



# 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 INE 16.0046X** Page 1 of 4 Certificate history:  
Status: **Current** Issue No: 3 Issue 2 (2019-06-17)  
Date of Issue: 2022-10-14 Issue 1 (2019-02-28)  
Issue 0 (2017-01-20)  
Applicant: **BIFFI ITALIA s.r.l**  
Strada Biffi, 165  
I – 29017 Fiorenzuola d'Arda  
**Italy**  
Equipment: **Quarter-Turn Electric Actuator type KEYSTONE EPI2 and BETTIS SCE300**  
Optional accessory:  
Type of Protection: **db eb or db eb h and/or h tb or tb**  
Marking: For EPI2-E6 to E91, EPI2-063 to 1000 and SCE300-063 to 1000:  
Ex db eb IIB T5 Gb  
Ex tb IIIC T100°C Db  
IP66/68  
For EPI2-E171, EPI2-2000 and SCE300-2000:  
Ex db eb h IIB T5 Gb  
Ex h tb IIIC T100°C Db  
IP66/68

Approved for issue on behalf of the IECEx  
Certification Body:

Position:

Signature:  
(for printed version)

Date:  
(for printed version)



Thierry HOUEIX

Ex Certification Officer

2022-10-14

Signé électroniquement  
Digitally signed by  
Thierry HOUEIX  
Ex Certification Officer  
Délégué Certification

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Certificate issued by:

**INERIS**  
Institut National de l'Environnement Industriel et des Risques  
BP n2 / Parc Technologique ALATA  
F-60550 Verneuil-en-Halatte  
**France**





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Manufacturer: **BIFFI ITALIA s.r.l**  
Strada Biffi, 165  
I – 29017 Fiorenzuola d'Arda  
**Italy**

Manufacturing  
locations: **BIFFI ITALIA s.r.l**  
Strada Biffi, 165  
I – 29017 Fiorenzuola d'Arda  
**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 60079-1:2014-06](#) 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

[IEC 60079-7:2017](#) Explosive atmospheres - Part 7: Equipment protection by increased safety "e"  
Edition:5.1

[ISO 80079-36:2016](#) Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements  
Edition:1.0

[ISO 80079-37:2016](#) Explosive atmospheres - Part 37: Non-electrical equipment for explosive atmospheres - Non electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k"  
Edition:1.0

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:

[FR/INE/ExTR16.0051/03](#)

Quality Assessment Report:

[FR/INE/QAR08.0005/13](#)



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## **EQUIPMENT:**

Equipment and systems covered by this Certificate are as follows:

This range of quarter-turn electric actuators is suitable for explosive gas explosive atmospheres of group IIB and for dust explosive atmospheres group IIIC.

The enclosure made in light alloy, is intended to receive mainly an electric motor and an electronic part protected by flameproof enclosure. The connection to the external circuits is made in the terminal board protected by increased safety.

The motor and the electrical circuits are protected by a thermal probe.

The equipment has two different brand names : KEYSTONE EPI2 and BETTIS SCE300.

The electric actuators EPI2-E171, EPI2-2000 and SCE300-2000 are provided with an additional gear, including only mechanical parts protected by "Ex h".

The enclosure gets the protection degrees IP66/IP68 according to IEC 60529 ; The verification of the degree of protection IPX8 corresponds to an immersion under 10 meters of water during 48 hours.

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

- The gap and diametrical clearances are lower than the values specified in the tables of IEC 60079-1 standard. The width of the flameproof joints is greater of the values specified in the IEC 60079-1 standard. For any repair, to contact the manufacturer.
- During the installation, the user will take into consideration that electric actuator EPI2-E171, EPI2-2000 and SCE300-2000 underwent only a shock corresponding to an energy of a low risk at 2 J.
- The screws used for the assembly of the main cover of explosion-proof enclosures must be of quality higher or equal to A4 class 80 with yield strength higher or equal to 600 N/mm<sup>2</sup>.
- The screws used for the assembly of the other various parts of explosion-proof enclosures must be of quality higher or equal to A4 class 70 with yield strength higher or equal to 450 N/mm<sup>2</sup>.



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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

### **Issue n°3:**

- Introduction of the version EPI2 and SCE 300 Boll&Kirch (BK) for the sizes 063 and 125
- Delete of the electric actuator type F02
- Application of the latest standards as listed (changing edition the IEC 60079-0 standard)
- Update of absorbed and dissipated powers to lower values for EPI2 and SCE300.

### **Issue n°2:**

- Introduction a new brand called "Bettis" including new designation of the products: "SCE300".
- New type code for the version EPI2 : "EPI2-063 to EPI2-2000".

### **Issue n°1:**

- Introduction of the electric actuator F02 size 2000 and EPI2-171.
- Application of standards IEC 60079-1:2014 and IEC 60079-7:2015/A1:2017 for all types and standards ISO 80079-36 and ISO 80079-37 for electric actuator F02 size 2000 and EPI2-171.

## **Annex:**

[IECEX INE 16.0046X-03\\_Annex.pdf](#)



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## PARAMETERS RELATING TO THE SAFETY

| Electrical parameters of the power circuit |  |  |                               |
|--|--|--|-------------------------------|
| Models                                     | 063(E6)-125(E13)   | 250(E25)-500(E51)-1000(E91)-2000(E171) | "BK" version 063(E6)-125(E13) |
| DC Voltage range                           | From 24 to 48 Vdc and from 100 to 240 Vdc ( $\pm 10\%$ )                                   |  |                               |
| Single phase Voltage range                 | From 24 to 48 Vac and from 100 to 240 Vac ( $\pm 10\%$ ), frequency 50/60 Hz ( $\pm 5\%$ ) |  |                               |
| Three phases Voltage range                 | From 208 to 575 Vac ( $\pm 10\%$ ), frequency 50/60 Hz ( $\pm 5\%$ )                       |  | N/A                           |
| Max absorbed power                         | 140 W  | 350 W                                  | 240W                          |
| Max dissipated power                       | 110 W  | 290W                                   | 216W                          |

This equipment can be used in range of ambient temperatures from  $-20^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  or  $-40^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$ .

## MARKING

Marking has to be readable and indelible; it has to include the following indications:

### 1. From EPI2-E6 to E91 and EPI2-063 to 1000 and SCE300-063 to 1000:

- BIFFI ITALIA s.r.l (\*\*\*)
- I - 29017 Fiorenzuola d'Arda (PC)
- EPI<sub>2</sub>... or SCE300... (\*)
- IECEx INE 16.0046X
- (Serial number)
- Ex db eb IIB T5 Gb
- Ex tb IIIC T100°C Db
- IP66 or IP66/68
- T.Amb. : (\*\*)
- For cable entries dimensions see installation manual.

On the terminal box cover: (rated voltage and rated current and/or rated power)

- WARNINGS:
  - DO NOT OPEN WHEN ENERGIZED.
  - DO NOT OPEN ANY COVER IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.

### 2. For EPI2-E171 and EPI2-2000 and SCE300-2000:

- BIFFI ITALIA s.r.l (\*\*\*)
- I - 29017 Fiorenzuola d'Arda (PC)
- EPI<sub>2</sub>... or SCE300... (\*)
- IECEx INE 16.0046X
- (Serial number)
- Ex db eb h IIB T5 Gb
- Ex h tb IIIC T100°C Db
- IP66 or IP66/68
- T.Amb.: (\*\*)
- For cable entries dimensions see installation manual.

On the terminal box cover: (rated voltage and rated current and/or rated power)

- WARNINGS:
  - DO NOT OPEN WHEN ENERGIZED.
  - DO NOT OPEN ANY COVER IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.

(\*) Type is completed by numbers and/or letters corresponding to alternatives of execution.

(\*\*) One of the following ranges of ambient temperature:  $-20^{\circ}\text{C}$  to  $+65^{\circ}\text{C}$  or  $-40^{\circ}\text{C}$  to  $65^{\circ}\text{C}$

(\*\*\*) Optional Brands BETTIS or KEYSTONE can be added in the marking with the sentence "manufactured by BIFFI ITALIA s.r.l."



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## **ROUTINE EXAMINATIONS AND TESTS**

### **For the “Ex db” parts of the enclosure:**

For actuator models “-063” and “-125” and “-E6” and “-E13” for using at ambient temperature down to -20°C:

According to 16.2 of IEC 60079-1 standard, the flameproof enclosure, defined above is exempted of routine test due to the fact it has undergone a static type test at 4 times the reference pressure under 16.8 bar.

For actuator models “-063” and “-125” and “-E6” and “-E13” for using at ambient temperature down to -40°C:

According to 16.1 of IEC 60079-1 standard, each piece of the flameproof enclosure defined above must have successfully passed before delivery an overpressure test under 8.7 bar during at least 10 seconds.

For other models:

According to 16.1 of IEC 60079-1 standard, each piece of the flameproof enclosure defined above must have successfully passed before delivery an overpressure test, during at least 10 seconds, under:

- 10.1 bar for ambient temperature down to -20°C
- 13.5 bar for ambient temperature down to -40°C.

### **For the “Ex eb” terminal box:**

In accordance with clause 7.1 of the IEC 60079-7 standard, a dielectric test strength on each of the different circuits of the connection units, performed according to the relevant standards, the supply voltage shall be applied for one minute.