Differential Pressure Gauges with magnetic piston Type DPG 200 DS 63-80-100-125-150

DPG 200

- ✔- *Cost effective*
- ✔- *Compact dimensions*
- ✔- *High static pressure: 200 bar*
- ✔- *Dial size: DS 63-80-100-125-150*
- ✔- *PTFE piston seal cup*
- ✔- *Glycerine filled version*
- ✔- *Water tight (IP65) enclosure*

Piston type differential pressure gauge is mainly used for liquid application and where small migration between high and low input is permissible. It is recommended to monitor differential pressures on cartridge filters, pipeline systems, valves, pumps, brand flows, condensers of those media without any magnetic substances.

Functional and constructive characteristics

Accuracy : ± 2% of full scale ascending.
Ambient temperature : -20°C...+60°C.
Medium temperature : 80 °C maximum.
Static pressure : 200 bar.
Overpressure safe : 200 bar maximum.
Protection: IP 65 as per IEC 529.
Body material: black anodized aluminium (AISI 316 st.st. with sand Blast finish or Brass black powder coated are available).
End connections: Axial.
Seals: Buna-N and Viton.
Magnetic piston: Aluminium with PTFE sealing (AISI 316 st.st. or brass available) with ceramic magnet.
Case material: AISI 304 st.st. with push in rubber ring.
Window: Plain float glass, (acrilic or toughened glass as option).
Dial: White aluminium with black marking.
Options: Glycerine filled, follower pointer, customer logo, dual scale, colour bands, strainer integrated in high port.

Switch: reed contacts

These instruments may be equipped with 1 or 2 SPST or SPDT reed contacts externally adjustable over 20% to 90% of the range.

Switch rating for SPST : 10VA AC (rms) or DC (max), 50V AC (rms) or 100 V DC (max), 0,5 Amp AC (rms) or DC (max).
Switch rating for SPDT : 3VA AC (rms) or DC (max), 28V AC (rms) or 28 V DC (max), 0,25 Amp AC (rms) or DC (max).

Operating principle

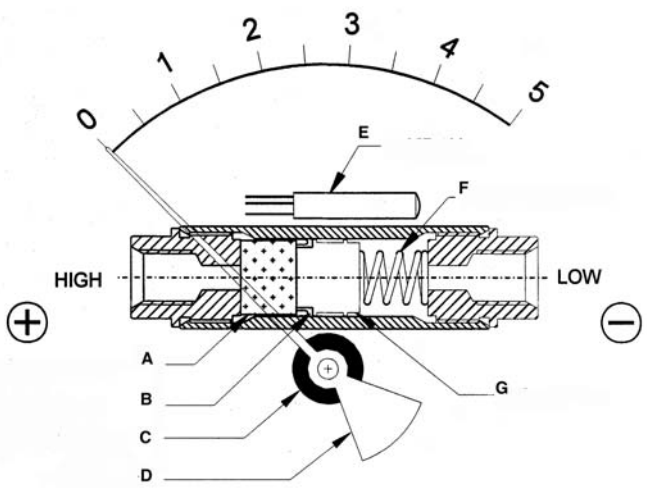
- The high (+) pressure and low (-) pressure ports are separated by a system assembly consisting of a ceramic magnet (A) and a piston (G) with a PTFE sealing (B).

- The difference in pressure causes axial movement of the piston supported by a measuring range spring (F).

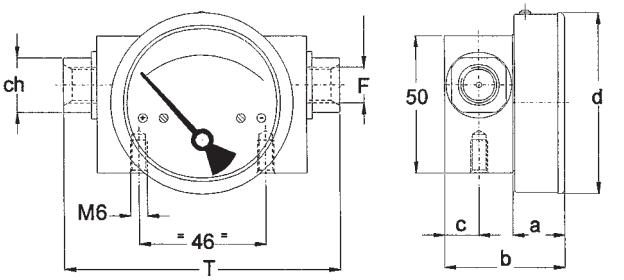
- A rotary magnet (C), located in a separated body cavity, is actuated by the magnetic coupling of the axial piston movement. The pointer (D) attached to the rotary magnet indicates differential pressure on the dial.

- The safety for the operator is achieved by a mechanical separation between the pressure chambers and the instrument case.

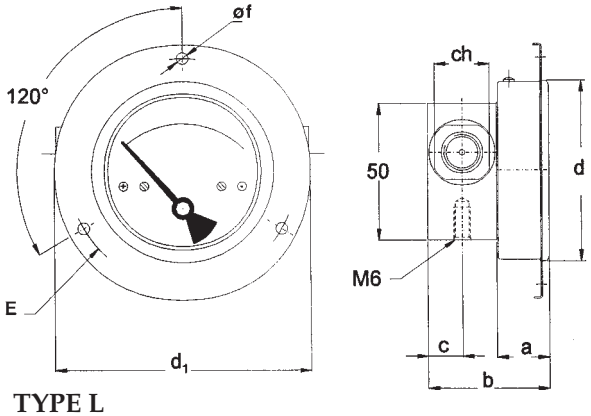
- They can be equipped with one or two reed contacts (E).



TYPES, WEIGHTS AND DIMENSIONS (mm.)



TYPE I
Stem mounting,
"in-line" connection



TYPE L
flush mounting, front flange;
"in-line" connection.

DS	F	a	b	b_1	c	c_1	d	d_1	T	ch	E	ø f	Weight
63	1/4" BSP F - 1/4" NPT F	18	44	79	12,5	47,5	66	93	100	20	83	4,2	0,3 Kg.
80	1/4" BSP F - 1/4" NPT F	18	44	79	12,5	47,5	83	109	100	20	99	4,2	0,35 Kg.
100	1/4" BSP F - 1/4" NPT F	18	44	79	12,5	47,5	104,3	131	100	20	121	4,2	0,40 Kg.
125	1/4" BSP F - 1/4" NPT F	18	44	79	12,5	47,5	119,7	146	100	20	136	4,2	0,45 Kg.
150	1/4" BSP F - 1/4" NPT F	18	44	79	12,5	47,5	154,3	181	100	20	171	4,2	0,50 Kg.

RANGES

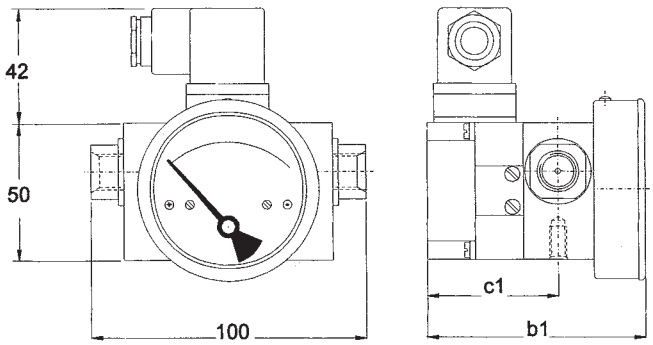
TAB. 1

Ranges	bar	kg/cm^2
0...0,5	✦	✦
0...1	✦	✦
0...0,75	✦	✦
0...1,6	✦	✦
0...2	✦	✦
0...2,5	✦	✦
0...4	✦	✦
0...5	✦	✦
0...6	✦	✦
0...7	✦	✦
0...9	✦	✦
0...10	✦	✦

TAB. 2

Ranges	psi
0...5	✦
0...8	✦
0...15	✦
0...20	✦
0...30	✦
0...40	✦
0...50	✦
0...60	✦
0...80	✦
0...100	✦

REED SWITCH OPTION



HOW TO ORDER

CODES & DESCRIPTIONS

DPG 200	Differential Pressure Gauge with magnetic piston
I	I - axial connection - stem mounting L - axial connection - flush mounting, front flange
E	C - DS 63 D - DS 80 E - DS 100 F - DS 125 G - DS150
0	0 - all ranges
0/10 bar	see ranges table
23F	21F - 1/4" BSP F 23F - 1/4 NPT F
GS5	GS1 - Switch type - One SPST GS3 - Switch type - Two SPST GS5 - Switch type - One SPDT GS7 - Switch type - Two SPDT
R10	T34 - Acrylic window T33 - Toughened glass 316 - St. St. 316 body and wetted parts BRS - Brass body and wetted parts R10 - Glycerine filled L25 - Acrylic window with maximum pointer (not available with R10 option)

Differenzdruckmanometer 078
für kleinste Messbereiche
Saphir gelagert

Anwendung:
Differenzdruckmessung für neutrale, gasförmige Medien, z.B. in der Umwelttechnik,
im Anlagenbau und in der Filtertechnik.

Differential Pressure Gauges 078
for finest measuring ranges
run on sapphire bearings

Service intended:
Measuring of differential pressure for neutral, gaseous media, e.g. in Environmental Industries, Process engineering, Filter control etc.

Gehäuse: aus Edelstahl 1.4301
Bajonettring: aus Edelstahl .14301, poliert
Schutzart: IP 45
Anschluss: 2 x M5 Innengewinde, hinten,
1 x zentrisch, 1 x bei 6 Uhr.
Andere Anschlussgewinde auf Anfrage.
Meßsystem: Membrane aus CuBe
Zeigerwerk: CuZn 40 Pb 2
Zeiger: Aluminium, schwarz
Skala: Aluminium, Grund weiß, Aufdruck schwarz
Deckscheibe: Glas
Anzeigebereiche:
0 - 6 mbar Δp
0 - 10 mbar Δp
0 - 20 mbar Δp

Case: *stainless steel 1.4301*
Bajonet type ring: *st.st. 1.4301, polished*
Protection: *IP 45*
Connection: *2 x M5 female, back,*
1 x centric, 1 x at 06:00 h.
Other connection threads on request.
Pressure element: *membrane in CuBe*
Movement: *Copper-tin alloy*
Pointer: *Aluminium, black*
Dial: *Aluminium, with, black figures*
Window: *glass*
Ranges:
0 - 6 mbar Δp
0 - 10 mbar Δp
0 - 20 mbar Δp

Ausführungen:
Typ 078.3: Mit 3-Loch-Flanschfrontring zum Schalttafeleinbau
Typ 078.4: Mit Klemmbügel zum Schalttafeleinbau

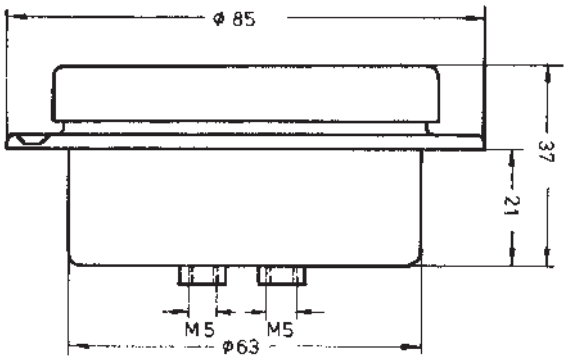
Types:
Type 078.3: With front-flange for panel mounting
Type 078.4: With u-clamp (bracket) for panel mounting

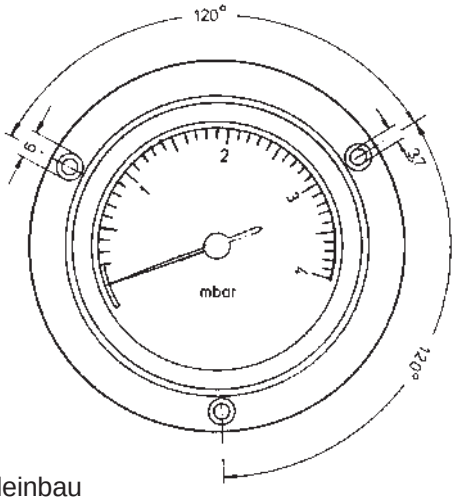
Optionen:
- Sonderskala (Logo, Sonderteilung usw.)
- Schlauchverschraubung M5 außen x 6,2/4 mm
- L-Schnellverschraubung, schwenkbar 6,2/4 mm

Options:
- *Special dial (logo, special graduation etc.)*
- *Hose connection M5 male x 6.2/4 mm*
- *L form quick connector for hose 6.2/4 mm*

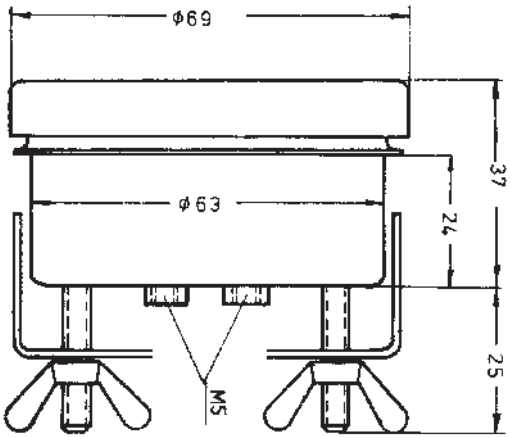
078 Membran-Differenzdruckmanometer, NG 63, 0...6 mbar bis 0...20 mbar
Membrane differential pressure gauge, DS 63 (2 1/2") finest ranges

Bauformen und Abmessungen
Mounting styles and dimensions





Type 078.3
Anschlüsse hinten, mit 3-Loch-Flanschfrontring, zum Schalttafeleinbau
Back connections, with front-flange, for panel mounting



Type 078.4
Anschlüsse hinten, mit Klemmbügel, zum Schalttafeleinbau
Back connections, with u-clamp (bracket), for panel mounting

Optionales Zubehör / *optional accessories*

Schlauchverschraubung aus Messing
M5 Außengewinde x 6,2/4 mm Schlauchanschluss
Hose connection in brass
M5 male x 6.2/4 mm hose connection

L-Schnellverschraubung aus Messing
schwenkbar, DN 2,3, M5 x 6,2/4 mm
L-form quick connector in brass
rotatable, DN 2.3, M5 x 6.2/4 mm

Differenzdruckmessgerät mit integrierter Betriebsdruckanzeige
Differential pressure gauge with integrated working pressure indication

DDP-2

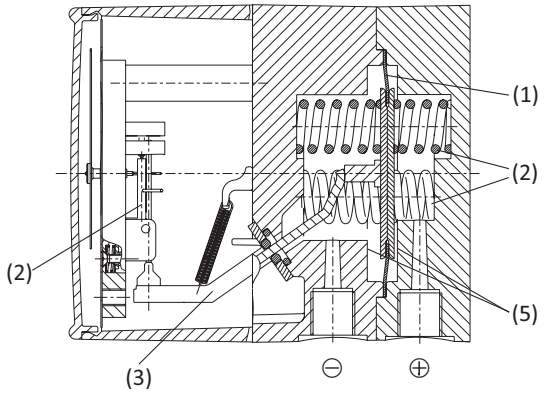
Rel. 20171026

Membran-Differenzdruckmanometer DDP-2

- Integrierte zusätzliche Anzeige des statischen Betriebsdruckes.
- Differenzdruckmessbereiche von 0...160 mbar bis 0...25 bar.
- Statischer Druck (Betriebsdruck) max. 25 bar (einseitig, beidseitig oder wechselseitig.
- Robustes Gehäuse mit Befestigungslaschen für Wandmontage.

Membrane differential pressure gauge DDP-2

- *Integrated additional indication of the working (static) pressure.*
- *Differential pressure ranges from 0...160 mbar to 0...25 bar*
- *Static pressure (working pressure) max. 25 bar, either side.*
- *Robust housing with mounting links for wall mounting.*



⊕ hoher Druck / *high pressure*, ⊖ niedriger Druck / *low pressure*

Aufbau und Wirkungsweise

In den Messstoffkammern (+) und (-), die durch eine elastische Membrane (1) getrennt sind, herrschen die Drücke p_1 und p_2.

Der Differenzdruck ($\Delta p = p_1 - p_2$) bewirkt eine axiale Auslenkung (Messweg) der Membrane gegen die Messbereichsfedern (2). Der dem Differenzdruck proportionale Messweg wird über einen Kipphebel (3) druckdicht und reibungsarm in das Anzeigegehäuse auf das Zeigerwerk (4) übertragen.

Die Überlastsicherheit wird durch Anlage der elastischen Membrane an metallische Stützflächen (5) erreicht.

Design and operating principle

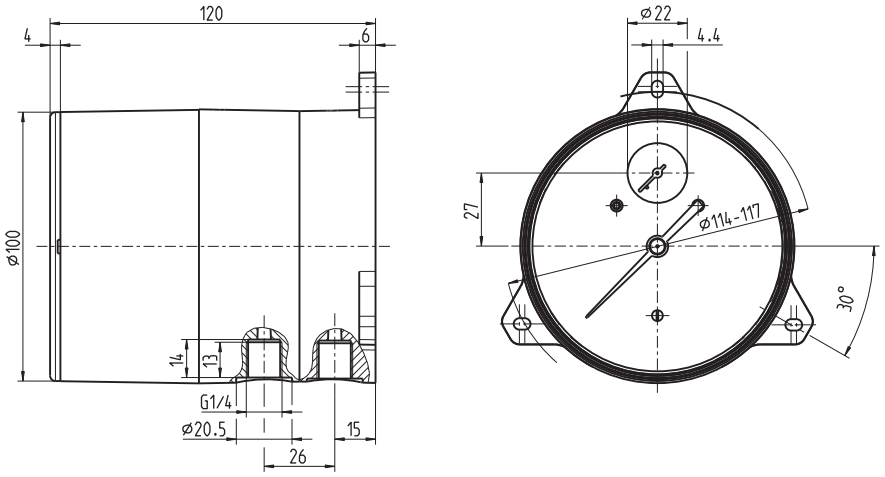
Pressures p_1 and p_2 act on the media chambers (+) and (-), which are separated by an elastic diaphragm (1). The differential pressure ($\Delta p = p_1 - p_2$) leads to an axial deflection of the diaphragm against the measuring range springs (2). The deflection, which is proportional to the differential pressure, is transmitted to the movement (4) in the indicating case via a pressure-tight and low friction rocker arm (3). Overpressure safety is provided by metal bolsters (5) resting against the elastic diaphragm.

Nenngröße: Differenzdruckanzeige NG 100, Betriebsdruckanzeige NG 22.
Genauigkeitsklasse: Differenzdruckanzeige Kl. 2,5; Betriebs-druckanzeige Kl. 4.
Anzeigebereiche: Differenzdruck 0...160 mbar bis 0...25 bar; Betriebsdruckanzeige 0...25 bar.
Max. Betriebsdruck: 25 bar (ein-/beid-/wechselseitig).
Zulässige Temperaturen: Umgebung -10...+70°C; Medium max. 90°C.
Schutzart: IP 65 nach EN 60529 / IEC 60529.
Messstoffkammern (mediumberührt): Aluminium, EN AC-AlSi9Cu3(Fe), schwarz lackiert. (Optional Edelstahl 1.4571)
Prozessanschlüsse (mediumberührt): 2 x G 1/4" Innengewinde, Anschlusslage unten, hintereinander, Achsabstand 26 mm. Optional G 1/4 B Außengewinde oder Schneidringverschraubung.
Messglieder (mediumberührt): Differenzdruck: Druckfedern aus Edelstahl 1.4310, Trennmembrane aus FPM/FKM (optional NBR). Betriebsdruck: Rohrfeder aus Kupferlegierung.
Übertragungsteile (mediumberührt): Edelstahl 1.4301, 1.4305, 1.4310, FPM/FKM (optional NBR).
Dichtungen (mediumberührt): FPM/FKM (optional NBR).
Zeigerwerk: Kupferlegierung.
Skalen: Zifferblatt weiß, Skalierung schwarz.
Zeiger: Differenzdruck- und Betriebsdruckanzeige: blau.
Nullpunktkorrektur für Differenzdruckanzeige: über Schraube in der Skala.
Gehäuse: Aluminium EN AC-AlSi9Cu3(Fe), schwarz lackiert.
Deckscheibe: Kunststoff, mit Verschlussschraube zur Nullpunktkorrektur.
Gewicht: ca. 1,3 kg.
Montage: nach angebrachten Symbolen (+) (hoher Druck) und (-) (niedriger Druck). Befestigung über starre Messleitungen oder Wandmontage über vorhandene Montagelaschen.

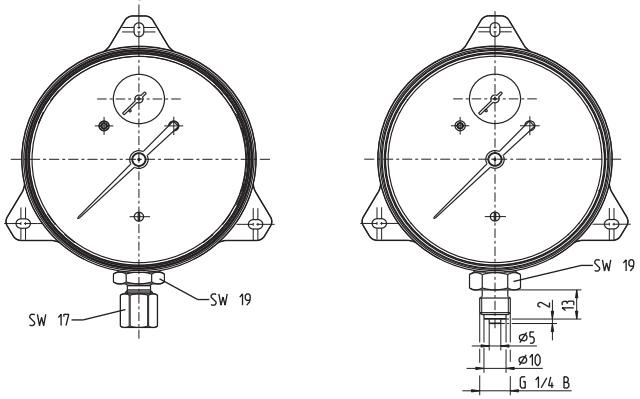
Nominal size: *differential pressure indication DS 100 mm, working pressure indication DS 22 mm.*
Accuracy class: *differential pressure indication class 2.5; working pressure indication class 4.*
Scale ranges: *differential pressure 0...160 mbar to 0...25 bar; working pressure indication 0...25 bar.*
Max. static pressure: *25 bar, either side.*
Permisible temperatures: *ambient -10...+70°C, medium max. 90°C.*
Ingress protection: *IP 65 per EN 60529 / IEC 60529.*
Media chamber (wetted): *Aluminium EN AC-AlSi9Cu3(Fe), black laquered. (Optional: stainless steel 1.4571)*
Process connections (wetted): *2 x 1/4" BSP female, lower mount, in-line, centre distance 26 mm. Optional 1/4" BSP male or compression fittings.*
Pressure elements (wetted): *differential pressure: compression springs st.st. 1.4310 and separating diaphragm FPM/FKM (optional NBR). Working pressure: bourdon tube in copper-alloy.*
Transmission parts (wetted): *stainless steel 1.4301, 1.4305, 1.4310, FPM/FKM (optional NBR).*
Sealings (wetted): *FPM/FKM (optional NBR).*
Movement: *copper alloy.*
Dials: *white with black lettering.*
Pointers: *differential and working pressure indication: blue*
Zero adjustment for differential pressure indication: *via screw in the dial.*
Case: *Aluminium EN AC-AlSi9Cu3(Fe), black laquered.*
Window: *plastic, with plug-screw for zero point adjustment.*
Weight: *approx. 1.3 kg.*
Mounting: *rigid measuring line or wall mounting via mounting links.*

DDP-2 Differenzdruckmessgerät mit integrierter Betriebsdruckanzeige
Differential pressure gauge with integrated working pressure indication

Abmessungen / *Dimensions* (mm):



Anschluss-Optionen / *Process connection variants*:



Schneidringverschraubung für 6/8/10 mm Rohr
Compression fitting with ferrule for 6/8/10 mm pipe

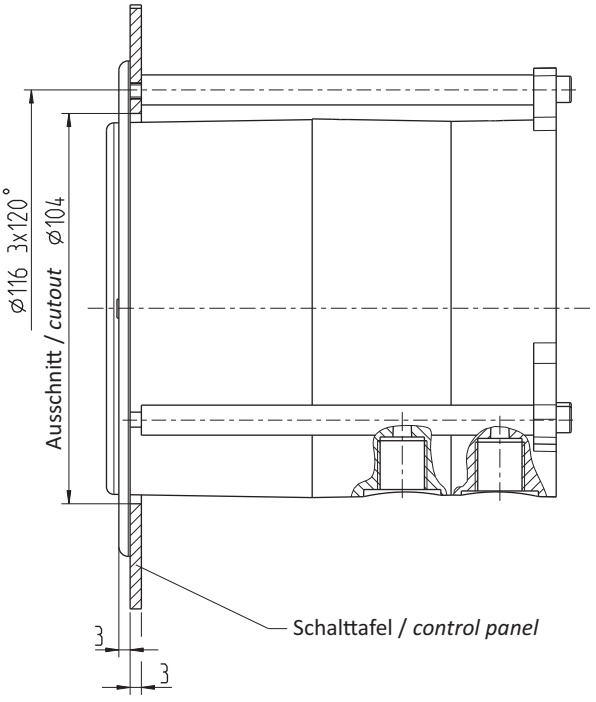
Differenzdruckmessbereiche / *differential pressure ranges*
0...160 mbar
0...250 mbar
0...400 mbar
0...0,6 bar
0...1 bar
0...1,6 bar
0...2,5 bar
0...4 bar
0...6 bar
0...10 bar
0...16 bar
0...25 bar

Prozessanschlüsse / *pressure connection variants*
G 1/4" Innengewinde (*1/4" BSP female)* = standard
G 1/4 B Außengewinde (*1/4" BSP male*)
Schneidringverschraubung für 6 mm Rohr
Schneidringverschraubung für 8 mm Rohr
Schneidringverschraubung für 10 mm Rohr
Andere auf Anfrage / *other on request*

Andere Materialen als auf Vorderseite beschrieben: auf Anfrage.
Other materials (wetted): on request.

Optionales Zubehör / *optional accessory*:
• Vierfach-Ventilblock / *4-way valve manifold*

Schalttafeleinbau / *control panel mounting*



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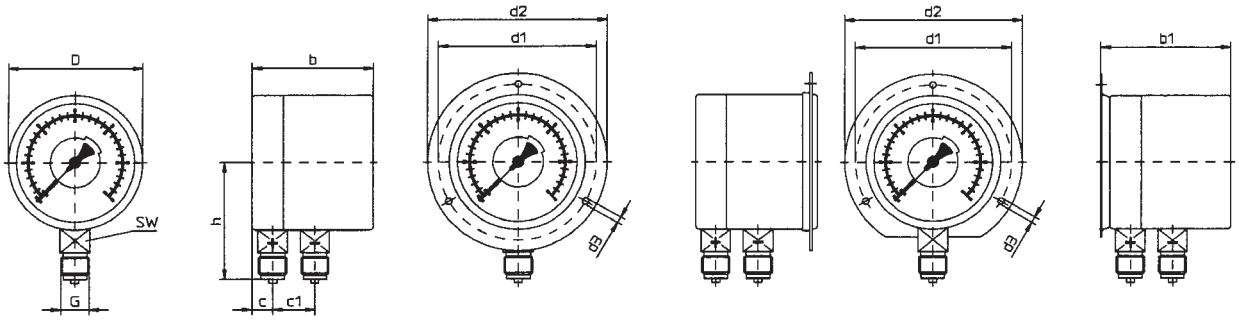
Differenzdruck-Rohrfedermanometer Typ DR

Anwendung:
Differenzdruckmessung von zwei unterschiedlichen Drücken.
Der Messbereich ist gemäß dem maximal auftretendem Druck zu wählen.

Differential Bourdon Tube Pressure Gauge Type DR

Service intended:
Measurement of pressure differential of two pressures applied. Scale range must be selected in consideration of the highest static pressure applied.



Typ DR10.U.1.N...
Anschluß unten
bottom pressure entry

Typ DR10.U.2.N...
Rand vorne
panel mounting flange

Typ DR10.U.3.N...
Rand hinten
surface mounting flange

NG / *DS*	b	b1	c	c1	D	d1	d2	d3	h	SW
100	92	98,5	16	32	100,8	116	132	4,8	87	22
160	101	107,5	16	32	161,3	178	196	5,8	118	22

Typ DR10: Mediumberührte Teile aus Kupferlegierung
Typ DR20: Komplett aus Edelstahl, mediumberührte Teile aus Edelstahl 1.4571

Type DR10: *wetted parts in copper-alloy.*

Type DR20: *all stainless steel construction, wetted parts in st.st. 1.4571.*

Mit 1 Zeiger und 1 beweglichen Zeigerscheibe.

With 1 standard pointer and 1 rotating pointer scale.

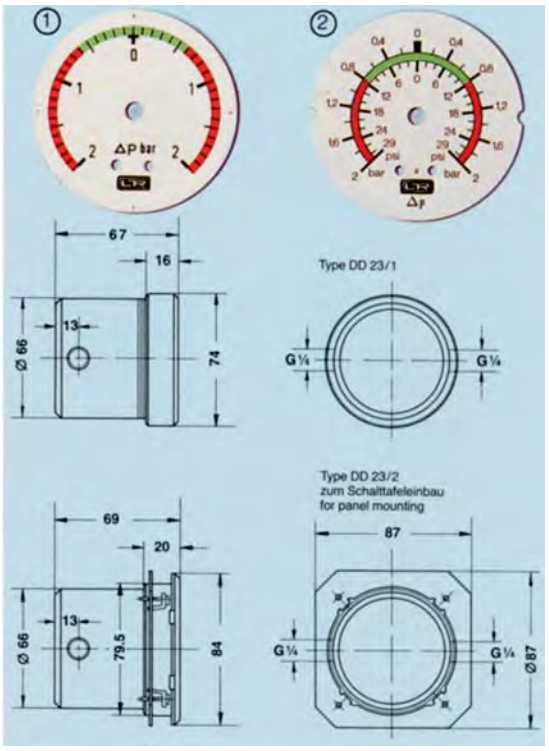
Güteklasse: Kl. 1,6
Druckanschlüsse: 2 x G 1/2 B parallel hintereinander, mit plus und minus markiert.
Umgebungstemperatur: -25°C...+60°C
Mediumtemperatur: max. +60°C bei Typ DR10, max. +100°C bei Typ DR20
Belastung:
1,0-facher Skalenendwert bei ruhender Last,
0,9-facher Skalenendwert bei dynamischer Last,
1,3-facher Skalenendwert kurzfristig

Accuracy class: *1.6*
Pressure connections: *2 x 1/2" BSP male, parallel, marked with plus and minus.*
Ambient temperature: *-25°C...+60°C*
Medium temperature: *max. +60°C at type DR10, max. +100°C at type DR20.*
Working pressure:
1.0 x full scale value at steady pressure,
0.9 x full scale value at fluctuating pressure,
1.3 x full scale value for very short time

Rohrfeder-Differenzdruckmanometer -2...+2 bar für Luftfilter usw.
Bourdon tube differential pressure gauge -2...+2 bar for air filter etc.

DD 23

Rel. 20171026



Für alle gasförmigen, nicht aggressiven Medien geeignet. Speziell zur rechtzeitigen Erkennung des Verschmutzungsgrades von Luftfiltern. Die besonderen Vorteile sind der für Differenzdruckmanometer sehr kleine Gehäusedurchmesser, die **direkte** Anzeige des Differenzdruckes, die sehr übersichtliche Skala mit Farbmarkierungen grün und rot für Arbeits- und Warnbereich und die von der Strömungsrichtung unabhängigen Anschlüsse.

*Suitabel for all gaseous, non-aggressive media. This gauge is particullary suitable to recognize in time the degree of polution of airfilters. Compared to other differential pressure gauges it's special advantages are the very small diameter, the **direct** indication of the differential pressure, the dial very clearly arranged, having green and red sections for working and warning scope, and connections being independent from the direction of the flow.*

Technische Daten
der Standardausführung:

Differenzdruckanzeige bis 2 bar. Skalenausführung Î oder Ï, siehe oben. Druckanschlüsse G 1/4" seitlich. Gehäuse und Schraubring aus Aluminium. Statischer Druck max. 16 bar. Temperatur max. +50°C.
Auf Wunsch andere Mess-bereiche für Differenzdrücke ab 40 mbar.
Achtung: Gehäuse nicht öffnen und Sichtscheibe nicht mit Lösungsmitteln reinigen.

Technical Data
Standard execution:

Differential pressure range up to 2 bar.
Scale execution Î or Ï, see above.
Connections 1/4" BSP female lateral.
Case and bezel ring in aluminium.
Static pressure max. 16 bar.
Temperature max. +50°C / +122°F.
***On request** other ranges for differential pressure from 0-40 mbar.*
***Warning:** Do not open the instrument and do not clean the window with solvents.*

Rel. 20171027

Differenzdruck-Kapselfedermanometer 077 für kleine Differenzdrücke

Anwendung:
Differenzdruckmessung bei gasförmigen, trockenen Schwebekörpern, sowie öl- und fettfreien Meßstoffen, z.B. in der Umwelttechnik, im Anlagenbau, in der Filter-, Medizin- oder Labortechnik.

Differential Capsule Pressure Gauge 077 for low pressure ranges

Service intended:
Measuring of gaseous dry media as well as media which are free of oil and grease, e.g. in Environmental industries, Terotechnology, Medical Industries, Laboratories and Filter control.

Gehäuse: aus Edelstahl 1.4301, NG 63 oder NG 100
Dichtung: NBR
Schutzart: IP 45
Anschluss:
NG 63: zentrisch und exzentrisch hinten
NG 100: zentrisch und exzentrisch hinten oder unten, um 20/ versetzt.
G 1/8 B Aussen- oder Innengewinde, oder Schlauchanschluss, auf Wunsch andere Gewinde.
Meßsystem: Kapselfeder aus Kupferlegierung
Zeigerwerk: Cu Zn-Legierung
Zeiger: Aluminium, schwarz.
Skala: Aluminium, Grund weiß, Aufdruck schwarz.
Deckscheibe: Glas
Nullpunkteinstellung: Verstellschraube auf Skala
Güteklasse: 1,6
Umgebungstemperatur: -25...+60/C
Anzeigebereiche: alle Norm-Bereiche
NG 63: 0/25 mbar bis 0/1000 mbar Δp
NG 100: 0/16 mbar bis 0/1000 mbar Δp

Case: *in stainless steel 1.4301, DS 63 or DS 100*
Seal: *NBR*
Protection: *IP 45*
Connection:
DS 63: centric and excentric back
DS 100: centric and excentric back, or bottom

1/8" BSP male or female, or tube connection, on request other threads available

Pressure element: *capsule in copper alloy*
Movement: *copper-tin alloy*
Pointer: *Aluminium, black*
Dial: *Aluminium, white, black figures*

Window: *glass*
Zero point adjustment: *Adjusting screw in dial*

Accuracy: *class 1.6 (±1.6% FS)*
Ambient temperature: *-25...+60/C*
Ranges: *according to Norm*
DS 63: 0/25 mbar to 0/1000 mbar Δp
DS 100: 0/16 mbar to 0/1000 mbar Δp

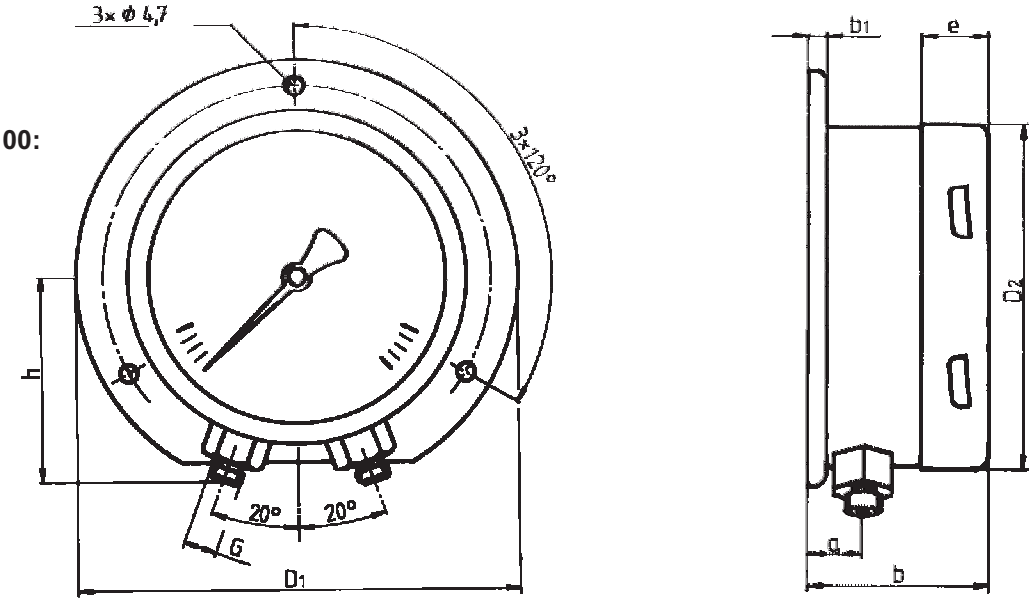
Optionen:
- Sonderskala (Logo, Sonderteilung usw.)
- Sicherheitsverbundglasdeckscheibe
- Spritzwasserdicht IP 54
- Überlastsicher, 3-fach
- NG 63 mit Klemmbügel statt 3-Loch-Frontring

Options:
- *Special dial (logo, special graduation etc.)*
- *Laminated safety glass window*
- *Splash water proof IP 54*
- *3-fold overpressure safe*
- *DS 63 with u-clamp (and no front flange)*

Bauformen, Abmessungen und Gewichte

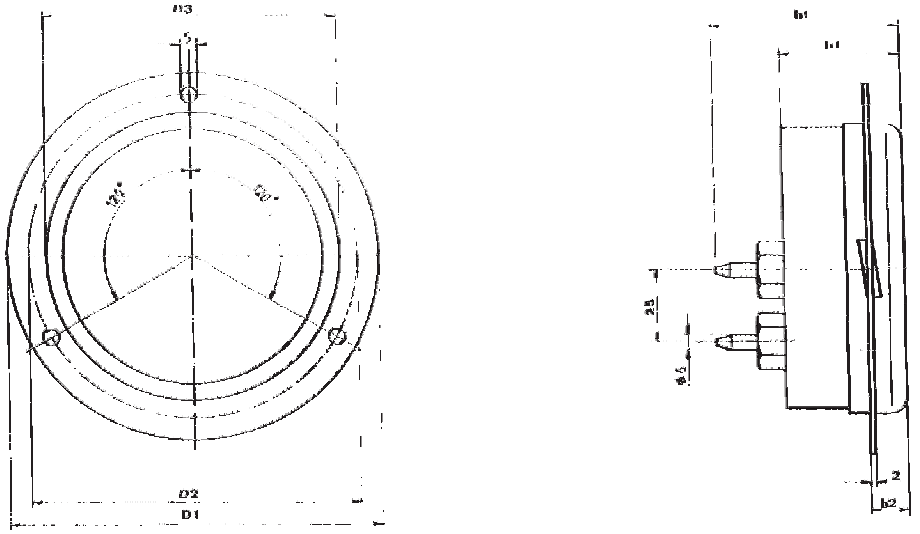
Mounting styles, dimensions and weights

Type 077.6.100:



NG / *DS*	a	b	b1	D1	D2	e	SW	h±1	Gewicht kg
100	12,5	51	5	132	101	18	14	70	ca. 0,3

Type 077.3.063, 077.3.100:



NG / *DS*	b1	b2	D1	D2	D3	h1	SW	Gewicht kg
63	39	5	85	73	64	61	17	ca. 0,2
100	48	6	132	115	100	70	17	ca. 0,28

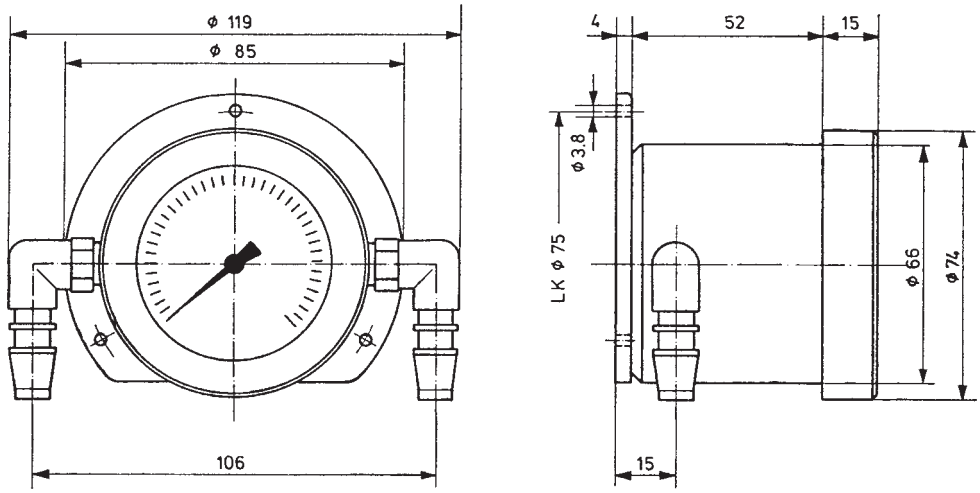
Rel. 20171026

Differenzdruck-Kapselfedermanometer in druckfestem Aluminiumgehäuse

Anwendung:
Differenzdruckmessung bei gasförmigen, trockenen Schwebekörpern, sowie öl- und fettfreien Messstoffen, z.B. in der Umwelttechnik, im Anlagenbau, in der Filter-, Medizin- oder Labortechnik.

Differential Capsule Pressure Gauge with aluminium case

Service intended:
Measuring of gaseous dry media as well as media which are free of oil and grease, e.g. in environmental industries, Terotechnology, medical industries, laboratories and filter control.



+ (P1)
Anschluß für höheren Druck

- (P2)
Anschluß für niedrigeren Druck

Anzeigebereich *Pressure range*	Bestell-Nummer *Order-Code*	max. statischer Druck *max. static pressure*
0 - 25 mbar	023.6.060.8025.0	250 mbar
0 - 40 mbar	023.6.060.8040.0	400 mbar
0 - 60 mbar	023.6.060.8060.0	600 mbar
0 - 100 mbar	023.6.060.8100.0	1,0 bar
0 - 160 mbar	023.6.060.8160.0	1,6 bar
0 - 250 mbar	023.6.060.8250.0	1,6 bar
0 - 400 mbar	023.6.060.8400.0	1,6 bar
0 - 600 mbar	023.6.060.8600.0	1,6 bar

Gehäusedurchmesser: 66 mm, mit hinterem Befestigungsrand, für Wandmontage
Gehäusematerial: Aluminium
Druckmittelberührte Teile: Cu-Legierung
Druckanschluss: 2 x Schlauchtülle für Schlauch mit lichter Weite 6 mm

Case diameter: *66 mm, with back flange, for panel mounting.*
Case material: *aluminium*
Wetted parts: *coppery-alloy.*
Pressure connection: *2 x for tube with 6 mm inner diameter.*

Differential Pressure Gauge PN 100 with single diaphragm

Type 02.13 - DS150

02.13

These instruments are used to check filter obstructions, pressure drops, flow rate differences, level, measurements and generally the difference between two pressures of equal or different circuits. In presence of high temperature, high viscosity and corrosive process fluid, these instruments can be fitted with remote mounting diaphragm seals

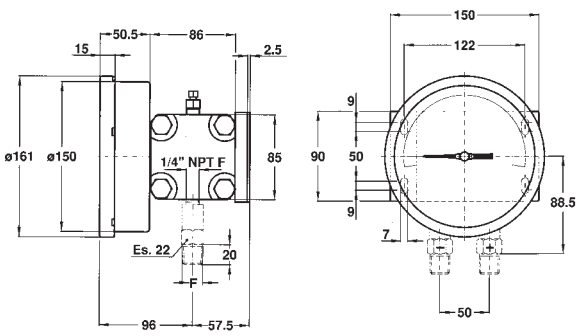
Functional and constructive characteristics

Accuracy: ± 1,6% of the full scale value.
Scale amplitude: 180·.
Static pressure: max 100 bar
Ambient temperature: -25...+65 ·C.
Process fluid temperature: +150 ·C.
Protection: IP 55 as per IEC 529.
Process connection: AISI 316L st.st.
Elastic element: Duratherm diaphragm.
Gasket: VITON and PTFE.
Case: AISI 304 st.st.
Ring: AISI 304 st. st., bayonet lock.
Window: glass, 4 mm. thick.
Movement: stainless steel.
Dial: aluminium, white with black markings.
Pointer: aluminium, micrometric adjustable.
Window gasket: EPDM.
Blow out vent: EPDM.

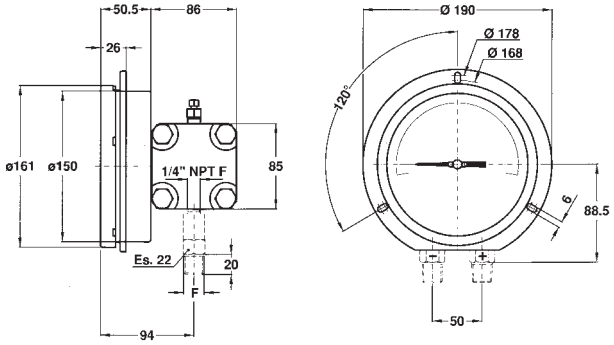
RANGES

RANGES	mbar	mmH_2O	bar	kPa
0...0,6			✦	
0...1			✦	
0...1,6			✦	
0...2,5			✦	
0...4			✦	
0...6			✦	
0...10			✦	
0...16			✦	
0...25			✦	
0...40				✦
0...60				✦
0...100				✦
0...160				✦
0...250				✦
0...400	✦			✦
0...600	✦			✦
0...1000	✦			✦
0...1600	✦			
0...2500	✦			
0...4000		✦		
0...6000		✦		
0...10000		✦		

TYPES, DIMENSIONS AND WEIGHTS (mm)



TYPE C
surface mounting, back flange;
lower connections.



TYPE E
panel mounting, front flange;
lower connections.

ORDER-CODE:

02	02- differential pressure gauges
13	13 - differential press. gauges MD13
1	dry, not filled
C	C - lower connections - back flange E - lower connections - front flange
E	G - DS 150
0...1 bar	see ranges table
23F	23F - 1/4-18 NPT female 41M - 1/2" BSP male 43M - 1/2-14 NPT male
C40	see Options tables

OPTIONS

Description	Code
Inductive and mechanical electric contacts (1)	---
AISI 316 st.st. case and ring	C40
Protection IP65	E65
Maximum pointer IP65 on Plexiglas window	L22
Special dial	Q01
Case glycerine filling (Ambient Temperature +15...+65).	R10
Case silicone oil filling (Ambient Temperature -40...65) (2)	R11
2" pipe mounting bracket	S31
Tropicalization	T01
Stainless steel label	T25
Plexiglas window	T31
Safety glass window	T32

(1) codes, descriptions and wiring on data-sheet MN14
(2) window gasket and blow out vent: VITON

OPTIONS FOR REMOTE MOUNTING, WITH DIAPHRAGM SEAL

Description	Code
n.2 diaphragm seals mounting (3)	M30
St.st. capillary, covered with st.st. armour, 1 mt	CP1
St.st. capillary, covered with st.st. armour, 2 mt	CP2
St.st. capillary, covered with st.st. armour, 3 mt	CP3
St.st. capillary, covered with st.st. armour, 4 mt	CP4
St.st. capillary, covered with st.st. armour, 5 mt	CP5
St.st. capillary, covered with st.st. armour, 6 mt	CP6

(3) with diaphragms > Ø 63 mm. only (models 04.1B0, 04.3B0 or 04.600)

Differential Pressure Gauges with double diaphragm PN 200 bar

02.15 DS100-150

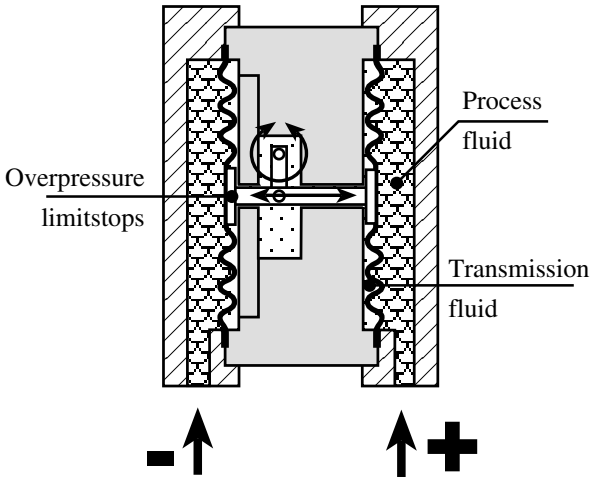
These instruments are used to check filter obstructions, pressure drops, flow rate differences, level, measurements and generally the difference between two pressures of equal or different circuits. The measuring element is formed by two diaphragms, acting on the same movement. In this way the pointer senses only the difference between the two pressures corresponding respectively to upstream and downstream pressure of the circuit.

Functional and constructive characteristics

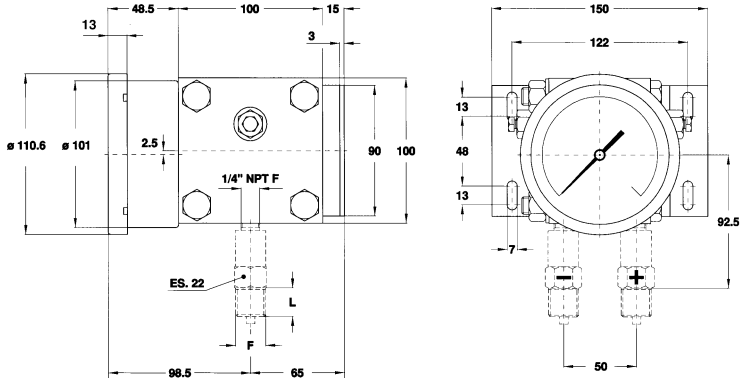
Accuracy : 1,6 as per EN 837.
Scale amplitude: 180·...270·, depending on the scale range .
Static pressure: 25...200 bar, depending on the scale range.
Ambient temperature : -25...+65 ·C.
Process fluid temperature: max +150 ·C.
Thermal drift: ±0,8% every ±10·C of ambient temperature.
Protection: IP 55 as per IEC 529, UNI 8896.
Process connection: AISI 316L st.st.
Elastic element: AISI 316L st.st. double diaphragm.
Gasket: VITON and PTFE.
Case: AISI 304 st.st.
Ring: AISI 304 st. st. polished, bayonet lock.
Window: glass, 4 mm. thick.
Movement: stainless steel.
Dial: aluminium, white with black markings.
Pointer: aluminium, micrometric adjustable.
Window gasket and blow out vent: EPDM.

Operating principle

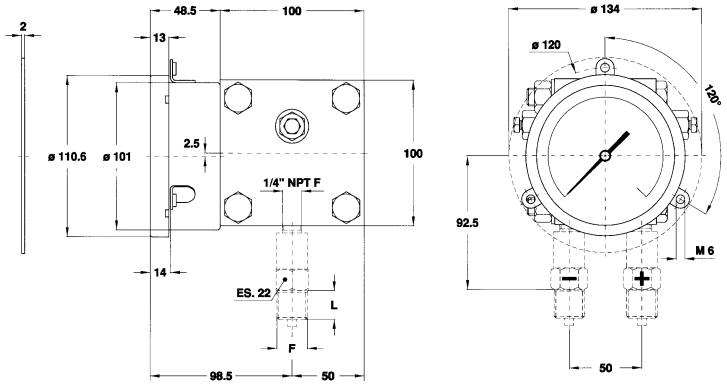
The double diaphragm measuring cell is characterized by a system of limitstops that closes and blocks the passage, obtaining in this way a liquid bed on which the measuring element stops. The linear shifting of the diaphragms is transformed, by leverages, in circular shifting and transmitted by the movement to the pointer.



TYPES, DIMENSIONS AND WEIGHTS



TYPE C
surface mounting, back flange;
lower connections.



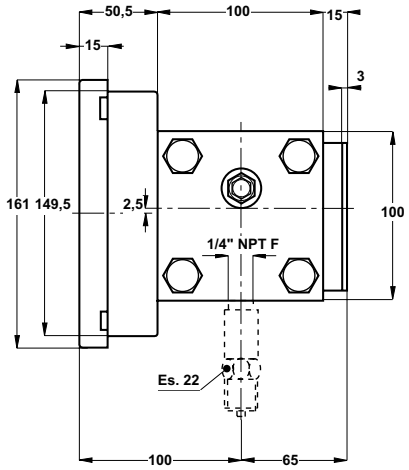
TYPE F
panel mounting, front flange;
lower connections.

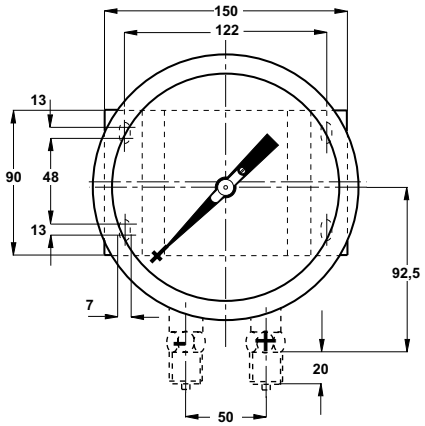
02.15 DS100 : RANGES

mbar	mmH2O	bar (1)	kPa	MPa	Static pressure One side	Static pressure Both side	Scale amplitude
0/100	0/1000		0/10		25 bar	100 bar	180°
0/160	0/1600		0/16		25 bar	100 bar	180°
0/250	0/2500		0/25		100 bar	200 bar	270°
0/400	0/4000		0/40		200 bar	200 bar	270°
0/600	0/6000	0/0,6	0/60		200 bar	200 bar	270°
0/1000	0/10000	0/1	0/100		200 bar	200 bar	270°
0/1600		0/1,6	0/160		200 bar	200 bar	270°
		0/2,5	0/250		200 bar	200 bar	270°
		0/4	0/400		200 bar	200 bar	270°
		0/6	0/600		200 bar	200 bar	270°
		0/10	0/1000	0/1	200 bar	200 bar	270°
		0/16	0/1600	0/1,6	200 bar	200 bar	270°
		0/25	0/2500	0/2,5	200 bar	200 bar	270°

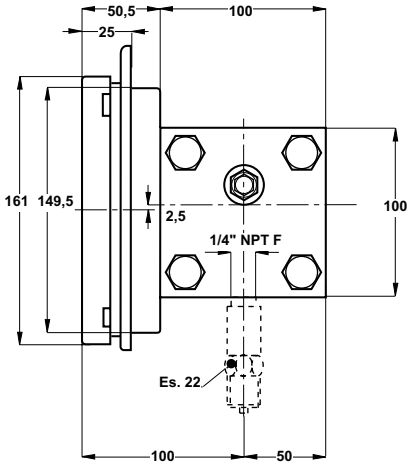
(1) Available also M.U.: kg/cmq; bar/psi; bar/kPa; bar/MPa.

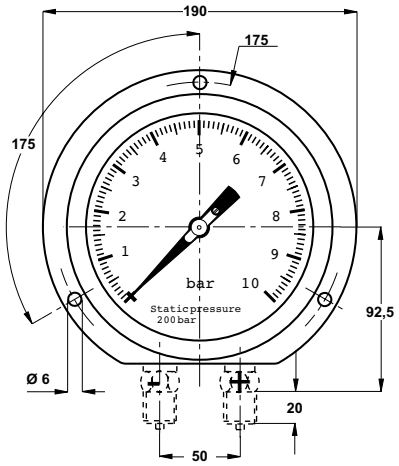
TYPES, DIMENSIONS AND WEIGHTS





TYPE C
surface mounting, back flange;
lower connections.





TYPE E
panel mounting, front flange;
lower connections.

02.15 DS150 : RANGES

mbar	mmH2O	bar (1)	kPa	MPa	Static pressure One side	Static pressure Both side	Scale amplitude
0/100	0/1000		0/10		25 bar	100 bar	180°
0/160	0/1600		0/16		25 bar	100 bar	180°
0/250	0/2500		0/25		100 bar	200 bar	180°
0/400	0/4000		0/40		200 bar	200 bar	180°
0/600	0/6000	0/0,6	0/60		200 bar	200 bar	270°
0/1000	0/10000	0/1	0/100		200 bar	200 bar	270°
0/1600		0/1,6	0/160		200 bar	200 bar	270°
		0/2,5	0/250		200 bar	200 bar	270°
		0/4	0/400		200 bar	200 bar	270°
		0/6	0/600		200 bar	200 bar	270°
		0/10	0/1000	0/1	200 bar	200 bar	270°
		0/16	0/1600	0/1,6	200 bar	200 bar	270°
		0/25	0/2500	0/2,5	200 bar	200 bar	270°

(1) Available also M.U.: kg/cmq; bar/psi; bar/kPa; bar/MPa.

OPTIONS - "E" = DS100; "G" = DS150.

Description	Code	02.15	Notes
Inductive and mechanical electric contacts (amplitude 180°)	---	G	Codes, descriptions and wiring on data-sheet MN14
AISI 316 st.st. case and ring	C40	EG	
MONEL 400 diaphragm and process connections	D10	EG	accuracy 2,5% F.S.V. for pressure ranges < 400 mbar
NACE MR 01.75 version	E30	EG	to be ordered with MONEL 400 diaphragm (code M23)
Protection IP65	E65	EG	
Maximum pointer IP65	L22	EG	to be ordered with Plexiglas window (code T31)
MONEL 400 diaphragms	M23	EG	accuracy 2,5% F.S.V. for pressure ranges < 400 mbar
Oxygen service	P02	EG	Filling of internal chamber with Fluorolube
Special dial	Q01	EG	
Case glycerine filling (Ambient Temperature +15...+65).	R10	EG	
Silicone glycerine filling (Ambient Temperature -40...65)	R11	EG	window gasket and blow out vent: VITON
2" pipe mounting bracket	S31	EG	mounting type "C" only
Tropicalization	T01	EG	
Stainless steel label	T25	EG	
Plexiglas window	T31	EG	
Safety glass window	T32	EG	

OPTIONS FOR REMOTE MOUNTING, WITH DIAPHRAGM SEAL - "E" = DS100; "G" = DS150.

Description	Code	02.15	Notes
n.2 diaphragm seals mounting (1)	M30	EG	with diaphragms > Ø63 mm. only (models 04.1B0-3B0-600)
St.st. capillary, covered with st.st. armour, 1 mt	CP1	EG	
St.st. capillary, covered with st.st. armour, 2 mt	CP2	EG	
St.st. capillary, covered with st.st. armour, 3 mt	CP3	EG	
St.st. capillary, covered with st.st. armour, 4 mt	CP4	EG	for pressure ranges 0 / 250 mbar
St.st. capillary, covered with st.st. armour, 5 mt	CP5	EG	for pressure ranges 0 / 250 mbar
St.st. capillary, covered with st.st. armour, 6 mt	CP6	EG	for pressure ranges 0 / 400 mbar

(1) for pressure ranges < 250 mbar call Technical Service.

HOW TO ORDER

02	02- differential and low pressure gauges
15	15 - differential pressure gauges, double diaphragm
1	standard case
C	C - lower connections - back flange E - lower connections - front flange (DS150 only) F - lower connections - front flange (DS100 only)
E	E - DS100 G - DS150
0	ranges: from 100 mbar to 25 bar
0...1 bar	see ranges table
41M	23M - 1 / 4" NPT F 41M - 1 / 2" BSP M 43M - 1 / 2" NPT M
C40	see Options tables

Differential Pressure Gauges PN 100 with double diaphragm Type 02.16 - DS 100-150

02.16

These instruments are used to check filter obstructions, pressure drops, flow rate differences, level, measurements and generally the difference between two pressures of equal or different circuits. The measuring element is formed by two diaphragms, acting on the same movement. In this way the pointer senses only the difference between the two pressures corresponding respectively to upstream and downstream circuit pressure.

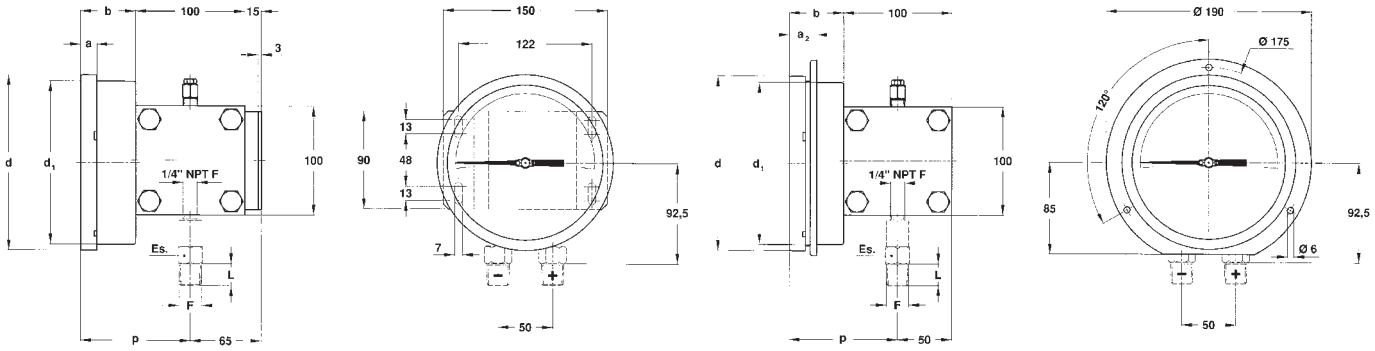
Functional and constructive characteristics

Accuracy: ± 2,5% of the full scale value.
Scale amplitude: 180·.
Static pressure: max 100 bar
Ambient temperature: -25...+65 ·C.
Process fluid temperature: +150 ·C.
Protection: IP 55 as per IEC 529.
Process connection: AISI 316L st.st.
Elastic element: AISI 316L st.st. double diaphragm.
Gasket: VITON and PTFE.
Case: AISI 304 st.st.
Ring: AISI 304 st. st. polished, bayonet lock.
Window: glass, 4 mm. thick.
Movement: stainless steel.
Dial: aluminium, white with black markings.
Pointer: aluminium, micrometric adjustable.
Window gasket and blow out vent: EPDM.

RANGES

RANGES	mbar	mmH2O	bar	kPa
0...0,6			✦	
0...1			✦	
0...1,6			✦	
0...2,5			✦	
0...4			✦	
0...6			✦	
0...10			✦	
0...40				✦
0...60				✦
0...100				✦
0...160				✦
0...250				✦
0...400	✦			✦
0...600	✦			✦
0...1000	✦			✦
0...1600	✦			
0...4000		✦		
0...6000		✦		
0...10000		✦		

TYPES, DIMENSIONS AND WEIGHTS (mm)



TYPE C
surface mounting, back flange;
lower connections.

TYPE E
panel mounting, front flange;
lower connections.

DS	Type	F	a	b	d	d_1	p	L	ch	Weight
100	C	1/2″ BSP or NPT	13	48,5	110,5	101	98,5	20	22	4,86 Kg.
150	C	1/2″ BSP or NPT	15	50,5	161	149,5	100,5	20	22	5,35 Kg.
150	E	1/2″ BSP or NPT	25,5	50,5	161	149,5	100,5	20	22	5,15 Kg.

HOW TO ORDER

02	02- differential and low pressure gauges
16	16 - differential press. gauges, MD16
1	standard
C	C - lower connections - back flange E - lower connections - front flange (DS150 only)
E	E - DS100 G - DS150
0	standard
0...1 bar	see ranges table
23F	23F - 1/4" NPT F 41M - 1/2" BSP M 43M - 1/2" NPT M
C40	see Options tables

OPTIONS

Description	Code
Inductive and mechanical electric contacts (1)	---
AISI 316 st.st. case and ring	C40
NACE MR 01.75 version (2) (3)	E30
Protection IP65	E65
Maximum pointer IP65 (4)	L22
MONEL 400 diaphragms (2)	M23
Oxygen service (5)	P02
Special dial	Q01
Case glycerine filling (Ambient Temperature +15...+65).	R10
Silicone glycerine filling (Ambient Temperature -40...65) (6)	R11
2" pipe mounting bracket (7)	S31
Tropicalization	T01
Stainless steel label	T25
Plexiglas window	T31
Safety glass window	T32

(1) codes, descriptions and wiring on data-sheet MN14
(2) available only for ranges ³ 1 bar
(3) to be ordered with MONEL 400 diaphragm (code M23)
(4) to be ordered with Plexiglas window (code T31)
(5) filling of internal chamber with Fluorolube
(6) window gasket and blow out vent: VITON
(7) mounting type "C" only

Differential Pressure Gauges with double diaphragm PN 400 bar

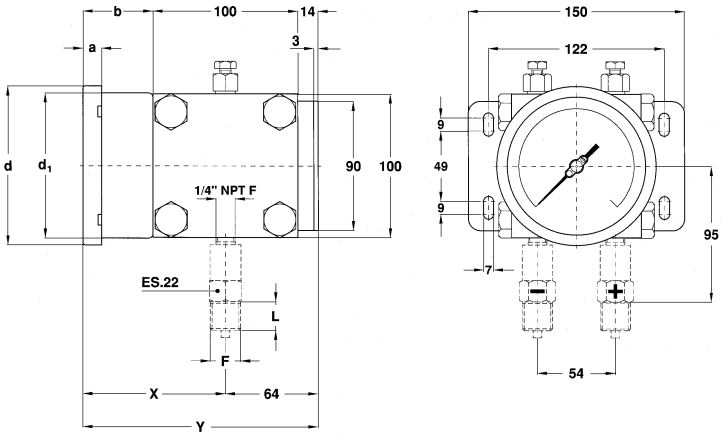
02.17 DS 100-150

These instruments are used to check filter obstructions, pressure drops, flow rate differences, level, measurements and generally the difference between two pressures of equal or different circuits. The measuring element is formed by two diaphragms, acting on the same movement. In this way the pointer senses only the difference between the two pressures corresponding respectively to upstream and downstream circuit pressure.

Functional and constructive characteristics

Accuracy : 1,6 as per EN 837.
Scale amplitude: 180·...270·, depending on the scale range .
Static pressure: 400 bar.
Ambient temperature : -25...+65 ·C.
Process fluid temperature: max +150 ·C.
Thermal drift: ±0,8% every ±10·C of ambient temperature.
Protection: IP 55 as per IEC 529, UNI 8896.
Process connection: AISI 316L st.st.
Elastic element: AISI 316L st.st. double diaphragm.
Gasket: VITON and PTFE.
Case: AISI 304 st.st.
Ring: AISI 304 st. st. polished, bayonet lock.
Window: glass, 4 mm. thick.
Movement: stainless steel.
Dial: aluminium, white with black markings.
Pointer: aluminium, micrometric adjustable.
Window gasket: EPDM.

DIMENSIONS AND WEIGHTS



TYPE C - wall mounting; with back flange and bottom connection.

DS	a	b	d	d_1	X	Y	L	Weight 02.17
100	13	48,5	110,6	101	98,5	162,5	20	7,31 Kg.
150	15	50,5	161	149,6	100,5	164,5	20	7,80 Kg.

RANGES

mbar	mmH2O	bar	kPa	MPa	Static pressure One side	Static pressure Both side	Scale amplitude DS 100	Scale amplitude DS 150
0/1000	0/10000	0/1	0/100		250 bar	400 bar	270°	180°
0/1600		0/1,6	0/160		250 bar	400 bar	270°	180°
		0/2,5	0/250		250 bar	400 bar	270°	180°
		0/4	0/400		250 bar	400 bar	270°	180°
		0/6	0/600		250 bar	400 bar	270°	180°
		0/10	0/1000	0/1	250 bar	400 bar	270°	180°

OPTIONS - "E" = DS 100; "G" = DS 150.

Description	Code	02.17	Notes
Inductive and mechanical electric contacts (amplitude 180°)	---	G	Codes, descriptions and wiring on data-sheet MN14
AISI 316 st.st. case and ring	C40	EG	
NACE MR 01.75 version	E30	EG	to be ordered with MONEL 400 diaphragm (code M23)
Protection IP65	E65	EG	
Maximum pointer IP65	L22	EG	to be ordered with Plexiglas window (code T31)
MONEL 400 diaphragms	M23	EG	accuracy 2,5% F.S.V. for pressure ranges < 400 mbar
Oxygen service	P02	EG	Filling of measuring chamber with Fluorolube
Special dial	Q01	EG	
Case glycerine filling (Ambient Temperature +15...+65°C).	R10	EG	
Silicone filling (Ambient Temperature -40...65°C)	R11	EG	window gasket : silicone rubber
2" pipe mounting bracket	S31	EG	mounting type "C" only
Tropicalization	T01	EG	
Stainless steel label	T25	EG	
Plexiglas window	T31	EG	
Safety glass window	T32	EG	

HOW TO ORDER

02 — 02 - differential and low pressure gauges

17 — 15 - differential pressure gauges, double diaphragm

1 — standard case

C — C - lower connections - back flange
~~E - lower connections - front flange (DS 150 only)~~
F - lower connections - front flange (DS 100 only)

E — E - DS 100
~~G - DS 150~~

0 — ranges: from 1 to 10 bar

0...1 bar — see range table

41M — 23F - 1/4" NPT F
~~41M - 1/2" BSP M~~
43M - 1/2" NPT M

C40 — see Options tables