

DGW-10(K)

Pressure transducer with threaded connection

Messbereiche 0...10 bar bis 0...500 bar



Purpose, Functioning

Pressure measurement, in particular remote measurements with no-load remote calibration. The signal provided by a strain gauge bridge on the membrane is amplified in the unit, balanced via external amplifier/supply unit with respect to zero and final value and then output as a standard signal.

Advantages

- Tight, corrosion-resistant, capable of withstanding high overloads
- Extremely small dead space, venting is usually not required
- Excellent reproducibility and linearity
- Suited for wet areas, flange connector (IP 65) with gold-plated contacts, permanent cable connection upon request (IP 67)
- Immune to HF interference thanks to shield and suppressor
- Output allows a signal cable length of up to approx. 500 m
- Calibrating standard in the transducer, can be remotely activated for final value balancing from an external device without test pressure to be known
- K option has restricted tolerances and three years warranty
- Parallel type DGW-11 (K) (Data Sheet 01.5) has a plug-type hydraulic connection SAE DN 19.

Applications

Static and dynamic pressure measurements, even in wet areas and where electrical interference is encountered such as, for example, in rolling machinery hydraulic systems.

Design

The membrane body with threaded pressure connection, of corrosion-resistant steel or bronze, carries the following components

- Strain gauge collar with balancing elements for zero and span, in the K option also for temperature drift
- Amplifier of shockproof SMD design with HF noise protection, zero and final value balancing can be remotely controlled, calibrating standard remotely activated.
- Front plate with flange type connector
- Conduit, sealed by means of O rings, screwed connections
- External amplifier/supply unit boards of types NK 10-15 Z2 (Z3, Z4) or AN 15/P2 (P3, P4) (data sheet 12.4) or wall-mounted enclosure NW-17 (data sheet 12.9) required.

Unit supplied in foamed-plastic packing including protective caps, seal rings, cable coupling

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Electrical data / physical characteristics		
Flange socket IP 67	BINDER series 723, 5 gold plated contacts	
Amplifier supply through external supply unit	-15 V/ 0 V/ +15 V	
Cal. standard corr. to	100 % nom. pressure	
Final value ± 10 %	externally adjustable	
Tolerances (20°C)	Standard	K-Option
Zero drift (including drift due to mounting).	< 0,1 %	< 0,1 %
Zero drift adjustable externally to	0,01 %	0,01 %
Combined temperature errors for zero and span, % full scale /10 K	<0,15 %	< 0,07 %
Combined errors due to non-linearity, hysteresis and reproducibility	≤ 250 bar: 0,1 % > 250 bar: 0,2 %	
Total error band (at -20°C...+ 80°C)		
K-Typ ≤ 250 bar:	≤ ± 0,3 %	
K-Typ > 250 bar:	≤ ± 0,4 %	
Standard Type	≤ ± 0,7 %	
Common-mode rejection	100 db 100 Hz typ.	
Amplifier frequency response	0...20 kHz 3 db	
Nominal temp. range	- 20°C...+ 80°C	
Admissible range	- 50°C...+ 120°C	

Mechanical data	
Pressure connection M 20 x 1,5 or G 1/2"	extremely small dead space
Working pressure	1,5 x nominal pressure
Limit pressure	2 x nominal pressure
Rupturing pressure	> 4 x nominal pressure
Nom. pressure stages (bar)	10 - 25 - 50 100 - 250 - 500 bar
Special pressure stages	optional
Lowest natural frequency	4...14 kHz
at pressure stage	25...500 bar
Weight, appr.	0,35 kg
Dimensions	see drawig

Transducers type DGW-10 (K) are fitted with a calibrating standard corresponding to 100 % of nominal pressure. It is remotely activated by pressing the CAL button on the amplifier/supply unit NK10-15 (or NK10-24) /Z2(Z3,Z4) or AN 15/ P2(P3,P4) (data sheet 12.4) or NW-17 (data sheet 12.9).

Output signal ranges: 0...10 V for Z2/P2, 0...20 mA for Z3, P3 and 4...20 mA for Z4, P4. Zero and final value can be adjusted via the amplifier/supply unit. The compatibility with older supply units of type NK10-15/Z1 (no remote calibration) is ensured. For replacement purposes the older transducer types DGW-12(K), DGW-15(K) will still be available.

Alternative equipment without supply unit:
 DGY-10 (K) with output 0...20 mA or DGZ-10 (K) for 4...20 mA (3/4-conductor connection).
 Refer to data sheets 01.1a, 01.1b

Phantom for DGW-10 / 11 (K) (data sheet 15.5)

