

# Differential pressure gauge With integrated working pressure indication (DELTA-plus) Model DPG40

WIKA data sheet PM 07.20



for further approvals  
see page 4

DELTA-plus

## Applications

Monitoring of filters, compressors and pumps in:

- Marine boilers, pressure vessels, bilge-water collection
- Drinking and cooling-water treatment plants
- Pressure-boosting stations
- Heating technology
- Fire-extinguishing systems

## Special features

- Robust aluminium case with shatterproof window
- Low measuring range from 0 ... 160 mbar
- High accuracy up to 1.6 %
- Optionally with approvals for hazardous areas



Differential pressure gauge with integrated working pressure indication, model DPG40

## Description

The differential pressure gauges of the DELTA-line product family are primarily used for the monitoring of low differential pressures where there are high requirements in terms of one-sided overpressure and static pressure.

Typical markets for these products are the shipbuilding industry, process heating technology, the heating, ventilation and air-conditioning industries, the waster/wastewater industry, and machine building and plant construction. For these, the main function of the measuring instruments is the monitoring of filters, compressors and pumps.

Often in these applications, alongside the display of the differential pressure, the current working pressure is also relevant. For this reason, a working pressure indication is integrated within the DELTA-plus differential pressure gauge as standard. The two local, easily readable, mechanical displays enable the simultaneous reading of the working and the differential pressure.

Furthermore, this saves on an additional measuring and sealing point, reducing additional expense for piping and mounting.

The robust aluminium case and shatterproof window enable a long service life of the product, even under harsh ambient conditions.

As a result of the low pressure range of 0 ... 160 mbar, the instrument can also be used for applications with low differential pressures. A further key feature is the high accuracy of up to 1.6 % which is important for most applications.

The new and functional design completes the appearance of the measuring instrument.

## Design and operating principle

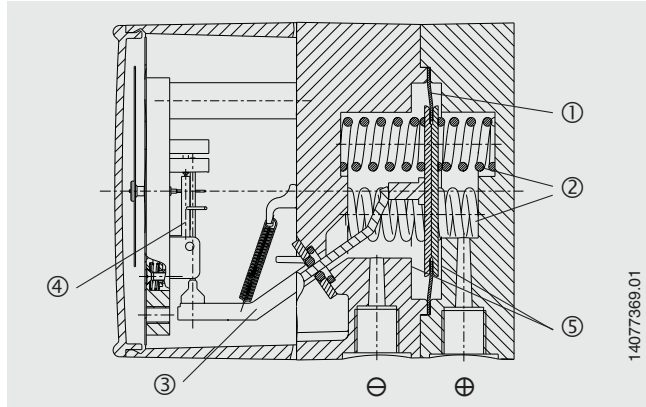
Pressures  $p_1$  and  $p_2$  act on the media chambers  $\oplus$  and  $\ominus$ , which are separated by an elastic diaphragm (1).

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.

## Illustration of the principle



Mounting according to affixed symbols,  
 $\oplus$  high pressure,  $\ominus$  low pressure

Mounting:

- Rigid measuring line
- Wall mounting with available mounting links

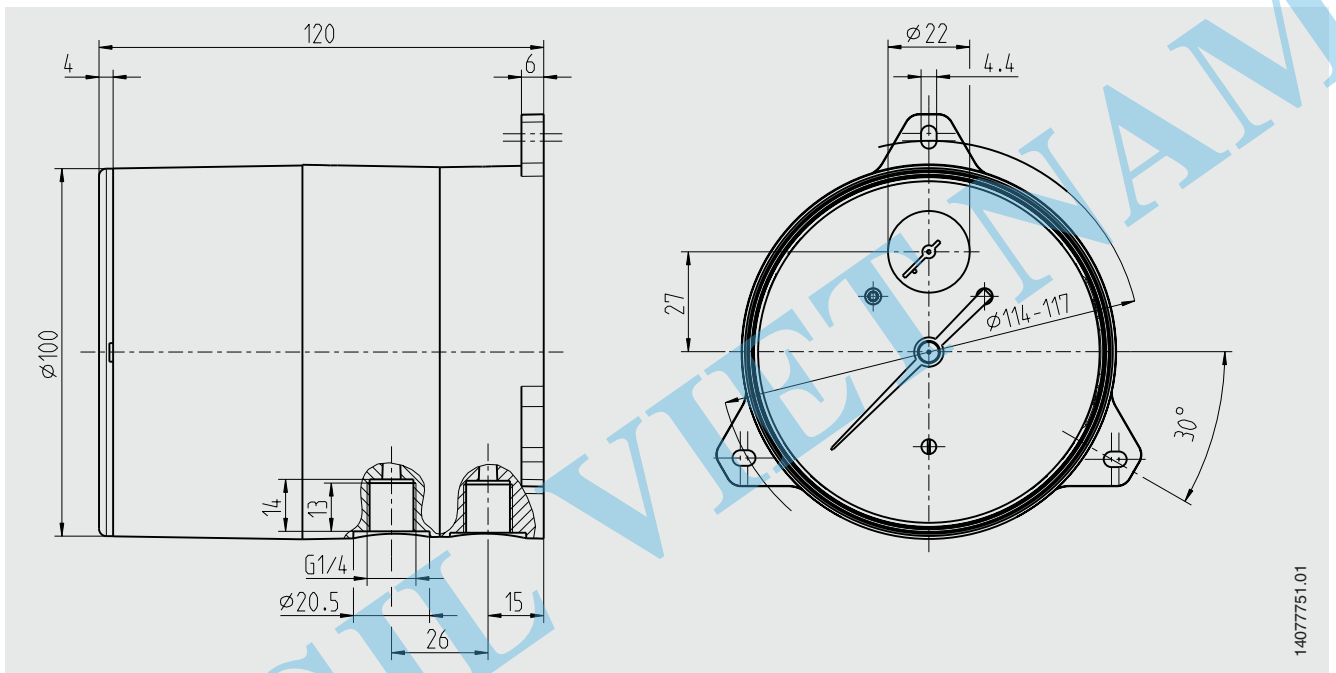
## Standard version

Specifications	DELTA-plus model DPG40
Nominal size	Differential pressure indication: $\varnothing$ 100 mm Working pressure indication: $\varnothing$ 22 mm (not available for ATEX versions)
Accuracy	Differential pressure indication: $\leq 2.5\%$ of span (option $\leq 1.6\%$ ) Working pressure indication: $\leq 4\%$ of span
Scale ranges (EN 837)	Differential pressure: 0 ... 0.16 to 0 ... 10 bar Working pressure: 0 ... 25 bar
Max. working pressure (stat.)	25 bar
Overpressure safety	Either side max. 25 bar
Permissible temperature	Ambient: $-10 \dots +70\text{ }^{\circ}\text{C}$ (at ATEX: $-10 \dots +60\text{ }^{\circ}\text{C}$ ) Medium: $-10 \dots +90\text{ }^{\circ}\text{C}$ Storage: $-40 \dots +70\text{ }^{\circ}\text{C}$
Ingress protection	IP65 per IEC/EN 60529
Marking per ATEX (option)	II 2G c IIC T4/T5/T6 X II 2D c T85°C/T100°C/T135°C X
Media chamber (wetted)	Aluminium, EN AC-Al Si9Cu3(Fe), black lacquered (option: Stainless steel 1.4571)
Process connections (wetted)	2 x G 1/4 female, lower mount (LM), in-line, centre distance 26 mm
Pressure elements (wetted)	Differential pressure: Compression springs from stainless steel 1.4310 and separating diaphragm from FPM/FKM (option: NBR) Working pressure: Bourdon tube from Cu-alloy
Transmission parts (wetted)	Stainless steel 1.4301, 1.4305, 1.4310, FPM/FKM (option: NBR)
Sealings (wetted)	FPM/FKM (option: NBR)
Movement	Copper alloy
Dial	Differential and working pressure indication: White dial, black lettering
Pointer	Differential and working pressure indication: Blue pointer
Zero adjustment for differential pressure indication	Via screw in the dial
Case	Aluminium, EN AC-Al Si9Cu3(Fe), black lacquered
Window	Plastic, with plug screw for zero point adjustment
Weight	approx. 1.3 kg

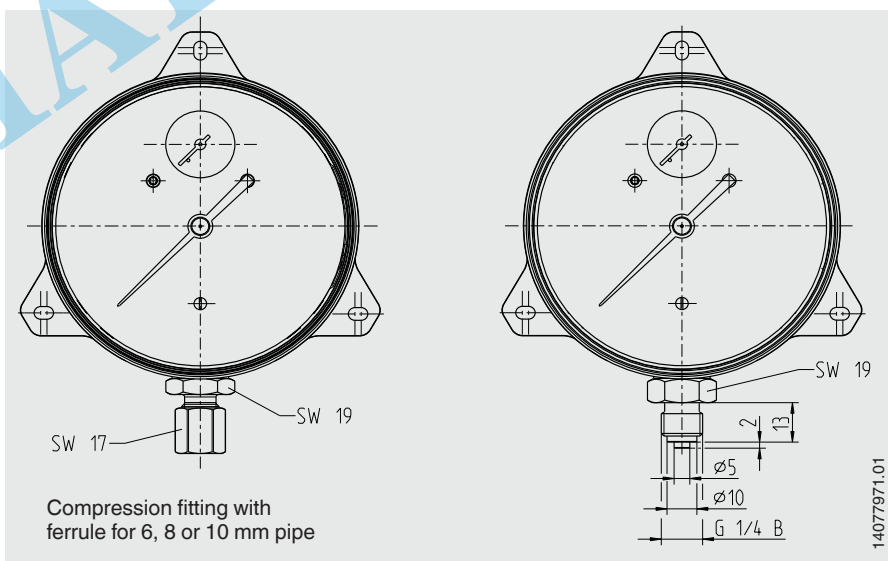
## Options

- Without working pressure indication
- Scale range for working pressure 0 ... 10 or 0 ... 16 bar (max. working pressure and overpressure safety up to 10 or 16 bar)
- Accuracy class 1.6 for differential pressure indication with scale ranges 0 ... 1 bar to 0 ... 10 bar
- 4-way valve manifold from Cu-alloy or stainless steel, (1 x pressure compensating valve, 2 x shut-off valve, 1 x valve for purging and ventilating)
- Sealings (model 910.17, see data sheet AC 09.08)
- Other process connections for female and male threads
- Compression fittings with ferrule or clamp ring for pipe diameters 6, 8 and 10 mm
- Panel mounting flange (available in 2 versions: Stainless steel or stainless steel, black lacquered)

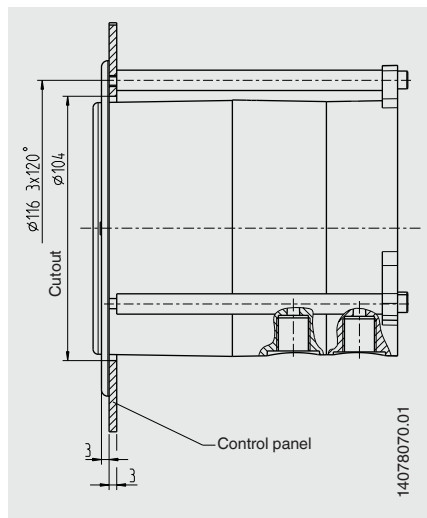
## Dimensions in mm



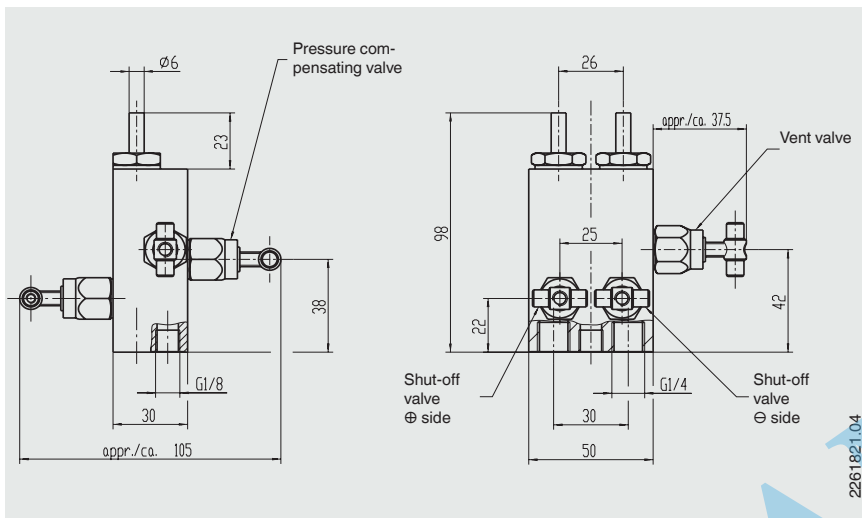
## Option Process connection variants



## Option Panel mounting



## Option 4-way valve manifold



## Approvals

Logo	Description	Country
 	<b>EU declaration of conformity</b> ATEX directive (option) <ul style="list-style-type: none"> <li>■ II 2G c IIC T4/T5/T6 X</li> <li>■ II 2D c T85°C/T100°C/T135°C X</li> </ul>	European union
	<b>EAC (Option)</b> <ul style="list-style-type: none"> <li>■ Pressure equipment directive</li> <li>■ Hazardous areas</li> </ul>	Eurasian Economic Community
	<b>GOST (Option)</b> Metrology, measurement technology	Russia
	<b>UkrSEPRO (Option)</b> Metrology, measurement technology	Ukraine
-	<b>CRN</b> Safety (e.g. electr. safety, overpressure, ...)	Canada

## Certificates (option)

- 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy)
- 3.1 inspection certificate per EN 10204 (e.g. indication accuracy)

Approvals and certificates, see website

## Ordering information

Model / Scale range / Process connection / Material of separating diaphragm and sealings / Options

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