

## **Installation recommendation for high pressure transducer model 8221**

The 8221 pressure transducer has been manufactured and calibrated with care. To benefit fully from its excellent measurement performance, we recommend that you follow the advice below when fitting the transducer:

### **Mounting**

Screw the pressure transducer onto an adapter with external thread size 9/16-18UNF, taking care not to cross-thread. This adapter must be made of a tough material such as stainless steel. The sensor and adapter should be at about the same temperature when being fitted.

**Tightening torque: 100 Nm max**

As an additional safeguard, especially for dynamic loads or where vibrations occur, we recommend securing the screw thread with anaerobic adhesive.

### **Sealing**

The transducer must be fitted with the sealing cone supplied.

### **Mounting position**

The transducer should preferably be suspended when used to measure liquid media. This allows any air to escape automatically from the volume inside the transducer. For applications that carry solid particles in the medium, it may be advantageous to install the transducer upright.

### **Overload**

An overload > 100 % of the upper range value (6 kbar max.) will alter the mechanical and electrical properties of the transducer. It is not the length of time for which the overload occurs but the magnitude of the overload that is critical. The switching of valves in hydraulic systems can cause significant pressure spikes. These must be attenuated to a level below the upper range value using suitable means, for instance by fitting restrictors upstream. Alternatively, a transducer with a larger measurement range may need to be used.



## Functions for transducers with built-in amplifier

Please use these functions only once the transducer is fitted in place.

The installation recommendation explains the following functions:

- 1 Autozero
- 2 Fine-Autozero
- 3 Calibration
- 4 Reset

**CAL-Pin:** activation of calibration is made by closing the contact between pin E-F.

The following pages explain the application modality for all additional functions.

The contents are related to application limits and aims.

### 1 Autozero

#### This is how it works

The Autozero function is activated by:

- 1 Position the magnetic pen near the Autozero label on the shell of the pressure transducer.
- 2 The magnetic pen has to be maintained on the Autozero position for 1 ... 10 seconds.

#### Result

The Autozero effect will be visible after waiting 2 seconds from the release of the magnetic pen.

The precision of the zero value will be within the accuracy class or setting tolerance of the transducer.

The Autozero function doesn't work outside the defined limits.

#### Limits

The maximum zero error with respect to the zero point must be within  $\pm 10$  of full scale.

#### Note

During automatic zeroing, a current of about 7mA appears at the output of transducers with a current output.

There will be only a short variation visible during the Autozero phase. This won't have any effects on the final result.

## 2 Fine-Autozero

### This is how it works

The Fine-Autozero function is activated by:

- 1 Position the magnetic pen near the Autozero label on the shell of the pressure transducer.
- 2 The magnetic pen has to be maintained on the Autozero position for 10 ... 30 seconds. After removing the magnetic pen, the signal will start changing the value step by step.

Stop the adjustment

- 1 To stop the changing of the signal, touch the Autozero position with the magnetic pen.

### Result

The output signal will change within a  $\pm 100$  mV value ( $\pm 0.16$  mA for 4 ... 20 mA output) in steps of 6 mV (12  $\mu$ A for 4 ... 20 mA output).

Example:

0...-6...-12... // -100...+100...+94...+88...0

When the desired zero value is reached, stop the adjustment cycle by touching the Autozero position with the magnetic pen.

The Fine-Autozero function doesn't work outside the defined limits.

### Limits

The maximum zero error with respect to the zero point must be within  $\pm 10$  of full scale.

### Note

The step duration time is 5 seconds.

During resetting, a current of about 7mA appears at the output of transducers with a current output. Furthermore, it will be possible to have short overcurrent up to 7 mA between the step variations.

There will be only a short variation visible during the Autozero phase. This won't have any effects on the final result.

### 3 Calibration

#### This is how it works

Start calibration

- 1 Activate the calibration by short-circuiting the CAL pins (E-F) for at least 1 second.

Stop calibration

- 1 Release the CAL pins (E-F) short-circuit.

#### Result

During the calibration phase the signal will be unbalanced at 80% F.S. The calibration effect is visible 2 seconds after short-circuiting of CAL pins (E-F).

The calibration function doesn't work outside the defined limits.

#### Limits

The maximum zero error with respect to the zero point must be within  $\pm 20$  of full scale.

#### Note

Switching-off the supply while the calibration function is activated, can cause calibration problems. The pressure transducer can be restored to the initial value by activating the Reset function.

### 4 Reset of calibration values

#### This is how it works

- 1 To reset the calibration values, position the magnetic pen near the Autozero label on the shell of the pressure transducer.
- 2 The magnetic pen has to be maintained on the Autozero position for at least 60 seconds.

#### Result

The pressure transducer is reset to the factory settings.

#### Anmerkung

During resetting, a current of about 7mA appears at the output of transducers with a current output.