NUOVA FIMA

Industrial instrumentation for Pressure and Temperature

ENG

User guide

PRESSURE GAUGE WITH ELECTRIC CONTACTS MCE/MN14

MI-MCE-MN14-ITA_2 07/2016

NUOVA FIMA

Via C. Battisti, 59/61 – 28045 INVORIO (No) – Italy
Tel. +39 0322 253200 – Fax +39 0322 253232
www.nuovafima.com – e-mail: info@nuovafima.com

4123 Hollister, Suite G – TX 77080 Houston
Tel. +1 713.690.9800 – Fax +1 713.690.9803
www.nuovafima.com – e-mail: info@nuovafima.com

Contents

1. General information

The instrument described in this manual has been designed and produced in conformity to the following standards:
EN 837-1-2 and ASME B40.1. 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, reading the following instructions carefully before use is highly recommended.

The instrument works in safe conditions when selected and installed correctly in the system and when 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 for this task, and must carry out the procedures established by the plant regulations.

Standards
Directive P.E.D. **2014/68/EU**
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/EU** standard the NUOVA FIMA pressure gauges are classified in 2 categories
PS ≤200 bar These instruments may not satisfy completely the essential safety standards but they have to be designed and manufactured according to a SEP-Sound Engineering Practice. No CE marking is required on them.
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 the one shown below.

CE

In accordance with directive	Standards of reference: EN 837
BT 2014/35/UE – PED 2014/68/UE	

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 the specific safety rules carefully when measuring oxygen pressure, acetylene, flammable or toxic gas or liquids.
- Disconnect the instruments only after depressurization of the system.
- The process fluids residuals remaining in the disassembled instruments could affect people, the environment and the system. Proper precautions have to be taken.

- 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 instruments conforming to standard 2014/34/UE (ATEX).
- The product warranty is no longer valid in case of non-authorized modifications and of misuse of the product.
- The user is responsible for the instrument installation and maintenance.
- Handle and stock the instrument used for toxic or flammable liquid measurement extremely carefully

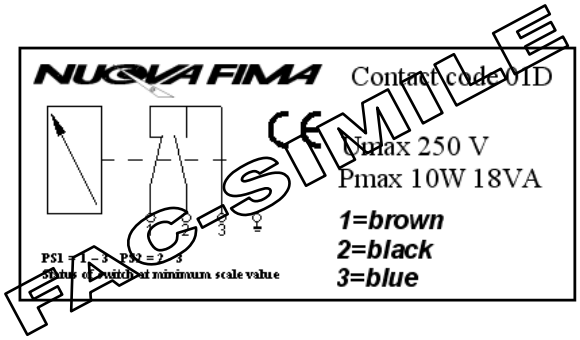
In order to verify the working and manufacturing features of the instruments read the catalogue sheets in the most updated edition available online at **www.nuovafima.com**

3. Intended use

This instrument is used to control the electrical operation of compressors, pumps, presses, hydraulic and pneumatic equipment, chemical and petrochemical plants. Contacts open or close the circuit depending on the position of the pointer and they are adjustable over the whole range. For application in case of severe working conditions, such as rapid and frequent pressure change, vibration and pulsation, they are manufactured as liquid filled instruments. The case filling reduces drastically the negative effect of the above-mentioned conditions as well as those caused by a corrosive atmosphere, making the pressure gauge more durable and better performant.

4. Electrical connections

For electrical connection see the instrument label



5. Installation

Before installing the electrical instrument securely into a plant or a system the instrument suitability to the plant characteristics and its correct installation should be verified. After installation, the user should verify that the instrument is not exposed to any heat source which exceeds the established ambient limits.
The instrument thread should be secured by 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 cylindrical thread process connections (Gas-Metric), a head gasket compatible with the measurement of gas or fluid should be used.
If the connection thread is conical the instrument is tightened through a simple screwing on the plug. To improve the thread's tightness it is recommended wrapping the male thread with a PTFE tape.
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.

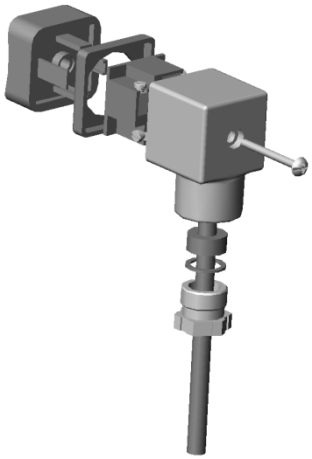


Figure 1 – *Exploded view of the connector*

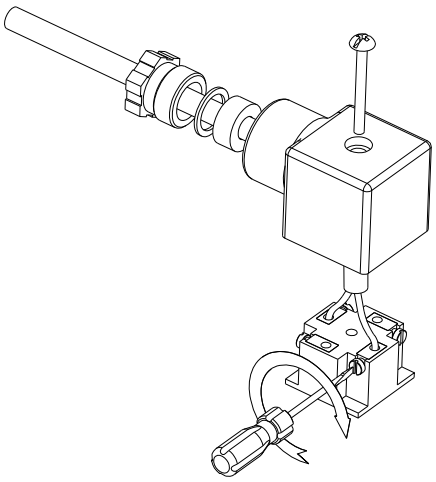
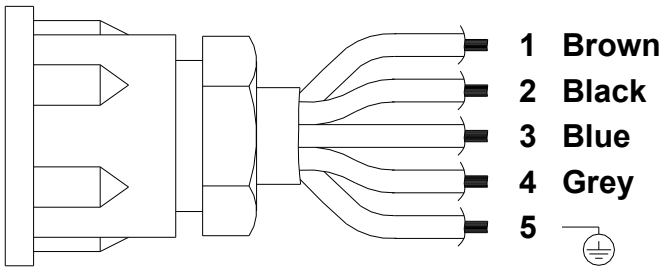


Figure 2 – *Wire connection*

Attention	**The IP grade according to standard CEI EN 60529 is guaranteed only if the female connector provided 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

Instrument components and packaging materials should be disposed of according to the national rules.