

## Pressure transducer integrated into a tube spring manometer – Type DMU... –



- **OUTPUT SIGNAL 0-20 mA, 3-WIRE OR 4-20 mA, 2-WIRE**
- **PRESSURE-MEASURING RANGES FROM 0-1 OR -1-0 TO 0-1000 BAR**
- **ELECTRICAL OUTPUT SIGNAL IS INDEPENDENT OF THE MANOMETER INDICATION**
- **OPTIONS:**
  - **LIMIT SIGNAL INDICATOR**
  - **DIAPHRAGM SEAL**
  - **HOUSING FILLING**

### DESCRIPTION

The pressure transducer with its tube spring measuring system is a mechanical pressure meter with a local display and an integrated piezo-resistive sensor for remote transmission of pressure values in the form of a constant analog signal at 0 or 4-20 mA.

The design is such that the electrical output signal is independent of the manometer indicator. A defective manometer will therefore not affect the electrical output signal and vice versa.

The vibration-resistant mechanical construction and high-grade electronic equipment render this pressure transducer suitable for operation under difficult conditions. The oil-filled pressure transducer is a special version recommended for measurements taken at measuring points subject to high dynamic loads such as shocks.

The pressure transducer can also be configured to carry out regulatory and controlling functions in process automation. The devices can be equipped with electrical limit signal indicators for this purpose. All common diaphragm seal connections can be fitted.

### TECHNICAL DATA

Housing	bayonet housing material No. 1.4301 => also see the data sheets for the RSC types and their specifications (from NG 100 onwards)
Output signal	* 4 - 20 mA, 2-wire, auxiliary power 10 - 40 VDC, working resistance ( $U_B - 10 \text{ V}$ ) / 0.02 A * 0 - 20 mA, 3-wire, auxiliary power 8 - 28 VDC, working resistance ( $U_B - 8 \text{ V}$ ) / 0.02 A * 0 - 10 mA, 3-wire, auxiliary power 13 - 28 VDC, working resistance at least 10 kOhm
Accuracy	$\pm 0.5\%$ of the maximum scale value, including linearity and hysteresis
Long-term stability	$\pm$ typically 0.25% p.a.
Environmental temperature	-40 to +60°C
Temperature of measuring material	-10 to +80°C
Storage temperature	-40 to +70°C
Temperature influence	zero point < 0.3% / 10 K range < 0.2% / 10 K
Measuring ranges	EN 837-1 for all display ranges between 0 - 1 or -1 - 0 bar and 0 - 1000 bar (=> also see the corresponding data sheet manometer)
Pressure connection	EN 837-1, G ½ B made from stainless steel, material number 1.4571 (standard), bottom (not possible at rear)
Electrical connection	cable socket with zero and span potentiometers, fitted on left side or at rear
Add-on devices	- limit signal indicator (see data sheet) - installation with diaphragm seal - designed for oxygen operation, no oil or grease - with housing filling G

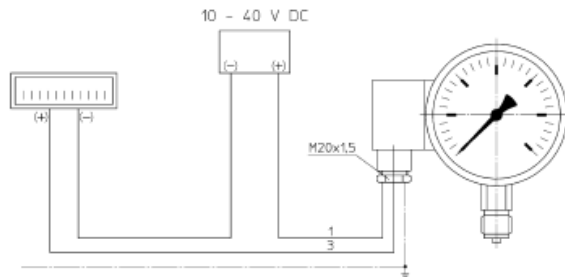
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## Dimensions

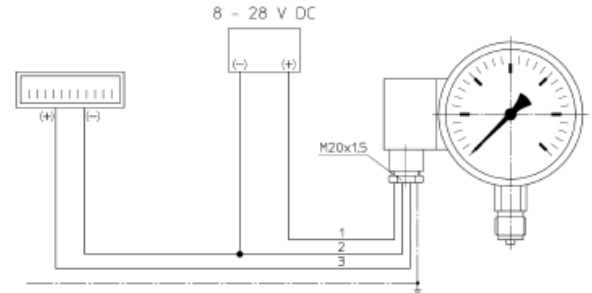
The dimensions of the various housing designs are given in the various data sheets for the RSC manometer (... special safety housing). All other types and dimensions remain unchanged.

## Connection diagram

### 2-wire- connection



### 3-wire- connection



## Installation and operating instructions

The national and international safety regulations (e.g. VDE 0100) must be adhered to during installation, initial and subsequent operation of this pressure transducer. If the corresponding regulations are disregarded, this may result in serious bodily injury or damage to property.

Only correspondingly qualified staff may work on this device.

Installation takes place with the aid of a suitable key to be applied to the key surface (SW) provided.

The process connection must make use of a suitable seal (flat gasket according to EN 837-1) for the process connection.

The electrical connection must be in accordance with the above connection diagram.

The protective categories as indicated can only be attained if the cable diameter is in accordance with the nominal width of the sealing insert of the cable connection and if the connection is tight. The centrally positioned attachment screw of the cable socket must be tightened by hand.

To maintain the electromagnetic compatibility (EMC), only sheathed cables may be used for the connection and the sheath must be connected to the housing or to the earth terminal of the right angle plug.

The devices require no maintenance.

Repair work may only be carried out by the manufacturer.

## Calibration potentiometer

The pressure transducers are calibrated at the factory. The potentiometers should therefore not be adjusted.

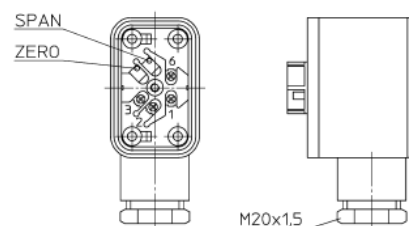
If the zero point should need to be changed, please proceed as follows:

- Loosen the central screw of the cable socket and remove the lid.
- A screwdriver can now be used to adjust the zero point on the exposed trimmer (ZERO, see sketch).

The terminal value (SPAN; trimmer at top right next to ZERO, see sketch) should not be adjusted under any circumstances!

## Electrical connection

Cable socket with ZERO and SPAN potentiometers; the terminals of the cable socket have been numbered in accordance with the circuit diagrams (see sketch on back). One earthed conductor terminal has been provided. The cable socket has been equipped with a cable connection M 20 x 1.5 with a cable grip.



To ensure the electromagnetic compatibility (EMC), a sheathed cable (e.g. LP/LiMYCY) must be used for the connection and the cable sheath must be connected with the housing.

## ORDERING INFORMATION (type construction)

### Basic type / housing size

DMU	Pressure transducer
... G	Glycerine filling
... OE	Oil filling for limit value transmitter (instead of GL)
... .. 100 mm	Nominal size 100 mm
... .. 160 mm	Nominal size 160 mm
... .. ..	Measuring ranges / add-ons / limit values / special features (please state in plain text or add code)

### Ordering code - Example: DMU100/10 bar/...

Our products are constantly in further development, therefore subjects to modifications.