Pressure Transducers

with Hydraulic Connector and Amplifier for 0…20 mA, 3/4 Leads

DGY-11(K) / 10…500 bar

Purpose
Pressure measuring, esp. remote measuring

Operating
The signal of strain gauge array applied to the diaphragm ist amplified and converted to an impressed current signal 0…20 mA.

Advantages
- Tight, non corroding, high overload
- Extreme small dead room, normally no evacuation necessary
- Simple mounting: SAE-standard flange
- Zero signal extremely independent from mounting influences
- Reproducibility and linearity very good
- Suitable for wet areas; flange receptacle waterproof with gold-plated contacts
- HF-protected by shielding and filter
- 20 mA-Output allows indicating and processing even at rather long distance
- CAL-Unit within the transducer allows inquiring without special feeding set
- K-Option has small tolerances and three years guarantee
- Simple supply by voltage 18…30 V DC, no special feeding set is necessary; a direct connection to "SPS" is possible

Application
Static and dynamic pressure measuring, remote control even in wet or electrically disturbed areas.

Electro-hydraulic control, e.g. for adjusting the gap of rolling mills.

Construction
The diaphragm part as well as the whole mechanical parts of the transducer are made from high strength stainless steel or bronce. It bears:
- Strain gauge array and adjusting ele-ments for Zero and Range, at K-Option moreover for shift
- Amplifier in shock-proof SMD-technics with HF-protection, remote switchable
- CAL-Unit, strain gauges internal excited
- 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 5p
.....waterproof gold-
.....plated contacts
Strain gauge exciting.....internal generated

Supply voltage $+U_B$.....18…30 V DC
Burden.....≤ 500 Ω
Output at overload.....≤ 34 mA ≤ 100 Ω
CAL-Unit simulates.....100 % nom.
.....pressure

Tolerances(20°C).....Standard / K
.....Option
Zero signal*).....< 2 % / < 1 %
" Temp.-Shift/10K..< 0.3 % / < 0.1 %
Output*)/nom. value.....< 1 % / < 0.1 %
Output/type plate.....< 0.1 % / < 0.05 %
" Temp.-Shift/10K.....< 0.3 % / < 0.1 %
*) *incl. Unbalance caused by fastening*

Comb. 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 temp.-range.....- 50°C…+ 100°C

Mechanical Data

Pressure connector.....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
Weight with flange.....0.7 kg

Dimensions.....see drawing

Transducers DGY-11(K) contain a CAL-Unit simulating 100 % nominal pressure to be remote activated by inducing a voltage $+U_B$ 18 V…30 V to the CAL-cable. This can be done in the control room, e.g. by SPS a.s.o.
Therefore it is not more necessary to measure near the transducer or to induce an exact value of pressure to the transducer.