

## Pressure Transducers with Hydraulic Connector and remote adjustable amplifier for 0...10 V DGW-11(K) / 10...500 bar



### Purpose

Pressure measuring, esp. remote measuring

### Operating

Signal of strain gauge array applied to the diaphragm, amplified by an internal operation amplifier, is adjusted for Zero and Range in the external feeding set.

### Advantages

- Tight, non corroding, high overload
- Extreme small dead room, normally no evacuation necessary
- Simple mounting: Standard SAE-flange
- Zero signal extremely independent from fastening influences
- Reproducibility and linearity very good
- Suitable for wet areas; flange receptacle waterproof with gold-plated contacts
- HF-protection by shielding and filter
- Output allows signal cable up to 500 m
- CAL-Unit within the transducer
- K-Option has small tolerances and three years guarantee
- Replaces older models DGW-15(K) using transient plug-in-connector and an adapted flange

### Application

Static and dynamic pressure measuring, remote control, even in wet and electric disturbed areas.

Electro-hydraulic control, e.g. of the forces in gap of rolling mills, combined with feeding sets as NK 10-15/Z2/3/4 (data sheet E 12.4), NW-17 (dwg. M 33 209 00) or AN-15/P2/3/4

### Construction

The diaphragm part as well as the whole mechanical parts of the transducer are made from high strength stainless steel or bronze. It bears:

- Strain gauge array and adjusting elements for Zero and Range, at K-Option moreover for shift
- Amplifier in shockproof SMD-technics with HF-protection, remote balancing and remote switchable CAL-Unit, strain gauges and amplifier separately feeded
- Front plate with flange receptacle
- Protecting tube, tightened by O-rings and fastened by screws

Delivery: within foam plastic packaging with caps, spare O-rings, cable connector, flange according SAE DN-19.

## Electrical Data

Resistance, nom. value.....	4 x 350 Ω
" actual value.....	see test certificate
Flange receptacle.....	Binder Ser.723 7p
waterproof gold-.....	plated contacts
Strain gauge exciting.....	max. 12 V symmetr.
" contacts.....	6 / 3
Amplifier feeding.....	-15 V / 0 V / +15 V
" contacts.....	2 / 7 / 4
Output (0...nom. press.).....	0...10 V, max.12 V
" contacts.....	5 / 7
CAL-Unit simulates.....	100 % nom. pressure
Balancing nearly.....	± 1 V for ± 10 %
" contact.....	1
Tolerances.....	<u>Standard/K-Option</u>
Zero signal <sup>1)</sup> .....	< 2 % < 1 %
" temp.shift/10K.....	< 0.5 % < 0.2 %
Output <sup>2)</sup> /nom.val.....	< 2 % < 1 %
" /Type plate.....	< 0.1 % < 0.05 %
" temp. shift/10K.....	< 0.5 % < 0.1 %
including unbalance by.....	fastening
without loss of range	
<sup>1)</sup> adjustable through feeding set, incl. Zero shift caused	
by screw on, without loss in measuring range	
Combined error.....	≤ 0.7 %
" K-Typ ≤ 250 bar:.....	≤ 0,1 %
> 250 bar:.....	≤ 0,25 %*)
Common mode rejection.....	100 dB 100 Hz typ.
Ampl.frequency range.....	0...20 kHz 3 dB
Nominal temp. range.....	- 20°C...+ 80°C
Tolerated range.....	- 50°C...+ 100°C
<i>For installation test we recommend Phantom for</i>	
<i>DGW-10/11(Data sheet E 15.5)</i>	
<i>Data sheet E 01.5 page 2 (07/2003)</i>	

## Mechanical Data

Pressure connection.....	SAE plug-in-conn.
" with staple flange.....	DN-19
Very small dead room.....	Normally no
.....	evacuation necessary
Working pressure.....	1.5 x nom. pressure
Limiting pressure.....	2 x nom. pressure
Destroying pressure.....	> 4 x nom. pressure
Standard ranges(bar).....	10 - 25 - 50
.....	100 - 250 - 500
Other ranges.....	optional
Natural frequencies.....	4...13 kHz
at ranges.....	25...250 bar
Weight without flange.....	0.35 kg
" with flange.....	0.7 kg
Dimensions.....	see drawing

Transducers DGW-11 contain a CAL-Unit simulating 100% nom. pressure to be activated by pressing the CAL-key in feeding set NK 10-15/Z2/3/4 or AN-15/P2/3/4 (data sheet 12.4), in newer sets NW-17 (dwg. M 33 209 00). Ranges of output signals: 0...10 V at Z2/P2; 0...20 mA at Z3/P3; 4...20 mA at Z4/P4.

Therefore it is not more necessary to measure near the transducer or to induce an exact pressure value to the transducer. But older feeding sets e.g. NK 10-15/Z1 remain compatible, without remote calibrating.

*For spare, the older models DGW-12(K) and DGW-15(K) remain deliverable.*

**Attention:** The similar models DGY-11 with output 0...20 mA (3/4 leads) and DGZ-11 with output 4...20 mA (2 leads) need no special feeding set. See data sheet E 01.5a, E 01.5b.

