



# IECEX Certificate of Conformity

## INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

Certificate No.: **IECEX EUT 24.0004X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2024-05-30

Applicant: **Rotork Instruments Italy s.r.l.**  
Via Portico 17  
Orio al Serio (BG) 24050  
Italy

Equipment: **SOLDO™ Proximity switch model BM □□□ X □□ - □□**

Optional accessory:

Type of Protection: **Flameproof enclosure "db", dust-tight "tb"**

Marking: Ex db IIC T6...T4 Gb

Ex tb IIIC T85°C, T90°C, T95°C Db

*Applicable to switch C4 (cable length ≥ 60mm)*

*Applicable to switches N1 and N3 (cable length ≥ 240mm)*

Ex db IIB+H<sub>2</sub> T6...T4 Gb

Ex tb IIIC T85°C, T90°C, T95°C Db

*Applicable to switches N1 and N3 (cable length ≥ 150mm)*

*The relationships between ambient temperature ranges and temperature limits are reported in the equipment description.*

Approved for issue on behalf of the IECEx  
Certification Body:

**Dionisio Bucchieri**

Position:

**Head of IECEx Certification Body**

Signature:  
(for printed version)

Date:  
(for printed version)

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Via Portico 17  
Orio al Serio (BG) 24050  
**Italy**

Manufacturing locations: **Rotork Instruments Italy s.r.l.**  
Via Portico 17  
Orio al Serio (BG) 24050  
**Italy**

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

#### STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

**IEC 60079-0:2017** Explosive atmospheres - Part 0: Equipment - General requirements  
Edition:7.0

**IEC 60079-1:2014** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

#### TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

**IT/EUT/ExTR23.0005/00**

Quality Assessment Report:

**GB/ITS/QAR09.0004/10**



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

Refer to the Annex file of this certificate.

## **SPECIFIC CONDITIONS OF USE: YES as shown below:**

- Flameproof joints cannot be repaired
- The equipment configured with external threads are designed to be directly interfaced to Ex db flameproof enclosures showing reference pressure values not greater than 15 bar at the installation point.
- In order to guarantee the earth bonding connection, the device must be installed in such a way as to guarantee the electrical contact of the body to earth by means of the mechanical connection of the threaded stem of the device to the structure on which it shall be mounted or by using an equivalent reliable method as long as a minimum contact cross-section of 4 mm<sup>2</sup> is guaranteed. See the instruction for further details.
- Potential electrostatic charging hazard, see instruction manual for details.

## **Annex:**

[Annex to CoC IECEx EUT 24.0004X Issue N. 0.pdf](#)



**Annex to certificate: IECEX EUT 24.0004X Issue N. 0**

**Equipment description**

The proximity switches series BM Soldo™ (hereinafter referred as BM) are sensors intended to detect the position of a magnetic or ferrous target and are designed to be used in presence of potentially explosive atmospheres requiring equipment with EPL Gb and/or Db having gas group IIC (or IIB+H<sub>2</sub> depending on the cable type and length) and dust group IIIC respectively.

The BM proximity switch enclosure is obtained by a solid constructed stainless steel body, an entry point machined M20x1.5 or 1/2" NPT provides access to the integral factory wiring cemented within casting compound; the adhesion of the compound with the inner body surface as well as the wires creates a sealed joint compliant with the requirements of Ex db type of protection.

The configuration featuring the switches N1 and N3 having cable length not less than 150 mm but less than 240 mm are limited to gas group IIB+H<sub>2</sub>; the same switches N1 and N3 with wires having exposed length not less than 240 mm as well as the switch C3 with exposed wiring length at least 60 mm are instead suitable for gas group IIC.

On the opposite side of the entry point the body has an externally threaded stem; within this area the device can include a reed contact or alternatively a micro switch coupled to a magnet in order to detect magnetic or ferrous targets respectively; the area where the microswitch is installed has a total free volume not greater than 10 cm<sup>3</sup>.

The entry point can have internal or external thread connection, in this last case the male connection is achieved by the integration of a nipple (covered by third party certificate); the casting compound of this version is then increased to reduce the amount of free volume in the nipple area; in all configurations the effectiveness of the Ex tb type of protection relies on the coupling of the entry point with a counterpart having thread conforming to the same size, specifications and type of protection.

The configurations having thread specification NPT (both internal and external) and external ISO Metric M20x1.5 specification have degree of protection IP66 according to IEC 60529 and IEC 60079-0 without the use of additional gaskets or sealing elements; the version with M20x1.5 internal thread entry size has a degree of protection limited to IP6x according to IEC 60529 and IEC 60079-0.

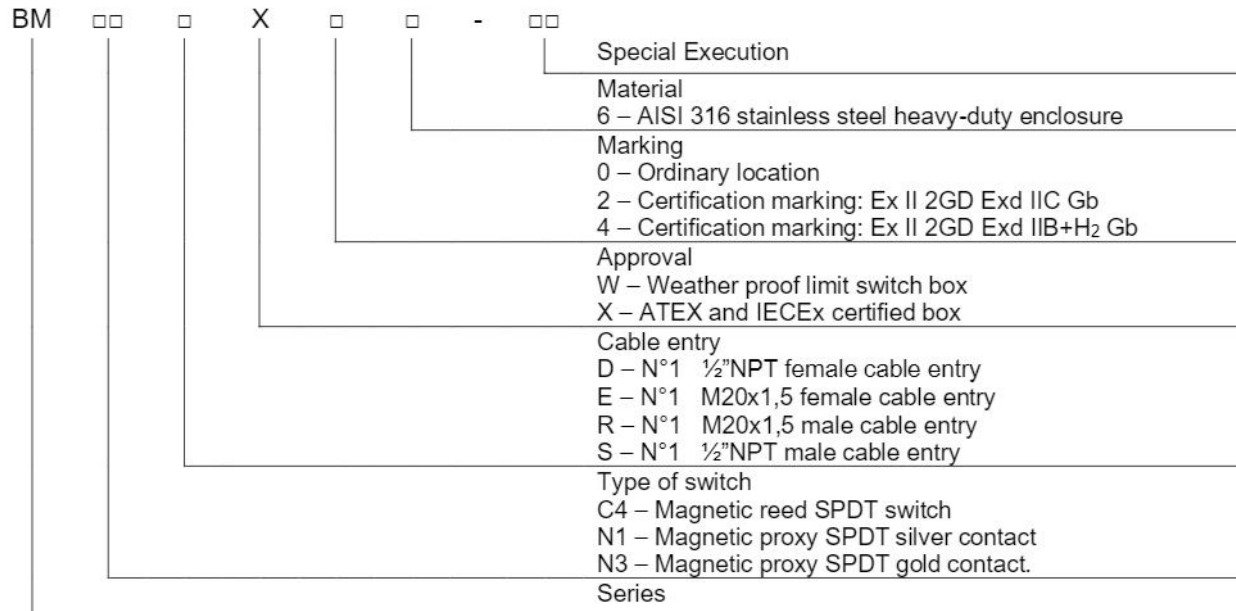
The equipment configured with external threads are designed to be directly interfaced to Ex db flameproof enclosures showing reference pressure values not greater than 15 bar at the installation point and/or Ex tb dust-tight enclosures; the configurations featuring internal threads are instead intended to be used together with separate fittings (according to the requirements and allowed techniques provided by the standard IEC 60079-14).

The extended ambient temperature range of the equipment is -40°C ≤ Tamb ≤ +90°C; the relationships between the maximum ambient temperature and temperature limits are reported below:

Maximum ambient temperature	Temperature class	Maximum surface temperature
70 °C	T6	T85°C
85 °C	T5	T90°C
90 °C	T4	T95°C

**Code designation:**

Each product is identified on the label by an article code as explained by the coding scheme below:



**Electrical parameters:**

The electrical parameters are related to the switch selected as reported below:

Switch model C4 [SPDT reed switch]

0.25 A @ 120 Vac / 1 A @ 24 Vdc / Max 30 W resistive load

Switch model N1 [SPDT silver plated contact]

5 A @ 250 Vac / 28 Vdc with resistive load, 4 A @ 250 Vac / 28 Vdc with inductive load

Switch model N3 [SPDT gold plated bifurcated contact]

1 A @ 250 Vac / 30 Vdc with resistive load, 0.5 A @ 250 Vac / 30 Vdc with inductive load

**Warning label**

- Do not open in a gas/dust explosive atmosphere
- Due to risk of static hazard the enclosure must be cleaned with a damp cloth

**Routine tests**

None – The equipment has successfully passed the overpressure test required by Clause 15.2.3.2 of the standard IEC 60079-1:2014 at a test pressure equal to 60 bar, for this reason it can be considered exempted from the manufacturer’s routine overpressure test detailed in clause 16 of the standard IEC 60079-1:2014 as long as the reference pressure of the apparatus where the BM proximity switch is intended to be installed is not higher than 15 bar.