Relative and differential pressure switch type 610

Pressure range
-1 ... -320 mbar / 1 ... 500 mbar

Type 610 pressure switches are especially suited to the monitoring of non-flammable gases in general industrial equipment. Exemplary accuracy is maintained throughout the high pressure range of this switch.

- High accuracy (especially the upper pressure ranges with 17 ideally designed pressure range incrementations)
- Ease of accurate adjustment by customer
- Repeatability of switching points up to $\pm 0.1$ mbar
- Rugged mechanics with high operating reliability and switching capacities up to 10 A
Technical overview

Pressure range
Relative 1 ... 500 mbar
Negative -1 ... -320 mbar

Operating conditions
Medium
<table>
<thead>
<tr>
<th>Type</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBR</td>
<td>0 ... +80 °C</td>
</tr>
<tr>
<td>FPM</td>
<td>-10 ... +80 °C</td>
</tr>
<tr>
<td>EPDM</td>
<td>-10 ... +80 °C</td>
</tr>
<tr>
<td>Silicone</td>
<td>-40 ... +80 °C</td>
</tr>
<tr>
<td>Storage</td>
<td>-40 ... +80 °C</td>
</tr>
</tbody>
</table>

Temperature
<table>
<thead>
<tr>
<th>Medium</th>
<th>Operating temp.</th>
</tr>
</thead>
<tbody>
<tr>
<td>NBR</td>
<td>0 ... +80 °C</td>
</tr>
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</tr>
<tr>
<td>Storage</td>
<td>-40 ... +80 °C</td>
</tr>
</tbody>
</table>

Tolerable overload
See order code selection table

Lowest turn-on pressure
> 1 mbar

Lowest switching difference
> 0.5 mbar

Materials
Case
Duroplast

Diaphragm
NBR based
FPM
Silicone

Material in contact with the medium
Diaphragm
NBR-based
EPDM
FPM
Silicone

To base Inox and diaphragm
Inox 1.4301, 1.4305, 1.4310, 1.4104

To base, galvanized steel and diaphragm
Inox 1.4310, brass, aluminium

To base, nickel-plated brass and diaphragm
Inox 1.4301, 1.4310

With medium in pressure chamber P2:
Brass, nickel-plated brass, CuSn, Bakelite
PF-PT, polyamide and polyacetal, AgCdO,
NBR, galvanized steel

Electrical overview
Nominal voltage
250 V AC

Nominal current for resistive loading
1 A 10 A

Nominal current for motor loading
0.5 A 3 A

Contact system
Changeover contact

Service life
mechanically 10^6 switching cycles

Protection standard
IP 30
IP 65 on request

Repeatability
±5% of the switching point with diaphragm NBR / Silicone
minimum ± 0.1 mbar

±10% of the switching point with diaphragm FPM / EPDM
minimum ± 0.2 mbar

Electrical connection
Screw terminals

Tab connectors (AMP) 6.3 mm

Cable gland PG9 (not part of scope of delivery / see accessories)

Pressure connection
Pipe Ø 6mm and thread G 1/4
M12x1

Installation arrangement
Pressure connections downwards

Remark:
By changing the mounting position the switching points also change. The adjustment ranges are in relation with the mounting position.

Weight
~ 260 g

Packaging
Single packaging in cardboard

Legend to cross-section drawing
1 Adjustment of switching difference
2 Adjustment of switching points
3 Connection for differential pressure
4 Diaphragm
5 Switchover contact element
6 Compression spring
7 Pressure or vacuum connection
### Order code selection table

**610. X X X X X**

<table>
<thead>
<tr>
<th>Pressure mode</th>
<th>p max.</th>
<th>pt</th>
<th>Switching capacity 250 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative</td>
<td>9</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Differential</td>
<td>5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Negative</td>
<td>6</td>
<td></td>
<td></td>
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<tr>
<td>Negative differential</td>
<td>7</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>Switching capacity 250 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - 4 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>4 - 30 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>7 - 70 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>10.5 - 45 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>28.5 - 120 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>30 - 160 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>50 - 300 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>65 - 500 mbar</td>
<td>1 A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure range</th>
<th>Switching capacity 250 VAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>-1 - 2 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>-2 - 7.5 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>-4.8 - 11.5 mbar</td>
<td>1 A</td>
</tr>
<tr>
<td>-8 - 20 mbar</td>
<td>6 A</td>
</tr>
<tr>
<td>-18 - 47 mbar</td>
<td>6 A</td>
</tr>
<tr>
<td>-42 - 80 mbar</td>
<td>6 A</td>
</tr>
<tr>
<td>-80 - 200 mbar</td>
<td>6 A</td>
</tr>
<tr>
<td>-180 - 320 mbar</td>
<td>6 A</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pressure connection / pressure case</th>
<th>Hose connection ø 6 mm and</th>
<th>NBR based</th>
<th>TPFM</th>
<th>EPDM</th>
<th>Q (Silicone)</th>
</tr>
</thead>
<tbody>
<tr>
<td>G ¼</td>
<td>Galvanized sheet steel</td>
<td>2</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>G ¼</td>
<td>Inox sheet steel</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G ¼</td>
<td>Nickel plated brass</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M12x1</td>
<td>Inox sheet steel</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>M12x1</td>
<td>Galvanized sheet steel</td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M12x1</td>
<td>Nickel plated brass</td>
<td>7</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Diaphragm material</th>
<th></th>
<th>NBR based</th>
<th>TPFM</th>
<th>EPDM</th>
<th>Q (Silicone)</th>
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<tbody>
<tr>
<td>NBR based</td>
<td></td>
<td>0</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TPFM</td>
<td></td>
<td>2</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>EPDM</td>
<td></td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Q (Silicone)</td>
<td></td>
<td>6</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Switching points (optional)</th>
<th></th>
<th>W</th>
<th>R</th>
<th>U</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Two factory set switching points</td>
<td></td>
<td>(please specify on order e.g.: W10/8mbar)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One factory set switching point high</td>
<td></td>
<td>(please specify on order e.g.: U25mbar)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One factory set switching point low</td>
<td></td>
<td>(please specify on order e.g.: R50mbar)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Accessories (3)

<table>
<thead>
<tr>
<th>Accessories (optional)</th>
<th>Order number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mounting bracket with hole Ø 12.5 mm for M12x1</td>
<td>104259</td>
</tr>
<tr>
<td>Mounting bracket with hole Ø 14 mm for G ¼</td>
<td>102872</td>
</tr>
<tr>
<td>Connector set (Tab connectors AMP)</td>
<td>103479</td>
</tr>
<tr>
<td>Cable gland PG9</td>
<td>103559</td>
</tr>
<tr>
<td>Calibration Certificate (at factory set switching points)</td>
<td>104551</td>
</tr>
</tbody>
</table>

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1) Other pressure range on request
2) pt = test pressure
3) Accessories supplied loose

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Huba Control type 610 - Technical data subject to change - Edition 07/2014

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3/5
Huba Control type 610 - Technical data subject to change - Edition 07/2014

Dimensions in mm / Electrical connections

Setting ranges:

1...4 mbar

DB 4...36 mbar

8...70 mbar

7...25 mbar

10.5...45 mbar

28.5...120 mbar

30...160 mbar

80...300 mbar

65...500 mbar

-1...-2 mbar

-2...-7.5 mbar

-4...-11.5 mbar

-8...-20 mbar

-10...-47 mbar

-42...-80 mbar

-80...-290 mbar

-180...-320 mbar
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