



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx INE 06.0004X issue No.:1
Status: **Current** Certificate history:
Issue No. 1 (2014-4-10)
Issue No. 0 (2006-12-20)
Date of Issue: **2014-04-10** Page 1 of 4
Applicant: **BIFFI ITALIA s.r.l**
Loc. Caselle S. Pietro
I – 29017 Fiorenzuola d'Arda
Italy
Electrical Apparatus: **Electrical Actuator type ICON2000AD and ICON2000 - Type ICON-.../...-...**
Optional accessory:
Type of Protection: **d or d ia , tb or tb ia**
Marking: Ex d IIB T4 Gb or Ex d ia IIB T4 Gb
Ex tb IIIC T135°C Db or Ex tb ia IIIC T135°C Db IP66/IP68

Approved for issue on behalf of the IECEx
Certification Body:

Thierry HOUEIX

Position:

Ex Certification Officer

Signature:
(for printed version)

Date:

2014-04-10



1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

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

INERIS is accredited by COFRAC under number 5-0045 for certification of products and services
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IECEx Certificate of Conformity

Certificate No.: IECEx INE 06.0004X

Date of Issue: 2014-04-10

Issue No.: 1

Page 2 of 4

Manufacturer: **BIFFI ITALIA s.r.l**
Loc. Caselle S. Pietro
I – 29017 Fiorenzuola d'Arda
Italy

Additional Manufacturing
location(s):

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 electrical apparatus 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 : 2011 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-11 : 2011 Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
IEC 60079-31 : 2008 Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'

*This Certificate **does not** indicate compliance with electrical 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/ExTR06.0004/01](#)

Quality Assessment Report:
[FR/INE/QAR08.0005/04](#)



IECEx Certificate of Conformity

Certificate No.: IECEx INE 06.0004X

Date of Issue: 2014-04-10

Issue No.: 1

Page 3 of 4

Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The enclosure made in light alloy, is destined to receive mainly an electric motor and an electronic part. A version is envisaged with a compartment containing an intrinsic safety element equipped with a battery. The equipment is only "d" when energized and "d ia" when de-energized. The motor is fitted with an internal thermal probe put in the winding. The enclosure presents the degrees of protection IP66/68 according IEC 60529 standard. The verification of the degree of protection IPX8 corresponds to an immersion under 10 meters of water during 48 hours.

CONDITIONS OF CERTIFICATION: YES as shown below:

- The gap and diametrical clearances are less than the values specified in the tables of IEC60079-1 standard.
- The width of the flameproof joints is superior to the value specified in the IEC 60079-1 standard.
- The various flameproof joints are fixed by screws in stainless steel AISI 316 with minimum yield stress 450 N/mm².
- The screws used for the assembly of the various parts of explosion-proof enclosures must be in stainless steel class A4 grade 70 with yield strength higher or equal to 450 N/mm².
- These actuators are intended to be used in ambient temperature +65°C or +85°C in accordance with the type of motor used.
- The actuators fitted with extension can be used in ambient temperature down to -20°C.
- The actuators model ICON-010 and ICON-020 can be used in ambient temperature down to -60°C.
- The actuators model ICON-030, ICON-040 and ICON-050 can be used in ambient temperature down to -55°C.



IECEx Certificate of Conformity

Certificate No.: IECEx INE 06.0004X

Date of Issue: 2014-04-10

Issue No.: 1

Page 4 of 4

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Details of change introduced by Issue 01:

- Extension of the ambient temperature range -20°C to +60°C. The new temperature ranges are :
 - o For the ICON type 010 and 020 without extension : -60°C to +65°C or +85°C
 - o For the ICON type 030 and 040 and 050 without extension : -55°C to +65°C or +85°C
 - o For ICON with extension : -20°C to +65°C or +85°C
- Application of the standards :
 - o IEC 60079-0:2011
 - o IEC 60079-1:2007
 - o IEC 60079-11:2011
 - o IEC 60079-31:2008
- Possibility to insert an extension on the terminal board compartment



IECEx Certificate of Conformity

Certificate No.: IECEx INE 06.0004X

Date of Issue: 2014-04-10

Issue No.: 1

Page 1 of 3

Annexe: IECEx INE 06.0004X_Annex.pdf

PARAMETERS RELATING TO THE SAFETY

Supply voltage :

- from 208 to 690 V for three phases motors serie TM
- from 110 to 240 V for single phases motors serie SM
- from 24 to 120 V for direct current serie DM

Frequency: 50/60 Hz

Power of motors: from 0.03 kW to 13.963 kW

The maximum power of motors varies according to the type of the motor and the electric characteristics. The various powers are specified in the descriptive documents.

Operating rate of the motors for single or three phases :

Motor SM series: S2-15 minutes and S4-25% 60 starts/hour maximum

Motor TM series:

- S2-30 minutes and S4-25% 600 starts/hour maximum for ICON2000 version
- S4-50% 1200 starts/hour maximum for ICON200AD 3\ph version
- S4-25% 1200 starts/hour maximum for ICON2000AD 1_ph version

Operating rate of the motors for direct current :

Supply voltage: from 24 to 120 V

Power of motors: 0.4 kW

Operating rate DM series: S2-15' or S4-25% 600 starts/hour maximum

Characteristics of thermal probe equipping the motor :

Threshold of release: 140°C +/- 5°C for actuator with motor SM or DM serie.

Threshold of release: 160°C +/- 5°C for actuator with motor TM serie.

Electrical characteristic of the cell located in the Ex d compartment:

Manufacturer : SAFT
Type : LS 14500
Supply voltage : 3.6 V
Nominal capacity : 2.6 Ah

Electrical characteristic of the cell located in the Ex ia compartment:

Manufacturer : SAFT
Type : battery pack LS 9 V
Supply voltage : 9 V
Nominal capacity : 1.2 Ah
LS14500C: 3.6V / 2.7 Ah

This actuator can be used in the following range of ambient temperatures:

- For actuator ICON 010 and 020 without extension : from -60°C to +65°C or +85°C
- For actuator ICON 020, 030 and 040 without extension : from -55°C to +65°C or +85°C
- For all types of actuator with extension: from -20°C to +65°C or +85°C



IECEX Certificate of Conformity

Certificate No.: IECEX INE 06.0004X

Date of Issue: 2014-04-10

Issue No.: 1

Page 2 of 3

Annexe: IECEX INE 06.0004X_Annex.pdf

MARKING

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

A - Actuator without intrinsic safety circuit:

- BIFFI ITALIA s.r.l
- I - 29017 Fiorenzuola d'Arda (PC)
- ICON (*)
- IECEX INE 06.0004X
- (Serial number)
- Ex d IIB T4 Gb
- Ex tb IIIC T135°C Db IP66/68
- T.Cable: 90°C (**)
- For cable entries dimensions see installation manual.

WARNINGS

- DO NOT OPEN WHEN ENERGIZED.
- DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.

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

(**) Indication if ambient temperature is higher than 65°C.

B - Actuator with intrinsic safety circuit:

- BIFFI ITALIA s.r.l
- I - 29017 Fiorenzuola d'Arda (PC)
- ICON (*)
- IECEX INE 06.0004X
- (Serial number)
- Ex d ia IIB T4 Gb
- Ex tb ia IIIC T135°C Db IP66/68
- T.Cable: 90°C (**)
- For cable entries dimensions see installation manual.

WARNINGS:

- DO NOT OPEN WHEN ENERGIZED.
- DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.

On the compartment containing the intrinsic safety circuit, the marking: "ia"

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

(**) Indication if ambient temperature is higher than 65°C.



IECEx Certificate of Conformity

Certificate No.: IECEx INE 06.0004X

Date of Issue: 2014-04-10

Issue No.: 1

Page 3 of 3

Annexe: IECEx INE 06.0004X_Annex.pdf

ROUTINE EXAMINATIONS AND TESTS

All model of actuators with extension for using limited down to -20 °C:

In accordance with clause 16.1 of EN 60079-1 standard, each sample, fitted with the extension, defined above must have successfully passed before delivery, an overpressure test, of a period comprised between 10 and 60 seconds, under 14.9 bar.

All model sizes of actuators without extension for using limited down to -20 °C:

In accordance with clause 16.2 of the EN 60079-1 standard, each sample, without extension, is exempted of routine test due to the fact that it has undergone a static type test at 4 times the reference pressure under 32 bar.

Actuators model ICON-010 and ICON-020 without extension for using down to -60 °C:

In accordance with clause 16.1 of EN 60079-1 standard, each sample, fitted with the extension, defined above must have successfully passed before delivery, an overpressure test, of a period comprised between 10 and 60 seconds, under 17.9 bar.

Actuators model ICON-030, ICON-040 and ICON-050 without extension for using down to -55 °C:

In accordance with clause 16.1 of EN 60079-1 standard, each sample, fitted with the extension, defined above must have successfully passed before delivery, an overpressure test, of a period comprised between 10 and 60 seconds, under 20.7 bar.