



NICO DIFFERENTIAL PRESSURE GAUGES

DPG SERIES



Nikan Sanat Khavarmianeh

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Product Image Placeholder

Reserved — official NICO product image to be added

P R E S S U R E M E A S U R E M E N T · P R O D U C T C A T A L O G

DPG Series

Differential Pressure Gauges

A complete family of differential pressure gauges — diaphragm, bellows, dual-diaphragm, magnetic-piston, switch-gauge and analog-output instruments for filter, pump, flow and process ΔP duties across industrial service.

6 MODELS · ONE FAMILY

PDG21 · PDG24 · PMG25 · PDG26 · PDS27 · PDT28

Differential pressure · ranges and static ratings to be confirmed by NICO

Sensing elements & principles

NICO DPG gauges indicate differential pressure mechanically, with no power required, using one of three sensing principles selected by ΔP range, static pressure and medium.

Element	Principle	Best for	NICO models
Diaphragm + bellows	All-welded diaphragm / metal bellows deflects	Low-range clean gas & liquid ΔP	PDG21 · PDS27 (std) · PDT28 (std)
SS bellows (variant)	Welded stainless-steel bellows deflects	All-metal, higher overload, direct mount	PDG21 (bellows version)
Dual diaphragm + fluid	Two opposed diaphragms, transmission fluid	High static pressure, hydraulic damping	PDG24 · PDS27 (HS) · PDT28 (HS)
Magnetic piston	Pressure-loaded piston, magnetic follower	Compact, fully isolated indication	PMG25 · PDG26

■ ACCURACY, RANGE & FILLING

Accuracy classes follow EN 837-1 / 837-3 (model-dependent). Select the range so the normal working ΔP sits around mid-scale. A glycerin or silicone fill damps vibration and pulsation and prevents condensation (PDG21 filled version). Switch contacts (PDS27) and a 4–20 mA analog output (PDT28) are available on the dedicated models — options to be confirmed by NICO.

■ ADVANTAGES OF THE DPG FAMILY

- ✓ Direct local ΔP indication — no power required
- ✓ Stainless-steel wetted parts for corrosion resistance
- ✓ All-welded / fully-isolated elements for clean and difficult media
- ✓ Field-serviceable, low-maintenance mechanical movement

CONSTRUCTION

Construction & materials

The DPG family is built in stainless steel for industrial ΔP service. Wetted materials and case design vary by model; values below are family-typical and confirmed per model.

Case	SS 304 / 316Ti (model-dependent)
Sensing element	SS 316Ti / 316L; NBR separating diaphragm (PDG26)
Movement	Stainless steel
Process connection	SS 316L
Window	Laminated safety glass (NS100/160) · polycarbonate (smaller dials)
Special alloys	Hastelloy C276 / Monel — on request (to be confirmed)

■ MEDIA ISOLATION

For aggressive, viscous, crystallising or particle-laden media, combine the gauge with a separating-diaphragm design (PDG26) or an external diaphragm seal, and add a snubber for pulsation. Compatible accessories are listed briefly in the Accessories section; full diaphragm-seal data is available on request.

■ INDICATION, SWITCHING & OUTPUT

Every model provides direct local ΔP indication. The PDS27 adds 1 or 2 adjustable SPDT switch contacts for alarm and control duties; the PDT28 adds a proportional 4–20 mA analog output for remote monitoring. Both are offered in standard and high-static versions.

THE DPG FAMILY

Six models, one family

Six models share a common Pressure-Measurement platform and differ by sensing element, material and function — from general-purpose indication to high-static, switching and analog-output instruments.

Model	Name	Series
PDG21	Differential Pressure Gauge	Diaphragm / bellows series
PDG24	High Static Differential Pressure Gauge	Dual-diaphragm high-overload series
PMG25	Magnetic Piston Differential Pressure Gauge	Magnetic-piston series
PDG26	Piston DP Gauge + Separating Diaphragm	Piston / separating-diaphragm series
PDS27	Differential Pressure Switch Gauge	Switch-gauge series (std + high static)
PDT28	DP Gauge with Analog Output	Analog-output series (std + high static)

Quick selection — which model?

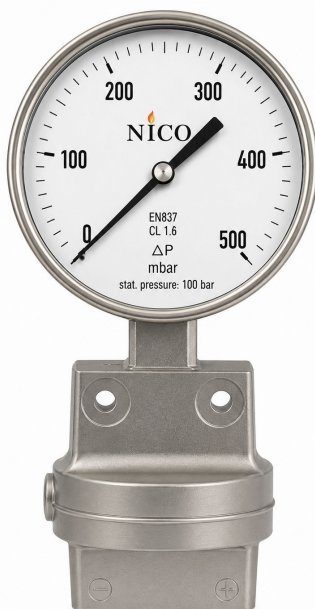
Model	Sales positioning — when to choose
PDG21	General-purpose DP gauge — clean gas / liquid ΔP indication.
PDG24	High static pressure DP gauge — PN40–PN400 demanding service.
PMG25	Gas / air magnetic piston DP gauge — compact, fully isolated.
PDG26	Liquid / particle service DP gauge — zero cross-flow.
PDS27	DP gauge with switch contacts — alarm / control.
PDT28	DP gauge with analog output — remote 4–20 mA monitoring.

PDG21

Diaphragm or bellows element · dry / glycerin / silicone · EN 837-3 · Ø100 / Ø160 mm

Differential Pressure Gauge

The reference NICO differential pressure gauge for general clean gas and liquid service. Available with an all-welded diaphragm-and-bellows element or a full stainless-steel bellows element, dry or liquid-filled, for robust low-range ΔP indication from 16 mbar to 40 bar (to 2.5 MPa in the bellows version).



■ OPERATING PRINCIPLE

The pressure difference between the (+) and (–) chambers deflects an all-welded diaphragm-and-bellows element (diaphragm version) or a welded stainless-steel bellows (bellows version); the motion is transferred through the movement to the pointer. No elastomers contact the medium.

■ TECHNICAL SPECIFICATIONS

Nominal size	Ø100 mm [4"] · Ø160 mm [6"]
Accuracy class	Class 1.0% · 1.6% · 2.5% (EN 837-3)
Sensing element	Diaphragm + metal bellows · or full SS welded bellows
Measuring range	0...16 mbar to 0...40 bar (bellows to 0...2.5 MPa) + vacuum & compound
Diaphragm (≤ 0.25 bar)	Stainless steel 316Ti (1.4571)
Diaphragm (≥ 0.4 bar)	NiCr alloy (Inconel)
Media chamber / bellows	SS 316Ti (1.4571)
Case design	S1 – blow-out device per EN 837-1
Case material	SS 1.4301 (304) · SS 1.4571 (316Ti)
Case filling	Dry · glycerin-water · silicone oil
Zero point setting	Adjustable pointer (external)
Ambient temperature	–20°C ... +60°C (–40°C silicone)
Medium temperature	–20°C ... +100°C (+150°C on request)
Temperature error	$\leq \pm 0.5\%$ / 10°C (ref. +20°C)
Static pressure effect	$\pm 0.3\%$ /bar (≤ 0.25 bar) · $\pm 0.04\%$ /bar (> 0.25 bar)
Process connection	2×G $\frac{1}{4}$ F · 2×G $\frac{1}{2}$ B M · 2× $\frac{1}{4}$ "NPT F · 2× $\frac{1}{2}$ "NPT M · on request
Max. static pressure	2.5 · 6 · 10 · 25 · 40 bar (range-dependent)
Restrictor (optional)	Ø0.6 mm SS · Ø0.3 mm SS
Ingress protection	IP54 · IP65 · IP66
Window	Laminated safety glass · polycarbonate
Standard	EN 837-3 · DIN 16003

■ OVERLOAD SAFETY & MAXIMUM STATIC PRESSURE

Span	Overload each side	Max. static — std	Max. static — opt
16...40 mbar	2.5 bar	2.5 bar	6 bar
60...250 mbar	2.5 bar	6 bar	10 bar
400 mbar	4 bar	25 bar	40 bar
0.6 bar	6 bar	25 bar	40 bar
1 bar	10 bar	25 bar	40 bar
1.6 bar	16 bar	25 bar	40 bar
2.5...40 bar	25 bar	25 bar	40 bar

■ DIMENSIONS (PRELIMINARY)

NS	Span	A	B	D ₁	DC	H±1	H	Weight (kg)
Ø100	≤ 0.25 bar	15.5	49.5	101	140	160	90	2.70
Ø100	≥ 0.4 bar	15.5	49.5	101	78	170	87	1.90
Ø160	≤ 0.25 bar	15.5	49.5	161	140	190	120	3.40
Ø160	≥ 0.4 bar	15.5	49.5	161	78	200	117	2.40

■ RECOMMENDED APPLICATIONS

Pump monitoring	Filter monitoring	Level measurement	Sealed vessels	Oil & gas	Chemical
Power plants	Food & pharma	HVAC / ventilation			

LIMITATIONS

- For corrosive or viscous media add a diaphragm seal.
- For low-mbar gas the diaphragm version is more sensitive than the bellows.
- Observe the per-span overload limits.

MODEL SELECTION GUIDE

Choose for general clean gas / liquid ΔP indication up to the confirmed static rating.

SALES-ENGINEER QUESTIONS

1. Normal and maximum static pressure?
2. ΔP span, connection and element (diaphragm / bellows)?
3. Medium compatibility (wetted material)?

ADVANTAGES

- ✓ All-welded — no elastomers in the media path
- ✓ Diaphragm or full-SS bellows element
- ✓ Dry, glycerin or silicone fill — vibration / pulsation damping
- ✓ SS 316Ti wetted parts · external zero adjustment

QUICK SELECTION SUMMARY

Choose when	General clean gas / liquid ΔP
Avoid when	High static → PDG24; switching → PDS27

■ ORDERING CODE — PDG21

PDG21 PDG21 — A — B — C — D — E — F — G — RANGE — H — J

Dial size — **1** Ø100 mm [4"] **2** Ø160 mm [6"]

Accuracy class — **A** Class 1.0% FS **B** Class 1.6% FS **C** Class 2.5% FS

Sensing element — **DI** Diaphragm + bellows (std) **BE** Full SS bellows

Process connection — **G1** 2×G¼ female **G2** 2×G½B male **N1** 2×½" NPT female **N2** 2×½" NPT male **OR** On request

Wetted material — **T** SS 316Ti (std) **L** SS 316L **OR** On request

Case filling — **DR** Dry (std) **GL** Glycerin-water **SI** Silicone oil

Ingress protection — **54** IP54 **65** IP65 **66** IP66

RANGE — **RANGE** Scale range (see range-selection table)

Max. static pressure — **S025** 2.5 bar (≤ 40 mbar) **S006** 6 bar **S010** 10 bar (≤ 250 mbar) **S025B** 25 bar (≥ 400 mbar) **S040** 40 bar

Options — — No option **R03** Restrictor Ø0.3 mm **R06** Restrictor Ø0.6 mm **DS** Dual scale **SQ** Square root (flow) **DP** Drag pointer **OR** On request

EXAMPLE ORDER CODE

PDG21 — 1 — A — DI — G1 — T — DR — 54 — 0160 — S006 — —

Ø100 · Class 1.0% · diaphragm · G¼ female · 316Ti · dry · IP54 · 0–160 mbar · static 6 bar

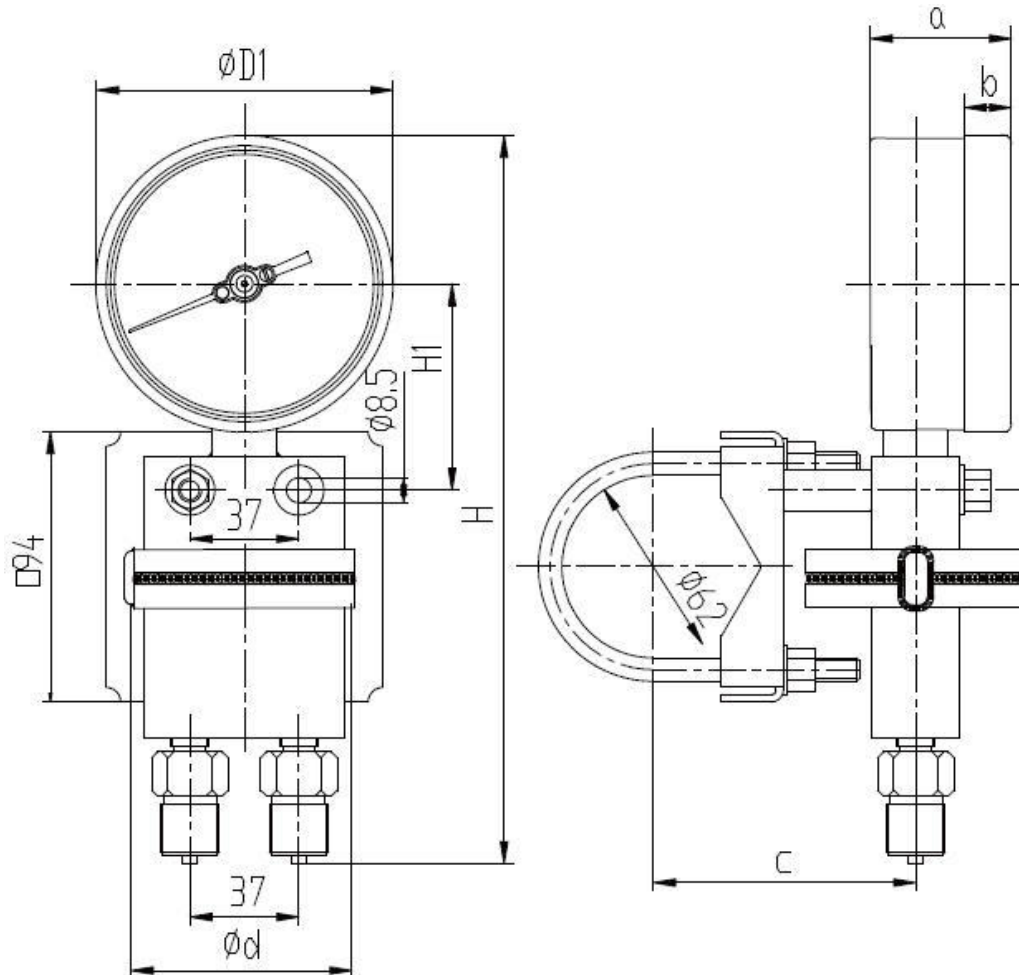
■ RANGE-SELECTION TABLE

Available scale-range codes — EN 837 preferred progression (1 · 1.6 · 2.5 · 4 · 6). mbar codes use four digits; bar codes use B + value×10; kPa / MPa codes apply to the bellows version. Vacuum and compound ranges on request.

mbar	0016	0025	0040	0060	0100	0160	0250	0400	0600
bar	B010	B016	B025	B040	B060	B100	B160	B250	B400
kPa	K060	K100	K160	K250	K400	K600			
MPa	M100	M160	M250						

■ ACCESSORIES & OPTIONS

Compatible accessories — diaphragm seals, valve manifolds, mounting brackets and certificates — are summarised in the Accessories section. Documentation options (inspection certificate EN 10204-3.1, NACE, oxygen-clean) are specified in the ordering code; items marked “to be confirmed by NICO” require confirmation before order.



PDG24

2× diaphragm + transmission fluid · PN40–PN400 · Hastelloy / Monel on request · Ø100 / Ø160 mm

High Static Differential Pressure Gauge

Two opposed diaphragms coupled by a transmission fluid give hydraulic damping against rapid pressure transients and one-sided overload protection. Static pressure is selectable from PN40 to PN400, with Hastelloy / Monel wetted parts and NACE on request for demanding oil & gas and chemical service.



■ OPERATING PRINCIPLE

Two opposed diaphragms connected by a transmission fluid sense the ΔP while protecting the element against high one-sided static pressure and rapid transients.

■ TECHNICAL SPECIFICATIONS

Nominal size	Ø100 mm [4"] · Ø160 mm [6"]
Accuracy class	Class 1.6% · 2.5% · 1.0% (application test)
Measuring range	0...60 mbar to 0...40 bar + vacuum / compound
Sensing element	2× diaphragm + transmission fluid
Diaphragm (≤ 0.25 bar)	SS 316L · Hastelloy C276
Diaphragm (≥ 0.4 bar)	316L + Inconel · Hastelloy C276 · Monel 2.4375
Measuring flanges	SS 316L · Hastelloy C276 · Monel 2.4360
Seals	FPM / FKM
Case design	S1 — blow-out device per EN 837
Case filling	Without (std) · silicone oil (→ IP65)
Ambient temperature	–20°C ... +60°C · –40°C (silicone)
Medium temperature	–20°C ... +100°C (max +200°C)
Temperature error	$\leq \pm 0.5\%$ / 10°C
Static pressure	PN40 · PN100 · PN250 · PN400
Process connection	G $\frac{1}{2}$ F · G $\frac{1}{2}$ B M · $\frac{1}{2}$ NPT M · flange EN61518
Ingress protection	IP54 · IP65 (oil) · IP66 (app. test)
Sour service	NACE MR0175 / ISO 15156 — on request

■ MAXIMUM STATIC PRESSURE

PN rating	One side / alternating	Both sides
PN 40	40 bar [580 psi]	40 bar
PN 100	100 bar [1,450 psi]	100 bar
PN 250	250 bar [3,625 psi]	250 bar
PN 400	400 bar [5,800 psi]	400 bar

■ DIMENSIONS (PRELIMINARY)

NS	Span / PN	B (mm)	D ₁ (mm)	H±1 (mm)	P (mm)	Wt dry (kg)
Ø100	≤ 0.25 bar / PN40–100	58.5	101	86	140	13.1
Ø100	≥ 0.4 bar / PN40–250	58.5	101	64	82	3.9
Ø100	≥ 0.4 bar / PN400	58.5	101	64	86	4.5
Ø160	≥ 0.4 bar / PN40–250	65.5	161	64	82	4.3
Ø160	≥ 0.4 bar / PN400	65.5	161	64	86	4.9

■ RECOMMENDED APPLICATIONS

Oil & gas upstream

High-pressure reactors

Refinery

Offshore

H₂S environments

Chemical

LIMITATIONS

- Hastelloy / Monel wetted parts on request.
- Confirm the NACE requirement for sour service.
- Maximum static rating per selected PN class.

ADVANTAGES

- ✓ Dual diaphragm + transmission fluid
- ✓ Hydraulic damping against transients
- ✓ High static-pressure capability to PN400
- ✓ NACE / special alloys on request

MODEL SELECTION GUIDE

Choose for ΔP at high static pressure on demanding services.

SALES-ENGINEER QUESTIONS

1. Maximum static pressure / PN rating?
2. Wetted material (SS / Hastelloy / Monel)?
3. NACE required?

QUICK SELECTION SUMMARY

Choose when	High static ΔP (PN40–PN400)
Avoid when	Low static, clean → PDG21

■ ORDERING CODE — PDG24

PDG24 — A — B — C — D — E — F — RANGE — J

Dial size — **1** Ø100 mm **2** Ø160 mm

Accuracy class — **A** Class 1.0% app. test **B** Class 1.6% **C** Class 2.5%

Process connection — **GF** G½ female **GM** G½B male **NM** ½" NPT male **FL** Flange
EN61518 **OR** On request

Wetted material — **L** SS 316L (std) **H** Hastelloy C276 **M** Monel 2.4360 **OR** On request

Max. static pressure — **P040** PN40 — 40 bar **P100** PN100 — 100 bar **P250** PN250 —
250 bar **P400** PN400 — 400 bar

Case filling — **DR** Without (std) **SI** Silicone → IP65

Ingress protection — **54** IP54 **65** IP65 oil **66** IP66 test

RANGE — **RANGE** Scale range (see range-selection table)

Options — — No option **NAC** NACE MR0175 / MR0103 **O2** Oil / grease-free O₂ **SQ**
Square root **OR** On request

EXAMPLE ORDER CODE

PDG24 — 1 — B — GM — L — P100 — DR — 54 — 0400 — —

Ø100 · 1.6% · G½B · 316L · PN100 · dry · IP54 · 0–400 mbar

■ RANGE-SELECTION TABLE

Available scale-range codes — EN 837 preferred progression (1 · 1.6 · 2.5 · 4 · 6). mbar codes use four digits; bar codes use B + value×10; kPa / MPa codes apply to the bellows version. Vacuum and compound ranges on request.

mbar	0060	0100	0160	0250	0400	0600				
bar	B010	B016	B025	B040	B060	B100	B160	B250	B400	

■ ACCESSORIES & OPTIONS

Compatible accessories — diaphragm seals, valve manifolds, mounting brackets and certificates — are summarised in the Accessories section. Documentation options (inspection certificate EN 10204-3.1, NACE, oxygen-clean) are specified in the ordering code; items marked “to be confirmed by NICO” require confirmation before order.

△ Hastelloy / Monel wetted parts and NACE certification on request; confirm before order.

PMG25

Modular · field-serviceable · gas & air · static up to 400 bar · NS80

Magnetic Piston Differential Pressure Gauge

A pressure-loaded magnetic piston moves axially; an annular indicator magnet follows through the stainless-steel wall. Complete mechanical isolation gives zero external leakage, and the measuring system and scale are exchangeable on-site. Positioned for clean gas, air and industrial-gas service.



■ OPERATING PRINCIPLE

A pressure-loaded piston moves against a calibrated spring; a follower magnet transfers its position through the pressure wall to the pointer — full mechanical isolation, zero external leakage.

■ TECHNICAL SPECIFICATIONS

Nominal size	NS80 (Ø79 mm)
Accuracy	±3% of full scale
Measuring range	0...400 mbar to 0...10 bar
Max. static pressure	100 bar · 250 bar · 400 bar (either side)
Ambient temperature	0°C ... +60°C
Medium temperature	max. +100°C
Process connection	2×G¼ female · in-line
Fine filter	Integrated in (+) connection
Wetted parts	SS 316Ti + hard ferrite magnet
Indicator case	Aluminium · black
Ingress protection	IP54
Weight	approx. 220 g
Suitable media	Gas · air · vapour (non-condensing)

■ REED SWITCH CONTACTS (OPTIONAL)

Contacts	Type	Switching capacity
1× CO	Reed change-over	To be confirmed by NICO
2× CO	Reed change-over	To be confirmed by NICO

■ DIMENSIONS (PRELIMINARY)

Config	Width Ø (mm)	Depth — no contact	Depth — with contact	Weight
NS80 std	79	94 mm	94 + 68.5 mm (cable socket)	~220 g

■ RECOMMENDED APPLICATIONS

Gas / compressed air	Filter monitoring	High-pressure pipelines	Cooling circuits	Industrial gas supply
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LIMITATIONS

- For liquids or particle-laden media use the PDG26.
- Confirm the maximum static rating.
- Reed-contact ratings to be confirmed by NICO.

ADVANTAGES

- ✓ Complete mechanical isolation
- ✓ Compact NS80
- ✓ Field-serviceable
- ✓ Optional reed contacts

MODEL SELECTION GUIDE

Choose for compact, isolated ΔP indication on clean gas / air.

SALES-ENGINEER QUESTIONS

1. Gas / air and ΔP span?
2. Maximum static pressure?
3. Reed contacts required?

QUICK SELECTION SUMMARY

Choose when	Clean gas / air, compact
Avoid when	Liquids / particles → PDG26

■ ORDERING CODE — PMG25

PMG25 PMG25 — A — B — C — RANGE — E

Process connection — **G14** 2×G $\frac{3}{4}$ female in-line **N14** 2× $\frac{1}{4}$ " NPT female **OR** On request

Max. static pressure — **S100** 100 bar **S250** 250 bar **S400** 400 bar

Reed contact — — No contact (std) **RC1** 1× reed change-over **RC2** 2× reed change-over

RANGE — **RANGE** Scale range (see range-selection table)

Options — — Single scale (std) **DS** Dual scale bar + psi **DP** Drag / max. pointer **BD** Bidirectional $\pm\Delta P$ **OR** On request

EXAMPLE ORDER CODE

PMG25 — G14 — S400 — — — 0400 — —

G $\frac{3}{4}$ female · static 400 bar · no contact · 0–400 mbar · standard scale

■ RANGE-SELECTION TABLE

Available scale-range codes — EN 837 preferred progression (1 · 1.6 · 2.5 · 4 · 6). mbar codes use four digits; bar codes use B + value×10; kPa / MPa codes apply to the bellows version. Vacuum and compound ranges on request.

mbar 0400 0600

bar B010 B016 B025 B040 B060 B100

■ ACCESSORIES & OPTIONS

Compatible accessories — diaphragm seals, valve manifolds, mounting brackets and certificates — are summarised in the Accessories section. Documentation options (inspection certificate EN 10204-3.1, NACE, oxygen-clean) are specified in the ordering code; items marked “to be confirmed by NICO” require confirmation before order.

△ Reed-contact electrical ratings and the 400 bar maximum static rating to be confirmed by NICO.

PDG26

NBR separating diaphragm · zero cross-flow · liquid media · NS80

Piston Differential Pressure Gauge with Separating Diaphragm

An NBR separating diaphragm fully isolates the (+) and (–) chambers, giving zero cross-flow between sides. This makes the magnetic-piston principle suitable for liquids and particle-laden media where a bare magnetic piston would allow leakage past the seal.



■ OPERATING PRINCIPLE

Magnetic-piston movement as in the PMG25, but an NBR separating diaphragm isolates each chamber, giving zero cross-flow for liquid and particle-laden service.

■ TECHNICAL SPECIFICATIONS

Nominal size	NS80 (Ø79 mm)
Accuracy	±5% FS
Measuring range	0...160 mbar to 0...2.5 bar
Sensing element	Magnetic piston + NBR separating diaphragm
Max. static (≤ 250 mbar)	50 bar
Max. static (all ranges)	100 bar
Cross-flow	Zero — fully separated chambers
Ambient temperature	0°C ... +60°C
Medium temperature	max. +100°C
Process connection	2×G¾ female — in-line
Wetted parts	SS 316Ti (1.4571)
Separating diaphragm	NBR
Ingress protection	IP54
Weight	approx. 500 g

■ REED SWITCH CONTACTS (OPTIONAL)

Contacts	Type	Switching capacity
1× CO	Reed change-over	To be confirmed by NICO
2× CO	Reed change-over	To be confirmed by NICO

■ PMG25 VS PDG26 — SELECTION

Characteristic	PMG25	PDG26
Cross-flow	Small	Zero
Liquids + particles	No	Yes
Measuring range	400 mbar ... 10 bar	160 mbar ... 2.5 bar
Max. static pressure	400 bar	100 bar
Weight	approx. 220 g	approx. 500 g

■ DIMENSIONS (PRELIMINARY)

NS	Width	Depth (no contact)	Weight
NS80 (std)	79 mm	146 mm	approx. 500 g

■ RECOMMENDED APPLICATIONS

Water treatment	Liquid filtration	Heat exchangers	Slurry systems	Cooling circuits
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LIMITATIONS

- Confirm the maximum static rating.
- Reed-contact ratings to be confirmed by NICO.
- Confirm elastomer compatibility (NBR / other).

ADVANTAGES

- ✓ NBR separating diaphragm — zero cross-flow
- ✓ Suitable for liquids and particles
- ✓ SS 316Ti wetted parts
- ✓ Optional reed contacts

MODEL SELECTION GUIDE

Choose for liquid or particle-laden ΔP where cross-flow must be eliminated.

SALES-ENGINEER QUESTIONS

1. Medium (liquid / particles)?
2. ΔP span and static pressure?
3. Reed contacts required?

QUICK SELECTION SUMMARY

Choose when	Liquids / particles, zero cross-flow
Avoid when	Clean gas → PMG25

■ ORDERING CODE — PDG26

PDG26 PDG26 — A — B — C — D — RANGE — F

Process connection — **G14** 2×G¾ female · in-line **OR** On request

Max. static pressure — **S050** 50 bar (spans ≤ 250 mbar) **S100** 100 bar (all ranges)

Separating diaphragm — **NB** NBR (standard) **OR** On request

Reed contact — — No contact **RC1** 1× reed change-over **RC2** 2× reed change-over

RANGE — **RANGE** Scale range (see range-selection table)

Options — — No option (standard) **DP** Drag / max. pointer **OR** On request

EXAMPLE ORDER CODE

PDG26 — G14 — S100 — NB — RC1 — 0250 — —

G¾ female · static 100 bar · NBR · 1× reed · 0–250 mbar

■ RANGE-SELECTION TABLE

Available scale-range codes — EN 837 preferred progression (1 · 1.6 · 2.5 · 4 · 6). mbar codes use four digits; bar codes use B + value×10; kPa / MPa codes apply to the bellows version. Vacuum and compound ranges on request.

mbar 0160 0250 0400 0600

bar B010 B016 B025

■ ACCESSORIES & OPTIONS

Compatible accessories — diaphragm seals, valve manifolds, mounting brackets and certificates — are summarised in the Accessories section. Documentation options (inspection certificate EN 10204-3.1, NACE, oxygen-clean) are specified in the ordering code; items marked “to be confirmed by NICO” require confirmation before order.

⚠ Reed-contact electrical ratings to be confirmed by NICO.

PDS27

Standard or high-static element · 1–2 SPDT contacts · dry / silicone · Ø100 / Ø160 mm

Differential Pressure Switch Gauge

A differential pressure gauge with adjustable SPDT switch contacts for combined local indication plus alarm and trip functions. Available as a standard all-metal element (static to 40 bar) or a dual-diaphragm high-static element (PN40–PN400) with hydraulic cushioning for elevated static service.



■ OPERATING PRINCIPLE

A diaphragm element (standard) or dual-diaphragm-and-fluid element (high static) drives the indicating pointer; adjustable set-point pointers carry SPDT electrical contacts that switch as the pointer reaches the set ΔP .

■ TECHNICAL SPECIFICATIONS

Nominal size	Ø100 mm [4"] · Ø160 mm [6"]
Accuracy class	Class 1.6% · 1.0% on request
Measuring range	0...16 mbar to 0...40 bar + vacuum & compound
Standard element	All-metal SS 316Ti media chamber (static ≤ 40 bar)
High-static element	2× diaphragm + transmission fluid (PN40–PN400)
Sensing (≤ 0.25 bar)	SS 316L diaphragm
Sensing (> 0.25 bar)	NiCr alloy (Inconel) diaphragm
Switch contacts	1× or 2× SPDT (snap-action)
Case design	S1 (blow-out) · S3 solid-front + blow-out (opt)
Case filling	Dry (std) · silicone → IP65
Ambient temperature	–20°C ... +60°C
Medium temperature	–20°C ... +100°C
Temperature error	≤ ±0.5% / 10 K
Max. static pressure	Standard 40 bar · High static PN40–PN400
Process connection	G½B female · G½B male · ½NPT male · flange EN61518 (HS)
Ingress protection	IP54 · IP65 · IP66
Electrical connection	M20×1.5 · 6 terminals + PE · 2.5 mm²

■ MAXIMUM STATIC PRESSURE

PN rating	One side / alternating	Both sides
PN 40	40 bar	40 bar
PN 100	100 bar	100 bar
PN 250	250 bar	250 bar
PN 400	400 bar	400 bar

■ SWITCH CONTACT OPTIONS

Contact	Type	Availability
1× SPDT	Snap-action change-over	Standard
2× SPDT	Snap-action change-over	Optional
Inductive / ATEX	Non-contact (slot sensor)	To be confirmed by NICO

■ DIMENSIONS (PRELIMINARY)

NS	Connection	H±1	X (1–2 ct)	X (CO / 3–4)	DC
Ø100	G½B	203	88	96–113	140 / 78
Ø100	½NPT	201	88	96–113	140 / 78
Ø160	G½B	233	102	116	140 / 78

■ RECOMMENDED APPLICATIONS

Process control	Alarm switching	Filter monitoring	Pump monitoring	HVAC / ventilation	Chemical
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LIMITATIONS

- Inductive / ATEX contact availability to be confirmed by NICO.
- High-static version uses the dual-diaphragm element (PN40–PN400).
- Respect contact electrical ratings.

ADVANTAGES

- ✓ Indication plus switching in one device
- ✓ 1 or 2 SPDT snap-action contacts
- ✓ Standard or high-static element
- ✓ Adjustable set points

MODEL SELECTION GUIDE

Choose where one device must both indicate ΔP and switch an alarm / control output.

SALES-ENGINEER QUESTIONS

1. How many set points (1 or 2 SPDT) and function (NO / NC / CO)?
2. Standard or high static (PN rating)?
3. Switched load and classified area (ATEX)?

QUICK SELECTION SUMMARY

Choose when	Indication + alarm / control
Avoid when	Indication only → PDG21

■ ORDERING CODE — PDS27

PDS27 PDS27 — A — B — C — D — E — F — G — H — RANGE — K

Dial size — **1** Ø100 mm **2** Ø160 mm

Accuracy — **A** Class 1.0% **B** Class 1.6% (std)

Version — **ST** Standard (≤ 40 bar) **HS** High static (PN40–PN400)

No. of contacts — **1** 1× SPDT **2** 2× SPDT

Switch function — **NO** Normally open **NC** Normally closed **CO** Change-over

Process connection — **GF** G $\frac{3}{4}$ B female **GM** G $\frac{1}{2}$ B male **NM** $\frac{1}{2}$ " NPT male **FL** Flange EN61518 (HS) **OR** On request

Max. static pressure — **S010** 10 bar (std) **S025B** 25 bar (std) **S040** 40 bar (std) **P040** PN40 (HS) **P100** PN100 (HS) **P250** PN250 (HS) **P400** PN400 (HS)

Case / IP — **DR54** Dry · IP54 (std) **SI65** Silicone · IP65 **66** IP66

RANGE — **RANGE** Scale range (see range-selection table)

Options — — No option (standard) **NAC** NACE (HS) **OR** On request

EXAMPLE ORDER CODE

PDS27 — 1 — B — ST — 2 — NC — GM — S040 — DR54 — 0400 — —

Ø100 · 1.6% · standard · 2× SPDT · NC · G $\frac{3}{4}$ B · static 40 bar · dry IP54 · 0–400 mbar

■ RANGE-SELECTION TABLE

Available scale-range codes — EN 837 preferred progression (1 · 1.6 · 2.5 · 4 · 6). mbar codes use four digits; bar codes use B + value×10; kPa / MPa codes apply to the bellows version. Vacuum and compound ranges on request.

mbar	0016	0025	0040	0060	0100	0160	0250	0400	0600
bar	B010	B016	B025	B040	B060	B100	B160	B250	B400
kPa	K060	K100	K160	K250	K400	K600			
MPa	M100	M160	M250						

■ ACCESSORIES & OPTIONS

Compatible accessories — diaphragm seals, valve manifolds, mounting brackets and certificates — are summarised in the Accessories section. Documentation options (inspection certificate EN 10204-3.1, NACE, oxygen-clean) are specified in the ordering code; items marked “to be confirmed by NICO” require confirmation before order.

△ Inductive / ATEX contact options to be confirmed by NICO.

PDT28

Local dial + 4–20 mA output · standard or high static · Ø100 / Ø160 mm

Differential Pressure Gauge with Analog Output

A differential pressure gauge combining local dial indication with a proportional 4–20 mA analog output for remote monitoring. Available as a standard element (static to 40 bar) or a dual-diaphragm high-static element (PN40–PN400). HART and output electrical performance to be confirmed by NICO.



■ OPERATING PRINCIPLE

A diaphragm element (standard) or dual-diaphragm element (high static) drives the local pointer; an output stage provides a proportional 4–20 mA signal for remote monitoring. HART option to be confirmed by NICO.

■ TECHNICAL SPECIFICATIONS

Nominal size	Ø100 mm [4"] · Ø160 mm [6"]
Mechanical accuracy	Class 1.0% · 1.6% · 2.5%
Measuring range	0...16 mbar to 0...40 bar + vacuum & compound
Standard element	Diaphragm + metal bellows — all-welded
High-static element	2× diaphragm + transmission fluid (PN40–PN400)
Wetted parts	SS 316Ti (1.4571) · 316L / Hastelloy / Monel (HS, on request)
Case filling	Dry (std) · silicone → IP65
Analog output	4–20 mA (2-wire) · HART to be confirmed by NICO
Max. static pressure	Standard 40 bar · High static PN40–PN400
Ambient temperature	–20°C ... +60°C
Medium temperature	–20°C ... +100°C
Process connection	2×G¼F · 2×G½B M · 2×¼NPT F · 2×½NPT M · flange EN61518 (HS)
Ingress protection	IP54 · IP65 (oil) · IP66
Electrical connection	M20×1.5 · terminals + PE

■ MAXIMUM STATIC PRESSURE

PN rating	One side / alternating	Both sides
PN 40	40 bar	40 bar
PN 100	100 bar	100 bar
PN 250	250 bar	250 bar
PN 400	400 bar	400 bar

■ DIMENSIONS (PRELIMINARY)

NS	Span	A	B	D ₁	DC	H±1	H	Wt (kg)
Ø100	≤ 0.25 bar	25	59.5	101	140	161	90	2.70
Ø100	≥ 0.4 bar	25	59.5	101	78	171	87	1.90
Ø160	≤ 0.25 bar	25	65	161	140	191	120	3.40
Ø160	≥ 0.4 bar	25	65	161	78	201	117	2.40

■ RECOMMENDED APPLICATIONS

Process monitoring

Level measurement

Flow measurement

Filter monitoring

SCADA / DCS integration

LIMITATIONS

- HART option and output electrical performance to be confirmed by NICO.
- ATEX availability to be confirmed.
- High-static version uses the dual-diaphragm element (PN40–PN400).

ADVANTAGES

- ✓ Local dial plus 4–20 mA output
- ✓ Standard or high-static element
- ✓ Stainless-steel wetted parts
- ✓ Remote-monitoring capability

MODEL SELECTION GUIDE

Choose where local ΔP indication and a remote analog signal are both required.

SALES-ENGINEER QUESTIONS

1. Standard or high static (PN rating)?
2. Output and HART requirement (to be confirmed)?
3. ΔP span, connection and material?

QUICK SELECTION SUMMARY

Choose when	Indication + analog output
Avoid when	Indication only → PDG21

■ ORDERING CODE — PDT28

PDT28 PDT28 — A — B — C — D — E — F — G — H — RANGE — K

Dial size — **1** Ø100 mm **2** Ø160 mm

Mechanical accuracy — **A** Class 1.0% **B** Class 1.6% **C** Class 2.5%

Version — **ST** Standard (≤ 40 bar) **HS** High static (PN40–PN400)

Output signal — **A0** 4–20 mA (HART to be confirmed)

Process connection — **G1** 2×G $\frac{3}{4}$ female **G2** 2×G $\frac{1}{2}$ B male **N1** 2× $\frac{1}{4}$ " NPT female **N2** 2× $\frac{1}{2}$ " NPT male **FL** Flange EN61518 (HS) **OR** On request

Wetted material — **T** SS 316Ti (std) **L** SS 316L **H** Hastelloy C276 (HS) **M** Monel (HS) **OR** On request

Max. static pressure — **S010** 10 bar (std) **S025B** 25 bar (std) **S040** 40 bar (std) **P040** PN40 (HS) **P100** PN100 (HS) **P250** PN250 (HS) **P400** PN400 (HS)

IP / filling — **54** IP54 · dry (std) **65** IP65 · silicone **66** IP66

RANGE — **RANGE** Scale range (see range-selection table)

Options — — No option (standard) **NAC** NACE (HS) **SQ** Square root **OR** On request

EXAMPLE ORDER CODE

PDT28 — 1 — B — ST — A0 — G1 — T — S010 — 54 — 0160 — —

Ø100 · 1.6% · standard · 4–20 mA · G $\frac{3}{4}$ female · 316Ti · static 10 bar · IP54 · 0–160 mbar

■ RANGE-SELECTION TABLE

Available scale-range codes — EN 837 preferred progression (1 · 1.6 · 2.5 · 4 · 6). mbar codes use four digits; bar codes use B + value×10; kPa / MPa codes apply to the bellows version. Vacuum and compound ranges on request.

mbar	0016	0025	0040	0060	0100	0160	0250	0400	0600
bar	B010	B016	B025	B040	B060	B100	B160	B250	B400
kPa	K060	K100	K160	K250	K400	K600			
MPa	M100	M160	M250						

■ ACCESSORIES & OPTIONS

Compatible accessories — diaphragm seals, valve manifolds, mounting brackets and certificates — are summarised in the Accessories section. Documentation options (inspection certificate EN 10204-3.1, NACE, oxygen-clean) are specified in the ordering code; items marked “to be confirmed by NICO” require confirmation before order.

△ Analog-output electrical performance, HART option and ATEX availability to be confirmed by NICO.

ORDERING

Ordering code system

Each model is ordered by joining its segment codes in the order shown on the model page, separated by dashes, including one scale-range code. Custom items use OR — On request. Options marked “to be confirmed” require NICO confirmation before order.

MODEL MODEL — SIZE — ACCURACY — ... — RANGE — OPTIONS

Version (ST standard / HS high static), filling, static-pressure and switch / analog fields are appended where applicable on the PDS27 and PDT28 models.

■ RANGE CODE CONVENTION

Millibar ranges use four digits (e.g. 0160 = 0...160 mbar); bar ranges use B + value×10 (e.g. B016 = 0–1.6 bar, B400 = 0–40 bar). kPa / MPa codes are used on the PDG21 bellows version (e.g. K250 = 0...250 kPa, M250 = 0...2.5 MPa). Vacuum and compound ranges on request.

■ COMMON OPTION CODES

Code	Option
—	No option (standard)
DS	Dual scale
DP	Drag / max. pointer
SQ	Square root (flow)
NAC	NACE material (on request)
OR	On request

⚠ ATEX / IECEx approval, the HART option, switch-contact options and the highest static-pressure ratings are model-dependent and to be confirmed by NICO.

COMPATIBLE ACCESSORIES

Compatible accessories

Differential pressure gauges integrate with the standard NICO accessory programme. These are compatible accessories — not part of the DPG product family — and are listed briefly; confirm thread, rating and material compatibility before order.

■ VALVE MANIFOLDS

Code	Description	Connection	Compatible
MF3-G	3-valve manifold	G½M × G¼	All Ø100 / Ø160
MF3-N	3-valve manifold NPT	½NPT M × G¼	All Ø100 / Ø160
MF5-G	5-valve manifold	G½M × G¼ × G½F vent	All Ø100 / Ø160
MF5-N	5-valve manifold NPT	½NPT M × G¼ × G½F	All Ø100 / Ø160

■ MOUNTING BRACKETS

Code	Description	Material	Compatible
BK-ST	Wall / pipe bracket	Lacquered steel	All Ø100 / Ø160
BK-SS	Wall / pipe bracket, SS	SS 1.4301	All Ø100 / Ø160
BK-PF	Panel-mount flange	SS, polished	All Ø100 / Ø160
BK-PP	Pipe bracket 2"	SS 304	PMG25 · PDG26

■ DIAPHRAGM SEALS

Code	Type	Connection	Wetted material
DS-T	Threaded seal	G½B / ½NPT male	SS 316L / Hastelloy
DS-F	Flanged seal	DN25–DN100 · ANSI 1"–4"	SS 316L / Hastelloy / Monel
DS-S	Sanitary seal	DIN / SMS / Tri-clamp	SS 316L (Ra ≤ 0.8 µm)

■ PRESSURE ACCESSORIES

Code	Description	Specification
SY-SS	Syphon / pigtail, SS	G½B · SS316 · 15 bar · 220°C
SN-SS	Snubber, SS	G½B male · Ø0.5 mm · SS316
EQ-3V	Pressure equalizer	3-way · G¼ · SS
RS-Ø3	Restrictor Ø0.3 mm	G¼ · SS316
RS-Ø6	Restrictor Ø0.6 mm	G¼ · SS316

One family, six models

PDG21

Differential Pressure Gauge

PMG25

Magnetic Piston Differential Pressure Gauge

PDS27

Differential Pressure Switch Gauge

C O N T A C T

Web www.nikaansanat.com

Email info@nikaansanat.com

Tel +98 21 65020398 · +98 21 65020374

Fax +98 21 65020361

WhatsApp +98 910 9660710

PDG24

High Static Differential Pressure Gauge

PDG26

Piston Differential Pressure Gauge with Separating Diaphragm

PDT28

Differential Pressure Gauge with Analog Output

L O C A T I O N S**Factory**

Payam Special Economic Zone, Karaj, Iran

Office

Tehran, Iran

Benji mascot

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