



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 13.0089X	Page 1 of 4	<u>Certificate history:</u>
Status:	Current	Issue No: 3	Issue 2 (2021-01-25)
Date of Issue:	2024-09-12		Issue 1 (2014-11-20)
Applicant:	BIFFI ITALIA s.r.l Srada Biffi, 165 I - 29017 Fiorenzuola d'Arda Italy		Issue 0 (2014-03-28)
Equipment:	Electric Actuator type F01-***_***/**		
Optional accessory:			
Type of Protection:	db h or db h ia and/or h tb		
Marking:	Ex db h IIB T4 Gb or Ex db h ia IIB T4 Gb Ex h tb IIIC T135°C Db IP66 The complete marking is detailed in Annex.		

Approved for issue on behalf of the IECEx
Certification Body:

Position:

Signature:
(for printed version)

Date:
(for printed version)



Thierry HOUEIX

Ex Certification Officer

2024-09-20

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

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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: **BIFFI ITALIA s.r.l**
Srada Biffi, 165
I - 29017 Fiorenzuola d'Arda
Italy

Manufacturing locations: **BIFFI ITALIA s.r.l**
Srada 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](#) 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 Report:

[FR/INE/ExTR13.0090/03](#)

Quality Assessment Report:

[FR/INE/QAR08.0005/16](#)



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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 for dust group IIIC.

The enclosure "db h" made in light alloy, is intended to receive mainly an electric motor and an electronic part including a battery. A version "db h ia" is foreseen with another compartment containing an intrinsic safety element equipped with a battery pack LS 9V. 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.

Optional protection, Tamperproof solution, could be fitted on the local control cover to avoid any tampering on the selector switch or on the pushbuttons. Alternatively, optional protection, Sunshade solution, could be fitted on the local control cover to avoid direct sunlight.

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.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

For the Issue n°00:

- Application of the IEC 60079-31:2013, 2nd edition;
- Addition of 5th cable entry (optional);
- Addition of the extension (optional);
- Change of ambient temperature from -50°C to +70°C to -50°C to +85°C

For the Issue n°01:

- 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°02:

- Mechanical modifications : modification of the position of the screws on the housing and modification of overall dimensions close to local interface.
- 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)
- Delete oldest design ("screws from the top")
- Revised length of sealed joint of the window
- Alternative material for external earth stud: stainless steel
- Optional TAMPERPROOF and SUNSHADE solutions

Annex:

[IECEX INE 13.0089X-03_Annex_1.pdf](#)



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PARAMETERS RELATING TO THE SAFETY

Electrical parameters for the motor:

Supply voltage : from 110 Vac to 690 Vac ($\pm 10\%$) or 24 Vdc ($\pm 10\%$)
Maximum powers : from 0.010 kW to 0.096 kW
Frequency : DC motors or 50/60 Hz ($\pm 2\%$) for AC motors
Torque range : from 150 Nm to 600 Nm

Characteristic of thermal probe equipping the motor:

Threshold of release : 140 °C \pm 5°C for AC motors or 90 °C \pm 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 -50°C to +85°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 13.0089X
- (Serial number)
- Ex db h IIB T4 Gb or Ex db h ia IIB T4 Gb
- Ex h tb IIIC T135°C Db
- IP66
- Tamb: -50°C to +85°C
- T.Cable: 110°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 compartment containing the intrinsic safety circuit, the marking: "ia"

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



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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 14 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	Exempted
	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 cover	EN AC 44300	100% of production
	ADC12 JIS	Exempted
EXTENSION [A] and [B]	EN AC 43300	Exempted
Threaded support for TAMPERPROOF and SUNSHADE	ASTM A276/A276M TP316/TP316L	Batch testing according to ISO 2859-1