

1. INTRODUCTION

Throughout this manual there are a number of HAZARD WARNINGS that must be read and adhered to in order to prevent possible personal injury and/or damage to equipment. Three signal work "DANGER", "WARNING" and "CAUTION" are used to indicate the severity of a hazard, and are preceded by the safety alert symbol.

Danger Denotes the most serious hazard and is used when serious injury or death WILL result from misuse or failure to follow specific instructions.

Warning Used when serious injury or death MAY result from misuse or failure to follow specific instructions.

Caution Used when injury or product/equipment damage may result from misuse or failure to follow specific instructions.

Caution It is the responsibility and duty of all personnel involved in the installation, operation and maintenance of the equipment on which this device is used, to fully understand the procedures by which hazards can be avoided.

The compatibility of the product is the responsibility of the person who designs the equipment or decides its specifications.

Only personnel with appropriate training should operate machinery and equipment.

Do not service or attempt to remove the machinery or equipment until safety is confirmed.

2. DESCRIPTION

These pressure gauges are used for measuring pressure in hazardous areas of industrial applications by means of resilient Bourdon tube pressure elements

The measuring characteristics are in accordance with the EN 837-1 standard

3. OPERATION

Bourdon gauges usually consist of an elliptical section tube whose axis is arranged along a circumference (but can also be wound more than 360°, and therefore take the form of a spiral), called the Bourdon tube.

The Bourdon tube tends to increase its radius of curvature as the pressure inside it increases; the measurement of the radius gives the measurement of the pressure. In practice, the tube is connected to one end with a fixed point, connected to the measurement environment; the other end is connected to a leverage (see fig. 1) which amplifies its movement, and translates it into the circular movement of a pointer along a graduated scale.



1. Bourdon tube
2. connection
3. end of tube
4. leverage
5. pointer
6. graduated scale

5. TECHNICAL FEATURES

Media: compressed air, inert gases, sweet and sour gases, liquids

Size: 40mm, 50mm, 63mm, 100mm

Connection: 1/8" – 1/4" NPT, backside

Working Range: 75% of full scale value

Accuracy: 2,5%

Materials: Case: AISI304 (MBSN, MBSS) AISI316 (MBS6)

Threaded connection: nickel plated brass (MBSN)

AISI316/316L (MBSS, MBS6)

Movement: copper alloy OT59 (MBSN),

AISI316 (MBSS, MBS6)

Pointer: black aluminum

Dial: painted aluminum

TYPE	TEMPERATURE			
	TRANSPORT	STORAGE	OPERATING	PROCESS
MBSN	-25°C...+65°C	-25°C...+65°C	-25°C...+65°C	400°C max
MBSS, S6	-55°C...+90°C	-55°C...+90°C	-55°C...+90°C	400°C max

Warning With gaseous media, the temperature may increase as a result of compression warming. In these cases it may be necessary to throttle the rate of change of pressure or reduce the permissible medium temperature.

The permissible medium temperature does not only depend on the instrument design, but also on the ignition temperature.

6. TRANSPORTATION & STORAGE

The preferred storage location is a clean, dry and protected warehouse. If the components have to be stored outside, precautions should be taken to keep gauges clean and dry. For storage temperatures, refer to the table in paragraph "TECHNICAL FEATURES".

7. INSTALLATION

Caution Before performing any work, read this manual and study all figures. Assure yourself that you understand and you can do what is required in each step. Failure to follow these instructions may affect quick release valve operation and may result in exposure to personal injury.

Warning Physical injuries and damage to property and the environment caused by media escaping under high pressure: with the pressurisation of the instrument, as a result of poor sealing of the process connection, media under high pressure can escape. Due to the high energy of the media that can escape in the event of a failure, the possibility of physical injuries and damage to property exists.

The sealing of the process connection must be carried out expertly and checked for leak tightness.

- Depending on the application, the instrument should be filled with the medium before screwing in, in order to ensure it functions properly.

- After installation, cut the rubber plug to avoid overpressure

- For outdoor applications, the selected installation location has to be suitable for the specified ingress protection, so that the pressure gauge is not exposed to impermissible weather conditions.

- In order to avoid any additional heating, the instruments must not be exposed to direct solar irradiation while in operation!

Requirements for the installation point: if the line to the measuring instrument is not adequately stable, an instrument bracket should be used for fastening (and possibly via a flexible capillary). If vibrations cannot be avoided by means of suitable installation, instruments with liquid filling should be used.

The instruments should be protected against coarse dirt and wide fluctuations in ambient temperature.

Warning Physical injuries and damage to property and the environment can be caused by the back or blowing out or breakage of front glass in the event of a failure. Due to the high energy in the back, if it is blown out in the event of a failure, there is a risk of physical injuries or damage to property through the ejected back and the media that would then escape. Due to high energy in the front, the glass can break and there is a risk of physical injuries or damage to property. It must be ensured that at no time can personnel or objects be at the rear of the instrument.

8. MOUNTING

In accordance with the general technical regulations for pressure gauges (e.g. EN 837-2 "Selection and installation recommendations for pressure gauges"), instruments must be grounded via the process connection. This is why electrically conductive sealing should be used at the process connection. Alternatively, take other measures for grounding. Measures for grounding applied ex works (e.g. welding spots or fuse plates) must therefore be used to integrate the devices into the equipotential bonding system and must not be removed under any circumstances. Ensure that the measures for grounding are reinstalled after dismounting (e.g. replacing the device).

The torque depends on the sealing used. In order to orientate the measuring instrument so that it can be read as well as possible, a connection with LH-RH union or union nut should be used. When a blow-out device is fitted to a pressure gauge, it must be protected against being blocked by debris and dirt.

9. MAINTENANCE

A. Ordinary maintenance

The instruments are maintenance-free. The indicator and switching function should be checked once or twice every year. For this the instrument must be disconnected from the process to check with a pressure testing device. Repairs must only be carried out by the manufacturer or appropriately qualified skilled personnel

B. Troubleshooting

Issue	Possible Cause	Fixes
No pointer movement despite change in pressure	Movement blocked	Replace instrument
	Pressure element defective	
	Pressure port blocked	
After de-pressurisation, the pointer remains just above the 0 point	Friction in the movement	Tap lightly on the case
	Instrument was overloaded	Replace instrument
	Material fatigue of the pressure element	
The pointer remains outside the zero point tolerance after installation and depressurisation.	Instrument not mounted in nominal position.	Check the mounting position
	Transport damage (e.g. non-permissible shock loading)	Replace instrument
Instrument outside the accuracy class.	Instrument was operated outside of permissible performance limits.	Check the observance of the operating parameters of app. Replace instrument.
Vibration of the pointer.	Vibrations in the application	Use instrument with case filling.
Mechanical damage (e.g. window, case).	Improper handling	Replace instrument

10. LABEL



11. MARKING ACORDING TO 2014/34/UEAtex

II 2G Ex h IIC T6/T5 Gb X



II 2D Ex h IIIC T85°C/T100°C Db X

For using these equipment in potentially explosive atmospheres, it is recommended - for the installation and the maintenance operation - to use tools and instruments that can produce only a single spark (for instance: screwdrivers, spanners). Avoid use of tools that can produce sparks like disk saw or grinder

Action must be taken to put to earth the units through a suitable connection, checking that all the metal components (fittings and pipe line) have to be equitably potential. Equipment have to be installed in the corresponding zone according to the marking.

NOTE: special conditions for safe use (X conditions)

1. All accessories (e.g. valves or attachment components) must be assessed in combination with the delivered instruments by the end user.
2. The operator must recognise ignition hazards and take suitable protective measures.
3. The legibility of the marking must be observed during time in use but at least during inspection periods of three years.
4. For instruments with marking pointer, ensure that there are no electrostatic charging mechanisms at the marking pointer.
5. Avoid any kind of external impact. External impacts can generate sparks through friction processes between different materials.
6. The filling/refilling of instruments by non-authorized personnel

Dichiarazione di conformità UE

In accordo con la Direttiva Europea 2014/34/UE

EU-Declaration of Conformity

In accordance with Directive 2014/34/EU

Noi, Sitecna Srl, dichiariamo che i seguenti prodotti / Sitecna Srl declares that the following equipment:

Product	mod.	Product	mod.	Product	mod.
Filter	F...	Volume Booster	VB...	Flow regulator	RFB..., RFU...
Regulator	R...	Control spool valve	DP...	Glass tube flowmeter	FLGSS...
Filter Regulator	FR...	Quick exhaust valve	VSR...	Vacuum pump	ST-VP...
Back Pressure valve	BP	Lock-up valve	LK...	Silencer	SLHF..., SLVP..., SLSC...
2 ways switching valve	SV...	Overload protector	SCLP...	Dust excluder	PV..., PVSL...
3 ways switching valve	S3...	Tee Filter	TF	Pressure gauge	MBSS..., MBS6..., MBSN...

Sono conformi alla normativa di armonizzazione dell'Unione / They comply with the Union harmonization legislation:

Direttiva 2014/34/UE ATEX	Direttiva 2014/34/UE del Parlamento europeo e del Consiglio, del 26 febbraio 2014, concernente l'armonizzazione delle legislazioni degli Stati membri relative agli apparecchi e sistemi di protezione destinati a essere utilizzati in atmosfera potenzialmente esplosiva (rifusione) Testo rilevante ai fini del SEE.
	Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014 on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres (recast) Text with EEA relevance.

Secondo le seguenti Norme di riferimento / As per following reference Normative Documents:

EN ISO 80079-36:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Metodo di base e requisiti
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Basic method and requirements
EN ISO 80079-37:2016	Atmosfere esplosive - Apparecchi non elettrici per atmosfere esplosive - Tipo di protezione non elettrica per sicurezza costruttiva "c", per controllo della sorgente di accensione "b", per immersione in liquido "k"
	Explosive atmospheres - Non-Electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"
N 1127-1:2011	Atmosfere esplosive - Prevenzione dell'esplosione e protezione contro l'esplosione - Concetti fondamentali e metodologia
	Explosive atmospheres - Explosion prevention and protection - Basic concepts and methodology

Ai sensi della Direttiva 2014/34/EU, i prodotti sopra indicati riportano la seguente marcatura / According to the Directive 2014/34/EU, above mentioned products reports the following marking:



II 2G Ex h IIC T6/T5 Gb X
II 2D Ex h IIIC T85°C/T100°C Db X

Inoltre, ai sensi della direttiva 2014/34/UE, i prodotti sopra menzionati sono oggetto, per gli aspetti relativi sia alla progettazione sia alla fabbricazione, al controllo interno di fabbricazione (Allegato VIII – Modulo A). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.

In conformity to Directive 2014/34/EU, the afore mentioned equipment, regarding their design and production, are object to internal manufacturing check (Attachment VIII – Module A). Ref 557/Ex-Ab 3213/20 c/o N° 0035 TÜV Rheinland.

La presente dichiarazione di conformità è rilasciata sotto la responsabilità esclusiva del fabbricante.

This declaration of conformity is issued under exclusive responsibility of the manufacturer.

Milan, 20/05/2020
 Davide Matteo De Corrado
 Managing Director

