

PDR04

Differential pressure gauge with double, linked Bourdon tubes

- Made completely of stainless steel, fully welded design
- Available measuring ranges: from 0–0.6 bar to 0–16 bar
- Static pressure: 3–40 bar
- Housing diameter: 100 or 160 mm
- Designs for all types of installations available
- Limit contacts optionally available



Description:

Model PDR04 differential pressure gauges feature two Bourdon tube measurement systems that are linked to each other in a manner that causes only the pressure difference between the two inlets to be indicated by the movement of the needle relative to the gauge scale.

This design makes an additional rotary scale, such as used on other double-Bourdon-tube systems, unnecessary.

These devices are made completely of stainless steel and available in housing diameters of 100 mm or 160 mm.

Housing designs are available for essentially all possible types of installations. The gauges are also optionally available with limit contacts.

Typical Applications:

Model PDR04 differential pressure gauges are primarily used in the following areas of application:

- Filter monitoring
- Petrochemical industry
- Ship building
- Off-shore facilities
- Flow measurement by means of orifice plates or based on the differential-pressure principle

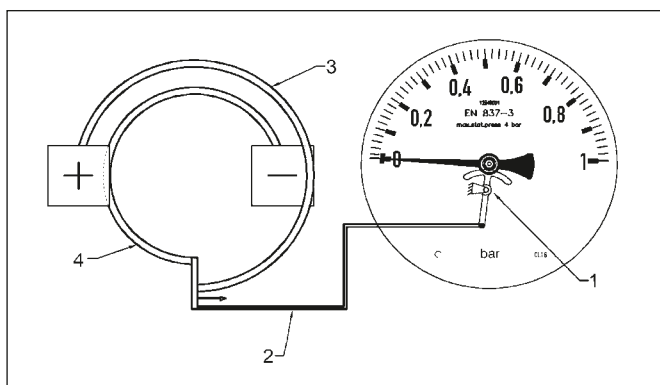
Models:

Nominal size:	Housing diameter of 100 or 160 mm
Materials:	Housing made of stainless steel 1.4301, Bourdon tubes and process connection made of stainless steel 1.4571
Process connection:	2 x 1/2" straight connections, male thread or 2 x 1/2" NPT connections, male thread; special-order connections optionally available
Designs:	
Version K:	for mounting on piping, connection on bottom
Version L:	for surface mounting with rim flange on back side, connection on bottom
Version M:	for mounting on piping, connection on back
Version N:	for panel mounting, with three-hole bezel, connection on back
Version O:	for panel mounting, with three-hole bezel, connection on bottom
Version M:	for panel mounting, with bezel and retainer, connection on back

Measuring Ranges:

Measuring range in bar (max. static pressure, on both sides)	Designs					
	Ordering codes					
0...0.6 (3 bar)	K67	L67	M67	N67	O67	H67
0...1 (4 bar)	K69	L69	M69	N69	O69	H69
0...1.6 (6 bar)	K70	L70	M70	N70	O70	H70
0...2.5 (10 bar)	K72	L72	M72	N72	O72	H72
0...4 (16 bar)	K73	L73	M73	N73	O73	H73
0...6 (25 bar)	K74	L74	M74	N74	O74	H74
0...10 (30 bar)	K75	L75	M75	N75	O75	H75
0...16 (40 bar)	K76	L76	M76	N76	O76	H76

Principle of Operation:



- 1 = Needle movement
- 2 = Mechanical linkage to measuring element
- 3 = Bourdon tube (+) for high pressure
- 4 = Bourdon tube (-) for low pressure

Model Coding:

Order Number: PDR04 10. E. 15G. 0. K75. 0. 0

Differential pressure gauge with double, linked Bourdon tubes

Models:

- 10 = Housing diameter of 100 mm
- 16 = Housing diameter of 160 mm

Materials:

- E = Completely of stainless steel

Process connection:

- 15G = 2 x 1/2" straight connections, male thread
- 15N = 2 x 1/2" NPT, male thread
- S = Special-order connection (see table in section "Options and Accessories")

Vibration dampening:

- 0 = None
- 1 = Glycerin-filled
- 2 = Oil-filled (only for devices with contact or analog output)

Designs and measuring ranges:

K67 to H76 = See table in section "Measuring Ranges"

Electrical accessories:

- 0 = None
- xxx = See table in section "Limit Contacts"

Options and accessories (more than one may be selected):

- 0 = None
- xxx = See table in section "Options and Accessories"

Technical Specifications:

Housing: Round gauge housing made of 1.4301 stainless steel, d = 100 or 160 mm

Pressure sensing element: 2 x Bourdon tubes made of stainless steel 1.4571

Needle movement: stainless steel 1.4301

Glass face: instrument glass (4 mm)

Scale and needle: aluminum, needle deflection 90°-180°

Process connection:

- 1/2" straight thread or NPT (standard)
- 1/4", 3/8" straight thread or NPT (optional), all made of stainless steel 1.4571
- Other connections available upon request

Liquid-filled version:

Glycerin (oil filled for gauges with contact devices)

Measuring ranges:

See table in section "Measuring Ranges"

Max. static pressure:

See table in section "Measuring Ranges"

Media temp.: -20° to +100°

Accuracy: Class 1.6

Protection type: IP45 (IP65 for filled devices)

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Abmessungen:

PDR04...K
for mounting on piping, connection on bottom

	Housing diameter (mm)			
	100	160	100 + contact	160 + contact
A	101.5	162	101.5	162
B	97	100	159	163
C	14	18	14	18
E	90	120	90	120
T	20	20	20	20

PDR04...L
for surface mounting with rim flange on back side, connection on bottom

	Housing diameter (mm)			
	100	160	100 + contact	160 + contact
A	101.5	162	101.5	162
B	100	102	162	165
C	14	18	14	18
D	132	196	132	196
E	90	120	90	120
P	116	178	116	178
H	4.5	6	4.5	6
T	20	20	20	20

PDR04...M
for mounting on piping, connection on back

	Housing diameter (mm)			
	100	160	100 + contact	160 + contact
A	101.5	162	101.5	162
B	97	100	159	163
E	137	140	199	203
T	20	20	20	20

PDR04...N
for panel mounting, with three-hole bezel, connection on back

	Housing diameter (mm)			
	100	160	100 + contact	160 + contact
A	101.5	162	101.5	162
B	97	100	159	163
D	132	196	132	196
E	137	140	199	203
F	3,5	3	3,5	3
G	13	15,5	13	15,5
H	4,5	6	4,5	6
P	116	178	116	178
T	20	20	20	20

PDR04...O
for panel mounting, with three-hole bezel, connection on bottom

	Housing diameter (mm)			
	100	160	100 + contact	160 + contact
A	101.5	162	101.5	162
B	97	100	97	100
C	14	18	14	18
D	132	196	132	196
E	90	120	90	120
F	3.5	3	3.5	3
G	13	15.5	13	15.5
H	4.5	6	4.5	6
P	116	178	116	178
T	20	20	20	20

PDR04...H
for panel mounting, with bezel and retainer, connection on back

	Housing diameter (mm)			
	100	160	100 + contact	160 + contact
A	101.5	162	101.5	162
B	97	100	159	163
D	110	180	110	180
E	137	140	199	203
F	2	2	2	2
G	10.5	9	10.5	9
T	20	20	20	20

Limit switches:

Models:

Magnetic spring

contact:

as normally open contact (N/O)
or normally closed contact (N/C)
(max. 2 contacts)
as changeover contact (max. 1 contact)
breaking capacity: 30 W, 50 VA
switching voltage: 24–250 V

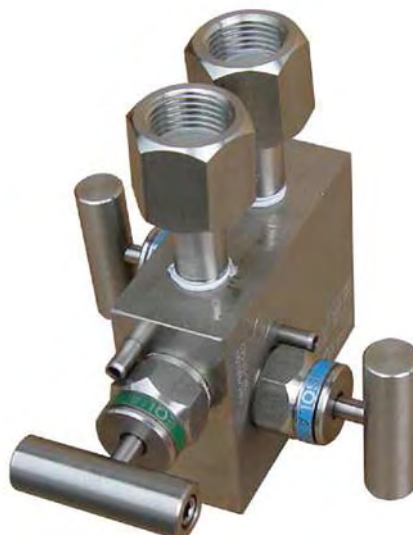
Inductive contact: as normally open contact (N/O) –
switched through output transistor
(enabled) or normally closed contact
(N/C) – output transistor disabled
(max. 2 contacts)
control voltage: 8 VDC, Ri = 1 kOhm
intrinsically safe as per EEx ib IIC T6

Description	Code
Contact operation with increasing pressure, needle movement clockwise (from left to right)	1 = normally open contact (N/O) 2 = normally closed contact (N/C) 3 = changeover contact
1 magnetic spring contact = normally open (N/O)	M1
1 magnetic spring contact = normally closed (N/C)	M2
1 magnetic spring contact = changeover, normally closed (N/C)	M3
2 magnetic spring contacts Switching function: x = normally open (N/O) or normally closed (N/C)	Mxx
1 inductive contact = normally open (N/O)	I1
1 inductive contact = normally closed (N/C)	I2
2 inductive contacts Switching function: x = normally open (N/O) or normally closed (N/C)	Ixx

Options and Accessories:

Description	Code
Scale in psi	P
Double scale in bar / psi	BP
Special-order scale	SK...
Process connection 1/4" straight thread	08G
Process connection 3/8" straight thread	10G
Process connection 1/4" NPT	08N
Process connection 3/8" NPT	10N
Three-valve manifold made of stainless steel Process connection: 2 x 1/4" straight connections, female thread Instrument connection: 2 x 1/2" straight connections with rotary sleeve clamp	3VD-35

Three-valve manifold for PDR04:



The model 3VD-35 valve manifold serves to block off the connection to the process as well as to provide pressure compensation between both inlets of the differential pressure gauge before the actual measurements are taken.

The device is made completely of stainless steel. The fitting packing consists of PTFE.

The valve manifold can be used for all differential pressure gauges with a minimum distance of 35 mm between the process connections.

Function:

