The DMD 331 is a differential pressure transmitter for industrial applications and is based on a piezoresistive stainless steel sensor, which can be pressurized on both sides with fluids or gases compatible with SST 1.4404 (316L) and 1.4435 (316L).

The compact design allows an integration of the DMD 331 in machines and applications with limited space. The DMD 331 calculates the difference between the pressure on the positive and the negative side and converts it into a proportional electrical signal.

### Preferred areas of use are
- Plant and machine engineering
- Energy industry

### Preferred used for
- Water
## Technical Data

### Input pressure range

<table>
<thead>
<tr>
<th>Nominal pressure [bar]</th>
<th>0.2</th>
<th>0.4</th>
<th>1</th>
<th>2.5</th>
<th>6</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Differential pressure range [bar]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TD 1 : 1 up to</td>
<td>0 ... 0.2</td>
<td>0 ... 0.4</td>
<td>0 ... 1</td>
<td>0 ... 2.5</td>
<td>0 ... 6</td>
<td>0 ... 16</td>
</tr>
<tr>
<td>TD 1 : 10 up to</td>
<td>0 ... 0.02</td>
<td>0 ... 0.04</td>
<td>0 ... 0.1</td>
<td>0 ... 0.25</td>
<td>0 ... 0.6</td>
<td>0 ... 1.6</td>
</tr>
<tr>
<td>Permissible static pressure, one-sided [bar]</td>
<td>0.5</td>
<td>1</td>
<td>3</td>
<td>6</td>
<td>20</td>
<td>60</td>
</tr>
</tbody>
</table>

### Output signal / Supply

- **Standard** 2-wire: 4 ... 20 mA / \( V_S = 12 \ldots 36 \text{ V}_{DC} \)
- **Option IS-version** 2-wire: 4 ... 20 mA / \( V_S = 14 \ldots 28 \text{ V}_{DC} \)
- **Option 3-wire** 3-wire: 0 ... 10 V / \( V_S = 14 \ldots 36 \text{ V}_{DC} \)

### Performance

#### Accuracy

- for ranges of max. input pressure \( p_{IN} > 1 \text{ bar} \) (codes C, D, E)
  - \( \leq \pm 0.5 \% \text{ FSO} \) (differential pressure range with TD from 1:1 up to 1:5)
  - \( \leq \pm 1 \% \text{ FSO} \) (differential pressure range with TD > 1:5 up to 1:10)
- for ranges of max. input pressure \( p_{IN} \leq 1 \text{ bar} \) (codes A, B, F)
  - \( \leq \pm 0.5 \% \text{ FSO} \) (differential pressure range with TD from 100 to 50 \% from nominal pressure)
  - \( \leq \pm 1 \% \text{ FSO} \) (differential pressure range with TD > 10 \% from nominal pressure)

#### Permissible load

- current 2-wire: \( R_{\text{MAX}} = [(V_S - V_\text{S min}) / 0.02 \, \Omega] \)
- voltage 3-wire: \( R_{\text{MIN}} = 10 \, k\Omega \)

#### Influence effects

- supply: 0.05 \% FSO / 10 V at reference conditions
- load: 0.05 \% FSO / k\Omega

#### Response time

- \(< 5 \, \text{msec} \)

1. Accuracy according to IEC 60770 = limit point adjustment (non-linearity, hysteresis, repeatability)

### Thermal effects

**Nominal pressure \( p_{IN} \) [bar]**

<table>
<thead>
<tr>
<th>0.2</th>
<th>0.4</th>
<th>( \geq 1.0 )</th>
</tr>
</thead>
</table>

**Tolerance band [% FSO]**

| \( \leq 2.5 \) | \( \leq 2 \) | \( \leq 1.5 \) |

**TC, average [% FSO / 10 K]**

| \( \leq 0.4 \) | \( \leq 0.3 \) | \( \leq 0.2 \) |

**in compensated range [°C]**

| 0 ... 50 | 0 ... 70 |

**Permissible temperatures**

- medium: -25 ... 125 °C
- electronics / environment: -25 ... 85 °C
- storage: -40 ... 100 °C

2. \( \% \text{ FSO} \) relating to nominal pressure range

### Electrical protection

- Short-circuit protection: permanent
- Reverse polarity protection: no damage, but also no function
- Electromagnetic compatibility: emission and immunity according to EN 61326

### Mechanical stability

- Vibration: 10 g RMS (20 ... 2000 Hz)
- Shock: 100 g / 11 msec

### Materials

- **Pressure port**: stainless steel 1.4404 (316L)
- **Housing**: aluminium, black anodized
- **Seals (media wetted)**: FKM / others on request
- **Diaphragm**: stainless steel 1.4435 (316L)
- **Media wetted parts**: pressure port, seals, diaphragm

### Miscellaneous

- **Current consumption**
  - signal output current: max. 25 mA
  - signal output voltage: max. 7 mA
- **Weight**: approx. 250 g
- **Operational life**: 100 million load cycles
- **Ingress protection**: IP 65
- **CE-conformity**: EMC Directive: 2014/30/EU
- **ATEX Directive**: 2014/34/EU

### Explosion protection (only for 4 ... 20 mA / 2 wire)

- **Approvals**
  - DX13A-DMD 331: IExu II 2G Ex ia IIIC T135°C Db
- **Safety technical maximum values**
  - \( U_S = 28 \text{ V}_{DC} \), \( I_S = 93 \text{ mA}, P_S = 660 \text{ mW}, C \leq 1 \, \text{nF}, L \leq 10 \, \mu\text{H} \)
  - the supply connections have an inner capacity of max. 27 \, nF to the housing
- **Permissible temperatures for environment**: -25 ... 65°C

### Pin configuration

- **Electrical connection**: ISO 4400
  - Supply +
  - Supply –
  - Signal + (only 3-wire)
  - Shield: ground pin

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DMD 331
Differential Pressure Transmitter
Technical Data

Wiring diagrams

2-wire-system (current)

3-wire-system (voltage)

Mechanical connection (dimensions in mm)

standard

option

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# Specification Sheet Differential Pressure Transmitter DMD 331

<table>
<thead>
<tr>
<th>DMD 331</th>
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</tr>
</thead>
</table>

## Pressure
- differential pressure
- 730

### Nominal pressure range [bar]
- 0.2: F
- 0.4: A
- 1.0: B
- 2.5: C
- 6.0: D
- 16: E

### Differential pressure range [bar]
- 0.02: F
- 0.04: A
- 0.10: B
- 0.25: C
- 0.60: D
- 1.0: E
- 2.5: 1
- 4.0: 1
- 6.0: 1
- 10: 1
- 16: 1

### Output
- 4 ... 20 mA / 2-wire
- intrinsic safety 4 ... 20 mA / 2 wire
- 0 ... 10 V / 3-wire

### Accuracy
- TD ≤ 1:5: 0.5 % FSO
- TD > 1:5 up to 1:10: 1.0 % FSO

### Electrical connection
- male and female plug ISO 4400
- standard

### Mechanical connection
- G1/2" EN 837
- 7/16" UNF DIN 3866

### Seals
- FKM

### Special version
- standard

### Prices EXW Kirchentellinsfurt, excluding package

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