

# Instrumentation Manifolds Traditional C13WT series

For DPharp EJX & EJA-E Differential Pressure and Pressure Transmitters



YOKOGAWA 

  
 Part of your business

# Introduction

## About Yokogawa and WIKA

Yokogawa and WIKA have a partnership to combine Yokogawa's pressure transmitters with WIKA's valves and manifolds.

Yokogawa Electric Corporation with its headquarters in Japan is one of the world's leading manufacturers of process instrumentation. Yokogawa field instrument products includes a complete line of flowmeters, pressure transmitters, differential pressure transmitters, temperature transmitters, level transmitters, fieldbus instruments and safety measurement instrumentation.

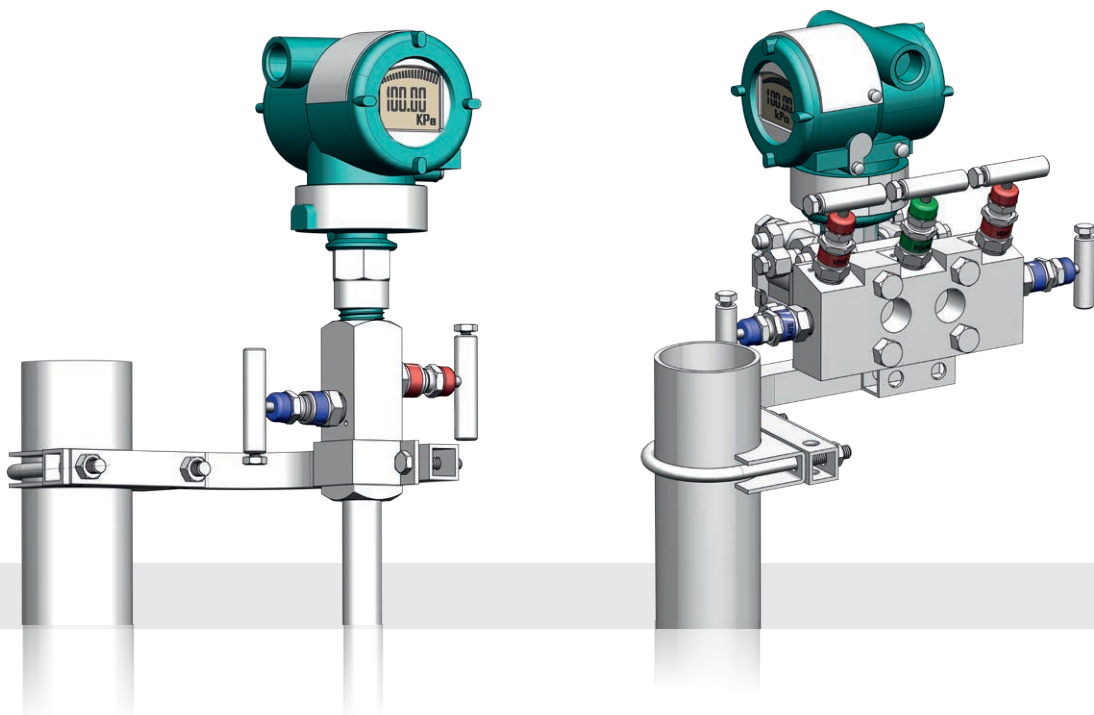
The WIKA group is a worldwide leader in pressure and temperature measurement with its headquarters in Germany. As a family-run business acting globally, with over 9,000 highly qualified employees, the company also sets the standard in the measurement of level, flow, calibration technology and valves and manifolds. With manufacturing locations around the globe, WIKA ensures flexibility and the highest delivery performance. Founded in 1946, WIKA is today a strong and reliable partner for all the requirements of industrial measurement technology, thanks to a broad portfolio of high-precision instruments and comprehensive services.

## About the catalogue

In this catalogue you will find C13WT manifolds for Yokogawa's DPharp EJX series and EJA series transmitters for differential pressure, gauge and absolute pressure applications and the relevant installation accessories.

Continuous product development may from time to time necessitate changes in the details contained in this catalogue. WIKA and Yokogawa reserve the right to make such changes at their discretion and without prior notice.

All dimensions shown are approximate and indicated in "mm [inch]".



# Standard features

## T-bar handle

- Easy operation
- Anti-tamper and handwheel option

## Dust caps

- Protection of threads from contamination
- Color coded for easy identification

## Body to bonnet seal

- Reliable metal to metal seal
- Prevents bonnet thread corrosion
- Eliminates possible tensile breakage of the bonnet

## Back seating

- Ensures safety to prevent stem blow - out and accidental removal while in operation
- Give a metal to metal sealing while in fully open position

## Packing below stem threads

- Preventing lubricant washout
- Avoids thread corrosion

## Bonnet assembly design

- Highly reliable bonnet assembly design
- Working in over few million valves
- Locking pin to prevent accidental removal

## Adjustable packing

- Stops leakage
- Provides long valve life

## Non-rotating tip

- Prevents seat damage
- Smooth and easy operation

## Valve seat

- Integral metal seats for long life

## Testing

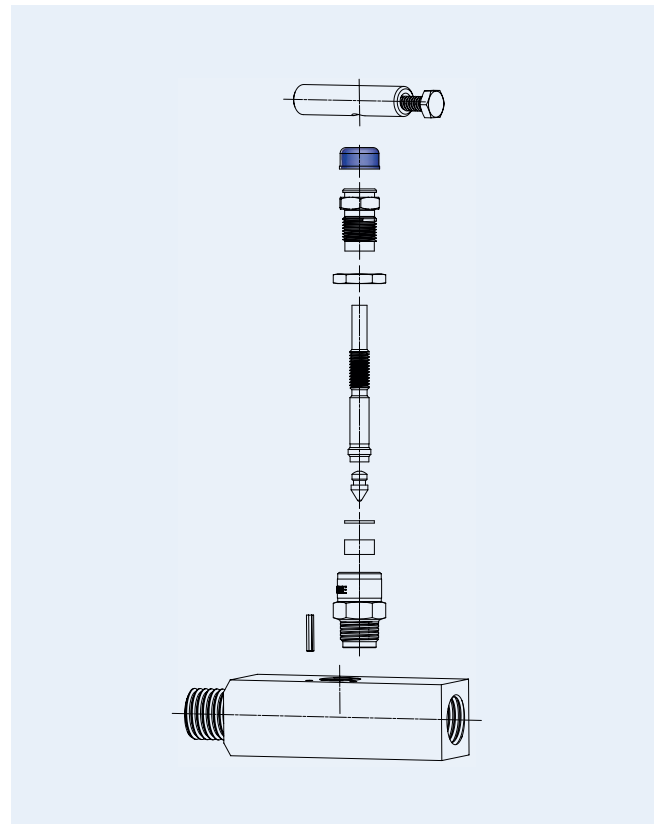
- 100 % pneumatic test
- All valves & valve manifold are 100 % hydraulic tested at 1.5 times of rated pressure

## Compact design

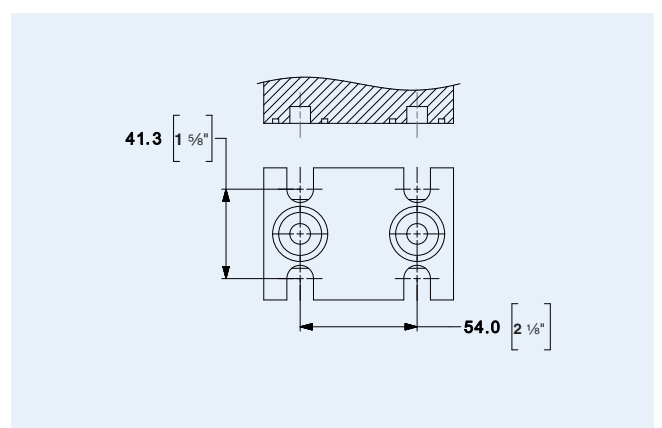
- Requires minimum space for operation and installation

## End connection available

- NPT, flanged and according to IEC 61518 Type B



## Flange connections according to IEC 61518-Type B



# General features

- All instrument side flange connections are according to IEC 61518 Type B (without spigot).
- All process side connections are ½" NPT and vent / drain connection are ¼" NPT.
- Design of 5 valves are single equalize.
- All valves are needle type with metal seats, T bar handles, PTFE gland packing, protected with dust caps and identified by color code.
- Graphite packing are also available as an option.
- MOC of pipe plug/bleed plug is same as the valve body.
- Manifold valves shall be supplied with set of PTFE seal rings as standard. In case of Graphite packing, seals shall also be Graphite.
- Set of 7/16" x 20 UNF high tensile yellow passivated bolts shall be supplied with manifolds as standard. SS316 and ASTM660 NACE compliant bolts are also available as an option.

## Temperature pressure rating

- PTFE packing - 6,000 PSI @ 200 °F  
4,000 PSI @ 400 °F
- PTFE packing 10,000 PSI @ 85 °F  
4,000 PSI @ 400 °F
- Graphite packing - 6,000 PSI @ 200 °F  
1,500 PSI @ 750 °F

**Manifold specific information will be engraved or laser marked. Information contain the following as minimum**

- Company name /company logo
- Model code
- Serial no.
- Material of construction
- Heat code
- Temperature pressure rating
- Connection schematic

## Valve label color for:

- Isolation valve will be **BLUE** **ISOLATE**
- Equalize valve will be **GREEN** **EQUALIZE**
- Vent / drain valve will be **RED** **VENT**

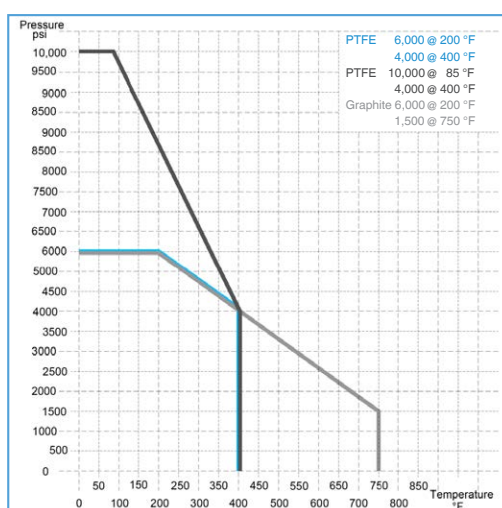
## Manufacturing standards & compliance

Manifolds conform to the following agencies and associations:

- ASME/ANSI B1.20.1 general pipe threads
- ASME/ANSI B16.34 valves flanged, threaded
- ASME/ANSI B16.11 fittings/socket weld
- ASME/ANSI B31.3 process piping
- ASME/ANSI B31.1 power piping
- CE - pressure equipment directive conformity national association of corrosion engineers
- MSS SP-25 standard valve markings
- MSS SP-99
- NACE MR 0175 & 0103/ISO 15156-3

- 2 valves, 3 valves and 5 valves manifolds are rated for 6,000 PSIG. Block & Bleed manifolds are rated for 10,000 PSIG as standard.
- All valves are compliant to latest standard of NACE MR 0175/0103 as standard.
- All external parts including valve handles and locking bolts/ grub screw are in SS316.
- Material test certificates type 3.1 including NACE conformance, pressure leak test certificates shall be provided as standard.

## Pressure-temperature rating for PTFE and Graphite packing



Components	Material					
Body *	SS316/ 316L	Hastelloy C-276	Monel 400	Duplex S31803/2205	Super Duplex S32750	Inconel 625
Bonnet *						
Stem point *						
Pipe Plug *						
Adjuster	SS316/316L					
Washer	SS316					
Gland Packing	PTFE or Graphite					
Lock Nut	SS316					
Handle Bolt						
Handle						
Lock Pin						

\* Wetted components

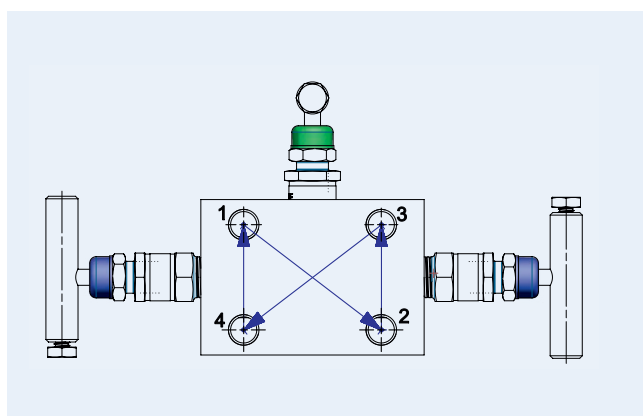
# Assembling instructions

Direct mount manifolds are supplied with high tensile steel yellow passivated bolts and PTFE seal rings as standard. SS316 and ASTM 660 NACE compliant bolting are available as an option. When Graphite packing is selected, seal rings shall also be in Graphite.

Item	Type of direct mount manifold	Mounting kit required
2VM	Wafer style	2 bolts, 1 seal ring
	T-style with 2 bolt holes	
	H-style with 2 bolt holes	
3VM	Wafer style	4 bolts, 2 seal ring
	T-style	
	H-style	
5VM	Wafer style	
	T-style	
	H-style	

## Bolt installation instructions:

1. Finger-tighten the bolts.
2. Torque the bolts to the initial torque 3.5 kg-m value using a crossing pattern (refer to figure below).
3. Torque the bolts to the final torque value 7.5 kg-m using the same crossing pattern.



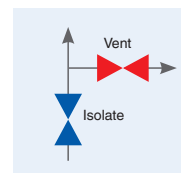


# Block & Bleed manifolds for In-line mount

Absolute and gauge pressure transmitters with male or female NPT process connection

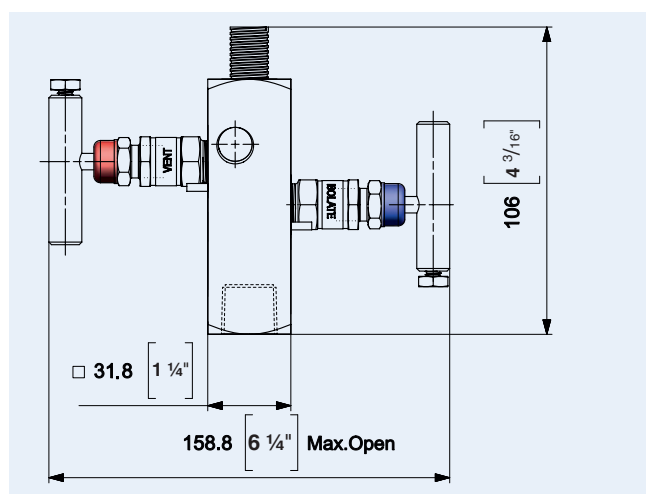
## Block & Bleed manifolds (2 valve)

Block & Bleed manifolds are designed to be durable, repetitive bubble tight for long and trouble free & safe life. Block valves provides process isolation and bleed valves enables safe depressurization / calibration port. Block & Bleed manifolds are designed for in-line mount absolute and gauge pressure transmitter with male or female NPT process connection. Drain / vent pipe plugs are not supplied as standard. For plugged vent ports (factory installed) and other options refer ordering information



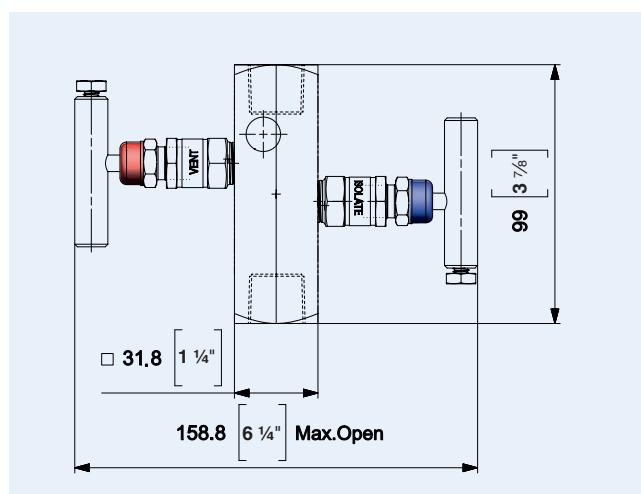
### Connection Type C

1/2" NPT female process x 1/2" NPT male instrument



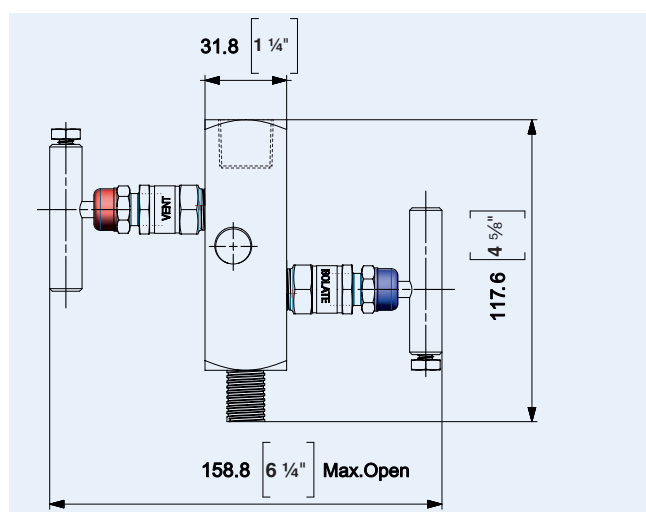
### Connection Type D

1/2" NPT female process x 1/2" NPT female instrument



### Connection Type E

1/2" NPT male process x 1/2" NPT female instrument



### Example for a typical installation



### Temperature-pressure rating

Max 700 bar (10,000 psi) @ 29 °C (85 °F)  
Max 275 bar (4,000 psi) @ 200 °C (392 °F)

### Available materials

SS 316/316L, Hastelloy C-276, Monel 400, Duplex SS 2205, Super Duplex SS 32750, Inconel 625

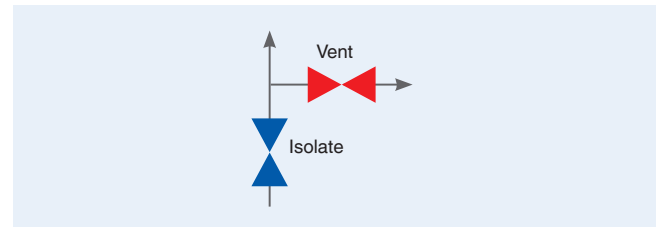
# Direct mount manifolds: 2 valve

## Pressure transmitters with flanged body

Direct mount 2 valve manifolds are designed for direct mounting to absolute pressure and gauge pressure transmitter with standard flange connection in accordance with IEC 61518. Two valve manifolds provide the isolation of process medium and safe depressurization or calibration via the vent port. Vent port is located as bottom face of manifold body.

### Below are the body styles offered

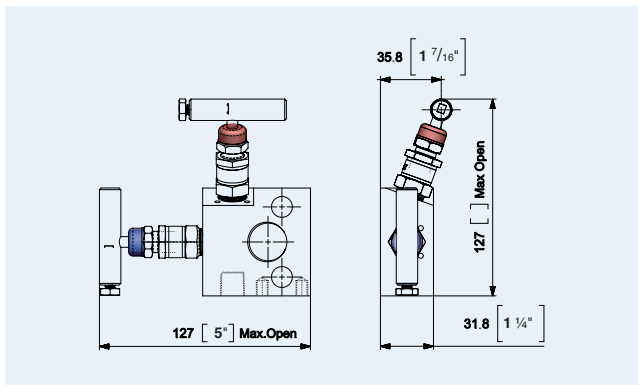
- Wafer and T-style manifolds:  
Process connection – ½" NPT F  
Instrument connection - flanged as per IEC 61518
  - H-style manifolds:  
Process connection – flanged  
Instrument connection - flanged as per IEC 61518
- For other options refer the ordering information.



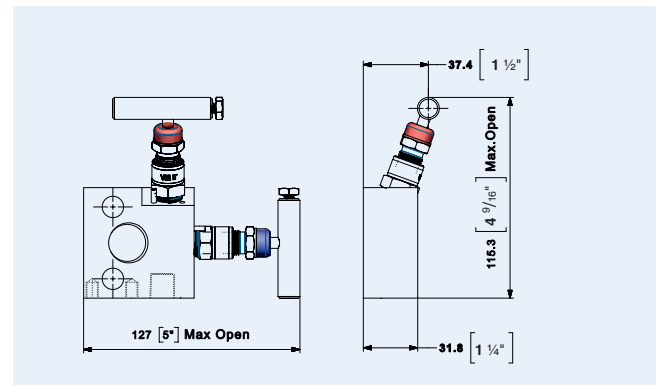
### Wafer style 2 valve manifolds

½" NPT female x flanged  
Isolate valve as standard on left side

#### For transmitters with high pressure on left side



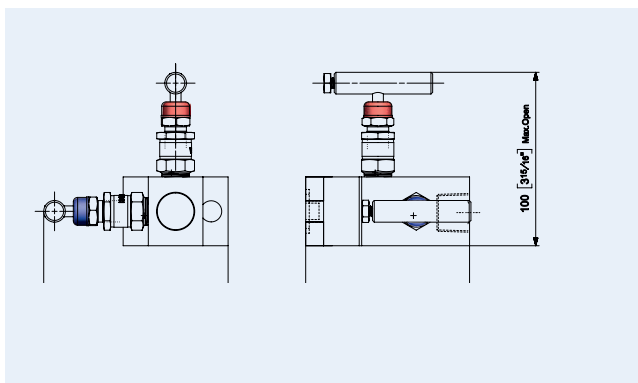
#### For transmitters with high pressure on right side



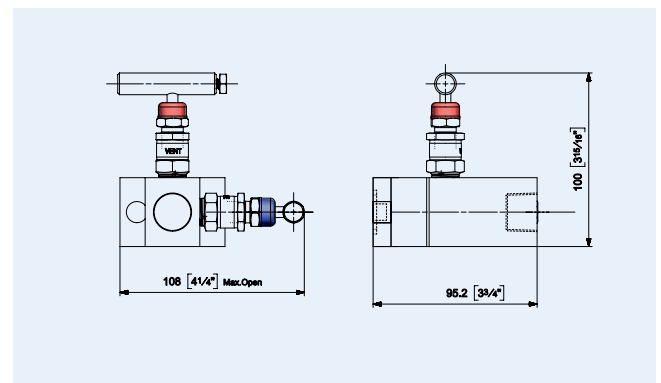
### T-style 2 valve manifolds

Isolate valve as standard on left side

#### For transmitters with high pressure on left side



#### For transmitters with high pressure on right side



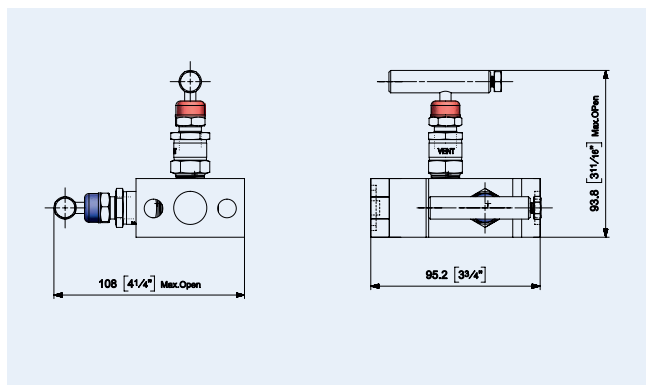
# Direct mount manifolds: 2 valve

## Pressure transmitters with flanged body

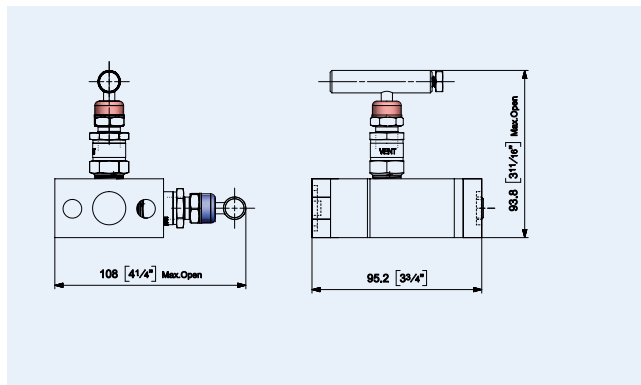
### H-style 2 valve manifolds

Isolate valve optional on right side

#### For transmitters with high pressure on left side



#### For transmitters with high pressure on right side



### Temperature-pressure rating

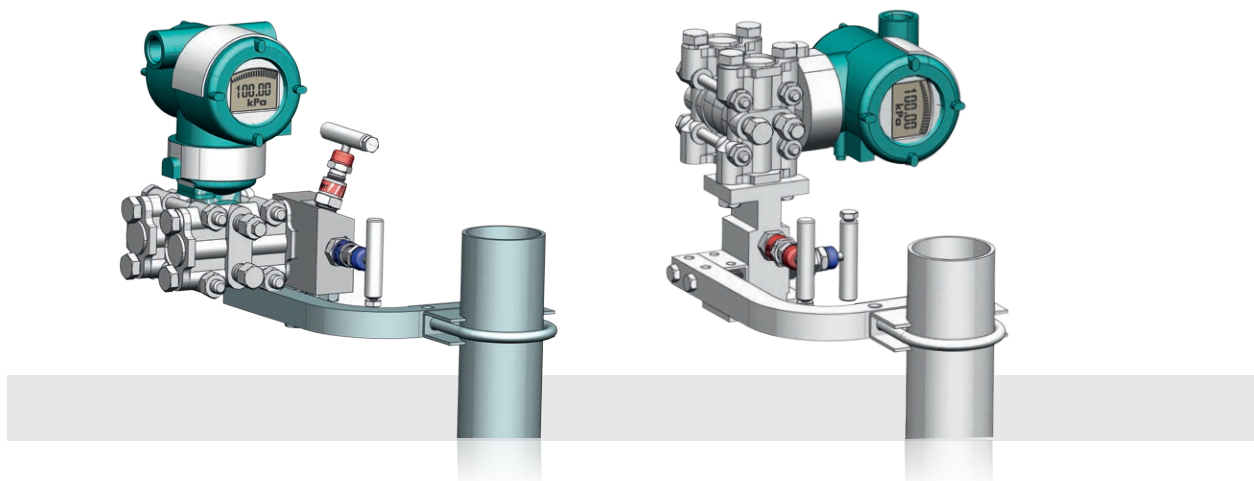
Max 414 bar (6,000 psi) @ 93 °C (200 °F)

Max 275 bar (4,000 psi) @ 200 °C (392 °F)

### Available materials

SS 316/316L, Hastelloy C-276, Monel 400, Duplex SS 2205,  
Super Duplex SS 32750, Inconel 625

### Example for a typical installation





# Direct mount manifolds: 3 valve

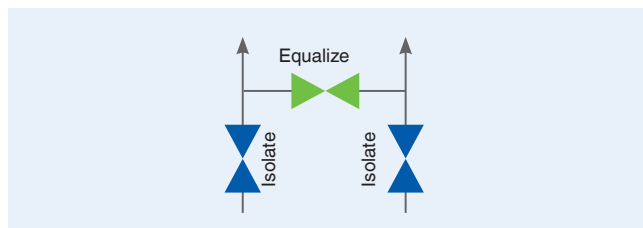
## Differential pressure transmitters with flanged body

Direct mount 3 valve manifolds are common on differential pressure transmitters, where your sensor actually has two sources of pressure. In this case, one valve is used to isolate each side (high pressure & low pressure) of the transmitter (isolation valve) and the center valve is used to equalize the two (equalize valve). Equalize valve is always closed in operating conditions. These manifolds are as standard without vent connections.

### Below are the body styles offered

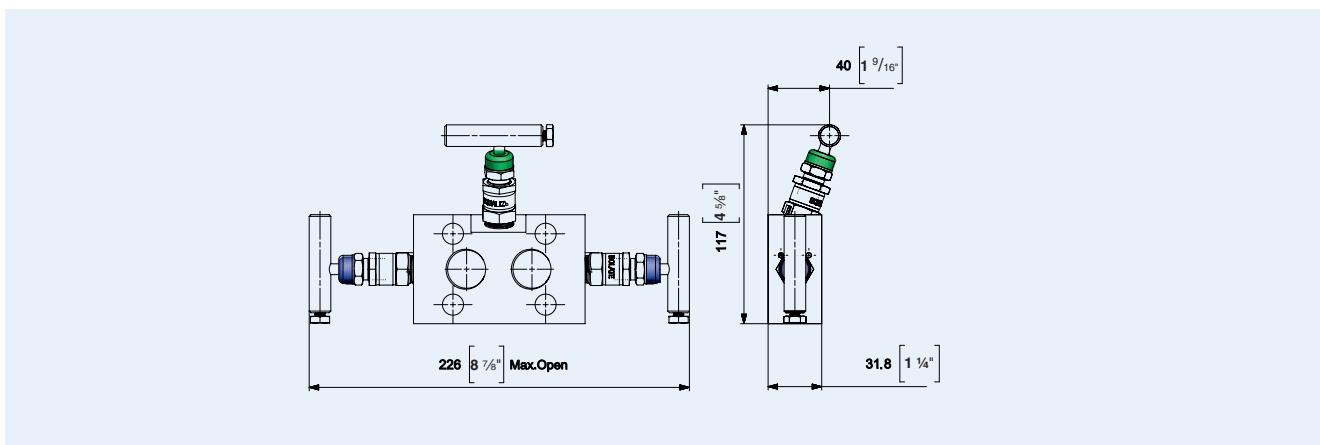
- Wafer and T-style manifolds  
Process connection –  $\frac{1}{2}$ " NPT F  
Instrument connection - flanged as per IEC 61518
- H-style manifolds  
Process connection – flanged  
Instrument connection - flanged as per IEC 61518

For other options refer the ordering information.



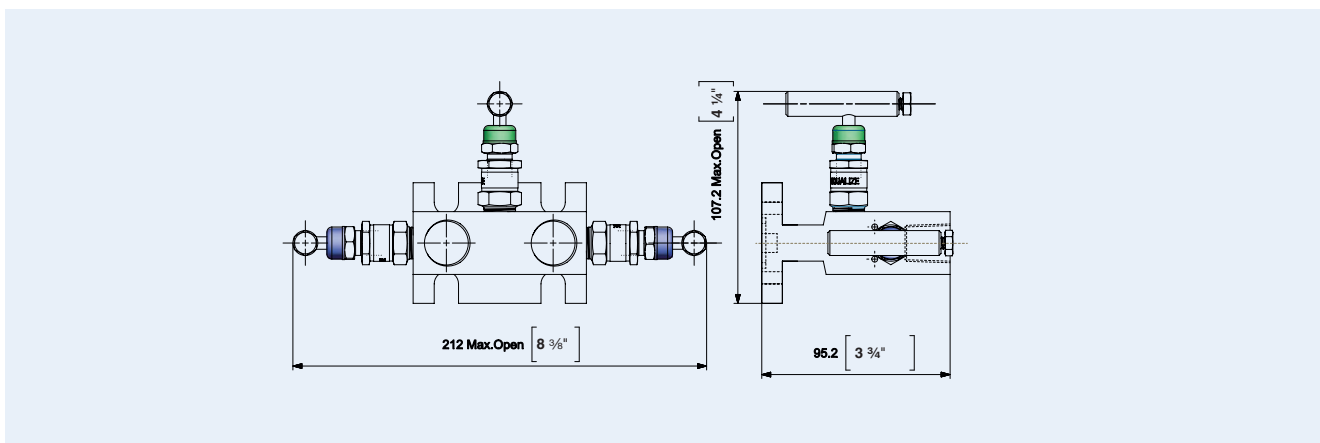
### Wafer style 3 valve manifolds

$\frac{1}{2}$ " NPT female x flanged



### T-style 3 valve manifolds

$\frac{1}{2}$ " NPT female x flanged

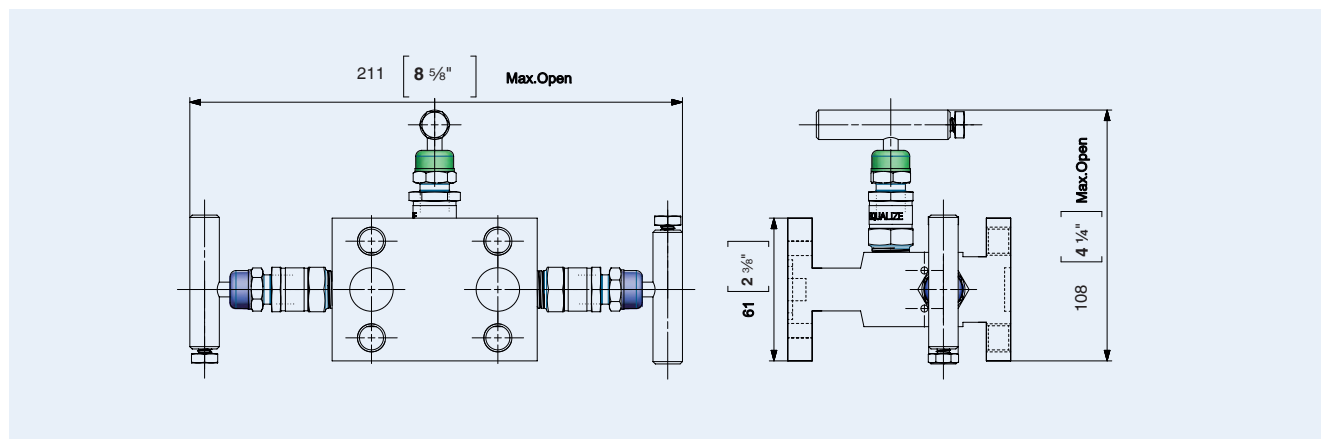


# Direct mount manifolds: 3 valve

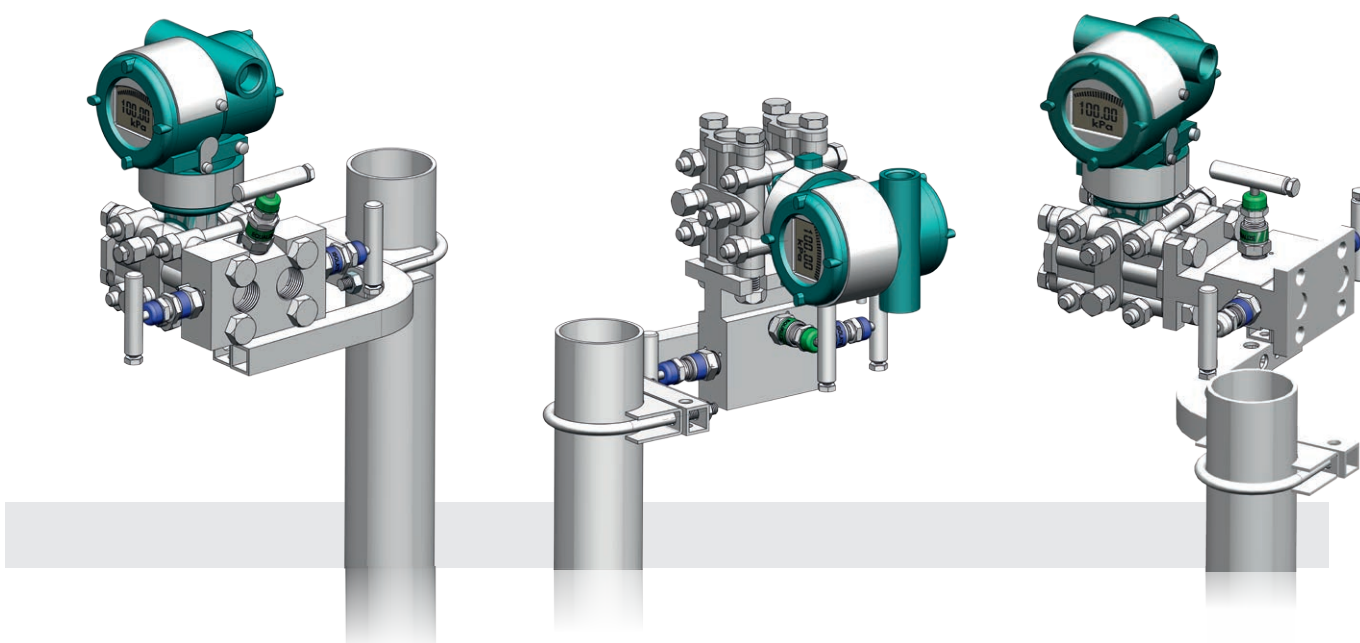
Differential pressure transmitters with flanged body

## H-style 3 valve manifolds

Flanged x flanged



Examples for horizontal and vertical impulse piping installations



## Temperature-pressure rating

Max 414 bar (6,000 psi) @ 93 °C (200 °F)

Max 275 bar (4,000 psi) @ 200 °C (392 °F)

## Available materials

SS 316/316L, Hastelloy C-276, Monel 400, Duplex SS 2205/  
S31803, Super Duplex SS 32750, Inconel 625

# Direct mount manifolds: 5 valve

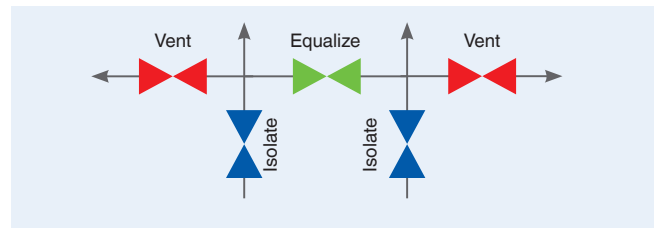
## Differential pressure transmitters with flanged body

5 valve manifolds are used for differential pressure transmitters like 3 valve manifolds. Five valve manifolds have one 'block' and one 'bleed' valve for each transmitter supply (high pressure & low pressure). It also includes a single 'equalize' valve to allow you to evenly distribute the pressure across both sides. Vent port is located on the bottom face on the manifold body.

### Below are the body styles offered

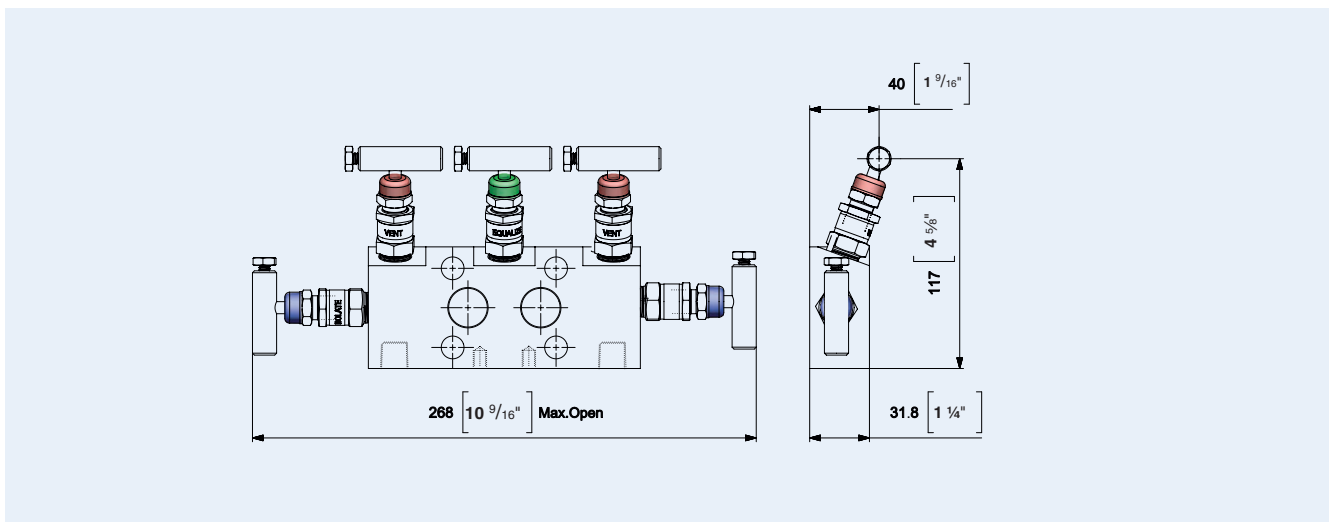
- Wafer and T-style manifolds  
Process connection –  $\frac{1}{2}$ " NPT F  
Instrument connection - flanged as per IEC 61518
- H-style manifolds  
Process connection – flanged  
Instrument connection - flanged as per IEC 61518

For other details refer the ordering information



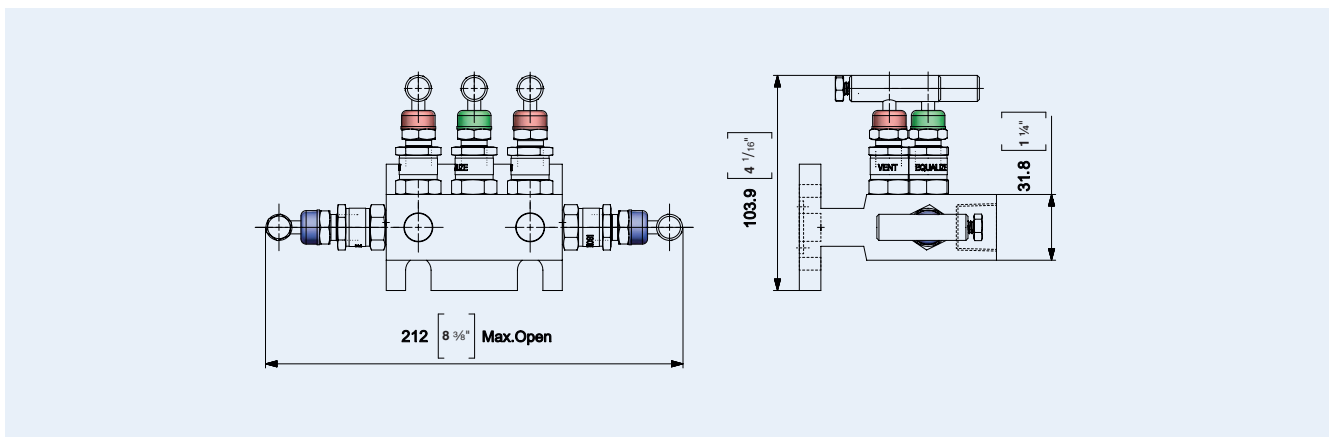
### Wafer style 5 valve manifolds

$\frac{1}{2}$ " NPT female x flanged



### T-style 5 valve manifolds

$\frac{1}{2}$ " NPT female x flanged

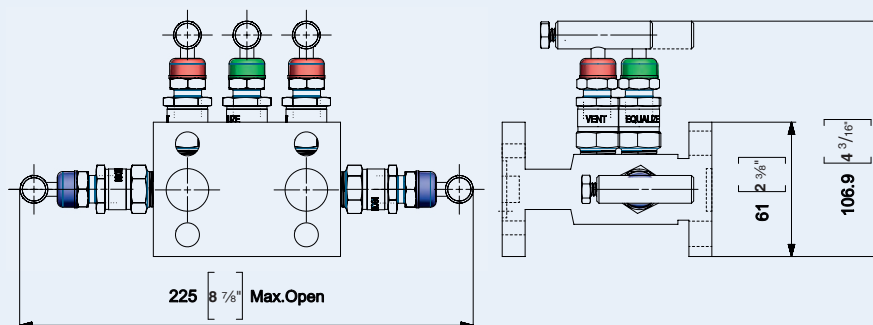


# Direct mount manifolds: 5 valve

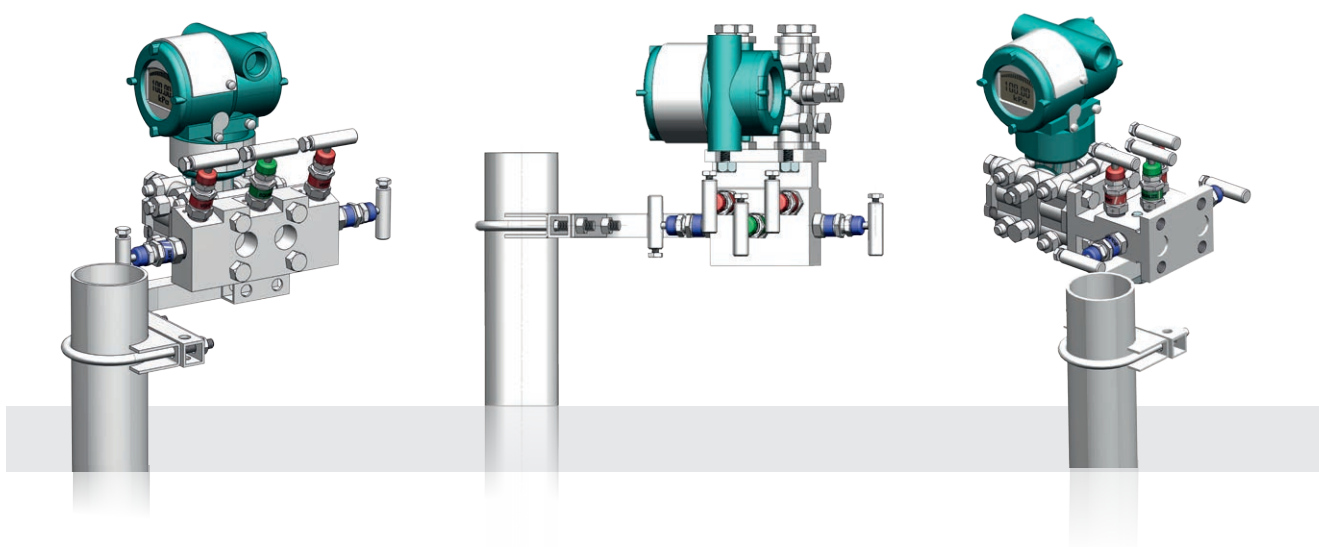
Differential pressure transmitters with flanged body

## H-style 5 valve manifolds

Flanged x flanged



Examples for horizontal and vertical impulse piping installations



## Temperature-pressure rating

Max 414 bar (6,000 psi) @ 93 °C (200 °F)

Max 275 bar (4,000 psi) @ 200 °C (392 °F)

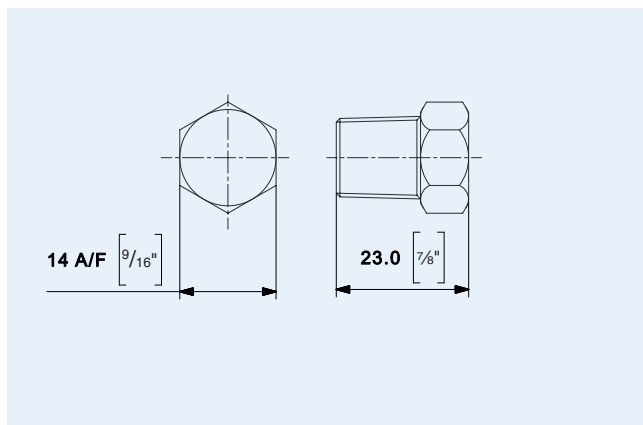
## Available materials

SS 316/316L, Hastelloy C-276, Monel 400, Duplex SS 2205,  
Super Duplex SS 32750, Inconel 625

# Additional options and accessories

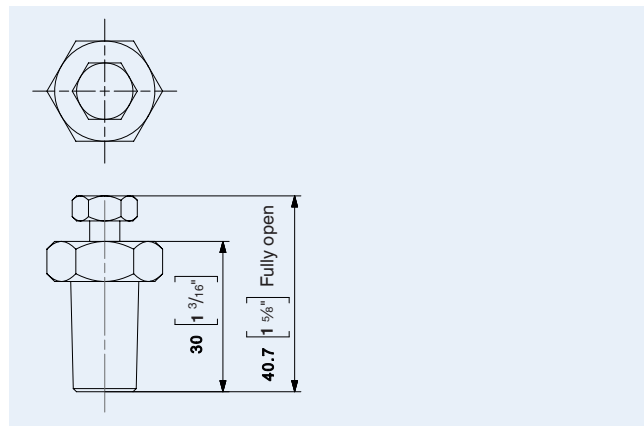
## ¼" NPT pipe plugs and vent valves

### Pipe plug



Factory fitted pipe plugs for vent port are available as an option. SS316/316L and other materials are available for pipe plugs and vent valves. Refer ordering information for details.

### Vent valve



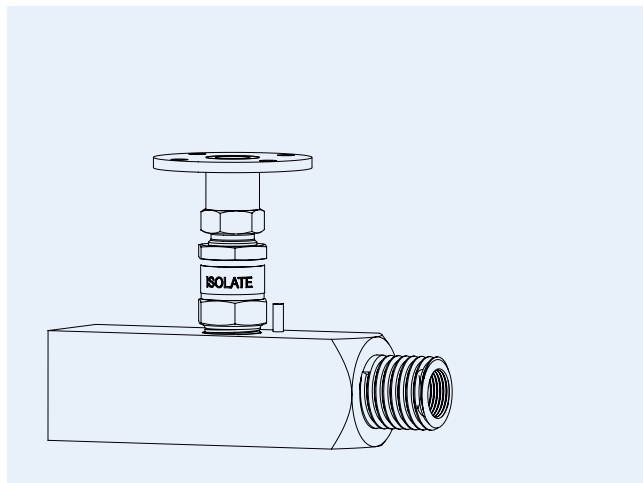
Vent valve provides an economical and safe means to bleed high process pressure trapped in instrumentation equipment before removing for repair or calibration. Standard material is SS316/316L. Other materials are also available as an option. Pipe plug and vent plug are only applicable with 2 valve, 5 valve and block and bleed manifold.

## Stainless steel handwheel and locking plate design

Option for stainless steel handwheel is available (option code H[]) and also with an additional fitted locking plate (option code L[]). This design allows minimum valve movements and is ideal as protection against unauthorized operation of the valve. The valve can be locked reliably in every position required.

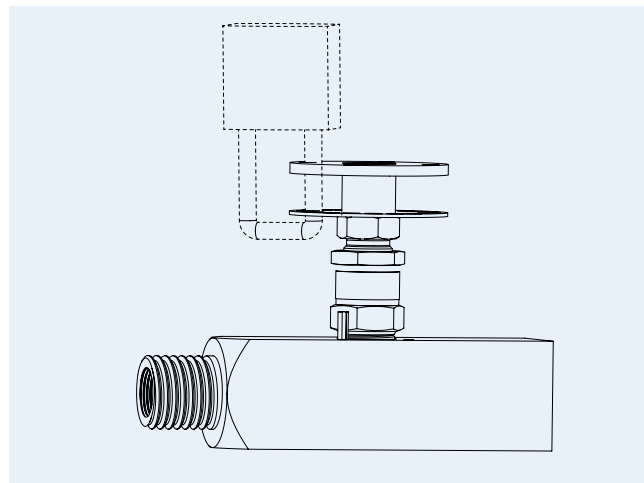
### Stainless steel handwheel

#### Option Code H[]



### Locking plate

#### Option Code L[]



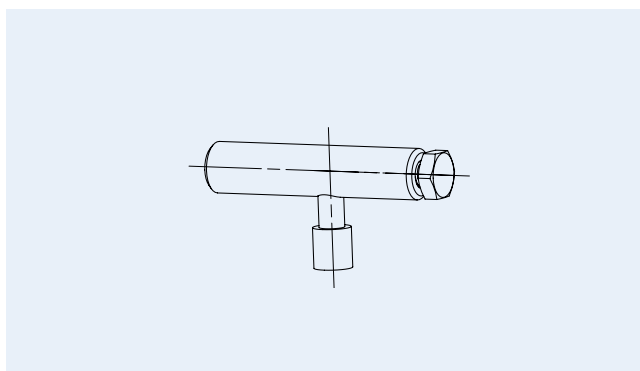
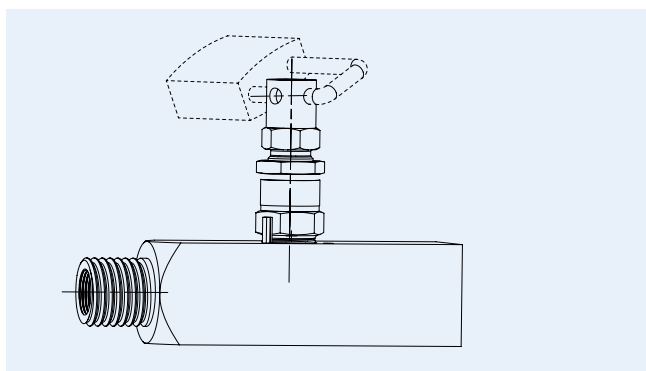
# Additional options and accessories

## Anti-tamper valve head unit options:

A key can be supplied for use with anti-tamper valve heads, which are fitted to all vent and equalize valves. Designed to prevent unauthorized operation of valves, in addition to this safety function, installing a padlock prevents the AT-key being inserted into the key guide. The valve can be locked reliably in every position required.

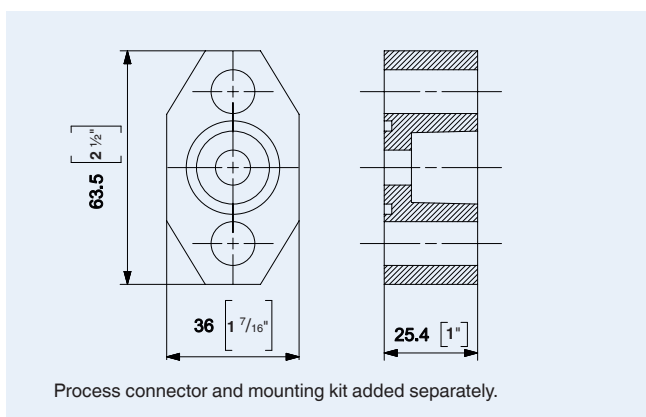
### Option code R [] or T []

### Part number C13WA-ATKES



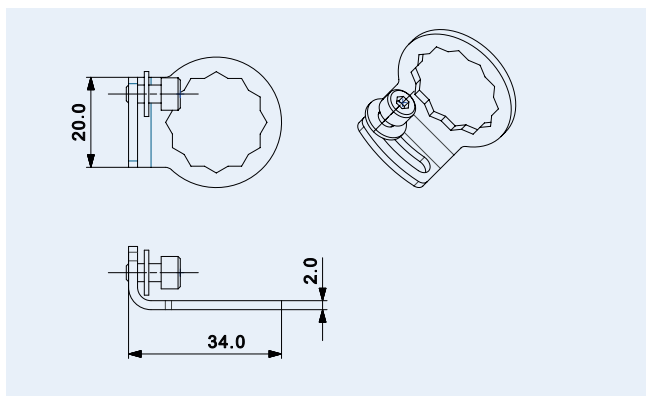
## Process connector for H-style manifolds only:

Flange connection acc. to IEC 61518 Type B x 1/2" NPT female



## ASME B31.1 power piping option

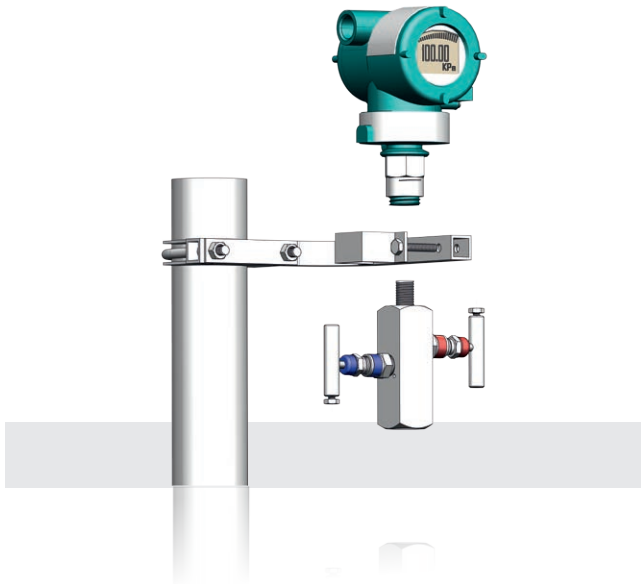
Manifolds required with ASME B 31.1 compliance come standard in integral seats, bonnet locks. Only available with SS316/316L materials of construction. Packing material will always be Graphite.



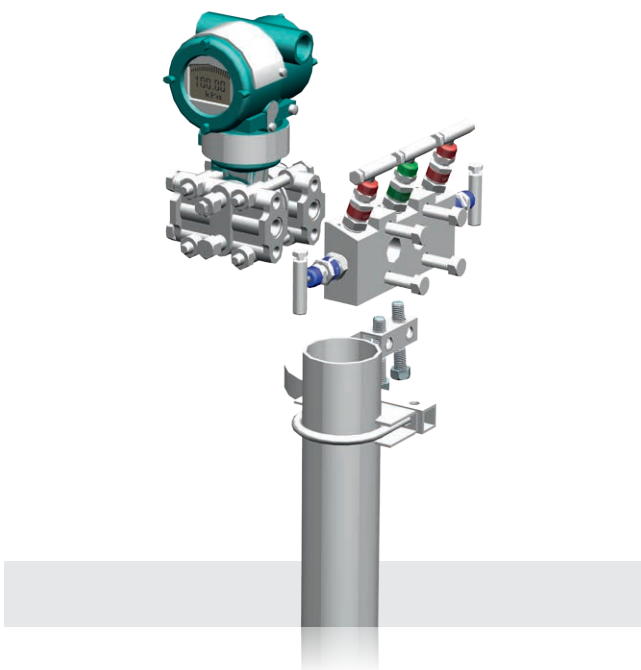


# Mounting bracket options

Mounting bracket kit for Block & Bleed manifolds, C13WA-MSPS0

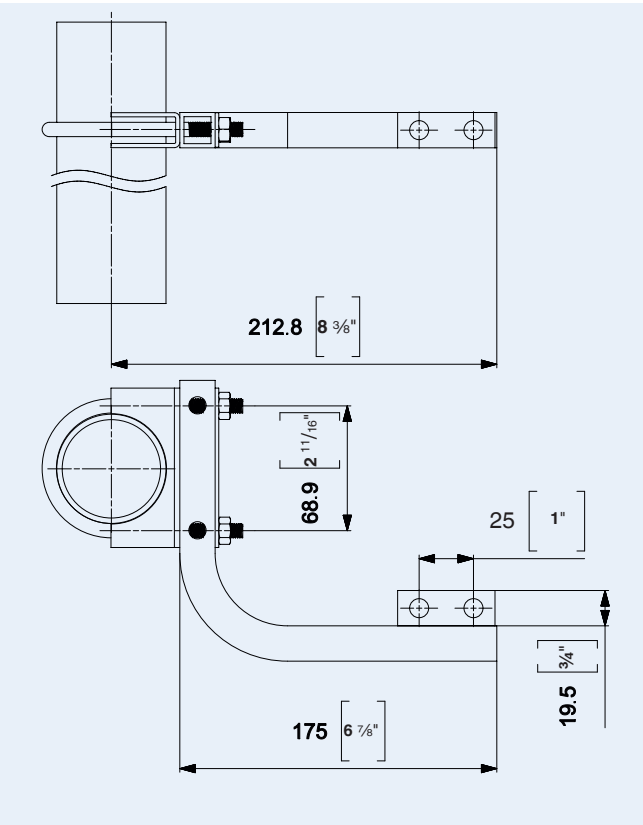
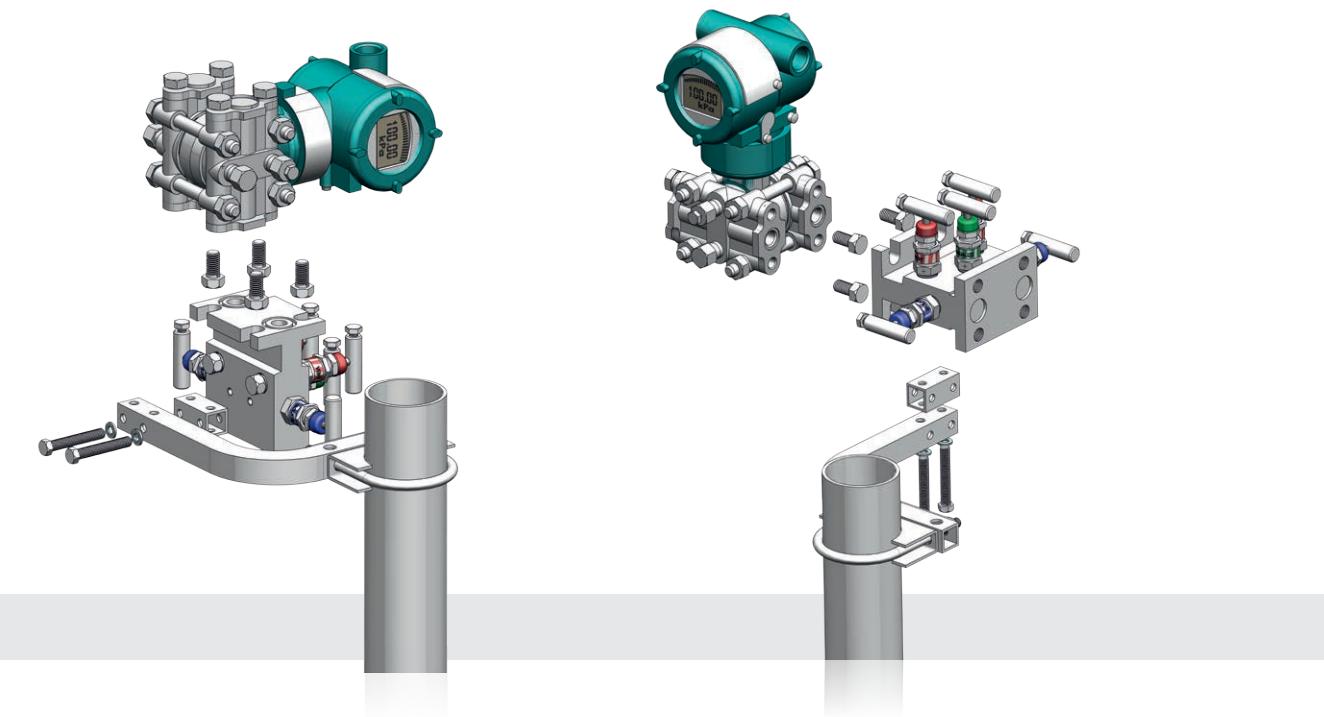


Mounting bracket kits for direct mount manifolds – Wafer style bodies, C13WSA-MUPSA



# Mounting bracket options

Mounting bracket kits for direct mount manifolds – T/H-style bodies, C13WA-MUPSB



# Ordering information - Traditional valve manifold

	Model	Suffix Codes					Description	
Standard features	C13WT						Valve manifold - Traditional (WIKA)	
	Body type	2					2 Valve	
		3					3 Valve	
		5					5 Valve	
		W					Wafer style	
			T					T- style
			H					H- style
			G					Block & Bleed
		Body material			S			SS316/316L
			H			Hastelloy C-276		
			M			Monel 400		
			E			Duplex 2205		
			W			Super Duplex 32750		
			C			Inconel 625		
	Connection type			A			Process side: ½" NPT female connection, Instrument side: flange connection (IEC 61518-B) (for Wafer & T-style body)	
				B			Process side: flange connection (IEC 61518), Instrument side: flange connection (IEC 61518-B) (for H-style body)	
				C			Process side: ½" NPT female connection, Instrument side: ½" NPT male (only for Block & Bleed manifold)	
				D			Process side: ½" NPT female connection, Instrument side: ½" NPT female (only for Block & Bleed manifold)	
				E			Process side: ½" NPT male connection, Instrument side: ½" NPT female (only for Block & Bleed manifold)	
	Installation			0			Always '0' for 3 valve and 5 valve	
				1			Left side high pressure (for 2 valve)	
				2			Right side high pressure (for 2 valve)	
				T			Always 'T' for Block & Bleed manifold	
	Additional features	Bolting				-S2		For 2 valve wafer (2 bolts) SS316
			-S4		For other type (4 bolts) SS316			
			-N2		For 2 valve wafer (2 bolts) ASTM 660, NACE compliant			
			-N4		For other type (4 bolts) ASTM 660, NACE compliant			
			-NN		Carbon steel bolts as standard (always 'NN' - none for block and bleed manifold)			
Bonnet options					-G2		Graphite packing for 2 valve <sup>1</sup>	
					-G3		Graphite packing for 3 valve <sup>1</sup>	
					-G5		Graphite packing for 5 valve <sup>1</sup>	
					-P2		ASME B31.1 compliant for 2 valve <sup>1</sup>	
					-P3		ASME B31.1 compliant for 3 valve <sup>1</sup>	
					-P5		ASME B31.1 compliant for 5 valve <sup>1</sup>	
					-NN		PTFE as standard	

<sup>1</sup> not possible for oxygen service

# Ordering information - Traditional valve manifold

	Model	Suffix Codes					Description			
Additional features	Pipe plug/ Vent plug <sup>3)</sup>		P				Pipe plug			
			V				Vent valve			
					S		SS316/316L			
					H		Hastelloy C-276			
					M		Monel 400			
					E		Duplex 2205			
					W		Super Duplex 32750			
					C		Inconel 625			
					1		For 1 port, 2 valve			
					2		For 2 port, 5 valve			
							Without plugs as standard			
	Cleaning for oxygen service						-K2		For 2 valve <sup>2</sup>	
							-K3		For 3 valve <sup>2</sup>	
							-K5		For 5 valve <sup>2</sup>	
							-NN		None	
	Valve operator						H2	Handwheel, for 2 valve		
							H3	Handwheel, for 3 valve		
							H5	Handwheel, for 5 valve		
							L2	Handwheel with locking plate design, for 2 valve		
							L3	Handwheel with locking plate design, for 3 valve		
							L5	Handwheel with locking plate design, for 5 valve		
							R2	Anti-tamper with key, for 2 valve		
							R3	Anti-tamper with key, for 3 valve		
							R5	Anti-tamper with key, for 5 valve		
							T2	Anti-tamper without key, for 2 valve		
							T3	Anti-tamper without key, for 3 valve		
							T5	Anti-tamper without key, for 5 valve		
							NN	None		

<sup>2</sup> Only applicable for bonnet option -NN "PTFE as standard".

<sup>3)</sup> Only applicable with 2 valve, 5 valve and block and bleed manifolds.

Example for building up the part no. of a 3 valve T style manifold acc. to the above mentioned ordering information:

C13WT3TSA0-NN-G3NNN-NNR3										
C13WT										Valve manifold - traditional (WIKI)
	3									3 valve
		T								T- style
			S							SS316/316L
				A						Process side: ½" NPT female connection, Istrument side: Flange connection (IEC 61518-B), (for Wafer & T-style body)
					0					Always '0' for 3 valve and 5 valve
						-NN				Carbon steel bolts as standard (always 'NN' -None for block and bleed mani- fold)
							-G3			Graphite packing for 3 valve
								NNN		Without plugs as standard
									-NN	None
										R3

# Ordering information - Accessory

	Model	Suffix Codes			Description
Accessory	C13WA				Accessory for valve manifold (WIKI)
	For traditional type (2, 3, 5 and block and bleed manifold)	-KF			Process connector, 1 process connector / 2 bolts / 1 seal ring / ½" NPT female inlet / IEC 61518-B outlet
			S		SS 316/316L
			H		Hastelloy C-276
			M		Monel 400
			E		Duplex 2205
			W		Super Duplex 32750
			C		Inconel 625
			N		Carbon steel bolts as standard
			S		SS 316 bolts
			P		Seal ring, PTFE
			G		Seal ring, graphite
		-MSPSA			Mounting bracket for Block and Bleed manifold, 316SST
		-MUPSA			Mounting bracket for Wafer style manifold, 316SST
		-MUPSB			Mounting bracket for T-/H-style manifold, 316SST
	Common	-ATKES			Anti tamper key
		-PMIR2			PMI test report, 2 valve manifold
		-PMIR3			PMI test report, 3 valve manifold
		-PMIR5			PMI test report, 5 valve manifold

## Example for building up a process connector:

C13WA-KFSSP					
C13WA					Accessory for valve manifold (WIKI)
	-KF				Process connector, 1 process connector / 2 bolts / 1 seal ring / ½" NPT female inlet / IEC 61518-B outlet
		S			SS 316/316L
			S		SS 316 bolts
				P	Seal ring, PTFE

## Example for building up a Mounting bracket for Wafer style manifold

C13WA-MUPSA					
C13WA					Accessory for valve manifold (WIKI)
		-MUPSA			Mounting bracket for Wafer style manifold, 316SST