

Duplex pressure gauge per DIN 38030

Panel mounting series for rail-vehicle braking systems

Model PG21DPB

WIKA data sheet PM 02.16

Applications

- Pneumatic braking systems for rail vehicles and commercial vehicles
- Pressure measurement for brake cylinders and pressure vessels

Special features

- Two process connections and two independent pointers
- Case from stainless steel
- NS 60 [2.4"] with accuracy class 1.6 or NS 80 [3"], NS 100 [4"] and NS 130 [5"] with accuracy class 1.0
- Scale ranges from 0 ... 6 bar to 0 ... 16 bar
- Overload safety to 1.3 x full scale value



Fig. left: NS 60 [2.4"]

Fig. right: NS 100 [4"]

Fig. bottom: NS 130 [5"]

Description

The model PG21DPB Bourdon tube pressure gauge is used in rail vehicles, buses and heavy goods vehicles with compressed-air brakes. The instrument is based on two independently operating Bourdon tube measuring systems and is therefore able to show the pressure from two measuring points on one display.

The stainless steel case and the measuring system from a special copper alloy are the basis for very good measuring properties. The instrument is designed to withstand at least one million load-cycles as well as offering good resistance to environmental influences.

On all models, the dials are illuminated, glare-free, by a special light guide. The illumination of the dial is possible, indirectly, via light slots in the case or, directly, via a filament bulb or LED with BA9s bulb fitting.

For the safety of the vehicle driver, the instrument is designed with a shatterproof window and a blow-out device at the case back.

The model PG21DPB is also available in customer-specific versions, e.g. with individual dial layout.

Specifications

Basic information		
Standard	Pressure gauges for rail vehicles per DIN 38030 Accuracy class per EN 837-1	
Nominal size (NS)	Ø 60 mm [2.4"] Ø 80 mm [3"] Ø 100 mm [4"] Ø 130 mm [5"]	
Connection location	Centre back mount	
Window	Laminated safety glass, reduced light reflections Acrylic glass (PMMA)	
Case		
Design	Safety level “S1” per EN 837-1 With blow-out device in case back	
Material	NS 60 [2.4"], NS 80 [3"], NS 100 [4"]	Stainless steel 1.4301
	NS 130 [5"]	Steel, painted black
Illumination	Without Indirect: Light slots, direct: light bulb, 3 W (NS 60 : 2 W), DC 24 V, BA9s lamp holder High-luminosity LED lamp	
Ring		
NS 60 [2.4"], NS 80 [3"], NS 100 [4"]	Crimp ring, aluminium, painted black Crimp ring, stainless steel	
NS 130 [5"]	Crimp ring, steel, painted black	
Mounting	Without Mounting bracket, galvanised steel	
Movement	Copper alloy	

1) For operating conditions, see table on page 5

2) For low scale ranges the case filling is a glycerine-water mixture

Measuring element	
Type of measuring element	2 x Bourdon tube, C-type
Material	Copper alloy
Leak tightness	Tested leakage rate: $< 5 \cdot 10^{-3}$ mbar l/s

Accuracy specifications	
Accuracy class	
NS 60 [2.4"]	Class 1.6 per EN 837-1
NS 80 [3"], NS 100 [4"], NS 130 [5"]	Class 1.0 per EN 837-1
Temperature error	On deviation from the reference conditions at the measuring system: $\leq \pm 0.3 \%$ per 10 °C [$\leq \pm 0.3 \%$ per 18 °F] of full scale value
Reference conditions	
Ambient temperature	+20 °C [+68 °F]

Scale ranges

bar	
0 ... 6	0 ... 12 ¹⁾
0 ... 10	0 ... 16

kg/cm ²	
0 ... 6	0 ... 12 ¹⁾
0 ... 10	0 ... 16

kPa	
0 ... 600	0 ... 1,000
0 ... 1,000	0 ... 1,200 ¹⁾

MPa	
0 ... 0.6	0 ... 1.2 ¹⁾
0 ... 1	0 ... 1.6

psi	
0 ... 90	0 ... 175 ¹⁾
0 ... 160	0 ... 230

1) NS 130 [5"] is only available in this scale range

Further details on: scale ranges	
Special scale ranges	Other scale ranges on request
Unit	■ bar ■ psi ■ kg/cm² ■ kPa ■ MPa
Dial	
Scale colour	White per RAL 9010 on black per RAL 9005 (pure white on jet black) Colours defined in DIN 38030 per RAL colour standard
Material	Aluminium
Special scale	Other scales or customer-specific dials, e.g. with red mark, circular arcs or circular sectors, on request
Instrument pointer	
Colour	1 pointer at the top, red and 1 pointer at the bottom, yellow Red per RAL 3026 (luminous bright red), yellow per RAL 1016 (sulfur yellow) Colours defined in DIN 38030 per RAL colour standard
Material	Aluminium
Pointer stop pin	At zero point

→ Other colours for scale and pointer on request

Process connection		
Size		
DIN EN ISO 8434-1	NS 60 [2.4"]	M12 × 1.5 – R6 – 24° cone
	NS 80 [3"], NS 100 [4"], NS 130 [5"]	M16 × 1.5 – R10 – 24° cone
Restrictor	■ Ø 0.3 mm [0.0118"], copper alloy ■ Ø 0.6 mm [0.0236"], copper alloy ■ Ø 0.8 mm [0.0314"], copper alloy	
Material (wetted)		
Process connection	Copper alloy	
Bourdon tube	Copper alloy	

→ Other process connections on request

Operating conditions	
Medium temperature	-20 ... +60 °C [-4 ... +140 °F]
Ambient temperature	-25 ... +80 °C [-13 ... +176 °F]
Pressure limitation	
Steady	3/4 x full scale value
Fluctuating	2/3 x full scale value
Short time	Full scale value
Ingress protection per IEC/EN 60529	IP43

Certificates

Certificates	
Certificates	■ 2.2 test report per EN 10204 (e.g. state-of-the-art manufacturing, indication accuracy) ■ PCA calibration certificate, traceable and accredited in accordance with ISO/IEC 17025 ■ Calibration certificate by a national accreditation body, traceable and accredited in accordance with ISO/IEC 17025 on request
Recommended calibration interval	1 year (dependent on conditions of use)

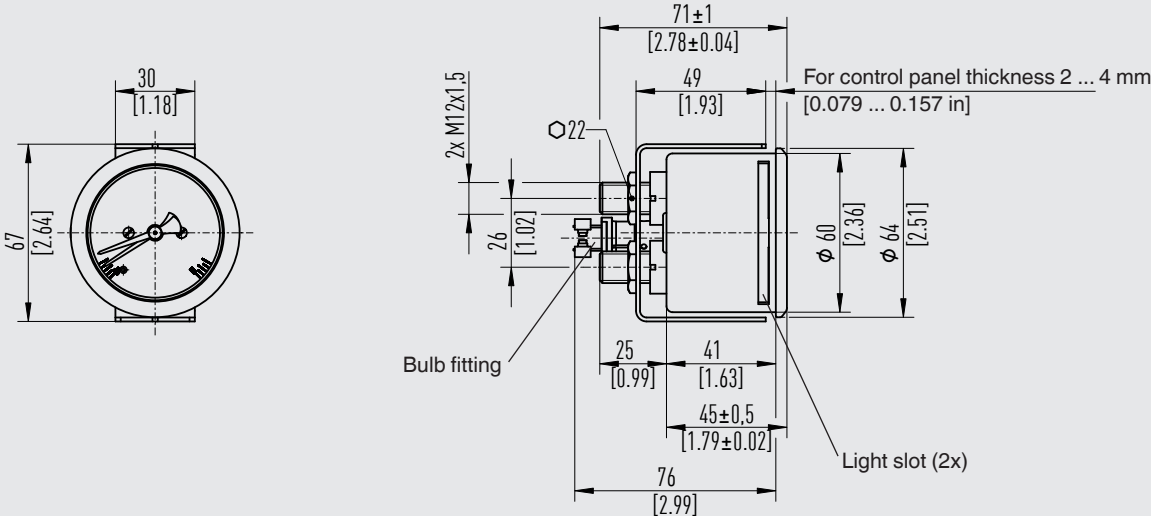
→ For approvals and certificates, see website

Dimensions in mm [in]

Model PG21DPB, NS 60

Included in the scope of delivery:
Bite-type ferrule and union nut SW 14 per DIN EN ISO 8434-1

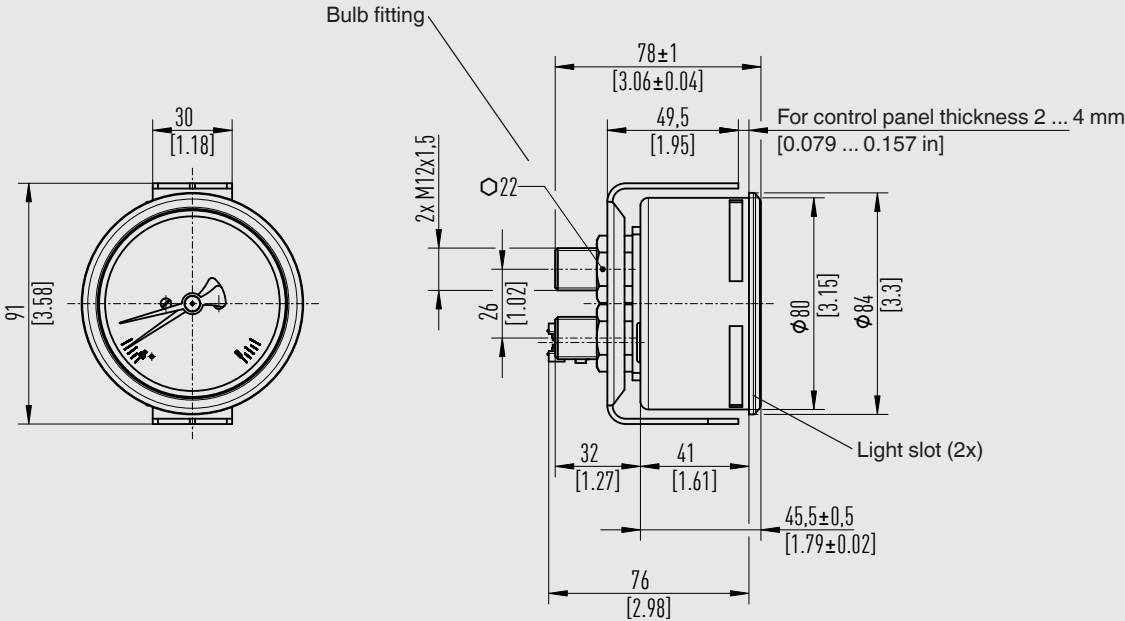
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Model PG21DPB, NS 80

Included in the scope of delivery:
Bite-type ferrule and union nut SW 14 per DIN EN ISO 8434-1

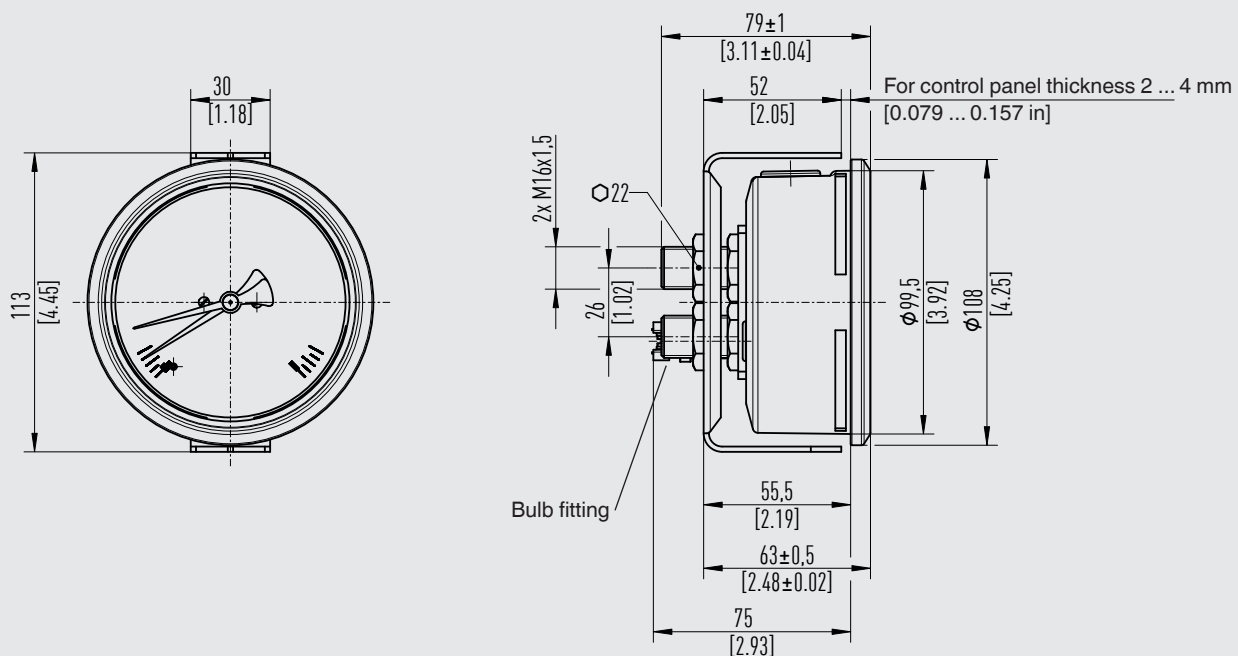
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Model PG21DPB, NS 100

Included in the scope of delivery:
Bite-type ferrule and union nut SW 14 per DIN EN ISO 8434-1

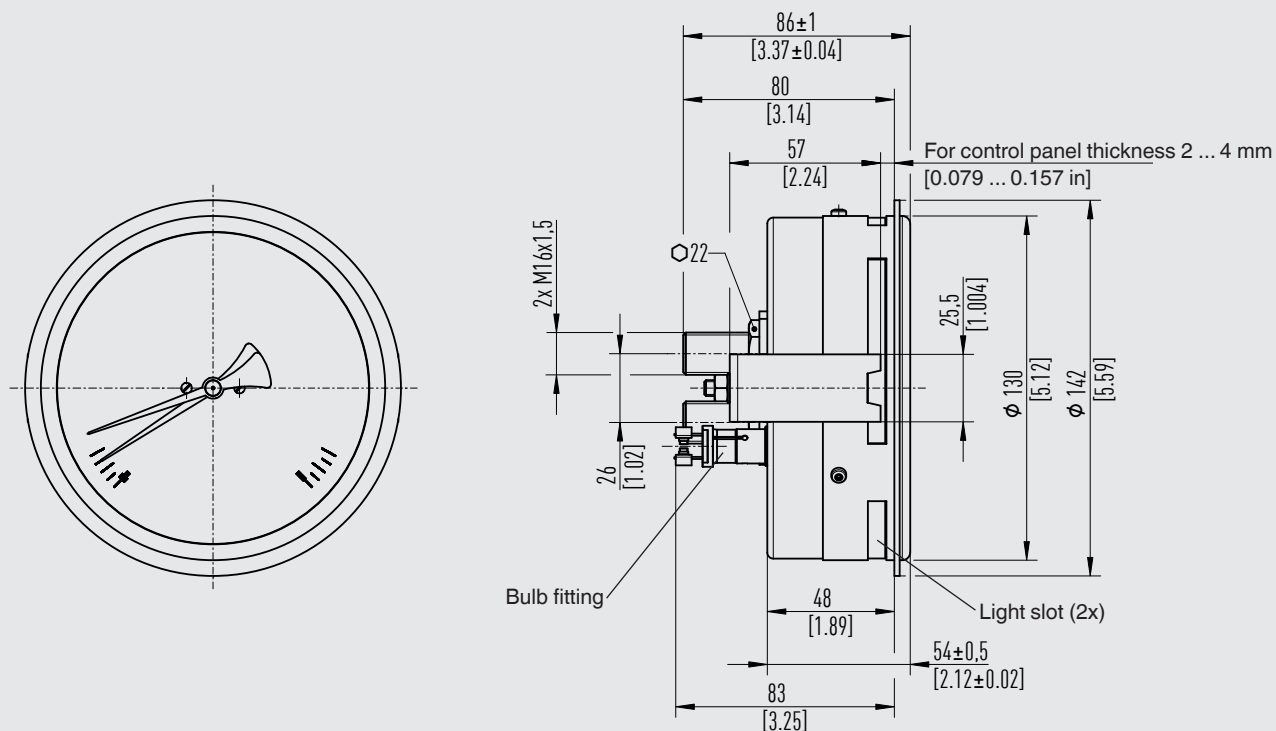
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Model PG21DPB, NS 130

Included in the scope of delivery:
Bite-type ferrule and union nut SW 14 per DIN EN ISO 8434-1

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Ordering information

Model / Scale range / Process connection / Options

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