PRESSURE 2025

PROFI MESS GMBH

PRESSURE GAUGES

PM-63N

Bourdon Pressure Gauge

Features

/ Quality class 1.6

/ Brass or VA movement

/ Filled or unfilled

/ Protection class IP65 / IP54

Description:

Bourdon pressure gauges in the PM-63N series can be supplied in brass or stainless steel designs in filled or unfilled conditions. A drawn brass or stainless steel pipe shaped into a spiral is filled with the medium which deforms irrespective of the pressure. This movement is indicated by a measuring instrument which can be attenuated by the glycerin filling available optionally so that vibrations are heavily mellowed down. The natural lubricating action of glycerin reduces the wear and tear of moving parts and penetration of corrosive gases and prevents formation of water condensation. The stainless steel version allows measurement of pressure even in the most hostile fluids and gases. The pressure gauges are selectively equipped with a G1/4 B threaded connection at the bottom or centre respectively off-centre at the back.

Application:

Bourdon pressure gauges are used across all types of industrial applications. They are particularly suited for measuring points where no power supply is available. The PM-63N.1 series of pressure gauges is widely used in machine and equipment manufacturing, in pumps, compressors or block-type thermal power plants, since often the requirements on the consistency of media must necessarily be moderate. On the other hand, the PM-63N.2 series of chemical pressure gauges is capable of resisting more hostile media and, therefore, are used frequently in chemical and petrochemical industries, in the food-processing segment, in pharmaceutical production or in power stations where they a proven record of unfailing service for decades.

Technical Specifications:

Accuracy class / quality class 1.6

Protection class / PM-63N.x.1. . . - IP54 as per EN 60529 / IEC 529
PM-63N.x.2. . . - IP65 as per EN 60529 / IEC 529

Sealing + plug / EPDM and PUR

Damping / glycerine

Options / other attenuation fluids, special type scales with customer's logo, other process connections

Load /

Pressure	steady	dynamic	burst
PM-63N.1.1.x..	0.75 x FSV	0.70 x FSV	1.00 x FSV
PM-63N.1.2.x..	1.00 x FSV	0.90 x FSV	1.30 x FSV
PM-63N.2.1.x..	1.00 x FSV	0.90 x FSV	1.30 x FSV
PM-63N.2.2.x..	1.00 x FSV	0.90 x FSV	1.30 x FSV

Temperature /

Temperature	max. Media temperature	Ambient temperature
PM-63N.1.1..	+60°C	-25. . .+ 60°C
PM-63N.2.1..	+200°C	-40. . .+ 60°C
PM-63N.1.2..	+60°C (>100 bar +100°C)	-25. . .+ 60°C
PM-63N.2.2..	+ 100°C	-25. . .+ 60°C

Temperature error /

Temperature error, T_{Ref} 20°C
rising: + 0.3% FS / 10K
falling: - 0.3% FS / 10K

Materials /

Material	Housing	Window
PM-63N.1.1.x..	black carbon steel, plastic resp. st. steel	instrument acrylic glass
PM-63N.1.2.x..	st. steel	polycarbonate
PM-63N.2.1.x..	st. steel	laminated safety-glass
PM-63N.2.2.x..	st. steel	laminated safety-glass

Material	Sensor element	Dial
PM-63N.1.1.x..	up to 60 bar circular bourdon ab 60 bar helix bourdon	white aluminium / white plastic, black scale and lettering as per EN 837-1
PM-63N.1.2.x..	up to 100 bar, CuSn8, soft-soldered from 100 bar, st. steel - 1.4404, hard-soldered	white aluminium, black scale and lettering as per EN 837-1
PM-63N.2.x..	st. steel 1.4404	white aluminium, black scale and lettering as per EN 837-1

Material	Motion work	Pointer
PM-63N.1.x..	Bottom and cover-parts from brass, moving parts argentan	black aluminium / black plastic
PM-63N.2.x..	st. steel	black aluminium

Ordering Codes:

Order number	PM-63N.	2.	2.	1.	0.	Q

PM-63N Bourdon Pressure Gauge

Version /
1 = brass
2 = fully stainless steel for chemical applications

Damping /
1 = no glycerin filling
2 = with glycerin filling

Process connection /
1 = G1/4" B at the bottom
2 = G1/4" B back, centred (PM-63N.1.), back, off-centre (PM-63N.2)

Fastening rim (see table for possible combination) /
0 = none
1 = 3 hole front ring
2 = rear edge for wall-mounting
3 = 3 rimmed front ring with clamp

Operating range /
A = 0 . . . 0.6 bar (PM-63N.1.1 only)
B = 0 . . . 1 bar
C = 0 . . . 1.6 bar
D = 0 . . . 2.5 bar
E = 0 . . . 4 bar
F = 0 . . . 6 bar
G = 0 . . . 10 bar
H = 0 . . . 16 bar
I = 0 . . . 25 bar
J = 0 . . . 40 bar
K = 0 . . . 60 bar
L = 0 . . .100 bar
M = 0 . . . 160 bar
N = 0 . . . 250 bar
O = 0 . . . 400 bar
P = 0 . . . 600 bar
Q = 0 . . . 1000 bar (not for PM-63N.1.1)
S = -1 . . . 0 bar
T = -1 . . . +0.6 bar
U = -1 . . . +1.5 bar
V = -1 . . . +3 bar
W = -1 . . . +5 bar
X = -1 . . . +9 bar
Y = -1 . . . +15 bar

Front ring /

	3-hole Front ring	rear edge	3-rimmed-Front ring
PM-63N.1.1.1..	-	OK	-
PM-63N.1.1.2..	OK	-	OK
PM-63N.1.2.1..	OK	OK	-
PM-63N.1.2.2..	OK	-	OK
PM-63N.2.1.1..	OK	OK	-
PM-63N.2.1.2..	OK	OK	OK
PM-63N.2.2.1..	OK	OK	-
PM-63N.2.2.2..	OK	OK	OK

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

PM-100N

Bourdon Pressure Gauge

Features

/ Quality class 1.0

/ Stainless steel housing

/ Brass or SS movement

/ Filled or unfilled

/ Protection class IP65 / IP54

Description:

Bourdon pressure gauges in the PM-100N series can be supplied in brass or stainless steel versions in filled or unfilled condition. A drawn brass or stainless steel pipe shaped into a spiral is filled with the medium which deforms irrespective of the pressure. This movement is indicated by a measuring instrument which can be attenuated by the glycerin filling available optionally so that vibrations are heavily mellowed down. The natural lubricating action of glycerin reduces the wear and tear of moving parts and penetration of corrosive gases and prevents formation of water condensation. The stainless steel design allows measurement of pressure even in the most hostile fluids and gases. The pressure gauges are selectively equipped with a G1/4 B threaded connection at the bottom or eccentrically at the back. On request, they can be fitted with up to two magnetic spring or inductive contacts. We supply also pressure gauges in larger nominal sized such as 6" (160 mm) or 10" (250 mm), or special designs of 4" (100 mm) and 2.5" (63 mm) devices. Please contact us in this regard.

Application:

Bourdon pressure gauges are used across all types of industrial applications. They are particularly suited for measuring points where no electrical power supply is available. The PM-100N.1 series of pressure gauges is widely used in machine and equipment manufacturing, in pumps, compressors or block-type thermal power plants, since often the requirements on the consistency of media must necessarily be moderate. On the other hand, the PM-100N.2 series of chemical pressure gauges is capable of resisting more hostile media and, therefore, are used frequently in chemical and petrochemical industries, in the food-processing segment, in pharmaceutical production or in power stations where they a proven record of unfailing service for decades. The PM-100N pressure gauges optionally equipped with switching contacts can also be used for electronic pressure monitoring.

Technical Specifications:

Accuracy class / Quality class 1.0

Protection class / PM-100N.x.1 - IP54 as per EN 60529
PM-100N.x.2 - IP65 as per EN 60529

Seal and Plug / PUR

Damping / glycerine

Options / other attenuation fluids, special type scales with customer's logo, other process connections

Load /

Pressure	steady	dynamic	burst
PM-100N.x.x..	1.00 x FSV	0.90 x FSV	1.30 x FSV

Temperature /

Temperature	max. Media temperature	Ambient temperature
PM-100N.1.1..	+80 (>100 bar +120°C)	-40. . . +60°C
PM-100N.2.1..	+200°C	-40. . .+60°C
PM-100N.1.2..	+60°C (>100 bar +100°C)	-25. . .+60°C
PM-100N.2.2..	+ 100°C	-25. . .+60°C

Temperature error /

Temperature error, T_{Ref} 20°C
rising: + 0.3% FS / 10K
falling: - 0.3% FS / 10K

Material /

Material	Housing	Window
PM-100N.1.1.x.	st. steel	instrument glass
PM-100N.1.2.x.	st. steel	laminated safety-glass
PM-100N.2.x.x.	st. steel	laminated safety-glass

Material	Sensor element	Dial
PM-100N.1.x..	up to 100 bar, CuSn8 - 2.1030, soft soldered from 100 bar, st. steel - 1.4404, hard soldered	white aluminium, black scale and lettering as per EN 837-1
PM-100N.2.x..	st. steel 1.4404	white aluminium, black scale and lettering as per EN 837-1

Material	Motion work	Pointer
PM-100N.1.x..	Bottom and cover-parts from brass, moving parts argentan	black aluminium (PM-100N.1.1 plastic)
PM-100N.2.x..	stainless steel	black aluminium

Ordering Codes:

Order number	PM-100N.	2.	2.	1.	0.	Q

PM-100N Bourdon Pressure Gauge

Version /
1 = brass measuring instrument
2 = full stainless steel version for chemical applications

Damping /
1 = no glycerin filling
2 = with glycerin filling

Process connection /
1 = G1/2 B at the bottom
2 = G1/2 B excentrically at the back

Fastening rim (see table for possible combination) /
0 = none
1 = 3 hole front ring
2 = rear edge for wall-mounting
3 = 3 rimmed front ring with clamp

Operating range /
A = 0. . .0.6 bar
B = 0. . .1 bar
C = 0. . .1.6 bar
D = 0. . .2.5 bar
E = 0. . .4 bar
F = 0. . .6 bar
G = 0. . .10 bar
H = 0. . .16 bar
I = 0. . .25 bar
J = 0. . .40 bar
K = 0. . .60 bar
L = 0. . .100 bar
M = 0. . .160 bar
N = 0. . .250 bar
O = 0. . .400 bar
P = 0. . .600 bar
Q = 0. . .1000 bar
R = 0. . .1600 bar*
R2 = 0. . .2500 bar*
S = -1. . .0 bar
T = -1. . .+0.6 bar
U = -1. . .+1.5 bar
V = -1. . .+3 bar
W = -1. . .+5 bar
X = -1. . .+9 bar
Y = -1. . .+15 bar

* only for chemical version (PM-100N.2.x.x.x)

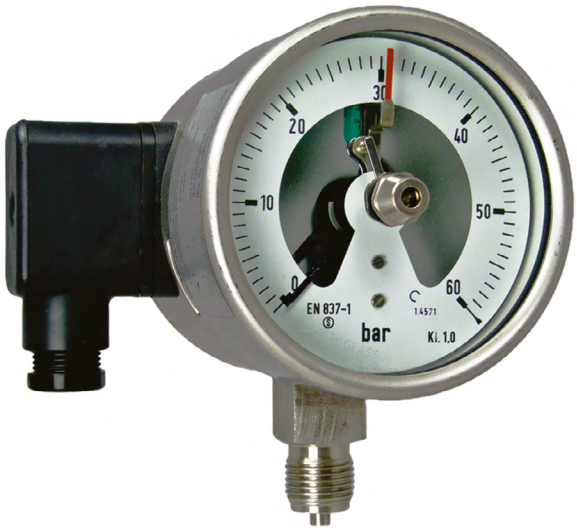
Front ring /

	3-hole Front ring	rear edge	3-rimmed-Front ring
PM-100N.1.1.1..	OK	OK	-
PM-100N.1.1.2.	OK	OK	OK
PM-100N.1.2.1..	OK	OK	-
PM-100N.1.2.2..	OK	OK	OK
PM-100N.2.1.1..	OK	OK	-
PM-100N.2.1.2..	OK	OK	OK
PM-100N.2.2.1..	OK	OK	-
PM-100N.2.2.2..	OK	OK	OK

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

KM-100N

Contact Pressure Gauge



Features

/ Brass and chemical versions

/ Nominal size 4” (100 mm)

/ Optional vibration attenuation

/ Up to 4 inductive or snap action contacts

/ All levels of pressure -1. . .2500 bar as per DIN

/ Negative pressure ranges

Description:

Contact pressure gauges are suited for controlling and regulating processes by means of excrescent processing pressure. In this, the switching contacts open or close depending on the indicator position in the pressure gauge. If the medium to be monitored does not tend to crystallize or harden, pressures from -1 bar up to 2500 bar can be displayed and monitored easily. In critical situations, optionally the pressure gauge is equipped with a diaphragm seal for the pressure. In KM-100N with oil filling, possible excrescent pressure pulsations or mechanical vibrations are subdued. This extends the life span and the quality of legibility in the devices significantly. Snap-action contacts are used under rough industrial conditions while switching high currents. In case of excess or below par electrical switching load at the contacts, we recommend using a protective relay for the contacts such as Profimess MSRx. On the other hand, touch less engaging of inductive contacts facilitates precise setting for the switching point and has no effect on the pressure measurement system. By using these contacts even applications in the hazardous areas can be covered. For controlling the inductive switching contacts, always a separate control device is necessary which normally has a control power circuit as per NAMUR.

Application:

The KM-100N series contact Bourdon pressure gauges is used in the whole industry. As against a simple pressure switch, they possess the major advantage of enabling visual inspection of the excrescent process pressure even if the power supply is interrupted due to power outage or cable failure. Snap-action contacts are engaged without potential, thus allowing the user maximum freedom to select the evaluator unit. The KM-100N is supplied with a standard G1/2”-male, however, optionally many other special type connections are feasible, assuring compatibility to a variety of processes.

Versions:

Movement: The process connection, the pressure gauge's tubular spring and the indicator element are available as brass or also fully stainless steel versions where the latter is recommended for applications with hostile media.

Oil filling: In case of pulsations or vibrations in the plants the KM-100N with polybutene oil filling can be ordered by which indicator trembling can be attenuated and thus extend the life span of the movement.

Process connection: The KM-100N has a standard G1/2"-male connection. Optionally, many other thread types can be manufactured as special versions. Position of the connection is either in the vertical to bottom direction or excentrically towards back.

Contact type: The choice can be a snap-action contact or an inductive contact.

Snap-action contacts are electromechanical alarm contacts that make or break electric circuits. A magnetic snap-action contact is a mechanical contact with a make/break capacity up to 30 W / 50 VA (without oil filling).

The signal output will be retarded or advanced and analog to the movement of the instrument pointer. Instruments with magnetic snap-action contacts can be used for all operating conditions, also with liquid-filled instruments.

Inductive alarm sensor contacts are inductive contacts to DIN 19234 resp. NAMUR. They are certified for use in hazardous areas of zone 1 and zone 2. The signal output is instantaneous and analog to the movement of the instrument pointer. Liquid filling in the instrument is possible.

Optionally, for the inductive contacts an integrated amplifier is available that is mounted directly into the housing of slit initiators.

This has a PNP- transistor output and can connect directly to small outputs, for example, in SP controls.

No. of contacts: Up to four contacts can be used. The use of a change-over-contact is considered as a double contact.

Contact function: It must be specified if the power circuit is expected to be contacted at increasing pressure (1 = NO-contact) or broken at increasing pressure (2 = NC-contact). In the case of snap-action contact the power circuit is broken or contacted mechanically, where as in inductive contacts the electrical resistance in the coils changes. Thereby, in the case of a NO-contact the current in the control circuit is set on "HIGH" state while it shifts to "LOW" as a NC-contact.

Operating range: Various DIN op. ranges from -1. . .+2500 bar are available. Please contact us for special operating ranges.

El. Specs magnet-spring Cont.:

Nominal voltage /	U_{eff} min: 24 V U_{eff} max: 250 V
Current rating /	inrush current: 1.0 A breaking current: 1.0 A continuous: 0.6 A
Load capacity /	P_{min}: 0.4 W / 0.4 VA
without oil filling:	P_{max}: 30 W / 50 VA
with polybutene filling:	P_{max}: 20 W / 20 VA
Set-point accuracy /	max. 4 contacts
Accuracy of switching /	2-5% FS
Creep and air distances /	acc. to DIN VDE 0110 Part 1 and 2 (degree of contamination 3)
Voltage testing /	
Circuit/ earth connection:	2000 VAC 1 min (DIN VDE 0660 part 200)
Circuit/Circuit:	2000 VAC 1 min (DIN VDE 0660 part 200)
Circuit /	In snap-action contacts, a single wire is used for all contacts as the common return line. In case of 3 contacts, consequently 4 pins and shielding are connected. Optionally, contact sets can be supplied with circuits separate according to contacts.
Contact arm bearing /	ruby bearing jewel
Contact material /	silver-nickel (Ag80 Ni20) 10 µm gold plated
No. of contacts /	max. 4 contacts, change-over-contacts will be counted as a double contact.
Contact function /	NO-contact and/or NC-contact and/or change-over-contact
Electrical connection /	Cable box, on the right side provided with 6 screw clamps +ground, cable gland M20x1.5 going downwards. Optionally, the cable box can be supplied with rear mounting instead of on the side.

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

Loads for magnet-spring contact /

Voltage		ohmic load			
		dry gauges		filled gauges	
V DC	V AC	mA DC	mA AC	mA DC	mA AC
220	230	100	120	65	90
110	110	200	240	130	180
48	48	300	450	190	330
24	24	400	600	250	450

Voltage	inductive load	
	dry gauges	filled gauges
V AC	cos phi > 0,7mA AC	cos phi > 0,7mA AC
230	65	40
110	130	85
48	200	130
24	250	150

*Preferred contact rating with ohmic load; but at least 24 VDC / 20 mA

El. Specs Inductive contact:

Operating voltage / 5. . .25 VDC

Nominal voltage / 8 VDC (Ri ≈ 1k)

Current consumption: / active surface free: ≥ 3 mA
active surface damped: ≤ 1 mA

Accuracy / < 0.5% FS

Contact arm bearing / ruby bearing jewel

No. of contacts / max. 4 contacts

Contact function / NO-contact and/or NC-contact

Electrical connection / Cable box, on the right side provided with 6 screw clamps +ground, cable gland M20x1.5 going downwards. Optionally, the cable box can be supplied with rear mounting instead of on the side.

Front ring:

	3-hole Front ring	rear edge	3-rimmed-Front ring
KM-100N.1.1.1..	OK	OK	-
KM-100N.1.1.2..	OK	OK	OK
KM-100N.1.2.1..	OK	OK	-
KM-100N.1.2.2..	OK	OK	OK
KM-100N.2.1.1..	OK	OK	-
KM-100N.2.1.2..	OK	OK	OK
KM-100N.2.2.1..	OK	OK	-
KM-100N.2.2.2..	OK	OK	OK

Technical Specifications:

Accuracy / pressure gauge quality class 1.0 [2)]

Protection class / KM-100N.x.1. . . - IP54 as per EN 60529
KM-100N.x.2. . . - IP65 as per EN 60529

Plug / PUR

Damping / polybutene fillling

Options / separate circuits (for snap-action contact, standard for inductive contact), special type scales with customer's logo, other process connections

Pressure /

	steady	dynamic	burst
KM-100N.x.x..	1.00 x ME	0.90 x ME	1.30 x ME

Temperature /

Manometer	max. Media temp.
KM-100N.1.1..	+ 80°C
KM-100N.2.1..	+ 100°C (temporary 120°C)
KM-100N.1.2..	+ 80°C
KM-100N.2.2..	+ 100°C

Contacts /

Contant	max. Ambient temp.
magnet spring	- 20. . . + 140°C
inductive	- 25. . . + 100°C

Temperature error, T_{Ref} 20°C /

rising: + 0.3% FS / 10K
falling: - 0.3% FS / 10K

Material /

Material	Housing	Window
KM-100N.1.1.x.	st. steel	instrument glass
KM-100N.1.2.x.	st. steel	laminated safety glass
KM-100N.2.x.x.	st. steel	laminated safety glass

Material	Sensor element	Dial
KM-100N.1.x..	up to 100 bar, CuSn8 - 2.1030, soft-soldered from 100 bar, st. steel - 1.4404, hard-soldered	white aluminium, black scale and lettering as per EN 837-1
KM-100N.1.2.x.	st. steel 1.4404	white aluminium, black scale and lettering as per EN 837-1

Material	Motion work	Pointer
KM-100N.1.1.x.	Bottom and cover-parts from brass, moving parts argentan	black aluminium (KM-100N.1.1 plastic)
KM-100N.2.x..	st. steel	black aluminium

[2)] The addition of mechanical electric contacts affects the accuracy of instruments and corresponds to the DIN 16085, thus amounts to a max. of 50% of the pressure gauge accuracy quality class.

Ordering Codes:

Order no.	KM-100N.	2.	1.	1.	1.	1.	2.	[0][0][2][1]	D

Contact Pressure Gauge

Version /
1 = brass movement
2 = fully stainless steel chemical version

Oil filling /
1 = no oil filling
2 = with polybutene filling for cutailing vibrations

Process connection /
1 = G1/2 B at the bottom
2 = G1/2 B excentrically at the back

Fastening rim (see table) /
0 = none
1 = 3 hole front ring
2 = rear edge for wall-mounting
3 = 3 rimmed front ring with clamp

Contact type /
1 = snap-action contact
2 = inductive contact

No. of contacts /
1 = one contact
2 = two contacts
3 = three contacts
4 = four contacts

Contact function (1 = NO-contact, 2 = NC-Contact, 3 = change-over-contact (only for snap-action contact)) /
[ ][ ][ ][ ] = contact sequence for incrementing pressure, e.g. [0][1][1][2]

Operating range /
A = 0. . .0.6 bar
B = 0. . .1 bar
C = 0. . .1.6 bar
D = 0. . .2.5 bar
E = 0. . .4 bar
F = 0. . .6 bar
G = 0. . .10 bar
H = 0. . .16 bar
I = 0. . .25 bar
J = 0. . .40 bar
K = 0. . .60 bar
L = 0. . .100 bar
M = 0. . .160 bar
N = 0. . .250 bar
O = 0. . .400 bar
P = 0. . .600 bar
Q = 0. . .1000 bar
R = 0. . .1600 bar [1)]
R2 = 0. . .2500 bar [1)]
S = -1. . .0 bar
T = -1. . .+0.6 bar
U = -1. . .+1.5 bar
V = -1. . .+3 bar
W = -1. . .+5 bar
X = -1. . .+9 bar
Y = -1. . .+15 bar

[1] only possible for chemical version (KM-100N.2.x.x.x)

address Schleusenstraße 3 | D-27568 Bremerhaven | Germany | **tel** +49 (0)471 98 24 151
fax +49 (0)471 98 24 152 | **mail** info@profimess.de | **web** profimess.com

PK-01

Capsule Element Pressure Gauge

Features

/ Quality class 1.6

/ Millibar range

/ Anti-corrosive

/ Zero point correction

Description:

The PK-01 capsule element pressure gauges are intended for measuring small, negative and positive overpressures in gaseous media. The measuring element in such a device comprises two diaphragm halves that are joined by welding. These actuate an indicator when pressure is exerted on them inside which is then display the system pressure on a scale made of aluminium. The standard versions of the devices supplied are made of brass; however, optionally they can be fitted with a stainless steel movement. Also another version with 10x overpressure safety can be delivered. The available housing sizes are 2.5" (63 mm), 4" (100 mm) or 6" (160 mm) with stainless steel housing provided with connections radially at the bottom or centrally at the back. On request, other versions can be supplied.

Application:

Capsule element pressure gauges are optimally suited for measuring very small pressures in gaseous media. Typical applications are found in medical engineering, air-conditioning, in production of gas or in laboratories. For example, the applications are for leak detection, filter status measuring, emission measuring or, using the stainless steel version, for monitoring hostile and corrosive media.

Technical Specifications:

Accuracy class / quality class 1.6

Zero point adjustment / adjusting screw in dial

Protection class / IP54 as per EN 60529 / ICE 529

max. Pressure / < 25 mbar, 6 x full scale value
≥ 25 mbar, 10 x full scale value
(the max. possible low pressure value for vacuum ranges is the specified value of the reading)

Sealing and plug / EPDM and PUR

Options /
- restrictor screw in connector
- vacuum safety
  < 25 mbar 3-times,
  > 25 mbar 10-times
- red mark on dial

Temperature /

Temperature	max. Media temp.	Ambient temp.
PK-01.x..	+100°C	-25. . .+ 60°C

Temperature error /

Temperature error, T_{Ref} 20°C
Rising temperature: + 0,3% FS / 10K
Falling temperature: - 0,3% FS / 10K

Materials /

Material	Housing	Window
PK-01.1.1-2..	round case, stainless steel	acrylic glass
PK-01.1.3-6..	round case, stainless steel	instrument glass
PK-01.2.1-2..	round case, stainless steel	acrylic glass
PK-01.2.3-6..	round case, stainless steel	laminated safety glass

Material	Measuring element	Instrument dial
PK-01.1.x..	capsule, copper alloy	white aluminium, black scale and lettering as per EN 837-1
PK-01.2.x..	laser welded capsule, st. steel 1.4571	white aluminium, black scale and lettering as per EN 837-1

Material	Motion work	Pointer
PK-01.1.x..	Bottom and cover-parts from brass, moving parts argentan	black aluminium
PK-01.2.x..	stainless steel	black aluminium

Ordering Codes:

Order number	PK-01.	2.	2.	0.	17

PK-01 Capsule Element Pressure Gauge

Version /
1 = brass
2 = chemical version completely st. steel

Nominal size /
1 = DN63, G 1/4" B radial, bottom
2 = DN63, G 1/4" B central, back
3 = DN100, G 1/2" B radial, bottom
4 = DN100, G 1/2" B central, back
5 = DN160, G 1/2" B radial, bottom
6 = DN160, G 1/2" B central, back

Fastening rim (see table for combinations) /
0 = none
1 = 3 hole front ring
2 = rear edge for wall-mounting
3 = 3 rimmed front ring with clamp

Operating ranges /
01 = -25. . .0. . .+15 mbar
02 = -20. . .0. . .+40 mbar
03 = -40. . .0. . .+20 mbar
04 = -6. . .0 mbar (only for nominal size 160)
05 = -10. . .0 mbar (only for nominal size 100 and 160)
06 = -16. . .0 mbar (only for nominal size 100 and 160)
07 = -25. . .0 mbar
08 = -40. . .0 mbar
09 = -60. . .0 mbar
10 = -100. . .0 mbar
11 = -160. . .0 mbar
12 = -250. . .0 mbar
13 = -400. . .0 mbar
14 = 0. . .6 mbar (only for nominal size 160)
15 = 0. . .10 mbar (only for nominal size 100 and 160)
16 = 0. . .16 mbar (only for nominal size 100 and 160)
17 = 0. . .25 mbar
18 = 0. . .40 mbar
19 = 0. . .60 mbar
20 = 0. . .100 mbar
21 = 0. . .160 mbar
22 = 0. . .250 mbar
23 = 0. . .400 mbar
24 = 0. . .600 mbar

Front ring /

	3-hole Front ring	rear edge	3-rimmed-Front ring
PK-01.x.1..	OK	OK	-
PK-01.x.2..	OK	OK	OK
PK-01.x.3..	OK	OK	-
PK-01.x.4..	OK	OK	OK
PK-01.x.5..	OK	OK	-
PK-01.x.6..	OK	OK	OK

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PF-01

Diaphragm Pressure Gauge

Features

/ Highly viscous media

/ Crystallizing media

/ Resistant to shocks and vibrations

/ Highly safe on overpressure

Description:

The diaphragm springs are thin, circular and wavy membranes that are fixed between two crimped rings and impacted by the media on one side. The membrane deflection due to pressure exerted by the media is utilized to display the pressure by means of an indicator element. Diaphragm pressure gauges are resistant to vibrations and, optionally, they are available with safeguards against high overpressure. As the diaphragms are suitably coated, the devices can be used even under very rough conditions and hostile materials.

Application:

Thanks to their design principle and product material, diaphragm pressure gauges meet any rigorous requirements that are encountered when deployed in industrial production plants. Open connecting flanges allow their use for highly viscous, crystallizing and polluted media since in this version there is no clearance volume which may cause build up of deposits. Diaphragm pressure gauges are widely used in food-processing and beverage industries as well as in the manufacturing of machines, installations and plants.

Technical Specifications:

Accuracy class / quality class 1.6

Protection class / IP54 as per EN 60529 / IEC 529

Plug / PUR

Connection / G1/2" B at the bottom per EN 837-3,
PF-01.A brass, PF-01.B-D of st. steel

Options /
- medium safe 200°C,
- glycerin filling,
- open flange,
- membrane coating,
- other connection threads,
- overload safe, 10 times, but maximum 40 bar

Pressure /

Pressure	steady	dynamic	burst
PF-01.x..	1.00 x ME	0.90 x ME	5.00 x ME max. 40 bar

Temperature /

Temperature	max. Media temp.	Ambient temp.
PF-01.x..	+100°C	-25. . .+ 60°C

Temperature error /

Temperature error, T_{Ref} 20°C
rising: + 0.5% FS / 10K

falling: - 0.5% FS / 10K

Material /

Material	Housing	Window
PF-01.A.x..	round case, st. steel	instrument glass
PF-01.B.x..	round case, st. steel with pressure relief	laminated safety glass
PF-01.C.x..	round case, st. steel with pressure relief	laminated safety glass
PF-01.D.x.. (safety version)	round case, st. steel, with solid baffle wall and blow-out back	laminated safety glass

Material	Sensor element	Dial
PF-01.A.x..	upper and lower flange: aluminium diaphragm: stainless steel 1.4571 diaphragm sealing ring: NBR	white aluminium, black scale and lettering as per EN 837-3
PF-01.B.x..	upper flange: aluminium lower flange: stainless steel 1.4571 diaphragm: stainless steel 1.4571 diaphragm sealing ring: FPM	white aluminium, black scale and lettering as per EN 837-3
PF-01.C.x..	upper and lower flange: 1.4571 diaphragm: stainless steel 1.4571 diaphragm sealing ring: FPM	white aluminium, black scale and lettering as per EN 837-3
PF-01.D.x.. (safety version)	upper and lower flange: 1.4571 diaphragm: stainless steel 1.4571 diaphragm sealing ring: FPM	white aluminium, black scale and lettering as per EN 837-3

Material	Motion work	Pointer
PF-01.A–B.x..	Bottom and cover-parts from brass, moving parts argentan	black aluminium
PF-01.C–D.x..	stainless steel	black aluminium

Ordering Codes:

Order number	**PF-01.**	**A.**	**1.**	**17**

PF-01 Diaphragm Pressure Gauge

Version /
A = Upper and lower flange made of aluminium
B = Upper flange in al., lower flange in st. steel 1.4571
C = Upper and lower flange made of st. steel 1.4571
D = Upper and lower flange made of st. steel 1.4571 Safety

Nominal size /
1 = DN100
2 = DN160

Operating range /

01a	=	-0.6. . .0 bar
02	=	-1. . . 0 bar
03	=	-0.6. . .0. . .+1.0 bar
04	=	-1. . .0. . .+0.6 bar
05	=	-1. . .0. . .+1.5 bar
06	=	-1. . .0. . .+3 bar
07	=	-1. . .0. . .+5 bar
08	=	-1. . .0. . .+9 bar
09	=	-1. . .0. . .+15 bar
10a	=	-1. . .0. . .+24 bar
11	=	0. . .0.6 bar
12	=	0. . .1 bar
13	=	0. . .1.6 bar
14	=	0. . .2.5 bar
15	=	0. . .4 bar
16	=	0. . .6 bar
17	=	0. . .10bar
18	=	0. . .16 bar
19	=	0. . .25 bar
20	=	0. . .40 bar
21	=	0. . .10 mbar
22	=	0. . .16 mbar
23	=	0. . .25 mbar
24	=	0. . .40 mbar
25	=	0. . .60 mbar
26	=	0. . .100mbar
27	=	0. . .160mbar
28	=	0. . .250mbar
29	=	0. . .400mbar

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PM-2000

Magnehelic® - Differential Pressure Gauge for Cases

Features

/ Proven and renowned technology

/ Resistant to shocks and vibrations

/ Accuracy class 2%

/ All common operating ranges and units

/ Ideally suited for filter monitoring

/ Panel mounting

Description:

The PM-2000 differential pressure gauge used in thousands operates according to the Magnehelic principle. In this, the rear side of a membrane is loaded with the positive while the front side of the membrane is loaded with the negative connection to a differential pressure which causes a mechanical deflection. The membrane is equipped with a U-shaped permanent magnet where its mechanical movement is transferred without touch to a similarly magnetic helix at the end of which directly the indicator of PM-2000 is located. The membrane deflection is, therefore, directly proportional to the indicator movement and the operating range only depends on the membrane's material properties. During such transfer of movement there are no losses due to friction; with the result even the smallest differences in pressure can be captured. The movement and the scale are located in an extremely robust aluminium housing that is suitable for mounting on a switch panel. The indicator made of aluminium has a red, clearly visible tip and is sapphire-mounted to withstand shocks. The housings are fitted with a overpressure plug made of silicon rubber for protection against overpressure in models capable up to 100 kPa. The indicator stoppers are made of rubber which prevent damage to the indicator in case of wide deflections. In every PM-2000, the user can readjust the zero point for the device by means of a setting screw that is mounted directly in the plastic cover.

Application:

The PM-2000 differential pressure gauges are used in large numbers for monitoring air filters and air speeds. Their unique construction allows measurement of even the smallest variations in pressures in fans and blowers, blood or respiratory pressures, overpressure in rows of chimneys, pressure drop in pressure plates and in many other situations. The extraordinarily robust construction with high degree of accuracy and variety of operating ranges and units are combined in an affordable product. Optionally, customer-specific scale types, adjustable marking indicators, limiting value display by means of LEDs and a wide choice of accessories are available. The delivery includes tube bushings for connecting to NPT-female of the housing and a complete set of accessories for mounting on a switch panel.

Operating Range Tables /

Model number	Range inch water column	Smallest setting
2000. . .00N[1, 2]	0.05. . .0. . .0.2	0.005
2000. . .00[1, 2]	0. . .0.25	0.005
2000. . .0[1, 3]	0. . .0.5	0.010
2001	0. . .1.0	0.020
2002	0. . .2.0	0.050
2003	0. . .3.0	0.100
2004	0. . .4.0	0.100
2005	0. . .5.0	0.100
2006	0. . .6.0	0.200
2008	0. . .8.0	0.200
2010	0. . .10	0.200
2012	0. . .12	
2015	0. . .15	0.500
2020	0. . .20	0.500
2025	0. . .25	0.500
2030	0. . .30	1.000
2040	0. . .40	1.000
2050	0. . .50	1.000
2060	0. . .60	2.000
2080	0. . .80	2.000
2100	0. . .100	2.000
2120	0. . .120	
2150	0. . .150	5.000
2160	0. . .160	
2180*	0. . .180	
2250*	0. . .250	

Model number	Range mm water column	Smallest setting
2000. . .6MM[1, 2]	0. . .6	0.200
2000. . .10MM[1, 3]	0. . .10	0.200
2000. . .15MM	0. . .15	
2000. . .25MM	0. . .25	0.500
2000. . .30MM	0. . .30	
2000. . .50MM	0. . .50	1.000
2000. . .80MM	0. . .80	2.000
2000. . .100MM	0. . .100	2.000
2000. . .125MM	0. . .125	
2000. . .150MM	0. . .150	
2000. . .200MM	0. . .200	
2000. . .250MM	0. . .250	
2000. . .300MM	0. . .300	

Model number	Range PSI	Smallest setting
2201	0. . .1	0.020
2202	0. . .2	0.050
2203	0. . .3	0.100
2204	0. . .4	0.100
2205	0. . .5	0.100
2210*	0. . .10	0.200
2215*	0. . .15	0.500
2220*	0. . .20	0.500
2230**	0. . .30	1.000

Model number	Range inch water column	Range Pa	Range kPa
2000. . .OOD[1, 2]	0. . .25	0. . .62 Pa	
2000. . .OD[1, 3]	0. . .0.5	0. . .125 Pa	
2001D	0. . .1.0	0. . .250 Pa	
2002D	0. . .2.0	0. . .500 Pa	
2003D	0. . .3.0	0. . .750 Pa	
2004D	0. . .4.0		0. . .1.0 kPa
2005D	0. . .5.0		0. . .1.25 kPa
2006D	0. . .6.0		0. . .1.5 kPa
2008D	0. . .8.0		0. . .2.0 kPa
2010D	0. . .10		0. . .2.5 kPa
2015D	0. . .15		0. . .3.7 kPa
2020D	0. . .20		0. . .5 kPa
2025D	0. . .25		0. . .6.2 kPa
2050D	0. . .50		0. . .12.4 kPa
2060D	0. . .60		0. . .15 kPa

Units with double scale for air speeds /

Model number	Range inch water column	Range air velocity F.P.M.
2000. . .00AV[1, 2]	0. . .0.25	300. . .2000
2000. . .0AV[1, 3]	0. . .0.50	500. . .2800
2001AV	0. . .1.0	500. . .4000
2002AV	0. . .2.0	1000. . .5600
2005AV	0. . .5.0	2000. . .8800
2010AV	0. . .10	2000. . .12500

Zero Center Ranges /

Model number	Range zero center mm water column	Smallest setting
2300. . . 6MM[1, 2]	3. . .0. . .3	
2300. . .10MM[1, 3]	5. . .0. . .5	
2300. . .20MM[1, 3]	10. . .0. . .10	

Model number	Range zero center inch water column	Smallest setting
2300. . .00[1, 2]	0.125. . .0. . .0.125	
2300. . .0[1, 3]	0.25. . .0. . .0.25	0.010
2301	0.5. . .0. . .0.5	0.020
2302	1. . .0. . .1	0.050
2304	2. . .0. . .2	0.100
2310	5. . .0. . .5	0.200
2320	10. . .0. . .10	0.500
2330	15. . .0. . .15	1.000

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Model number	Range cm water column	Smallest setting
2000. . .15CM	0. . .15	0.500
2000. . .20CM	0. . .20	0.500
2000. . .25CM	0. . .25	0.500
2000. . .50CM	0. . .50	1.000
2000. . .80CM	0. . .80	2.000
2000. . .100CM	0. . .100	2.000
2000. . .150CM	0. . .150	5.000
2000. . .200CM	0. . .200	5.000
2000. . .250CM	0. . .250	5.000
2000. . .300CM	0. . .300	10.000

Zero Center Ranges /

2300. . .4CM	2. . .0. . .2	0.100
2300. . .10CM	5. . .0. . .5	0.200
2300. . .30CM	15. . .0. . .15	1.000

Model number	Range kPascal	Smallest setting
2000. . .0.5KPA	0. . .0.5	
2000. . .1KPA	0. . .1	0.020
2000. . .1.5KPA	0. . .1.5	0.050
2000. . .2KPA	0. . .2	0.050
2000. . .2.5KPA	0. . .2.5	
2000. . .3KPA	0. . .3	0.100
2000. . .4KPA	0. . .4	0.100
2000. . .5KPA	0. . .5	0.100
2000. . .8KPA	0. . .8	0.200
2000. . .10KPA	0. . .10	0.200
2000. . .15KPA	0. . .15	0.500
2000. . .20KPA	0. . .20	0.500
2000. . .25KPA	0. . .25	0.500
2000. . .30KPA	0. . .30	1.000

Zero Center Ranges /

2300. . .1KPA	0.5. . .0. . .0.5	0.020
2300. . .2KPA	1. . .0. . .1	
2300. . .2.5KPA	1.25. . .0. . .1.25	
2300. . .3KPA	1.5. . .0. . .1.5	0.100

Model number	Range Pascal	Smallest setting
2000. . .60NPA[1, 2]	10. . .0. . .50	
2000. . .60PA[1, 2]	0. . .60	1.000
2000. . .100PA[1, 3]	0. . .100	2.000
2000. . .125PA[1, 3]	0. . .125	5.000
2000. . .250PA	0. . .250	5.000
2000. . .300PA	0. . .300	10.000
2000. . .500PA	0. . .500	10.000
2000. . .750PA	0. . .750	25.000
2000. . .1000PA	0. . .1000	

Zero Center Ranges /

2300. . .60PA[1, 2]	30. . .0. . .30	1.000
2300. . .100PA[1, 2]	50. . .0. . .50	2.000
2300. . .120PA	60. . .0. . .60	2.000
2300. . .200PA	100. . .0. . .100	
2300. . .250PA	125. . .0. . .125	5.000
2300. . .300PA	150. . .0. . .150	
2300. . .500PA	250. . .0. . .250	10.000
2300. . .1000PA	500. . .0. . .500	

1 Calibrated for vertical mounting

2 Accuracy ± 4%

3 Accuracy ± 3%

* Option MP

** Option HP

Versions:

Operating range /

A large number of operating ranges and physical units are available. All standard variants are listed in the table “Operating ranges”. Please enquire for special type operating ranges.

Options /

CB Chrome bezel option: A chrome plated aluminum bezel for an aesthetically pleasing finish when mounting on metal surfaces such as control panels

SB Stainless steel bezel option: 304 stainless steel electro polished Ra 16 finished bezel

SS Corrosion resistant brushed 304 stainless steel bezel

G Green Transparent Overlay
(to highlight and emphasize critical pressures)

R Red Transparent Overlay
(to highlight and emphasize critical pressures)

Y Yellow Transparent Overlay
(to highlight and emphasize critical pressures)

ASF Additional features for the indicator with an adjustable marking signal flag

HP Overpressure safety up to 80 psi (5.52 bar) ensured by a thicker housing. A 4 13/16” – board cutout is necessary for assembly as against the standard cutout (4 9/16”).

LT Media temperatures up to -28°C possible as against the standard up to -6.67°C.

MP Overpressure safety up to 35 psi (2.41 bar) ensured by a thicker housing. A 4 13/16” – board cutout is necessary for assembly as against the standard cutout (4 9/16”).

SP An LED on the scale alerts if the limiting value that can be set from the front exceeds. The unit requires a power supply of 12 to 24 VDC and an MP- or HP housing.

SSK A large number of special type scales are available on request.

HA High Accuracy Magnehelic© Gage. Accuracy within 1% and weatherproof. Also includes mirrored scale overlay and a six point calibration certificate.

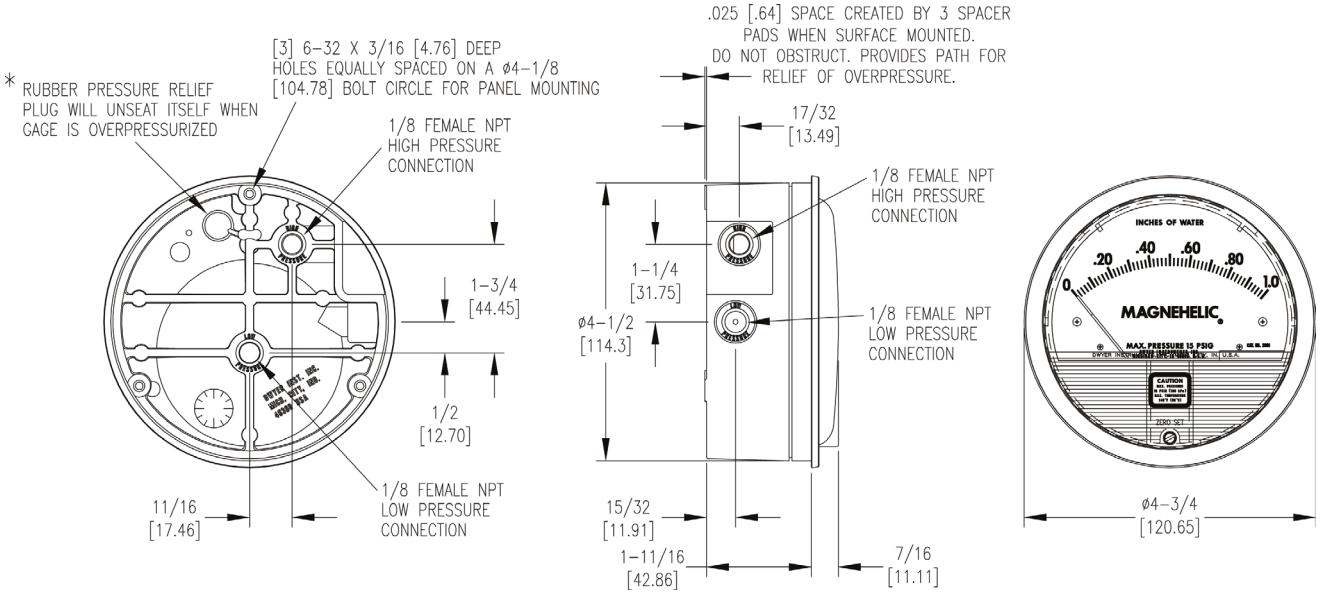
AHU1 Furnished with attached surface mounting plate.

AHU2 Furnished with attached surface mounting plate and including A-481 installer kit (2 plastic static pressure tips and 7' of PVC tubing).

M A mirrored scale overlay is also available to assist in reducing parallax error.

FC Factory calibration certificate.

NIST NIST traceable calibration certificate.



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Technical Specifications:

Media /	air and non-hostile and non-inflammable gases (optionally version for natural gases on request)
Housing /	aluminium casting, iridite-immersed external machining burnt-in dark gray forging
Accuracy /	± 2% F.S. in the entire range at 21°C (restrictions see operating range table)
Weight /	510 g (HP- and MP-models 963 g)
Pressure /	-0.677 bar to 1.034 bar maximum static pressure (2.41 bar in the MP option, 5.52 bar in the HP option)
Overpressure /	blow out plug opens at approx. 1.72 bar (only in standard devices)
Temperature /	-6.67. . .+60°C (-28°C for option LT)
Mounting posiiton /	vertical, scale towards the front
Process connection /	2 x 1/8"-NPT-female, one pair of connections on the side, one additionally at the back (closure plugs for one pair supplied)
Zero point /	can be set with the correction screw from the front

Ordering Codes:

Order number	**PM-2000.**	**2300-250PA.**	**ASF**

PM-2000 Magnehelic®

Operating range, refer to model number in the table for operating ranges:
□□□□-□□

Options /

CB	= Aluminium bezel, coated with chrome
SB	= st. steel bezel 304, electropolished
SS	= st. steel bezel 304, corrosion resistant, brushed
G	= green sight glass
R	= red sight glass
Y	= yellow sight glass
ASF	= marking indicator can be set
HP	= highly safe on overpressure
LT	= for lower temperatures down to -28°C
MP	= medium safe on overpressure
SP	= LED for setpoint display (no output)
SSK	= special type scale with coloured marking (ret, green, mirror) on request
HA	= high accuracy, weatherproof, mirrored scale 6 point calib. certificate
AHU1	= furnished with attached surface mounting plate
AHU2	= like AHU1, but additional 2 plastic static pressure tips and 7' of PVC tubing
M	= mirrored scale overlay
FC	= factory calibration certificate
NIST	= NIST traceable calibration certificate

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DM-250

Digital Pressure Gauge with Ceramic Sensor

Features

/ Accuracy ≤ ± 0.25 % FSO BFSL

/ Operating ranges up to 600 bar

/ Rotatable display housing

/ Min/Max function

/ Offset- and endpoint calibration

/ Switch-off automatic configuration

/ NPT or G thread

/ Selectable pressure units (bar, mbar, psi, InHg, cmHg, mmHG, hPa, kPa, MPa, mH2O, InH2O)

Description:

The battery-powered digital pressure gauge series DM-250 has been designed for pressure measurements in hydraulic and pneumatic systems. Characteristics such as accuracy, reliability and a good overload resistance forms the base for the use of this series in the entire industry. All models are equipped with a stable, rotatable plastic display housing with a 2-line LC display, which guarantees a good readability even under unfavorable mounting conditions. The handling and configuration is menu-driven via three miniature push buttons.

Besides showing information about the nominal pressure range (e.g. limit exceeding), several pressure units and the position of decimal point can be set as well as minimal and maximal pressure of the process can be read. Furthermore, the instruments zero and end point can be calibrated and the configuration of the power off function is possible. Factory defaults can be loaded via menu.

Application:

Today, in the industry, conventional Bourdon tube pressure gauges are increasingly replaced by digital manometers, since these devices are more accurate, long lasting and stable and possess additional characteristics that are impossible for mechanical manometers due to their design. Especially users from the areas listed below will profit from these facts:

- Environmental technology
- Laboratory technology
- Machine construction
- Plant manufacturing
- Pneumatic & Hydraulic
- Research & Development
- etc.

Technical Specifications:

Operating ranges /	see table 1
Measuring rate /	5 per sec.
Accuracy /	≤ ± 0.25 % FSO BFSL (accuracy according to IEC 60770 - minimum value setting (non-linearity, hysteresis, repeatability)
Thermal error /	≤ ±0.2 % FSO / 10 K for zero and span in compensated range -25. . .+85°C
max. Temperature /	
Medium:	-20. . .+85°C
Ambient:	-20. . .+70°C
Storage:	-30. . .+80°C
mech. Stability	
Vibration:	5 g RMS (25. . .2000 Hz) as per DIN EN 60068-2-6
Shock:	100 g / 1 ms as per DIN EN 60068-2-27
Process connection /	
Standard:	G 1/4" EN 837
Optional:	G 1/2" EN 837, 1/4" NPT, 1/2" NPT
Materials /	
Pressure port / housing:	st. steel 1.4404
Display housing:	PA 6.6, polycarbonate
Gaskets:	FKM
Diaphragm:	ceramics Al_2O_3 96%
Wetted parts /	pressure port, gaskets and diaphragm
Mounting pos. /	any
Weight /	approx. 300 g

Electrical Specifications:

Display /	LCD, visible range 40 x 30 mm; 4.5-digit 7-segment main display, digit height 11 mm, range of indication ±19999; 6-digit 14-segment additional display, digit height 7.5 mm
Power supply /	3.6 V Lithium-Battery; 2 Units (1/2 AA)
Operational life /	
Mechanical:	> 100 x 10^6 pressure cycles
Battery:	Standby mode: approx. 5 years
AD-converter /	14 Bit resolution
Data storage /	EEPROM (non volatile)
Protection class /	IP65
Emission /	as per EN 61326
Immunity /	as per EN 61326
CE-conformity /	
EMV-directive:	2004/108/EG
Pressure directive:	2014/68/EU (Module A) (this directive is only for devices with max. permissible overpressure > 200 bar)

Ranges & Burst Pressure:

Nominal pressure	Nom. pressure abs.	overpressure	burst press. ≥
-1. . .0 bar		4 bar	7 bar
0. . .0.4 bar		1 bar	2 bar
0. . .0.6 bar	0. . .0.6 bar	2 bar	4 bar
0. . .1.0 bar	0. . .1.0 bar	2 bar	4 bar
0. . .1.6 bar	0. . .1.6 bar	4 bar	5 bar
0. . .2.5 bar	0. . .2.5 bar	4 bar	5 bar
0. . .4.0 bar	0. . .4.0 bar	10 bar	12 bar
0. . .6.0 bar	0. . .6.0 bar	10 bar	12 bar
0. . .10 bar	0. . .10 bar	20 bar	25 bar
0. . .16 bar	0. . .16 bar	40 bar	50 bar
0. . .25 bar	0. . .25 bar	40 bar	50 bar
0. . .40 bar	0. . .40 bar	100 bar	120 bar
0. . .60 bar	0. . .60 bar	100 bar	120 bar
0. . .100 bar	0. . .100 bar	200 bar	250 bar
0. . .160 bar	0. . .160 bar	400 bar	500 bar
0. . .250 bar	0. . .250 bar	400 bar	500 bar
0. . .400 bar	0. . .400 bar	600 bar	650 bar
0. . .600 bar	0. . .600 bar	800 bar	880 bar

Vacuum resistance: PN ≥ 1 bar: unlimited vacuum resistance; PN < 1 bar: on request

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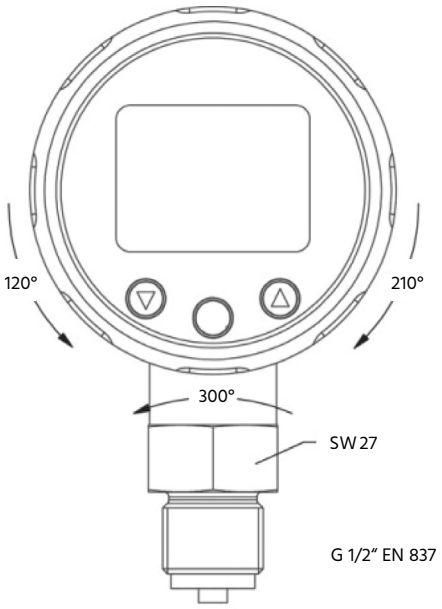
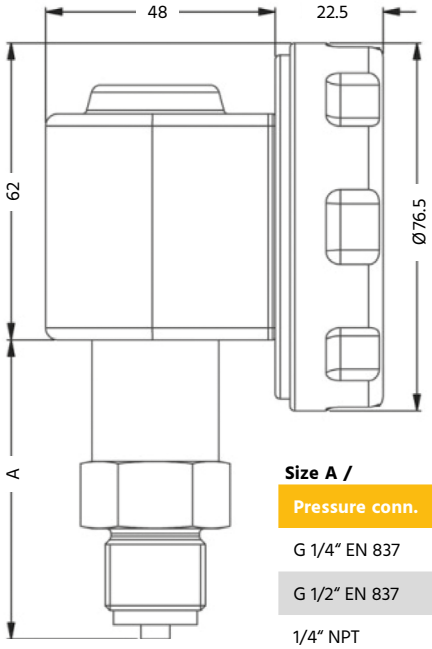
Dimensions in mm:





Size A /

Pressure conn.	mm
G 1/4" EN 837	54.5
G 1/2" EN 837	62.5
1/4" NPT	54.5
1/2" NPT	60.5

Ordering Codes:

Order number	DM-250.	2.	2.	A.	0

DM-250 Digital Pressure Gauge

Process connection /
1 = G 1/4" EN 837
2 = G 1/2" EN 837
3 = 1/4" NPT
4 = 1/2" NPT

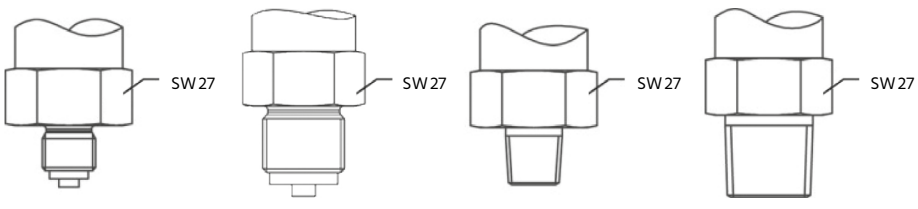
Calibration /
1 = relative pressure
2 = absolute pressure [1]

Operating range /
A = -1. . .0 bar [1]
B = 0. . .0.4 bar [1]
C = 0. . .0.6 bar
D = 0. . .1 bar
E = 0. . .1.6 bar
F = 0. . .2.5 bar
G = 0. . .4 bar
H = 0. . .6 bar
I = 0. . .10 bar
J = 0. . .16 bar
K = 0. . .25 bar
L = 0. . .40 bar
M= 0. . .60 bar
N = 0. . .100 bar
O = 0. . .160 bar
P = 0. . .250 bar
Q = 0. . .400 bar
R = 0. . .600 bar
9 = other

Option /
0 = none
9 = special (please specify in detailed text)

[1] absolute pressure possible from 0.6 bar (operating range „C")

Process connection /



G 1/4"EN 837 | G 1/2"EN 837 | 1/4"NPT | 1/2"NPT

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PAMU

Chemical Pressure Gauge with Integrated Pressure Measuring Transmitter

Features

/ Mechanical and electronic system

/ Independent

/ Display visible from distance

/ Fully stainless steel

/ Optionally Ex-version

Description:

In the PAMU type of devices two parallel systems measure the excrescent pressure at the process connection independent of each other. The first one is a Bourdon pressure gauge of proven stainless steel technology that is intended for clearly legible display of the measurement onsite. In case of high frequent pressure changes, we recommend optionally available silicon oil filling for the device, as this would counteract the quivering of the indicator. At the same time, a pressure measuring transmitter integrated into the housing of the pressure gauge functions as a remote encoder with its 4. . .20 mA 2-wire output and thus enables processing of the measurement in control or other display units.

Application:

Well-tested and long-standing pressure measuring technology in robust design combined with modern electronics, so as to unify the benefits of both the systems into a single device. Right under the roughest conditions of the equipment, the user obtains a measurement directly at the measuring point despite sensitive hi-tech devices and thus will be able to read into the operations in the system even if there is an outage of electrical power. Chemical pressure gauges with an integrated pressure measuring transmitter are used often in the chemical industry as well as in the manufacturing of machines and equipment.

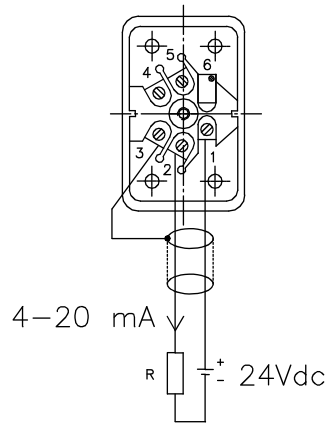
Technical Specifications:

Nominal size /	NG100 (NG160 on request)
Process connection /	Standard G 1/2" B male, CrNi-Steel 1.4571, facing downwards; optional G 1/4" B, 1/2" NPT and 1/4" NPT connections
Damping /	Manometer available with non-conductive insulating oil
Accuracy /	
Manometer:	< 1.0% of full scale value (Class 1.0 as per EN 837-1)
max. Temperature /	
Media temp.:	-40. . .+100°C
Ambient temp.:	-40. . .+60°C
Wetted parts /	AISI, 316 Ti / 1.4571
Dial /	white aluminium, black scale
Pointer /	black aluminium
Housing /	CrNi-steel with blow-out back
Window /	mineral glass
Ring /	bayonet ring, 1.4301
Prot. Class Housing /	IP 65
CE-marking /	pressure equipment directive 2014/68/EU, PS > 200 bar, module A, pressure accessory

Electrical Specs Transmitter:

Supply voltage /	12. . .30 VDC
Nominal voltage /	250 VDC
max. Curent /	16 A
Accuracy /	< 0.5%
Ranges /	-1. . .+0.6 bar to 0. . .600 bar
Output /	4. . .20 mA, 2-Leiter
max. Switch resistance /	≤ (Ub - 9.5 V) / 0.02 A
Connection /	Universal cable connection box Type B, 6-pole, adjustable at 180°
Contacts:	brass, gold plated
Connector type:	**Clamps:** M20 x 1.5 to 1.5 mm², wire protected **Device:** soldered conn. up to 2.0 mm²
Ambient temp. /	-40. . .+85°C
Material /	Polyamide 6
Ex-Version /	on request
EMV /	EN 50 081-1:1992
Protection class /	IP65 as per EN 60529 / IEC 529

Pin-Assignment Transmitter:



PIN 1 = + 24 VDC
PIN 2 = -
PIN 3 = cable shield
6 = zero point adjustment

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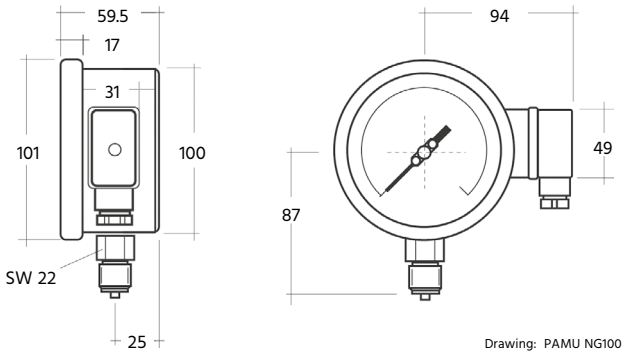
Dimensions in mm:



Drawing: PAMU NG100

Ordering Codes:

Order number	PAMU.	1.	0.	0.	L

PAMU Chemical Pressure Gauge

Process connection /
1 = G 1/2" B male downwards (standard)
2 = NPT 1/2" male downwards
3 = NPT 1/4" male downwards
4 = G 1/4" B male downwards

Damping /
0 = none
1 = Glycerine filling

Option /
0 = none, standard
1 = oil- and fat-free for oxygen usage
2 = Ex-Version

Operating range /
A = -1...0 bar
B = 0...1 bar
C = 0...1.6 bar
D = 0...2.5 bar
E = 0...4 bar
F = 0...6 bar
G = 0...10 bar
H = 0...16 bar
I = 0...25 bar
J = 0...40 bar
K = 0...60 bar
L = 0...100 bar
M = 0...160 bar
N = 0...250 bar
O = 0...400 bar
P = 0...600 bar
Q = -1...0.6 bar
R = -1...1.5 bar
S = -1...3 bar
T = -1...5 bar
U = -1...9 bar
V = -1...15 bar
W = -1...24 bar

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GH-PM

Mounting Enclosure for Magnehelic PM-2000

Features

/ Robust enclosure made of ABS

/ Nonvolatile screws

/ Two bulkhead connectors

/ Protection class IP66

Description:

Enclosures of GH-PM series are particularly designed for differential pressure indicators and switches of Magnehelic PM-2000 series. They allow a simple and safe wall mounting, professionell wiring and offer two tight connections for both high and low pressure.

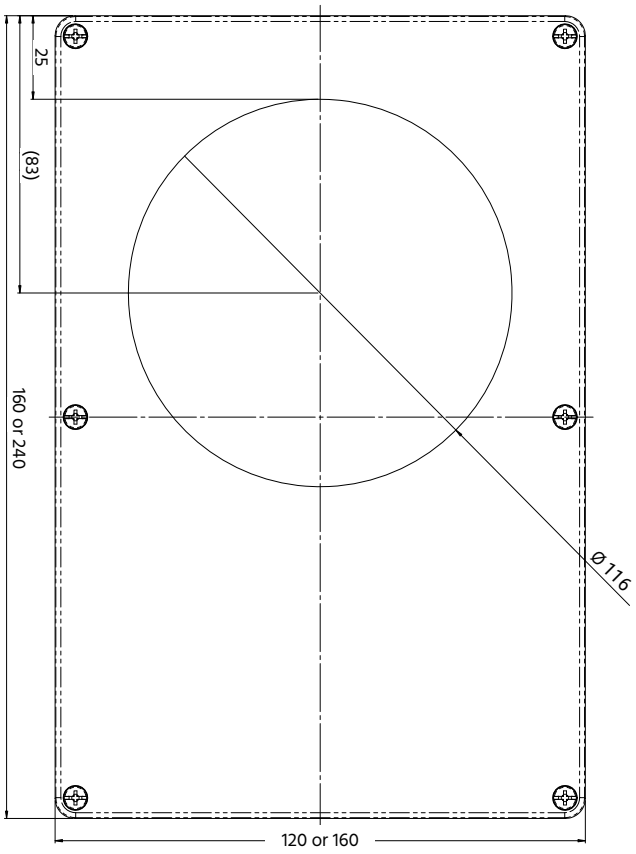
Application:

Differential pressure indicators for low differential pressure ranges are used in many, many industrial applications and in health technology worldwide. Wherever no panel with the particular cutout for Magnehelics is present, or where the Magnehelic offers an additional analog or relay output, Profimess supplies the indicators pre-mounted in the enclosure GH-PM. The pressure and electronic connections will therefore stay clean, dry and protected against incorrect operation.

Technical Specifications:

Dimensions (H x W x D)	
small /	160 x 120 x 90 mm (hole circle in the middle)
large /	240 x 160 x 120 mm
Material /	ABS
Colour /	RAL 7035, squirrel grey
Protection class /	IP 66 acc. to EN 60529 (09.08 23 09: IP 65)
Surface resistance /	4 x 10^{14} Ohm, IEC 60093
Disruptive strength /	24 KV/mm, IEC 60243-1
Impact resistance /	7 Joule acc. to EN 60079-0
Insulation /	fully insulated acc. to VDE 0100
Flammability /	UL 94 HB
Toxicity /	halogen-free
Temperature /	-40. . .+60°C
Seal /	CR-(Chloropren)
Bulkhead connections /	brass nickel-plated 6 x 4 mm
Cable glands /	M16 x 1.5 for cable diameters 5-10 mm or M20 x 1.5 for cable diameters 8-13 mm

Dimensions in mm:



Ordering Codes:

Order number	**GH-PM.**	**G**
GH-PM Mounting Enclosure		
Size / K = small G = large		

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KE-01

Cooling Line for Pressure Metering Points up to 200°C

Features

/ Available in brass, steel or stainless steel
/ Pressure up to 600 bar
/ Temperature up to 200°C
/ Female thread for instrument
/ Gauge connection to measuring point

Description:

The full stainless steel cooling tower KE-01 connects a pressure measuring point, which is due to high media temperatures too hot for a direct connection, to a pressure instrument like a pressure gauge, a pressure switch or a pressure sensor. The cooling tower reduces the temperature of the pressure medium significantly by air circulation and thermal radiation, in order to avoid wrong measuring values or damages of the pressure instrument. It is recommended to use the cooling tower KE-01 at process temperatures in excess of 100°C.

Application:

Too high media temperatures at pressure metering points are frequently restricting the facility to display, measure and evaluate the process pressure accurately, thus pressure instruments are usually calibrated to a specified temperature range or the inaccuracy caused by higher or lower temperatures is compensated. Temperatures out of this range lead to disproportionate imprecision or damage of the internal electronic components. In this case the cooling tower KE-01 offers a priceworth and practical solution, which increases the measuring accuracy and the lifespan of such instruments.

Technical Specifications:

Materials / brass, steel or stainless steel 316Ti

max. Pressure /
brass: 250 bar
steel: 400 bar
st. steel: 600 bar

Temperature /
brass: 100°C
steel: 155°C
st. steel: 200°C

Connecting thread /
Instrument: G 1/2"-female
Process: G 1/2"B-male or G 1/4"B-male

Weight / G1/4"B: 100g
G1/2"B: 120g

Ordering Codes:

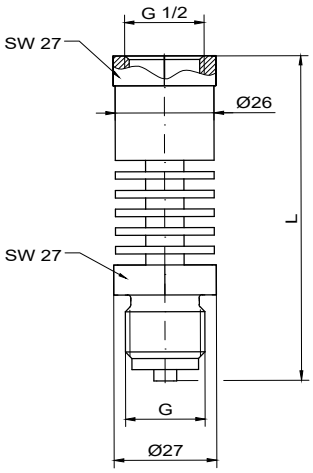
Order number	KE-01.	1.	2.

KE-01 Cooling Line

Material /
1 = brass
2 = steel
3 = stainless steel 361Ti

Process connection /
1 = G 1/2"B-male
2 = G 1/4"B-male

Dimensions in mm:



Version	Thread	mm
KE-01	G	L
KE-01.x.1	G 1/2B	87
KE-01.x.2	G 1/4B	79

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