



# 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 21.0007X** Page 1 of 4 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2021-10-07

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

Equipment: **SOLDO™ Proximity switch BMC41A**

Optional accessory:

Type of Protection: **Intrinsic safety "ia", dust-tight "tb"**

Marking: Ex ia IIC T6...T4 Ga  
Ex ia IIIC T<sub>200</sub>85°C...T<sub>200</sub>135°C Da  
Or  
Ex tb IIIC T85°C...T135°C Db

Approved for issue on behalf of the IECEx  
Certification Body:

**Dionisio Bucchieri**

Position:

**Head of IECEx Certification Body**

Signature:  
(for printed version)

Date:

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Certificate issued by:

**Eurofins Product Testing Italy S.r.l.**  
**Via Cuorgnè**  
**n.21 - 10156 Torino**  
**Italy**



Product Testing



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

Additional  
manufacturing  
locations:

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 60079-11:2011** Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"  
Edition:6.0

**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/ExTR21.0011/00](#)

Quality Assessment Report:

[GB/ITS/QAR09.0004/07](#)



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## EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The proximity switches **BMC41A** series are sensors suitable for any industrial field where it is necessary to take over the position of a magnetic target.

**BMC41A** proximity switches are based on a reed detector; the body is realized in stainless steel and a gasket made of silicone is placed between the mating parts to guarantee an ingress of protection **IP66** and **IP68** (10m 48h) according to the standard **IEC 60529** and **IEC 60079-0**.

The contact element included in the device consists of a reed detector configured as **Single pole Double throw (SPDT)** element; the field connection of the device is made possible by the use of a four-contacts terminal block (mounted on a support **PCB**) pre-wired on one side to the reed contact by a factory wiring. Part of the factory wiring (including the **PCB**) is protected by casting compound used both for a greater resistance against harsh environmental conditions and for improvement of thermal behaviour of the **EOL** resistors (when included).

The equipment can be manufactured in the two following main configurations:

- 1) Reed proximity sensor without **End Of Line (EOL)** monitoring resistors.
- 2) Reed proximity sensor with **End Of Line (EOL)** monitoring resistors.

The configuration with **EOL** monitoring resistors, respect to the 1st configuration, additionally features **SMD** resistors on the **PCB** where the terminal block for field connection is provided; these resistors are used to draw a small quantity of current from the power supply and then allow to identify remotely a potential wiring interruption.

The internal earth connection is allowed by a dedicated terminal and the external bonding is guaranteed by mounting the equipment on a conductive metallic structure connected to earth. The equipment body is machined with an **M20x1.5** threaded hole to allow the field connection; an already certified cable gland having the same **IP** rating and compatible type of protection shall be used for this purpose.

The equipment can be used in presence of potential explosive atmospheres belonging to gas group **IIC** in zone 0 or dust group **IIIC** in zone 20 and have to be powered up by an intrinsically safe barrier.

The equipment can be alternatively marked **Ex tb**; in this case the device can be used in presence of zone 21 and dust group **IIIC** without the need of an intrinsically safe associated apparatus.

## Electrical parameters

### Safety related electrical parameters applicable to the intrinsically safe version

*Device including End Of Line (EOL) monitoring resistors*

Ui: 30 V, Ii: 100 mA, Pi: 300 mW, Li:  $\approx 0\mu\text{H}$ , Ci:  $\approx 0\mu\text{F}$

*Device without End Of Line (EOL) monitoring resistors*

Ui: 30 V, Ii: 100 mA, Pi: 750 mW, Li:  $\approx 0\mu\text{H}$ , Ci:  $\approx 0\mu\text{F}$

### Power supply parameters applicable to the dust-tight version

Umax: 16 V, Imax: 1 A

## 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
- Do not open when energized
- See IOM for wiring details

## Routine tests

None.

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

- The proximity switch can be powered up only by a single channel certified intrinsically safe barrier
- 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 **M16** 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.



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## Equipment (continued):

The extended ambient temperature range of the equipment is  $-60^{\circ}\text{C} \leq T_{\text{amb}} \leq +105^{\circ}\text{C}$ ; the relationships between the maximum ambient temperature, temperature limits and types of protections are reported in the following table:

| Type of protection | Maximum ambient temperature | Temperature class | Maximum surface temperature |
|--------------------|-----------------------------|-------------------|-----------------------------|
| Ex ia              | +40°C                       | T6                | T85°C                       |
|                    | +55°C                       | T5                | T100°C                      |
|                    | +105°C                      | T4                | T135°C                      |
| Ex tb              | +40°C                       | N / A             | T85°C                       |
|                    | +55°C                       | N / A             | T100°C                      |
|                    | +105°C                      | N / A             | T135°C                      |