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## Pressure gauge model 2 NS 63 per ATEX directive



II 2 GD c TX X



Part of your business

Declarations of conformity see [www.wika.com](http://www.wika.com)  
 Specifications: See data sheet at [www.wika.de](http://www.wika.de)  
 Subject to technical modifications.  
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### 1. General information

- The pressure gauge described in the operating instructions has been designed and manufactured using state-of-the-art technology.
- All components are subject to stringent quality and environmental criteria during production. Our management systems are certified to ISO 9001 and ISO 14001.
- These operating instructions contain important information on handling the pressure gauge. Working safely requires that all safety instructions and work instructions are observed.
- Observe the relevant local accident prevention regulations and general safety regulations for the instrument's range of use.
- The operating instructions are part of the product and must be kept in the immediate vicinity of the instrument and readily accessible to skilled personnel at any time.
- Skilled personnel must have carefully read and understood the operating instructions, prior to beginning any work.
- The manufacturer's liability is void in the case of any damage caused by using the product contrary to its intended use, non-compliance with these operating instructions, assignment of insufficiently qualified skilled personnel or unauthorised modifications to the pressure gauge.
- The general terms and conditions, contained in the sales documentation, shall apply.
- Subject to technical modifications.
- Further information:
  - Internet address: [www.wika.de](http://www.wika.de) / [www.wika.com](http://www.wika.com)
  - Relevant data sheet: PM 02.02, PM 02.04, PM02.12, PM 02.24

#### Explanation of symbols



#### WARNING!

... indicates a potentially dangerous situation, which can result in serious injury or death, if not avoided.



#### Information

... points out useful tips, recommendations and information for efficient and trouble-free operation.



#### WARNING!

... indicates a potentially dangerous situation in the hazardous area, resulting in serious injury or death, if not avoided.

### 2. Safety



#### WARNING!

Before installation, commissioning and operation, ensure that the appropriate pressure gauge has been selected in terms of measuring range, design and specific measuring conditions.

The compatibility of the materials under pressure with the medium must be checked!

In order to guarantee the measuring accuracy and long-term stability specified, the corresponding load limits must be observed.

Non-observance can result in serious injury and/or damage to equipment.



Further important safety instructions can be found in the individual chapters of these operating instructions.

#### 2.1 Intended use

These pressure gauges are used for measuring pressure within hazardous areas in industrial applications.

The pressure gauge has been designed and built solely for the intended use described here, and may only be used accordingly.

The manufacturer shall not be liable for claims of any type based on operation contrary to the intended use.

#### 2.2 Personnel qualification



#### WARNING!

#### Risk of injury should qualification be insufficient!


Improper handling can result in considerable injury and damage to equipment.


- The activities described in these operating instructions may only be carried out by skilled personnel who have the qualifications described below.

#### Skilled personnel

Skilled personnel are understood to be personnel who, based on their technical training, knowledge of measurement and control technology and on their experience and knowledge of country-specific regulations, current standards and directives, are capable of carrying out the work described and independently recognising potential hazards.

### 2.3 Safety instructions for pressure gauges per ATEX

 **WARNING!**  
Non-observance of these instructions and their contents may result in the loss of explosion protection.

 **WARNING!**  
It is imperative that the application conditions and safety requirements of the EU-type examination certificate are followed.

- Pressure gauges must be grounded via the process connection.

#### Permissible ambient temperature.

Model 232/262/PG23CP: -40 ... +60 °C (unfilled)  
 Model 233/263/PG23CP: -20 ... +60 °C (glycerine filling)  
 -40 ... +60 °C (silicone oil filling)

**Attention!** In the case of gaseous media, the temperature may increase due to compression warming. In these cases it may be necessary to throttle the rate of change of pressure or reduce the permissible medium temperature.

#### Permissible medium temperature

The permissible medium temperature not only depends on the instrument design, but also on the ignition temperature of the surrounding gases, vapours or dusts. Both aspects have to be taken into account.

#### Potentially explosive gas atmosphere

Required temperature class (ignition temperature of gas or vapour)	Maximum permissible medium temperature (in the measuring system)	
	Models 232, PG23CP (dry gauges)	Models 233, PG23CP (liquid-filled gauges)
T6 (T > 85 °C)	+70 °C	+70 °C
T5 (T > 100 °C)	+85 °C	+85 °C
T4 (T > 135 °C)	+120 °C	+100 °C
T3 (T > 200 °C)	+185 °C	+100 °C
T2 (T > 300 °C)	+200 °C	+100 °C
T1 (T > 450 °C)	+200 °C	+100 °C

#### Hazardous dust atmosphere

For dusts, the procedure specified in ISO/IEC 80079-20-2 for determining the ignition temperature has to be applied. The ignition temperature is determined separately for dust clouds and dust layers, respectively. For dust layers, the ignition temperature depends on the dust layer thickness per IEC/EN 60079-14.

Ignition temperature of dust	Maximum permissible medium temperature (in the measuring system)
Dust cloud: $T_{Cloud}$	$< 2/3 T_{Cloud}$
Dust layer: $T_{Layer}$	$< T_{Layer} - 75 K$ – (Reduction depending on the layer thickness)

The permissible maximum medium temperature must not exceed the lowest determined value, even in case of a malfunction.


#### Handling of materials

Avoid handling of materials that react dangerously with the materials used for the instrument, and substances liable to spontaneous combustion.


#### Cleaning

Clean the measuring instrument with a moist cloth. Ensure that due to the cleaning no electrostatic charge will be generated.


### 2.4 Special hazards

 **WARNING!**  
For hazardous media such as oxygen, acetylene, flammable or toxic gases or liquids, and refrigeration plants, compressors, etc., in addition to all standard regulations, the appropriate existing codes or regulations must also be followed.

From pressure gauges which do not correspond to a safety version per EN 837 highly pressurised media might leak out through the possibly bursting window in case of a component failure.

 For gaseous media and operating pressures > 25 bar a pressure gauge with safety version S3 is recommended per EN 837-2.

For additional important safety instructions see chapter "2.3 Safety instructions for pressure gauges per ATEX".

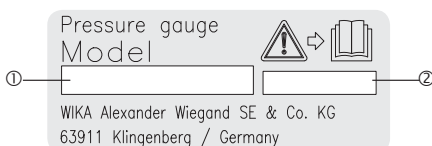
 **WARNING!**  
Residual media in dismantled pressure gauges can result in a risk to persons, the environment and equipment. Take sufficient precautionary measures.

### 2.5 Labelling / safety marks


#### Dial


- ATEX marking: II 2 GD c TX X
- Serial number

#### Product Label



- ① Model
- ② Year of manufacture

  Before mounting and commissioning the instrument, ensure you read the operating instructions!

 Instruments bearing this mark on the dial are safety pressure gauges with solid baffle wall per EN 837 (S3).

### 3. Specifications

#### Pressure limitation

Steady:	3/4 x full scale value
Fluctuating:	2/3 x full scale value
Short time:	Full scale value

#### Temperature effect

When the temperature of the measuring system deviates from the reference temperature (+20 °C): max. ±0.4 %/10 K of full scale value

#### IP Ingress protection <sup>1)</sup> (per IEC/EN 60529)

IP65, IP66

For further specifications see WIKA data sheet PM 02.02, PM 02.04, PM 02.12 or PM 02.24 and the order documentation.

1) For general use, no ATEX requirement

### 4. Design and function

#### Description

- Nominal size 63 mm
- The instruments measure the pressure by means of resilient bourdon tube pressure elements
- The measuring characteristics are in accordance with the EN 837-1 standard
- In accordance with the EN 837-1 standard, pressure gauges with "S3" marking are safety pressure gauges whose enclosing and pressurised components are designed with a solid baffle wall. Models with "S3" marking are 232.30, 233.30, 262.30, 263.30. Model PG23CP is optionally available as an "S3" variant.

#### Scope of delivery

Cross-check scope of delivery with delivery note.

### 5. Transport, packaging and storage

#### 5.1 Transport

Check pressure gauge for any damage that may have been caused by transport. Obvious damage must be reported immediately.

#### 5.2 Packaging

Do not remove packaging until just before mounting. Keep the packaging as it will provide optimum protection during transport (e.g. change in installation site, sending for repair).

#### 5.3 Storage

#### Permissible storage temperature

-40 ... +70 °C

### 6. Commissioning, operation

#### Mechanical connection

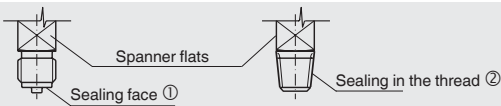
In accordance with the general technical regulations for pressure gauges (e.g. EN 837-2 "Selection and installation recommendations for pressure gauges").

Pressure gauges must be grounded via the process connection. This is why electrically conductive sealings should be used at the process connection. Alternatively, take other measures for grounding. When screwing gauges in, the force required for this must not be applied through the case, but rather through the spanner flats (using a suitable tool) provided for this purpose on the square shaft of standard connections.

Installation with open-ended spanner



For parallel threads, use flat gaskets, lens-type sealing rings or WIKA profile sealings at the sealing face ①. With tapered threads (e.g. NPT threads), sealing is made in the threads ② using suitable sealing material (EN 837-2).



The torque depends on the seal used. Connecting the gauge using a clamp socket or a union nut is recommended, so that it is easier to orientate the gauge correctly.

When a blow-out device is fitted to a pressure gauge, it must be protected against being blocked by debris and dirt.

#### Requirements for the installation point

If the measuring point is not sufficiently stable a measuring instrument support such as a bracket or flange should be used for fastening (possibly via a flexible capillary). If vibrations cannot be avoided by taking suitable measures during installation, liquid-filled instruments should be used. Instruments must be protected against coarse dirt and wide fluctuations in ambient temperature.

#### Installation

- Nominal position per EN 837-1 / 9.6.7 Figure 9: 90° ( ⊥ )
- Process connection lower mount (LM) or back mount (BM)
- After mounting, set the compensating valve (if available) from CLOSE to OPEN. The version of the vent valve depends on the model and can deviate from the illustration!
- 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!
- To ensure that the pressure can be safely vented in the case of failure instruments with blow-out device or blow-out back must keep a minimum distance of 20 mm from each object.



## Permissible ambient and operating temperatures

When mounting the pressure gauge it must be ensured that, taking into consideration the influence of convection and heat radiation, no deviation above or below the permissible ambient and medium temperatures can occur. The influence of temperature on the display accuracy must be observed.

## Permissible vibration load at the installation site

The instruments should always be installed in locations free from vibration.

If necessary, it is possible to isolate the instrument from the mounting point by installing a flexible connection line between the measuring point and the pressure gauge and mounting the instrument on a suitable bracket.

If this is not possible, the following limit values must not be exceeded:

Frequency range < 150 Hz  
Acceleration < 0.7 g (7 m/s<sup>2</sup>)

## Filling level testing

The liquid filling must be checked on a regular basis.  
The liquid level must not drop below 75 % of the gauge diameter.

## Commissioning

During the commissioning process pressure surges must be avoided at all costs. Open the shut-off valves slowly.

## 7. Maintenance and cleaning

### 7.1 Maintenance

The instruments are maintenance-free.

The indicator and switching function should be checked once or twice every year. The gauge must be disconnected from the process to check with a pressure testing device.

Repairs are only to be carried out by the manufacturer or appropriately trained skilled personnel.

### 7.2 Cleaning



#### CAUTION!

- Clean the pressure gauge with a moist cloth.
- Wash or clean the dismantled pressure gauge before returning it, in order to protect personnel and the environment from exposure to residual media.

## 8. Dismounting and disposal



#### WARNING!

Residual media in dismantled pressure gauges can result in a risk to persons, the environment and equipment.

Take sufficient precautionary measures.

### 8.1 Dismounting

Only disconnect the pressure gauge once the system has been depressurised!

When dismantling, close the compensating valve (if available).

### 8.2 Disposal

Incorrect disposal can put the environment at risk. Dispose of instrument components and packaging materials in an environmentally compatible way and in accordance with the country-specific waste disposal regulations.

## Appendix: EU declaration of conformity



### EU-Konformitätserklärung EU Declaration of Conformity

Dokument Nr.: 11575400.04  
Document No.:

Wir erklären in alleiniger Verantwortung, dass die mit CE gekennzeichneten Produkte  
We declare under our sole responsibility that the CE marked products

Typenbezeichnung: 232.30.063 + option ATEX / 233.30.063 + option ATEX /  
Type Designation: 262.30.063 + option ATEX / 263.30.063 + option ATEX

232.50.063 + option ATEX / 233.50.063 + option ATEX /  
262.50.063 + option ATEX / 263.50.063 + option ATEX

232.53.063 + option ATEX / 233.53.063 + option ATEX /  
262.53.063 + option ATEX / 263.53.063 + option ATEX

PG23CP.063 + option ATEX

Beschreibung: Druckmessgerät mit Rohrfeder  
Description: Bourdon Tube Pressure Gauge

gemäß gültigem Datenblatt:  
according to the valid data sheet: PM 02.04  
PM 02.02  
PM 02.12  
PM 02.24

die grundlegenden Schutzanforderungen der folgenden Richtlinien erfüllen: Harmonisierte Normen:  
comply with the essential protection requirements of the directives: Harmonized standards:

2014/34/EU Explosionsschutz (ATEX) <sup>(1)</sup>  
2014/34/EU Explosion protection (ATEX) <sup>(1)</sup>

EN 1127-1:2011  
EN 13463-1:2009  
EN 13463-5:2011

 II 2 GD c TX X

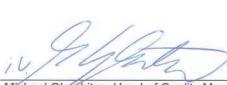
(1) Konformitätsbewertungsverfahren „interne Fertigungskontrolle“. Die Dokumentation ist hinterlegt bei benannter Stelle TÜV NORD CERT GmbH, Essen (Nr. 0044), Aktennummer 8000550026  
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Unterzeichnet für und im Namen von / Signed for and on behalf of

**WIKAI Alexander Wiegand SE & Co. KG**

Klingenberg, 2017-02-06

  
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