

# CESI

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interamente versato  
Codice fiscale e numero  
iscrizione CCIAA 00793580150

Registro Imprese di Milano  
Sezione Ordinaria  
N. R.E.A. 429222  
P.I. IT00793580150

Schema di certificazione  
**CESI-ATEX**  
**CESI**

Il CESI è stato autorizzato dal governo italiano ad operare quale organismo di certificazione di apparecchi e sistemi destinati a essere utilizzati in atmosfera potenzialmente esplosiva con D.M. 1/3/1983, D.M. 19/6/1990, D.M. 20/7/1998 e D.M. 27/9/2000

ATEX E C-01

# CERTIFICATE



## [1] EC-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use  
in potentially explosive atmospheres  
Directive 94/9/EC**

[3] EC-Type Examination Certificate number:

**CESI 02 ATEX 015**

[4] Equipment: Inductive transducer type ETHA-4/.

[5] Manufacturer: **ATOS S.p.A.**

[6] Address: Via alla Piana, 57 - 21018 Sesto Calende (VA) - Italy

[7] This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

[8] CESI, notified body n. 0722 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in confidential report n. EX-A2/005947.

[9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

**EN 50014: 1997 + A1..A2 EN 50018: 2000**

[10] If the sign "X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EC-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified equipment or protective system in accordance to the Directive 94/9/EC. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

[12] The marking of the equipment or protective system shall include the following:

**II 2 G EEx d II C T6, T5, T4**

This certificate may only be reproduced in its entirety and without any change, schedule included.

**Date 27 February 2002 - Translation issued the 27 February 2002**

**Prepared**  
Enrico Radaelli

**Verified**  
Damiano Cavanna

**Approved**  
Ulisse Colombo

**CESI**  
CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO  
Business Unit Certificazione

*Responsabile*

[13]

## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 02 ATEX 015**

[15] **Description of equipment**

Inductive transducer type ETHA-4/. The transducer may be used alone or coupled to a solenoid type OZA-T. The models available are the following:

| model    | Resolution  |
|----------|---|
| ETHA-4/1 | 3,3 V/mm  |
| ETHA-4/2 | 2,5 V/mm  |
| ETHA-4/4 | 1,25 V/mm   |
| ETHA-4/8 | 0,6 V/mm  |
| ETHA-4/C | Current output 4-20 or 0-20 mA<br>With conversion voltage/current |

### Electrical characteristics

Supply voltage:  $\pm 15$  Vdc stabilized  
 Electrical input max.: 28 mA  
 Power input max.: < 1 W

### Temperature classes and temperature on the supply cables related to the ambient temperature

| model                   | ambient temperature max. | temperature class | operating temperature of the cables |
|-------------------------|--------------------------|-------------------|-------------------------------------|
| ETHA-4/. <sup>[1]</sup> | 40 °C                    | T6                | --                                  |
| ETHA-4/. <sup>[1]</sup> | 70 °C                    | T6                | $\geq 90$ °C                        |
| ETHA-4/. <sup>[2]</sup> | 40 °C                    | T5                | $\geq 90$ °C                        |
| ETHA-4/. <sup>[2]</sup> | 70 °C                    | T4                | $\geq 120$ °C                       |

<sup>[1]</sup> Coupled to mechanical parts from which is not depending the assigned temperature class.

<sup>[2]</sup> Coupled to solenoid OZA-T

A label shall be provided on the outside of the electrical apparatus as a guide for the selection of the cable by the user (par. 16.8 of EN 50014 Standard).

### Installation conditions

The accessories used for cable entries shall be suitable for the indicated cables temperature and shall be certified according to EN 50014 and EN 50018 Standards.

If cylindrical threads are used, the coupling between the cable gland and the terminal box shall be provided by block to prevent loosening.

This certificate may only be reproduced in its entirety and without any change, schedule included.



[13]

## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 02 ATEX 015**

[16] **Report n. EX-A2/005947**

### Routine tests

The manufacturer shall carry out the routine tests prescribed at paragraph 24 of the EN 50014 Standard.

The manufacturer is exempted from the routine overpressure test since the transducer in subject has been submitted to an overpressure test at 38 bar, corresponding to four times the reference pressure.

### Descriptive documents (prot. EX-A2/005950)

|                             |         |       |           |
|-----------------------------|---------|-------|-----------|
| - n. SAS-212-D/1            | (2 pg.) | dated | 15.1.2002 |
| - n. t190                   | (3 pg.) | dated | 15.1.2002 |
| - n. 4-ETHA-101051-I Rev. 1 |         | dated | 10.1.2002 |
| - n. 4-ETHA-200000-I Rev. 2 |         | dated | 10.1.2002 |
| - n. t187                   |         | dated | 10.1.2002 |

One copy of all documents is kept in CESI files.

[17] **Special conditions for safe use**  
None.

[18] **Essential Health and Safety Requirements**  
Assured by compliance to the Standards indicated at page 1.



## EXTENSION n. 01/03

to EC-Type Examination Certificate CESI 02ATEX015

Equipment: Inductive transducer type ETHA-4/  
Manufacturer: ATOS S.p.A.  
Address: Via alla Piana, 57 – 21018 Sesto Calende (Varese) - Italy

### Admitted variation

Constructional modifications.  
The constructional modifications are specified in the descriptive documents annexed to this extension.

Report n. EX- A2/005947

Descriptive documents (prot. EX-A3/021452)

- n. SAS-266-D/0 dated 28.05.2003  
- n. 4-ETHA-200000-I Rev. 3 dated 12.05.2003

One copy of all documents is kept in CESI files.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX015.

This document may only be reproduced in its entirety and without any change.

date 14 June 2003 - translation issued the 14<sup>th</sup> June 2003

prepared CERT – Enrico Radaelli 

verified CERT – Mirko Balaz 

approved CERT – Ulisse Colombo

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CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO  
Business Unit Certificazione  
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page 1/1

Prot. A3/021456 P: 1  
Keywords 13010R 27430N 48010M 542500 66540E



## EXTENSION n. 02/07

to EC-Type Examination Certificate CESI 02ATEX015

Equipment: Inductive transducer type ETHA-4/.

Manufacturer: ATOS S.p.A.

Address: Via alla Piana, 57 – 21018 Sesto Calende (Varese) - Italy

### Admitted variation

Constructional modifications:

materials for enclosure suitable to be used at a minimum ambient temperature up to  $-40^{\circ}\text{C}$ .  
The admitted variation are specified in the descriptive documents annexed to the extension.

### Installation conditions

The characteristic of the cables and of the accessories used for cable entries shall be suitable to be used in the range of the ambient/operating temperature of the transducer.

Report n. EX-A7013683.

### Routine tests

The manufacturer shall carry out the routine tests prescribed at par. 24 of the EN 50014 standard and at par. 16 of the EN 50018 standard. The transducer in subject is exempted from overpressure routine test since it has been submitted, with the static method and favourable result, to an overpressure test at a pressure corresponding to 4 times the reference pressure related to an ambient temperature of  $-40^{\circ}\text{C}$ .

### Descriptive documents (prot. EX-A7013695)

|                            |         |       |            |
|----------------------------|---------|-------|------------|
| - n. SAS-313-D/1           |         | dated | 02.02.2007 |
| - n. 4-ETHA-101051-I Rev.3 |         | dated | 02.02.2007 |
| - n. 4-ETHA-200000-I Rev.5 |         | dated | 02.02.2007 |
| - n. TT190/2               | (pg. 4) | dated | 26.01.2007 |

One copy of all documents is kept in CESI files.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX015.

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date 07 February 2007 - translation issued the 07<sup>th</sup> February 2007

prepared Enrico Radaelli

verified Mirko Balaz

approved Fiorenzo Bregani

**CESI**  
Centro Elettrotecnico Sperimentale Italiano  
Giacinto Motta SpA

Prot. A7013694 P: 1

page 1/1

## EXTENSION n. 03/08



to EC-Type Examination Certificate CESI 02 ATEX 015

Equipment: Inductive transducer type ETHA-4/.

Manufacturer: ATOS S.p.A.

Address: Via alla Piana, 57 – 21018 Sesto Calende (Varese) - Italy

### Admitted variation

Constructional modifications and updating of the documentation for conformity to EN60079-0 (2006), EN60079-1 (2004) Standards. The admitted variation are specified in the descriptive documents annexed to the extension.

### Marking

The equipment shall be marked as follows:

 II 2G Ex d IIC T6 or T5 or T4

### Electrical characteristics

Unchanged.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02 ATEX 015.

This document may only be reproduced in its entirety and without any change.

date 4 April 2008 - translation issued the 4<sup>th</sup> April 2008

prepared

Enrico Radaelli

verified

Mirko Balaz

approved

Fiorenzo Bregani

**CESI** S.p.A.  
Divisione Energia  
"Area Tecnica Certificazione"  
Il Responsabile

page 1/2

## EXTENSION n. 03/08

to EC-Type Examination Certificate CESI 02 ATEX 015

### Temperature classes and temperature on the supply cables related to the ambient temperature

| model                   | ambient temperature max. | temperature class | operating temperature of the cables |
|-------------------------|--------------------------|-------------------|-------------------------------------|
| ETHA-4/. <sup>[1]</sup> | 40 °C                    | T6                | --                                  |
| ETHA-4/. <sup>[1]</sup> | 70 °C                    | T6                | > 90 °C                             |
| ETHA-4/. <sup>[2]</sup> | 40 °C                    | T5                | > 90 °C                             |
| ETHA-4/. <sup>[2]</sup> | 70 °C                    | T4                | > 120 °C                            |

<sup>[1]</sup> Coupled to mechanical parts from which is not depending the assigned temperature class.

<sup>[2]</sup> Coupled to solenoid OZA-T

A label shall be provided on the outside of the electrical apparatus as a guide for the selection of the cable by the user (par. 16.5 of EN 60079-0 Standard).

### Minimum ambient temperature

The transducers in subject are suitable to operate with a minimum ambient temperature of – 40°C.

### Installation conditions

- The characteristics of the cables and of the accessories used for cable entries shall be suitable for the use in the ambient/operating temperature of the solenoid. The accessories used for cable entries shall be certified according to EN60079-0 and EN60079-1 Standards.
- If cylindrical threads are used, the coupling between the cable gland and the enclosure shall be provided by block to prevent loosening.

Report n. EX-A8010039

### Routine tests

The manufacturer shall carried out the routine tests prescribed at par. 27 of EN60079-0 Standard and at par. 16 of EN60079-0 Standard. Transducers in subject are exempted from overpressure routine test since they have been submitted, with the static method and favourable result, to an overpressure test at a pressure corresponding to 4 times the reference pressure related to an ambient temperature of –40 °C.

### Descriptive documents (prot. EX-A8010046)

|                             |         |       |            |
|-----------------------------|---------|-------|------------|
| - n. SAS-429-D/0            |         | dated | 29.08.2007 |
| - n. 4-ETHA-200000-I Rev.6  |         | dated | 05.09.2007 |
| - n. 4-ETHA-101051-I Rev. 5 |         | dated | 06.09.2007 |
| - n. TT190/3                | (pg. 4) | dated | 30.08.2007 |
| - n. TT187/2                |         | dated | 30.08.2007 |

One copy of all documents is kept in CESI files.

### Essential Health and Safety Requirements

The Essential Health and Safety Requirements are assured by compliance to the following standards:

- EN 60079-0: 2006 – Electrical apparatus for explosive gas atmosphere -General requirements.
- EN 60079-1: 2004 – Flameproof enclosure “d”.

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## EXTENSION n. 04/11



to EC-Type Examination Certificate CESI 02 ATEX 015

Equipment: Inductive transducer type ETHA-4/.

Manufacturer: ATOS S.p.A.

Address: Via alla Piana, 57 – 21018 Sesto Calende (Varese) - Italy

### Admitted variation

- Standard update to EN60079-0: 2009 and EN60079-1: 2007
- Added protection for DUST – group II, category 2D conformity to EN60079-31: 2009 standard for installation with combustible dust.

The admitted variation are specified in the descriptive documents annexed to the extension.

### Marking

The equipment shall be marked as follows:

 II 2G Ex d IIC T6 or T5 or T4 Gb

 II 2D Ex tb IIIC IP66/67 T85°C or T100°C or T135°C Db

### Electrical characteristics

Unchanged.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02 ATEX 015.

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date 17 May 2011 - translation issued the 17<sup>th</sup> May 2011

prepared

MT



verified

Mirko Balaz



approved

Fiorenzo Bregani



page 1/2



## EXTENSION n. 04/11

to EC-Type Examination Certificate CESI 02 ATEX 015

### Temperature classes and temperature on the supply cables related to the ambient temperature

| model                   | ambient temperature max. | temperature class / maximum surface temperature | operating temperature of the cables |
|-------------------------|--------------------------|---|-------------------------------------|
| ETHA-4/. <sup>[1]</sup> | 40 °C                    | T6 / T85°C                                      | --                                  |
| ETHA-4/. <sup>[1]</sup> | 70 °C                    | T6 / T85°C                                      | ≥ 90 °C                             |
| ETHA-4/. <sup>[2]</sup> | 40 °C                    | T5 / T100°C                                     | ≥ 90 °C                             |
| ETHA-4/. <sup>[2]</sup> | 70 °C                    | T4 / T135°C                                     | ≥ 120 °C                            |

<sup>[1]</sup> Coupled to mechanical parts from which is not depending the assigned temperature class.

<sup>[2]</sup> Coupled to solenoid OZA-T

A label shall be provided on the outside of the electrical apparatus as a guide for the selection of the cable by the user (par. 16.5 of EN 60079-0 Standard).

### Minimum ambient temperature

The transducers in subject are suitable to operate with a minimum ambient temperature of – 40°C.

### Installation conditions

- The characteristics of the cables and of the accessories used for cable entries shall be suitable for the use in the ambient/operating temperature of the solenoid. The accessories used for cable entries shall be certified according to EN60079-0, EN60079-1 and EN60079-31 Standards with degree of protection IP66/67.
- If cylindrical threads are used, the coupling between the cable gland and the enclosure shall be provided by block to prevent loosening.

Report n. EX-B1015781

### Routine tests

Unchanged.

### Descriptive documents (prot. EX-B1015788)

|                      |         |       |            |
|----------------------|---------|-------|------------|
| - n. SAS-516-D/0     |         | dated | 04.04.2011 |
| - n. TT190/5         | (pg. 4) | dated | 04.04.2011 |
| - n. TT187/3         |         | dated | 04.04.2011 |
| - n. 4-ETHA-211051-I |         | dated | 22.02.2011 |
| - n. 4-ETHA-210000-I |         | dated | 22.02.2011 |

One copy of all documents is kept in CESI files.

### Essential Health and Safety Requirements

The Essential Health and Safety Requirements are assured by compliance to the following standards:

- EN 60079-0: 2009 – Electrical apparatus for explosive atmosphere - General requirements.
- EN 60079-1: 2001 – Flameproof enclosure “d”.
- EN 60079-31: 2009 – Equipment dust ignition protection by enclosure "t".

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**EXTENSION n. 05/15**

to EC-Type Examination Certificate CESI 02ATEX015X

**Equipment:** Inductive transducer type ETHA-4/  
**Manufacturer:** ATOS S.p.A.  
**Address:** Via alla Piana, 57 – 21018 Sesto Calende (Varese) - Italy

**Admitted variation**

- Updating to EN60079-0 (2012) and EN60079-31 (2014) standards.
- Updating nameplate for multi-certification ATEX / IEC EX /...
- Updating of the documentation.

The details of the admitted variations are specified in the descriptive documents annexed to this extension.

**Marking**

The equipment shall be marked as follows:

II 2G Ex d IIC T6, T5, T4 Gb  
 II 2D Ex tb IIC T85 °C, T100 °C, T135 °C Db  
 IP66/67

The temperature class and/or the maximum surface temperature are function of the ambient temperature:  
 Tamb: -40°C / +40°C/+70°C.

**Electrical characteristics**

All electrical characteristics remain unchanged.  
 Detailed characteristics are reported in the descriptive documents annexed to the certificate.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX015X.

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**Date** 21 May 2015 - Translation issued the 21 May 2015

**Prepared**

Enrico Radaelli

**Verified**

Mirko Balaz

**Approved**

Roberto Piccin

**CESI S.p.A.**  
 Testing & Certification Division Page 1/2  
 Business Area Certification  
 Il Responsabile

**(Roberto Piccin)**

PRD N. 018B  
 Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC  
 Signatory of EA, IAF and ILAC Mutual Recognition Agreements

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Capitale sociale € 8.550.000 interamente versato  
 C.F. e numero iscrizione Reg. Imprese di Milano 00793580150  
 P.I. IT00793580150  
 N. R.E.A. 429222

**EXTENSION n. 05/15**

to EC-Type Examination Certificate CESI 02ATEX015X

Report n. EX-B5010825.

**Routine test**

Unchanged.

**Descriptive documents** (prot. EX-B5010836)

|   |         |       |            |
|---|---------|-------|------------|
| - Technical Note n. SAS-563-D/0                           | (pg. 2) | dated | 08.05.2015 |
| - Safety Instructions n. TT190-5                          | (pg. 3) | dated | 11.05.2015 |
| - n. 4 -ETHA-210000- I rev. 1                             |         | dated | 25.03.2015 |
| - n. 6 -ETHA-100050                                       |         | dated | 25.03.2015 |
| - Declaration of Conformity TT187/4 ( <i>fac simile</i> ) |         | dated | 08.05.2015 |

One copy of all documents is kept in CESI files.

**Special conditions for safe use (X)**

*Beginning from this extension the "X" suffix is added to the CESI 02ATEX015 certificate number and it becomes CESI 02ATEX015X for the insertion of the following special condition for safe use:*

- The flamepaths are specified in the manufacturer drawings. For information regarding the dimensions of the flameproof joints the manufacturer shall be contacted.
- The characteristics of the connecting cables and of the accessories used for cable entries shall be suitable for the use in the ambient/operating temperature of the transducer. For the selection of the operating temperature of the cable, depending on the installation and / or operation temperatures of the transducer, refer to the Safety Instructions provided by the Manufacturer. The accessories used for cable entries shall be certified separately and suitable for the installation hazardous area.
- Information relating to use, installation, repair and maintenance of the equipment are included within the safety instructions.

**Essential Health and Safety Requirements**

The Essential Health and Safety Requirements are assured by compliance to the following standards:

- EN 60079-0: 2012 – Explosive atmospheres - Equipment - General requirements.
- EN 60079-1: 2007 – Explosive atmospheres - Equipment protection by flameproof enclosures “d”.
- CEI EN 60079-1: 2008 (annex 1) – Explosive atmospheres – Equipment protection by flameproof enclosures “d”.
- EN 60079-31: 2014 – Explosive atmospheres – Equipment dust ignition protection by enclosures “t”.

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fac simile

La Ditta / The Company

**ATOS s.p.a.**  
**21018 Sesto Calende / Italia**  
**via alla Piana 57**

Dichiara con la presente la conformità al Prodotto / herewith declares conformity of the Products

| Prodotto / Product                                    | Tipo / Type     |
|---|-----------------|
| <b>TRASDUTTORE INDUTTIVO<br/>INDUCTIVE TRANSDUCER</b> | <b>ETHA-4/*</b> |

Modo di protezione / Protection mode

|  |   |
|--|---|
|  | II 2 G Ex d IIC T6, T5, T4 Gb                             |
|  | II 2 D Ex tb IIIC T85°C, T100°C, T135°C Db <b>IP66/67</b> |

Certificato / Certificate **CESI 02 ATEX 015 X**

In accordo alle norme sottostanti / in accordance with the below applicable regulations

Direttive CEE applicabili / applicable EC Directive

**2004/108/CE**

**94/9/CE**

In quanto conforme alle Norme Europee Armonizzate / As in accordance to the European Armonized Standards

|                     |                                     |                           |                                     |
|---------------------|-------------------------------------|---------------------------|-------------------------------------|
| <b>EN 61000-6-1</b> | <input checked="" type="checkbox"/> | <b>EN 60079-0</b> (2012)  | <input checked="" type="checkbox"/> |
| <b>EN 61000-6-3</b> | <input checked="" type="checkbox"/> | <b>EN 60079-1</b> (2007)  | <input checked="" type="checkbox"/> |
|                     |                                     | <b>EN 60079-31</b> (2014) | <input checked="" type="checkbox"/> |

**Organismo Notificato / Notified body n° 0722**  
**Notifica / Notification CESI 02 ATEX 034Q**

|  |                           |
|--|---------------------------|
| <b>CESI</b>  |                           |
| protocollo<br><b>B5010836</b>                        | firma<br><i>Kodells</i>   |
| allegato al certificato<br><b>CESI 02 ATEX 015 X</b> | data<br><b>21/05/2015</b> |