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Differential Pressure Manifolds – M24



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.

Applications

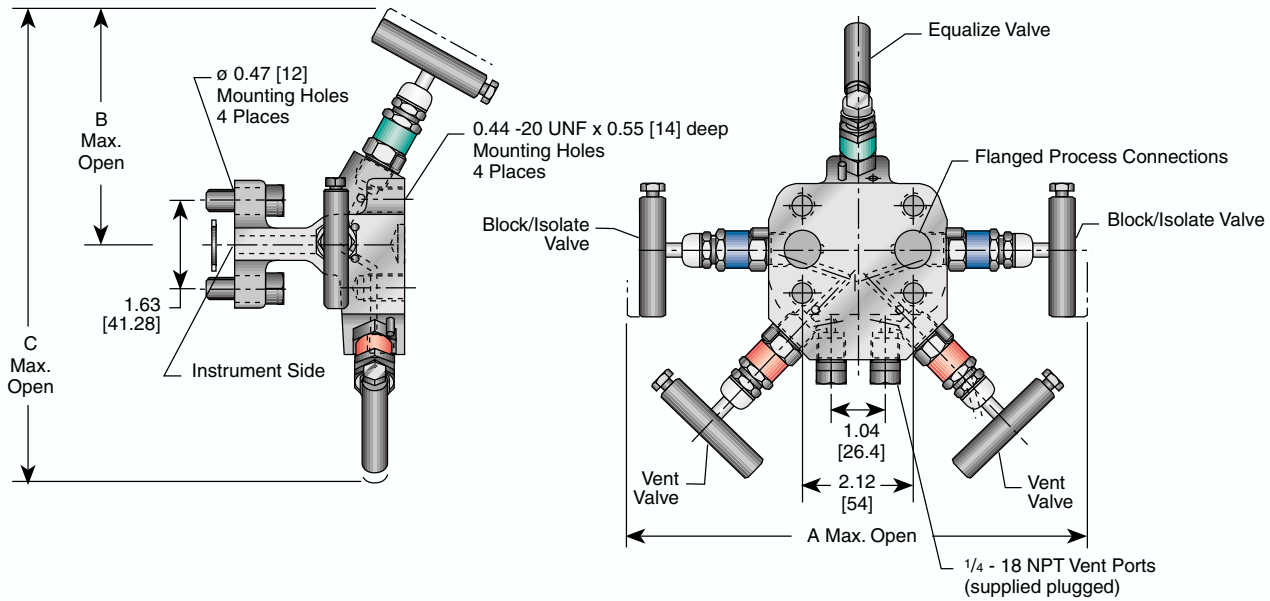
- Direct-mounting differential pressure transmitters.
- Instrument isolation and zeroing.
- Instrument venting to close system.
- Instrument calibration.
- Liquid and vapor service.

Features and Benefits

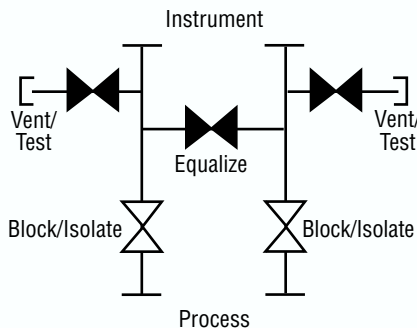
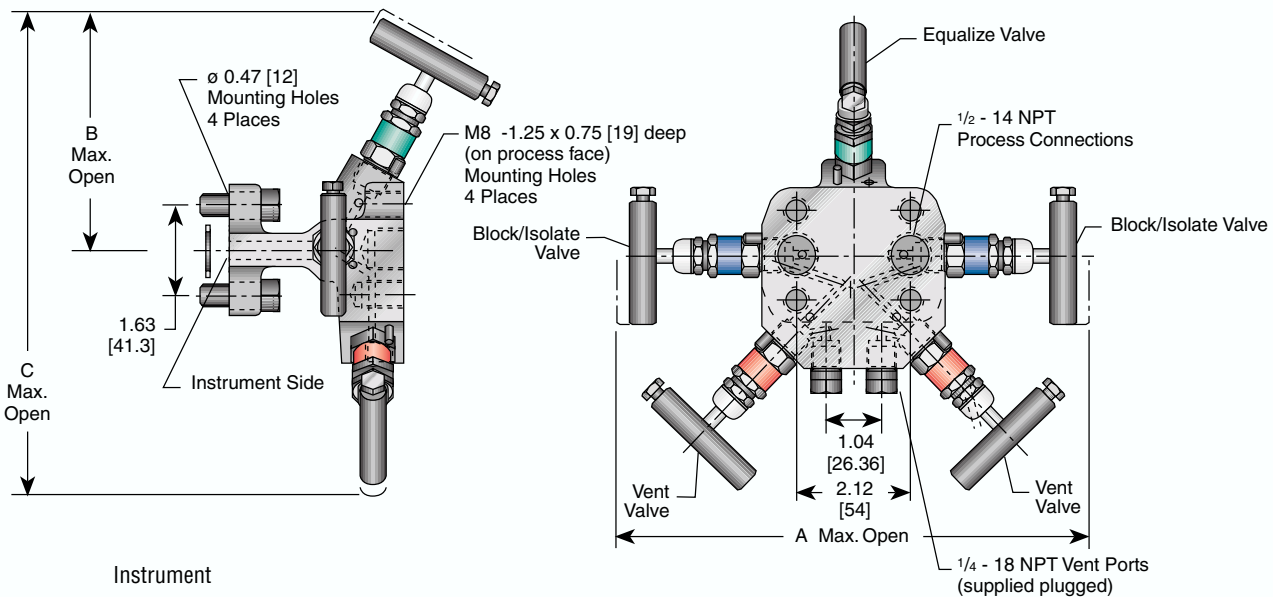
- **Direct mounting compact design** requires a minimum of space for operation and installation with fewer potential leak points.
- **Installation costs reduced** by manifolding the valves, thereby eliminating several components essential for 'piping-up.'
- **Ball end stem** free-swiveling ball-end stem 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.

Differential Pressure Manifolds – M24 Specifications

M24A Dimensions, inches [mm] – Flanged x Flanged



M24T Dimensions, inches [mm] – Threaded x Flanged



Maximum Dimensions, inches [mm]

Valve	A	B	C
Teflon® Packing	8.65 [220]	4.35 [110]	8.65 [220]
GRAFOIL® Packing	9.75 [248]	4.80 [122]	9.60 [244]

Differential Pressure Manifolds – M24 Specifications

Standard Materials

Valve ¹	Body	Bonnet	Stem	Ball Seat
SS ²	A351 CF8M	316 SS	316 SS	316 SS
Monel ^{®2}	Monel [®] 400	Monel [®] 400	Monel [®] 400	Monel [®] K500
SG ²	A351 CF8M	316 SS	Monel [®] 400	Monel [®] K500

Notes

1. Approximate valve weight: 6.0 lb [2.7 kg].
0.187-inch [4.8 mm] diameter orifice.
Valve C_v 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

Duplex UNS S31803

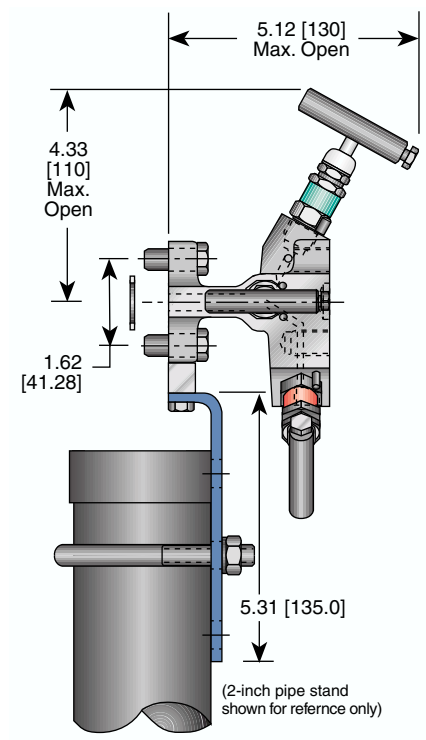
6MO UNS S31254

Hastelloy[®] C276

Incoloy 825

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 1/2-inch NPT to ANSI/ASME B1-20-1 on 2 1/8-inch [54 mm] centers.

Instrument Flanged for direct mounting to transmitters on 2 1/8-inch [54 mm] centers. Flanged connections are on 2 1/8-inch [54 mm] centers.

Vent Threaded 1/4-inch NPT to ANSI/ASME B1-20-1.

Other Connections

Threaded BSP Tr to BS21
BSP F to BS2779

Please consult the factory for availability.

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.

Connection	CS	SS
1/2" FNPT	FFC-4	FFS-4
1/2" MNPT	FFC-4M	FFS-4M
1/2" Buttweld	FFCC-4BW	FFS-4BW
1/2" Socket Weld	FFC-4B	FFS-4B

Notes

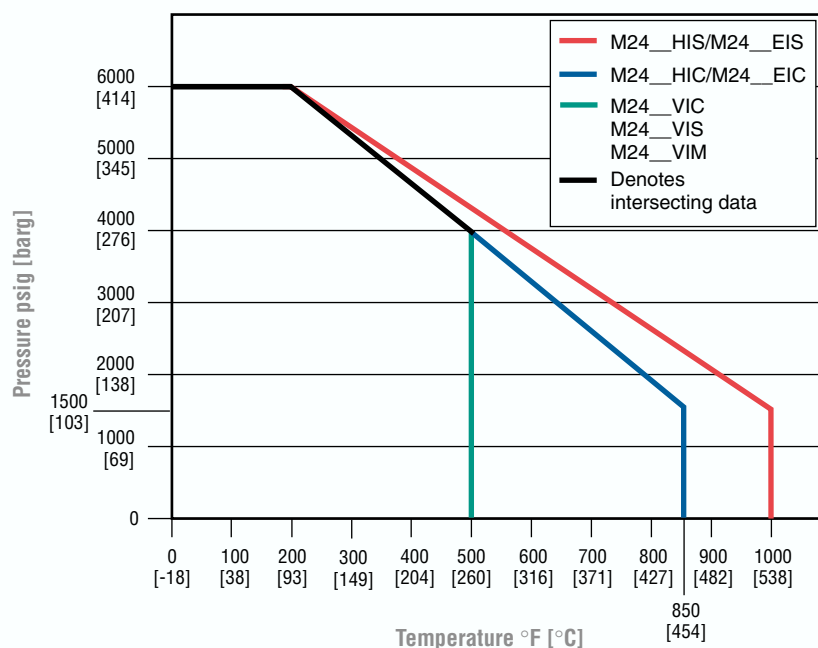
1. Threaded connection: vent supplied with blanking plug as standard.
2. All manifolds are supplied with seal rings and four 7/16-inch UNF HT steel mounting bolts. Teflon® seal rings are supplied with the standard bonnet; Graphite seal rings are supplied with high temperature bonnet.

Pressure and Temperature Ratings

Valve	Teflon® Bonnet
CS, SS, and Monel®	6000 psig @ 200°F [414 barg @ 93°C] 4000 psig @ 500°F [276 barg @ 260°C]

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]

Pressure vs. Temperature



Differential Pressure Manifolds – M24 Specifications

Ordering Information

	M24T	V	I	S	- 4	- SG
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 – 1/4-inch FNPT 4 – 1/2-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 Applications¹

	M24THP	S	- 4	-XP	- SG
Valve Type	M24AHP M24THP				
Body Material	S – SS				
Connections⁴ (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

- All Manifolds come standard with GRAFOIL® packing, integral seats, bonnet locks, and are subjected to hydrostatic testing.
- Manifold ratings:
 - SST 6000 psig @ 100°F
 - 2915 psig @ 1000°F
 - [414 barg @ 38°C]
 - [201 barg @ 538°C]
- See page 148 for Code Requirements.
- M24A connections are Flange x Flange x 1/4-inch FNPT.