<td></td>
</tr>
<tr>
<td>TCZ-2K</td>
<td>0.02-1.8 (0.2-18)</td>
<td>0.12 (1.2) 0.16 (1.6) 0.18 (1.8)</td>
<td>4 (40)</td>
<td></td>
</tr>
<tr>
<td>TDZ-1K</td>
<td>0.1-3.2 (1-32)</td>
<td>0.25 (2.5) 0.3 (3) 0.35 (3.5)</td>
<td>10 (100)</td>
<td></td>
</tr>
<tr>
<td>TDZ-3K</td>
<td>0.2-7 (2-70)</td>
<td>0.3 (3) 0.4 (4) 0.5 (5)</td>
<td>35 (350)</td>
<td></td>
</tr>
<tr>
<td>TDZ-4K</td>
<td>0.5-20.5 (5-205)</td>
<td>0.8 (8) 1.1 (11) 1.3 (13)</td>
<td>70 (700)</td>
<td></td>
</tr>
<tr>
<td>TDZ-7K</td>
<td>1-40 (10-400)</td>
<td>1.6 (16) 2 (20) 2.2 (22)</td>
<td>70 (700)</td>
<td></td>
</tr>
<tr>
<td>TDZ-8K</td>
<td>2-63.5 (20-635)</td>
<td>3 (30) 3.5 (35) 4 (40)</td>
<td>120 (1,200)</td>
<td></td>
</tr>
</tbody>
</table>

Remarks

● The differential (dead band) is not adjustable.
● The differential (dead band) becomes smaller than the indicated value within the lower range, and larger within the higher range.
● Select a type of your pressure switch so that it can be used within the middle of the range as much as possible.
● A PT1/8 drain port is equipped on the side of the body so that the pressure switch is used with piping for drains beforehand, in an environment that will not allow even a small amount of see page. The drain port must be opened to the atmospheric pressure (piston actuator only).
Pressure Switches

TCZ-5K
TCZ-1K
TCZ-2K

3-φ5.2MTG

Pilot Lamp (optional)

Rc1/4 (PT1/4)
PRESSURE PORT

Mass: approx. 0.8kg (Unit: millimeter)

TDZ-1K
TDZ-3K
TDZ-4K
TDZ-7K
TDZ-8K

3-φ5.2MTG

Pilot Lamp (optional)

Rc1/4 (PT1/4)
PRESSURE PORT

Rc1/8 (PT1/8)
Drain Port

Mass: approx. 0.8kg (Unit: millimeter)
Pressure Switch (Piston Actuator)
(Available for high pressure steam and water)

Features
- The medium besides the oil pressure can also use the high-pressure steam and water by the specific technology.
- The sealing material is Viton, a piston made of SUS316 is adopted.
- The pressure switches are applicable to pressure from 1 to 50 MPa ranges.
- In addition to a SPDT standard micro switch, a DPDT micro switch is also available.
- CCC approved.

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Differential (Dead Band)</th>
<th>Rated Pressure</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN.</td>
<td>MAX.</td>
<td>MPa (kgf/cm²)</td>
<td>MIN. - MAX.</td>
</tr>
<tr>
<td>SPDT</td>
<td>Z350PM</td>
<td>1-35</td>
<td>1.5-2</td>
<td>15-20</td>
</tr>
<tr>
<td></td>
<td>Z500PM</td>
<td>2-50</td>
<td>2.2-5</td>
<td>20-25</td>
</tr>
<tr>
<td>DPDT</td>
<td>Z350PMW</td>
<td>1-35</td>
<td>1.8-2.5</td>
<td>18-25</td>
</tr>
<tr>
<td></td>
<td>Z500PMW</td>
<td>2-50</td>
<td>2.5-3.0</td>
<td>25-30</td>
</tr>
</tbody>
</table>

- The differential (dead band) is not adjustable. It is fixed within the range of indicated value.
- The differential (dead band) indicates value at the middle of the pressure range. The differential (dead band) becomes smaller than the indicated value within the lower range, and larger within the higher range.
Pressure Switches

Mass: approx. 0.8kg

Z350PM
Z500PM

Z350PMW
Z500PMW

Mass: approx. 0.9kg

(Unit: millimeter)
Inheriting the mechanism of the Z series, the New Z series are pressure switches that realize high proof pressure and extremely small differential (dead band) at the same time.
Highly reliable basic configuration

Inheriting the distinguished original configuration of the Z series, the New Z series are pressure switches and differential pressure switches that realize high proof pressure and extremely small differential by adopting a stainless steel or a polyimide diaphragm.

The pressure switches having characteristic features of high proof pressure and extremely small differential (dead band)

The pressure switches have adopted a stainless steel diaphragm, and have characteristic features of high proof pressure and extremely small differential (dead band). They can be used for such pressure media as high pressure water or steam up to the maximum range of 28MPa.

A ployimide diaphragm has been adopted to the differential pressure switches.

The differential pressure switches that have adopted a ployimide diaphragm allow you to set very small differential pressure even though your system pressure is high.
When differential pressure (Hp - Lp) between higher pressure and lower pressure is applied to the diaphragm, its force received by the pressure plate is transmitted to the operating rod that is regulated by the range spring. The force, then, actuates the on-off micro switch. The differential pressure can be adjusted with the differential adjusting nut.
Specifications

- Housing Material: Die-cast Aluminum
- Painting Color: 7.5BG4/1.5
- Gasket Material: Nitrile Rubber (Buna N)
- Enclosure Type: IP65
- Pressure Port: Rc1/4 (PT1/4)
- Conduit: G1/2 (PF1/2)
- Operating Ambient Temperature: 20°C ~ 80°C (no condensation)
- Allowable Operating Frequency: 120 cycles / minute
- Insulation Resistance: Between discontinuous terminals, and between each terminal and non-charging metal: Over 100MΩ (at DC500V)
- Withstand Voltage: Between each terminal and non-charging metal, and ground: 2000VAC 50/60Hz, 1 minute
- Allowable Medium Temperature: SUS316 (L) −20〜+200℃
- Polyimide −20〜+200℃
- Nitrile Rubber −10〜+80℃
(Provided the temperature shall be within the range that will not effect on the switch mechanism.)
- Micro Switch: SPDT M4
- Earth Terminal: M3
- Repeatability: Standard Pressure Switch ±1% of Max range
  Differential Pressure Switch ±1% of Max differential
- Material of the Pressure: Z1.7D, 005D, 025D, 035D, 070D, 120D, 280D
- Sensing Element: Diaphragm: SUS316L
  Diaphragm Flange: SUS316 L
  Pressure Port: SUS316
  O-ring: Viton *
- : Z2.5DD, 005DD, 012DD, 020DD, □□□DDEX, 1/4DD
  Diaphragm: Polyimide
  Diaphragm Flange: SUS316
  Pressure Plate: SUS316
  Pressure Port: SUS316
  O-ring: Viton *
- : Z1/30DD
  Diaphragm: Nitrile Rubber (Buna N)
  Cavity: Steel (chrome plated)
  Pressure Plate: Aluminum
  Pressure Port: SUS303
  Assembly Screw: Steel (chrome plated)
  Gasket: Non-asbestos Joint Sheet
  O-ring: Viton *
* Viton is the registered trademark of DuPont.

How to order

When CCC approved is needed, add appendix of -C to the end of model number.
Example: An approved of Z005D ---- Z005D-C
# Pressure Switches (Diaphragm Actuator)

**Z□□□D/Z□□□DW**

## Features
- The pressure switches adapt to high pressure and extremely small differential (dead band) at the same time.
- The switches adapt up to the maximum range of 28MPa.
- A SUS316L diaphragm is adopted as a pressure sensing element.
- The diaphragm actuated pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
- In addition to a SPDT standard micro switch, a DPDT micro switch is also available.
- CCC approved.

### New Z Type of the Micro Switches

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Differential (Dead Band)</th>
<th>Rated Pressure</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN.: Minimum setting point of falling pressure.</td>
<td>MAX.: Maximum setting point of rising pressure.</td>
<td>Add to the Range Value (Central Value of Middle Range)</td>
<td>Maximum Pressure in Continuous Use</td>
</tr>
<tr>
<td></td>
<td>MPa (kgf/cm²)</td>
<td>MPa (kgf/cm²)</td>
<td>MPa (kgf/cm²)</td>
<td>MPa (kgf/cm²)</td>
</tr>
<tr>
<td>SPDT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z1.7D</td>
<td>0.002-0.17 (0.02-1.7)</td>
<td>0.003 (0.03)</td>
<td>2.3 (23)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>Z005D</td>
<td>0.005-0.5 (0.05-5)</td>
<td>0.005 (0.05)</td>
<td>2.3 (23)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>Z025D</td>
<td>0.02-2.5 (0.2-25)</td>
<td>0.025 (0.25)</td>
<td>7 (70)</td>
<td>12 (120)</td>
</tr>
<tr>
<td>Z035D</td>
<td>0.05-3.5 (0.5-35)</td>
<td>0.05 (0.5)</td>
<td>10 (100)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>Z070D</td>
<td>0.1-7 (1-70)</td>
<td>0.12 (1.2)</td>
<td>12 (120)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>Z120D</td>
<td>0.2-12 (2-120)</td>
<td>0.2 (2)</td>
<td>15 (150)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>Z280D</td>
<td>0.2-28 (2-280)</td>
<td>0.7 (7)</td>
<td>35 (350)</td>
<td>42 (420)</td>
</tr>
<tr>
<td>DPDT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Z1.7DW</td>
<td>0.002-0.17 (0.02-1.7)</td>
<td>0.0045 (0.045)</td>
<td>2.3 (23)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>Z005DW</td>
<td>0.005-0.5 (0.05-5)</td>
<td>0.0075 (0.075)</td>
<td>2.3 (23)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>Z025DW</td>
<td>0.02-2.5 (0.2-25)</td>
<td>0.04 (0.4)</td>
<td>7 (70)</td>
<td>12 (120)</td>
</tr>
<tr>
<td>Z035DW</td>
<td>0.05-3.5 (0.5-35)</td>
<td>0.075 (0.75)</td>
<td>10 (100)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>Z070DW</td>
<td>0.1-7 (1-70)</td>
<td>0.18 (1.8)</td>
<td>12 (120)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>Z120DW</td>
<td>0.2-12 (2-120)</td>
<td>0.3 (3)</td>
<td>15 (150)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>Z280DW</td>
<td>0.2-28 (2-280)</td>
<td>1 (10)</td>
<td>35 (350)</td>
<td>42 (420)</td>
</tr>
</tbody>
</table>

- The differential (dead band) is not adjustable.
- The differential (dead band) indicates value at the middle of the pressure range. The differential (dead band) becomes smaller than the indicated value within the lower range, and larger within the higher range.
- Only "C" contact micro switch is available.
Pressure Switches

Z1.7D
Z005D
Z025D

Mass: approx. 0.9kg

※ Please note: Total length of DPDT is longer than SPDT.

Z035D
Z070D
Z120D
Z280D

Mass: approx. 0.7kg

※ Please note: Total length of DPDT is longer than SPDT.
Differential Pressure Switches

Features
● The differential pressure switches adapt to high pressure and extremely small dead band at the same time.
● The switches adapt up to the maximum range of 21MPa. The adjustable differential range is 0.002 to 3.5MPa.
● A polymide diaphragm is adopted as a pressure sensing element.
● To realize the high proof pressure and the small dead band at the same time, the stroke and the clearance have been made smaller. (It is recommended to use an approx. 20μm filter for the both higher pressure side and lower pressure side.)
● The diaphragm actuated pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
● CCC approved.

<table>
<thead>
<tr>
<th>Type of the Micro Switches</th>
<th>Models</th>
<th>Range MPa (kgf/cm²)</th>
<th>Sensitivity (Dead Band) MPa (kgf/cm²)</th>
<th>Range of Adjustable Difference MPa (kgf/cm²)</th>
<th>Proof Pressure MPa (kgf/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDT</td>
<td>Z2.5DD</td>
<td>0.002-2 (0.02-20)</td>
<td>0.005 (0.05)</td>
<td>0.002-0.25 (0.02-2.5)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z005DD</td>
<td>0.005-2 (0.05-20)</td>
<td>0.01 (0.1)</td>
<td>0.005-0.5 (0.05-5)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z012DD</td>
<td>0.005-2 (0.05-20)</td>
<td>0.05 (0.5)</td>
<td>0.005-1.2 (0.05-12)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z020DD</td>
<td>0.005-2 (0.05-20)</td>
<td>0.07 (0.7)</td>
<td>0.005-2 (0.05-20)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z2.5DDEX</td>
<td>0.002-21 (0.02-210)</td>
<td>0.005 (0.05)</td>
<td>0.002-0.25 (0.02-2.5)</td>
<td>35 (350)</td>
</tr>
<tr>
<td></td>
<td>Z005DDEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.01 (0.1)</td>
<td>0.005-0.5 (0.05-5)</td>
<td>35 (350)</td>
</tr>
<tr>
<td></td>
<td>Z012DDEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.05 (0.5)</td>
<td>0.005-1.2 (0.05-12)</td>
<td>35 (350)</td>
</tr>
<tr>
<td></td>
<td>Z035DDEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.07 (0.7)</td>
<td>0.005-3.5 (0.05-35)</td>
<td>35 (350)</td>
</tr>
<tr>
<td>DPDT</td>
<td>Z2.5DDW</td>
<td>0.002-2 (0.02-20)</td>
<td>0.0075 (0.075)</td>
<td>0.002-0.25 (0.02-2.5)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z005DDW</td>
<td>0.005-2 (0.05-20)</td>
<td>0.015 (0.15)</td>
<td>0.005-0.5 (0.05-5)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z012DDW</td>
<td>0.005-2 (0.05-20)</td>
<td>0.08 (0.8)</td>
<td>0.005-1.2 (0.05-12)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z020DDW</td>
<td>0.005-2 (0.05-20)</td>
<td>0.1 (1)</td>
<td>0.005-2 (0.05-20)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td></td>
<td>Z2.5DDWEX</td>
<td>0.002-21 (0.02-210)</td>
<td>0.0075 (0.075)</td>
<td>0.002-0.25 (0.02-2.5)</td>
<td>35 (350)</td>
</tr>
<tr>
<td></td>
<td>Z005DDWEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.015 (0.15)</td>
<td>0.005-0.5 (0.05-5)</td>
<td>35 (350)</td>
</tr>
<tr>
<td></td>
<td>Z012DDWEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.08 (0.8)</td>
<td>0.005-1.2 (0.05-12)</td>
<td>35 (350)</td>
</tr>
<tr>
<td></td>
<td>Z035DDWEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.1 (1)</td>
<td>0.005-3.5 (0.05-35)</td>
<td>35 (350)</td>
</tr>
</tbody>
</table>

● The sensitivity (dead band) is not adjustable.
● The sensitivity (dead band) indicates value at the middle of the range of adjustable difference. The sensitivity (dead band) becomes smaller than the indicated value within the lower range of adjustable difference, and larger within the higher range of adjustable difference.
● Only “C” contact micro switch is available.
Differential Pressure Switches

**Z2.5DD**
- Mass: approx. 0.9kg

**Z005DD**
- Mass: approx. 1.3kg

**Z012DD**
- Mass: approx. 1.3kg

**Z020DD**
- Mass: approx. 1.3kg

※ Please note: Total length of DPDT is longer than SPDT.

- **Z2.5DDEX**
- **Z005DDEX**
- **Z012DDEX**
- **Z035DDEX**

※ Please note: Total length of DPDT is longer than SPDT.

(Unit: millimeter)
Differential Pressure Switches (Diaphragm Actuator)

Z1/4DD/Z1/4DDW

Features

- This differential pressure switch especially specializes in extremely small differential pressure.
- The differential pressure switch adapts to the differential range of 0.0005 to 0.025MPa.
- A polymide diaphragm is adopted as a pressure sensing element.
- To realize the high proof pressure and the extremely small dead band at the same time, stroke and clearance have been made smaller. (It is recommended to use an approx. 20μm filter for the both higher pressure side and lower side pressure side.)
- The diaphragm actuated pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
- CCC approved.

<table>
<thead>
<tr>
<th>Type of the Micro Switches</th>
<th>Models</th>
<th>Range MPa (kgf/cm²)</th>
<th>Sensitivity (Dead Band) MPa (kgf/cm²)</th>
<th>Range of Adjustable Difference MPa (kgf/cm²)</th>
<th>Proof Pressure MPa (kgf/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDT</td>
<td>Z1/4DD</td>
<td>0.0005-6.6 (0.005-66)</td>
<td>0.0005 (0.005)</td>
<td>0.0005-0.025 (0.005-0.25)</td>
<td>10 (100)</td>
</tr>
<tr>
<td>DPDT</td>
<td>Z1/4DDW</td>
<td>0.0005-6.6 (0.005-66)</td>
<td>0.00075 (0.0075)</td>
<td>0.0005-0.025 (0.005-0.25)</td>
<td>10 (100)</td>
</tr>
</tbody>
</table>

- The sensitivity (dead band) is not adjustable.
- The sensitivity (dead band) indicates value at the middle of the range of adjustable difference. The sensitivity (dead band) becomes smaller than the indicated value within the lower range of adjustable difference, and larger within the higher range of adjustable difference.
- Only “C” contact micro switch is available.
Differential Pressure Switches
(Diaphragm Actuator)

Z1/30DD

Features

● The differential pressure switch enables you to set its operating point at extremely small differential pressure under high normal operation pressure.
● The differential pressure switch can be used up to its proof pressure of 69kPa. The adjustable differential pressure range is 0 to 3kPa.
● A nitrile rubber diaphragm is adopted as a pressure sensing element.
● To realize the high proof pressure and the small dead band at the same time, the stroke and the clearance have been made smaller. (It is recommended to use an approx. 20μm filter for the both higher pressure side and lower pressure side.)
● The diaphragm actuated pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
● CCC approved.

<table>
<thead>
<tr>
<th>Type of the Micro Switches</th>
<th>Models</th>
<th>Range kPa (kgf/cm²)</th>
<th>Sensitivity (Dead Band)</th>
<th>Range of Adjustable Difference</th>
<th>Proof Pressure kPa (kgf/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDT</td>
<td>Z1/30DD</td>
<td>0-46 (0-0.46)</td>
<td>0.07 (0.0007)</td>
<td>0-3 (0-0.03)</td>
<td>69 (0.69)</td>
</tr>
</tbody>
</table>

● The sensitivity (dead band) is not adjustable.
● The sensitivity (dead band) indicates value at the middle of the range of adjustable difference. The sensitivity (dead band) becomes smaller than the indicated value within the lower range of adjustable difference, and larger within the higher range of adjustable difference.
● Use flexible tubing so that any external force or stress is not applied to the diaphragm flange.
● Only "C" contact micro switch is available.
Z1/30DD

Differential Pressure Switches

Mass: approx. 2.7 kg

[Unit: millimeter]
The explosion-proof pressure switches have adopted a pressure-proof type cable gland at the conduit connection port. This particular configuration makes the explosion-proof pressure switches conforming to the IEC standard.
Explosion-proof Pressure Switches

The explosion-proof pressure switches conform to the IEC standard. The explosion-proof class is ExdIICT6.

A reference chart of gases (ambient atmosphere) in which the TEX-Z type can be used.

Since the explosion-proof configuration of the TEX-Z conforms to ExdIICT6 standard, the switches can be used in hazardous locations where explosive gases (flammable gases and vapor of flammable liquid) exist.

[Example of classification of explosive gases being compatible with a group of explosion-proof electric devices and the temperature grade]

<table>
<thead>
<tr>
<th>Temperature Grade</th>
<th>T1</th>
<th>T2</th>
<th>T3</th>
<th>T4</th>
<th>T5</th>
<th>T6</th>
</tr>
</thead>
<tbody>
<tr>
<td>G R O U P</td>
<td>IIA</td>
<td>Acetone</td>
<td>Ethanol</td>
<td>Ethyl Cyclohexane</td>
<td>Acetaldehyde</td>
<td>Ethyl Nitrite</td>
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<td>Ammonia</td>
<td>Ethyl Benzene</td>
<td>Ethyl Cyclopentane</td>
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<td></td>
<td>Carbon Monoxide</td>
<td>Acetyl Chloride</td>
<td>Butyl Chloride</td>
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<td>Ethane</td>
<td>Vinyl Chloride</td>
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<td>Ethyl Methylketone</td>
<td>Vinyl Acetate</td>
<td>Cyclohexanol</td>
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<td>Acryl Acetate</td>
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<td>Decane</td>
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<td>Dimethylamine</td>
<td>Hexane</td>
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<td>Ethyl Acetate</td>
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<td>Styrene</td>
<td>Butane</td>
<td>Pentane</td>
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<td>Propyl Acetate</td>
<td>Methylcyclohexane</td>
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<td>Petroleum Naphtha</td>
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<td>Methane</td>
<td>Ethyl Methacrylate</td>
<td>Oil of Turpentine</td>
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<td>Methyl Methacrylate</td>
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<td>Acrylic Nitrile</td>
<td>Ethyl Acrylate</td>
<td>Acrylic Aldehyde</td>
<td>Ethyl Methyl Ether</td>
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<td>Hydrogen Cyanide</td>
<td>Methyl Acrylate</td>
<td>Crotonaldehyde</td>
<td>Diethyl Ether</td>
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<td></td>
<td>Cyclopropane</td>
<td>Ethylene</td>
<td>Dimethyl Ether</td>
<td>Dibutyl Ether</td>
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<td></td>
<td>Coke Oven Gas</td>
<td>Ethylene Oxide</td>
<td>Tetrahydrofuran</td>
<td>Nitric Acid Isopropyl</td>
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<td></td>
<td>1,3-butadiene</td>
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<td></td>
<td>Furane</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IIC</td>
<td>Hydrogen</td>
<td>Acetylene</td>
<td></td>
<td>Carbon Disulfide</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Ethyl Nitrate</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
How to set

Pressure setting can be done easily.

When you set the operating pressure on falling pressure, put a flat blade screw driver longitudinally in the slit of the range adjusting nut, then rotate the nut with it. When viewing from the front, rotating the nut clockwise will make the set pressure high. Dead band (difference between ON and OFF) can be adjusted by rotating the differential adjusting nut. This means setting the operating pressure on rising. When viewing from the front, rotating the nut clockwise will make the differential large.

Note) Differential of the fixed differential type can not be adjusted.
Specifications

Housing Material: Die-cast Aluminum
Painting Color: 7.5BG4/1.5
Explosion-proof class: Exd II CT6
Pressure Port: Rc1/4 (PT1/4)
Conduit: G3/4 (PF3/4)
Operating Ambient Temperature: −10 to +40°C
Allowable Operating Frequency: 120 cycles / minute
Insulation Resistance: Between discontinuous terminals, and between each terminal and non-charging metal; Over 100MΩ (at DC500V)
Withstand Voltage: Between discontinuous terminals; 1000VAC, 50/60Hz, 1 minute
Between each terminal and non-charging metal, and ground; 2200VAC 50/60Hz, 1 minute
Micro Switch Terminal Screw: M4
Earth Terminal Screw: M4
Orifice of the Pressure Sensing Part: 1.5
Allowable Medium Temperature: SUS316, −20 to +200°C
Polymide, −20 to +200°C
Piston Actuator, −10 to +80°C
Diaphragm Actuator, −10 to +80°C
Phosphor Bronze Bellows, −40 to +120°C
Stainless Steel Bellows, −40 to +250°C
(Provided the temperature shall be within the range that will not effect on the switch mechanism.)
Repeatability: Standard Pressure Switch: ±1% of Max range
Differential Pressure Switch: ±1% of Max differential

How to order

Explosion-proof Designation of the Series

D: Diaphragm
P: Piston
B: Bellows
BS: Stainless Steel Bellows
F: Adjustable Differential Type
H: Fixed Differential Type
R: Compound Vacuum Pressure Type
C: SPDT Standard
0: SPDT Micro-load Type
A: SPDT Sealed Type
D: SPDT (C contact)

Material of the Pressure Sensing Element
Diaphragm: Nitrile Rubber (Buna N)
Flange: Die-cast Aluminum
O-ring: Nitrile Rubber (Buna N)

Material of the Housing
TEX-Z005D, 010D, 018D
TEX-Z1/4D
TEX-Z032P
TEX-Z070P, 210P, 400P
TEX-Z635P
TEX-Z001BR, 005BR, 009BR
TEX-Z1/4DD, 2.5DD, 005DD, 012DD, 020DD, 035DD, 070DD, 120DD, 280DD
TEX-Z1.7DH, 005DH, 025DH, 035DH, 070DH, 120DH, 280DH
TEX-Z001BR, 005BR, 009BR
TEX-Z1/4DD, 2.5DD, 005DD, 012DD, 020DD, 035DD, 070DD, 120DD, 280DD

Type of Actuators

D: Diaphragm
P: Piston
B: Bellows
BS: Stainless Steel Bellows
F: Adjustable Differential Type
H: Fixed Differential Type
R: Compound Vacuum Pressure Type
C: SPDT Standard
0: SPDT Micro-load Type
A: SPDT Sealed Type
D: SPDT (C contact)

Collective Range

TEX-Z

Micro Switch

* Teflon and Viton are the registered trademarks of Du Pont.
Explosion-proof Pressure Switches

(Diaphragm Actuator)

TEX□-Z□□□D

Features

● The explosion-proof pressure switches have adopted a nitrile rubber diaphragm as the pressure sensing element.
● The pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
● The pressure switches are applicable to pressure ranging from 0.005 to 1.8MPa.
● The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24VDC), and a sealed type (environment resistance).
● ExdIICT6 (explosion-proof class) approved.

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Differential (Dead Band)</th>
<th>Rated Pressure</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M1N. : Minimum setting point of falling pressure.</td>
<td>Add to the Range Value MPa. (kgf/cm²)</td>
<td>Maximum Pressure in Continuous Use MPa. (kgf/cm²)</td>
<td>MPa (kgf/cm²)</td>
</tr>
<tr>
<td></td>
<td>MAX. : Maximum setting point of rising pressure.</td>
<td>MIN. - MAX.</td>
<td>MIN. - MAX.</td>
<td>MIN. - MAX.</td>
</tr>
<tr>
<td>TEX1-Z005D</td>
<td>0.005-0.5 (0.05-5)</td>
<td>0.03-0.1 (0.3-1)</td>
<td>0.03-0.11 (0.3-1.1)</td>
<td>0.04-0.12 (0.4-1.2)</td>
</tr>
<tr>
<td>TEX1-Z010D</td>
<td>0.005-1 (0.05-10)</td>
<td>0.04-0.2 (0.4-2)</td>
<td>0.05-0.21 (0.5-2.1)</td>
<td>0.1-0.22 (1-2.2)</td>
</tr>
<tr>
<td>TEX1-Z018D</td>
<td>0.02-1.8 (0.2-18)</td>
<td>0.09-0.39 (0.9-3.9)</td>
<td>0.12-0.4 (1.2-4)</td>
<td>0.2-0.42 (2-4.2)</td>
</tr>
</tbody>
</table>

● Beside the adjustable differential (dead band) type, the fixed differential type (symbol “F”) is available.
● The differential (dead band) becomes larger to a certain extent in accordance with increase of the pressure. The above chart shows the differential adjustable range related to the pressure ranges divided into three stages.
● The minimum (MIN.) differential (dead band) indicates values at the middle of the pressure range. The differential (dead band) becomes smaller than the indicated values within the lower range, and larger range within the higher range.
● The differential (dead band) of the fixed differential type is less than or equal to the minimum value of the adjustable differential (dead band) type.
● Select a type of your pressure switch so that it can be used within the middle of the range as much as possible.
Explosion-proof Pressure Switches

TEX1-Z005D
TEX1-Z010D
TEX1-Z018D

Mass: approx. 1.9kg

(Unit: millimeter)
Explosion-proof Pressure Switches

(Diaphragm Actuator)

TEX□-Z1/4D

Features

● The explosion-proof pressure switch can be used within very low pressure range of 3 to 25kPa.
● The pressure switches have adopted a nitrile rubber diaphragm as the pressure sensing element.
● The pressure switch can be used for various pressure medium such as air, water, oil, gases and steam.
● The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24VDC), and a sealed type (environment resistance).
● ExdIICt6 (explosion-proof class) approved.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range</th>
<th>Differential (Dead Band)</th>
<th>Rated Pressure</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEX1-Z1/4D</td>
<td>3-25 (0.03-0.25)</td>
<td>2.5-8 (0.025-0.08)</td>
<td>25 (0.25)</td>
<td>300 (3)</td>
</tr>
</tbody>
</table>

- Fixed differential (dead band) type ("F") is available.
- The minimum (MIN.) differential (dead band) indicates values at the middle of the pressure range. The differential (dead band) becomes smaller than the indicated value within the lower range, and larger within the higher range.
- The differential (dead band) of the fixed differential type ("F") is less than or equal to the minimum value of the adjustable differential (dead band) models.
Explosion-proof Pressure Switches

Mass: approx. 2.8kg

TEX1-Z1/4D

(Unit: millimeter)
Explosion-proof Pressure Switches
(piston actuator)

TEX□-Z□□□P

Features

● The explosion-proof pressure switches have adopted a brass (nickel plated) or SUS420F piston as the pressure sensing element.

● An O-ring and Teflon cup seal have been adopted as a seal of the piston, and this configuration realizes long-time duration of the pressure switches.

● The pressure switches are applicable to pressure ranging from 0.1 to 63.5MPa.

● The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24VDC), and a sealed type (environment resistance).

● ExdIICT6 (explosion-proof class) approved.

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Differential (Dead Band)</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN. - MAX.</td>
<td>MIN. - MAX.</td>
<td>MPa (kgf/cm²)</td>
</tr>
<tr>
<td></td>
<td>Lower Range</td>
<td>Middle Range</td>
<td>Higher Range</td>
</tr>
<tr>
<td></td>
<td>MIN. - MAX.</td>
<td>MIN. - MAX.</td>
<td>MIN. - MAX.</td>
</tr>
<tr>
<td>TEX1-Z032P</td>
<td>0.1-3.2 (1-32)</td>
<td>0.2-0.6 (2-6)</td>
<td>0.2-0.6 (2-6)</td>
</tr>
<tr>
<td>TEX1-Z070P</td>
<td>0.2-7 (2-70)</td>
<td>0.25-1.3 (2.5-13)</td>
<td>0.28-1.4 (2.8-14)</td>
</tr>
<tr>
<td>TEX1-Z210P</td>
<td>0.5-20.5 (5-205)</td>
<td>0.6-3.8 (6-38)</td>
<td>0.7-4 (7-40)</td>
</tr>
<tr>
<td>TEX1-Z400P</td>
<td>1-40 (10-400)</td>
<td>1.4-7.8 (14-78)</td>
<td>1.5-8 (15-80)</td>
</tr>
<tr>
<td>TEX1-Z635P</td>
<td>2-63.5 (20-635)</td>
<td>2-11 (20-110)</td>
<td>2.5-12 (25-120)</td>
</tr>
</tbody>
</table>

Beside the adjustable differential (dead band) type, the fixed differential type (symbol "F") is available.

● The differential (dead band) becomes larger to a certain extent in accordance with increase of the pressure. The above chart shows the differential adjustable range related to the pressure ranges divided into three stages.

● The minimum (MIN.) differential (dead band) indicates values at the middle of the pressure range. The differential (dead band) becomes smaller than the indicated values within the lower range, and larger range within the higher range.

● The differential (dead band) of the fixed differential type is less than or equal to the minimum value of the adjustable differential (dead band) type.

● The differential (dead band) of the fixed differential type is less than or equal to the minimum value of the adjustable differential (dead band) type.

● A PT1/8 drain port is equipped on the side of the body so that the pressure switch is used with piping for drains beforehand, in an environment that will not allow even a small amount see page. The drain port must be opened to the atmospheric pressure.

● Select a type of your pressure switch so that it can be used within the middle of the range as much as possible.
Explosion-proof Pressure Switches

TEX1-Z032P
TEX1-Z070P
TEX1-Z210P
TEX1-Z400P
TEX1-Z635P

Mass: approx. 1.9kg

(Unit: millimeter)
## Explosion-proof Pressure Switches (Bellows Actuator)

**Features**
- The explosion-proof pressure switches have adopted a SUS316L bellows actuator as the pressure sensing element.
- The pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
- The pressure switches are applicable to pressure ranging from 0.005 to 11.5MPa.
- The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24VDC), and a sealed type (environment resistance).
- ExdIICT6 (explosion-proof class) approved.

### Models

<table>
<thead>
<tr>
<th>Models</th>
<th>Range</th>
<th>Differential</th>
<th>Rated Pressure</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN : Minimum setting point of falling pressure</td>
<td>Add to the Range Value</td>
<td>Maximum Pressure in Continuous Use</td>
<td>MPa (kgf/cm²)</td>
</tr>
<tr>
<td></td>
<td>MAX : Maximum setting point of rising pressure</td>
<td>MPa (kgf/cm²)</td>
<td>MPa (kgf/cm²)</td>
<td>MPa (kgf/cm²)</td>
</tr>
<tr>
<td>TEX1-Z002BS</td>
<td>0.005-0.2 (0.05-2)</td>
<td>0.008-0.04 (0.08-0.4)</td>
<td>0.2 (2)</td>
<td>0.3 (3)</td>
</tr>
<tr>
<td>TEX1-Z006BS</td>
<td>0.005-0.6 (0.05-6)</td>
<td>0.03-0.1 (0.3-1)</td>
<td>0.6 (6)</td>
<td>0.9 (9)</td>
</tr>
<tr>
<td>TEX1-Z010BS</td>
<td>0.005-1 (0.05-10)</td>
<td>0.06-0.2 (0.6-2.1)</td>
<td>1 (10)</td>
<td>2 (20)</td>
</tr>
<tr>
<td>TEX1-Z025BS</td>
<td>0.03-2.5 (0.3-25)</td>
<td>0.17-0.5 (1.7-5)</td>
<td>2.5 (25)</td>
<td>4.2 (42)</td>
</tr>
<tr>
<td>TEX1-Z050BS</td>
<td>0.1-5 (1-50)</td>
<td>0.5-0.9 (5-9)</td>
<td>5 (50)</td>
<td>14 (140)</td>
</tr>
<tr>
<td>TEX1-Z115BS</td>
<td>0.2-11.5 (2-115)</td>
<td>1.2-1.8 (12-18)</td>
<td>11.5 (115)</td>
<td>17.5 (175)</td>
</tr>
</tbody>
</table>

**Note**
- Beside the adjustable differential (dead band) type, the fixed differential type (symbol “F”) is available.
- The minimum (MIN.) differential (dead band) indicates values at the middle of the pressure range.
- The differential (dead band) becomes smaller than the indicated value within the lower range, and larger range within the higher range.
- The differential (dead band) of the fixed differential type (“F”) is less than or equal to the minimum value of the adjustable differential (dead band) type.
- The bellows type pressure switches can be used for various pressure medium such as air, water, oil, gases and steam. However, when you use a bellows type pressure switch for such application as water or oil, you should restrain possible pulsation or surge pressure in your system at minimum.
- It is recommended to use a damper for an application of which surge pressure is high.
- Normal operating pressure should be below the rated pressure.
- Life duration of bellows is largely influenced by amplitude of setting pressure and fluctuation range of pressure applied to the bellows. It does not always correspond to number of times of a pressure switch actuation. Check high and low setting points, rated pressure and proof pressure value of a pressure switch, so that you select an appropriate model that meets your application.
- The larger number of pressure cycles applied to a bellows is, shorter life duration of it.
- Note that metal fatigue of a bellows accumulates according to pressure cycles even if they do not actuate a pressure switch.
Explosion-proof Pressure Switches

TEX1-Z002BS
TEX1-Z006BS
TEX1-Z010BS

TEX1-Z025BS
TEX1-Z050BS
TEX1-Z115BS

<table>
<thead>
<tr>
<th>Type</th>
<th>Mass (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEX1-Z002BS</td>
<td>100 approx. 2.0</td>
</tr>
<tr>
<td>TEX1-Z006BS</td>
<td>74 approx. 1.9</td>
</tr>
<tr>
<td>TEX1-Z010BS</td>
<td>74 approx. 1.9</td>
</tr>
<tr>
<td>TEX1-Z025BS</td>
<td>85 approx. 2.0</td>
</tr>
<tr>
<td>TEX1-Z050BS</td>
<td>104 approx. 2.1</td>
</tr>
<tr>
<td>TEX1-Z115BS</td>
<td>93 approx. 2.1</td>
</tr>
</tbody>
</table>

(Unit: millimeter)
Explosion-proof Type Compound Vacuum Pressure Switches (Bellows Actuator)

Features

- The explosion-proof type compound vacuum pressure switches can be used within vacuum to positive pressure range. They can be set within vacuum pressure range only, from vacuum to positive pressure range or within positive pressure range only.
- Setting at the atmospheric pressure (gauge pressure = 0) can also be done.
- The pressure switches have adopted a phosphor bronze bellows actuator as the pressure sensing element.
- The pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
- The micro switch is selectable from a SPDT standard rating type, a micro-load type (for 24VDC), and a sealed type (environment resistance).
- ExdIICT6 (explosion-proof class) approved.

<table>
<thead>
<tr>
<th>Models</th>
<th>Range MIN.</th>
<th>Range MAX.</th>
<th>Differential</th>
<th>Rated Pressure</th>
<th>Proof Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEX1-Z001BR</td>
<td>80kPaVac-100kPa</td>
<td>10-40 (0.1-0.4)</td>
<td>100kPaVac-100kPa</td>
<td>300 (3)</td>
<td></td>
</tr>
<tr>
<td>TEX1-Z005BR</td>
<td>73kPaVac-500kPa</td>
<td>20-100 (0.2-1)</td>
<td>100kPaVac-500kPa</td>
<td>900 (9)</td>
<td></td>
</tr>
<tr>
<td>TEX1-Z009BR</td>
<td>67kPaVac-900kPa</td>
<td>40-200 (0.4-2)</td>
<td>100kPaVac-900kPa</td>
<td>2000 (20)</td>
<td></td>
</tr>
</tbody>
</table>

- Beside the adjustable differential (dead band) type, the fixed differential type (symbol “F”) is available.
- The minimum (MIN.) differential (dead band) indicates values at the middle of the pressure range. The differential (dead band) becomes smaller than the indicated value within the lower range, and larger range within the higher range.
- The differential (dead band) of the fixed differential type (“F”) is less than or equal to the minimum value of the adjustable differential (dead band) type.
- The bellows type pressure switches can be used for various pressure medium such as air, water, oil, gases and steam. However, when you use a bellows type pressure switch for such application as water or oil, you should restrain possible pulsation or surge pressure in your system at minimum.
- It is recommended to use a damper for an application of which surge pressure is high.
- Normal operating pressure should be below the rated pressure.
- Life duration of bellows is largely influenced by amplitude of setting pressure and fluctuation range of pressure applied to the bellows. It does not always correspond to number of times of a pressure switch actuation. Check high and low setting points, rated pressure and proof pressure value of a pressure switch, so that you select an appropriate model that meets your application.
- The larger number of pressure cycles applied to a bellows is, shorter life duration of it.

Note that metal fatigue of a bellows accumulates according to pressure cycles even if they do not actuate a pressure switch.
Explosion-proof Pressure Switches

TEX1-Z001BR

Mass: approx. 2.3 kg

TEX1-Z005BR
TEX1-Z009BR

Mass: approx. 2.1 kg
Explosion-proof Pressure Switches (Diaphragm Actuator)

**TEX-Z□□□DH**

**Features**

- The explosion-proof pressure switches adapt to small differential.
- The switches adapt up to the maximum range of 28MPa. The adjustable differential range is 0.004 to 1MPa.
- A SUS316L diaphragm is adopted as the pressure sensing element.
- The pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
- ExdIICT6 (explosion-proof class) approved.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range MIN : Maximum setting point of falling pressure, MPa (kgf/cm²)</th>
<th>Differential Add to the Range Value, MPa (kgf/cm²)</th>
<th>Rated Pressure Maximum Pressure in Continuous Use, MPa (kgf/cm²)</th>
<th>Proof Pressure, MPa (kgf/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEX-Z1.7DH</td>
<td>0.002-0.17 (0.02-1.7)</td>
<td>0.004 (0.04)</td>
<td>2.3 (23)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>TEX-Z005DH</td>
<td>0.005-0.5 (0.05-5)</td>
<td>0.006 (0.06)</td>
<td>2.3 (23)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>TEX-Z025DH</td>
<td>0.02-2.5 (0.2-25)</td>
<td>0.03 (0.3)</td>
<td>7 (70)</td>
<td>12 (120)</td>
</tr>
<tr>
<td>TEX-Z035DH</td>
<td>0.05-3.5 (0.5-35)</td>
<td>0.06 (0.6)</td>
<td>10 (100)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>TEX-Z070DH</td>
<td>0.1-7 (1-70)</td>
<td>0.15 (1.5)</td>
<td>12 (120)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>TEX-Z120DH</td>
<td>0.2-12 (2-120)</td>
<td>0.3 (3)</td>
<td>15 (150)</td>
<td>41 (410)</td>
</tr>
<tr>
<td>TEX-Z280DH</td>
<td>0.2-28 (2-280)</td>
<td>1 (10)</td>
<td>35 (350)</td>
<td>42 (420)</td>
</tr>
</tbody>
</table>

- The differential (dead band) is not adjustable.
- The differential (dead band) indicates value at the middle of the pressure range. The differential (dead band) becomes smaller than the indicated value within the lower range, and larger within the higher range.
- Only “C” contact micro switch is available.
Explosion-proof Pressure Switches

TEX-Z1.7DH
TEX-Z005DH
TEX-Z025DH

Mass: approx. 2.1kg

TEX-Z035DH
TEX-Z070DH
TEX-Z120DH
TEX-Z280DH

Mass: approx. 1.9kg

(Unit: millimeter)
Explosion-proof Differential Pressure Switches (Diaphragm Actuator)

Features

- This explosion-proof differential pressure switch especially specializes in extremely small differential pressure.
- The differential pressure switches conform to the differential setting range of 0.0005 to 3.5MPa.
- The switches adapt up to the maximum range of 21MPa.
- A polymide diaphragm is adopted as a pressure sensing element.
- To realize the high proof pressure and the extremely small dead band at the same time, the stroke and clearance have been made smaller. (It is recommended to use an approx. 20μm filter for both higher pressure side and lower side pressure side.)
- The differential pressure switches can be used for various pressure medium such as air, water, oil, gases and steam.
- Exd IIC T6 (explosion-proof class) approved.

<table>
<thead>
<tr>
<th>Model</th>
<th>Range MPa (kgf/cm²)</th>
<th>Sensitivity (Dead Band)</th>
<th>Range of Adjustable Difference The switch is activated on increasing pressure difference. MPa (kgf/cm²)</th>
<th>Proof Pressure MPa (kgf/cm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>TEX-Z1/4DD</td>
<td>0.0005-6.6 (0.005-66)</td>
<td>0.0006 (0.006)</td>
<td>0.0005-0.025 (0.005-0.025)</td>
<td>10 (100)</td>
</tr>
<tr>
<td>TEX-Z2.5DD</td>
<td>0.002-2 (0.02-20)</td>
<td>0.006 (0.06)</td>
<td>0.002-0.25 (0.02-0.25)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>TEX-Z005DD</td>
<td>0.005-2 (0.05-20)</td>
<td>0.02 (0.2)</td>
<td>0.005-0.5 (0.05-0.5)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>TEX-Z012DD</td>
<td>0.005-2 (0.05-20)</td>
<td>0.06 (0.6)</td>
<td>0.005-1.2 (0.05-1.2)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>TEX-Z020DD</td>
<td>0.005-2 (0.05-20)</td>
<td>0.1 (1)</td>
<td>0.005-2 (0.05-20)</td>
<td>3.5 (35)</td>
</tr>
<tr>
<td>TEX-Z2.5DDEX</td>
<td>0.002-21 (0.02-210)</td>
<td>0.006 (0.06)</td>
<td>0.002-0.25 (0.02-0.25)</td>
<td>35 (350)</td>
</tr>
<tr>
<td>TEX-Z005DDEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.02 (0.2)</td>
<td>0.005-0.5 (0.05-0.5)</td>
<td>35 (350)</td>
</tr>
<tr>
<td>TEX-Z012DDEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.06 (0.6)</td>
<td>0.005-1.2 (0.05-1.2)</td>
<td>35 (350)</td>
</tr>
<tr>
<td>TEX-Z035DDEX</td>
<td>0.005-21 (0.05-210)</td>
<td>0.1 (1)</td>
<td>0.005-3.5 (0.05-3.5)</td>
<td>35 (350)</td>
</tr>
</tbody>
</table>

- The sensitivity (dead band) is not adjustable.
- The sensitivity (dead band) indicates value at the middle of the range of adjusting difference. The sensitivity (dead band) becomes smaller than the indicated value within the lower range of adjusting difference, and larger within the higher range of adjusting difference.
- Only “C” contact micro switch is available.
**Explosion-proof Pressure Switches**

**TEX-Z1/4DD**
- Mass: approx. 6.0kg

**TEX-Z2.5DD**
- Mass: approx. 2.1kg

**TEX-Z005DD**
- TEX-Z012DD
- TEX-Z020DD

Dimensions and features include:
- FLAMEPROOF PACKING
- CABLE GLAND
- Pressure Ports: High and Low
- Unit: millimeter
Explosion-proof Pressure Switches

TEX-Z2.5DDEX
TEX-Z005DDEX
TEX-Z012DDEX
TEX-Z035DDEX

Mass: approx. 2.5kg

(Unit: millimeter)
**Furnished Accessories**

- **Pressure-proof packing type cable gland (UF322)**

  **Pressure-proof packing**

<table>
<thead>
<tr>
<th>Applicable cable size (nominal)</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>10〜13</td>
<td>322-13</td>
</tr>
<tr>
<td>13〜15</td>
<td>322-15</td>
</tr>
</tbody>
</table>

  The above two kinds of packing are furnished.

- **Hex wrench for the cable gland**

- **Tool for opening and closing the terminal cover**

---

**Pressure-proof packing type cable gland (UF322)**

The TEX-Z series pressure switches become to be explosion-proof configuration by using the pressure-proof packing type cable gland at their conduit opening.

- It is mandatory to use the pressure-proof packing type cable gland, and to install the pressure switch in the correct manner.
- Use the furnished cable gland for the pressure-proof packing cable gland.
- Refer to the instruction manual for the correct installation of the pressure-proof packing cable gland.
# Electrical Rating of Micro Switches

## SPDT Standard Type

<table>
<thead>
<tr>
<th>Contact Structure</th>
<th>Voltage (V)</th>
<th>Resistance Load (A)</th>
<th>Lamp Load (A)</th>
<th>Inductive Load (A)</th>
<th>Motor Load (A)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N.C.</td>
<td>N.O.</td>
<td>N.C.</td>
<td>N.O.</td>
<td>N.C.</td>
</tr>
<tr>
<td>AC 125</td>
<td>10</td>
<td>10</td>
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<td>1.5</td>
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<tr>
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<td>2</td>
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<td>10</td>
</tr>
<tr>
<td>480*</td>
<td>10</td>
<td>10</td>
<td>1.5</td>
<td>0.8</td>
<td>3</td>
</tr>
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<td>0.5</td>
<td>1.5</td>
</tr>
<tr>
<td>DC 8</td>
<td>10</td>
<td>6</td>
<td>3</td>
<td>10</td>
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<td>6</td>
<td>4</td>
</tr>
<tr>
<td>125</td>
<td>0.8</td>
<td>0.2</td>
<td>0.2</td>
<td>0.8</td>
<td>0.2</td>
</tr>
<tr>
<td>250</td>
<td>0.4</td>
<td>0.1</td>
<td>0.1</td>
<td>0.4</td>
<td>0.1</td>
</tr>
</tbody>
</table>

* A CE approved switch is rated up to 480VAC. Voltage rating 600VAC is not CE approved.

## SPDT Micro Load Type

<table>
<thead>
<tr>
<th>Contact Structure</th>
<th>Rating</th>
<th>Recommended Range of Load</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tr>
<tr>
<td>125V AC0.1A</td>
<td></td>
<td>DC5-30V</td>
</tr>
<tr>
<td>30V DC0.1A</td>
<td></td>
<td>0.5-100mA</td>
</tr>
</tbody>
</table>

## SPDT (C contact): Standard Type

<table>
<thead>
<tr>
<th>Contact Structure</th>
<th>Voltage (V)</th>
<th>Resistance Load (A)</th>
<th>Lamp Load (A)</th>
<th>Inductive Load (A)</th>
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<tbody>
<tr>
<td></td>
<td>N.C.</td>
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<td>N.C.</td>
</tr>
<tr>
<td>AC 125</td>
<td>10</td>
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<td>1.5</td>
<td>10</td>
<td>5</td>
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<tr>
<td>250</td>
<td>10</td>
<td>2.5</td>
<td>1.25</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>DC 8</td>
<td>15</td>
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<td>1.5</td>
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<td>5</td>
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<td>0.02</td>
<td>0.02</td>
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</table>

## SPDT (C contact): Explosion-proof type

<table>
<thead>
<tr>
<th>Contact Structure</th>
<th>Voltage (V)</th>
<th>Resistance Load (A)</th>
<th>Lamp Load (A)</th>
<th>Inductive Load (A)</th>
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<tbody>
<tr>
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</tr>
<tr>
<td>125</td>
<td>0.4</td>
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<td>0.03</td>
<td>0.03</td>
</tr>
<tr>
<td>250</td>
<td>0.2</td>
<td>0.1</td>
<td>0.1</td>
<td>0.02</td>
<td>0.02</td>
</tr>
</tbody>
</table>

## DPDT (C contact)

<table>
<thead>
<tr>
<th>Contact Structure</th>
<th>Voltage (V)</th>
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<td>0.2</td>
<td>0.2</td>
<td>0.02</td>
<td>0.02</td>
</tr>
</tbody>
</table>

1. The above tables show steady-state current.
2. Inductive Load : Alternating current-phase factor is 0.4 or more, direct current-time constant is below 7 ms.
Pressure Switches

Pressure Switches

Cover with Pilot Lamp

Pilot Lamp Window

Rubber Lamp Holder

LED (Light Emitting Diode)
To the Micro Switch
Rectifier Stack
Rubber Holder

Lamp Assembly (L24)

Put the holder on the built-in micro switch after wiring, and then close the cover. When ordering a pressure switch with a pilot lamp, suffix a concerned symbol. (Ex. TDZ-4L)

Operation Indicating Pilot Lamp

Pressure Cycle

Operating point on rising pressure ("a" contact ON, "b" contact OFF)

Reset point on falling pressure ("a" contact OFF, "b" contact ON)

Lighting range on rising pressure

Lighting range on falling pressure

Symbol L

Voltage : 100/200V AC, DC
Carry current : Approx. 0.5 mA at 100V
Approx. 1.6 mA at 200V
Lamp : Neon lamp
Built-in Resistor

Symbol L24

Voltage : 24V DC
Carry current : ①② Approx. 1.8 mA
③④ Approx. 2.3 mA
Lamp : LED (Light Emitting Diode)
Built-in Stack and Resistor
Red emission

Symbol LF

Voltage : Free voltage (DC30V Max)
Lamp : LED (Light Emitting Diode)
Built-in Stack
Red emission
Mounting an external resistor:
When an external resistor is mounted, calculate the carry current through the LED from each voltage so that it shall be within range of 10 to 15 mA.

Lighting on rising pressure

Lighting on falling pressure

Lighting when a load is OFF

Lighting when a load is ON

External Resistor

Lighting on rising pressure

Lighting on falling pressure

Lighting when a load is OFF

Lighting when a load is ON
TOKYO PLANT