› Operating instructions

Pressure transmitter | Type DPSZ

intelligent electronics | FSM®

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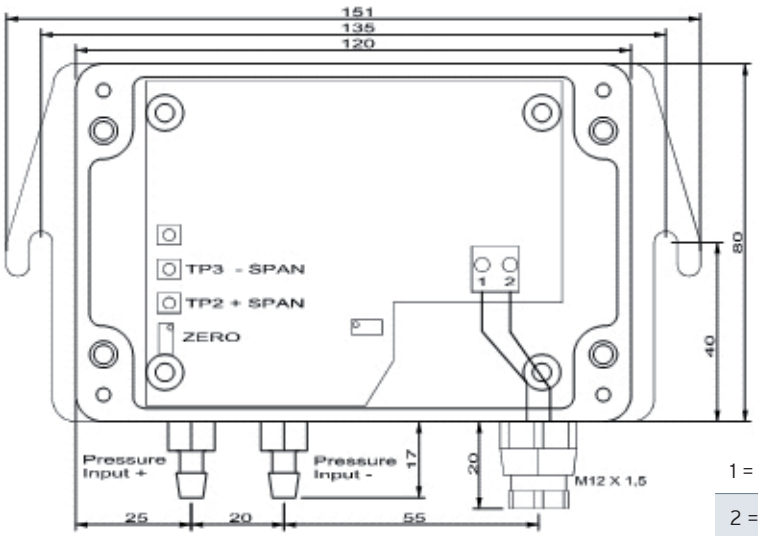
The Model DPSZ and APSZ Transducers are for the measurement of very small pressures and differential pressures of non-aggressive gases. The pressure sensing member comprises a pressure-sensitive berylium/copper diaphragm. An inductive transducing system provides the electrical output. The Transducers are not "explosion-proof"-housed.

Terminal diagram



1 = 0

2 = 12... 32 VDC

Calibration

The pressure sensors are calibrated in the factory. If necessary recalibrate according to the calibration instructions..

Safe precautions and personnel protection

For the correct and safe use of this instrument it is important that the VDE (or similar association) safety precautions as well as the precautions of the professional/trade association having liability for industrial safety regarding the operation of electrical instruments and equipment be observed.

Installation

Mount the transducers by the two side brackets. Please avoid mounting in the proximity of Transformers, Transmitters, Motors (they could generate noise) and please do not mount close the heat sources. Shocks or vibration should be damped out by employing anti-vibration mountings. The ideal mounting position is vertical, with the pressure ports facing downwards. The Transducers are factory calibrated in that position. This position of mounting is also advantageous for preventing the migration of condensation from the pressure lines into the sensor.

Operation

Before operating the unit, remove the cover, so as to expose the electrical connections, the terminal blocks. Please connect the external cables carefully! Never connect the supply to the protection. The output of the Transducer is short-circuit-proof.

2-Wire System (DC-Supply; 12 - 32 Volt Smoothed DC)

- Minus to terminal 1
- Plus to terminal 2

When the power supply is on, the output can be monitored. In the event of some deviation in the output, there are two items worthy of special attention:

- Die Einlaufzeit des Sensors beträgt ca. 1 Stunde. Nach dieser Zeit muß das Sensorsignal bei Differenzdruck Null und bei konstanter Umgebungstemperatur stabil stehen.
- The total warm-up time of the Transducers is between half and one hour. After that time the output signal will be suitable for zero differential pressure at constant temperature. For ranges less than 10 mbar there is an attitude-related zero shift. After the warm-up time of the Transducers, this can be corrected by adjusting the null-adjust Pot (null-adjust should be operated with the pressure ports unconnected).

Connecting the pressure lines

"Positive" high gauge pressure connects to the plus port. „Negative" vacuum gauge, or low-gauge pressure connects to the minus port. Model APSZ for absolute pressure has only one pressure port. Please do not "Blow" into the pressure ports, as diaphragms for less than 100 mbar are easily damaged by this procedure.

Transport and storage

The storage temperature is from -10 °C bis + 70 °C For onward transportation (either to further destinations for even if the unit has to be returned), please ensure that the pressure ports for differential Transducers are left open. NB: Transducers of the absolute type must only be transported by air in pressurised compartments.

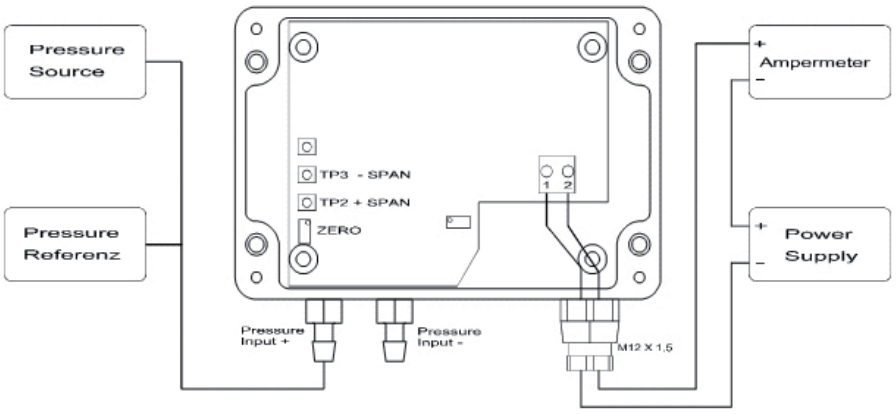
Kalibrieranleitung

For calibration use the following accessories:

Pressure refe-rence::	Precision Pressure Source (eg Digital Manometer) For absolute pressure use absolute pressure reference
Pressure source:	eg. pump, bellows etc.
Supply:	12... 32 VDC smooth
Measuring inst-ruments:	Appropriate meter to read „current" or „voltage"

Type DPSZ

1. Connect the power supply (12 – 32 VDC) and an ampermeter in series to Terminals 1 (minus) and 2 (plus).
2. Allow unit to warm up (see operting instructions).
3. To adjust the zero both the pressure ports must be open to the ambient pressure. Set Trimmer P 1 so that the meter reads 4 mA.
4. Span adjustment: Connect the nominal pressure – via a „T" Junction – to the pressure source and the reference pressure and to the pressure port of the DPSZ (for gauge pressure [high side] to the plus port and to a vacuum [low side] to the negative port). Now adjust Trimmer P2 so the ammeter reads 20 mA.



Type APSZ

1. Both these items are as for Model DPSZ above.
2. Wait for the sensor warm up (ca. 1 hour).
3. Connect the pressure port – via a 'T' Junction to the power source and the absolute pressure reference. Now apply the absolute pressure intended to correspond to 4mA output. Set Trimmer P1, so that the ammeter reads accordingly.
4. Span adjustment: Connect the absolute pressure to a pressure port and apply the pressure intended to produce 20 mA output. Now set Trimmer P2 so that the ammeter gives the appropriate reading.

Response time (not for type DPSAZ)

C14: Capacitor for the electronical absorbability
Response time (t): $t \approx R \times C$ $C \approx t / 50\ kOhm$ $R = 50\ k$

Notes

With some of the DPSZ options there are further Trimmers fitted (P3/P4/P5):

- TP3: Symmetry adjustment for sensors with plus/minus ranges.
- TP4: Adjustment Trimmer for spezial ranges or spezial output modes.
- TP5: The ranging and matching of digital read-outs.

These Trimmers are factory pre-set. Any readjustment should be avoided without prior reference to the Supplier.
Any readjustment of the zero and span as per the instructions above, do not require Trimmers TP3 to TP5. For any re-calibration it is necessary to adjust only Trimmers TP1 and TP2.