Additional Safety Instructions
For instruments intended for use in rated areas

FOREWORD

These safety instructions refer to the installation, use and maintenance of "Visual indicators,
Flow metres, Level switches, Flow switches and Level Indicators/transmitters specially designed, manufactured and tested in accordance with the requirements set forth in Directive 2014/34/UE – Atex -, intended for use in areas featuring potentially explosive atmospheres.

EP housing gases and powders		**II 1 G Ex ia IIC T6 Ga** **II 1 D Ex ia IIIC T85°C Da**
WP housing gases only		**II 1 G Ex ia IIC T6 Ga**

N.B: These instructions must be observed in addiction to the instructions provided in the user's manual supplied by the manufacturer.

INSTALLING THE EXPLOSION-PROOF CASES

Fitness of the case to the installation place

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

The essential safety requirements against the risk of explosion in the classified areas are set forth in the 2014/34/UE (as regards the equipment) and 1999/92/CE dated December 16 1999 (as regards the systems).

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 EN 60079-10.

The technical requirements of the electrical systems in the classified areas are set forth in Standard EN 60079-14.

Special instructions for the manufacture, the testing and marking of electrical systems belonging to systems group II.

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

- System type: surface systems (group II)
- Area classification: 0, 1, 2 (for which units belonging to category 1(Ga), 2(Gb), 3(Gc) respectively are suitable)
- Characteristics of the flammable substances present in the form of gases, vapours, mists or powders
- subgroup: IIA, IIB, IIC
- temperature class: T6 (defining the gas ignition temperature)
- temperature class: 85 °C (defines ignition temperature of powders)

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 notified organisms in charge of the certification.

Ratings concerning safety

CE	Mark of compliance with directive 2014/34/UE and the related technical regulations
Ex	Mark of compliance with the applicable European directives
II 1	Housing for surface systems with presence of gases or vapours, category 1, suitable for zone 0. Housing for surface systems with presence of powders, category 1, suitable for zone 20
Ex ia	Protection mode: Ex ia = intrinsically safe
IIC	Case of the IIC group suitable for substances (gases) of the IIB or IIC group
IIIC	Housing of group IIIC suitable for substances (powders) of groups IIIA, IIIB and IIIC
T6	Case temperature class (maximum surface temperature) suitable to the corresponding temperature class of the flammable substance (gas)
T 85 °C	Maximum surface temperature of the housing.
EPL Ga	Ga: “very high” protection degree
EPL Da	Da: “very high” protection degree
AB xx ATEX yyy	AB : name of the laboratory that issued the CE type certificate xx : year when the certificate was issued yyy : number of type certificate
xxxx	Number of the notified organism that carried out the notification of the production system quality

Notes a) Cases of the IIC group also suit IIA and IIB environments.
b) Cases of the IIIC group also suit IIIA and IIIB environments.
c) Explosion-proof cases are envisaged for service with room temperature within the range:
-50 ÷ +60°C for temperature class T6 (gas) T85°C (powders) with limitations below dictated by the temperature limits of the switches in use.
d) The T6 temperature service housings are suitable for use for T1 to T5 levels, too.

1. DESCRIPTION

Type C, S, D housings in the EP version (fixed and swivelling) and WP (only S & D swivelling), are designed in compliance with the standards EN60079-0 (2012), EN60079-11 (2012) and EN60079-26 (2007) to be mounted on level and/or flow switches.
They can be equipped with one or two trigger units, where each one can be provided with single (SPDT) or double (DPDT) changeover contacts for monitoring and/or alarm function.

2. PLATE IDENTIFICATION

The plate is applied to each instrument/housing as shown in the figure.

PLATE EP Gases and Powders

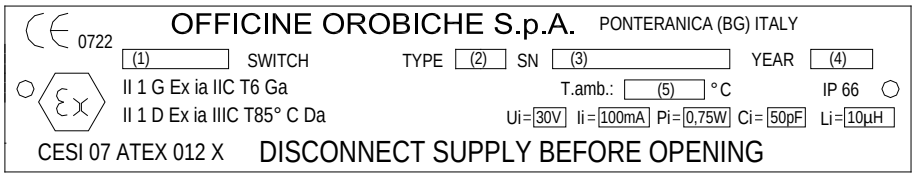
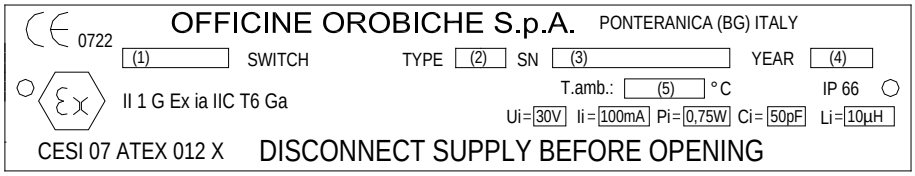


PLATE WP Gases only



The plate bears the following data:

1- "LEVEL" or "FLOW"
2- Gas-only model: "S", "D", "L"
2- Gas and Powders model: "C", "S", "D" fixed version, "CG", "SG", "DG" swivelling version
3- instrument serial number
4- instrument's year of manufacture
5- Room temperature +60°C for temperature class "T6"; +80°C for "T85°C"Corrente max (A)
6- Max. current (A)
7- Max. voltage (Vac or Vdc)

Microswitch code	Minimum room temperature
M4, M12	**-15 °C**
M19, M22	**-20 °C**
M6, M20	**-23 °C**
M2, M3	**-25 °C**
M9, M10, M11, M14, M21, M23, VD	**-50 °C**

3. SETTING AT WORK

3.1 Make sure that the use of the instrument does not exceed the intended use and that the applied electrical rated value complies with the values printed on the plate.

3.2 The user shall ensure that the use of the equipment is compatible with the data printed on the additional plate (e.g.: Pressure, Temperature).
Namely, the surface temperature shall be less than 80% the hazardous gas firing temperature.

4. INSTALLATION

4.1 GROUND CONNECTION

Beside the ground connection envisaged to take place inside the case, the latter is equipped with another ground clamp located outwardly.
It shall be connected to the system's main ground using a suitably sized conductor.

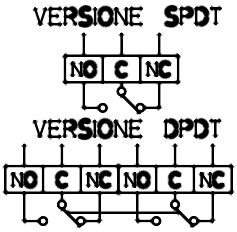
As a function of the **S** section of the line conductor, the section of the ground conductor shall be:

= S	For $S \leq 16$ mm^2
16	For 16 mm$^2 < S \leq 35$ mm^2
≥ 0,5 S	for $S > 35$ mm^2

4.2 ELECTRICAL WIRING

The instrument is equipped with a terminal box inside the housing.

Please ensure that the case cover is closed before feeding it with voltage.



4.3 LID CLOSURE

4.3.1 Version EP

In order to ensure the IP66 degree of tightness to water and powders, the lid, whether it be of type "C", "S" or "D" in either the fixed or the swivelling versions, shall be closed by following the instructions below:
- tighten the lid up to the point when the seal rests on the whole flat sealing surface; the latter can be found as soon as the lid stops turning freely and starts rubbing against the gasket itself.
- make two corresponding marks on the base and on the lid with a pen or some adhesive tape so as to be able to remove it at the end of the job.
- close the lid so as to make it run a chord measuring not less than 90 mm; it can be measured by using a flexible meter wound around the collar whose diameter is larger than the cap.
- tighten the self-locking headless screw M5.

4.3.2 Version WP

In order to ensure the IP 66 protection rating, the lid, whether type "S" or "D", shall be closed by the screw located on top of the lid taking care that the gaskets are located in the right slots.
As regards the "L" version, follow the instructions of the EP model.

4.4 CABLE OUTLET ORIENTATION (FOR SWIVELLING VERSION ONLY)

The swivelling version of the housing makes it possible to orientate the cable outlet to fit the actual conditions of the wiring on the spot. The admitted level of freedom is that of a round angle (360°), which always enables you to find the right position of the incoming cables. After finding the right position, you need to tighten the two headless screws M4 located in the lower section.

5.MAINTENANCE

5.1 WARNING

Before opening the case, ensure that you are not in an explosive atmosphere.
"DISCONNECT SUPPLY BEFORE OPENING"

-NEVER open the lid without being sure that voltage has been cut out;
-NEVER leave the case without its lid for longer than the inspection time;
-NEVER use the instrument with an electrical rating that exceeds the rating plate values;
-NEVER perform settings or replace parts without having read the instructions beforehand; in case of doubts, please turn to our customer service department;
-NEVER lubricate any instrument parts;

5.2 PERIODICAL CHECKS OVER CONTACTS

Cut out voltage.
With the lid open, perform a sight check to ensure that the tripping unit does not have damaged or aged parts.

5.3 INSTRUCTIONS FOR DISASSEMBLING

- To open the case, unlock the screw that is fastened on the cap and unscrew the latter.
- Perform the above-mentioned inspection.
- Remember to re-tighten the screw after closing the cap.

5.4 REPAIRING THE EXPLOSION-PROOF BOXES

Repairing the explosion-proof equipment shall comply with the criteria set forth in the IEC 79-19 Standard.
In cases when the repairs are not carried out by Officine Orobiche, they must be carried out by workshops that own the equipment required for the repairs and only provided that Officine Orobiche has approved of them.
All the replaced parts shall be genuine spare parts supplied by Officine Orobiche, repairs of broken parts are not authorized.

6. DISPOSAL

Once their service life is over, the instruments are meant to be scrapped; please comply with the provisions of the law in force dealing with this subject.
The metal parts, once all seals, gaskets and special protection coating requested by the customer are removed along with any other plastic part, can be recycled.

7. GUARANTEE

All the parts that make up the case are guaranteed to be free from manufacturing faults over a period of 12 months from the date of shipment.
In the event of failures, implying return of goods within the limit specified above, OFFICINE OROBICHE will replace (shipment fees not included) all damaged parts free, provided that the failure does not ensue from incorrect use.
OFFICINE OROBICHE shall never be held for any incorrect use of their products when these are used for purposes other than those mentioned in the specifications approved at the order stage.
In these cases, no complaints will ever be taken into consideration.
No damage and/or fee, whether direct or indirect, ensuing from an incorrect installation or use shall ever be debited to OFFICINE OROBICHE.

DOCUMENTO INCLUSO NEL CERTIFICATO D'ESAME CE DEL TIPO Nessuna modifica e' consentita senza l'atteslato dell'ORGANISMO NOTIFICATO		
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Emesso	Data:	Firma:
Dato corso	Data:	Firma: