Product Overview

The M24 is a five valve manifold designed for direct mounting to differential pressure transmitters. Lightweight and with compact dimensions, M24 manifolds enable instrument operation, isolation, zeroing and venting in a single unit.

Manufactured from a precision casting with two block valves, an equalize valve and two instrument vent/calibrate valves, the M24 is coupled directly to differential pressure transmitters via standard instrument flanged connections on 21/8-inch [54 mm] centers. (Non-standard instrument centers are also available). Process connections are available threaded or flanged to accept standard futbol flanges. Vent connections are threaded 1/4-inch on all manifolds and provided with vent plugs as standard. Suitable for pressures of up to 6000 psig [414 barg] and temperatures of up to 1000°F [538°C]. M24 is available with a metal seat and the option of Teflon® or GRAFOIL® stem packing.

Features and Benefits

- **Direct mounting compact design** requires a minimum of space for operation and installation with fewer potential leak points.
- **Installation costs reduced** by manifolding the valves, thereby eliminating several components essential for ‘piping-up.’
- **Ball end stem** free-swiveling ball-end stem ensures perfect alignment, providing repetitive bubble-tight shut-off and long life.
- **Packing below threads** Teflon® or GRAFOIL® packing below the stem threads prevents lubricant washout and thread corrosion.
- **Back seat stem** prevents stem blow-out or accidental removal while in operation.
- **Threaded vent ports** allows vent to be safely piped away, supplied plugged as standard.
- **Manifold mounting** standard pipe bracket bolts directly to the manifold providing a rigid support for the transmitter. Instrument can be easily removed for service or repair.

Applications

- Direct-mounting differential pressure transmitters.
- Instrument isolation and zeroing.
- Instrument venting to close system.
- Instrument calibration.
- Liquid and vapor service.
Differential Pressure Manifolds – M24 Specifications

M24A Dimensions, inches [mm] – Flanged x Flanged

M24T Dimensions, inches [mm] – Threaded x Flanged

Maximum Dimensions, inches [mm]

<table>
<thead>
<tr>
<th>Valve</th>
<th>A</th>
<th>B</th>
<th>C</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teflon® Packing</td>
<td>8.65</td>
<td>4.35</td>
<td>8.65</td>
</tr>
<tr>
<td>GRAFOIL® Packing</td>
<td>9.75</td>
<td>4.80</td>
<td>9.60</td>
</tr>
</tbody>
</table>
Differential Pressure Manifolds – M24 Specifications

### Standard Materials

<table>
<thead>
<tr>
<th>Valve</th>
<th>Body</th>
<th>Bonnet</th>
<th>Stem</th>
<th>Ball Seat</th>
</tr>
</thead>
<tbody>
<tr>
<td>SS</td>
<td>A351 CF8M</td>
<td>316 SS</td>
<td>316 SS</td>
<td>316 SS</td>
</tr>
<tr>
<td>Monel®</td>
<td>Monel® 400</td>
<td>Monel® 400</td>
<td>Monel® 400</td>
<td>Monel® K500</td>
</tr>
<tr>
<td>SG</td>
<td>A351 CF8M</td>
<td>316 SS</td>
<td>Monel® 400</td>
<td>Monel® K500</td>
</tr>
</tbody>
</table>

### Notes

1. Approximate valve weight: 6.0 lb [2.7 kg], 0.187-inch [4.8 mm] diameter orifice. Valve Cv 0.52 maximum.
2. For SS, SG (Sour Gas meets the requirements of NACE MR0175-latest revision) and Monel® valves, non-wetted parts are austenitic SS.

### Special Severe Service Materials

<table>
<thead>
<tr>
<th>Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>Duplex UNS S31803</td>
</tr>
<tr>
<td>6MO UNS S31254</td>
</tr>
<tr>
<td>Hastelloy® C276</td>
</tr>
<tr>
<td>Incoloy 825</td>
</tr>
</tbody>
</table>

For any other material requirements, please consult the factory.

### AGCO Mount Dimensions, inches [mm]

**AGCO Mount MB55**

The AGCO Mount principle is to mount the manifold not the transmitter enabling easier instrument loop installations and lower on-going maintenance costs. The transmitter is simply removed by releasing the four mounting bolts and disconnecting signal leads. M24 utilizes a MB55 AGCO Mount, suitable for 2-inch [50 mm] NB pipestand. Supplied in zinc plated CS as standard.
Differential Pressure Manifolds – M24 Specifications

Valve Bonnet Identification

**Dust Cap Coding:** The valve bonnet dust caps are color coded to identify the gland packing/stem.

- **White:** Standard bonnet assembly Teflon® packing.
- **Green:** Sour Gas service Teflon® packing.

**Ring Labels:** The valve bonnets have color coded ring labels for service identification.

- **Red:** Vent Valves
- **Blue:** Isolate Valves
- **Green:** Equalize Valves

Connections

**Standard Connections**

**Process**
Threaded ½-inch NPT to ANSI/ASME B1-20-1 on 2½-inch [54 mm] centers.

**Instrument**
Flanged for direct mounting to transmitters on 2½-inch [54 mm] centers. Flanged connections are on 2½-inch [54 mm] centers.

**Vent**
Threaded ¼-inch NPT to ANSI/ASME B1-20-1.

**Other Connections**

**Threaded**
BSP Tr to BS21
BSP F to BS277

Please consult the factory for availability.

Notes

1. Threaded connection: vent supplied with blanking plug as standard.
2. All manifolds are supplied with seal rings and four 7/16-inch UNF HT steel mounting bolts. Teflon® seal rings are supplied with the standard bonnet; Graphite seal rings are supplied with high temperature bonnet.

Pressure and Temperature Ratings

**Valve**

<table>
<thead>
<tr>
<th>Teflon® Bonnet</th>
<th>CS, SS, and Monel®</th>
</tr>
</thead>
<tbody>
<tr>
<td>6000 psig @ 200°F [414 barg @ 93°C]</td>
<td>4000 psig @ 500°F [276 barg @ 260°C]</td>
</tr>
</tbody>
</table>

**Valve High Temperature**

| CS | 6000 psig @ 200°F [414 barg @ 93°C] |
| 1500 psig @ 850°F [103 barg @ 454°C] |

| SS | 6000 psig @ 200°F [414 barg @ 93°C] |
| 1500 psig @ 1000°F [103 barg @ 538°C] |

Futbol Flanges

Futbol Flanges are available for bolting to the process side of a flanged manifold. This provides the ideal solution to welded connection requirements, allowing the flanges to be welded to process piping while keeping the flexibility to remove the manifold when required, for maintenance or repair.

<table>
<thead>
<tr>
<th>Connection</th>
<th>CS</th>
<th>SS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2” FNPT</td>
<td>FFC-4</td>
<td>FFS-4</td>
</tr>
<tr>
<td>1/2” MNPT</td>
<td>FFC-4M</td>
<td>FFS-4M</td>
</tr>
<tr>
<td>1/2” Butt weld</td>
<td>FFCC-4BW</td>
<td>FFS-4BW</td>
</tr>
<tr>
<td>1/2” Socket Weld</td>
<td>FFC-4B</td>
<td>FFS-4B</td>
</tr>
</tbody>
</table>

Pressure vs. Temperature

<table>
<thead>
<tr>
<th>M24__HIS/M24__EIS</th>
<th>M24__HIC/M24__EIC</th>
</tr>
</thead>
<tbody>
<tr>
<td>M24__VIC</td>
<td>M24__VIS</td>
</tr>
<tr>
<td>M24__VIM</td>
<td>Denotes intersecting data</td>
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Differential Pressure Manifolds – M24 Specifications

<table>
<thead>
<tr>
<th>Ordering Information</th>
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</thead>
<tbody>
<tr>
<td>M24T V I S – 4 – SG</td>
</tr>
</tbody>
</table>

**Valve Type**

- M24A (Flanged x Flanged)
- M24T (Threaded x Flanged)

**Bonnet Packing**

- V – Teflon® (patent protected)
- H – GRAFOIL®
- E – Low Emissions Graphite

**Seat**

- I – Integral (body material)

**Body Material**

- S – SS
- M – Monel® 400

**Process Connections (M24T only)**

- 2 – ¼-inch FNPT
- 4 – ½-inch FNPT

**Options**

- AT Anti-Tamper Bonnet
- BL Bonnet Lock Device (Accessories, page 146)
- CB Ceramic Ball Ended Stem
- K Key for AT
- LAT Lockable Anti-Tamper Bonnet
- MB55 AGCO Mount (page 91)
- OC Cleaned for Oxygen Service
- PD Padlock for LAT
- R3V Installation Kit for Rosemount® 3051 C
- SG Sour Gas meets the requirements of NACE MR0175-latest revision. (SS valves only)
- SSB 316 Flange Bolts (B8M Class 2)
- SSC 316 Flange Bolts (B8M)
- ST Stellite Ball Ended Stem
- SP Special Requirements - please specify
### Differential Pressure Manifolds – M24 ASME B31.1 Specifications

#### Ordering Information – Power Industry Applications

<table>
<thead>
<tr>
<th>Valve Type</th>
<th>S</th>
<th>4</th>
<th>XP</th>
<th>SG</th>
</tr>
</thead>
<tbody>
<tr>
<td>M24AHP</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>M24THP</td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

#### Body Material

<table>
<thead>
<tr>
<th>Body Material</th>
<th>S</th>
<th>SS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>S</td>
<td>SS</td>
</tr>
</tbody>
</table>

#### Connections (Process x Instrument x Vent)

- 4 – 1/2-inch FNPT x Flange x 1/4-inch FNPT
- 3AT – 3/8-inch AGCO Tube x Flange x 1/4-inch FNPT
- 4AT – 1/2-inch AGCO Tube x Flange x 1/4-inch FNPT

#### Options

- MB55 AGCO Mount (page 91)
- SP Special Requirements - please specify

#### Notes

1. All Manifolds come standard with GRAFOIL® packing, integral seats, bonnet locks, and are subjected to hydrostatic testing.
2. Manifold ratings:
   - SST 6000 psig @ 100°F
   - 2915 psig @ 1000°F
   - [414 barg @ 38°C]
   - [201 barg @ 538°C]
4. M24A connections are Flange x Flange x 1/4-inch FNPT.