



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

Certificate No.: **IECEx INE 20.0042X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-09-14

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

Equipment: **Electrical Actuator series BIFFI ICON3000 or BIFFI ICON3000AD or BIFFI ICON3000LP and series BETTIS XTE3000 or BETTIS XTE3000AD or BETTIS XTE3000LP**

Optional accessory:

Type of Protection: **db h or db h ia and/or h tb**

Marking: Ex db h IIB or IIC T4 Gb or Ex db h ia IIB or IIC T4 Gb
Ex h tb IIIC T135°C Db IP66/68

Approved for issue on behalf of the IECEx
Certification Body:

Thierry HOUËIX

Position:

Ex Certification Officer

Signature:
(for printed version)

2020-09-14

Date:

1. This certificate and schedule may only be reproduced in full.
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Certificate issued by:

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



controlling risks |
for sustainable development |



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Manufacturer: **Emerson Process Management Valve Automation Inc**
19200 Northwest Freeway
Houston
Texas 77065
USA
United States of America

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 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
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

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 Reports:

[FR/INE/ExTR18.0021/03](#)

[FR/INE/ExTR20.0044/00](#)

Quality Assessment Report:

[GB/SIR/QAR06.0045/12](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

This range of Electric Actuators are suitable for explosive gas atmospheres of group IIB and IIC (sizes 010 and 020) or group IIB only (sizes 030, 040 and 050) and for dust group IIIC (for all the versions).

The enclosure made in light alloy, is intended 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 cell.

The equipment is only "db h" when energized and "db h ia" when de-energized.

The motor is fitted with an internal thermal probe put in the winding.

In accordance with the specifications defined in the descriptive documents of the manufacturer, the electric actuator can be coated (optionally) by a passive fire protection in intumescent coating type K-mass.

The equipment has two different brandnames: BIFFI ICON3000, BIFFI ICON3000AD, BIFFI ICON3000LP, BETTIS XTE3000, BETTIS XTE3000AD or BETTIS XTE3000LP.

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.

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.

- For the assembly of the various parts of explosion-proof enclosures, the screws must be in stainless steel class A4 grade 70 with yield strength higher or equal to 450 N/mm².

Annex:

[IECEx INE 20.0042X-00_Annex.pdf](#)



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PARAMETERS RELATING TO THE SAFETY

Supply voltage:

- from 173 to 690 V for three phases motors series SM and series TM
- from 110 to 240 V for single phases motors series SM and series TM
- from 24 to 120 Vdc for direct current series DM
- 24 V for direct current series LP

Frequency: 50/60 Hz

Power of motors: from 0.03 kW to 13.980 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 ICON3000 version or XTE3000 version
- S4-50% 1200 starts/hour maximum for ICON3000AD 3/ph version or XTE3000AD 3/ph version
- S4-25% 1200 starts/hour maximum for ICON3000AD 3/ph version or XTE3000AD 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 or S4-50% 1200 starts/hour maximum

Operating rate LP series: S4-50% 1200 starts/hour maximum

Characteristics of thermal probe equipping the motor:

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

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

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

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

Motor TM series:

- For actuators sizes 010 and 020 without extension: from -60°C to +65°C
- For actuators sizes 030, 040 and 050 without extension: from -55°C to +65°C
- For all types of actuator with extension: from -20°C to +65°C

Motor DM, SM and LP series:

- For actuators sizes 010 and 020 without extension: from -60°C to +65°C or +85°C
- For actuators sizes 030, 040 and 050 without extension: from -55°C to +65°C or +85°C



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MARKING

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

- Emerson Process Management Valve Automation Inc
- TEXAS 77065 - USA
- ICON3000(*) or XTE3000 (*)
- IECEx INE 20.0042X
- (Serial number)
- Ex db h or db h ia II(**) T4 Gb
- Ex h tb IIIC T135°C Db IP66/68
- T.Cable: 90°C (***)
- For cable entries dimensions see installation manual.
- WARNING:
- DO NOT OPEN WHEN ENERGIZED.
- DO NOT OPEN IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
- POTENTIAL ELECTROSTATIC CHARGING – SEE INSTRUCTIONS

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

(**) IIB: For all sizes or

IIC: For sizes 010 or 020 only

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

ROUTINE EXAMINATIONS AND TESTS

For the models intended for Group IIB:

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

In accordance with clause 16.1 of IEC 60079-1 standard, each sample 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 sizes of actuators without extension for using limited down to -20°C:

Excepted when the enclosures or parts of the enclosures are made in alloys exempted of routine tests as detailed in the technical note DT_2316X, in accordance with clause 16.1 of IEC 60079-1 standard, each sample must have successfully passed before delivery, an overpressure test, of a period comprised between 10 and 60 seconds, under 12 bar.

The enclosures made in alloys exempted of routine tests as detailed in the technical note DT_2316X have undergone a static type test at 4 times the reference pressure under 32 bar.

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

In accordance with clause 16.1 of IEC 60079-1 standard, each sample defined above must have successfully passed before delivery, an overpressure test, of a period comprised between 10 and 60 seconds, under 18 bar.

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

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

For the models intended for Group IIC:

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

In accordance with clause 16.1 of IEC 60079-1 standard, each sample defined above must have successfully passed before delivery, an overpressure test, of a period comprised between 10 and 60 seconds, under 18 bar.