



Differential pressure

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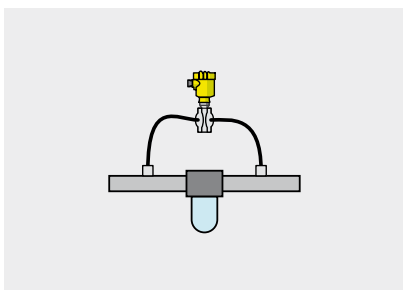
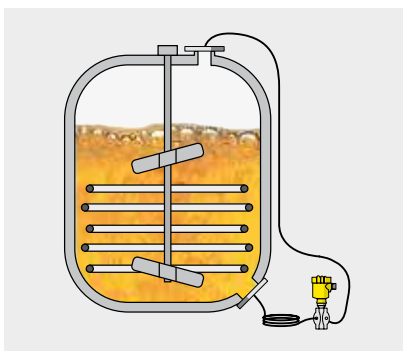


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Overview Differential pressure



Area of application

The differential pressure gauge VEGADIF was specially developed for level measurement of liquids and gases in pressurized vessels. It is also suitable for pressure monitoring on filters and pumps as well as for flow measurement of gases, vapours and liquids in conjunction with a differential pressure generator (e.g. orifice plate). When used in conjunction with a CSB or CSS chemical seal assembly, VEGADIF can also be deployed for density and interface measurement.

Measuring principle

Different pressures act on the two sides of an oil-filled differential pressure measuring cell. This converts the pressure differential into an electronic signal. A piezo measuring cell is used as the pressure measuring cell.

Advantages

The differential pressure transmitter VEGADIF is characterized by its especially wide application spectrum. Even differential pressures of only a few mbar can be accurately measured. Media at extreme temperatures can be measured by adding a chemical seal assembly.

	VEGADIF 65	Chemical seal CSB	Chemical seal CSS
			
Application	Liquids and gases	Liquids and gases	Liquids and gases
Deviation	0.15 %; 0.075 %	–	–
Process fitting	¼-18 NPT, RC ¼, optional with chemical seal assembly, metallic of 316L, Alloy	Flanges from DN 40, 2" cells from DN 50, 2" of 316L, Alloy, Tantalum	Flanges from DN 50, 2" cells from DN 50, 2" of 316L, Alloy, Tantalum
Process temperature	-40 ... +120 °C	-40 ... +400 °C	-40 ... +400 °C
Measuring range	from -10 ... +10 mbar (-1 ... +1 kPa) up to -40 ... +40 bar (-4000 ... +4000 kPa)	from -100 ... +100 mbar (-10 ... +10 kPa) up to -40 ... +40 bar (-4000 ... +4000 kPa)	from -100 ... +100 mbar (-10 ... +10 kPa) up to -40 ... +40 bar (-4000 ... +4000 kPa)
Overload resistance	up to 420 bar	up to 420 bar	up to 420 bar
Signal output	4 ... 20 mA, 4 ... 20 mA/HART, Profibus PA, Foundation Fieldbus	–	–
Display/Adjustment	PLICSCOM, PACTware, VEGADIS 81, VEGADIS 82	–	–
Approvals	ATEX, IEC, CSA, GOST, Overfill protection	In combination with VEGADIF 65	In combination with VEGADIF 65

VEGADIF 65

Differential pressure transmitter with metal measuring diaphragm

Application area

The differential pressure transmitter VEGADIF 65 can be used universally for the measurement of liquids, gases and vapours. Typical applications are level measurements in pressurized vessels as well as flow measurements in combination with DP flow elements. Further applications are pressure monitorings on filters as well as density and interface measurements.

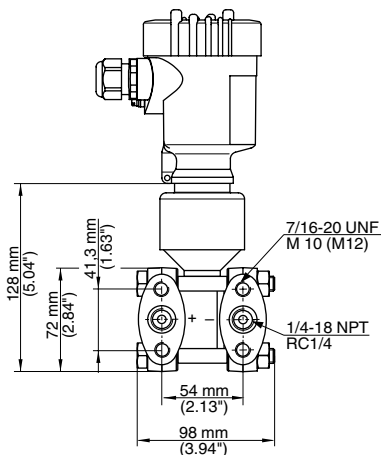
Your benefit

- Measurement of very low differential pressures through high precision measured value detection
- High reliability through integrated overload diaphragm
- Versatile use through a variety of measuring ranges and process fittings

Technical data

Measuring cell:	metallic
Measuring range:	from -10 ... +10 mbar (-1 ... +1 kPa) to -40 ... +40 bar (-4000 ... +4000 kPa)
Process fitting:	1/4 - 18 NPT, RC 1/4
Process temperature:	-40 ... +120 °C with chemical seal assembly -40 ... +400 °C
Deviation in characteristics:	0.15 %; 0.075 %

Delivery time:  **SPEED**



The options shown represent only a limited selection. Additional instrument options and possible restrictions.

www.vega.com/configurator

Instrument documentation and drawings:

www.vega.com/downloads

Mounting accessories, welded sockets and housing overview:

Chapter Accessory

XX	without
AX	ATEX II 3G Ex nA
CX	ATEX II 1G, 1/2G, 2G Ex ia IIC T6
CK	ATEX II 1G, 1/2G, 2G Ex ia IIC T6 + 1D, 1/2D, 2D Ex tD IP66 T*
DX	ATEX II 1/2G, 2G Ex d ia IIC T6
GX	ATEX II 1D, 1/2D, 2D Ex tD IP66 T*
CX	IEC Ex ia IIC T6
DX	IEC Ex d ia IIC T6
GX	IEC Ex tD A20, A20/A21, A21 IP66 T*
CX	CSA (IS) CL I, II, III, DIV1, GP ABCDEFG
DX	CSA (XP-IS) CL I, II, III, DIV1, GP ABCDEFG

B	NPT1/4-18, IEC61518, UNF7/16-20 / Steel C22.8 (1.0460) / without	
C	NPT1/4-18, IEC61518, UNF7/16-20 / Steel C22.8 (1.0460) / with	
D	NPT1/4-18, IEC61518, UNF7/16-20 / 316L / without	
E	NPT1/4-18, IEC61518, UNF7/16-20 / 316L / with	
F	NPT1/4-18, IEC61518, UNF7/16-20 / Alloy C276 (2.4819) / without	
1	NPT1/4-18, PN160=M10, PN420=M12 / Steel C22.8 (1.0460) / without	
2	NPT1/4-18, PN160=M10, PN420=M12 / 316L / without	
W	Prepared for chemical seal assembly / 316L	

1	316L
2	Alloy C276 (2.4819)
3	Alloy 400 (2.4360)
5	Tantalum

A FKM
C PTFE
F NBR
K Copper seal ring, oxygen application
H Copper seal ring

7B	10mbar (1kPa) / 160bar (16000kPa)
7C	30mbar (3kPa) / 160bar (16000kPa)
7D	100mbar (10kPa) / 160bar (16000kPa)
7F	500mbar (50kPa) / 160bar (16000kPa)
7H	3bar (300kPa) / 160bar (16000kPa)
7L	16bar (1600kPa) / 160bar (16000kPa)
7M	40bar (4000kPa) / 160bar (16000kPa)
8F	500mbar (50kPa) / 420bar (42000kPa)
8H	3bar (300kPa) / 420bar (42000kPa)
8L	~~16bar (1600kPa) / 42
8M	40bar (4000kPa) / 420bar(42000kPa)

Z Two-wire 4 ... 20mA

H Two-wire 4...20mA/HART®

P Two-wire Profibus PA

F Two-wire Foundation Fieldbus

K	Plastic single chamber / IP66/IP67
R	Plastic double chamber / IP66/IP67
A	Aluminium single chamber / IP66/IP67
D	Aluminium double chamber / IP66/IP67
8	Stainless steel single chamber (electropolished) / IP66/IP67
W	Stainless steel double chamber / IP66/IP67
P	Axial cable outlet IP 68 (PUR) with external plastic single chamber housing / IP65

M M20x1.5 / with / without

N ½ NPT / without / without

X without
A Mounted

Additional equipment
X without

7 0.075 %
F 0.150 %

Cable length
per 100 mm cable of PUR

Chemical seal CSB

Chemical seal both side assembly for VEGADIF 65

Application area

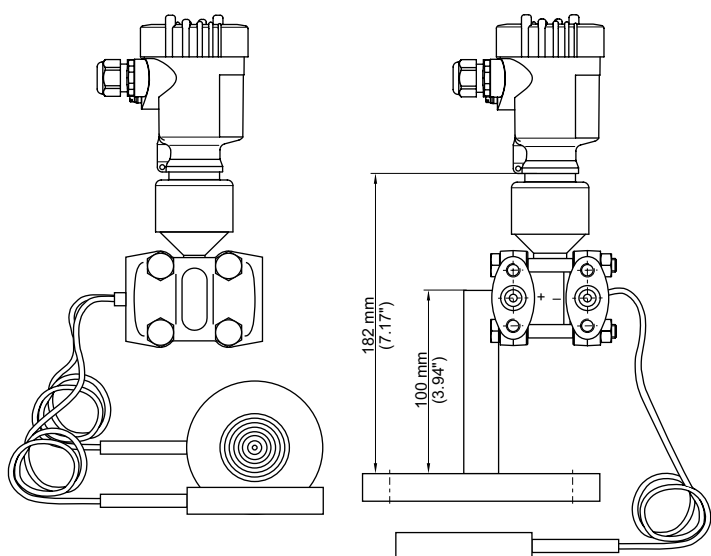
The VEGADIF 65 with chemical seal CSB (both side assembly) is suitable for level, interface, density, differential pressure and flow measurement. Through the assembly of the chemical seal CSB, applications in corrosive, high viscosity and hot products can be realized.

Your benefit

- High chemical resistance through adapted diaphragm materials
- Versatile solutions through individual configuration

Technical data

Measuring range:	from -100 ... +100 mbar (-10 ... +10 kPa) to -40 ... +40 bar (-4000 ... +4000 kPa)
Process fitting:	flanges from DN 50, 2"
Process temperature:	-40 ... +400 °C



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Additional instrument options and possible restrictions.

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Mounting accessories, welded sockets
and housing overview:

Chapter Accessory

Connection high pressure side

- B** Rigid horizontal (100 mm)
E Capillaries 1m
F Capillaries special lengths

Process fitting / Material high pressure side

- AA** Cell DN50 PN16-400 / 316L
AK Cell DN80 PN16-400 / 316L
AR Cell DN100 PN16-400 / 316L
CA Cell 2" 150-2500 / 316L
CK Cell 3" 150-2500 / 316L
FC Flange DN50 PN40 Form D, DIN2501 / 316/316L; 1.4404/1.4401
FD Flange DN50 PN40; with extension (ø48.5x50mm) / 316/316L; 1.4404/1.4401
FH Flange DN80 PN40 Form D, DIN2501 / 316/316L; 1.4404/1.4401
FJ Flange DN80 PN40; with extension (ø76x50mm) / 316/316L; 1.4404/1.4401
F5 Flange 2" 150lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
F7 Flange 2" 150lb RF, ASME; with extension (ø1.9x2") / 316/316L; 1.4404/1.4401
FS Flange 3" 150lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
FQ Flange 3" 150lb RF, ASME; with extension (ø2.9x6") / 316/316L; 1.4404/1.4401
FT Flange 3" 300lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
HN Flange 3" 600lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
RW Slotted nut, nut DN50 PN25, DIN11851 / 316L
RX Slotted nut, nut DN80 PN25, DIN11851 / 316L

Diaphragm material

- 1** 316L
B 316L coated with 0.1 µm rhodium on 4 µm gold
2 Alloy C276 (2.4819)
3 Tantalum

Isolating liquid / Temperature

- C** Silicone oil KN2.2 / -40...+200°C (Pabs<1bar -40...+150°C)
G High temperature oil KN32 / -10...+300°C (Pabs<1bar -10...+200°C)
H High temperature oil KN32 / -10...+400°C (Pabs<1bar -10...+200°C)
I Halocarbon oil KN21 / -40...+150°C (Pabs<1bar -40...+80°C)
R Medical white oil KN92 (FDA) / -10...+250°C (Pabs<1bar -10...+160°C)

Connection low pressure side

- F** Capillaries special lengths

Process fitting / Material low pressure side

- AA** Cell DN50 PN16-400 / 316L
AK Cell DN80 PN16-400 / 316L
AR Cell DN100 PN16-400 / 316L
CA Cell 2" 150-2500 / 316L
CK Cell 3" 150-2500 / 316L
FC Flange DN50 PN40 Form D, DIN2501 / 316/316L; 1.4404/1.4401
FD Flange DN50 PN40; with extension (ø48.5x50mm) / 316/316L; 1.4404/1.4401
FH Flange DN80 PN40 Form D, DIN2501 / 316/316L; 1.4404/1.4401
FJ Flange DN80 PN40; with extension (ø76x50mm) / 316/316L; 1.4404/1.4401
F5 Flange 2" 150lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
F7 Flange 2" 150lb RF, ASME; with extension (ø1.9x2") / 316/316L; 1.4404/1.4401
FS Flange 3" 150lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
FQ Flange 3" 150lb RF, ASME; with extension (ø2.9x6") / 316/316L; 1.4404/1.4401
FT Flange 3" 300lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
HN Flange 3" 600lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
RW Slotted nut, nut DN50 PN25, DIN11851 / 316L
RX Slotted nut, nut DN80 PN25, DIN11851 / 316L

Vacuum service

- J** yes (with measuring ranges < 0.5bar abs)
N No

Material certificate

- X** without
D Inspection certif. EN10204-3.1B, NACE MR0175(wetted)

CSB. ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Capillaries high pressure side in m
(500-12000 mm) per 100 mm

Capillaries low pressure side in m
(500-12000 mm) per 100 mm

Chemical seal CSS

Chemical seal single side assembly for VEGADIF 65

Application area

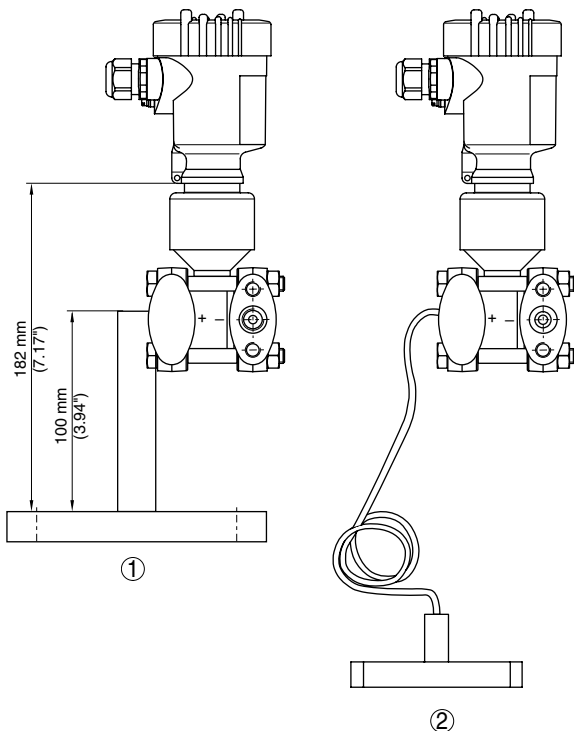
The VEGADIF 65 with chemical seal CSS (single side assembly) is suitable for level and differential pressure measurement. Through the assembly of the chemical seal CSS, applications in corrosive, high viscosity and hot products can be realized.

Your benefit

- High chemical resistance through adapted diaphragm materials
- Versatile solutions through individual configuration

Technical data

Measuring range:	from -100 ... +100 mbar (-10 ... +10 kPa) to -40 ... +40 bar (-4000 ... +4000 kPa)
Process fitting:	flanges from DN 50, 2"
Process temperature:	-40 ... +400 °C



- ① Version: rigid vertically (100 mm)
② Version: with capillaries (100 mm)

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Additional instrument options and possible restrictions.

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Instrument documentation and drawings:

www.vega.com/downloads

Mounting accessories, welded sockets
and housing overview:

Chapter Accessory

A Rigid vertical (100 mm)
 B Rigid horizontal (100 mm)
 C Rigid with cooling distance vertical (150 mm)
 D Rigid with cooling distance horizontal (150 mm)
 E Capillaries 1m
 F Capillaries special lengths

FC	Flange DN50 PN40 Form D, DIN2501 / 316/316L; 1.4404/1.4401
FD	Flange DN50 PN40; with extension (ø48.5x50mm) / 316/316L; 1.4404/1.4401
FH	Flange DN80 PN40 Form D, DIN2501 / 316/316L; 1.4404/1.4401
FJ	Flange DN80 PN40; with extension (ø76x50mm) / 316/316L; 1.4404/1.4401
DF	Flange DN100 PN40; with extension (ø94x50mm) / 316/316L; 1.4404/1.4401
F5	Flange 2" 150lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
F7	Flange 2" 150lb RF, ASME; with extension (ø1.9x2") / 316/316L; 1.4404/1.4401
HW	Flange 2" 150lb SG, ASME B16.5 / 316/316L; 1.4404/1.4401
FS	Flange 3" 150lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
FQ	Flange 3" 150lb RF, ASME; with extension (ø2.9x6") / 316/316L; 1.4404/1.4401
HP	Flange 3" 150lb FF, ASME B16.5 / 316/316L; 1.4404/1.4401
DI	Flange 2" 900lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401
FT	Flange 3" 300lb RF, ASME B16.5 / 316/316L; 1.4404/1.4401

1 316L
2 Alloy C276 (2.4819)
3 Tantalum

C	Silicone oil KN2.2 / -40...+200°C (Pabs<1bar -40...+150°C)
G	High temperature oil KN3.2 / -10...+300°C (Pabs<1bar -10...+200°C)
H	High temperature oil KN3.2 / -10...+400°C (Pabs<1bar -10...+200°C)
I	Halocarbon oil / -40...+150°C (Pabs<1bar -40...+80°C)
R	Medical white oil KN92 / -10...+250°C (Pabs<1bar -10...+160°C)

1 7/16-20 UNF

1 316L

Y Kalrez 6375

J yes (with measuring ranges <0.5bar abs)

Material certificate

X without

Capillaries high pressure side in m
(500-8000 mm) per 100 mm

Oval flange adapter

Oval flange adapter for VEGADIF

The oval flange adapter enables the connection of a ½ NPT tube to a VEGADIF 65 or a valve block. Through the selection of the suitable material, the oval flange adapter can be adapted to all processes.



- Version / Material
- A Basic version / 316L
 - Screws / Material / Nominal pressure
 - H 7/16 UNF / steel 8.8 galvanized / PN420
 - I 7/16 UNF / 304 / PN160
 - Seal / Temperature range
 - 1 FKM (Vi 399) / -15...+200°C
 - 2 EPDM / -40...+150°C
 - 3 PTFE / -200...+260°C

DIFOVAL.			
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Ventilation valve

Ventilation valve for VEGADIF
2 pcs.



- Version / Material
- 17724 ¼ NPT / 316L

2.	
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Closing screw

Closing screw for VEGADIF
2 pcs.



- Version / Material
- 17725 ¼ NPT / 316L

2.	
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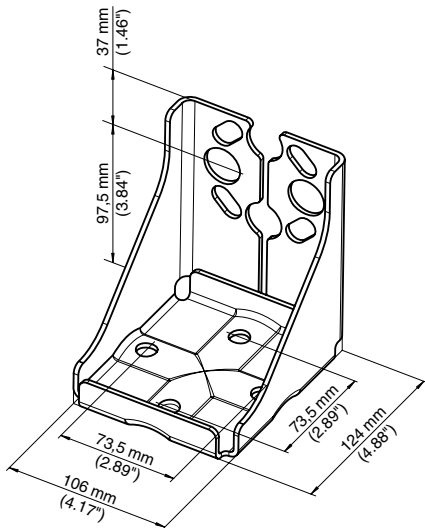
Mounting angle for VEGADIF

Mounting angle for VEGADIF
for wall or tube mounting
with strap for tube mounting
with fixing screws 7/16 UNF, M10



Version / Material
A Universal angle / 304

DIFMW.



Compression type mechanical joint VEGADIF

Compression type mechanical joint
for VEGADIF and oval flange adapter



Version
41594 1/4 NPT compression type fitting for tube diameter 12mm / 316L
40439 1/2 NPT compression type fitting for tube diameter 12mm / 316L

2.

Valve block

For direct connection to the differential pressure transmitter VEGADIF 65

Application area

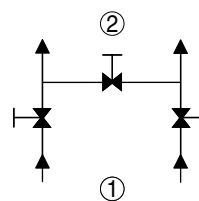
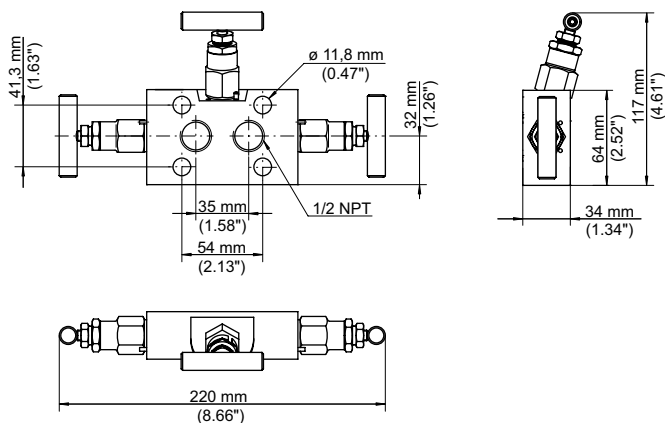
The use of the valve block with inlet and outlet valves ensures the simple installation and setup of the differential pressure transmitter.

Your benefit

- Proven technology because suitable for connections according to IEC 61518
- Simple mounting and dismantling of the differential pressure transmitter
- Individual adaptation to the respective process

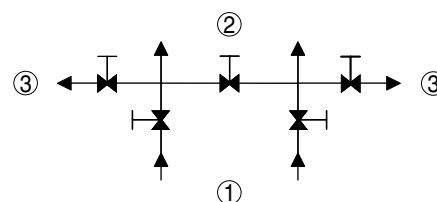
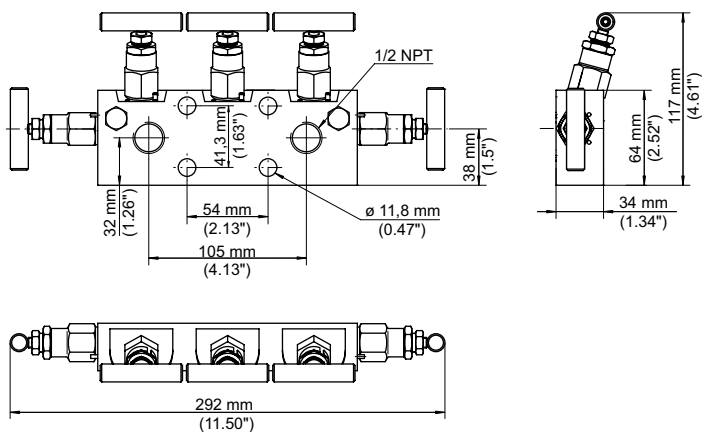


Three-fold valve block acc. to DIN 19213



- ① to the process
② to the measuring instrument

Five-fold valve block acc. to DIN 19213



- ① to the process
② to the measuring instrument
③ check/ventilate

Version

- C** 3-fold DN5 PN420
- D** 5-fold DN5 PN420
- E** 3-fold DN5 PN420 flanging on both sides
- L** 3-fold DN5 PN160
- M** 5-fold DN5 PN160
- N** 3-fold DN5 PN160 flanging on both sides

Material block / Material valve seal

- V** 316L (1.4404) / PTFE

Input

- N** Threaded socket 1/2NPT
- M** Cutting ring connection for 12 mm (DIN2353)
- I** according to IEC 61518
- J** Oval flange adapter IEC 61518 - Thread 1/2NPT

Output

- A** Form A, IEC61518

Fixing screws / Material process seal

- X** without
- 1** 7/16 UNF 304, length: 1 3/4" / PTFE
- 4** 7/16 UNF galvanized steel, length: 1 3/4" / PTFE
- 5** 7/16 UNF 304, length: 7/8" / PTFE
- 6** 7/16 UNF galvanized steel, length: 7/8" / PTFE
- T** M10 304, length: 45mm / PTFE
- U** M10 galvanize steel, length: 45mm / PTFE

Certificate / Standard

- X** without
- B** (C) 3.1-Inspection certificate for material (EN 10204)

DIFVALVE.



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