

User guide

PRESSURE GAUGE WITH ELECTRIC CONTACTS MCE/MN14



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1. Important information

The instrument described in this manual has been designed and produced in conformity to the following standards in force. All components are submitted to severe quality and traceability controls. The quality management system is certified according to the ISO 9001 standard. This manual contains important information about the use and the installation of the gauge in safe conditions. Therefore it is highly recommended to read carefully the following instructions before using the instrument.

The instrument works in safe conditions when correctly selected and installed in the system and when the rules concerning the product as well as the maintenance procedures established by the manufacturer are respected.

The staff charged with the selection, installation and maintenance of the instrument must be able to recognize the conditions that may negatively affect the instrument's ability to work and which may lead to premature breakage. The staff must therefore be technically qualified and properly trained, and must carry out the procedures called for in the plant regulations.

Nuova Fima instruments are designed and manufactured according to the safety rules included in the safety international standards in force. According to the **2014/68/UE(PED)** standard the **NUOVA FIMA** pressure gauges are classified in 2 categories

PS ≤200 bar these instruments should not satisfy the essential safety standards but they have only to be designed and manufactured according to a SEP-Sound Engineering Practice and they do not have to bring any CE marking.

PS >200 bar these instruments should satisfy the essential safety standards established by the PED, they are classified as category I and they are certified according to Form A. They should bring the CE marking as reproduced below.



In accordance with directive
BT 2014/35/UE – PED 2014/68/UE

Standards of reference: EN 837

2. Safety information



- 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.



- 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 2014/34/UE (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

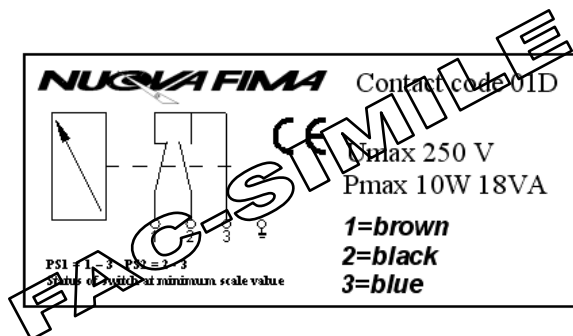
In order to verify the working and manufacturing features of the instruments read the catalogue sheets in the most up-dated edition available on line on www.nuovafima.com

3. Intended use

They are used to control the electrical operation of compressors, pumps, presses, hydraulic and pneumatics equipment, chemical and petrochemical plant. The contacts open or close the circuit depending on the position of the indicating pointer and they are adjustable over the whole range. For application on severe working conditions, such as rapid and frequent pressure change, vibration and pulsation, they are manufactured with the case liquid filled. The filling drastically reduces the effect of such factors as well as those caused by a corrosive atmosphere, giving longer life and better performances of the pressure gauge and their electric contacts.

4. Electrical connections

For electrical connection see the instrument label



5. Installation

Before installing electrical instrument securely into a plant or a system the user should verify the instrument suitability to the plant characteristics and the correct installation. After installation the user should verify that the instrument is not exposed to any source of heat exceeding the established ambient limits.

Secure the instrument thread through a special key/wrench on the process connection hexagon (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.

5.1 Connection Output

Disassemble the connector as shown in fig.1 and connect the cable as in fig.2.
Reassemble the connector and fix it on the pressure gauge.

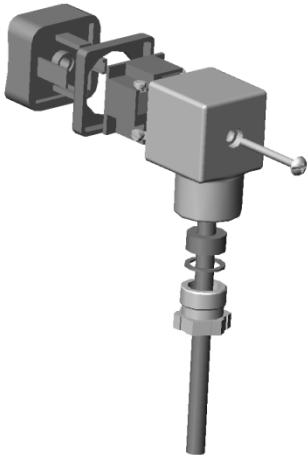


Figure 1 – Exploded view of the connector

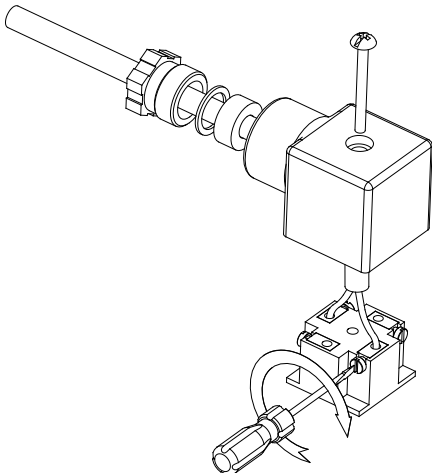


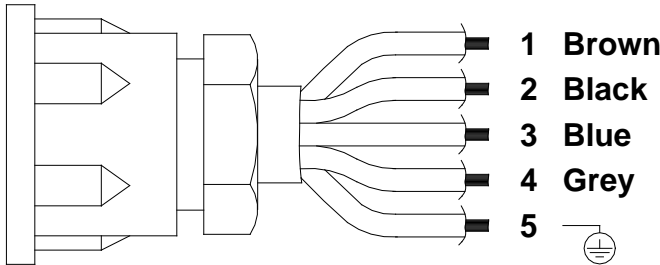
Figure 2 – Wires connection



The IP grade according to standard CEI EN 60529 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.

5.2 Cable output

Connection cable combination with colours and numbers



6. Working current

| VOLTAGE | SLIDING CONTACT | | | MAGNETIC RELEASE NON FILLED CONTACT | | | MAGNETIC RELEASE FILLED CONTACT | | |
|---------|-----------------|-------|------------------|-------------------------------------|-------|------------------|---------------------------------|-------|------------------|
| Volt | CC | CA | Inductive charge | CA | CC | Inductive charge | CC | CA | Inductive charge |
| 220 | 40mA | 45mA | 25mA | 100mA | 120mA | 65mA | 65mA | 90mA | 40mA |
| 110 | 80mA | 90mA | 45mA | 200mA | 240mA | 130mA | 130mA | 180mA | 85mA |
| 48 | 120mA | 170mA | 70mA | 300mA | 450mA | 200mA | 190mA | 330mA | 130mA |
| 24 | 200mA | 350mA | 100mA | 400mA | 600mA | 250mA | 250mA | 450mA | 150mA |

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.