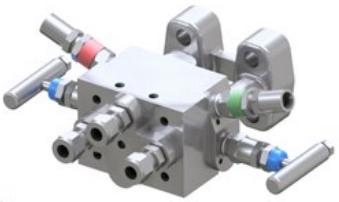
TESCOM™ Anderson Greenwood Instrumentation Manifolds

Series AS4

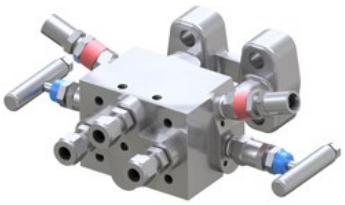
General Application

The AS series is part of the Modular Mounting System and used for flow measurement and level measurement applications with differential pressure transmitters. The products in this series are installed where contamination of process streams is not permitted.

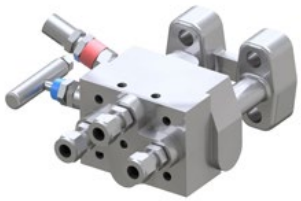
MESC SPE: 60.98.56/201 type A (/1 Manifold Configuration)
MESC SPE: 60.98.56/201 Type B (/2 Manifold Configuration)
MESC SPE: 60.98.56/201 Type C (/3 Manifold Configuration)
MESC SPE: 60.98.56/201 Type D (/4 Manifold Configuration)



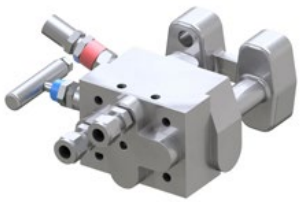
AS4T/1, Four Valve



AS4T/2, Four Valve



AS4T/3, Two Valve



AS4T/4, Two Valve

Features

- Compact design provides lower installation costs and fewer potential leak points.
- Parallel thread metal-to-metal seals on process and vent connections.
- Equalize and vent valves fitted with anti-tamper facility.
- T-bar handle on isolate bonnet assembly.
- All bonnet assemblies color coded and function identified.
- Optional factory installed tube fittings in process and vent ports.
- Readily accepts a full range of accessories.

Technical Data

Materials	AISI 316 SS
Connections Instrument	Flanged for direct mounting 2 1/8 centres and in accordance with DIN 19231 pt 2
Process	G1/4" parallel threaded
Vent	G1/4" parallel threaded
Pressure (max)	413 bar at 38°C
Standard	6000 psig (414 barg)
Temperature PTFE Packing	-313°F to 1000°F (-192°C to 538°C)*
Temperature Graphite Packing	550°C

*See Pressure and Temperature charts

Product Overview

The AS series manifold can be bolted directly onto a standard mounting plate, eliminating the need for extra bracketing and minimizing pipework on site. The AS series has also been designed to be fitted with a full range of accessories. The manifold body has an identification for 'Gas' (vent port orientation below process ports) or 'Liquid' (vent port orientation above process ports) service.

Sour Gas Service

Manifolds are available in materials which comply with the NACE standard MR-01-75 which covers metallic material requirements for resistance to sulfide stress cracking.

Standard Valve Materials

Valve	Wetted Parts				Non-wetted Parts
	Valve Body	Bonnet	Stem	Ball Seat	Handle, Jam Nut and Bushing
316 SS	A351-CF8M/CF3M	316 SS	316 SS	316 SS	Austentic SS
Sour Gas	A351-CF8M/CF3M	316 SS	Alloy 400	Alloy K500	Austenitic SS

AS4T/1 - Four Valve

A double isolate/equalize/vent block for general applications with differential pressure transmitters.

AS4T/2 - Four Valve

A double isolate/vent block for applications with differential pressure transmitters where contamination of process streams is not permitted.

AS4T/3 - Two Valve

A single isolate/vent block for low pressure applications and level measurement on atmospheric tanks with differential pressure transmitters.

AS4T/4 - Two Valve

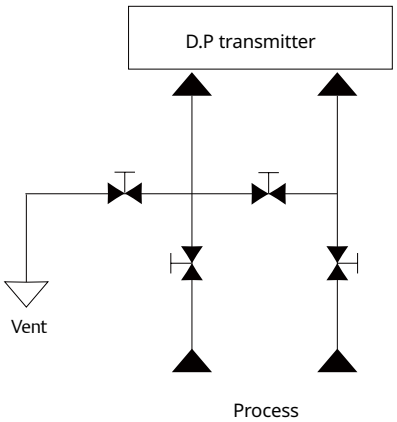
A single isolate/vent block for applications with pressure transmitters of the differential body design.

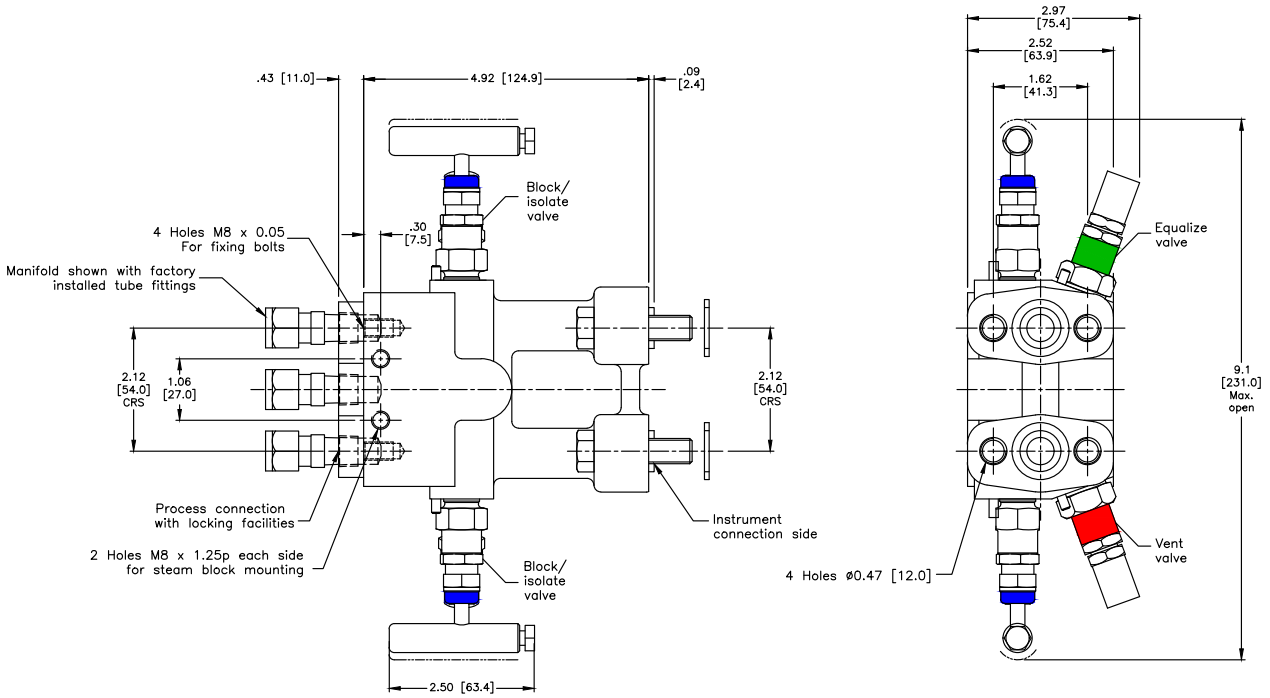
NOTE

1. Instrument mounting: Four 7/16” UNF stainless steel mounting bolts (Grade ASTM A193 B8M.CL2) are supplied as standard. Two PTFE seal rings are supplied with the PTFE packed bonnets and two graphite rings are supplied with the graphite packed bonnets.

Valve Schematic and Dimension: inches (mm)

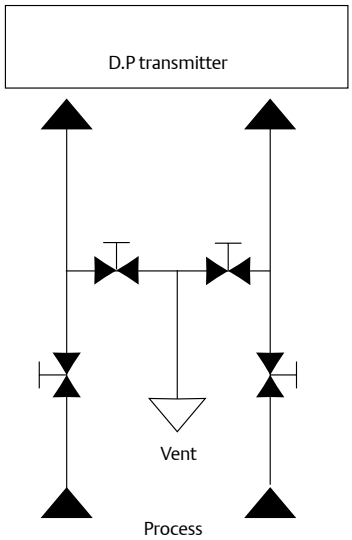
AS4T/1 - Four Valve

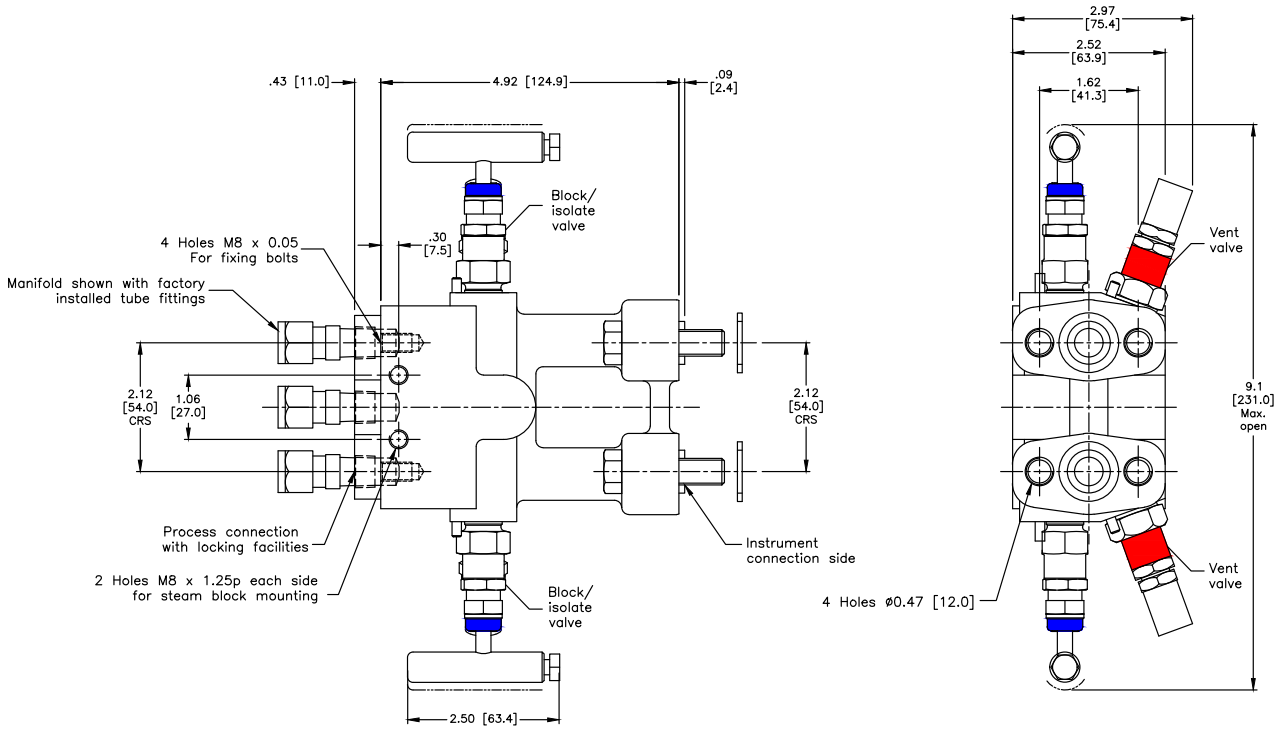




Valve Schematic and Dimension: inches (mm)

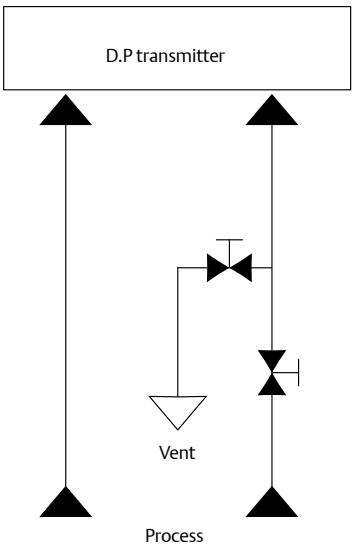
AS4T/2, Four Valve

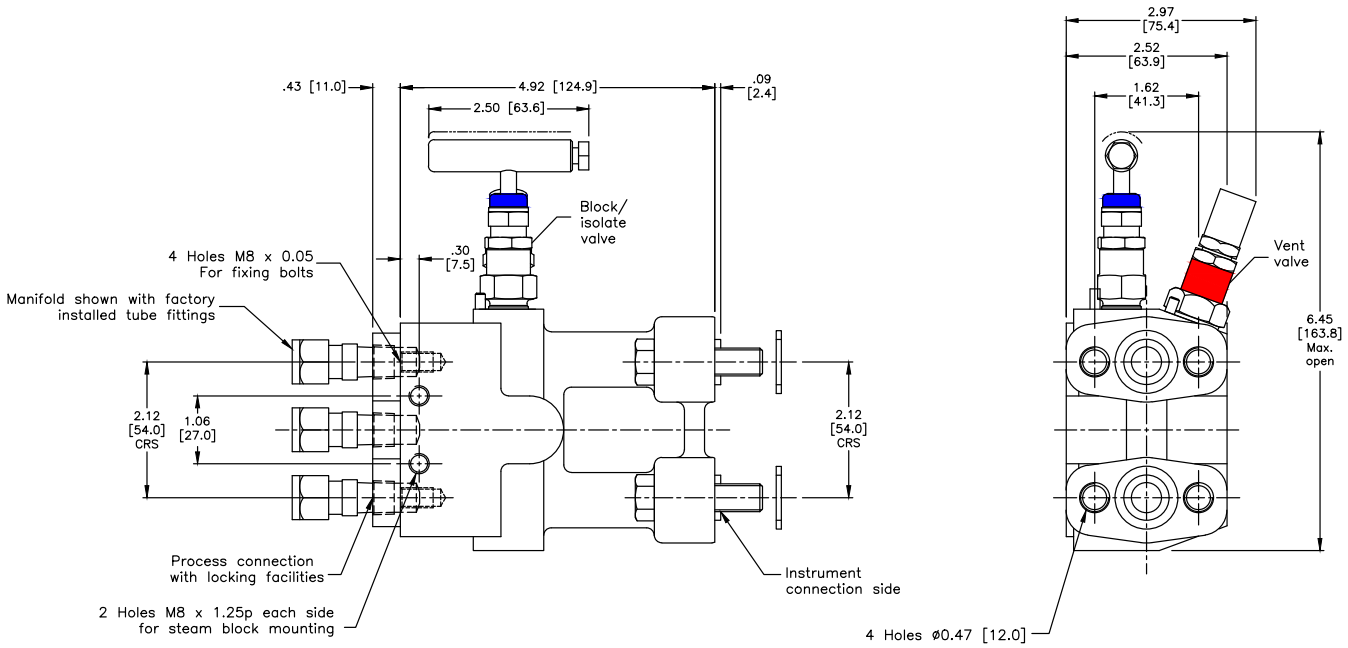




Valve Schematic and Dimension: inches (mm)

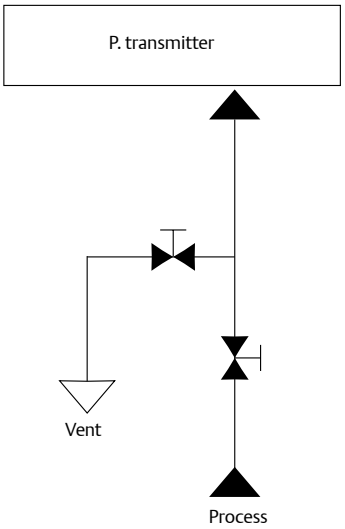
AS4T/3, Two Valve

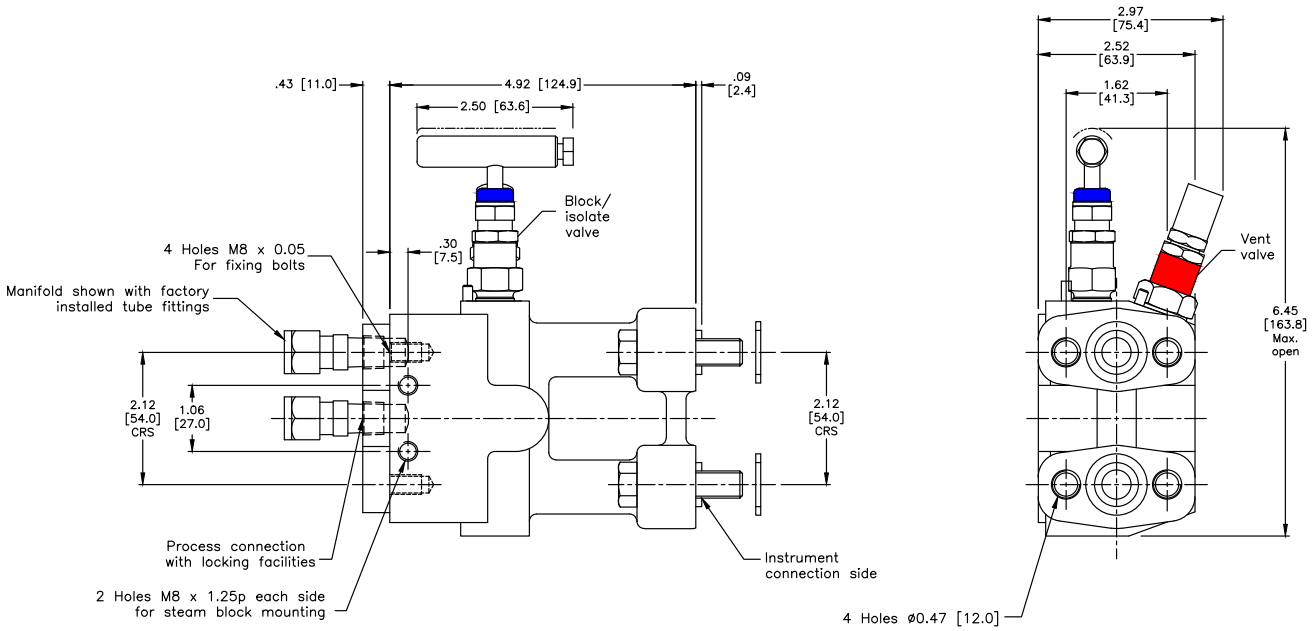




Valve Schematic and Dimension: inches (mm)

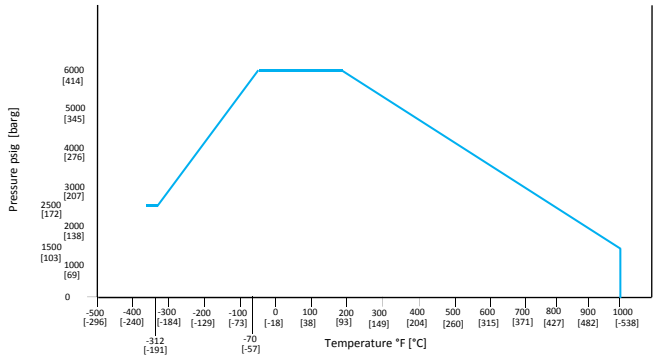
AS4T/4, Two Valve



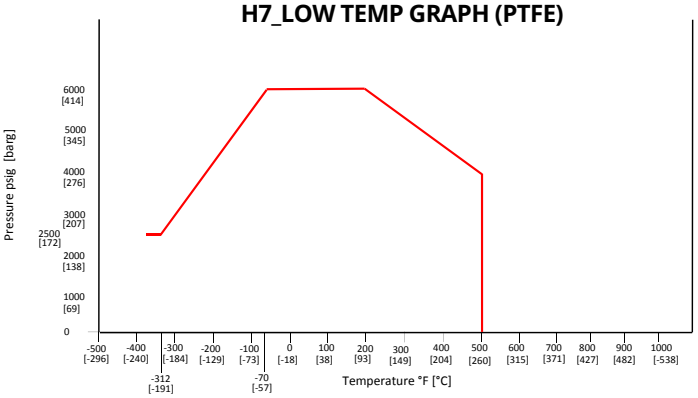


Pressure vs. Temperature

H7_LOW TEMP GRAPH (GRAPHITE)



H7_LOW TEMP GRAPH (PTFE)



Valve	PTFE Bonnet
316 SS, and Monel®	6000 psig at 200°F (414 barg at 93°C)
	4000 psig at 500°F (276 barg at 260°C)

Valve	High Pressure
316 SS	10000 psig at 200°F (690 barg at 93°C)
	4500 psig at 200°F (414 barg at 260°C)

Valve	High Temperature
316 SS	6000 psig at 200°F (414 barg at 93°C)
	1500 psig at 1000°F (103 barg at 538°C)

Minimum Temperature

Valve	PTFE Bonnet
316 SS, Monel®, Hastelloy® PTFE packed	-313°F to 1000°F (-192°C to 538°C)
316 SS, Monel®, Hastelloy® Graphite packed	-313°F to 1000°F (-192°C to 538°C)

Selection Guide

AS4T	V	I	S	-2	/1	-SG	-GYM
BASIC SERIES	**BONNET PACKING**	**SEAT TYPE**	**BODY MATERIAL**	**PROCESS CONNECTION**	**MANIFOLD CONFIGURATION**	**MANIFOLD OPTIONS**	**PROCESS/VENT CONNECTION FITTINGS**
AS4T Screwed x flanged	**V** PTFE	**I** Integral	**S** 316 SS	**2** G ¼-inch	**/1** Double isolate/ equalize/ vent block	**SG** (Sour Gas) NACE edition 2003/ MR0103	**GYM** Gyrolok metric (10 mm OD)
	H Graphite				**/2** Double isolate/ vent block	**OC00** Oxygen clean (OC)	**GYI** Gyrolok imperial (3/8-inch OD)
					/3 Single isolate/ vent block	**K** Anti-tamper bonnet key	**SKM** Swagelok metric (10 mm OD)
					/4 Single isolate/ vent block	**SS** All 316 SS construction	**SKI** Swagelok imperial (3/8-inch OD)

NOTES
Manifolds are available in Monel® and Hastelloy®. Please consult the factory for availability and delivery.
Monel® is a registered trademark of the Special Metals Corporation.
Hastelloy® is a registered trademark of Haynes International, Inc.

The simplest and most effective means to install and calibrate Rosemount® Coplaner™ style transmitters.

General Application

AS6 manifolds are designed for use with transmitters on general liquid and gas flow or liquid level measurement. They are all designed to be bolted directly onto a standard Shell mounting plate.

Features

- Compact design reduces installation costs and potential leakage points.
- Process inlet and vent connections supplied G ¼" parallel threaded fitted withtube/compression fittings. ¼" NPT female option available.
- Suitable for liquid or gas service.
- Fully self draining.
- Equalize and vent valves fitted with an anti tamper facility.
- Choice of manifold configurations to suit the application:
  AS6 2/1 - Double isolate, equalize, vent
  AS6 2/2 - Double isolate, double vent
  AS6 2/3 - Single isolate, vent/ block
  AS6B 2/5 - Single isolate, vent/ block (threaded connections).
- Designed to be generally compatible with Shell M.E.S.C specification 60.98.56. XXX
- NACE /sour gas service option available.
- Choice of accessories:
  Seal pot, filling connectors
  Heater (steam/electric)
  Mounting plate
  Sun shade

Technical Data

Materials	316 SS, Monel®, Duplex, Hastelloy® and other exotic materials
Seats	Metal
Connections Instrument	½" NPT (AS6B 2/5 only) G1/2"
Connections Process	G 1/4"
Presuure (max)	Standard: 6000 psig (414 barg)
Temperature Range (min/max)*	-313°F to 1000°F (-192°C to 538°C)

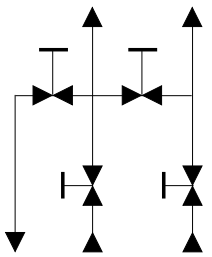
*See Pressure and Temperature charts

Product Overview

Integral mounted AS6 TVIS 2/1, 2, 3
The Integral manifold system provides true direct mounting to the transmitter sensor module, eliminating the need for Coplaner™ or traditional flange adaptors, extra bracketing and minimizing pipework.

They are designed to be used with the following Rosemount® Coplaner™ style pressure/ differential pressure transmitters:
- Model 3051
- Model 2051
- Model 4088 multivariable™ transmitter

Differential/Pressure Transmitter



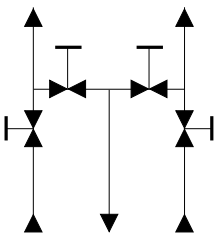
Process

NOTE
Approximate weight: 11.46 lbs (5.2 kgs).

AS6 TVIS 2/1
A double isolate/equalize/vent block manifold for general liquid and gas flow measurement using DP transmitters. It has been designed to be fitted with a full range of accessories.

Applications
• Differential pressure transmitters.
• Flow measurement.
• Level measurement.
• Integral manifold option of MESC 60.98.56.201 (Type A).

Differential/Pressure Transmitter



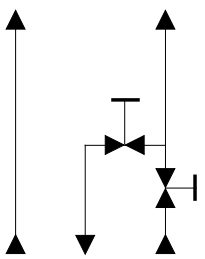
Process

NOTE
Approximate weight: 11.46 lbs (5.2 kgs).

AS6 TVIS 2/2
A double isolate/double vent block for applications with differential pressure transmitters, where contamination of process systems is not permitted.

Applications
• Differential pressure transmitters.
• Flow measurement.
• Level measurement.
• Integral manifold option of MESC 60.98.56.201 (Type B).

Differential/Pressure Transmitter



Process

NOTE
Approximate weight: 11.02 lbs (5.0 kgs).

AS6 TVIS 2/3
A single isolate/ vent block designed for low pressure applications with differential pressure transmitters and level measurement on atmospheric tanks. It can also be used with pressure transmitters of the differential pressure body design and has been designed to be fitted with a full range of accessories.

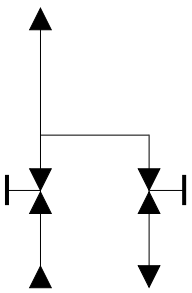
Applications
• Low pressure differential pressure transmitters.
• Pressure transmitters of the differential body design.
• Level measurement.
• Flow measurement.
• Pressure measurement.
• Integral manifold option of MESC 60.98.56.201 (Types C and D).

NOTES
1. Coplaner™ and multivariable are trademarks of Emerson Process Management
2. Rosemount® is a registered trademark of Emerson Process Management

Threaded outlet AS6B TVIS 2/5
A compact single isolate/vent block designed for applications with pressure transmitters/gauges using threaded connections, which are made directly into the manifold's standard G ½" female instrument connection. An alternative rotatable adaptor can be provided which allows the instrument to be positioned through 360°.

It is compatible with the following threaded Rosemount® pressure transmitters:
- Model 3051T
- Model 2088
- Model 2051

Applications
• Pressure measurement.
• Pressure transmitters using threaded connections.
• Pressure transmitter options of MESC 60.98.56.301 (Types E, F, G).



NOTE
Approximate weight: 11.02 lbs (5.0 kgs).

Bonnet assemblies

The metal-seated bonnet assemblies have a rotating stem with free swivel ball-type seat for long service life. The specially hardened ball seat is ideal for both gas and liquid service.

All stem threads are rolled and lubricated to prevent galling and reduce operating torque. The stem seal is a patented PTFE packing gland which is adjustable in service. All bonnets are assembled with a bonnet locking pin to prevent accidental removal while in service and a protective dust cap is fitted to contain stem lubricant and prevent the influx of contaminants.

The high-temperature bonnet assemblies incorporate adjustable graphite packing and back-up pressure rings to ensure a leak-free stem seal.

Valve bonnet Anti Tamper facility

NOTES
1. Rosemount® is a registered trademark of Emerson Process Management

Standard Materials

Valve	Body	Bonnet	Stem	Ball Seat	Non-wetted Parts
316 SS	A479-316SS	316 SS	316 SS	316 SS	Austenitic SS
SG	A479-316SS	316 SS	Alloy 400	Alloy K500	Austenitic SS

Standard Material Traceability
Standard material traceability to EN10204- 3.1, manifold body only.

Special Materials
For severe service, manifolds are available in the following exotic materials:

Monel® alloy 400
Duplex S31803
Hastelloy® C276
6MO UNS S31254

Valve Packings

PTFE (Standard) Maximum Pressure:	6000 psig (413 barg)
Maximum Temperature:	500°F (260°C)
Graphite (Optional) Maximum Pressure:	6000 psig (413 barg)
Maximum Temperature	1000°F (538°C)
Minimum Temperature	-313°F (-192°C)

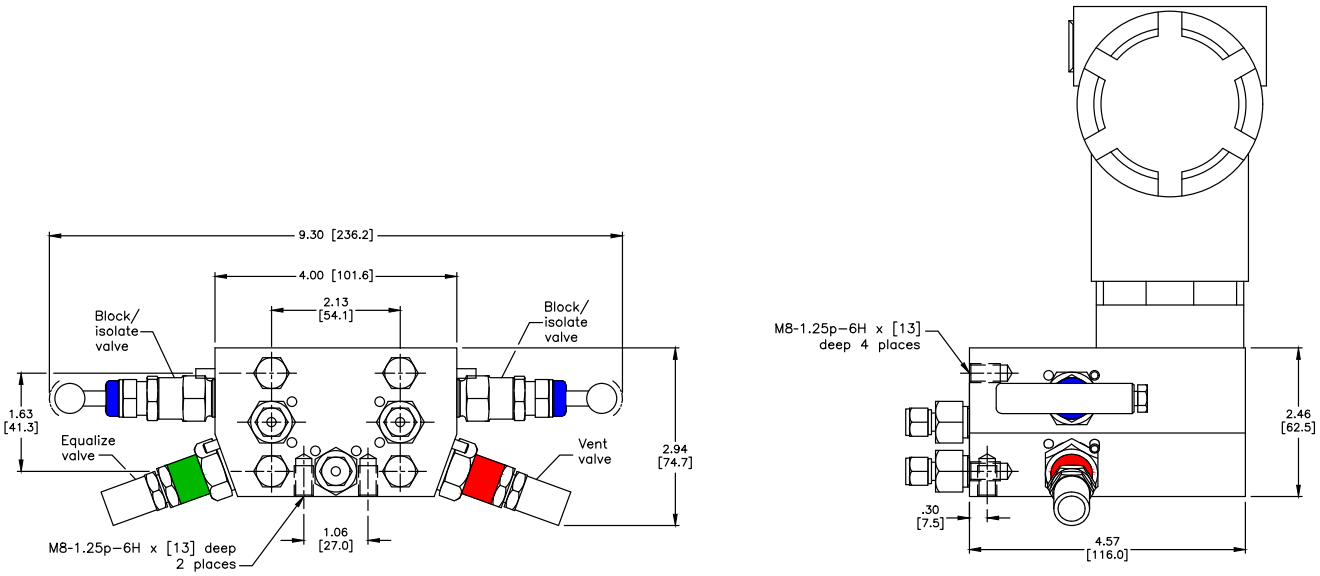
AT - Anti Tamper Bonnet
Valve bonnets are available with a removable T-bar key to prevent unauthorized operation of valves.
K - Key for anti tamper bonnet.
Valves are available with lockable anti-tamper bonnets which can be supplied for padlocking, providing added security.
HL - Hand Lock.

Valve Bonnet Identification
Dust cap coding
Red: Vent valves
Blue: Isolate Valves
Green: Equalize Valves

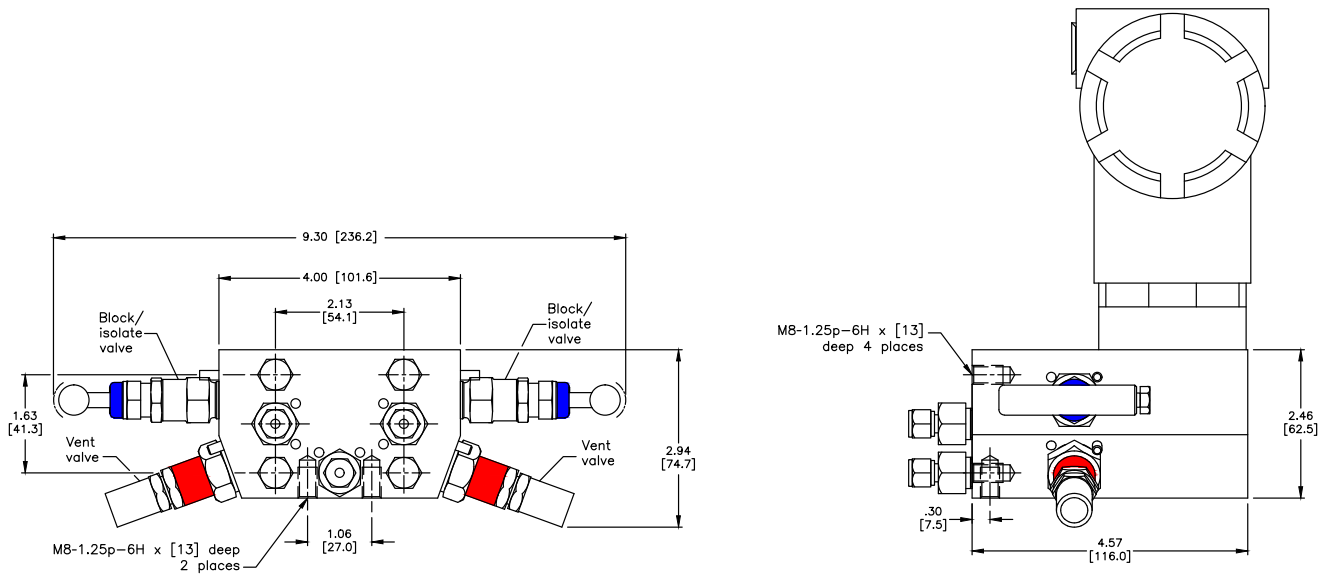
NOTES
Manifold transmitter bolting AS6 2/1, 2, 3
1. Instrument mounting: four 7/16" UNF stainless steel mounting bolts (Grade ASTM A193 B8.2) are supplied as standard.

Dimension: inches (mm)

Integral mounted AS6T - 2/1

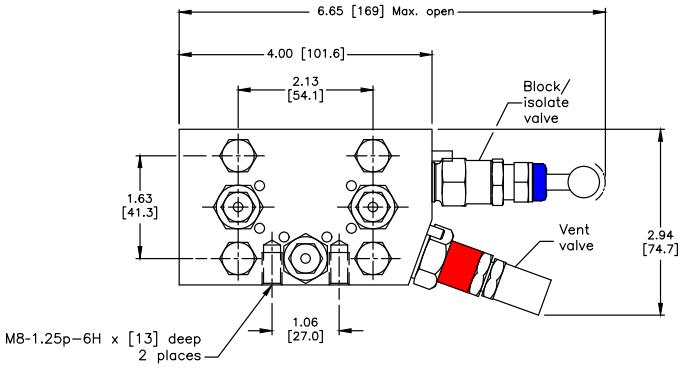


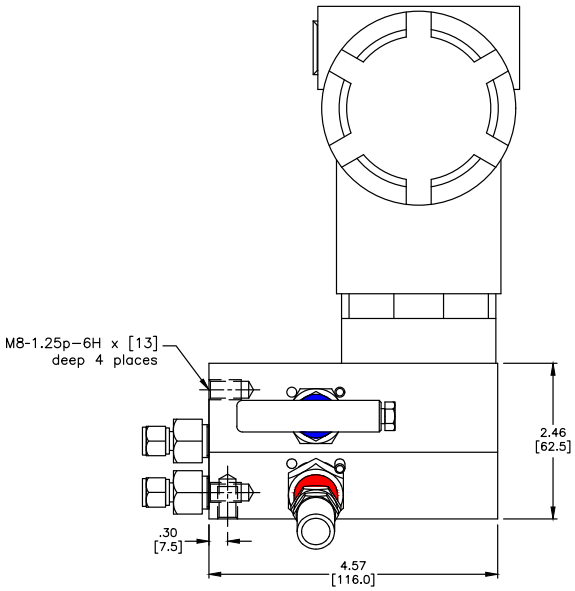
Integral mounted AS6T - 2/2



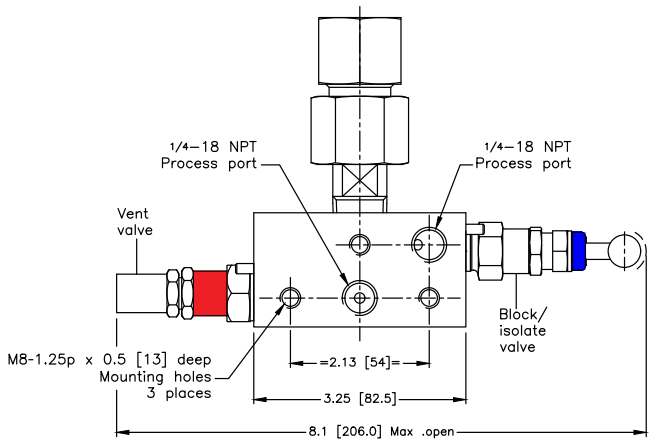
Dimension: inches (mm)

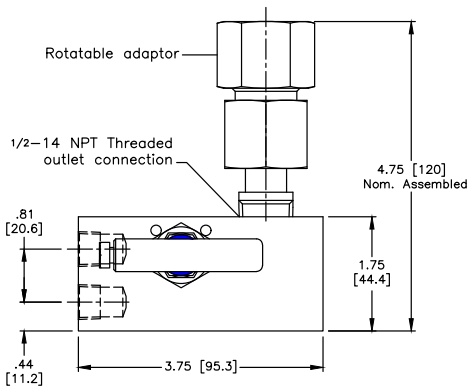
Integral mounted AS6T - 2/3





Integral mounted AS6T - 2/5





Accessories

FC - Filling connector

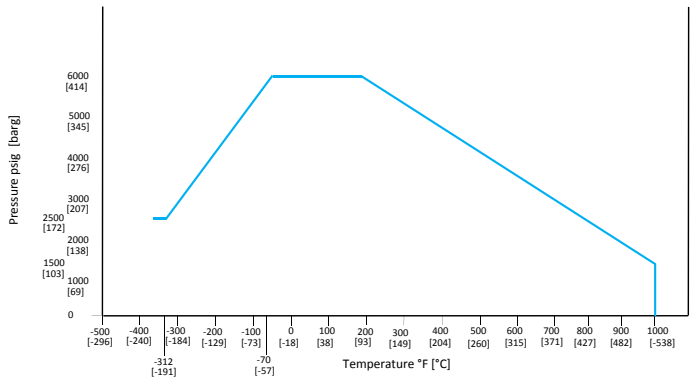
BF - Blind flange

SP - Seal pot

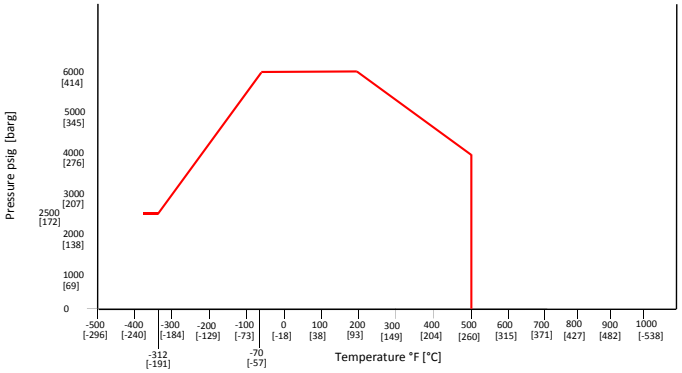
VPB - Vent purge block

Pressure vs. Temperature

H7_LOW TEMP GRAPH (GRAPHITE)



H7_LOW TEMP GRAPH (PTFE)



Valve	PTFE Bonnet
316 SS, and Monel®	6000 psig at 200°F (414 barg at 93°C)
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Valve	High Pressure
316 SS	10000 psig at 200°F (690 barg at 93°C)
	4500 psig at 200°F (414 barg at 260°C)

Valve	High Temperature
316 SS	6000 psig at 200°F (414 barg at 93°C)
	1500 psig at 1000°F (103 barg at 538°C)

Minimum Temperature

316 SS, Monel®, Hastelloy® PTFE packed	-313°F to 1000°F (-192°C to 538°C)
316 SS, Monel®, Hastelloy® Graphite packed	-313°F to 1000°F (-192°C to 538°C)

Selection Guide - AS6 Manifolds

AS6T	V	I	S	-2	/3	MA4	SG	GY-M
BASIC SERIES	**BONNET PACKING**	**SEAT TYPE**	**BODY MATERIAL[2]**	**PROCESS/VENT CONNECTIONS**	**MANIFOLD FUNCTION**	**INSTRUMENT CONNECTION (AS6B 2/5 ONLY)**	**OPTIONS**	**PROCESS/VENT CONNECTION FITTINGS**
AS6T	**V** PTFE	**I** Integral	**S** Stainless Steal	**2** G ¼-inch	**/1** Double isolate, equalize, vent	**MA4** ½-inch NPTmale (rotatable adaptor)	**SG** Sour gas service	**GY-M** Gyrolok metric (10 mm OD)
AS6BT (/5 only)	**H** Graphite				**/2** Double isolate, double vent	**FA4** ½-inch NPT female (rotatable adaptor)	**K** Anti-tamper bonnet key	**GY-I** Gyrolok imperial (3/8-inch OD)
					/3 Single isolate, vent	**FA4BSP** G ½-inch female (rotatable adaptor)		**SK-M** Swagelok metric (10 mm OD)
					/5 Single isolate, vent			**SK-I** Swagelok imperial (3/8-inch OD)

Accessories

VPBVIS-S	Vent purge block - single - 316 SS	AT - Key	Anti-tamper key - 316 SS
VPBVIS-D	Vent purge block - double - 316 SS	2S	Sunshade, plastic
SP.2HIS	Seal pot - 316 SS (consult factory)	IL9	GRP enclosure
FC.2S	Filling connector -316 SS	MPA1	Mounting plate for AS6T (316 SS Type A1)
STB-2	Steam block - 316	MPA2	Mounting plate for AS6T (316 SS Type A2)
MH-B4	Electrical heater block - 30 watt	MPB1	Mounting plate for AS6T (316 SS Type B1)
BFS	Blind flange - 316 SS	MPB2	Mounting plate for AS6T (316 SS Type B2)

NOTES
Compression fitting
1. SK-I can be substituted with SK-M, GY-I, GY-M
   SK-M = Swagelok - Metric 10 mm OD tube
   SK-I = Swagelok - Imperial ⅜-inch OD tube
   GY-M = Gyrolok - Metric 10 mm OD tube
   GY-I = Gyrolok - Imperial ⅜-inch OD tube
2. Manifolds are available in Monel® and Hastelloy®. Please consult the factory for availability and delivery.
For other makes and sizes - consult factory