

Additional Safety Instructions For Level indicators Series 2000 intended for use in IECEx classified Hazardous Locations

FOREWORD

These safety instructions refer to the installation, use and maintenance of level indicators Series 2000 antifrost hermetically sealed, that have been designed, manufactured and tested for use in areas with potentially explosive atmospheres.

This safety instructions are applicable to the raceway of the level indicators, which is composed by an enclosure and its internal mechanical components (rotating flaps).

1 STOCKING AND STORAGE

All the systems, upon delivery, are specially prepared to face shipment and storage.

Namely, each device is normally provided with special protections, covers, shock-dampening plastic films, and the like devices, which shall be left where they are until installation is performed.

Moreover, the instruments shall be stored/stocked in a clean and dry place until the time they need to be installed.

2 NAMEPLATE DATA CONCERNING SAFETY

Ex MARKING:

Ex h IIC T6 Gb

Ex h IIIC T 85 °C Db

Range of ambient temperature: -50°C / +75°C

Or

Ex h IIC T5 Gb

Ex h IIIC T 100 °C Db

Range of ambient temperature: -50°C / +90°C

The equipment nameplate, in addition to the above information, also bears the manufacturer's name and address, the product code and the year of manufacture.

Model:	S/N:	Year:	IP66
Tag:	Rating:	Ambient temp.:	
Wetted Parts:	Range:	IECEX FIDI 25.0006X	
○ PS=	TS=	PT=	Ex h IIC T6 Gb ○
EquipmentType:LEVEL INDICATOR SERIES 2000 EX h IIIC T85°C Db			
WARNING - POTENTIAL ELECTROSTATIC HAZARD-SEE INSTRUCTIONS			
OFFICINE OROBICHE Srl-Via G.Paglia,22 ZANICA - ITALY			

Model:	S/N:	Year:	IP66
Tag:	Rating:	Ambient temp.:	-50/+90°C
Wetted Parts:	Range:	IECEX FIDI 25.0006X	
○ PS=	TS=	PT=	Ex h IIC T5 Gb ○
EquipmentType:LEVEL INDICATOR SERIES 2000 EX h IIIC T100°C Db			
WARNING - POTENTIAL ELECTROSTATIC HAZARD-SEE INSTRUCTIONS			
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The fields listed on the nameplate (model, tag, rating, wetted parts, range, type, series, PS, TS, PT, and Mod.) are used for identifying the pipeline containing the magnetic float, where the raceway is installed. However, this information is not related to the explosion protection and certification of the raceway itself.

Applied standards for the level indicator are:

IEC 60079-0:2017, ISO 80079-36:2016, ISO 80079-37:2016

3. INSTALLING THE LEVEL INDICATORS

In cases when the flowmeters are used in areas featuring explosion dangers, the user needs to ensure the flowmeters suits the area classification and the characteristics of the flammable substances that are found in the plant.

PLACES WHERE FLAMMABLE GASES, VAPOURS, MISTS OR POWDERS ARE FOUND

The criteria adopted for the classification of the areas featuring explosion risks are set forth in Standard IEC 60079-10. The technical requirements of the electrical systems in the classified areas are set forth in Standard IEC 60079-14.

Special instructions for the manufacturing, the testing and marking of electrical systems belonging to equipment Group II and Group III.

Based on these technical and legal provisions, the choice of the case shall also consider the following factors:

- System type: surface systems (Group II and Group III), areas with an explosive gas or dust atmosphere other than mines susceptible to firedamp.
- Area classification for explosive gas atmosphere: 0, 1, 2 (for which equipment with EPL Ga, Gb and Gc respectively are suitable)
- Characteristics of the flammable substances present in the form of gases or vapours
 - subgroup: IIA, IIB, IIC
 - temperature class: Tx (defining the gas ignition temperature)
- Characteristics of the flammable substances present in the form of dust
 - subgroup: IIIA, IIIB, IIIC
 - minimum ignition temperature of the combustible dust cloud T_{CL}
 - minimum ignition temperature of the combustible dust layer $T_{LAYER 5 mm}$

The ratings include, in addition to the functional data:

- all data required to choose the suitable type of case and its correct installation.
- The references to the IECEx Testing Laboratory (ExTL) in charge of the certification.

Legend of IECEx marking:

Ex h	Non electrical equipment for explosive atmospheres, type of protection constructional safety "c"
IIC	The equipment is suitable for use in explosive gas atmosphere, gas group IIA or IIB or IIC
T6 or T5	Temperature class of the equipment. The equipment is suitable for use in case of presence of an explosive gas atmosphere; the gas shall have a temperature class T6 or T5 (according to the actual information on the nameplate) or lower (T4, T3, T2 or T1)
EPL Gb	Equipment for explosive gas atmospheres, having a "high" Level of Protection, which is not a source of ignition in normal operation or during expected malfunctions
IIIC	The equipment is suitable for use in explosive dust atmosphere, dust group IIIA or IIIB or IIIC
T85°C or T100 °C	Maximum surface temperature of the housing for dust.
EPL Db	Equipment for explosive dust atmospheres, having a "high" Level of Protection, which is not a source of ignition in normal operation or during expected malfunctions
IECEx AB xx.yyyy	AB : mark of the IECEx Testing Laboratory that issued the certificate xx : year when the certificate was issued yyyy : certificate number

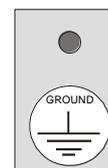
4. GROUNDING

The user shall check the grounding of the instrument at regular intervals.

Ground it through the dedicated terminal, see figure on the page.

For all units, the authorized grounding terminal indicated by the adjacent symbol shall be used:

Such terminal, equipped with a rotation and loosening prevention system, shall be connected to the general system grounding line by using a conductor that is $\geq 4 \text{ mm}^2$ in gauge.



5 PRECAUTIONS FOR USE

Maintenance shall be carried out by expert and only after having read the pertaining instructions.

When the units covered by this Technical File are installed or maintained, please observe the following guidelines:

1. Perform a risk-analysis and remove, or cut down, all potential source of firing in compliance with the requirements of the rated installation area.



2. Comply with all health and safety regulations applying to the site (classified area) where the equipment is installed, in full compliance with the employer's risk analysis.
3. Wear the statutory personal protection devices.
4. To avoid sparks of mechanical origin between the tools used for maintenance and the equipment's parts, the personnel in charge of maintaining the equipment shall be suitably trained to prevent such phenomenon.
5. Do not remove or maintain the equipment if it has not been fully depressurized, emptied and cooled down to room temperature beforehand and, wherever necessary, set free from all residues of all toxic, explosive or flammable substances possibly used.
6. Do not handle equipment that has been used in the presence of harmful substances, unless it has been fully decontaminated and certified as safe for all handling purpose.
7. To avoid the accumulation of electrostatic charges, whatever cleaning shall be exclusively carried out with antistatic or wet cloths.
8. The equipment must be installed to prevent any accumulation of electrostatic charges. It shall be protected from direct airflows causing a charge transfer.
9. In case of fluid temperature above 90°C, suitable thermal insulation between the process and the level indicator shall be installed, and/or appropriate spacing between these two items shall be achieved.
10. Avoid the accumulation of powders
11. Do not use the equipment for tasks that exceed the specified working parameters. Please contact the Technical Department of **Officine Orobiche S.r.l.** for further information on this subject.
12. Do not modify nor alter the equipment without having first consulted the manufacturer. Only use original spare parts as instructed by the manufacturer.
13. Always use suitable lifting means and methods to install, remove and maintain the equipment, and make sure it is always well supported in its final working location.
14. The final users are responsible for guaranteeing that the product is compatible with the specific application (that is pressure and type of process fluid, corrosion state, which may affect aptitude and reliability).
15. Before installing the equipment in areas that are potentially exposed to seismic activity or extreme weather conditions, please consult the Technical Department of **Officine Orobiche S.r.l.** If the equipment must be used in the presence of unstable gases, ensure that the specified working parameters are not exceeded.
16. These units are not safety devices, and shall be controlled/protected by other devices to prevent exceeding pressure and temperature values.
17. Never use flames close to the equipment, whether this is running or being maintained.
18. To safeguard tightness, with a view to preventing all powders from entering the unit, we recommend you routinely check tie rods for proper tightening.
19. To prevent potentially explosive fluids from leaking out, it is advisable to periodically check the connections for proper seal.
We further recommend you intervene immediately so as to minimize or avoid losses, also by previously and routinely replacing parts that are exposed to wear-and-tear.
20. To avoid sparks of mechanical origin to show up, owing to flanged connections coming into contact with one another, we recommend you routinely inspect tie rods for proper tightening and always provide for replacement of the seals.
21. All applications of electrical and/or electronic parts shall take place in compliance with the explosion protection requirements as set forth in the local laws and legislation.



Other specific indications are provided with the instructions for use and maintenance supplied along with the units.