

User guide

TRANSMITTER PRESSURE GAUGE MT



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1 – Important information

Please read carefully this information before installation and use of the instrument. Keep it in a safe and accessible place for every user.

The safety level of the instrument depends on choosing the correct application, the proper installation of the instrument and by following the maintenance procedures established by the manufacturer.

Technicians in charge of the instrument selection, installation and maintenance should be able to understand if the instruments condition could affect its functioning and thereby, lead to any premature damage or breaking.

It is essential that these procedures are included in the plants regulations should be carried out by a qualified staff. Any improper use could be damage the instrument, causing breakage and possible hazards to the staff and to the plant.

In order to correctly choose the right instrument it is highly recommended to reference the most recent catalogue sheets available on-line at www.nuovafima.com



In accordance with directive
EMC 2004/108/CE – PED 97/23/CE

Standards of reference: EN 61326
IEC 60770 – IEC 61298-2

2 – Safety Instructions



Warning

- The manufacturer disclaims all responsibility in case of damages caused by the improper use of the product and by the non-respect of the instructions reported in this manual.
- Follow carefully the specific safety rules in case of measuring oxygen pressure, acetylene, inflammable or toxic gas or liquids.
- Disconnect the instruments only after depressurization of the system.
- The process fluids residuals in the disassembled instruments could affect people, the environment and the system. It is highly recommended to take proper precautions.



Attention

- Before installation be sure that the right instrument has been selected following the working conditions and in particular the range, the working temperature and the compatibility between the material used and the process fluid.
- This manual does not concern the instruments conforming to standard 94/9/CE (ATEX).
- The product warranty is no longer valid in case of non-authorized modifications and of wrong use of the product.
- The user is totally responsible for the instrument installation and maintenance.
- Handle and carefully stock the instrument used for toxic or inflammable liquids measurement

3 – Intended use

The transmitter pressure gauge has a double function: to locally display an input pressure (gauge) and turn it into an electrical output signal (transmitter). The electrical signal changes proportionally on the input pressure value

3 – Electrical connections

Output signal	4...20 mA	Output signal	0...5 Vdc	0...10 Vdc
N° of wires	2	N° of wires	3	3
Charge (Ohm)	$R_L - (V_{in}-10)/0,02$	Charge (Ohm)	min. 5Kohm	min.10 Kohm
Input : +Vin	10...30	Input : +Vin	8...30	14...30

The transmitter metal case should always be connected to ground through the process connection thread in order to protect it from disturbances due to electromagnetic fields or electrostatic charges.

If it is not possible to do so, connect the transmitter to ground through the connector and the cable screen.

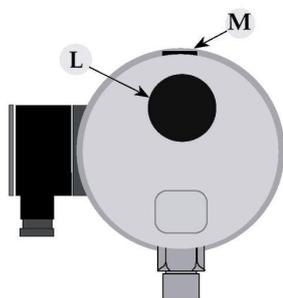
4 – Installation

Before installing an electrical instrument safely and securely into a plant or a system, it is recommended to verify that the installation is performed correctly according to the particular design features. After installation the instrument should not be subject to any source of heat which could exceed the established ambient temperature limits.

Secure the instrument thread through a special key/wrench on the process connection hexagon without grasping the case by the hands (20...30Nm) without grasping the case by the hands. The correct torque depends on the type of process connection and the type of seal used (form and material).

As for those process connections with a cylindrical thread (Gas-Metric), a head gasket compatible with the measurement gas or fluid should be used.

If the connection thread is conical the instrument is tightened through a simple screwing on the plug. In order to improve the thread tightness it is recommended to place a PTFE layer on the male thread.



If the instrument is equipped with a fluid diaphragm seal the connection should be clamped on the diaphragm otherwise the calibration could be compromised. If a remote mounting capillary is mounted between the instrument and the pressure switch, verify that during the mounting operations the capillary does not twist and break and that the passage hole of the pressure transmission fluid is not compressed by any curving angles.

The blow-out vents in the gauge case (blow-out vent L and filling cap M) should not be closed or tightened. As for instruments with a scale range up to 16 bar the filling cap M should be drilled.

Disassemble the connector as in fig.1 and connect the cable as in fig.2.

Reassemble the connector and fix it on the transmitter.

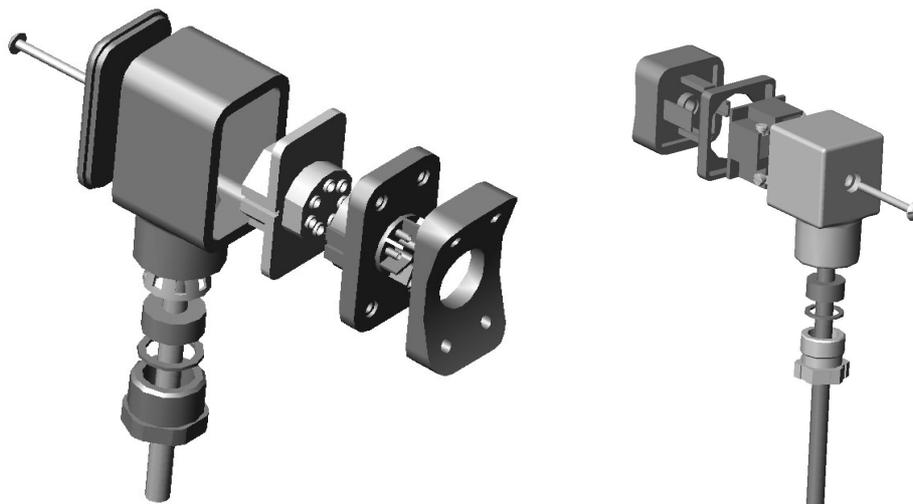


Figure 1 – Exploded view of the connector

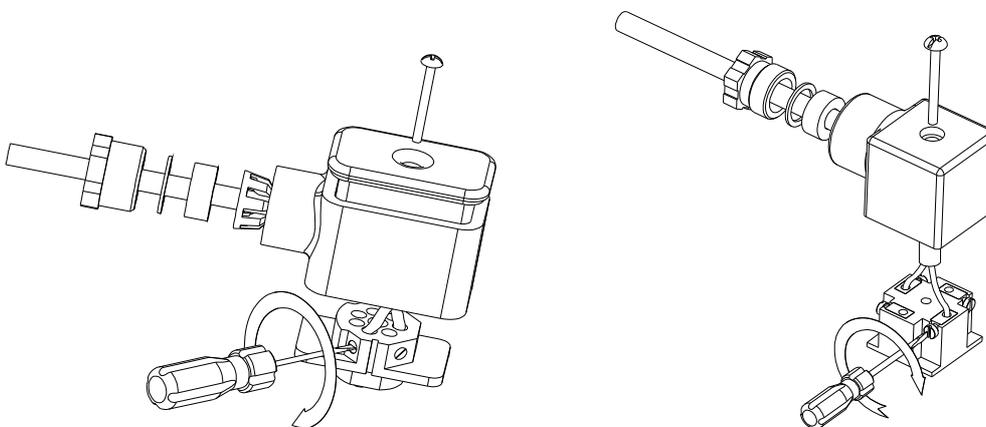


Figure 2 – Wires connections



The IP grade according to standard EN 60529-1:1992 is guaranteed only if the female connector equipped with a connection cable is mounted on the instrument and all the other components are assembled correctly.

5 – Recalibration and maintenance

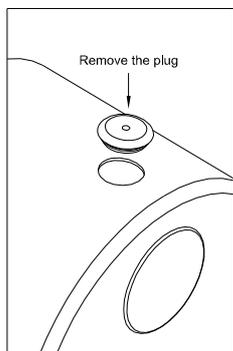


Figure 1

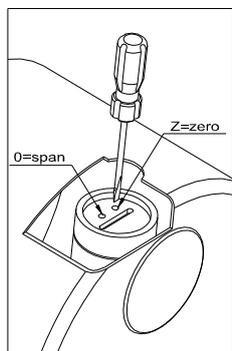


Figure 2

In order to perform the instrument zero adjusting please proceed as follows:

1. Disconnect the connector from the transmitter;
2. Remove the filling cap to reach the ZERO trimmer (figure1);
3. Connect the sensor to the measurement circuit (PLC-PC board or millimeter);
4. If the input pressure is at zero adjust the output signal value to 4 mA together with the corresponding ZERO trimmer placed inside the instrument (figure 2).
5. Reinstall the filling cap.

In case a complete recalibration is necessary please contact NUOVA FIMA S.p.A.

7. Disposal and demolition

Dispose of instrument components and packaging materials in an environmentally compatible way and in accordance with the rules of the specific waste in the country of origin.