



PKP Prozessmesstechnik GmbH

Borsigstrasse 24

D-65205 Wiesbaden-Nordenstadt

Tel: 06122 / 7055 - 0

Fax: 06122 / 7055 – 50

Operating Instructions

PDP02

*Differential pressure gauge with diaphragm
measuring system and two measuring chambers*

INSTRUCTION LEAFLET FOR PRESSURE GAUGES

WARNING:

Incorrect use of pressure gauges can cause damage and injuries. Under this Directive, the user must ensure that pressure gauges are installed and used in such a way that pressure-related hazards are eliminated to a maximum extent.

Before starting installation, follow the recommendations of standard EN 837-2:

Check that the pressure gauge, designed in compliance with standard EN 837-1/3, is suitable for the planned use in terms of:

- Operating pressure (OP)
- Operating temperature (OT)
- Safety level of the pressure gauge
- Connection interface
- Type of mounting
- Compatibility of materials in contact with the fluid to be measured
- Environmental conditions, vibrations, shocks, pulses, ambient atmosphere
- Check that the pressure gauge is compatible with the surrounding atmosphere

USE IN AN OXYGEN CIRCUIT

Check that the pressure gauge is designed for such an application. The dial must have the word OXYGEN printed in red and the international symbol "oil-free" (a crossed-out burette). The pressure gauge must not have been in contact with oil or grease that is incompatible with oxygen:

RISK OF EXPLOSION!

Mounting

A pressure gauge must be mounted in compliance with standard practice.

- We advise to mount with an isolation valve.
- The user must check that the connections are perfectly sealed by using suitable seals that are compatible with the fluid to be measured.
- Use a correctly sized spanner to tighten connections. NEVER TWIST THE CASE IN ORDER TO TIGHTEN CONNECTIONS.
- Comply with the instructions given on the device when putting it into service.
- For pressure gauges fitted with a rear blow-out disc for protection against overpressure, ensure that there is a gap of at least 10 mm between the rear panel of the casing and the panel immediately next to it.
- Likewise, for this type of rear blow-out disc and a casing filled with damping fluid, do not remove the disc from its location.
- Only re-use a pressure gauge if the medium is the same as for its first use.

USE

Warning: The operating conditions must be such that the device can be used safely.

THE PRESSURE GAUGE MUST NOT BE SUBJECTED TO:

- Mechanical shocks: if there is a risk install it at a distance with a hose connection.
- Vibrations: if there is a risk install it at a distance with a hose connection or use a liquid filled pressure gauge.
- Pressure pulses: if there is a risk mount a pulsation damper.

Warning: pressure pulses cause a considerable shortening of the operating life of pressure gauges.

- Pressures greater than operating pressures (OP). Otherwise use a pressure relief valve.
- Temperatures greater or less than operating temperatures (OT). If there is a risk use a siphon mount or mount with hose connection to respect the temperature at the pressure gauge.

NOTE:

Failure to observe the conditions above may reduce pressure gauge safety. In such cases contact us.

DISASSEMBLY

- During disassembly, check that the pressure gauge is no longer under pressure. As a precaution, disassemble it slowly.
- Check that the temperature of the pressure gauge body is not sufficient to cause burning.
- Check that residues of the product present in the tube and block of the pressure gauge are not dangerous for the operator and the environment.

MAINTENANCE

- The general safety of a facility often depends on the reliability of indications on the pressure gauges installed in the facility.
- Any pressure gauge that seems to be giving false readings must be removed immediately, then tested. If the tests prove it is unreliable, it must be replaced with a new device.
- Periodic verifications should be carried out to check the accuracy of pressure gauges.
- Any pressure gauge considered to have been subjected to abnormal conditions of use (e.g. fire, wrong fluid, blows, etc.) must not be used.

MAINTENANCE, VERIFICATION OR RECALIBRATION MUST BE CARRIED OUT BY PERSONNEL APPROVED BY THE CONSTRUCTOR AND USING SUITABLE EQUIPMENT.

IMPORTANT

The instructions in this leaflet must be strictly followed.

The manufacturer declines all responsibility for any direct or indirect damage to property or persons as well as for the consequence, for example, of lost production resulting from failure to observe the instructions in this leaflet.

PDP02

Differential Pressure Gauge with Diaphragm and two Measuring Chambers

- low-cost version
- housing diameter 100 or 160 mm
- completely made of stainless steel, gaskets FKM and PTFE
- measuring ranges from 0...0,6 bar to 0...16 bar
- static pressure max. 20 bar
- high overload protection, max. 4 x full scale
- versions available for all installation variants
- accuracy class 2,5



Description:

The differential pressure gauges PDP02 have two measuring chambers which are separated from each other by a diaphragm. Different pressures in the two measuring chambers cause a deflection of the diaphragm, which is indicated on the scale by a pointer mechanism.

The devices are always supplied completely in stainless steel with FKM and PTFE seals in housing sizes 100 or 160 mm. Housing versions for practically all installation situations are available.

Typical applications:

The differential pressure gauges PDP02 are mainly used in the following areas of application:

- filter monitoring
- petrochemistry
- oil and gas applications
- shipbuilding
- off-shore applications
- general industrial applications
- flow measurement by means of orifice plates or according to differential pressure principle


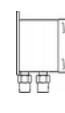
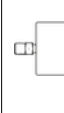
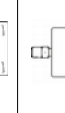
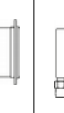
Models:

Nominal size: housing diameter 100 or 160 mm
Materials: stainless steel housing 1.4301, bourdon tube and process connection made of stainless steel 1.4571, diaphragm made of Duratherm
Process connection: 2 x G 1/2 male or 2 x 1/2" NPT male, special connections optional

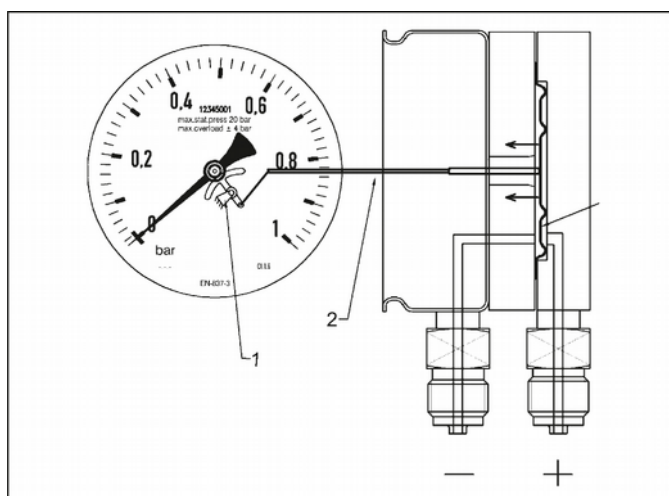
Designs:

Version K: for pipe mounting, connection at bottom
 Version L: for wall mounting, with rear rim, connection at bottom
 Version M: for pipe mounting, connection at back
 Version N: for panel mounting, with three-hole front ring, connection at back
 Version O: for panel mounting, with three-hole front ring, connection at bottom

Measuring Ranges:

Measuring range [bar] (Overload safety [bar])	Design				
					
	Order Code				
0...0,6 (2,4)	K67	L67	M67	N67	O67
0...1 (4)	K69	L69	M69	N69	O69
0...1,6 (6,4)	K70	L70	M70	N70	O70
0...2,5 (10)	K72	L72	M72	N72	O72
0...4 (16)	K73	L73	M73	N73	O73
0...6 (20)	K74	L74	M74	N74	O74
0...10 (20)	K75	L75	M75	N75	O75
0...16 (20)	K76	L76	M76	N76	O76

Functional Principle:



1 = pointer mechanism
 2 = mechanical connection to measuring element
 3 = bourdon tube

Order Code:

Order number: PDP02. 10. E. 15G. 0. K75. 0. 0

Differential pressure gauge with diaphragm

Models:

10 = housing diameter 100 mm
 16 = housing diameter 160 mm

Materials:

E = stainless steel, gasket FKM / PTFE
 S = special version

Process connection:

15G = 2 x G 1/2 male thread
 15N = 2 x 1/2" NPT male thread
 S = special connection (see: options)

Vibration damping:

0 = 0 = without

Design and measuring range:

K67...H76 = see table „Measuring Ranges“

Additional electrical equipment:

0 = 0 = without

Options and accessories: (multiple selection possible)

0 = 0 = without
 xxx = see table „Options and Accessories“

Technical Data:

Housing: round stainless steel housing 1.4301, d = 100 or 160 mm

Measuring element: diaphragm made of Duratherm

Pointer mechanism: brass, nickel-plated

Viewing class: mineral glass (4 mm)

Scale and pointer: aluminium

Process connection: 1/2" G or NPT (standard), 1/4", 3/8" G or NPT (optional) made of stainless steel 1.4404, other connections on request

Gasket: FKM / PTFE

Measuring ranges: see table „Measuring Ranges“

Max. static pressure: 20 bar (25 bar on request)

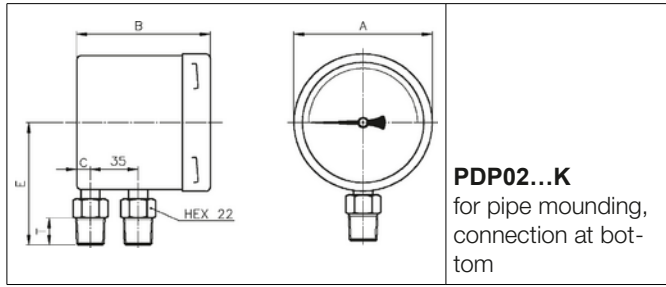
Overload safety: see table „Measuring Ranges“

Media temperature: -20 ... +80 °C

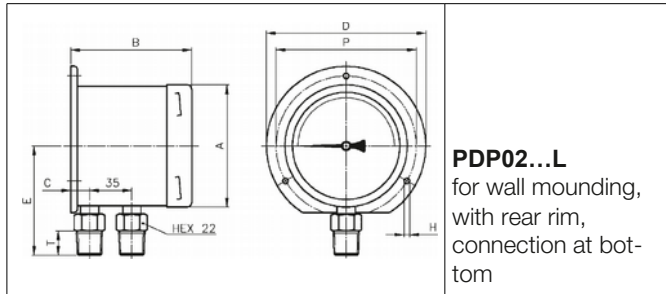
Accuracy: class 2,5

Protection class: IP65

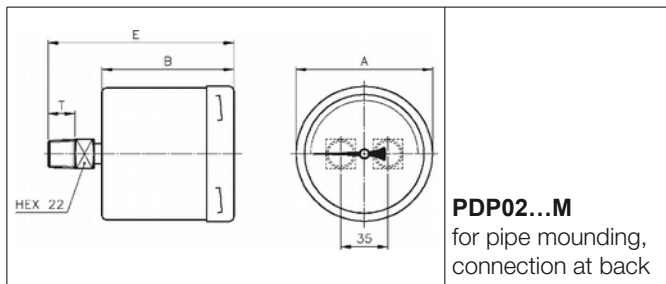
Dimensions:



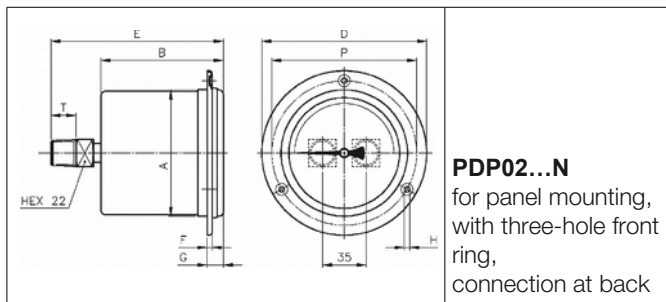
	Dimensions [mm]	
	Ø 100	Ø 160
A	101,5	162
B	80	80
C	11	11
E	89	119
T	20	20



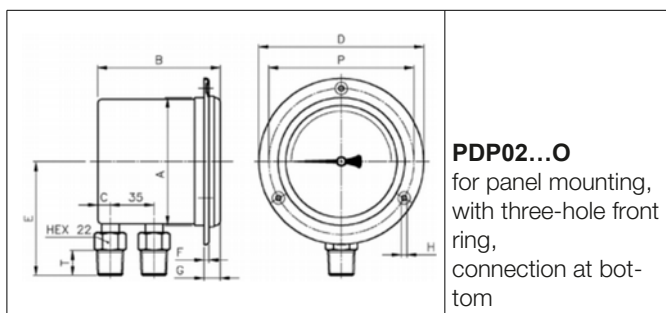
	Dimensions [mm]	
	Ø 100	Ø 160
A	101,5	162
B	83	83
C	14	14
D	132	196
E	89	119
P	116	178
H	4,5	6
T	20	20



	Dimensions [mm]	
	Ø 100	Ø 160
A	101,5	162
B	80	80
E	120	120
T	20	20

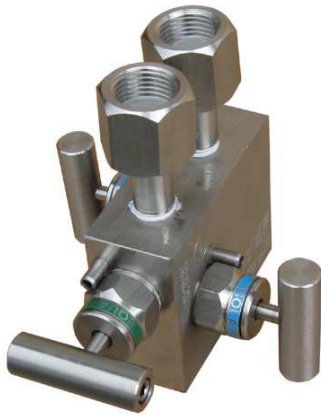


	Dimensions [mm]	
	Ø 100	Ø 160
A	101,5	162
B	80	80
D	132	196
E	120	120
F	3,5	3
G	13	15,5
H	4,5	6
P	116	178
T	20	20



	Dimensions [mm]	
	Ø 100	Ø 160
A	101,5	162
B	80	80
C	11	11
D	132	196
E	89	119
F	3,5	3
G	13	15,5
H	4,5	6
P	116	178
T	20	20

Three-Spindle Valve Block for PDP02:



The 3VD-35 valve block is used to shut off the connection to the process and to equalize the pressure between the two inputs of the differential pressure gauge before the actual measurement.

The device is completely made of stainless steel 1.4401, the packing is made of PTFE.

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

Options and Accessories:

Description	Code
scale in psi	P
double scale bar / psi	BP
special scale	SK...
process connection G 1/4	08G
process connection G 3/8	10G
process connection 1/4" NPT	08N
process connection 3/8" NPT	10N
three-spindle stainless steel valve block, process connection: 2 x G 1/4 female instrument connection: 2 x G 1/2 with rotating sleeve	3VD-35

Function:

