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 15.0038X**

Page 1 of 4

Certificate history:
Issue 2 (2021-02-19)
Issue 1 (2017-01-20)
Issue 0 (2016-04-28)

Status: **Current**

Issue No: 3

Date of Issue: 2024-05-24

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

Equipment: **Electric Actuator type F01-***-***/****

Optional accessory:

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

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

The marking is detailed in Annex.

Approved for issue on behalf of the IECEx Certification Body: **Thierry HOUEIX**

Position: **Ex Certification Officer**

Signature: (for printed version)

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

Date: (for printed version) **2024-05-24**

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 www.iecex.com or use of this QR Code.

Certificate issued by:

INERIS
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

IECEx Certificate of Conformity

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

Manufacturing locations: **BIFFI ITALIA S.r.l**
Strada Biffi, 165
Fiorenzuola d'Arda 29017
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 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-1:2014 Edition:7.0	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 60079-31:2013 Edition:2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
IEC 60079-7:2017 Edition:5.1	Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
ISO 80079-36:2016 Edition:1.0	Explosive atmospheres - Part 36: Non-electrical equipment for explosive atmospheres - Basic methods and requirements
ISO 80079-37:2016 Edition:1.0	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"

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/ExTR15.0042/03

Quality Assessment Report:

FR/INE/QAR08.0005/16

IECEx Certificate of Conformity

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 for dust group IIIC.

For gas application, the overall enclosure is protected by “Ex db h” excepted the terminal board compartment which is protected by “Ex eb” or “Ex eb ia”. A version is envisaged with a compartment containing an intrinsic safety element and a cell. The equipment is only "db eb h" when energized and "db eb h ia" when de-energized.

An optional “Ex eb” connection module can be added in the terminal board compartment to verify the integrity loop of end user connections: Lonworks Removable Connection Module or Profibus Removable Connection Module. The module consists of a printed circuit board fitted with terminals covered by the certificate IECEx KEM 10.0093U in accordance with the standards IEC 60079-0:2017 and IEC 60079-7:2017

For dust application, the enclosure is protected by “Ex h tb”.

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

An extension in light alloy can be mounted on the increased safety part. This extension is equipped up to 9 entries 1/2"NPT or M20x1.5, alternatively up to 6 entries 1/2"NPT or M20x1.5 and an electronic card

The enclosure presents the degrees of protection IP66 according IEC 60529 standard.

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.

IECEx Certificate of Conformity

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
For the Issue n°01:

- Possibility to install, inside the “Ex e” compartment, the PCB connector covered by the Ex component certificate IECEx KEM 10.0093U.
- Add 3 cylindrical thread joints on the Ex e compartment for fixing of the PCB connector

For the Issue n°02:

- Mechanical modifications.
- Introduction of new light alloys for the different parts of the enclosure and modification of routine tests.
- Application of the last edition of the standards for electrical equipment listed in the certificate.
- Application the standards ISO 80079-36 and ISO 80079-37 for non-electrical equipment using the type of protection “h”
- Modification of the supply voltage parameters

For the Issue n°03:

- Addition of new thermal heater kit (maximum total power of 65W)
- Optional painting of the plane part between the body and the covers
- Product name changes from F01-2000 to F01
- Added new version of logic cards (in Ex db carter volume)
- Changed type of terminal board
- Changed ambient temperature range from -50°C/+70°C to -20°C/+60°C
- Alternative material for external earth stud: stainless steel

Annex:

IECEx INE 15.0038X-03_Annex.pdf

IECEx Certificate of Conformity

Certificate No.: IECEx INE 15.0038X

Issue No.: 03

Annex: IECEx INE 15.0038X-03_Annex.pdf

PARAMETERS RELATING TO THE SAFETY

Maximum power dissipated : 123 W

Electrical parameters for the motor:

Supply voltage	:	from 110 Vac to 690 Vac (±10%) or 24 Vdc (±10%)
Maximum powers	:	from 0.010 kW to 0.096 kW
Frequency	:	DC motors or 50/60 Hz (+/-2%) for AC motors

Characteristic of thermal probe equipping the motor:

Threshold of release : 140 °C ± 5°C for AC motors or 90 °C ± 5°C for DC motors

Electrical characteristic of the cell located in the “Ex db” compartment:

Manufacturer	:	SAFT
Type	:	LS 14500C
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

Optional electrical heater kit:
An optional electrical heater kit, composed by one or two electrical heaters, can be added inside the housing. The first electrical heater has a maximum power of 15W, the second heater has a maximum power of 50W.
The two resistors are intended to be turned on for temperatures below or equal to 0°C and to turn off at +10°C, each heater has a thermal probe that turns on the heater at 0°C and turns it off at +10°C.

This actuator can be used in range of ambient temperatures from -20°C to +60°C.

MARKING

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

- BIFFI ITALIA s.r.l
- I – 29017 Fiorenzuola d'Arda (PC)
- F01-***-***/** **(*)**
- IECEx INE 15.0038X
- (Serial number)
- Ex db eb h IIB T4 Gb or Ex db eb h ia IIB T4 Gb
- Ex h tb IIIC T135°C Db
- IP66
- Tamb: -20°C to +60°C
- T.Cable: 85°C
- For cable entries dimensions see installation manual.
- **WARNINGS:**
  - DO NOT OPEN WHEN ENERGIZED.
  - DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.

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

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

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

IECEx Certificate of Conformity

Annex: IECEx INE 15.0038X-03_Annex.pdf

ROUTINE EXAMINATIONS AND TESTS

For the flameproof “Ex db” part of the enclosure :

In accordance with clause 16 of IEC 60079-1 standard, the table below defines the parts of the enclosure that must be submitted to the overpressure routine test. When required, the sample must have successfully passed before delivery, an overpressure test, during at least 10 seconds, under 13.5 bar.

Parts of the enclosure	materials	Routine tests
Housing	EN AC 44300	100% of production
	EN AC 43300	Batch testing according to ISO 2859-1
Local control group cover	EN AC 44300	100% of production
	EN AC 43300	100% of production
	EN AC 42000	100% of production
Local interface cover	EN AC 44300	100% of production
	EN AC 43300	100% of production
	EN AC 42000	Batch testing according to ISO 2859-1
Terminal board	LATAMID 66 H2 G/50-V0HF1	100% of production

For increased safety “eb” part of the enclosure:

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 during one minute.