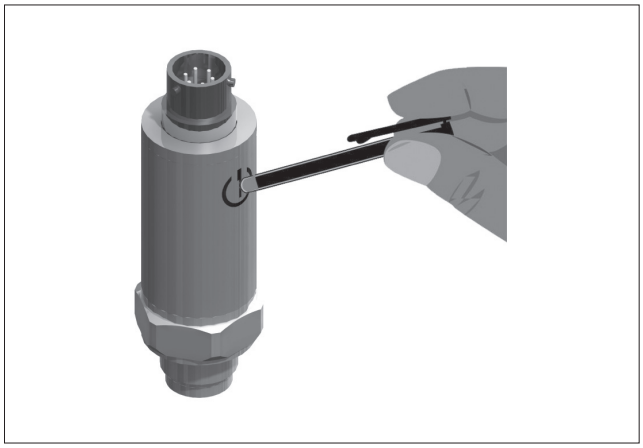
GEFRAN

INDUSTRIAL PRESSURE TRANSMITTER

TPFAS series



OPERATING MANUAL

AUTOZERO OPTION

code **85305** ed. **01** - **10/2014**

This section contains information and warnings of a general nature which should be read before proceeding with any function activation

The flush diaphragm pressure transmitter series **TPFAS** is available with Autozero function that can be activated in two different ways:

- Option M: Magnetic autozero
- Option E: External autozero

The above functions can be activated via the following devices:

- CAL Pin
- Magnetic pen

Option **E** involves the activation of all functions exclusively through the CAL pin.

Option **M** involves the activation of all features using the magnetic pen and CAL pin.

The available functions are as follows:

1) Autozero
2) Fine-Autozero
3) Calibration (option M only)
4) Reset

CAL pin:
The CAL function activation (Calibration or Autozero) is achieved by closing the contact between the following pins or cables:

• 6 pole connector version (V)	pin E-F
• 7 pole connector version (P)	pin 5-6
• Cable version (F)	wires blue-orange

The following pages present the methods of application, the applicability limits, and the results of such functionality.

1) AUTOZERO

Application mode	Limits	Results
The Autozero function is activated by: **1**) positioning the magnet near the Autozero label on the shell of the sensor. **2**) Short-circuiting the CAL pin or cable wires (option E) The contact has to be maintained on the Autozero position for a time within 1 to 10 sec.	The whole Zero unbalancement in addition to the zero done by the manufacturer, has to be within ± 10% FS.	The Autozero effect will be visible after waiting 2 sec 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.

NOTE:

During the Autozero phase, the output for current transmitter series, will increase around 7mA.

That's a short variation only visible during the Autozero phase; it won't have any effects on the final result.

Figure 1

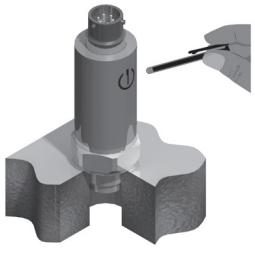


Figure 2

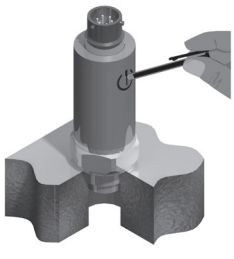


Figure 3

Figure 1 : represents the "magnetic pen"

Figure 2 : represent the Autozero function label on the sensor housing

Figure 3 : shows the position of the pen on the shell while activating the autozero function

2) FINE-AUTOZERO FUNCTION

Application mode	Limits	Results
The Fine-Autozero function is activated by: **1**) positioning the magnet near the Autozero label on the shell of the sensor. The contact has to be maintained on the Autozero position for a time within 10 to 30 sec. After removing the contact the signal will start changing the value step by step. **2**) Short-circuiting the CAL pin or cable wires (option E) Stop adjustment: Touch the Autozero area with the magnet to stop the signal scrolling or close contact on CAL pin (option E).	The whole Zero unbalancement in addition to the zero done by the manufacturer, has to be within ± 10%FS	The output signal will change within a ± 100mV value (± 0.16mA for 4 to 20mA output) in steps of 6mV (12μA for 4 to 20mA output). Eg: 0..-6..-12..//-100..+100..+94..+88..0 When the desired zero value is reached stop the adjustment cycle by touching the Autozero area with the magnet. The Fine-Autozero function doesn't work outside the defined limits.

NOTE:

The step duration time is 5 sec

- During the Autozero phase, the output for current transmitter series, will increase to around 7mA. Furthermore between the step variations it will be possible to have short overcurrent up to 7mA.
- That's an immediate variation only visible during the Autozero phase; it won't have any effects on the final result.
- The new zero value setted with the "Fine-Autozero" function, will be the zero reference for future "Autozero" procedures.

3) CALIBRATION (WITH OPTION M ONLY, MAGNETIC AUTOZERO)

Application mode	Limits	Results
Start calibration The Calibration function is activated by short-circuiting the CAL pin for a minimum time of 1 sec Stop calibration Release the CAL pin short-circuit	The whole Zero unbalancement in addition to the zero done by the manufacturer, has to be within ± 20%FS.	During the Calibration phase the signal will be unbalanced at 80% FS. The calibration effect is visible 2 sec after short-circuiting CAL pin. The Calibration function doesn't work outside the defined limits.

NOTE:

- Switching off the supply while the calibration function is activated, could be cause of calibration problems; the transmitter can be restored to the initial value by activating the "reset function".
- To locate the CAL pin contacts, please refer to item "CAL pin" at the beginning of this manual.

4) TOTAL RESET OF THE CALIBRATION VALUES

Application mode	Limits	Results
1) The total reset function is activated by positioning the magnet near the Autozero label on the shell of the sensor **2**) by short-circuiting the CAL pin (or cable wires) on option E. The contact has to be maintained on the Autozero position for a time over 60 sec.		The Zero of the transmitter will be restored to the factory settings.

NOTE:

- During the total reset phase, the output for current transmitter series, will increase around 7mA
- An internal timer will trigger the function as soon as the elapsed time will exceed 60 sec.

GEFRAN spa
via Sebina, 74 - 25050 PROVAGLIO D'ISEO (BS) - ITALIA
tel. 0309888.1 - fax. 0309839063 Internet: http://www.gefran.com