

# INERIS

INSTITUT NATIONAL DE L'ENVIRONNEMENT  
INDUSTRIEL ET DES RISQUES

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(2) **Equipment and protection systems intended for use in potentially explosive atmospheres  
Directive 94/9/CE**

(1) **EC-TYPE EXAMINATION CERTIFICATE**

(3) Number of the EC type examination certificate: **INERIS 00ATEX0043 X**

(4) Protection apparatus or system:

**ACTUATOR SERIES ICON2000 TYPE ICON--.../...--**

(The type is completed by numbers and/or letters corresponding to alternatives of execution)

(5) Manufacturer: **BIFFI ITALIA s.r.l**

(6) Address: **Loc.Caselle S.Pietro  
29017 Fiorenzuola d'Arda (Pc)  
ITALY**

(7) This protection system or equipment and any other acceptable alternative of this one are described in the annex of this certificate and the descriptive documents quoted in this annex.

(8) The INERIS, notified body and identified under number 0080, in accordance with article 9 of Council Directive 94/9/CE 23 the Mars 1994, certifies that this protection system or equipment fulfils the Essential of Health and Safety Requirements relating to the design and construction of equipment and protection systems intended for use in potentially explosive atmospheres, described in appendix II of the Directive.

The examinations and the tests are consigned in official report N°15674/00.

(9) The respect of the Essential Health and Safety Requirements is ensured by:

- conformity with:


EN 50 014 of June 1997  
EN 50 018 of August 1994  
EN 50 020 of August 1994  
EN 50 281-1-1 of September 1998

- specific solutions adopted by the manufacturer to meet the Essential Health and Safety Requirements described in the descriptive documents.

(10) Sign X, when it is placed following the Number of the EC type examination certificate, indicates that this equipment and protection system is subjected to the special conditions for safe use, mentioned in the annex of this certificate.

(11) This EC type examination certificate refers only to the design and the construction of the apparatus or protection system specified. If necessary, other requirements of this Directive will be imposed on the manufacture and the supply of this apparatus or protection system.

(12) The marking of the equipment or the protection system will have to contain:

 II 2 GD

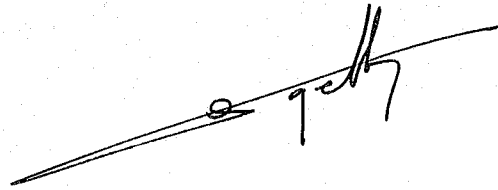
EEEx d IIB 135°C (T4) or EEx d ia IIB 135°C (T4)

Verneuil-en-Halatte, 2001 01 09

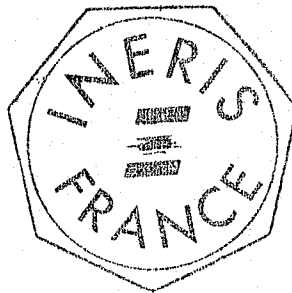


X. LEFEBVRE

Engineer at the Laboratory of Certification of  
Materials ATEX



The Director of the Organisation Certified,  
By delegation  
B. PIQUETTE  
Deputy manager of Certification



(13)

## ANNEX

(14)

EC TYPE EXAMINATION CERTIFICATE N° INERIS 00ATEX0043 X

(15)

### DESCRIPTION OF THE EQUIPMENT OR THE PROTECTION SYSTEM

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

The enclosure presents the degrees of protection IP68 according to the European standard EN 60529.

The actuators can be used at an ambient temperature lower than  $-20^{\circ}\text{C}$  (maximum  $-55^{\circ}\text{C}$ )

### PARAMETERS RELATING TO THE SAFETY

For using in ambient temperatures inferior to  $-20^{\circ}\text{C}$  ( $-55^{\circ}\text{C}$  maxi), the manufacturing is previewed by the manufacturer under his responsibility.

Type test have been performed under ambient temperature required by standards

#### Electrical parameters

Supply voltage : from 230 to 480 V  
Frequency : 50/60 Hz

Power of motors : from 0,071 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.


#### Thermal probe characteristic equipping the motor :

Limit of release :  $140^{\circ}\text{C} \pm 5^{\circ}\text{C}$ .

**MARKING**

Marking must be readable and indelible; it must comprise the following indications:


A) Actuator without intrinsic safety element :

- **BIFFI ITALIA s.r.l**  
Loc.Caselle S.Pietro  
29017 Fiorenzuola d'Arda (Pc)  
ITALY
- ICON (1)
- INERIS 00ATEX0043 X
- (Serial number, if any)
- (year of construction)
-  **II 2 GD**
- EEx d IIB 135°C (T4)
- T.Amb : (\*)
- IP68
- DO NOT OPEN ANY COVER WHEN AN EXPLOSIVE GAS ATMOSPHERE MAY BE PRESENT

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

(\*) Indication of ambient temperature range when that it is different from -20°C to 40°C.

B) Actuator with intrinsic safety element :

- **BIFFI ITALIA s.r.l**  
Loc.Caselle S.Pietro  
29017 Fiorenzuola d'Arda (Pc)  
ITALY
- ICON (1)
- INERIS 00ATEX0043 X
- (Serial number, if any)
- (year of construction)
-  **II 2 GD**
- EEx d ia IIB 135°C (T4)
- T.Amb : (\*)
- IP68
- DO NOT OPEN ANY COVER WHEN AN EXPLOSIVE GAS ATMOSPHERE MAY BE PRESENT

(1) Type is completed by numbers and/or letters corresponding to manufacturing variation.

(\*) Indication of ambient temperature range when that it is different from -20°C to 40°C.

On the compartment containing the intrinsic safety circuit :  
EEx ia IIC T4 - IP66

The whole of marking can be carried out in the language of the country of use.

The protection apparatus or system must also carry the marking normally envisaged by the standards of construction which relate to it.

### **ROUTINE EXAMINATIONS AND TESTS**

Each example of the equipment hardware defined above must have successfully passed before delivery an overpressure test in accordance with section 16.1 of standard EN 50 018, of a period comprised between 10 and 60 seconds under 12 bar.

### **(16) DESCRIPTIVE DOCUMENTS**

The technical report is composed of the documents quoted hereafter, constituting the descriptive file of the apparatus, object of this certificate.

- |  |                      |
|--|----------------------|
| - Technical note DT-1396 Rév. 1 of 20001.01.08   | signed on 2001.01.08 |
| - Instruction manual MAN 618 Rév 0 of 2000.11.16 | signed on 2000.11.16 |
| - Plan n° 50080-1 Rév.2 of 29.12.2000            | signed on 2000.12.29 |
| - Plan n° 50080-9 Rév.1 of 29.12.2000            | signed on 2000.12.29 |
| - Plan n° 50080-10 of 28.12.2000                 | signed on 2000.12.28 |
| - Plan n° PC4736-4                               | signed on 2000.12.06 |
| - Plan n° PC4736-3                               | signed on 2000.12.06 |
| - Plan n° PC4736-2                               | signed on 2000.12.06 |
| - Plan n° PC4736-1                               | signed on 2000.12.06 |
| - Plan n° DE4736                                 | signed on 2000.12.06 |
| - Plan n° PC4750                                 | signed on 2000.12.06 |
| - Plan n° DE4750-1                               | signed on 2000.12.06 |

### **(17) SPECIAL CONDITIONS FOR SAFE USE**

- The actuator variations are intended to be used in an ambient temperatures range of -55°C to 85°C.
- The screws used for the assembly of the various parts of explosion-proof enclosures must be of quality higher or equal to 450 N/mm<sup>2</sup>.
- All the certified elements equipping the actuators, in particular the cables entries, could be put on the market until June 30 2003. The actuators put on the market after this date will be equipped with material in conformity with Directive 94/9/EC.

For use in potentially explosive atmospheres due to combustible dust:

- The surface of the different gaps shall be covered with grease, for example silicone and cable entries shall be of a degree of protection at least IP6X.
- User shall perform a regular cleaning of material to limit dust layers on the material sides.

These special conditions are defined in instruction notice.

### **(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH**

The respect of the Essential Health and Safety Requirements is ensured by:

- conformity to the European standards EN 50 014, EN 50 018, EN 50 020 and EN 50 281-1-1
- the whole of the provisions adopted by the manufacturer and described in the descriptive documents.

## ADDITION

### INERIS 00ATEX0043 X/01

ACTUATOR SERIES ICON2000 TYPE ICON---/...-...

Manufactured by BIFFI

(15) - PURPOSE OF THE ADDITION

Exemption of the routine test.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety stipulated by the basic certificate are unchanged.

MARKING

The marking defined in the basic certificate is unchanged.

ROUTINE EXAMINATIONS AND TESTS

The actuators, defined below by the descriptive documents, are exempted of the routine test stipulated by the basic certificate. The actuators have been performed a type test under four times the reference pressure.

(16) - DESCRIPTIVE DOCUMENTS

The documents referred to below, constitute the file describing the modifications of the apparatus and forming the subject of the present addition.

- |  |                      |
|--|----------------------|
| - Technical note DT-1396-1 of 2002.03.06 | signed on 2002.03.06 |
| - Plan n° 50080-1 Rev.3 of 2002.02.20    | signed on 2002.02.20 |
| - Plan n° 50080-9 Rev.2 of 2001.02.20    | signed on 2002.02.20 |

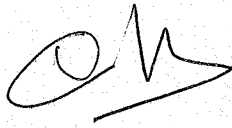
(17) - SPECIFIC PARAMETERS OF THE TYPES OF PROTECTION CONCERNED

The special conditions for safe use defined in the basic certificate are unchanged.

(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH

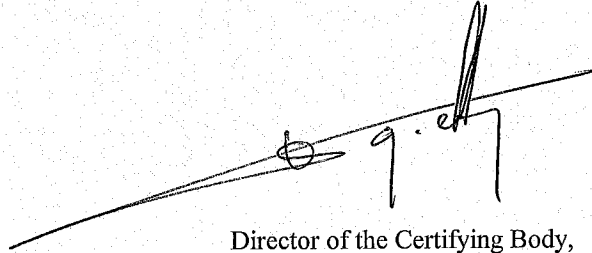
The respect of the Essential Health and Safety Requirements defined in the basic certificate is unchanged.

Verneuil-en-Halatte, 2002 03 13



X. LEFEBVRE

Engineer at the Laboratory of Certification of  
Materials ATEX



Director of the Certifying Body,  
By delegation  
B. PIQUETTE  
Deputy manager of Certification



## ADDITION

### INERIS 00ATEX0043X/02

ACTUATOR SERIES ICON2000 TYPE ICON-.../...-...

Manufactured by BIFFI

#### (15) - PURPOSE OF THE ADDITION

- Increasing of maximum supply voltage,
- Incorporation of new powers for type ICON-010,
- Incorporation of new motors TM series.

#### PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety stipulated by the basic certificate are modified as follows :

##### Electrical characteristics :

Supply voltage : from 230 to 690 V  
Frequency : 50/60 Hz  
Power of motors : from 0.03 kW to 13.963 kW

##### Operating rate of the motors :

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

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.

##### Characteristics of thermal probe equipping the motor :

Threshold of release : 140 °C ± 5°C for actuator with motor SM serie.  
Threshold of release : 160 °C ± 5°C for actuator with motor TM serie.

#### MARKING

The marking defined in the basic basic EC-type examination certificate is unchanged.

#### ROUTINE EXAMINATIONS AND TESTS

The routine tests stipulated by the basic certificate and addition 01 are unchanged.

**(16) - DESCRIPTIVE DOCUMENTS**

The documents referred to below, constitute the file describing the modifications of the apparatus and forming the subject of the present addition.

- Descriptive note DT-1396-2 rev.0 of 2004.09.06
- Drawing n° 50080-1 rev.4 of 2004.03.30
- Drawing n° 50080-9 rev.3 of 2004.03.30

These documents were signed on 2004.09.08

**(17) - SPECIAL CONDITIONS FOR SAFE USE**


The special condition, relating to the range of ambient temperature, defined in the basic certificate is modified as follows :

The actuator fitted with motors TM series are intended to be used in an ambient temperatures range from -55°C to 65°C.

**(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH**

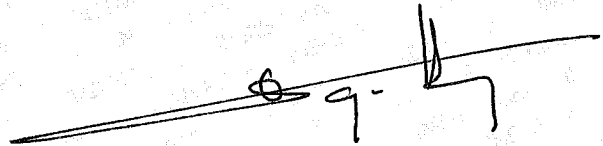
The respect of the Essential Health and Safety Requirements defined in the basic certificate is unchanged.

Verneuil-en-Halatte, 2004 11 10

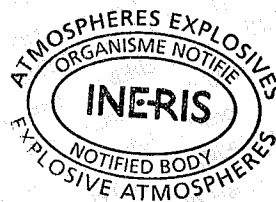
  
X LEFEBURE

C.PETITFRERE

Engineer at the Laboratory of Certification of  
ATEX Equipment



Director of the Certifying Body,  
By delegation  
B. PIQUETTE  
Deputy manager of Certification



## ADDITION

### INERIS 00ATEX0043X/03

ACTUATOR SERIES ICON2000 TYPE ICON-.../...-....

Manufactured by BIFFI ITALIA srl

#### (15) - PURPOSE OF THE ADDITION

- Modification of the operating rate for motors TM series for type ICON-010 to ICON-040,
- Modification of the supply voltage for motors SM and TM series,
- Incorporation of new continuous motors DM series for type ICON-010 and ICON-020.

For these different modifications the series becomes ICON2000AD.

#### PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety stipulated by the basic certificate are modified as follows :

##### Electrical characteristics for three phases motors :

Supply voltage : from 230 to 690 V  
Frequency : 50/60 Hz  
Power of motors : from 0.03 kW to 1.348 kW  
Operating rate TM series : S4-50% 1200 starts/hour maximum

##### Electrical characteristics for single phases motors :

Supply voltage : from 110 to 240 V  
Frequency : 50/60 Hz  
Power of motors : from 0.106 kW to 1.764 kW  
Operating rate SM series : S2-15' or S4-25% 60 starts/hour maximum  
Operating rate TM series : S4-25% 1200 starts/hour maximum

##### Electrical characteristics for direct current phases motors :

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 DM serie.

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.

**MARKING**

The marking defined in the basic EC-type examination certificate is unchanged.

**ROUTINE EXAMINATIONS AND TESTS**

The routine tests stipulated by the basic certificate and the complement 01 are unchanged.

**(16) - DESCRIPTIVE DOCUMENTS**

The documents referred to below, constitute the file describing the modifications of the apparatus and forming the subject of the present addition.

- Descriptive note DT-1396-3 rev.1 of 2004.10.27
- Drawing n° 50080-22 rev.1 of 2004.10.27
- Drawing n° 50080-23 rev.1 of 2004.10.27

These documents were signed on 2004.10.27

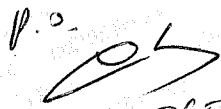
**(17) - SPECIAL CONDITIONS FOR SAFE USE**

The special condition, defined in the basic certificate and the complement 02 are unchanged.

**(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH**

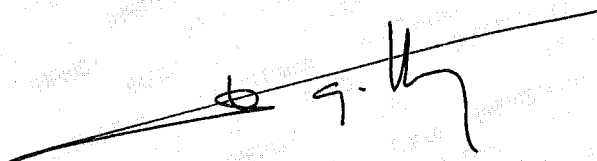
The respect of the Essential Health and Safety Requirements defined in the basic certificate is unchanged.

Verneuil-en-Halatte, 2004 11 10

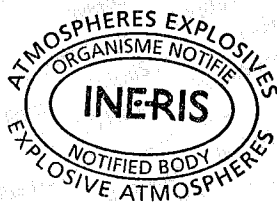
*P.O.*  
  
X. LEFEBVRE

C.PETITFRERE

Engineer at the Laboratory of Certification of  
ATEX Equipment



Director of the Certifying Body,  
By delegation  
B. PIQUETTE  
Deputy manager of Certification



# ADDITION

## INERIS 00ATEX0043X/04

ACTUATOR SERIES ICON2000 TYPE ICON-.../...-...

Manufactured by BIFFI ITALIA srl

### (15) - PURPOSE OF THE ADDITION

- Replacement of existing battery by LS 14250 SAFT battery
- Change of infallible components fuse, resistance included in the battery compartment

### PARAMETERS RELATING TO THE SAFETY

The batteries to be use are SAFT LS14250 - 9V - 1,0 Ah  
 The other parameters relating to the safety stipulated by the addition 03 are unchanged.

### MARKING

On the compartment containing the intrinsic safety circuit, the marking becomes :

EEx ia IIC T4 up to Tamb 65°C - IP66

Or EEx ia IIC T3 up to Tamb 85°C - IP66

“ DO NOT OPEN IN PRESENCE OF EXPLOSIVE GAS ATMOSPHERE ”

### ROUTINE EXAMINATIONS AND TESTS

The routine tests stipulated by the basic certificate and the addition 01 are unchanged.

### (16) - DESCRIPTIVE DOCUMENTS

The documents referred to below, constitute the file describing the modifications of the apparatus and forming the subject of the present addition.

- Descriptive note DT-1396-4 rev.0 du 2005.10.10
- Drawing DE5713 rev.1 du 2005.08.26
- Drawing PC 5713-1 rev.1 du 2005.10.12
- Instruction Manual MAN 618 rev.7 du 2005.10.10
- Drawing n° 50080-9 rev.4 du 2005.10.10
- Drawing n° 50080-23 rev.2 du 2005.10.10
- Interface circuit DE5700 rev.1 du 2005.10.12
- Printed circuit PC 5700-1 rev.1 du 2005.10.12

- Printed circuit PC 5700-2 rev.1 du 2005.10.12
- Printed circuit PC 5700-3 rev.1 du 2005.10.12
- Printed circuit PC 5700-4 rev.1 du 2005.10.12

These documents are signed on 2005.10.12

**(17) - SPECIAL CONDITIONS FOR SAFE USE**

The special condition, defined in the basic certificate and the addition 02 are unchanged.

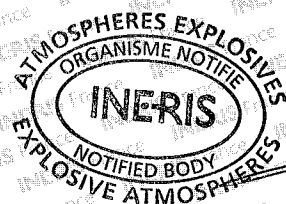
**(18) ESSENTIAL REQUIREMENTS OF SAFETY AND HEALTH**

The respect of the Essential Health and Safety Requirements defined in the basic certificate is unchanged.

Verneuil-en-Halatte, 2005 11 07

T. DELBAERE

Engineer at the Laboratory of Certification of  
ATEX Equipment



Director of the Certifying Body,

By delegation

B. PIQUETTE

Deputy manager of Certification

## ADDITION

(3) INERIS 00ATEX0043X/05

(4) ACTUATOR SERIES ICON2000 TYPE ICON-.../...-....

(5) Made by BIFFI ITALIA srL

(15) PURPOSE OF THE ADDITION

- Application of standards :  
EN 60079-0 : 2006    EN 60079-1 : 2004    EN 60079-11 : 2007.  
EN 61241-0 : 2006    EN 61241-1 : 2004.
- Possibility to insert an extension on the control compartment.
- Modification of the ambient range temperature.

PARAMETERS RELATING TO THE SAFETY

The parameters relating to the safety are unchanged.

MARKING

The marking is modified as follows:

A) Actuator without intrinsic safety element :

BIFFI ITALIA s.r.l  
I - 29017 Fiorenzuola d'Arda (PC)  
ICON (\*)  
INERIS 00ATEX0043X  
(Serial number)  
(Year of construction)  
 Ex d IIB T4  
Ex tD A21 IP68 T135°C  
T. cable : 90°C (\*\*)

**WARNINGS:**

DO NOT OPEN WHEN ENERGIZED  
DO NOT OPEN ANY COVER IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

**B) Actuator with intrinsic safety element :**

BIFFI ITALIA s.r.l  
I - 29017 Fiorenzuola d'Arda (PC)  
ICON (\*)  
INERIS 00ATEX0043X  
(Serial number)  
(Year of construction)  
 II 2 GD  
Ex d ia IIB T4  
Ex tD A21 IP68 T135°C  
T. cable : 90°C (\*\*)

**WARNINGS :**

DO NOT OPEN WHEN ENERGIZED  
DO NOT OPEN ANY COVER IF AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

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

Ex ia IIC T4 up to Tamb 65°C  
Ex ia IIC T3 up to Tamb 85°C

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

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

Marking may be carried out in the language of the country of use.

The protective system or equipment has also to carry the marking normally stipulated by its construction standards.

**ROUTINE EXAMINATIONS AND TESTS**

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.

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

**(16) DESCRIPTIVE DOCUMENTS**

The descriptive documents quoted hereafter constitute the technical documentation describing the modification of the equipment, subject of this present addition.

- Descriptive notice DT\_1396\_5                      rev.1      of 2009.09.22      signed on 2009.09.30
- MAN\_618\_Addendum 1                              rev.1      of 2009.09.28      signed on 2009.09.30
- Drawing n° 50080-29                                rev.1      of 2009.09.09      signed on 2009.09.30

(17) SPECIAL CONDITIONS FOR SAFE USE

The special conditions for safe use are modified as follow :

- 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/mm<sup>2</sup>.
- The equipment is intended to be used in an operating temperature range from -20°C to 65°C or -20°C to 85°C in accordance with the type of motor used.
- The gap and diametrical clearances are less than the values specified in the table 1 of the standard EN 60079-1.

The other conditions are stipulated in the instructions.

(18) ESSENTIAL SAFETY AND HEALTH REQUIREMENTS

The respect of the Essential Health and Safety Requirements is completed as follows:

- Conformity to the standards quoted on page 1, clause (15).
- All provisions adopted by the manufacturer and defined in the descriptive documents.

Verneuil-en-Halatte, 2009 10 08



A handwritten signature in black ink, appearing to read "T. Houeix".

Director of the Certifying Body,  
By delegation  
T. HOUPIX  
Certification Officer  
Certification Division