NUOVA FIMA

Industrial instrumentation for Pressure and Temperature

User Guide

MGS 18 DN 63 BOURDON TUBE PRESSURE GAUGES, ATEX VERSIONS 2M2-2N2-2N0 ZONES 1, 2, 21, 22

MI-MGS_63-2M2-2N2-2N0 ENG_4 02/2021

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1. Safety

- The safest ambient conditions for the instrument to operate properly depend on the correct selection and installation of it in the system, as well as on the compliance with the maintenance procedures set out by the manufacturer. The user is entirely responsible for a correct installation and maintenance.
- This manual is supplied with the instrument and should be properly stored. It is advisable to read it carefully before using the instrument.
- To specify the functional and constructive characteristics of the instruments, it is recommended to consult the most updated version of the catalogue and data sheets which are available on the website www.nuovafima.com

- An improper use may damage the instrument and the operator or the entire plant.
- The operators responsible for the selection, installation and maintenance of the instrument should be aware of the environmental conditions that may negatively affect the instrument's functioning and which may lead to its premature failure. Therefore, only technically qualified and trained staff should carry out the procedures established by the plant regulations.

2. Directives

The MGS pressure gauges conform to the Essential Health and Safety Requirements laid down in European Directive 2014/34/EU Group II, Category 2G or 2GD equipment in the T6…T1 temperature class

VERSION	MARKING
2M2 (gas)	**EXTENDED MARKING***
	CE Ex II 2G Ex h IIB T6…T1 Gb -20°C ≤ Ta ≤ 60°C
	REDUCED MARKING*
	CE Ex II 2G Ex h X
2N2 (gas and dust)	**EXTENDED MARKING***
	CE Ex II 2G Ex h IIB T6…T1 Gb II 2D Ex h IIIB T85°C…T450°C Db -20°C ≤ Ta ≤ 60°C
	REDUCED MARKING*
	CE Ex II 2GD Ex h X
2N0 (gas and dust)	**EXTENDED MARKING***
	CE Ex II 2G Ex h IIB T6…T1 Gb II 2D Ex h IIIB T85°C…T450°C Db 0°C ≤ Ta ≤ 60°C
	REDUCED MARKING*
	CE Ex II 2GD Ex h X

* Due to space reduction on the dial of DN63 pressure gauges, the marking may be reduced according to point 11.4 of regulation UNI CEI EN ISO 80079-36:2016

This instrument is NOT suitable for ZONES 0 and 20.

EMC Directive **2014/30/EU** on electromagnetic compatibility does not apply to this product.

Under the terms of directive **PED 2014/68/EU**, NUOVA FIMA pressure gauges are classified into 2 categories:
- PS <=200 bar These instruments do not need to meet the essential safety requirements but are just designed and manufactured by "Sound Engineering Practice";
- PS > 200 bar these instruments must comply with the essential safety requirements prescribed by the PED, are classified as Category 1 and are certified according to Form A.

3. Standards

NUOVA FIMA's instruments are designed and manufactured to comply with the safety requirements required by the international regulations in force some of which are reported in this manual. To perform the installation and commissioning of the instruments, it is necessary to know and comply fully with the following standards: **EN837-1, EN837-2, ASME B40.1, UNI CEI EN ISO 80079-36, UNI CEI EN ISO 80079-37, UNI EN 1127-1, UNI EN ISO 15156-3/MR0175.**
All instruments must be calibrated according to national and/or international samples according to regulations established by the UNI EN ISO 9001:2015 quality management system.

4. Operative principle

The sensitive bourdon tube element moves linearly with the pressure applied. The tube is attached to a movement by a tie rod, which transforms this linear movement into a rotary movement by transmitting it to a pinion. The rack on the indicator arm is keyed into the pinion, allowing the pressure to be indicated on a graduated scale on a dial with a range ≥ 270°.

5. Materials

The parts that come into contact with the process fluid are made of AISI 316L stainless steel. The case is made of AISI 304 or AISI 316 L stainless steel. Gaskets are manufactured in SILICONE RUBBER and the vent/filler caps are manufactured in EPDM or VITON. The window is plastic. The dial and indicator are manufactured in aluminium.

6. Data-sheet

Detailed information about the construction and the operating characteristics, as well as the drawings showing the overall dimensions are available in the **MGS18 DN63** pressure gauges catalogue sheet, **ATEX** versions: 2M2 for gases, 2N2 and 2N0 for gases and dusts.

7. Function

The instrument is designed to measure the relative pressure locally and also remotely via a capillary.
This instrument cannot cause fires when operating in normal conditions or when not in use. Operation within the operating limits is recommended. All misuse of the instrument should be prevented.

8. Intended use limit

Maximum surface temperature – It may be produced by the fluid temperature only. The temperature resulting from the combination of the ambient temperature and the process fluid temperature should be lower than the ATEX temperature class so as not to affect the instrument's functioning.

The process fluid temperature (Pt) must, therefore, be kept within the limits shown in the table below:

Class (Tmax)	*Pt (°C)*	
	Instrument case: Not fillable	*Instrument case Filled*
T6 (85°C)	70	60
T5 (100°C)	85	
T4 (135°C)	100	
T3 (200°C)		
T2 (300°C)		
T1 (450°C)		

Ambient temperature – This instrument is designed to be used safely at ambient temperatures between:
– 20°C…60°C (2M2 and 2N2 version)
0°C…60°C (2N0 version)

Model – In compressed gas systems, the safety level of instruments must be sufficiently adequate, according to standard **EN 837-1**. In case of unexpected failure of the sensing element, compressed gas must be released outside the case through the safety device to prevent the instrument explosion. NUOVA FIMA instruments model MGS18 DN 63 type S2 are provided with a shatterproof window and a safety blow-out vent which opens when pressure inside the case is too high to connect the case to the outside. To choose an instrument provided with an adequately safe blow-out vent, please see the table below taken from standard EN837-2:

Measured fluid LIQUID				
Case filling	Nothing		Damping liquid	
DN	<100		<100	
Range (bar)	≤25	>25	≤25	>25
Safety	0	0	S1	S1

Measured fluid GAS or VAPOUR				
Case filling	Nothing		Damping liquid	
DN	<100		<100	
Range (bar)	≤25	>25	≤25	>25
Safety	0	S2	S1	S2

0= gauges without blow-out vent
S1= gauges with blow-out vent
S2= safety pattern gauge without baffle wall

Operating pressure - This instrument is designed to operate at a static pressure of up to 75% of the scale range. When dynamic or pulsating pressure is involved, 66% of the scale range must not be exceeded. For ranges < 1 bar, steps must be taken to prevent a vacuum from occurring accidentally that exceeds the absolute value for the instrument's operating range.

When gaseous fluids are involved in the system it is advisable to use a nominal scale range that is twice the operating range.

Chemical compatibility - The chemical compatibility between the process fluid and the wetted parts materials, and between the atmosphere and the exposed parts material should be verified. An IP65/67 protection level is recommended for better protection.
This mechanical construction may be used with process fluids which are compatible with AISI316L stainless steel.
In all other cases, it is recommended to use an assembling of a pressure gauge and a diaphragm seal provided that the diaphragm's wetted parts material is suitable for the system.

Overpressure – The maximum overpressure values are shown in the table below:

Overpressure %		
≤100 bar	*≤600 bar*	*> 600 bar*
25	15	10
Values are expressed as a percentage of full-scale		

Ambient pressure - This instrument is designed to work at atmospheric pressures between 0,8 and 1,1 bar A.
Maximum Permissible Pressure of an Assembly - The maximum Permissible Pressure (PP) of an Assembly is determined by the PP of every component. To calculate the PP of an assembly, simply select the lesser value of the components. For safe operation, the PP of the assembly should not be exceeded.
To determine the maximum allowable pressure of a standard product please consult the data sheet available on the website www.nuovafima.com. For products not included in the NUOVA FIMA catalogue, please refer to the contractual documents.

Protection level –CEI EN 60529 standard. It refers to the condition of an airtight sealed ring, with built-in caps properly positioned. Values are shown in the table below:

Version	**IP rating** *(instrument case)*
2M2	IP 55 *(Not fillable PN≤6bar)*
2N2	IP 65/67 *(Filled)* *(Not fillable PN>6bar)*
2N0	IP 65/67 *(Filled)*

Liquid-filled Cases - Liquid filling is generally used to dampen the vibrations of the parts in motion due to vibrations and/or pulsations. Great care must be taken in choosing the damping liquid for instruments used with oxidising media such as oxygen, chlorine, nitric acid, hydrogen peroxide, etc. In the presence of oxidising agents, the risk of chemical reaction, ignition and explosion of the instrument is possible.
To prevent damping liquid leakage, instruments are made and delivered, and sealed. Particular care must be taken in terms of the nature of the filling liquid used and the limitations of use in terms of ambient temperature.

Filling liquid	*Ambient temperature*
Glycerine 98%	0...60°C
Silicone oil	-20...60°C
Fluorurate fluid	-20...60°C

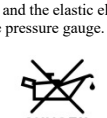
Temperature - Regardless of the assembly material or welding between the connection and the process and between the Bourdon tube and the final part, it is not advisable to use pressure gauges at temperatures exceeding 65°C. It is recommended to use a syphon when the pressure gauge is used with steam or high-temperature liquid media. A syphon or similar device should always be mounted close to the instrument and filled with condensed fluid before pressurising the system, to prevent the hot fluid from reaching the instrument when pressure is risen for the first time. The fluid should not be allowed to freeze or crystallise inside the measuring element. However, if the instrument is used for measuring high-temperature peaks, it is advisable to use a hose with an inner diameter measuring at least 6 mm to connect it to the pressure coupling. A hose which should be about 1.5-2 metres long, reduces the operating temperature to the ambient temperature. If a small section hose cannot be used because of the process fluid type, it is often necessary to insert a diaphragm seal between the process fluid and the instrument, provided that the transmission fluid is compatible with the temperature of the process fluid.

9. Wrong uses

- Systems containing compressed gas **(1) (7)**
- Systems containing oxygen **(2)**
- Systems containing corrosive fluids in a liquid or gaseous state **(3)**
- Systems subject to dynamic or cyclical pressures **(4)**
- Systems in which overpressures may accidentally be applied or in which low-pressure gauges may be installed on high-pressure couplings **(1)**
- Systems in which interchangeable pressure gauges may give rise to dangerous contamination **(2)**
- Systems containing toxic or radioactive fluids in a liquid or gaseous state **(2)**
- Systems which produce mechanical vibrations **(5)**
- Systems containing combustible/inflammable fluids **(6)**
- Systems containing vapour pressure **(7)**

Overpressure Failure (1) - When internal pressure is higher than the rated limits of the measuring element and when a low-pressure gauge is installed on a high-pressure system, a failure may occur the effects of which are generally more serious and unpredictable in compressed gas applications because the instrument may explode and fragments may be projected in all directions. The opening of the case safety device cannot always prevent the fragments from being projected all around.
It is generally accepted that an instrument provided with a solid front and blow-out back prevents fragments from being projected toward the operator standing in front of the instrument. Overpressure pulses of short duration (spikes) may occur in pneumatic or hydraulic systems, especially when valves are opened or closed. The amplitude of such pulses can be much higher than the operating pressure. Since spikes are extremely fast it is unlikely for the operator to read them on the instrument so he cannot be aware of them. As a result, the instrument may be damaged permanently or a permanent zero error may occur.

Failure for explosion (2) - When thermal energy is badly released because of a chemical reaction, such as adiabatic compression of oxygen in the presence of hydrocarbons, the instrument may explode. It is generally accepted that the effects of this type of failure cannot be prevented. Even the use of solid-front instruments cannot prevent the fragments from being projected in all directions.
- Pressure gauges suitable for use with oxygen are marked "Oxygen - Use no Oil" and/or with a crossed oil can symbol on the dial. Instruments are supplied already washed, degreased and packaged in polyethylene bags. The user should take the necessary precautions to ensure that the connection and the elastic element are kept clean after unpacking the pressure gauge.



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Corrosion Failure (3) - This condition may develop when the sensing element materials are subjected to a chemical attack coming from the substances composing the fluid to be measured or from the atmosphere surrounding the pressure system.
When this kind of failure occurs, fluid starts leaking locally in spots or a fatigue crack starts developing because of the material weakening. The sensing element is subjected to a strong mechanical stress because it is usually quite thin. Therefore, it should be chemically compatible with the media to measure. None of the most common materials is immune from a chemical attack which power can be influenced by concentration, temperature and the type of mix of chemical substances.

Fatigue Failure (4) - When the instrument is under mechanical stress because of pressure, a small crack from the inside to the outside, generally along an edge of the instrument, develops. Such a failure is even more dangerous when the medium is a compressed gas rather than a liquid. Fluid may gradually leak because of fatigue failures. Therefore, when pressure increases inside the case, the vent valve opens. When measuring high pressures, the process operating pressure may be to the maximum permissible stress limit and an explosion may occur.

Vibration Failure (5) - Most commonly the instrument's parts in motion are completely worn out by vibrations which cause a progressive accuracy loss and, subsequently, the pointer stops working permanently.

Fatigue Failure induced by vibrations(5) – Large amplitude vibrations may cause fatigue cracks in the structure of the measuring element. In this case the fluid leakage may be slow or fast or even explosive.

Crack Failure (6) – When the instrument is used unproperly or the sensing element is cracked or broken, when the process fluid is combustible or flammable, the instrument shouldn't operate because an explosive atmosphere may develop inside and around the instrument case. It is extremely important that the worn-out parts of the instrument are replaced in order to prevent fluid leakages.

Temperature (7) - The temperature inside and on the surface of the instrument may increase significantly because of the rapid compression of the gas in the process, or of an impact wave in the process liquid. Internal overheating caused by adiabatic compression or by an impact wave can lead to spontaneous combustion of the fluids measured, or to the ignition of the explosive atmosphere outside the case. The surface temperature should not exceed the correct limit set for the temperature class required in the area where the instrument is operating.

10. Transport

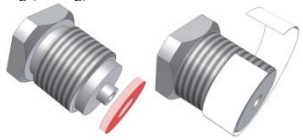
Although properly packaged, instruments' features might be affected during transport, a check before use is strongly recommended.
It is possible to check if the calibration is correct by isolating the instrument from the process through an interception valve and verifying that, after having the pipe drained, the pointer stops within the zero sign (unless the temperature is very different from 20°C)
If the pointer misses the zero it means that the instrument is severely damaged and has to be inspected.

11. Storage

Instruments must remain in their original packages until installation and should be stored indoors and protected from humidity. When instruments are packaged in special containers such as tar paper-wrapped wooden boxes or moisture barrier bags, it is preferable to store them indoors, protected from the atmospheric agents. Containers' conditions must be checked every 3-4 months especially if they are stored outdoors. The storage area temperature should be between -20 and 65 °C, unless otherwise specified in the relevant catalogue sheets.

12. Installation

MGS18 DN63 pressure gauges ATEX versions 2M2, 2N2 and 2N0 must be installed in compliance with European Standard EN 837-2, and special care must be taken to prevent mechanical connections from being slack.
The instrument should be installed far from magnetic and electromagnetic induction, ionising radiation, ultrasound and sunlight to prevent the increase of the instrument's surface temperature.
To facilitate removal for maintenance purposes, a shut-off valve can be installed between the pressure gauge and the plant. The pressure connection must be watertight. If the pressure connection has a cylindrical thread, the seal is achieved using an O-ring clamped between the two flat sealing surfaces, one on the pressure connection and the other on the instrument's process connection. If the pressure connection has a tapered thread, the seal is achieved by simply screwing the connection onto the coupling, through the mating of the threads. It is common practice to wrap PTFE tape around the male thread before coupling (see Fig).



In both cases, the torque must be applied using two hexagonal spanners, one on the flat faces of the instrument/process coupling and the other on the pressure connection.
Do not tighten forcing on the case as this may damage the instrument.
When pressurising the system for the first time, check the tightness of the connection seal. All instruments must be mounted in such a way that the dial is vertical unless otherwise indicated on the dial itself. When the instrument includes a safety device, this must be at least 20 mm from any other object. - For wall or panel mount instruments, make sure that the pipe conveying the pressurised fluid is connected to the instrument coupling without exerting torsion or force.
Effect of liquid columns - The user should be aware that, when the instrument is loaded by a liquid column, calibration is required to compensate for this effect. This event may occur when the instrument is mounted above or below the pressure connection but not when gas or steam are involved. However, installing the instrument above the pressure connection is recommended.
Ventilation - The case must be ventilated as recommended in the instructions shown on the tag supplied with the instrument.
Temperature - See Temperature paragraph
Adiabatic compression - For gaseous fluids which compress rapidly, the rate of pressure change must be lowered until the maximum surface temperature falls to the permissible range. When gaseous fluids are involved pressure must be increased as slowly as possible. Suitably sized bottlenecks or shock absorbers must be installed until 1 sec. raise time is reached through pressure steps of 80% of the full range value. If pressure on the line is likely to fluctuate, a suitable pressure-limiting device must be installed upstream of the pressure gauge.
Mechanical stress - Pressure gauges must not be affected by mechanical stress. If the installation points are affected by mechanical stress, the instrument must be installed remotely and connected via flexible hoses. - The instruments selected must be wall or panel mount type.
Vibrations - When the pressure gauge support is affected by vibrations, various solutions may be considered, such as:
a) the use of liquid-filled gauges; b) if vibrations are strong or irregular, the instruments must be mounted remotely and connected via flexible hose or tubing.
The presence of vibrations is shown by continuous, often irregular fluctuations of the pointer.
Dynamic and cyclical pressures – They generally occur when instruments are mounted on pumps and/or when gaseous fluids are involved. The sensitive element's life and the pressure gauge's amplified motion are significantly reduced and over temperatures develop. This kind of pressure is visible when the pointer oscillates widely. They must be reduced by fitting shock absorbers or bottlenecks between the pressure source and instrument, especially when working with combustible or flammable fluids. Filling the case with a damper liquid can also reduce the harmful effect of pulsations on the pressure gauge's parts in motion.
Overpressure - Overpressures stress the measuring element reducing its life and accuracy. It is therefore always advisable to choose an instrument whose full-scale pressure is wider than the maximum operating pressure to overcome overpressures and pressure surges. Pressure surges can be handled in the same way as pulsating pressures. Overpressures of longer duration can be handled by installing a pressure-reducing valve on the pressure gauge line. Even a single overpressure event can result in an overpressure failure.
Equipotentiality – The instrument has to be made equipotential to the system where it is installed through an Ohmnic contact between the threaded process connection and the system connection which has to be a metallic one and connected to the ground.

13. Accessories

Diaphragm seals: They are required to transmit the pressure produced by corrosive, hot, high viscosity or crystallisable process fluids. See the instruction manual concerned: MGS9.

14. Use

The user must be aware of the risks related to the chemical and physical characteristics of gases, vapours, and/or dusts in the system, and carry out a thorough preliminary check before commissioning.
Commissioning – Commissioning of the instrument must always be carried out with extreme care to prevent pressure surges or sudden temperature changes. **Shut-off valves must be opened slowly.**
Intermittent measuring - It is advisable to perform the measuring by slowly opening the shut-off valve and then closing it again once the reading has been taken. This will ensure a long life and safe operation of the instruments.
It is not advisable to use the instruments for measuring pressures near zero, as in that range the accuracy tolerance may represent a significant percentage of the applied pressure. For this reason, these instruments should not be used for measuring residual pressures inside large containers such as tanks, surge tanks, and alike. Such containers may retain pressures which may be dangerous for the operator, even when the instrument indicates a zero pressure. It is recommended to install a ventilation device on tanks to achieve zero pressure before removing covers or connections or performing similar tasks.
It is not advisable to install additional instruments on systems containing different operating media, to prevent the wetted parts from getting contaminated because chemical reactions as well as an explosion may develop.
Caps - The filling and vent caps must not be removed while the system is working.

15. Possible malfunctions

- **Indication remains on the same value**: Pressure pipes clogged. The initial valve closes.
- **Indication remains outside the graduated scale**: Excess pressure – temporary or permanent reading error.
- **Indication error exceeds the one declared for the instrument**: Calibration altered.
- **Pointer oscillates rapidly**: Harmful pulsations in the process fluid. Harmful mechanical vibrations.
- **Ejection of the safety cap**: Excess Temperature: the sensitive element is likely to break or crack.

16. Maintenance

Maintenance of the original mechanical and construction characteristics must be ensured using a specific maintenance programme, drawn up and managed by qualified technicians. Mechanical parts must be maintained to prevent damages for high temperatures, and the risk of fire and explosion due to malfunctions.

General check - The window must not be cracked. The filling plug and blow-out vent must be placed in the right position. The pointer must be within the graduated scale.

Routine check – Instruments used on plants operating in severe working conditions (vibrations, pulsating pressures, corrosive or combustible/flammable fluids) should be replaced according to the maintenance programme. The state of the sensing element should be checked every 3/6 months, as well as the indication accuracy, the level of corrosion of the sensing element (for fluid diaphragm) the seal on the gaskets, and the presence of condensation inside the case. If the instrument does not operate properly, an extra check is advisable.
Dust deposits on the instrument should not be thicker than 5mm otherwise they must be removed and the instrument cleaned employing a cloth soaked in a water and soap solution.
Removal - Instruments should be isolated from the system by closing the root valve. Pressure remaining inside the instrument must be reduced to zero by opening the vent in the system. The process fluid remaining in the instrument process connection must not be disposed of in the environment. Dangerous and toxic fluids must be handled with care.
Detailed check – The testing fluid should be compatible with the fluid to be measured in the pressurised system. To ensure that the sensing element is undamaged, fit the instrument on a pressure generator, and provide a shut-off valve between the two devices. Submit the instrument to the maximum pressure allowed and disconnect it from the pressure source by closing the shut-off valve. If leaks occur on the sensing element, the pointer will slowly return to zero. To check the accuracy in indication, a stable pressure should be generated in the laboratory and applied to the instrument and to a laboratory pressure gauge or primary pressure gauge. The accuracy of the latter must be 4 times higher than the nominal accuracy for the instrument being checked. The values shown by the two instruments during the pressure rise and fall allow us to establish the non-linearity, the hysteresis, and the repeatability of the instrument under test.
Check the gaskets' condition and the IP protection level.

Recalibration – If values differ from the nominal values shown in the catalogue after the calibration check, the instrument must be recalibrated. We recommend returning the instrument to NUOVA FIMA for recalibration through the **Product Return Service**.

NUOVA FIMA does not accept any responsibility for the misuse of the instruments or instruments operating in non-authorised working conditions. In this case, the CE Declaration of Conformity and Contractual Guarantee is no longer valid.

17. Disposal

Before disposal, windows and caps should be removed and disposed of as aluminium and stainless steel. The fluid remaining inside the instrument may be dangerous or toxic.

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DICHIARAZIONE UE DI CONFORMITÀ
EU DECLARATION OF CONFORMITY
Direttiva 2014/34/UE – *Directive 2014/34/EU*

Apparecchi e sistemi di protezione destinati ad essere utilizzati in atmosfera potenzialmente esplosiva

Equipment and protective systems intended for use in potentially explosive atmospheres.

NUOVA FIMA s.r.l. dichiara sotto la propria responsabilità che i manometri a molla tubolare in esecuzione 2M2, 2N2 e 2N0 di seguito elencati sono in accordo con la direttiva

NUOVA FIMA s.r.l. declares on its sole responsibility that the following bourdon tube pressure gauges 2M2, 2N2 and 2N0 version comply with the above-mentioned directive

Modello Model	***DN DS***	***Campo Range***	***Tipo custodia Case type***	***Versione Version***	***Marcatura estesa Extended marking***	***Marcatura ridotta * Reduced marking ****
MGS18	63	≤ 6 bar	Non riempibile *Not fillable*	2M2	**II 2G Ex h IIB T6...T1 Gb -20°C ≤ Ta ≤ 60°C**	**II 2G Ex h X**
		> 6 bar	Non riempibile *Not fillable*	2N2	**II 2G Ex h IIB T6...T1 Gb II 2D Ex h IIIB T85°C...T450°C Db -20°C ≤ Ta ≤ 60°C**	**II 2GD Ex h X**
		Tutti *All*	Riempita *Filled*			
		Tutti *All*	Riempita *Filled*	2N0	**II 2G Ex h IIB T6...T1 Gb II 2D Ex h IIIB T85°C...T450°C Db 0°C ≤ Ta ≤ 60°C**	**II 2GD Ex h X**

* Per esigenze di spazio sul quadrante dei manometri, la marcatura può essere ridotta in accordo al punto 11.4 della norma UNI CEI EN ISO 80079-36 :2016
** Due to space reduction on the dial of DN63 pressure gauges, the marking may be reduced according to point 11.4 of regulation UNI CEI EN ISO 80079-36:2016*

Norme di riferimento - *Reference standards*

- UNI EN 1127-1:2019
- UNI CEI EN ISO 80079-36:2016
- UNI CEI EN ISO 80079-37:2016

Il fascicolo tecnico è depositato presso l'Organismo Notificato:
The technical file is recorded at the following Notified Body: **ICIM – 0425(CERT.0425ATEX 005517-00)**

Il fascicolo tecnico è denominato:
The technical file is named: **TF1**

La revisione e la data di revisione sono:
The revision number and the revision date are: ***Rev.4 – 09/06/2022***

Il controllo della fabbricazione interna degli strumenti è assicurato dal Sistema Qualità secondo ISO 9001:2015 operante in azienda e certificato da ICIM SpA.

The internal manufacturing process of the instruments is controlled and guaranteed by the current company Quality System according to ISO 9001:2015 and certified by ICIM SpA.

Invorio, 04/01/2023

Responsabile ATEX-*ATEX Responsible*
F.Zaveri