Overview

All shut-off fittings can be secured onto walls, racks (72 mm grid) and vertical and horizontal pipes. This offers the advantage when assembling a plant that the shut-off fittings can be secured first and the lines for the medium and differential pressure connected to them. It is then possible to check all connections for leaks and to blow out or flush the pipes in order to remove dirt (welding residues, shavings etc.). The measuring instruments can be screwed onto the shut-off fittings right at the end when all piping has been completed. If an instrument has to be removed for maintenance, the fittings and pipes remain as they are. It is only necessary to close the valves – the instrument can then be removed, and refitted following maintenance.

Pressure transmitters with shut-off fittings - mounting examples

- SITRANS P transmitter for gauge pressure with double shut-off valve.
- SITRANS P pressure transmitter with multiway cock or 3-spindle valve manifold.
- SITRANS P transmitter for differential pressure with 3-way valve manifold, 3-spindle valve manifold or valve manifold combination DN 5/DN 8.
- SITRANS P pressure transmitter for differential pressure, mounted in protective box (available on request).
- SITRANS P pressure transmitter mounted on valve combination "Mono-flange" for direct connection to flanges (available on request).

Classification according to pressure equipment directive (DGRL 97/23/EC):

For gases of fluid group 1 and liquids of fluid group 1; compliance with requirements of article 3, paragraph 3 (sound engineering practice).

New standard DIN EN 61518

The flange connection between transmitter and valve manifold was modified in the new standard DIN EN 61518. The only connection thread approved for use in the process flanges of the pressure transmitter is $7/16\frac{1}{2}$ UNF. The valve manifolds for M12 screws, including the accessory sets, have therefore been deleted.

Material acceptance test certificate to EN 10204-3.1

If a material acceptance test certificate to EN 10204-3.1 is required when ordering valve manifolds or shut-off fittings, please note that a single certificate is sufficient for each ordered item type. This means that you will only be charged for one certificate in the cost calculations.
### Selection of available shut-off valves

<table>
<thead>
<tr>
<th>Transmitters</th>
<th>Shut-off valves for general applications</th>
<th>Page</th>
<th>Shut-off valves for special applications</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relative and absolute pressure transmitters with process connection G(\frac{1}{2})&quot; male thread</strong></td>
<td>Shut-off valves/double shut-off valves to DIN 16270, DIN 16271 and DIN 16272</td>
<td>2/198</td>
<td>Double shut-off valve DN 5 for crossover (\frac{1}{2})-NPT-F to G(\frac{1}{2}) nipple connection 7MF9011-4EA</td>
<td>2/201</td>
</tr>
<tr>
<td>e.g.</td>
<td></td>
<td></td>
<td>2-spindle valve manifold DN 5 for installation in protective boxes 7MF9412-1B</td>
<td>2/218</td>
</tr>
<tr>
<td>- SITRANS P Z series 7MF1564-.....-A..</td>
<td></td>
<td></td>
<td>Double shut-off valve DN 5 for process connection (\frac{1}{2})-NPT 7MF9011-4DA</td>
<td>2/201</td>
</tr>
<tr>
<td>- SITRANS P300 7MF802-.....-0-.....</td>
<td></td>
<td></td>
<td>2-spindle valve manifold DN 5 for installation in protective boxes 7MF9411-5A</td>
<td>2/203</td>
</tr>
<tr>
<td>- SITRANS P DS III series 7MF403-.....-0-..... and 7MF423-.....-0-.....</td>
<td></td>
<td></td>
<td>2-spindle valve manifold DN 5 for installation in protective boxes 7MF9412-1C</td>
<td>2/218</td>
</tr>
</tbody>
</table>

**Relative and absolute pressure transmitter with \(\frac{1}{2}"-14 NPT female thread**

<table>
<thead>
<tr>
<th>Double shut-off valve DN 5 7MF9011-4FA and 7MF9011-4GA</th>
<th>2/201</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.</td>
<td></td>
</tr>
<tr>
<td>- SITRANS P Z series 7MF1564-.....-H..</td>
<td></td>
</tr>
<tr>
<td>- SITRANS P300 7MF802-.....-1-.....</td>
<td></td>
</tr>
<tr>
<td>- SITRANS P DS III series 7MF403-.....-1-..... and 7MF423-.....-1-.....</td>
<td></td>
</tr>
</tbody>
</table>

**Absolute pressure transmitter with process connection to IEC 61518**

<table>
<thead>
<tr>
<th>2-spindle valve manifold DN 5 7MF9411-5A.</th>
<th>2/203</th>
</tr>
</thead>
<tbody>
<tr>
<td>e.g.</td>
<td></td>
</tr>
<tr>
<td>- SITRANS P DS III series 7MF433-.....</td>
<td></td>
</tr>
<tr>
<td>Transmitters</td>
<td>Shut-off valves for general applications</td>
</tr>
<tr>
<td>--------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>Differential pressure transmitter with process connection to IEC 61518</td>
<td>For 3/5-spindle valve manifold DN 5 7MF9411-5B. and 7MF9411-5C.</td>
</tr>
<tr>
<td></td>
<td>e.g. SI T RAN S P DS III series 7MF443-.. and 7MF453-..</td>
</tr>
<tr>
<td></td>
<td>PN 100 multiway cocks 7MF9004-..</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Pressure Measurement

Fittings - Shut-off valves for gauge and absolute pressure transmitters

Shut-off valves to DIN 16270, DIN 16271 and DIN 16272

Overview

Transmitter for pressure with double shut-off valve 7MF9401-...

The shut-off valves for pressure gauges are used to shut off the line of the measured medium when dealing with aggressive and non-aggressive gases, vapors and liquids.

Design

A water trap must be connected upstream of the shut-off valve in the case of temperatures of the medium above 120 °C. The shut-off valves form B have a shaft with which they can be secured on an instrument bracket. An adapter is therefore not required to secure these valves. The vent/test connection can be shut off separately with the double shut-off valves DIN 5. This permits checking of the zero on the pressure gauge. In addition, the characteristic of the pressure gauge can be checked using an external pressure source.

Selection and Ordering data

Shut-off valves, form B, DIN 16270

without test collar, pipe union with ferrule 12 S DIN EN ISO 8484-1, without certificate

<table>
<thead>
<tr>
<th>Material</th>
<th>Maximum permissible pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve housing</td>
<td>working pressure</td>
</tr>
<tr>
<td>P250GH</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.0460)</td>
<td></td>
</tr>
<tr>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
</tbody>
</table>

Shut-off valves, form B, DIN 16271

with test collar, pipe union with ferrule 12 S DIN EN ISO 8484-1, without certificate

<table>
<thead>
<tr>
<th>Material</th>
<th>Maximum permissible pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve housing</td>
<td>working pressure</td>
</tr>
<tr>
<td>P250GH</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.0460)</td>
<td></td>
</tr>
<tr>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
</tbody>
</table>

Double shut-off valves, form B, DIN 16272

with test collar, connection shank, without certificate

<table>
<thead>
<tr>
<th>Material</th>
<th>Maximum permissible pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve housing</td>
<td>working pressure</td>
</tr>
<tr>
<td>P250GH</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.0460)</td>
<td></td>
</tr>
<tr>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Material</th>
<th>Maximum permissible pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Valve housing</td>
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<td>P250GH</td>
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</tr>
<tr>
<td>(mat. No. 1.0460)</td>
<td></td>
</tr>
<tr>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.4571/316Ti)</td>
<td></td>
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</tbody>
</table>

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<th>Material</th>
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<td>(mat. No. 1.0460)</td>
<td></td>
</tr>
<tr>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>400 bar</td>
</tr>
<tr>
<td>(mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
</tbody>
</table>

Selection and Ordering data

Order No.

7MF9401-7DA

7MF9401-7DB

7MF9401-7DC

7MF9401-8DA

7MF9401-8DB

7MF9401-8DC

Accessories

Factory test certificate EN 10204–2.2

Material acceptance test certificate EN 10204-3.1

Instrument bracket, see page 2/202.
Pressure Measurement

Fittings - Shut-off valves for gauge and absolute pressure transmitters

Shut-off valves to DIN 16270, DIN 16271 and DIN 16272

Characteristic curves

Permissible operating pressure as a function of the permissible operating temperature

Dimensional drawings

Shut-off valve, form B, dimension drawing, dimensions in mm

Double shut-off valve, form B, dimension drawing, dimensions in mm
Pressure Measurement

Fittings - Shut-off valves for gauge and absolute pressure transmitters

Angle adapter

Overview

P300 pressure transmitter with shut-off valve and angle adapter

The angle adapter enables pressure transmitters with top displays to be read from the front.

Dimensional drawings

Angle adapter, dimensions in mm

Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Angle adapters</th>
</tr>
</thead>
<tbody>
<tr>
<td>7MF9401-7WA</td>
<td>Material: X 12 CrNiMoTi 17 12 2 (mat. No. 1.45714/316Ti), max. permissible operating pressure 400 bar</td>
</tr>
<tr>
<td>7MF9000-8AB</td>
<td>Factory test certificate EN 10204-2.2</td>
</tr>
<tr>
<td>7MF9000-8AD</td>
<td>Material acceptance test certificate EN 10204-3.1</td>
</tr>
</tbody>
</table>

Characteristic curves

Permissible operating overpressure as a function of the permissible operating temperature

Stainless steel version
400 bar at 120 °C
350 bar at 200 °C
Overview
The double shut-off valves DN 5 are suitable for pressure gauges and pressure transmitters and available in 4 versions:
- Sleeve-collar
- Sleeve-sleeve
- Sleeve-nipple
- Collar-collar

Characteristic curves
Permissible operating pressure as a function of the permissible operating temperature

Selection and Ordering data
Order No.
Double shut-off valves DN 5
Material: X 6 CrNiMoTi 17 13 2 (mat. No. 1.4404/316L), max. permissible working pressure 420 bar;
- Sleeve-sleeve
- Sleeve-nipple connection
- Sleeve-collar
- Collar-collar

Accessories
Factory test certificate EN 10204–2.2
Material acceptance test certificate EN 10204-3.1
Further designs
Add "-Z" to Order No. and specify Order Code.
Oil- and grease-free cleaning for oxygen applications, max. pressure PN 100 (1450 psi) and max. temperature 60 °C (140 °F)

Dimensional drawings
Double shut-off valve DN 5 (sleeve-sleeve) 7MF9011-4DA, dimensions in mm
Double shut-off valve DN 5 (sleeve-nipple) 7MF9011-4EA, dimensions in mm
Double shut-off valve DN 5 (sleeve-collar) 7MF9011-4FA, dimensions in mm
Double shut-off valve DN 5 (collar-collar) 7MF9011-4GA, dimensions in mm
Pressure Measurement

Fittings - Shut-off valves for gauge and absolute pressure transmitters

Accessories for shut-off valves / double shut-off valves

Overview
The mounting set is suitable for the double shut-off valves 7MF9011-4.A and for wall, rack and pipe mounting.

Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Mounting set for shut-off valves</th>
</tr>
</thead>
<tbody>
<tr>
<td>7MF9011-8AB</td>
<td>7MF9011-4DA und -4EA made of stainless steel, scope of delivery: 1x mounting bracket, 2x hexagon screws M6x40, 1x mounting clip, 2x washers 8.4 to DIN 125; 2x hexagon nuts 8.4 to DIN EN 24032</td>
</tr>
<tr>
<td>7MF9011-8AC</td>
<td>7MF9011-4FA und -4GA made of stainless steel, scope of delivery: 1x mounting bracket, 2x hexagon screws M6x10, 1x mounting clip, 2x washers 8.4 to DIN 125; 2x hexagon nuts 8.4 to DIN EN 24032</td>
</tr>
</tbody>
</table>

Overview
The instrument brackets are needed to mount the following units:
- Pressure gauges with threaded connection at the bottom
- Shut-off valves to DIN 16270, DIN 16271 and DIN 16272 (7MF9401-7.. and 7MF9401-8..)

Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Instrument bracket, form H, DIN 16281</th>
</tr>
</thead>
<tbody>
<tr>
<td>M56340-A0046</td>
<td>instrument bracket, form H, DIN 16281 (e.g. for gauge) made of aluminium alloy, painted black, for wall mounting, screw-type bracket cover</td>
</tr>
<tr>
<td>M56340-A0047</td>
<td>projection length 60 mm</td>
</tr>
<tr>
<td>M56340-A0053</td>
<td>projection length 100 mm</td>
</tr>
<tr>
<td>M56340-A0079</td>
<td>Instrument bracket, form A, DIN 16281 (e.g. for transmitter) made of annealed cast iron, galvanized and primed for mounting on a wall or rack or on a sectional rail (horizontal/vertical); Screw-type bracket cover</td>
</tr>
<tr>
<td>M56340-A0053</td>
<td>Instrument bracket, form A, DIN 16281 (e.g. for transmitter) made of annealed cast iron, galvanized and primed with pipe clamp for wall and pipe mounting (horizontal/vertical) Screw-type bracket cover</td>
</tr>
</tbody>
</table>

Dimensional drawings

Mounting bracket (7MF9011-8AB) for shut-off valves 7MF9011-4DA and 7MF9011-4EA for wall, rack or pipe mounting, dimensions in mm

Instrument bracket form H, for wall mounting, M56340-A0046/-A0047, dimensions in mm

Instrument bracket form A, wall or pipe mounting, M56340-A0053/-A0079, dimensions in mm
Overview

The 2-spindle, 3-spindle and 5-spindle valve manifolds 7MF9411-5.. are for pressure transmitters for absolute pressure or differential pressure.

The valve manifolds are used to shut off the differential pressure lines and to check the pressure transmitter zero.

The 2-spindle and the 5-spindle valve manifold enable in addition venting on the transmitter side and checking of the pressure transmitter characteristic.

Benefits

• Max. working pressure 420 bar
• Each available in version for oxygen

Application

The spindle valve manifolds DN 5 are designed for liquids and gases.
Each is available in a version for oxygen on request.

Design

All versions of the valve manifolds have a process connection ½-14 NPT. The connection for the pressure transmitter is always designed as a flange connection to EN 61518, form B. The 2-spindle and the 5-spindle valve manifold have in addition a vent and test connection ¼-18 NPT.

The valves have an external spindle thread.

Materials used

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
<th>Mat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>X 2 CrNiMo 17 13 2</td>
<td>1.4404/316L</td>
</tr>
<tr>
<td>Cones</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
</tr>
<tr>
<td>Spindles</td>
<td>X 2 CrNiMo 18 10</td>
<td>1.4404/316L</td>
</tr>
<tr>
<td>Head parts</td>
<td>X 5 CrNiMo 18 10</td>
<td>1.4401/316</td>
</tr>
<tr>
<td>Packings</td>
<td>PTFE</td>
<td></td>
</tr>
</tbody>
</table>

Function

Functions of all valve manifolds:
• Shutting off the differential pressure lines
• Checking the pressure transmitter zero

Additional functions of the 2-spindle and 5-spindle valve manifolds through the vent and test connection:
• Venting on the transmitter side
• Checking the pressure transmitter characteristic
Pressure Measurement
Fittings - Shut-off valves for differential pressure transmitters

**2-, 3- and 5-spindle valve manifolds DN 5**

### Selection and Ordering data

<table>
<thead>
<tr>
<th>Order code</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>K16</td>
<td>7MF9411-6BB</td>
</tr>
<tr>
<td>K26</td>
<td>7MF9411-6BC</td>
</tr>
<tr>
<td>M11</td>
<td>7MF9006-6EA</td>
</tr>
<tr>
<td>M12</td>
<td>7MF9006-6GA</td>
</tr>
<tr>
<td>M21</td>
<td>7MF9006-6EC</td>
</tr>
<tr>
<td>M22</td>
<td>7MF9006-6GC</td>
</tr>
</tbody>
</table>

#### Further designs

1. When ordering accessory set or mounting together with the valve manifolds, please use Order code; otherwise use Order No.
2. Flange connections to DIN 19213 only permissible up to 160!

#### Accessories

**Accessory set for 2-, 3- and 5-spindle valve manifolds**

- **2-spindle valve manifold DN 5**
  - K35: 2 screws $\frac{7}{16}$ UNF x 1¾ inch to ASME B18.2.1, 1 flat gasket
  - K15: 2 screws M10x45 to DIN EN 24014, 2 washers, 1 flat gasket

- **3-spindle and 5-way valve manifold DN 5**
  - K36: 4 screws $\frac{7}{16}$ UNF x 1¾ inch to ASME B18.2.1, 2 flat gaskets
  - K16: 4 screws M10x45 to DIN EN 24014, 4 washers, 2 flat gaskets

**Washers Ø 10.5 to DIN 125**

**Flat gaskets made of PTFE, max. 420 bar, 80 °C**

**Mounting plate**

- For wall mounting or for securing on rack (72 mm grid), weight 0.5 kg
- Scope of delivery:
  1. mounting plate with bolts for mounting on valve manifold
- For pipe mounting, weight 0.7 kg
- Scope of delivery:
  1. mounting plate M11, 2x pipe brackets with nuts and washers (for pipe with max. Ø 60.3 mm)
- For valve manifold, made of stainless steel
- For wall mounting or for securing on rack (72 mm grid), weight 0.5 kg
- Scope of delivery:
  1. mounting plate with bolts for mounting on valve manifold
- For pipe mounting, weight 0.7 kg
- Scope of delivery:
  1. mounting plate M11, 2x pipe brackets with nuts and washers (for pipe with max. Ø 60.3 mm)

**Valve manifold 100 bar, suitable for oxygen**

- S12: For 2-way valve manifold
- S13: For 3-way valve manifold
- S14: For 5-way valve manifold

**Characteristics curves**

Valve manifolds PN 5 (7MF9411-5.,) permissible working pressure as a function of the permissible working temperature.
Pressure Measurement

Fittings - Shut-off valves for differential pressure transmitters

**2-, 3- and 5-spindle valve manifolds DN 5**

### Dimensional drawings

2-spindle valve manifold DN 5 (7MF9411-5A.), dimensions in mm

- Process connection: ½-14 NPT
- Transmitter connection: Flange connection to EN 61518, form B
- Valve design: external spindle thread

3-spindle valve manifold DN 5 (7MF9411-5B.), dimensions in mm

- Process connection: ½-14 NPT
- Transmitter connection: Flange connection to EN 61518, form B
- Valve design: external spindle thread

5-spindle valve manifold DN 5 (7MF9411-5C.), dimensions in mm

- Process connection: ½-14 NPT
- Transmitter connection: Flange connection to EN 61518, form B
- Vent / test connection: ¼-18 NPT
- Valve design: external spindle thread

### Schematics

2-spindle, 3-spindle and 5-spindle valve manifold DN 5, connections

- Process connection
- Transmitter connection
- Blow-out and test connection

Mounting plate 7MF9006-6.. (M11, M12) for valve manifold, dimensions in mm
Multiway cock PN 100 (7MF9004-1P.) for differential pressure transmitters

The multiway cock PN 100 can be flanged to pressure transmitters for differential pressure.

Benefits

- Version available for aggressive liquids, gases and vapors
- Robust design
- Oil-free and grease-free version possible
- One-hand operation

Application

The PN 100 multiway cock is available in versions for aggressive and non-aggressive liquids, gases and vapors.

Design

The multiway cock can be flanged with four screws to pressure transmitters for differential pressure.

The PN 100 has 2 process connections and one blow-out connection. A steel version of the multiway cock is available for non-aggressive media, and a stainless steel version for aggressive media. The housing is forged in one piece. The switching lever is removable.

Sealing can be improved during operation.

Note: An accessory set is always required for flanging of the multiway cock to a differential pressure transmitter.

Function

- Shutting off the differential pressure lines
- Blowing out the differential pressure lines
- Testing the pressure transmitter zero

Cock positions; the symbols are printed on the cock
Accessories

Accessory set for multiway cock PN 100
- L31: 4 screws 7/16-20 UNF x 1 inch, 2 flat gaskets
- L11: 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets
- L15 (suitable for oxygen): 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets
Washers Ø 10.5 to DIN 125
Flat gaskets made of PTFE, max. permissible temperature 80 °C

Multiway cock in oil-free and grease-free design
- S11 (only for aggressive liquids, gases and vapors (7MF9004-1Q.)): Max. PN 63 (instead of PN 100), BAM-tested lubricant, gasket suitable for oxygen

Mounting brackets
- M13: Required for wall mounting or for securing on rack (72 mm grid); made of electrogalvanized sheet-steel

Characteristic curves

<table>
<thead>
<tr>
<th>Operating temperature</th>
<th>Operating pressure (bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200 °C</td>
<td>1</td>
</tr>
<tr>
<td>100 °C</td>
<td>2</td>
</tr>
<tr>
<td>0 °C</td>
<td>200</td>
</tr>
</tbody>
</table>

Multiway cock PN 100, permissible operating pressure as a function of the permissible operating temperature

Dimensional drawings

Multiway cock 7MF9004-1P, for flanging to pressure transmitters for differential pressure, dimensions in mm

Mounting bracket 7MF9004-6AA (M13), dimensions in mm
Pressure Measurement
Fittings - Shut-off valves for differential pressure transmitters

3-way and 5-way valve manifolds DN 5

Overview

The three-spindle and five-spindle valve manifolds DN 5 (7MF9410-1../-3..) are used to shut off the differential pressure lines and to check the transmitter zero.

In addition, the five-way valve manifold permits blowing out of the differential pressure lines.

Benefits

- Available for aggressive and non-aggressive liquids and gases
- Max. working pressure 420 bar, with version for oxygen max. 100 bar

Application

The 3-way and 5-way valve manifolds are available in versions for aggressive and non-aggressive liquids and gases.

Mounting plates are available for wall mounting, for securing to mounting racks or for pipe mounting.

Design

The process connection of the 3-way and 5-way valve manifolds is a pipe union with ferrule.

Both valve manifolds have 2 flange connections for connecting a pressure transmitter.

In addition, the five-way valve manifold has 2 blow-out connections.

Depending on the version the valve manifold has either 3 or 5 valves, each with an internal spindle thread.

Materials used

<table>
<thead>
<tr>
<th>Component</th>
<th>For non-aggressive liquids and gases</th>
<th>Material</th>
<th>Mat. No.</th>
<th>For aggressive liquids and gases</th>
<th>Material</th>
<th>Mat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td></td>
<td>P250GH</td>
<td>1.0460</td>
<td></td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
</tr>
<tr>
<td>Head parts</td>
<td></td>
<td>C 35</td>
<td>1.0501</td>
<td></td>
<td>1.4104</td>
<td>1.4122</td>
</tr>
<tr>
<td>Spindles</td>
<td></td>
<td>X 12 CrMoS 17</td>
<td>1.4104</td>
<td></td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
</tr>
<tr>
<td>Cones</td>
<td></td>
<td>X 35 CrMo 17 hardened and tempered</td>
<td>1.4122</td>
<td></td>
<td>1.4571/316Ti</td>
<td></td>
</tr>
<tr>
<td>Valve seats</td>
<td></td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packings</td>
<td></td>
<td>PTFE</td>
<td>1.4571/316Ti</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Function

- Shutting off the differential pressure lines
- Checking the pressure transmitter zero
- In addition, the five-way valve manifold permits blowing out of the differential pressure lines.

Selection and Ordering data

<table>
<thead>
<tr>
<th>Order No.</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>7MF9410-7A</td>
<td>3-way valve manifold DN 5</td>
</tr>
<tr>
<td></td>
<td>For flanging to pressure transmitters for differential pressure, process connection: Pipe union with ferrule, max. working pressure 420 bar, weight 2.9 kg (order accessory set and mounting plate with Order code), without certificate.</td>
</tr>
<tr>
<td></td>
<td>For non-aggressive liquids and gases</td>
</tr>
<tr>
<td></td>
<td>For aggressive liquids and gases</td>
</tr>
<tr>
<td>7MF9410-7E</td>
<td>5-way valve manifold DN 5</td>
</tr>
<tr>
<td></td>
<td>For flanging to pressure transmitters for differential pressure, process connection: Pipe union with ferrule, max. working pressure 420 bar, weight 4.4 kg (order accessory set and mounting plate with Order code), without certificate.</td>
</tr>
<tr>
<td></td>
<td>For non-aggressive liquids and gases</td>
</tr>
<tr>
<td></td>
<td>For aggressive liquids and gases</td>
</tr>
<tr>
<td>7MF9410-7F</td>
<td>5-way valve manifold DN 5</td>
</tr>
<tr>
<td></td>
<td>For flanging to pressure transmitters for differential pressure, process connection: Pipe union with ferrule, max. working pressure 420 bar, weight 4.4 kg (order accessory set and mounting plate with Order code), without certificate.</td>
</tr>
<tr>
<td></td>
<td>For non-aggressive liquids and gases</td>
</tr>
<tr>
<td></td>
<td>For aggressive liquids and gases</td>
</tr>
</tbody>
</table>

Accessories

- Factory test certificate EN 10204-2.2 7MF9000-8AB
- Material acceptance test certificate EN 10204-3.1 7MF9000-8AD
Pressure Measurement

Fittings - Shut-off valves for differential pressure transmitters

3-way and 5-way valve manifolds DN 5

Accessories

Accessory set for 3-way and 5-way valve manifold DN 5 for flanging
- B31: 4 screws 7/16-20 UNF x 2 1/8 inch to ASME B18.2.1, 2 flat gaskets
- B34: 4 screws 7/16-20 UNF x 2 1/8 inch to ASME B18.2.1, 2 O-rings (FPM 90)
- B11: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 flat gaskets
- B15 (suitable for oxygen): 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)
- B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)

Washers Ø 10.5 to DIN 125
Flat gaskets made of PTFE, max. 420 bar, 120 °C

Note: M10 screws only permissible up to PN 160!

Mounting plate
Made of electrogalvanized sheet-steel
- M11: For wall mounting or for securing on rack (72 mm grid)
  Scope of delivery:
  - 1 mounting plate 7MF9006-6EA with bolts for mounting on valve manifold
- M12: For pipe mounting
  Scope of delivery:
  - 1 mounting plate M11
  - 2 pipe brackets with nuts and washers for pipes with max. Ø 60.3 mm

Valve manifold 100 bar, suitable for oxygen
S12: Only in combination with versions for aggressive liquids and gases

Selection and Ordering data

<table>
<thead>
<tr>
<th>Order code</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B31 F)</td>
<td>7MF9010-5CC</td>
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<tr>
<td>B34</td>
<td>7MF9410-5CA</td>
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<tr>
<td>B11</td>
<td>7MF9010-6AD</td>
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<tr>
<td>B15</td>
<td>7MF9010-6AE</td>
</tr>
<tr>
<td>B16</td>
<td>7MF9010-6CC</td>
</tr>
<tr>
<td>M11</td>
<td>7MF9006-6EA</td>
</tr>
<tr>
<td>M12</td>
<td>7MF9006-6GA</td>
</tr>
</tbody>
</table>

1) When ordering accessory set or mounting together with the valve manifolds, please use Order code; otherwise use Order No.
2) Flange connections to DIN 19213 only permissible up to PN 160

F) Subject to export regulations AL: 9I999, ECCN: N.
Pressure Measurement
Fittings - Shut-off valves for differential pressure transmitters

3-way and 5-way valve manifolds DN 5

Characteristic curves

Permissible operating pressure as a function of the permissible operating temperature

Dimensional drawings

Mounting plate 7MF9006-6.. (M11, M12) for valve manifold, dimensions in mm

Schematics

3-way and 5-way valve manifolds, connections

Three-way valve manifold for liquids and gases
Five-way valve manifold for liquids and gases or vapors

3-way valve manifold DN 5 (7MF9410-1..), dimensions in mm

A Process connection (e.g. on primary device): Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
B Transmitter connection: Flange connection to EN 61518, form A
Valve design: internal spindle thread

5-way valve manifold DN 5 (7MF9410-3..), dimensions in mm

A Process connection (e.g. on primary device): Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
B Transmitter connection: Flange connection to EN 61518, form A
C Blow-out connection: Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
Valve design: internal spindle thread
Overview

The 3-way valve manifold DN 8 (7MF9416-1../-2..) is for pressure transmitters for differential pressure. It is used to shut off and blow out differential pressure lines and to test the pressure transmitter zero.

In the designs with a test connection, a test device can be connected to test the pressure transmitter characteristic.

Benefits

- For aggressive and non-aggressive liquids and gases
- The maximum working pressure is 420 bar.

Application

The 3-way valve manifold is available in versions for aggressive and non-aggressive liquids and gases.

Mounting plates are available for wall mounting, for securing to mounting racks or for pipe mounting.

Design

For the process connection on the version for non-aggressive media it is possible to choose between a pipe union with ferrule and welding pins.

The version for aggressive media always has a pipe union with ferrule.

Both versions are available optionally with a test connection M20x1.5.

The valves have an internal spindle thread.

Function

The 3-way valve manifold DN 8 performs two functions as standard:

- Shutting off the differential pressure lines
- Checking the pressure transmitter zero

All versions are also available with a test connection, to which a test device for checking the pressure transmitter characteristic can be connected.

Selection and Ordering data

<table>
<thead>
<tr>
<th>3-way valve manifold DN 8</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>7MF9416 - A</td>
<td></td>
</tr>
</tbody>
</table>

For flanging to pressure transmitters for differential pressure, max. working pressure 420 bar, (order accessory set and mounting plate with Order code), without certificate

For non-aggressive liquids and gases

- process connection: Pipe union with ferrule Ø 12 mm
- without test connection
- with test connection

For non-aggressive liquids and gases

- process connection: Welding pin Ø 14 x 2.5
- without test connection
- with test connection

For aggressive liquids and gases

- process connection: Pipe union with ferrule Ø 12 mm
- without test connection
- with test connection

Accessories

Factory test certificate EN 10204-2.2
Material acceptance test certificate EN 10204-3.1

Materials used

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
<th>Mat. No.</th>
<th>For non-aggressive liquids and gases</th>
<th>Mat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>P250GH</td>
<td>1.0460</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
</tr>
<tr>
<td>Head parts</td>
<td>C 35</td>
<td>1.0501</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
</tr>
<tr>
<td>Spindles</td>
<td>X 12 CrMoS 17</td>
<td>1.4104</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cones</td>
<td>X 35 CrMo 17 hardened and tempered</td>
<td>1.4122</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Valve seats</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packings</td>
<td>PTFE</td>
<td>-</td>
<td></td>
<td>PTFE</td>
</tr>
</tbody>
</table>
### 3-way valve manifold DN 8

#### Selection and Ordering data

<table>
<thead>
<tr>
<th>Accessory set to EN</th>
<th>Order code</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(required for flanging, weight 0.2 kg)</td>
<td>B31</td>
<td>F) 7MF9010-5CC</td>
</tr>
<tr>
<td>4x screws M10x55 to DIN EN 24014; chromized steel</td>
<td>B34</td>
<td>7MF9410-5CA</td>
</tr>
<tr>
<td>4x screws M10x55 to DIN EN 24014; chromized steel</td>
<td>B11</td>
<td>7MF9010-6AD</td>
</tr>
<tr>
<td>4x screws M10x55 to DIN EN 24014; chromized steel</td>
<td>B16</td>
<td>7MF9010-6CC</td>
</tr>
<tr>
<td>Mounting plate</td>
<td>M11</td>
<td>7MF9006-6EA</td>
</tr>
<tr>
<td>M12</td>
<td>7MF9006-6GA</td>
<td></td>
</tr>
</tbody>
</table>

#### Accessories

- **Accessory set for 3-way valve manifold DN 8 for flanging**
  - B31: 4 screws 7/16-20 UNF x 2 1/8 inch to ASME B18.2.1, 2 flat gaskets
  - B34: 4 screws 7/16-20 UNF x 2 1/8 inch to ASME B18.2.1, 2 O-rings (FPM 90)
  - B11: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 flat gaskets
  - B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. 420 bar, 80 °C

O-ring to DIN 3771, 20 x 2.65 – S – FPM90, max. 420 bar, 120 °C

**Note:** M10 screws only permissible up to PN 160!

#### Mounting plate

- **For valve manifold, made of electrogalvanized sheet-steel**
  - M11: For wall mounting or for securing on rack (72 mm grid), weight 0.5 kg
  - Scope of delivery: 1 mounting plate with bolts for mounting on valve manifold

- **For pipe mounting, weight 0.7 kg**
  - Scope of delivery: 1x mounting plate M11, 2x pipe brackets with nuts and washers (for pipe with max. Ø 60.3 mm)

**Characteristics curves**

3-way valve manifold DN 8, permissible working pressure as a function of the permissible working temperature.

---

1) When ordering accessory set or mounting together with the valve manifold, please use Order code; otherwise use Order No.
2) Flange connections to DIN 19213 only permissible up to PN 160!

F) Subject to export regulations AL: 9I999, ECCN: N.
Pressure Measurement

Fittings - Shut-off valves for differential pressure transmitters

3-way valve manifold DN 8

Dimensional drawings

3-way valve manifold DN 8 (7MF9416-1..) with pipe union, dimensions in mm

A Process connection (e.g. on primary device): Pipe union with ferrule, diameter 12 mm, S series to DIN 2353
B Transmitter connection: Flange connection to EN 61518, form A
C Test connection: M20 x 1.5
Valve design: internal spindle thread

3-way valve manifold DN 8 (7MF9416-2..) with welding pin, dimensions in mm

A Process connection (e.g. on primary device): Welding pin, diameter 14 x 2.5
B Transmitter connection: Flange connection to EN 61518, form A
C Test connection: M20 x 1.5
Valve design: internal spindle thread

Mounting plate 7MF9006-6.. (M11, M12) for valve manifold, dimensions in mm

Schematics

A Process connection
B Transmitter connection
D Vent/Test connection

Three-way valve manifold for liquids and gases

3-way valve manifold DN 8, connections
Pressure Measurement
Fittings - Shut-off valves for differential pressure transmitters

Valve manifold combination DN 5/DN 8

Overview
The valve manifold combination DN 5/DN 8 (7MF9416-6..) is for pressure transmitters for differential pressure.
The combination is used to shut off and blow out differential pressure lines and to test the pressure transmitter zero.
In the designs with a test connection, a test device can be connected to test the pressure transmitter characteristic.

Benefits
• Max. working pressure 420 bar

Application
The valve manifold combination DN 5/DN 8 is designed for vapors.

Design
The valve manifold combination DN 5/DN 8 has a process connection with welding pins.
The connection for the pressure transmitter is designed as a flange connection, while the blow-out connection is designed as a pipe union with ferrule.
The manifold valves have an internal spindle thread, while the blow-out valves have an external spindle thread.
The optional test connections are M20x1.5.

Materials used

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>P250GH</td>
<td>16 Mo 3</td>
<td>1.5415</td>
</tr>
<tr>
<td>Head parts</td>
<td>C 35</td>
<td>21 CrMo V57</td>
<td>1.7709</td>
</tr>
<tr>
<td>Spindles</td>
<td>X 12 CrMo 17</td>
<td>X 20 Cr 13</td>
<td>1.4021</td>
</tr>
<tr>
<td>Cones</td>
<td>X 35 CrMo 17</td>
<td>X 35 CrMo 17 hardened and tempered</td>
<td>1.4122</td>
</tr>
<tr>
<td>Valve seats</td>
<td>X 6 CrNiMoTi</td>
<td>X 20 Cr 13</td>
<td>1.4021</td>
</tr>
<tr>
<td>Packings</td>
<td>PTFE</td>
<td>Pure graphite</td>
<td>-</td>
</tr>
<tr>
<td>Welding pins</td>
<td>-</td>
<td>16 Mo 3</td>
<td>1.5415</td>
</tr>
</tbody>
</table>

Selection and Ordering data
Order No. 7MF9416-6.. for vapors
For flanging to pressure transmitters for differential pressure, max. working pressure 420 bar, also available in stainless steel on request (order accessory set with Order code), without certificate
• without test connection
• with test connection M20 x 1.5

Accessories
Factory test certificate EN 10204-2.2
Material acceptance test certificate EN 10204-3.1

Selection and Ordering data
Order code Order No.
Further designs1)
Please add "-Z" to Order No. and specify Order code.

Accessory set to EN
(required for flanging, weight 0.2 kg)
4x screws 7/16 x 20 UNF x 2 \( \frac{1}{8} \) inch to ASME B18.2; chromized steel
2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C

Accessory set to DIN2)
(required for flanging, weight 0.2 kg)
4x screws M10x55 to DIN EN 24014; chromized steel
4x washers Ø 10.5 mm to DIN 125; 2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C
Flange connection to DIN 19213 only permissible up to PN 160!

1) When ordering accessory set together with the valve manifold combination, please use Order code; otherwise use Order No.
2) Flange connections to DIN 19213 only permissible up to 160
Accessories

Accessory set for valve manifold combination DN 5/DN 8 for flanging

- B34: 4 screws $\frac{7}{16}$-20 UNF x $\frac{2}{16}$ to ASME B18.2.1, 2 O-rings (FPM 90)
- B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)

Washers Ø 10.5 to DIN 125
O-ring to DIN 3771, 20 x 2.65 - S – FPM90, max. 420 bar, 120 °C

Note: M10 screws only permissible up to PN 160!

Characteristic curves

Permissible operating pressure as a function of the permissible operating temperature

- Valve manifold
- Blow-out connection

$^{1)}$ According to DIN 19210 the design can be such that the temperatures for the differential pressure line can be set approx. 100 °C lower than the media temperature.

Dimensional drawings

Valve manifold combination DN 5/DN 8 (7MF9416-6C.), dimensions in mm (deviating dimensions for 7MF9416-6D., shown in brackets)

Schematics

Valve manifold combination DN 5/DN 8, connections
Pressure Measurement
Fittings - Shut-off valves for differential pressure transmitters

Overview

The valve manifold combination DN 8 (7MF9416-4..) is for pressure transmitters for differential pressure. It is used to shut off and blow out the differential pressure lines and to check the pressure transmitter zero. In the designs with a test connection, a test device can be connected to check the pressure transmitter characteristic.

Benefits

- Max. working pressure 420 bar

Application

The valve manifold combination DN 8 is designed for vapors.

Design

The valve manifold combination DN 8 has a process connection with welding pins. The connection for the pressure transmitter is designed as a flange connection, while the blow-out connection is designed as a pipe union with ferrule. The manifold valves have an internal spindle thread, while the blow-out valves have an external spindle thread. The optional test connection is M20x1.5.

The valve manifold combination DN 8 is supplied with a mounting plate.

Materials used

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>P250GH</td>
<td>1.0460</td>
<td>16 Mo 3</td>
<td>1.5415</td>
</tr>
<tr>
<td>Head parts</td>
<td>C 35</td>
<td>1.0501</td>
<td>21 CrMo V57</td>
<td>1.7709</td>
</tr>
<tr>
<td>Spindles</td>
<td>X 12</td>
<td>1.4104</td>
<td>X 20 Cr 13</td>
<td>1.4021</td>
</tr>
<tr>
<td>Cones</td>
<td>X 35</td>
<td>1.4122</td>
<td>X 35 CrMo 17 hardened and tempered</td>
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<tr>
<td></td>
<td>CrMo 17</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Valve seats</td>
<td>X 6 CrNiMoTi</td>
<td>1.4571/316Ti</td>
<td>X 20 Cr 13</td>
<td>1.4021</td>
</tr>
<tr>
<td>Packings</td>
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<td>Pure graphite</td>
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<tr>
<td>Welding pins</td>
<td>-</td>
<td></td>
<td>16 Mo 3</td>
<td>1.5415</td>
</tr>
</tbody>
</table>

Function

- Shutting off the differential pressure lines
- Blowing out the differential pressure lines
- Checking the pressure transmitter zero

As an option it is possible to order a version with a test connection, to which a test device for checking the pressure transmitter characteristic can be connected.

Selection and Ordering data

<table>
<thead>
<tr>
<th>Valve manifold combination DN 8 for vapors</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>for flanging to pressure transmitters for differential pressure, with mounting plate, max. working pressure 420 bar, also available in stainless steel on request (order accessory set with Order code), without certificate</td>
<td>7 MF 9 4 1 6 - 7 MF 9 4 1 5 - A</td>
</tr>
<tr>
<td>• without test connection</td>
<td>4 C</td>
</tr>
<tr>
<td>• with test connection M20 x 1.5</td>
<td>4 D</td>
</tr>
</tbody>
</table>

Accessories

- Factory test certificate EN 10204-2.2
- Material acceptance test certificate EN 10204-3.1

<table>
<thead>
<tr>
<th>Selection and Ordering data</th>
<th>Order code</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessory set to EN</td>
<td>B34</td>
<td>7MF9410-SCA</td>
</tr>
<tr>
<td>(required for flanging, weight 0.2 kg)</td>
<td></td>
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</tr>
<tr>
<td>4x screws 7/16-20 UNF x 2 1/8 inch to ASME B18.2, chromized steel</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accessory set to DIN2</td>
<td>B16</td>
<td>7MF9010-6CC</td>
</tr>
<tr>
<td>(required for flanging, weight 0.2 kg)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4x screws M10x55 to DIN EN 24014, chromized steel</td>
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</tr>
<tr>
<td>4x washers Ø 10.5 mm to DIN 125; 2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C Flange connection to DIN 19213 only permissible up to PN 160!</td>
<td></td>
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</table>

Further designs

1) When ordering accessory set together with the valve manifold combination, please use Order code; otherwise use Order No. Please add “-Z” to Order No. and specify Order code.

2) Flange connections to DIN 19213 only permissible up to 160

Accessories

<table>
<thead>
<tr>
<th>Accessory set for valve manifold combination DN 8 for flanging</th>
<th>Order code</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>B34: 4 screws 7/16-20 UNF x 2 1/8 inch to ASME B 18.2.1, 2 O-rings (FPM 90)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B16: 4 screws M10x55 to DIN EN 24014, 4 washers, 2 O-rings (FPM 90)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Washers Ø 10.5 to DIN 125</td>
<td></td>
<td></td>
</tr>
<tr>
<td>O-ring to DIN 3771, 20 x 2.65 – S – FPM90, max. 420 bar, 120 °C</td>
<td></td>
<td></td>
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<tr>
<td>Note: M10 screws only permissible up to PN 160!</td>
<td></td>
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</tbody>
</table>
Pressure Measurement

Fittings - Shut-off valves for differential pressure transmitters

Valve manifold combination DN 8

**Characteristic curves**

<table>
<thead>
<tr>
<th>Operating pressure (bar)</th>
<th>Operating temperature (°C)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>100</td>
<td>100</td>
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<tr>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td>400</td>
<td>400</td>
</tr>
</tbody>
</table>

1. Valve manifold
2. Blow-out connection

1) According to DIN 19210 the design can be such that the temperatures for the differential pressure line can be set approx. 100 °C lower than the media temperature.

**Dimensional drawings**

Valve manifold combination DN 8 (7MF9416-4..), dimensions in mm

**Schematics**

Valve manifold combination DN 8, connections

A. Process connection
B. Transmitter connection
C. Blow-out connection
D. Test connection

Valve manifold combination for vapors

A. Process connection (e.g. on primary device): Welding pin
B. Transmitter connection: Flange connection to EN 61518, form A
C. Blow-out connection: Pipe union with ferrule, diameter 14 mm, S series to DIN 2353
D. Test connection (only with Order No. 7MF9416-4D): M20 x 1.5

Valve design:
- Manifold valves: internal spindle thread
- Blow-out valves: external spindle thread

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The 2-spindle, 3-spindle and 5-spindle valve manifolds (7MF9412-1..) are used to shut off the differential pressure lines and to check the transmitter zero.

The five-spindle valve manifold permits venting on the transmitter side and checking of the transmitter characteristic. These valve manifolds are preferentially used when mounting in protective boxes. In addition, they can also be used for wall, frame or pipe mounting together with the mounting bracket. Transmitters of the DS series can be operated and read from the front when using these valve manifolds.

**Application**

The valve manifolds DN 5 are designed for liquids and vapors and for installing in protective boxes. Each is available in a version for oxygen on request.

**Design**

All versions of the spindle manifolds have a process connection ½-14 NPT.

The connection for the pressure transmitter is always designed as a flange connection to EN 61518, Form A.

The 2-spindle and the 5-spindle valve manifold have in addition a vent and test connection ¼-18 NPT. The valves have an external spindle thread.

**Materials used**

<table>
<thead>
<tr>
<th>Components</th>
<th>Material</th>
<th>Mat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>X 2 CrNiMo 17 13 2</td>
<td>1.4404/316L</td>
</tr>
<tr>
<td>Cones</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
</tr>
<tr>
<td>Spindles</td>
<td>X 2 CrNiMo 18 10</td>
<td>1.4404/316L</td>
</tr>
<tr>
<td>Head parts</td>
<td>X 5 CrNiMo 18 10</td>
<td>1.4401/316</td>
</tr>
<tr>
<td>Packings</td>
<td></td>
<td>PTFE</td>
</tr>
</tbody>
</table>

**Functions**

Functions of all valve manifolds:
- Shutting off the differential pressure lines
- Checking the pressure transmitter zero

Additional functions of the 2-spindle and 5-spindle valve manifolds through the vent and test connection:
- Venting on the transmitter side
- Checking the pressure transmitter characteristic
Pressure Measurement

Fittings - Shut-off valves for differential pressure transmitters

2-, 3- and 5-spindle valve manifolds for installing in protective boxes

### Selection and Ordering data

<table>
<thead>
<tr>
<th>Further designs**</th>
<th>Order code</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accessory set to DIN (connection between valve manifold and pressure transmitter)</td>
<td>F12</td>
<td>7MF9412-6AA</td>
</tr>
<tr>
<td>For valve manifold 7MF9412–1C, 2x screws M10x50 to DIN EN 24014; chromized steel; 2x washers Ø 10.5 mm to DIN 125; 1x O-ring to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C**</td>
<td>F14</td>
<td>7MF9412-6EA</td>
</tr>
<tr>
<td>For valve manifold 7MF9412–1D and -1E, 4x screws M10x50 to DIN EN 24014; chromized steel; 4x washers Ø 10.5 mm to DIN 125; 2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C**</td>
<td>F15</td>
<td>7MF9412-6BA</td>
</tr>
<tr>
<td>For valve manifold 7MF9412–1D and -1E, 4x screws M10x50 to DIN EN 24014; chromized steel; 4x washers Ø 10.5 mm to DIN 125; 2x O-rings to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C**</td>
<td>F16</td>
<td>7MF9412-6FA</td>
</tr>
</tbody>
</table>

### Accessories

#### Accessory set for 2-, 3- and 5-spindle valve manifolds (Connection between manifold and transmitter)

- **2-spindle valve manifold DN 5 with flange connection**
  - F32: 2 screws 7/16 20 UNF x 2 inch to ASME B 18.2.1, 1 O Ring (FPM90)
  - F35: 2 screws 7/16 20 UNF x 2 inch to ASME B 18.2.1, 1 flat-gasket
  - F12: 2 screws M10x50 to DIN EN 24014, 2 washers, 1 O-ring (FPM90)
  - F15: 2 screws M10x50 to DIN EN 24014, 2 washers, 1 flat gasket

- **3-spindle and 5-way valve manifold DN 5**
  - F34: 4 screws 7/16 20 UNF x 2 inch to ASME B 18.2.1, 2 O-rings (FPM90)
  - F36: 4 screws 7/16 20 UNF x 2 inch to ASME B 18.2.1, 2 flat-gaskets
  - F14: 4 screws M10x50 to DIN EN 24014, 4 washers, 2 O-rings (FPM90)
  - F16: 4 screws M10x50 to DIN EN 24014, 4 washers, 2 flat-gaskets

- **Washers Ø 10,5 to DIN 125**

- **Flat-gaskets made of PTFE, max. 420 bar, 80 °C**

- **O-ring to DIN 3771, 20 x 2.65 - S - FPM90; max. 420 bar, 120 °C**

- **Mounting bracket** required for wall mounting or for securing to mounting rack with bolts for mounting on valve manifold
  - for valve manifolds 7MF9412-1B and -1C.
  - for valve manifold 7MF9412-1D.
  - for valve manifold 7MF9412-1E.

- **Mounting clip** 2 off, to secure mounting bracket to pipe

- **Valve manifold 100 bar**
  - Oil- and grease-free cleaning for oxygen applications, max. pressure PN 100 (1450 psi) and max. temperature 60 °C (140 °F)
  - for valve manifolds 7MF9412-1B and -1C.
  - for valve manifold 7MF9412-1D.
  - for valve manifold 7MF9412-1E.

1) When ordering accessory set or mounting together with the valve manifolds, please use Order code; otherwise use Order No.

2) Flange connections with M10 screws only permissible up to PN 160!

### Characteristic curves

Permissible operating pressure as a function of the permissible operating temperature

- 420 bar at 120 °C
- 350 bar at 200 °C
Pressure Measurement

Fittings - Shut-off valves for differential pressure transmitters

2-, 3- and 5-spindle valve manifolds for installing in protective boxes

Dimensional drawings

2-spindle valve manifold DN 5 (7MF9412-1B..) with rotating sleeve, dimensions in mm

A Process connection: ½-14 NPT
B Transmitter connection: Nipple to DIN 16284, G½, SW 27
C Vent / test connection: ¼-18 NPT

3-spindle valve manifold DN 5 (7MF9412-1D..), dimensions in mm

A Process connection: ½-14 NPT
B Transmitter connection: Flange connection EN 61518, form A
C Valve design: external spindle thread

5-spindle valve manifold DN 5 (7MF9412-1E..), dimensions in mm

A Process connection: ½-14 NPT
B Transmitter connection: Flange connection to EN 61518, form A
C Vent / test connection: ¼-18 NPT
Valve design: external spindle thread
Pressure Measurement

Fittings - Shut-off valves for differential pressure transmitters

2-, 3- and 5-spindle valve manifolds for installing in protective boxes

Mounting bracket (7MF9006-6LA)/(M14) for 2-spindle valve manifolds, dimensions in mm

Mounting bracket (7MF9006-6NA)/(M17) for 3-spindle valve manifolds, dimensions in mm

Mounting bracket (7MF9006-6PA)/(M18) for 5-spindle valve manifolds, dimensions in mm

Mounting bracket (7MF9006-6LA)/(M14) for 2-spindle valve manifolds, dimensions in mm

Mounting bracket (7MF9006-6NA)/(M17) for 3-spindle valve manifolds, dimensions in mm

Mounting bracket (7MF9006-6PA)/(M18) for 5-spindle valve manifolds, dimensions in mm

Schematics

2-spindle valve manifold DN 5 (with rotating sleeve G½ or flange connection), connections

3-spindle valve manifold DN 5, connections

5-spindle valve manifold DN 5, connections
Overview

These 3-spindle and 5-spindle valve manifolds 7MF9413-1... were developed specially for vertical differential pressure lines.
The valve manifolds are used to shut off the differential pressure lines and to check the pressure transmitter zero.
The 5-spindle valve manifold permits venting on the transmitter side and checking of the pressure transmitter characteristic.

Benefits

• For vertical differential pressure lines
• Max. operating pressure 420 bar
• Transmitters of the DS series can be operated and read from the front.

Application

The 3-spindle and 5-spindle valve manifolds for vertical differential pressure lines are for liquids and gases. The valve manifolds are flanged on the pressure transmitter.

Design

All versions of the spindle valve manifolds have a process connection ½-14 NPT.
The connection for the pressure transmitter is always designed as a flange connection to EN 61518, form B.
The 2-spindle and the 5-spindle valve manifold have in addition a vent and test connection ¼-18 NPT.

Materials used:

<table>
<thead>
<tr>
<th>Component</th>
<th>Material</th>
<th>Mat. No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing</td>
<td>X 2 CrNiMo 17 13 2</td>
<td>1.4404/316L</td>
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<td>1.4571/316Ti</td>
</tr>
<tr>
<td>Spindles</td>
<td>X 2 CrNiMo 18 10</td>
<td>1.4404/316L</td>
</tr>
<tr>
<td>Head parts</td>
<td>X 5 CrNiMo 18 10</td>
<td>1.4401/316</td>
</tr>
<tr>
<td>Packings</td>
<td>PTFE</td>
<td>-</td>
</tr>
</tbody>
</table>

Function

Functions of all valve manifolds:
• Shutting off the differential pressure lines
• Checking the pressure transmitter zero
Additional functions of the 2-spindle and 5-spindle valve manifolds through the vent and test connection:
• Venting on the transmitter side
• Checking the pressure transmitter characteristic

Selection and Ordering data

Order No.
Valve manifolds for vertical differential pressure lines for liquids and gases for flanging to pressure transmitters for absolute and differential pressure Material: stainless steel, mat. No: 1.4404/316L max. working pressure 420 bar (order accessory set with Order code), without certificate
• 3-spindle valve manifold
• 5-spindle valve manifold

Accessories

Factory test certificate EN 10204-2.2
Material acceptance test certificate EN 10204-3.1

Selection and Ordering data

Order No.
Valve manifolds for vertical differential pressure lines for flanging to pressure transmitters for absolute and differential pressure Material: stainless steel, mat. No: 1.4404/316L max. working pressure 420 bar (order accessory set with Order code), without certificate
• 3-spindle valve manifold
• 5-spindle valve manifold

Accessories

Factory test certificate EN 10204-2.2
Material acceptance test certificate EN 10204-3.1

Selection and Ordering data

Order No.
Further designs

Please add "-Z" to Order No. and specify Order code.

Accessory set to EN (connection between valve manifold and pressure transmitter)
4x screws 1/4-20 UNF x 1¾ inch to ASME B18.2.1; chromized steel
2x flat gaskets made of PTFE, max. permissible 420 bar, 80 °C

Accessory set to DIN (connection between valve manifold and pressure transmitter)
4x screws M10x45 to DIN EN 24014; chromized steel
4x washers Ø 10.5 mm to DIN 125;
2x flat gaskets made of PTFE, max. permissible 420 bar, 80 °C
Flange connection with M10 screws only permissible up to PN 160.

Mounting bracket
required for wall mounting or for securing to mounting rack, with bolts for mounting on valve manifold
• for valve manifold 7MF9413-1D.
  M17 7MF9006-6NA
• for valve manifold 7MF9413-1E.
  M18 7MF9006-6PA

Mounting bracket
required for mounting on 2" standpipe, with bolts for mounting on valve manifold
• for valve manifold 7MF9413-1D.
  M19 7MF9006-6QA

Mounting clip
2 off. to secure mounting bracket to pipe
Valve manifold 100 bar suitable for oxygen
• for valve manifold 7MF9413-1D.
  S13
• for valve manifold 7MF9413-1E.
  S14

1) When ordering accessory set or mounting together with the multiway cock, please use Order code; otherwise use Order No.
2) Flange connections to DIN 19213 only permissible up to 160!
### Accessories

**Accessory set (connection between manifold and transmitter)**
- K36: 4 screws 7/16-20 UNF x 1 3/4 inch to ASME B18.2.1, 2 flat gaskets
- K16: 4 screws M10x45 to DIN EN 24014, 4 washers, 2 flat gaskets

**Washers Ø 10.5 to DIN 125**

**Flat gaskets made of PTFE, max. 420 bar, 80 °C**

**Note:** Flange connection with M10 screws only permissible up to PN 160!

**Mounting bracket for wall mounting or for securing to mounting rack**
- M17: For 3-spindle valve manifold
- M18: For 5-spindle valve manifold

**Mounting bracket for mounting on 2” standpipe**
- M19: For 3-spindle valve manifold

**Mounting clips (2 off)**
- For securing the mounting brackets M17, M18 and M19 to pipe

**Valve manifold 100 bar, suitable for oxygen**
- For 3-spindle valve manifold
- For 5-spindle valve manifold

### Characteristic curves

**Permissible operating pressure as a function of the permissible operating temperature**

### Dimensional drawings

**3-spindle valve manifold 7MF9413-1D. for vertical differential pressure lines, dimensions in mm**

**5-spindle valve manifold 7MF9413-1E. for vertical differential pressure lines, dimensions in mm**

**Mounting bracket (7MF9006-6NA)/(M17) for 3-spindle valve manifolds, dimensions in mm**

**Mounting bracket (7MF9006-6PA)/(M18) for 5-spindle valve manifolds, dimensions in mm**
Pressure Measurement
Fittings - Shut-off valves for differential pressure transmitters

3- and 5-spindle valve manifolds for vertical angular differential pressure lines

Mounting bracket (7MF9006-6QA)/(M19) for 3-spindle valve manifolds, dimensions in mm

Schematics

3-spindle valve manifold for vertical differential pressure lines, connections

5-spindle valve manifold for vertical differential pressure lines, connections

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The low-pressure multiway cock 7MF9004-4CA/-4DA can be flanged to pressure transmitters for differential pressure.

**Benefits**
- Robust design
- For liquids and gases
- One-hand operation

**Design**
The multiway cock has 2 process connections and 2 test connections, which are available in 2 versions (with sealing screws G\(\frac{3}{8}\) or quick-release couplings). The housing is made of hot-pressed brass CuZn39Pb3, CW 614N. Test connections with sealing screws or with self-sealing quick-release couplings.

*Note:* An accessory set is always required for flanging of the multiway cock to a differential pressure transmitter.

**Function**
- Shutting off the differential pressure lines
- Testing the pressure transmitter zero
- Testing the pressure transmitter characteristic

**Accessories**

**Accessory set for low-pressure multiway cock**
- L31: 4 screws \(\frac{7}{16} \times 20\) UNF x 1 inch, 2 flat gaskets
- L11: 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets
- L15 (suitable for oxygen): 4 screws M10x25 to DIN EN 24017, 4 washers, 2 flat gaskets

Washers \(\Omega 10.5\) to DIN 125
Flat gaskets made of PTFE, max. permissible temperature 80 °C

**Multiway cock in oil-free and grease-free design**
- S11: BAM-tested lubricant, gasket suitable for oxygen

**Mounting brackets**
- M13: Required for wall mounting or for securing on rack (72 mm grid); made of electrogalvanized sheet-steel

---

**Selection and Ordering data**

**Order No.**

<table>
<thead>
<tr>
<th>Low-pressure multiway cock</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>for liquids and gases, for flanging to pressure transmitters, max. working pressure 25 bar, max. working temperature 60 °C (up to 80 °C for a short time), weight 1.75 kg (without accessory set)</td>
<td>7MF9004-4CA</td>
</tr>
<tr>
<td>2x sealing screws G(\frac{3}{8})</td>
<td>7MF9004-4DA</td>
</tr>
</tbody>
</table>

**Selection and Ordering data**

**Order code**

<table>
<thead>
<tr>
<th>Accessory set to EN (required for flanging, weight 0.2 kg)</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x screws (\frac{7}{16} \times 20) UNF x 1 inch to ASME B18.2.1; chromized steel</td>
<td>L31 7MF9004-5CC</td>
</tr>
<tr>
<td>2x gaskets made of PTFE, max. permissible temperature 80 °C</td>
<td>L11 7MF9004-6AD</td>
</tr>
<tr>
<td>4x washers (\Omega 10.5) mm to DIN 125; 2x gaskets made of PTFE, max. permissible temperature 80 °C</td>
<td>L15 7MF9004-6AE</td>
</tr>
</tbody>
</table>

**Further designs**

Please add "-Z" to Order No. and specify Order code.

<table>
<thead>
<tr>
<th>Accessory set to DIN (required for flanging, weight 0.2 kg)</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>4x screws M10x25 to DIN EN 24017; chromized steel</td>
<td>L11 7MF9004-6AD</td>
</tr>
<tr>
<td>4x washers (\Omega 10.5) mm to DIN 125; 2x gaskets made of PTFE, max. permissible temperature 80 °C</td>
<td>L15 7MF9004-6AE</td>
</tr>
</tbody>
</table>

**Multiway cock in oil-free and grease-free design**

- S11: BAM-tested lubricant, gasket suitable for oxygen

**Mounting bracket**

- M13: Required for wall mounting or for securing on rack (72 mm grid); made of electrogalvanized sheet-steel, weight 0.85 kg

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Pressure Measurement
Fittings - Shut-off valves for differential pressure transmitters

Low-pressure multiway cock

Options
Test connections
• 2 sealing screws G³/₈
• 2 quick-release couplings

Characteristic curves
Low-pressure multiway cock, permissible operating pressure as a function of the permissible operating temperature

Dimensional drawings
Low-pressure multiway cock 7MF9004-4CA/-4DA for direct flanging to pressure transmitters for differential pressure, dimensions in mm

Mounting bracket 7MF9004-6AA (M13), dimensions in mm
Overview

The oval flange 7MF9408-2C., for pressure transmitters for absolute pressure and differential pressure has a ½-14 NPT female thread and is designed for max. operating pressure 400 bar.

Accessories

Accessory set for oval flange
- E36: 2 screws \( \frac{7}{16} \)-20 UNF x 1 ½ inch to ASME B18.2.3, chrome- mized steel
- E34: 2 screws \( \frac{7}{16} \)-20 UNF x 1 ½ inch to ASME B18.2.3, chrome- mized steel
- E13: 2 screws M10x40 to DIN EN 4762, 2 washers, 1 O-ring (FPM 90)
- E16: 2 screws M10x40 to DIN EN ISO 4762, 2 washers, 1 flat gasket

Washers Ø 10.5 to DIN 125

Flat gaskets made of PTFE, max. 420 bar, 80 °C

O-ring to Din 3771, 20 x 2.65 – S – FPM90, max. 420 bar, 120 °C

Note: M10 screws only permissible up to PN 160!

Selection and Ordering data

<table>
<thead>
<tr>
<th>Selection and Ordering data</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oval flange with female thread ½-14 NPT, max. working pressure 420 bar, flange connection to DIN EN 61518, form A</td>
<td>7MF9408-2CE 7MF9408-2CL</td>
</tr>
<tr>
<td>Material</td>
<td></td>
</tr>
<tr>
<td>P250GH, mat. No.: 1.0460</td>
<td></td>
</tr>
<tr>
<td>X 2 CrNiMo 17 13 2, mat. No. 1.4404/316L</td>
<td></td>
</tr>
</tbody>
</table>

Further designs

Please add “-Z” to Order No. and specify Order code.

Accessory set to EN

- E36: 2 screws \( \frac{7}{16} \)-20 UNF x 1 ½ inch to ASME B 18.2.3; chromized steel
- 1x flat gasket made of PTFE, max. permissible 420 bar, 80 °C

Accessory set to DIN

- E34: 2 screws \( \frac{7}{16} \)-20 UNF x 1 ½ inch to ASME B 18.2.3; chromized steel
- 1x O-ring to Din 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C

- E13: 2x screws M10x40 to DIN EN ISO 4762; chromized steel
- 2x washers Ø 10.5 mm to DIN 125; 1x O-ring to DIN 3771, 20 x 2.65 - S - FPM90, max. permissible 420 bar, 120 °C

- E16: 2x screws M10x40 to DIN EN ISO 4762; chromized steel
- 2x washers Ø 10.5 mm to DIN 125; 1x flat gasket made of PTFE, max. permissible 420 bar, 80 °C

1) When ordering accessory set together with the oval flange, please use Order code; otherwise use Order No.

2) Flange connections with M10 screws only permissible up to PN 160

Dimensional drawings

Oval flange 7MF9408-2C., dimensions in mm
Adapters, connection glands

Overview
Adapters enable e.g. a transition from medium connections with NPT thread to shut-off valves to DIN 16270 ... 16272 or pipes in conjunction with a connection gland (e.g. 7MF9008).

Design
The connection pieces are made of X 6 CrNiMoTi 17 12 2, mat. No. 1.4571 and available in 3 versions
- Thread ¼-18 NPT and connection shank G½ to DIN EN 837-1
- Thread ½-14 NPT and connection shank G½ to DIN EN 837-1
- Thread ½-14 NPT and thread ½-14 NPT

Selection and Ordering data

<table>
<thead>
<tr>
<th>Adapter</th>
<th>Order No.</th>
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</thead>
<tbody>
<tr>
<td>with thread ¼-18 NPT – G½</td>
<td>7MF9001-1AA</td>
</tr>
<tr>
<td>with thread ½-14 NPT – G½</td>
<td>7MF9001-1CA</td>
</tr>
<tr>
<td>with thread ½-14 NPT – ½-14 NPT</td>
<td>7MF9001-1DA</td>
</tr>
<tr>
<td>with thread ½-14 NPT – M20 x 1.5</td>
<td>7MF9001-1EA</td>
</tr>
<tr>
<td>with pipe union with ferrule 12 S, Ø 12 mm – ½-14 NPT</td>
<td></td>
</tr>
<tr>
<td>• 9 SMnPb 28, mat. No. 1.0718</td>
<td>7MF9008-1CA</td>
</tr>
<tr>
<td>• X 6 CrNiMoTi 17 12 2, mat. No. 1.4571</td>
<td>7MF9008-1CB</td>
</tr>
<tr>
<td>with pipe union with ferrule 14 S, Ø 14 mm – ½-14 NPT</td>
<td></td>
</tr>
<tr>
<td>• 9 SMnPb 28, mat. No. 1.0718</td>
<td>7MF9008-1CC</td>
</tr>
<tr>
<td>• X 6 CrNiMoTi 17 12 2, mat. No. 1.4571</td>
<td>7MF9008-1CD</td>
</tr>
</tbody>
</table>

Dimensional drawings

Connection piece with thread ¼-18 NPT and connection shank G½ 7MF9001-1AA, dimensions in mm

Connection piece with thread ½-14 NPT and thread M20 x 1.5 7MF9001-1EA, dimensions in mm

Connection piece with pipe union with ferrule 12 S, Ø 12 mm and thread ½-14 NPT 7MF9001-1FA, dimensions in mm

Connection piece with pipe union with ferrule 14 S, Ø 14 mm and thread ½-14 NPT 7MF9001-1GA, dimensions in mm
Overview

Connection glands to connect medium or differential pressure lines to collars G½ to DIN EN 837-1

- For rated pressures up to PN 630
- For oxygen only up to PN 250

Selection and Ordering data

<table>
<thead>
<tr>
<th>Material</th>
<th>Design</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>11SMn30 (mat. No. 1.0715)</td>
<td>Standard</td>
<td>7MF9008-1GA</td>
</tr>
<tr>
<td>X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti)</td>
<td>Standard</td>
<td>7MF9008-1GB</td>
</tr>
<tr>
<td>X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti)</td>
<td>Grease-free</td>
<td>7MF9008-1GC</td>
</tr>
</tbody>
</table>

Dimensional drawings

[Diagram of connection gland 7MF9008-1G]
Connection parts G½ for pressure gauges and shut-off fittings are available in 3 versions:

- Nipple connection
- Clamping sleeve
- Collar connection piece

### Dimensional drawings

#### Nipple connection (G) M56340-A0001 to A0003, dimensions in mm

#### Nipple connection (M20 x 1.5) M56340-A0008, dimensions in mm

#### Clamping sleeve M56340-A0004/-A0005, dimensions in mm

#### Collar connection piece M56340-A0006/-A0007, dimensions in mm
Overview

Water traps protect pressure gauges and shut-off fittings from heating up (e.g. by steam) by the water column produced by the water trap.

The max. working temperature is 120 °C at 100 bar, 300 °C at 80 bar or 400 °C at 63 bar. If the temperature of the measured medium is higher, a sufficiently long line has to be connected upstream of the trap to enable heat dissipation.

Design

The water traps are available in U shape (type B) or circular shape (type D) to DIN 16282. They have a weld-on end Ø 20 mm × 2.6 mm on the measurement side. The connection on the device side is a clamping sleeve G½ to DIN 16283.

The water traps are made of steel (P235GH) or stainless steel (X 6 CrNiMoTi 17 12 2)

Water traps are designed as standard for max. operating temperature 120 °C at max. operating pressure 100 bar (300 °C at 80 bar, 400 °C at 63 bar). Water traps for higher operating pressures and temperatures are available on request.

Selection and Ordering data

| Water traps for pressure gauges and pressure transmitters, max. working temperature 120 °C, max. working pressure 100 bar (or 300 °C at 80 bar, or 400 °C at 63 bar), weight 0.7 kg |
|---|---|
| **Water trap B to DIN 16282** |
| Material | Mat. No. |
| P235GH | 1.0345 |
| X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti |
| **Water trap D to DIN 16282** |
| Material | Mat. No. |
| P235GH | 1.0345 |
| X 6 CrNiMoTi 17 12 2 | 1.4571/316Ti |

NOTE: Subject to export regulations AL: 9I999, ECCN: N.

Dimensional drawings

Sealing ring 7MF9007-7A. to EN 837-1, dimensions in mm

Selection and Ordering data

<table>
<thead>
<tr>
<th>Sealing ring to EN 837-1 for thread G½ made of (packing unit 100 pcs)</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>F) 7MF9007-7AA</td>
</tr>
<tr>
<td>Soft iron</td>
<td>F) 7MF9007-7AB</td>
</tr>
<tr>
<td>Stainless steel, mat.-No. 1.4571</td>
<td>F) 7MF9007-7AC</td>
</tr>
<tr>
<td>PTFE</td>
<td>F) 7MF9007-7AD</td>
</tr>
</tbody>
</table>

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Pressure Measurement

Fittings - Accessories

Pressure surge reducers

Overview

The pressure surge reducer protects the pressure gauge against damage, premature wear and tear and inaccurate/fluctuating indications.

Application

The pressure reducer is used when pulsations occur in the measured medium (e.g. in slow-running vapor engines, piston pumps and compressors), or if drastic fluctuations are likely to occur in the measured medium (e.g. in hydraulic presses and tensile testing machines).

Design

- Enclosure made of brass or stainless steel (mat. no. 1.4571)
- Adjustable nozzle
- Sleeve for connection to the measuring instrument
- Pin for connection to supply lead

Selection and Ordering data

<table>
<thead>
<tr>
<th>Pressure surge reducer</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Weight approx. 0.21 kg</td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>Full-scale value</td>
</tr>
<tr>
<td>Brass</td>
<td>250 bar</td>
</tr>
<tr>
<td>Stainless steel</td>
<td>600 bar</td>
</tr>
<tr>
<td></td>
<td>M56340-A54</td>
</tr>
</tbody>
</table>

Dimensional drawings

Sleeve for connection to the pressure display

Pin for connection to supply lead

Pressure surge reducer, dimensions in mm
Overview

Primary shut-off valves are available in the following versions:

- For non-corrosive liquids, gases and vapors
- For corrosive liquids and gases
- Grease-free for oxygen

The shut-off valves are available in various materials and with various connections (see Selection and Ordering data)

Characteristic curves

Shut-off valve 7MF9017-1.., permissible working pressure as a function of the permissible working temperature

Shut-off valve 7MF9017-2.. and -3.., permissible working pressure as a function of the permissible working temperature

Dimensional drawings

Shut-off valve 7MF9017–1A., dimensions in mm

Shut-off valve 7MF9017-1B. and -2B., dimensions in mm

Shut-off valves 7MF9017-1C., -1D. and -2C., dimensions in mm
Shut-off valves 7MF9017-, dimensions in mm

<table>
<thead>
<tr>
<th>Ø A x b</th>
<th>7MF9017-</th>
</tr>
</thead>
<tbody>
<tr>
<td>14 mm x 2.5 mm</td>
<td>1F. and 1G.</td>
</tr>
<tr>
<td>21.3 mm x 6.3 mm</td>
<td>1H. and 2H.</td>
</tr>
<tr>
<td>24 mm x 7.1 mm</td>
<td>1J., 1K. and 2J.</td>
</tr>
</tbody>
</table>

### Selection and Ordering data

#### Primary shut-off valves, without certificate

<table>
<thead>
<tr>
<th>Max. working pressure</th>
<th>Characteristic</th>
<th>Material</th>
<th>Mat. No.</th>
<th>Spindle thread</th>
<th>Connections</th>
<th>Approx. weight kg</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>160 bar</td>
<td>A</td>
<td>P250GH</td>
<td>1.0460</td>
<td>Internal</td>
<td>Threaded socket G½ form R, DIN 19207</td>
<td>0.8</td>
<td>7MF9017-1A</td>
</tr>
<tr>
<td>160 bar</td>
<td>A</td>
<td>P250GH</td>
<td>1.0460</td>
<td>Internal</td>
<td>Threaded socket G½ form R, DIN 19207</td>
<td>0.8</td>
<td>7MF9017-1B</td>
</tr>
<tr>
<td>400 bar</td>
<td>C</td>
<td>P250GH</td>
<td>1.0460</td>
<td>Internal</td>
<td>Pipe union with ferrule for pipe Ø 12 mm, S series</td>
<td>1</td>
<td>7MF9017-1C</td>
</tr>
<tr>
<td>400 bar</td>
<td>C</td>
<td>P250GH</td>
<td>1.0460</td>
<td>Internal</td>
<td>Pipe union with ferrule for pipe Ø 14 mm, S series</td>
<td>1</td>
<td>7MF9017-1D</td>
</tr>
<tr>
<td>500 bar</td>
<td>D</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>External</td>
<td>Welding sleeves Ø 14 mm x 2.5 mm</td>
<td>1.6</td>
<td>7MF9017-1F</td>
</tr>
<tr>
<td>500 bar</td>
<td>E</td>
<td>11 CrMo 9 10</td>
<td>1.7383</td>
<td>External</td>
<td>Welding sleeves Ø 14 mm x 2.5 mm</td>
<td>1.6</td>
<td>7MF9017-1G</td>
</tr>
<tr>
<td>500 bar</td>
<td>D</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>External</td>
<td>Welding sleeves Ø 21.3 mm x 6.3 mm and Ø 14 mm x 2.5 mm</td>
<td>1.6</td>
<td>7MF9017-1H</td>
</tr>
<tr>
<td>500 bar</td>
<td>E</td>
<td>11 CrMo 9 10</td>
<td>1.7383</td>
<td>External</td>
<td>Welding sleeves Ø 24 mm x 7.1 mm and Ø 14 mm x 2.5 mm</td>
<td>1.6</td>
<td>7MF9017-1J</td>
</tr>
</tbody>
</table>

#### Shut-off valve for aggressive liquids and gases

<table>
<thead>
<tr>
<th>Max. working pressure</th>
<th>Characteristic</th>
<th>Material</th>
<th>Mat. No.</th>
<th>Spindle thread</th>
<th>Connections</th>
<th>Approx. weight kg</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>160 bar</td>
<td>F</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
<td>Internal</td>
<td>Threaded socket G½ form R, DIN 19207</td>
<td>0.8</td>
<td>7MF9017-2B</td>
</tr>
<tr>
<td>400 bar</td>
<td>G</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
<td>Internal</td>
<td>Pipe union with ferrule for pipe Ø 12 mm, S series</td>
<td>1</td>
<td>7MF9008-8AB</td>
</tr>
<tr>
<td>400 bar</td>
<td>H</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
<td>External</td>
<td>Welding sleeves Ø 21.3 mm x 6.3 mm and Ø 14 mm x 2.5 mm</td>
<td>1.6</td>
<td>7MF9008-8AD</td>
</tr>
<tr>
<td>400 bar</td>
<td>H</td>
<td>X 6 CrNiMoTi 17 12 2</td>
<td>1.4571/316Ti</td>
<td>External</td>
<td>Welding sleeves Ø 24 mm x 7.1 mm and Ø 14 mm x 2.5 mm</td>
<td>1.6</td>
<td>7MF9008-8AD</td>
</tr>
</tbody>
</table>

### Accessories

- Factory test certificate EN 10204-2.2
- Material acceptance test certificate EN 10204-3.1

1) See Figure “Permissible working pressure as a function of the permissible working temperature”
Overview

The compensation vessels prevent the level difference which occurs with pressure changes in the pressure lines and which falsifies the measurement.

According to DIN 19211, the temperature in the compensation vessel must be assumed to be 50 K less than the steam temperature in the pipe when calculating the wall thicknesses. This is because the temperature in the compensation vessel during operation can only rise up to the saturated steam temperature.

A material acceptance test certificate A to EN 10204-3.1 is available for the materials from which the compensation vessels are made.

Characteristic curves

Permissible operating pressure as a function of the permissible operating temperature

Selection and Ordering data

<table>
<thead>
<tr>
<th>Compensation vessel, without certificate</th>
<th>Max. working pressure</th>
<th>Characteristic</th>
<th>Material</th>
<th>Mat. No.</th>
<th>Connections</th>
<th>Input</th>
<th>Output</th>
<th>Approx. contents cm³</th>
<th>Approx. weight kg</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>160 bar A</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>100</td>
<td>Threaded socket G½, 21.3 mm × 6.3 mm</td>
<td>250</td>
<td>0.8</td>
<td></td>
<td></td>
<td>7MF9015 - 1A</td>
</tr>
<tr>
<td></td>
<td>250 bar B</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>100</td>
<td>Welding sleeve 24 mm × 7.1 mm</td>
<td>250</td>
<td>0.8</td>
<td></td>
<td></td>
<td>7MF9015 - 1B</td>
</tr>
<tr>
<td></td>
<td>250 bar B</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>100</td>
<td>Welding sleeve 24 mm × 7.1 mm</td>
<td>250</td>
<td>1</td>
<td></td>
<td></td>
<td>7MF9015 - 1C</td>
</tr>
<tr>
<td></td>
<td>250 bar B</td>
<td>11 CrMo 9 10</td>
<td>1.7383</td>
<td>100</td>
<td>Welding sleeve 24 mm × 7.1 mm</td>
<td>250</td>
<td>1</td>
<td></td>
<td></td>
<td>7MF9015 - 1D</td>
</tr>
<tr>
<td></td>
<td>160 bar A</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>100</td>
<td>Threaded socket G½, 33.7 mm × 4.5 mm</td>
<td>20</td>
<td>1.6</td>
<td></td>
<td></td>
<td>7MF9015 - 1E</td>
</tr>
<tr>
<td></td>
<td>500 bar D</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>100</td>
<td>Welding sleeve 21.3 mm × 6.3 mm</td>
<td>20</td>
<td>1.6</td>
<td></td>
<td></td>
<td>7MF9015 - 5A</td>
</tr>
<tr>
<td></td>
<td>500 bar D</td>
<td>16 Mo 3</td>
<td>1.5415</td>
<td>100</td>
<td>Welding sleeve 24 mm × 7.1 mm</td>
<td>20</td>
<td>1.6</td>
<td></td>
<td></td>
<td>7MF9015 - 5B</td>
</tr>
<tr>
<td></td>
<td>500 bar D</td>
<td>11 CrMo 9 10</td>
<td>1.7383</td>
<td>100</td>
<td>Welding sleeve 24 mm × 7.1 mm</td>
<td>20</td>
<td>1.6</td>
<td></td>
<td></td>
<td>7MF9015 - 5C</td>
</tr>
</tbody>
</table>

Accessories

Factory test certificate EN 10204-2.2
Material acceptance test certificate EN 10204-3.1

1) See Figure "Permissible working pressure as a function of the permissible working temperature"
Connection parts

Overview
Connection parts are available in the following versions:

- Threaded flange pair G½ with stainless steel gasket
- Nipple G½ form V to DIN 19207
- Union nut G½ made of C 35 to DIN 16284
- Gasket B½ (grooved) to DIN 19207

All connection parts are also available grease-free for oxygen.

Selection and Ordering data

<table>
<thead>
<tr>
<th>Material</th>
<th>Order No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Threaded flange pair G½</td>
<td>7MF9007-4CA</td>
</tr>
<tr>
<td>• with stainless steel gasket</td>
<td></td>
</tr>
<tr>
<td>• grease-free for oxygen, with stainless steel gasket</td>
<td>7MF9007-4DA</td>
</tr>
<tr>
<td>Scope of delivery:</td>
<td></td>
</tr>
<tr>
<td>2x threaded flanges G½ to DIN 19207; material: P250GH (mat. No. 1.0460)</td>
<td></td>
</tr>
<tr>
<td>4x hexagon screws M10x45 to DIN EN 24014; Material: C35E (mat. No. 1.1181)</td>
<td></td>
</tr>
<tr>
<td>4x hexagon screws M10x50 to DIN EN 24032</td>
<td></td>
</tr>
<tr>
<td>1x gasket G½ (7MF9007-6BA) grooved, to DIN 19207; Material: X 6 CrNiMoTi 17 12 2 (mat. No. 14571/316Ti)</td>
<td></td>
</tr>
<tr>
<td>Only for 7MF9007-4CA!</td>
<td></td>
</tr>
<tr>
<td>1x gasket G½ (7MF9007-6CA), grease-free for oxygen, grooved, to DIN 19207; Material: X 6 CrNiMoTi 17 12 2 (mat. No. 14571/316Ti)</td>
<td></td>
</tr>
<tr>
<td>Only for 7MF9007-4DA!</td>
<td></td>
</tr>
<tr>
<td>Nipple G½</td>
<td>7MF9007-4KA</td>
</tr>
<tr>
<td>to DIN 19207</td>
<td></td>
</tr>
<tr>
<td>• Material: 16 Mo 3 (mat. No. 1.5415)</td>
<td></td>
</tr>
<tr>
<td>• grease-free for oxygen, Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
<tr>
<td>Union nut G½</td>
<td>7MF9007-4MA</td>
</tr>
<tr>
<td>to DIN 16284</td>
<td></td>
</tr>
<tr>
<td>• Material: C35E (mat. No. 1.1181)</td>
<td></td>
</tr>
<tr>
<td>• grease-free for oxygen, Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
<tr>
<td>Gasket G½</td>
<td>7MF9007-6BA</td>
</tr>
<tr>
<td>to DIN 19207, grooved</td>
<td></td>
</tr>
<tr>
<td>• Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
<tr>
<td>• grease-free for oxygen, Material: X 6 CrNiMoTi 17 12 2 (mat. No. 1.4571/316Ti)</td>
<td></td>
</tr>
</tbody>
</table>

F) Subject to export regulations AL: 91999, ECCN: N.

Dimensional drawings

Threaded flange 7MF9007-4CA/-4DA, dimensions in mm

Nipple G½ 7MF9007-4KA/-4LA, dimensions in mm

Union nut G½ 7MF9007-4MA/-4NA, dimensions in mm

Gasket 7MF9007-6BA/-6CA, dimensions in mm