

Valve manifold for differential pressure measuring instruments

3-, 5-valve manifold

Models IV30, IV31, IV50 and IV51

WIKA data sheet AC 09.23

Applications

- Shut-off, pressure compensating, purge and vent valves for differential pressure measuring instruments
- For gaseous and liquid aggressive media that are not highly viscous or crystallising, also in aggressive environments
- Process industry: Oil & gas, petrochemical, chemical industries, power generation, water and wastewater

Special features

- Low-wear design due to non-rotating spindle tip in the bonnet
- Low torque and smooth operation of valve handle even at high pressure
- Enhanced safety due to blow-out proof bonnet design
- Customer-specific combination of valves and instruments (hook-up) on request
- Standardised centre distances of 37 mm and 54 mm, suitable for WIKA differential pressure gauges and commonly used process transmitters

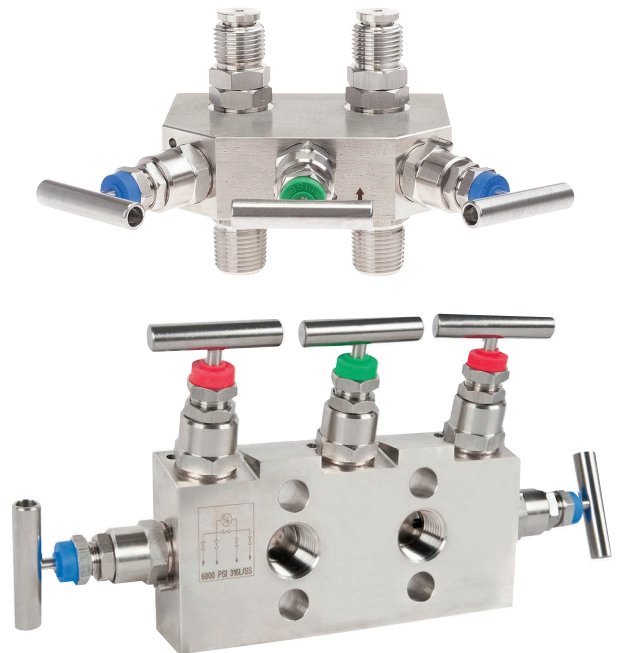


Fig. top: Model IV31, 3-valve manifold
Fig. bottom: Model IV51, 5-valve manifold

Description

3-valve manifold, models IV30 and IV31

The 3-valve manifold consists of two shut-off valves and one pressure compensating valve. The shut-off valves separate the process from the differential pressure measuring instrument. The pressure compensating valve enables the compensation between \oplus side and \ominus side to avoid one-sided overpressure during commissioning and operation.

5-valve manifold, models IV50 and IV51

Compared to the 3-valve manifold, the 5-valve manifold is equipped with two additional vent valves. One vent valve per pressure side allows operators the targeted venting of one or both pressure sides of the measuring arrangement.

Through the non-rotating spindle tip, the wear of the sealing elements is reduced. This results, particularly with frequent opening and closing, in a noticeable increase in the service life.

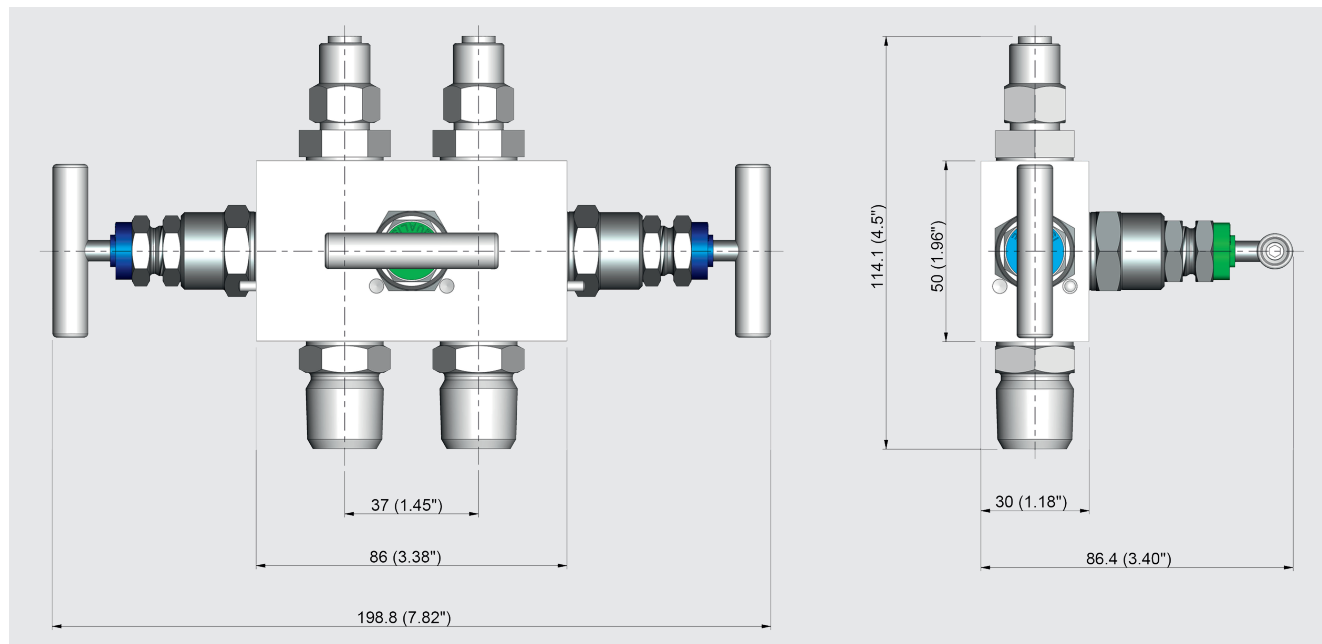
Through the blow-out proof design of the valve, working safety is improved, especially in applications with high pressure loading.

As an option, WIKA offers the professional assembly of valves and pressure measuring instruments and also other accessories into a ready-to-install solution, also known as a hook-up. To ensure the performance of the complete system, an additional leak test is carried out on the hook-up.

Dimensions in mm (in)

3-valve manifold, model IV30, centre distance on instrument side: 37 mm (1.45 in)

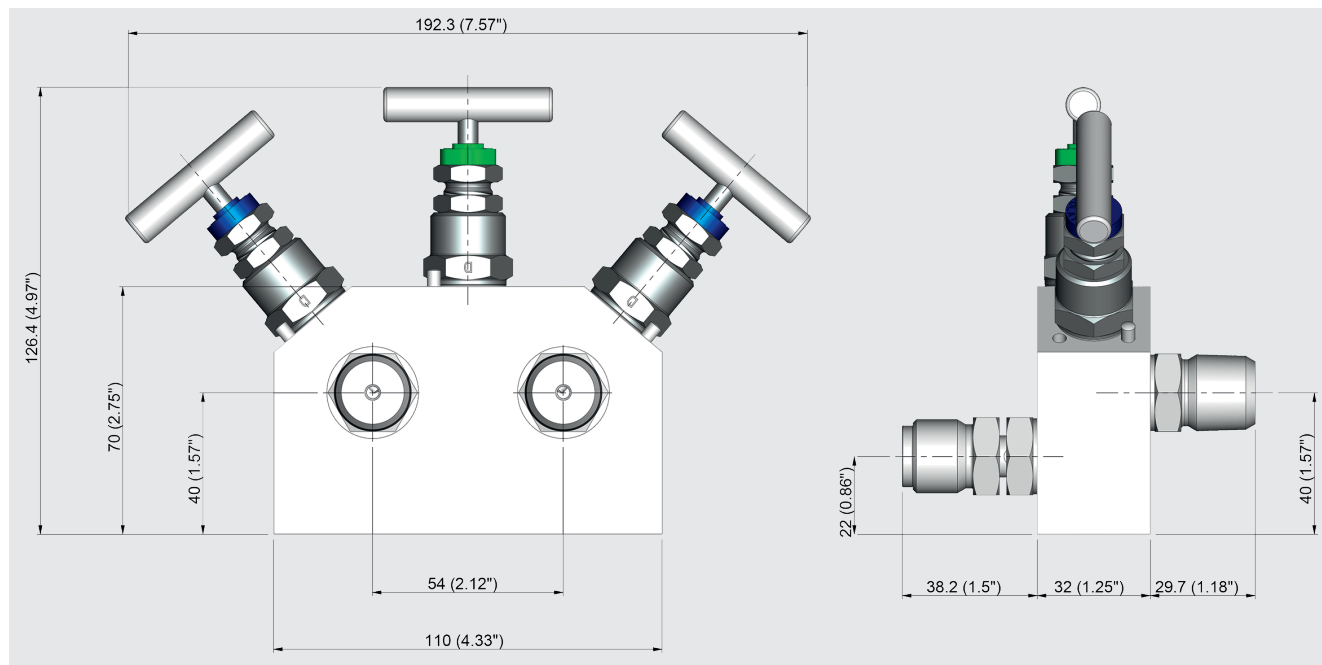
Valve position: Angled, pressure compensating valve in front, other valves arranged laterally



For differential pressure gauge, WIKA model 732.51

3-valve manifold, model IV31, centre distance on instrument side: 54 mm (2.12 in)

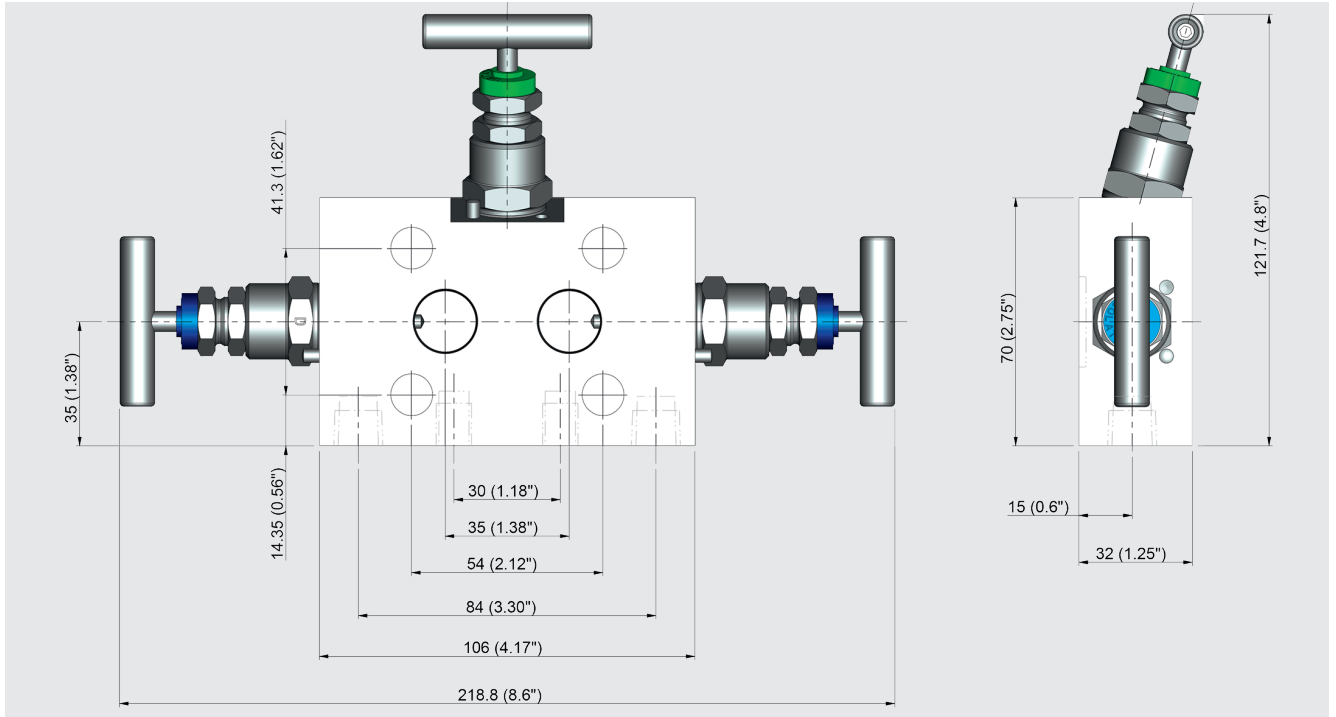
Valve position: Radial, valves arranged side-by-side



For differential pressure gauges, WIKA model 732.14

3-valve manifold, model IV31, centre distance on instrument side: 54 mm (2.12 in)

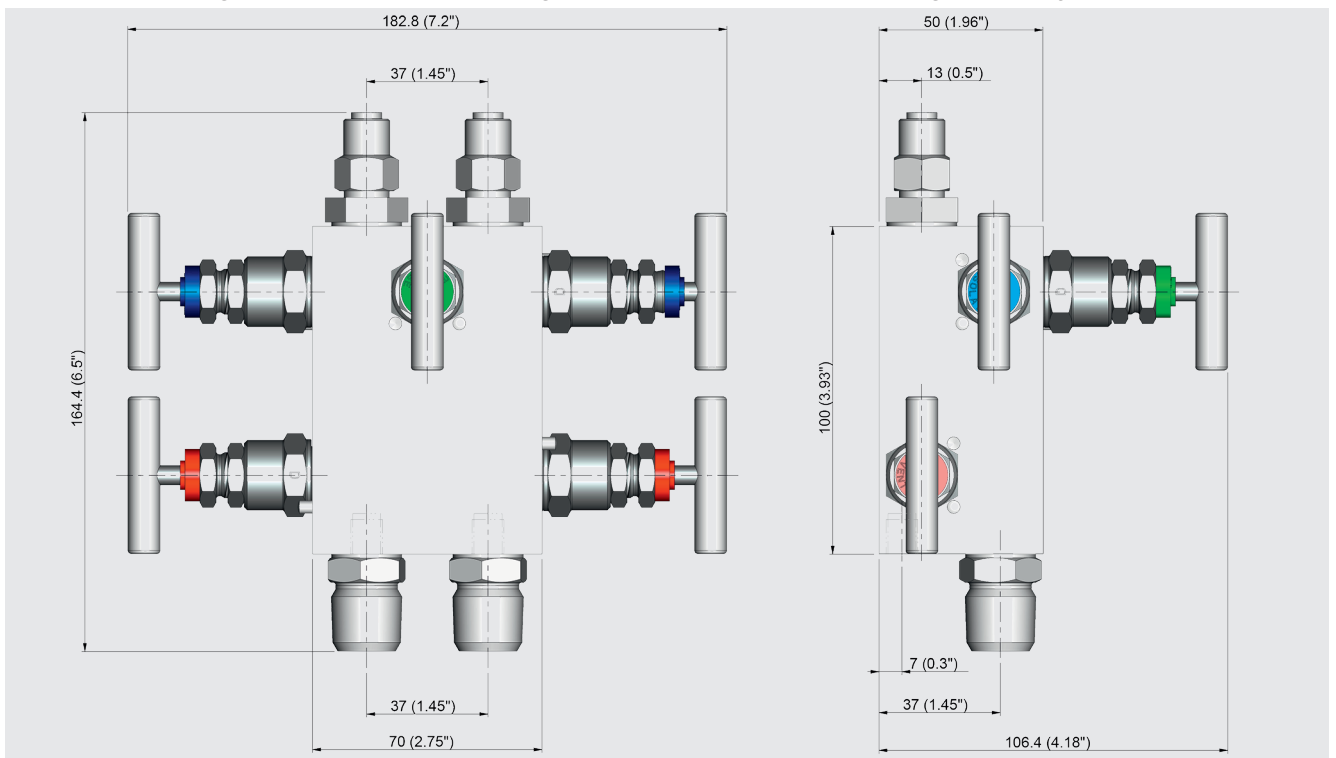
Valve position: Angled, for direct flange mounting



For differential pressure measuring instruments with process connection per IEC 61518 form A or form B
 Form B: E.g. for differential pressure gauges, WIKA model 732.14, with process connection per IEC 61518
 Form A: E.g. for transmitters, WIKA model DPT-10

5-valve manifold, model IV50, centre distance on instrument side: 37 mm (1.45 in)

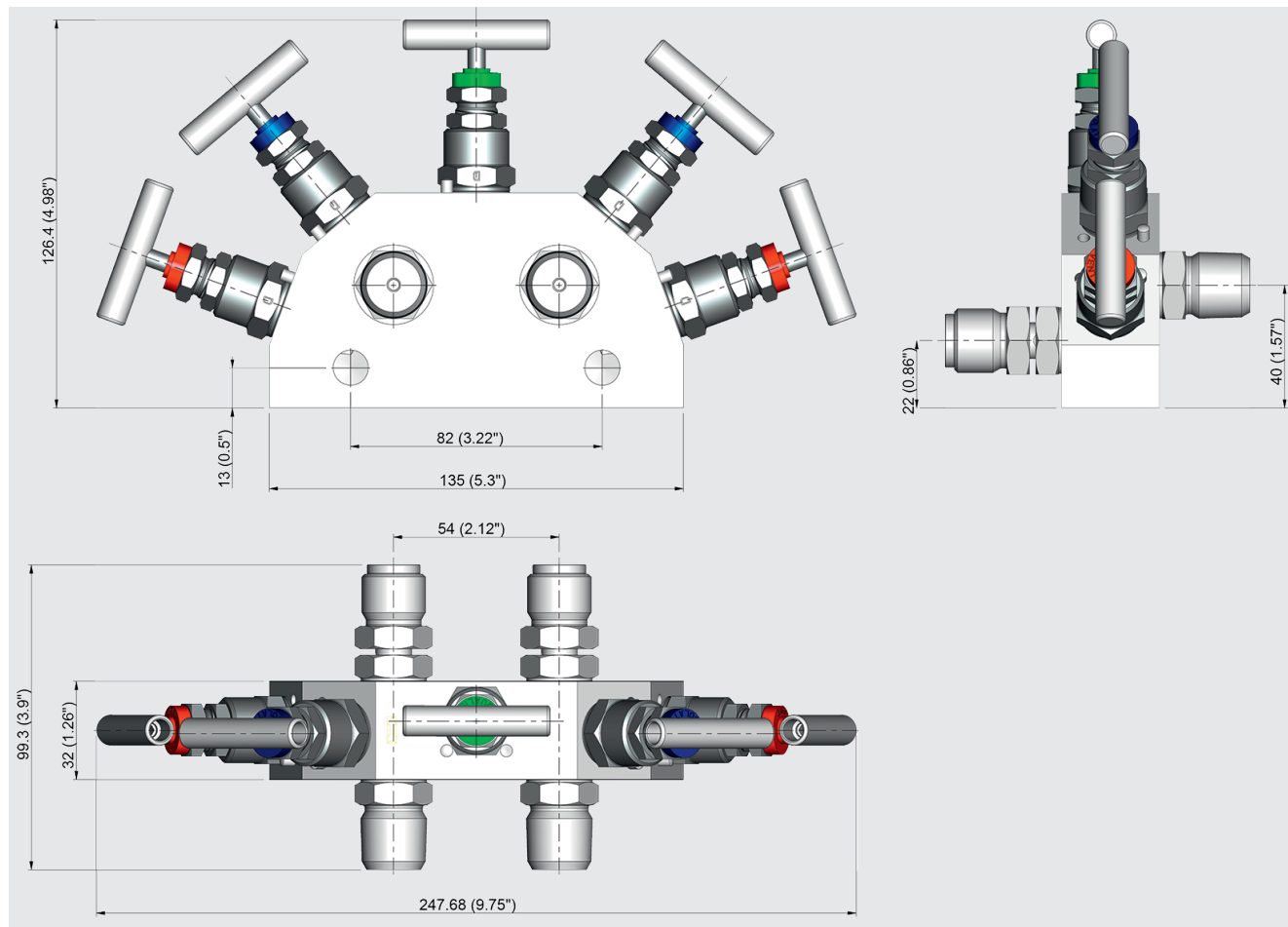
Valve position: Angled, pressure compensating valve in front, other valves arranged laterally



For differential pressure gauge, WIKA model 732.51

5-valve manifold, model IV51, centre distance on instrument side: 54 mm (2.12 in)

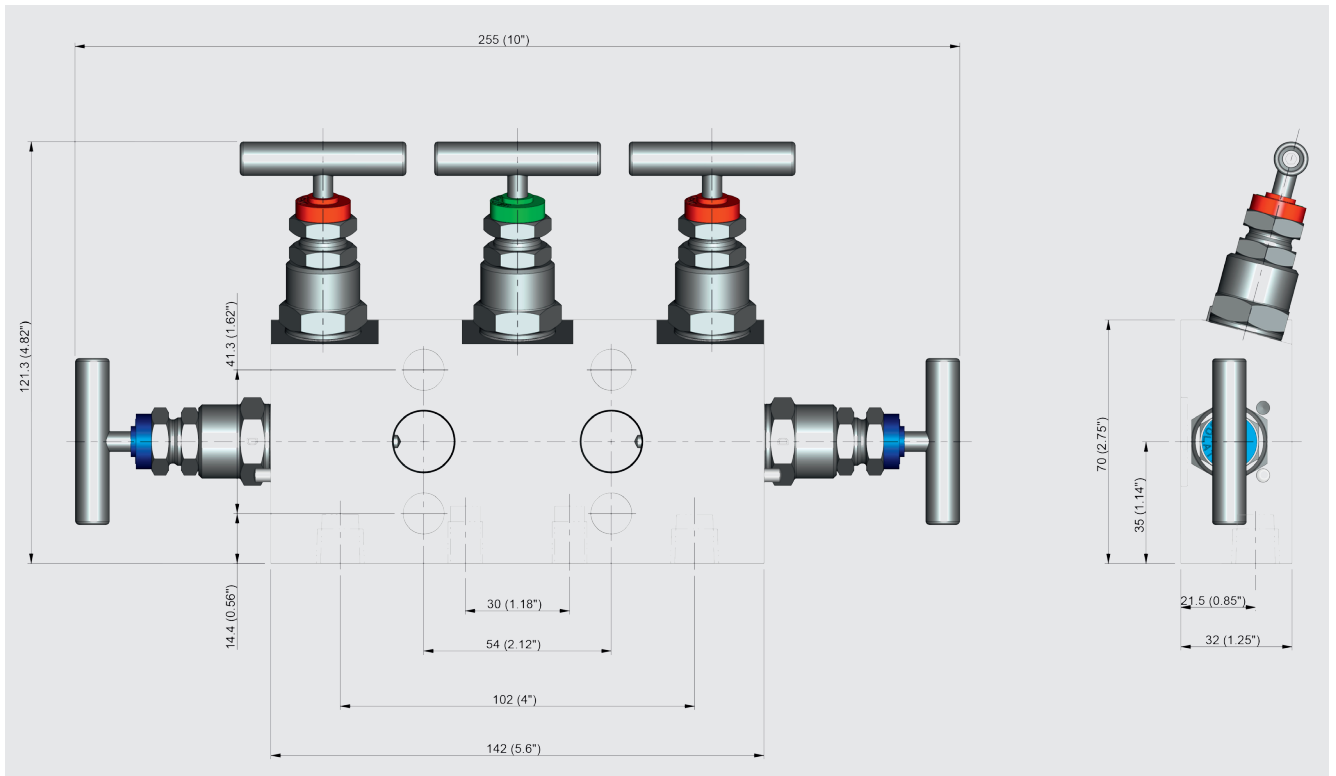
Valve position: Radial, valves arranged side-by-side



For differential pressure gauges, WIKA model 732.14

5-valve manifold, model IV51, centre distance on instrument side: 54 mm (2.12 in)

Valve position: Angled, for direct flange mounting



For differential pressure measuring instruments with process connection per IEC 61518 form A or form B
 Form B: E.g. for differential pressure gauges, WIKA model 732.14, with process connection per IEC 61518
 Form A: E.g. for transmitters, WIKA model DPT-10

Manufacturer's information and certificates

Logo	Description
-	PMI ¹⁾ test certificate Valve body
-	Certificate for proof pressure Tested with 1.5 times permissible operating pressure, shell test per API 598, and with 1.1 times permissible operating pressure, seat test per API 598

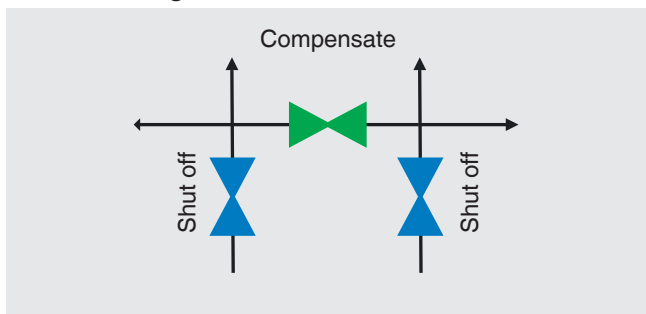
1) Positive material identification

Certificates

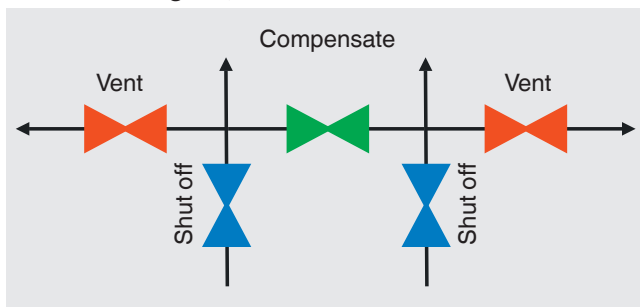
- NACE 3.1 material certificate for the valve body (MR0103/MR0175)
- NACE 3.1 material certificate for the wetted parts (MR0103/MR0175)

Specifications

Functional diagram, 3-valve manifold

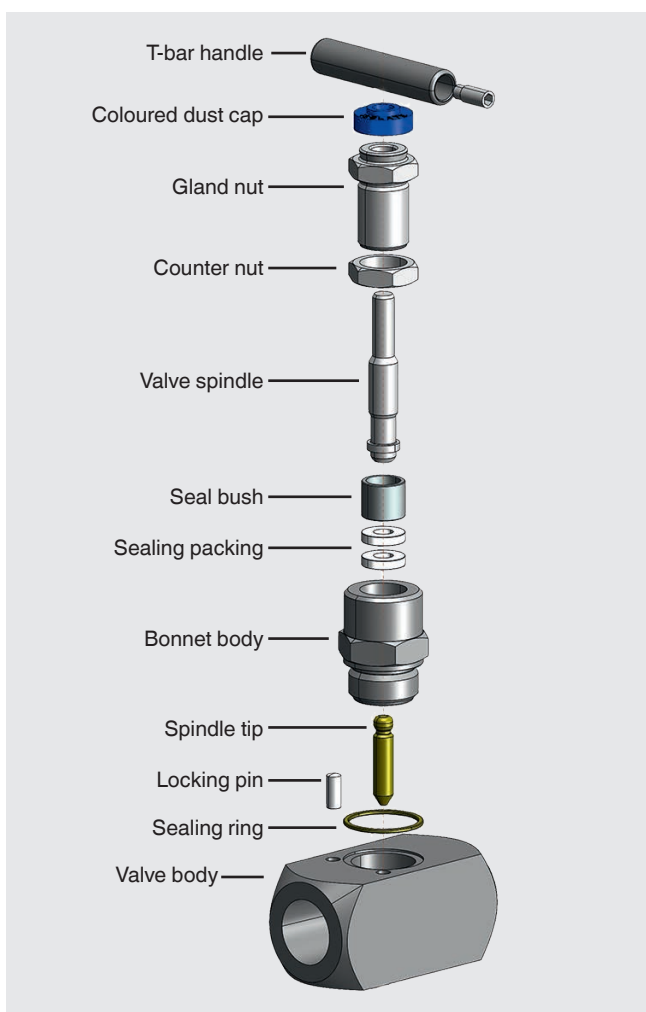


Functional diagram, 5-valve manifold



Bonnet design

Standard version



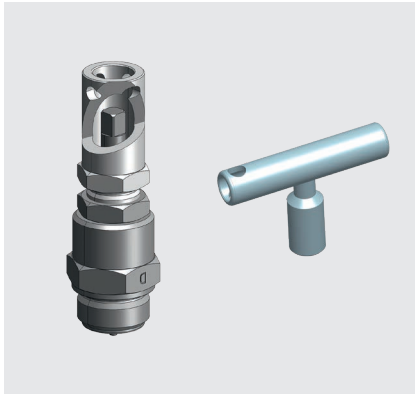
Specification

Dust cap colour code	Blue: Shut off Red: Vent Green: Compensate
Spindle tip	Non-rotating, low-wear
Valve seat	Metal seat
Valve bore size	4 mm (0.16 in)

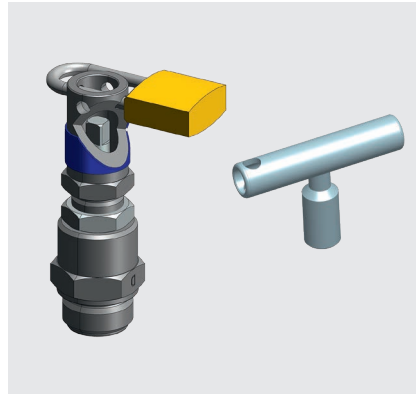
Material	Standard	Option
Wetted parts		
Valve body	Stainless steel 316/316L	■ Monel® 400
Bonnet body		■ Hastelloy® 276
Spindle tip		■ Others on request
Sealing packing	PTFE	Graphite
Non-wetted parts		
Handle	Stainless steel 304	
Gland nut	Stainless steel 316/316L	
Counter nut		
Valve spindle		
Seal bush		

Bonnet options

Anti-tamper version



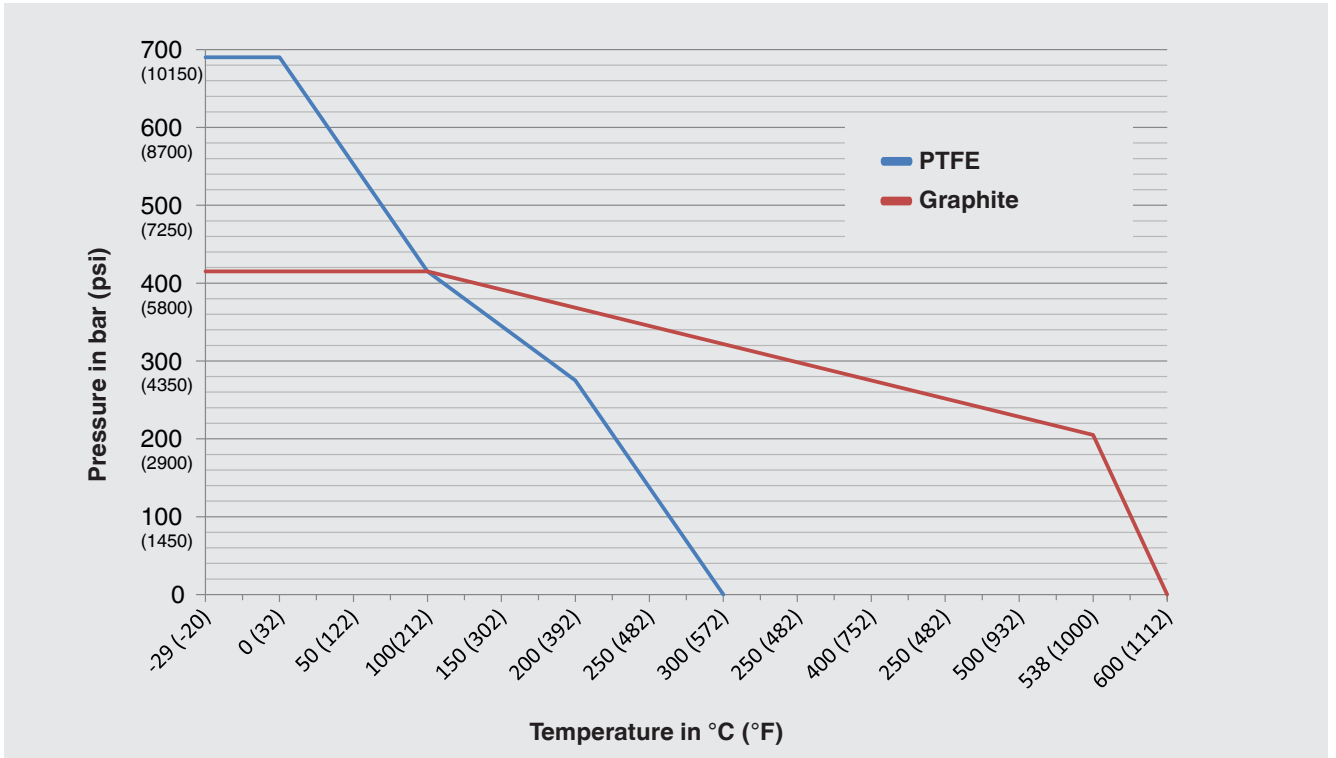
Anti-tamper version with padlock



Extended handle version



Pressure-temperature diagram



Sealing material	Max. pressure depending on the temperature
PTFE	689 bar at 38 °C (10,000 psi at 100 °F)
	276 bar at 210 °C (4,000 psi at 400 °F)
Graphite	414 bar at 38 °C (6,000 psi at 100 °F)
	209 bar at 538 °C (3,030 psi at 1,000 °F)

Ordering information

Valve manifold, models IV30, IV31, IV50 and IV51		Code	
Version	■ Model IV30, centre distance on instrument side: 37 mm (1.45 in)	30	
	■ Model IV31, centre distance on instrument side: 54 mm (2.12 in)	31	
	■ Model IV50, centre distance on instrument side: 37 mm (1.45 in)	50	
	■ Model IV51, centre distance on instrument side: 54 mm (2.12 in)	51	
Valve position (see dimensions from page 2)	■ Angled, pressure compensating valve in front, other valves arranged laterally ¹⁾	4	
	■ Radial, valves arranged side-by-side ²⁾	5	
	■ Angled, for direct flange mounting ²⁾	6	
Process connection / instrument connection	■ ½ NPT female / G ¼ pressure screw ¹⁾	IIA	
	■ ½ NPT male / G ¼ pressure screw ¹⁾	NB	
	■ ½ NPT female / G ½ pressure screw ^{2) 3)}	NC	
	■ ½ NPT male / G ½ pressure screw ^{2) 3)}	ND	
	■ ½ NPT female / process connection per IEC 61518 form B ^{2) 4)}	I1	
	■ ¼ NPT female / process connection per IEC 61518 form B ^{2) 4)}	I2	
Material of wetted parts (body, bonnet, spindle tip)	■ Stainless steel 316/316L	S1	●
	■ Monel 400	MO	
	■ Hastelloy 276	HC	
Mounting	■ Suitable for mounting bracket, with mounting holes	R	●
Permissible operating pressure	■ ≤ 6,000 psi (420 bar)	L	●
	■ ≤ 10,000 psi (689 bar)	M	
Material of the sealing packing / permissible temperature range (see diagram on page 5)	■ PTFE / -73 ... +210 °C (-100 ... +400 °F)	P	●
	■ Graphite / -54 ... +538 °C (-65 ... +1,000 °F)	G	
Bonnet design (see page 4 ff.)	■ Standard version	S	●
	■ Extended handle version	E	
Bonnet options	■ Without	Z	●
	■ Anti-tamper version, vent	1	
	■ Anti-tamper version, shut off	2	
	■ Anti-tamper version, compensate	3	
	■ Anti-tamper version, shut off and vent	4	
	■ Anti-tamper version, shut off and compensate	5	
	■ Anti-tamper version, vent and compensate	6	
	■ Anti-tamper version, shut off, vent and compensate	7	
	■ Small T-bar handle	8	
■ T-bar handle from stainless steel 316L	9		
Padlock ⁵⁾	■ Without	Z	●
	■ With padlock, vent	1	
	■ With padlock, shut off	2	
	■ With padlock, compensate	3	
	■ With padlock, shut off and vent	4	
	■ With padlock, shut off and compensate	5	
	■ With padlock, vent and compensate	6	
■ With padlock, shut off, vent and compensate	7		
Special design feature	■ Without	Z	●
	■ For oxygen, oil and grease free	H	
Certificate option 1 ⁶⁾	■ NACE 3.1 material certificate for the valve body (MR0103/MR0175)	M	●
	■ NACE 3.1 material certificate for the wetted parts (MR0103/MR0175)	N	
Certificate option 2 ⁷⁾	■ Without	Z	●
	■ PMI test certificate for the valve body	P	
Certificate option 3 ⁶⁾	■ Without	Z	●
	■ Proof pressure test certificate with 1.5 times permissible operating pressure, shell test per API 598, and with 1.1 times permissible operating pressure, seat test per API 598	5	

1) Option only for models IV30 and IV50

2) Option only for models IV31 and IV51

3) Option only for valve position "5"

4) Option only for valve position "6"

5) Option packlock only selectable together with anti-tamper version

6) Issued per order item

7) Issued per piece

● Standard

Order code

IV											
Version	Valve position	Process connection / instrument connection	Material of wetted parts	Mounting	Permissible operating pressure	Material of the sealing packing	Bonnet design	Bonnet options	Padlock	Special design feature	Certificates 1, 2, 3

Order numbers

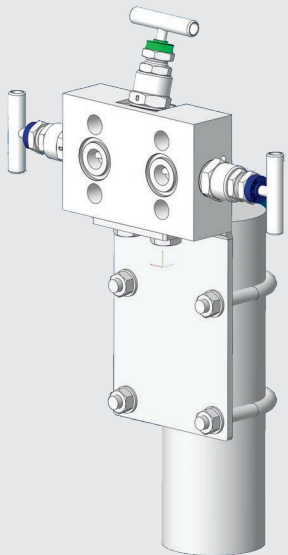
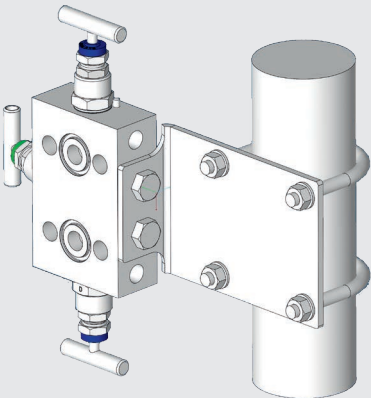
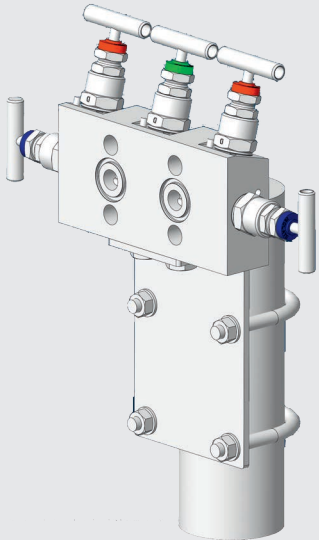
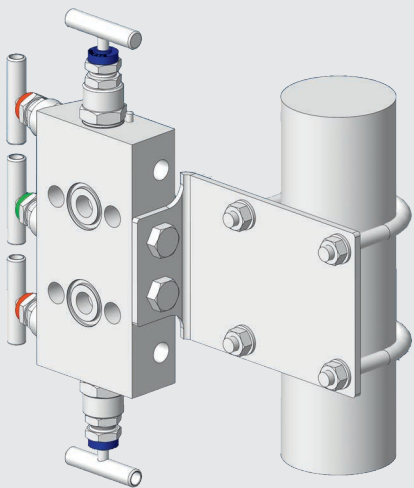
Standard bonnet; material of the valve body: 316/316L; sealing: PTFE; permissible operating pressure: 6,000 psi (420 bar)

Model	Valve position code ¹⁾	Process connection / instrument connection	Vent connection	Order number
IV30	4	½ NPT male / G ¼ pressure screw	Without	14275703
		G ½ male / G ¼ pressure screw	Without	14275701
IV31	5	½ NPT male / G ½ pressure screw	Without	14275705
		G ½ male / G ½ pressure screw	Without	14275702
IV50	4	½ NPT male / G ¼ pressure screw	G ⅛	14275693
		G ½ male / G ¼ pressure screw	G ⅛	14276055
IV51	5	½ NPT male / G ½ pressure screw	G ¼	14275694
		G ½ male / G ½ pressure screw	G ¼	14276058
	6	½ NPT female / process connection per IEC 61518 form B	¼ NPT	14275698

1) see ordering information on page 8

Accessories

Only for versions with mounting option "D": Suitable for mounting bracket, with mounting holes

Mounting bracket			
For model	Position of the measuring instrument		Order number
	Horizontal	Vertical	
IV31			14267553
IV51			14267553

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