

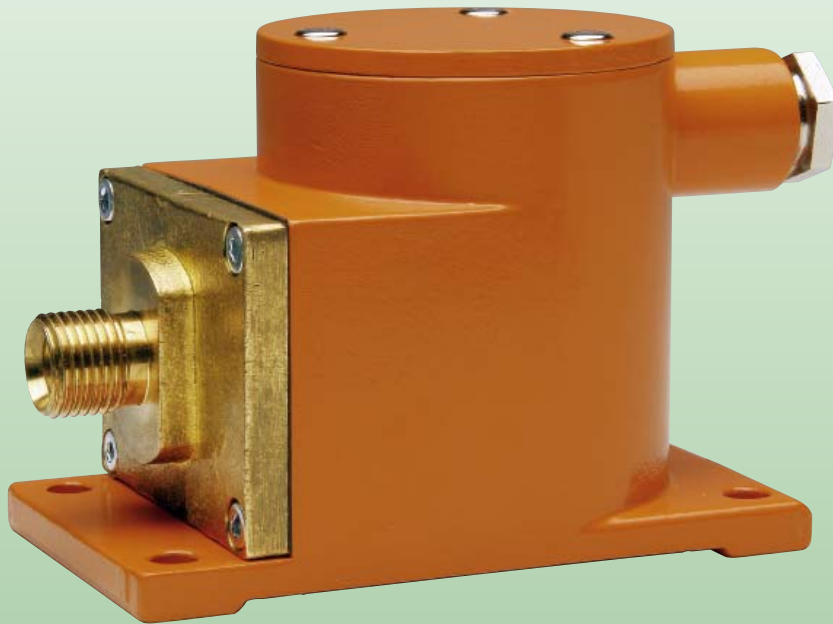


Pressure Measurement Converter for Raw Conditions and Surroundings



measuring
•
monitoring
•
analysing

PNK



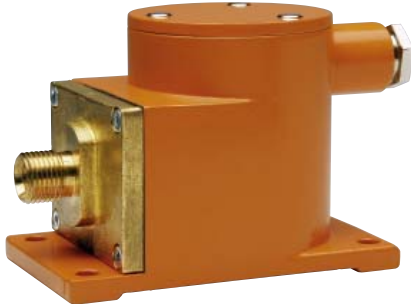
- Measuring range:
-1... 0 bar to 0 ...100 bar
- Sensor:
Bourdon tube with inductance sensor
- Measuring accuracy: $\pm 1\%$ of full scale
- p_{\max} : 160 bar; t_{\max} : 80 °C
- Process connection:
M16 x1,5 with conical nipple,
R 1/4, R 1/2, 1/2 NPT
- Material: brass connection,
saltwater resistant
aluminium casing



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Description

The KOBOLD pressure measurement converter is used for the electrical remote transmission of a pressure. For use in heavy machinery, engines, shipbuilding and automotive engineering, pressure measurement converters have to be very robustly constructed to ensure that they work perfectly under strong vibrations and with greatly variable ambient temperatures. The device volumes should also be as small as possible so that it is possible to clearly arrange several pressure measurement converters in a small space. The PNK in ductance pressure measurement converter described below meets the requirements.

Function

When subjected to pressure the Bourdon tube is deflected laterally. The degree of deflection is converted into a proportional electrical measurement using a contact-free differential transformer. At the output of an integrated amplifier there is an available memorised current of 0 (4) to 20 mA or a voltage of 0 -10 V. The minus poles of the emergency voltage ($24 V_{DC}$) and the output signals are connected with one another.

Design

Together with the pressure measuring element (Bourdon tube), the inductive tapping system and the downstream amplifier make up one compact unit. The chosen construction makes it possible to closely align the components in such a manner that access to pressure connections, cable entry points and terminals is guaranteed.

The casing is made of saltwater resistant aluminium alloy. Electricity is connected to various screwed cable glands.

Assembly tips

Despite a high degree of vibration resistance of the pressure transmitter as a whole, the vibration effect in the direction of the pressure-dependent movement of the measuring element shows a maximum. In order to avoid this direction when for example installing in diesel engines, it is marked with an arrow in the dimensional drawing.

Applications areas

- Diesel engines
- Shipbuilding
- Engine building
- Power unit construction
- Machine building

Technical Details

Measuring ranges:	-1... 0 bar to 0 ...100 bar, all standard values
Overload capability:	60%
Accuracy:	$\pm 1.0\%$ of full scale
Temperature influence:	$\leq \pm 0.04\% / ^\circ C$
Working range:	$-25\ ^\circ C$ to $+80\ ^\circ C$
Storage temperature:	$-25\ ^\circ C$ to $+100\ ^\circ C$
Vibration resistance:	10 g in the range between 25 to 500 Hz
Position dependency:	max. error in lateral position 0,3% zero shift otherwise no influence
Pressure connection:	M16 x1,5 with conical nipple 60° (DK connection) M16 x1,5 with conical nipple 24° (SR connection)
Adapter connection:	R 1/4, R 1/2 (manometer) 1/2 NPT male thread with M4 female thread for inductor

Screwed cable gland

Standard:	for cable \varnothing 5 -10 mm
Use in shipbuilding:	according to DIN 89280 with inside thread M18 x1,5 for cable with shielding \varnothing 8 -10.5
Military use:	according to VG 88812 with female thread M18 x1.5 for cable \varnothing 11.5 -12.5
Cable entry points:	thread PG11

Wetted parts

Pressure connection:	brass
Measuring element:	copper-beryllium
Housing:	saltwater resistant aluminium alloy, powder coated surface
Power supply:	18 - 32 V_{DC}
Output current:	0 - 20 mA, 4- 20 mA, 3-wire (max. 500 Ω) or 0 -10 V

Deviation from linearity:	$\leq 20\ \mu A$ or 0,1% of full scale
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Dimensions

Breadth:	64 mm
Length of the mounting plate:	110 mm
Height:	80 mm
Protection:	IP 56
Weight:	approx. 0.75 kg
Approvals:	GL-approval



Order Details (Example: PNK-11AD M5 P00)

Measuring range*	Model	Mechanical connection	Screwed cable gland	Output
-1 ... 0 bar	PNK-11A	M5 = M16x1,5 with conical nipple 60° (DK connection) K5 = M16x1,5 with conical nipple 24° (SR connection) Adapter G2 = R ¼ male thread G4 = R ½ male thread N4 = ½ NPT	P = standard M = according to DIN 89280 V = according to VG 88812	00 = 0 - 20 mA 40 = 4- 20 mA 10 = 0 - 10 V
0 ... 1 bar	PNK-11B2			
0 ... 1,6 bar	PNK-11B3			
0 ... 2,5 bar	PNK-11B4			
0 ... 4 bar	PNK-11B5			
0 ... 6 bar	PNK-11B6			
0 ... 10 bar	PNK-11B7			
0 ... 16 bar	PNK-11B8			
0 ... 20 bar	PNK-11BK			
0 ... 25 bar	PNK-11B9			
0 ... 40 bar	PNK-11B0			
0 ... 60 bar	PNK-11C1			
0 ... 100 bar	PNK-11C2			

* Please specify measuring ranges in PSI in clear text.

Dimensions

