Volume flow transmitter

Type 679

The volume flow transmitter type 679 have Bi-direction pressure ranges. Variable measurement of pressure, flow or velocity of flow is available.

Special sensors developed for each pressure range guarantee a physically precise and long term stable measurement. The diversity of versions ensure the use in many various applications in HVAC or for fine measurement in the industry or medical sector.

Measuring range

-1 ... 1 mbar / 0 ... 0.3 – 50 mbar

+ With LCD-Display
+ Adjustable measurement range
+ Switchable output signals
+ Resettable Zero Point (Reset button)
+ Full scale adjustable
+ Application at over and low pressure range possible
+ Fast, easy mounting. Housing incorporates integral bracket for wall or ceiling mounting
+ Adjustable k-Factor for flow and velocity
## Technical overview

### Measuring range
Flow and velocity for following pressure ranges:
- 1 ... 1 mbar / 0 ... 0.3 ... 50 mbar

### Operating conditions
**Medium:** Air and neutral gases

**Temperature:**
- Medium / ambient: 0 ... +70 ºC
- Storage: -10 ... +70 ºC
- No condensation

### Tolerable overload on one side
**Application at over pressure range:**
- 3 mbar P1 = 50 mbar P2 = 4 mbar
- 4 mbar P1 = 100 mbar P2 = 4 mbar

**Application at under pressure range:**
- 3 mbar P1 = -4 mbar P2 = -50 mbar
- 5 mbar P1 = -4 mbar P2 = -100 mbar

**Rupture pressure:**
- ambient temperature: 2 x overload
- 70 ºC: 1.5 x overload

### Materials in contact with medium
**Sensor:** Ceramic Al2O3 (96%)
**Diaphragm:** Silicone
**Housing:** Polycarbonat PC

### Electrical overview
**Output:**
- 2 wire
  - Power supply: 1) 8.0 ... 33 VDC
  - Load: > 10 kOhm
  - Current consumption: > 20 mA
- 3 wire
  - 0 ... 10 V
  - 13.5 ... 33 VDC / 24 VAC ±15% > 10 kOhm
  - 0 ... 10 mA
  - 0 ... 20 mA
  - 13.5 ... 33 VDC / 24 VAC ±15% < 500 Ohm
  - 30 mA
  - 0 ... 5 V
  - 3) 6.5 ... 33 VDC / 24 VAC ±15% > 10 kOhm
  - 0 ... 10 mA

**Filter:**
- Response time switchable by: off / 0.2s / 1s / 5s / 20s

**Polarity reversal protection:**
- Short circuit proof and protected against polarity reversal. Each connection is protected against crossover up to max. supply voltage.

### Dynamic response
**Response time:** < 20 ms
**Load cycle:** < 10 Hz

### Protection standard
**Without cover:** IP 00
**With cover:** IP 54
IP 65

### Display
**LCD Display:**
- Double spaced
- per 8 digit alphanumeric at additional backlight LCD Display 30 mA current consumption

### Ranges of adjustment
**The zero point is adjustable by reset button.**
The Full scale is adjustable by DIP-Switch and additional by the turbopoti.

**Display adjustable between flow and velocity.**

**Available units:**
- Pressure: mbar, Pa, mmWS, kPa, bar, mmH2O
- Flow: m³/s, m³/h, ft³, l/s
- Velocity: m/s, fpm

**Parameters are adjustable by customer**
Pressure ranges in grades, stepless adjustable with Turbo-Poti / output signals / Unit / Output signal and additional 0 ... 5 V / filter (off / 0.2s / 1s / 5s / 20s) / k-Factor adjustable 0.0001 ... 9999 / backlight (off / 5min / on)

### Electrical connection
**Screw terminals for wire and stranded conductors up to 1.5 mm²**
**Cable gland with built-in strain relief PG11**

### Pressure connection
**Connection pipe:** Ø 6.2 mm

### Mounting instructions
**Installation arrangement:** Vertical, with pressure connections downwards
**Mounting:** Mounting bracket (integrated in case)

### Tests / Admissions
**UL**
**Electromagnetic compatibility:** CE-conformity acc. EN 61326-2-3

### Weight
- ~ 100 g

### Packaging
**Single packaging in cardboard**
**Multiple packaging:** 20 / 40 / 120

### Accuracy
**Parameters**
- ±0.5 mbar
- ±0.1 mbar
- ±0.05 mbar
- ±0.02 mbar

**Unit**
- Pressure: mbar, Pa, mmWS, kPa, bar, mmH2O
- Flow: m³/s, m³/h, ft³, l/s
- Velocity: m/s, fpm

**TC-Zero point**
- max. typ. ±0.2 ±0.2 ±0.1 ±0.1 ±0.0

**TC sensitivity**
- max. typ. ±0.3 ±0.3 ±0.2 ±0.1 ±0.0

**TC-Zero point**
- max. typ. ±0.6 ±0.6 ±0.5 ±0.5 ±0.2

**- no additional root-extracted errors**
**- For changing diaphragm position, compensable with zero point reset**

**Test conditions:**
- 25 ºC, 45% rF, Power supply 24 VDC
- TC z.p. / TC z.p. 0 ... 70 ºC

**TC = Temperature coefficient**

**±0.5 mbar**
**0 ... 1 mbar**
**0 ... 3 mbar**
**0 ... 5 mbar**
**0 ... 10 - 50 mbar**

Adjustable by DIP Switch

At nominal pressure

Additional adjustable by software
**Order code selection table**

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<th>Pre-adjustment</th>
<th>max. range</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<th>7</th>
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<th>10</th>
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<td>Pressure range of</td>
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<td>Pressure range of</td>
<td>-100 % to 100% FS</td>
<td>(diagram c)</td>
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<td>Pressure and flow</td>
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<tr>
<td>1) under pressure max. acc. order code selection table = -50 Pa/ 100 Pa</td>
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<tr>
<td>2) Accessories supplied loose</td>
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<tr>
<td>Connection kit for vent duct (metal), 90º angled including tube 2 m long (Fig. 1)</td>
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<td>Connection kit for vent duct (plastic), straight including tube 2 m long (Fig. 2)</td>
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<td>DIN-rail mounting adapter (Fig. 3)</td>
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<td>Calibration certificate</td>
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**Pressure range selectable**

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<th>Unit</th>
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<th>3</th>
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<tbody>
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<td>2</td>
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<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
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<tr>
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<td>6</td>
<td>10</td>
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<td>20</td>
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<td>6</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
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<tr>
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<td>6</td>
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<td>15</td>
<td>20</td>
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<td>30</td>
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<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
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<tr>
<td>inH2O</td>
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<td>2</td>
<td>6</td>
<td>10</td>
<td>15</td>
<td>20</td>
<td>25</td>
<td>30</td>
<td>35</td>
<td>40</td>
</tr>
</tbody>
</table>

**Output signal**

- Linear with filter (transposable) | 2 6
- Square root extracted with filter (transposable) | 3

**Output / power supply**

- 0 ... 10 V | 13.5 ... 33 VDC / 24 VAC ± 15 % (3-Leiter) | 1
- 0 ... 20 mA | 13.5 ... 33 VDC / 24 VAC ± 15 % (3-Leiter) | 3
- 4 ... 20 mA | 13.5 ... 33 VDC / 24 VAC ± 15 % (3-Leiter) | 4
- 8.0 ... 33 VDC (2-Leiter) | 5

**Option**

- with display in pressure unit chosen above | 1
- with display in %fs | 2
- at delivery no pre-adjustment | 6

**Pressure connection / pressure orifices**

- Connection pipe Ø 6.2 mm |
- without pressure orifices | 1
- pressure orifices on P1 | 2
- pressure orifices on P2 | 3
- pressure orifices on P1 and P2 | 4

**Accessories / connection Kit**

- IP 54 |
- without with connection kit (metal), 90º angled including tube 2 m long (Fig. 1) | 0
- with connection kit (plastic), straight including tube 2 m long (Fig. 2) | 2
- IP 65 |
- without with connection kit (metal), 90º angled including tube 2 m long (Fig. 1) | 3
- with connection kit (plastic), straight including tube 2 m long (Fig. 3) | 4

**Pressure range variation (optional)**

- Indicate W and state range on order (e.g.: W0 ... + 8mbar/OUT1...6V) | 1

**Range of characteristic line**

- a) Out 100% | 0% Pressure 100%
- b) Out 100% | 0% Pressure 100%
- c) Out 100% | -100% Pressure 100%

**Accessories 2**

- Connection kit for vent duct (metal), 90º angled including tube 2 m long (Fig. 1) | 104312
- Connection kit for vent duct (plastic), straight including tube 2 m long (Fig. 2) | 100064
- DIN-rail mounting adapter (Fig. 3) | 112854
- Calibration certificate | 104551

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1. under pressure max. acc. order code selection table = -50 Pa/ 100 Pa
2. Accessories supplied loose