CESI
Centro Elettrotecnico
Sperimentale Italiano
Giacinto Motta SpA

Via R. Rubattino 54
20134 Milano - Italia
Telefono +39 022125.1
Fax +39 0221255440
www.cesi.it

Capitale sociale 8 550 000 €
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

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 03 ATEX 057 X

[4] Equipment: Explosion proof solenoids type OAM, OAM/WP, OZAM, OZAM-A/WP, MZAM-A and inductive transducer type ETHAM-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-A3/009577.

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

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

[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:

Ex I M 2 EEx d I

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

Date 18 March 2003 - Translation issued the 18 March 2003

Prepared	**Verified**	**Approved**
Enrico Radaelli	Damiano Cavanna	Ulisse Colombo

CESI
CENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Business Unit Certificazione
Il Responsabile

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-02

[13] **Schedule**

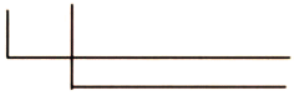
[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 03 ATEX 057 X**

[15] **Description of equipment**

EXPLOSION PROOF SOLENOIDS

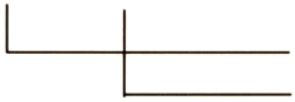
The explosion proof solenoids subject of this certificate are use to drive direction control, flow control and pressure control valves; they are identified by a code as follows:

OAM - . .



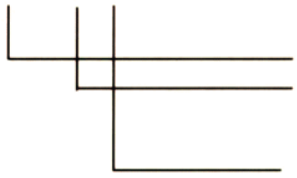
explosion proof ON/OFF solenoid
options supply voltage

OAM/WP - . .



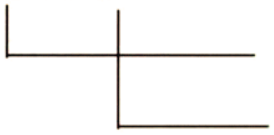
explosion proof ON/OFF solenoid with protected manual override
options supply voltage

OZAM - . - .



explosion proof proportional solenoid
A: for open loop application
T: for closed loop application with position transducer type ETHAM-4
option supply voltage for type **A**

OZAM -A/WP - .



explosion proof proportional solenoid with protected manual override for open loop application,
options supply voltage

MZAM -A - .

explosion proof proportional solenoid without manual override
options supply voltage

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

Prot. A3/009590 P: 5+ 22
Keywords 13010R 21635I 48010M 54250O 66540E

[13] # Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 03 ATEX 057 X**

[15] **Description of equipment** *(follows)*

INDUCTIVE TRANSDUCER type ETHAM-4

The transducer may be used alone or coupled to a solenoid type OZAM-T.

The models available are the following:

model	Resolution
ETHAM-4/1	3,3 V/mm
ETHAM-4/2	2,5 V/mm
ETHAM-4/4	1,25 V/mm
ETHAM-4/8	0,6 V/mm
ETHAM-4/C	Current output 4-20 or 0-20 mA with conversion voltage/current

Electrical characteristics

Solenoid type OAM and OAM/WP

- Rated voltage supply :	12 ÷220 Vdc ;	12 ÷220 Vca
- Rated power:	8 W	8 W
- Frequency:		50/60 Hz

Solenoid type OZAM, OZAM-A/WP and type MZAM-A

- Rated voltage supply:	12 Vdc ;	24 Vdc
- Input current max:	2.5 A;	1.1 A
- Rated power max:	35 W	

Power limitation is achieved by means of electronic regulator feeding the solenoid with a current of 2.5 A for the models supplied at 12 V and with a current of 1.1 A for the models supplied at 24 V.

The supply of the solenoid type OZA-T is made by means of electronic regulator type E-ME-T-0*H (ATOS).

Inductive transducer type ETHAM-4

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

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

[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 03 ATEX 057 X**

[15] **Description of equipment** *(follows)*

Temperature on the supply cables related to the ambient temperature

Supply cable to be used shall be suitable for the operating temperature reported in the following table:

model	ambient temperature max.	operating temperature of the cables
OAM - OAM/WP	70 °C	≥ 90 °C
OAM - OAM/WP	45 °C	--
OZAM-A - OZAM-A/WP	60 °C	≥ 110 °C
OZAM-A - OZAM-A/WP	40 °C	≥ 90 °C
MZAM-A	60 °C	≥ 110 °C
MZAM-A	40 °C	≥ 90 °C
OZAM-T	60 °C	≥ 110 °C
OZAM-T	40 °C	≥ 90 °C
ETHAM-4 [1]	40 °C	--
ETHAM-4 [1]	70 °C	≥ 90 °C
ETHAM-4 [2]	40 °C	≥ 90 °C
ETHAM-4 [2]	60 °C	≥ 110 °C

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

[2] Coupled to solenoid OZAM-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 loosing.

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

[13] # Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 03 ATEX 057 X**

[16] **Report n.** EX-A3/009577

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

Explosion proof solenoids.
The manufacturer is exempted from the overpressure test since the solenoids in subject have been submitted to an overpressure test at 33 bar, corresponding to four times the reference pressure.
The actuators are submitted to an individual overpressure test to verify the functionally suitability at the rated operating pressure.

Inductive transducer
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-A3/009592)

- Document n. SAS – 222 –D/O	(pg. 6)	dated	20.01.2003
- Document n. t23	(pg. 5)	dated	20.01.2003
- Document n. 6-OAM-201000-I		dated	20.01.2003
- Document n. 6-OAM-202000-I		dated	20.01.2003
- Document n. 6-OZAM-101000-I		dated	20.01.2003
- Document n. 6-OZAM-102000-I		dated	20.01.2003
- Document n. 6-MZAM-220000-I		dated	20.01.2003
- Document n. 4-ETHAM-200000-I		dated	20.01.2003
- Document n. T-641/BT-I		dated	20.01.2003
- Document n. T-642/BT-I		dated	20.01.2003
- Document n. T-444/BT		dated	20.01.2003
- Document n. T-443/BT		dated	20.01.2003
- Document n. t33		dated	20.01.2003

One copy of all documents is kept in CESI files.

[17] **Special conditions for safe use**
Do not expose to high risk of mechanical danger

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

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

EXTENSION n. 01/08

to EC-Type Examination Certificate CESI 03 ATEX 057X

Equipment: Explosion proof solenoids type OAM, OAM/WP, OZAM, OZAM-A/WP, MZAM-A and inductive transducer type ETHAM-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.
- Change of the code and new electrical characteristics for the types **OAM-220** and **OAM/WP-220** in the new code **OAM-230** and **OAM/WP-230**

Marking

The equipment shall be marked as follows:

I M2 Ex d I

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 03 ATEX 057X.

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

date 22 January 2008 - translation issued the 22nd January 2008

prepared Enrico Radaelli

verified Mirko Balaz

approved Fiorenzo Bregani

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

CESI
Centro Elettrotecnico
Sperimentale Italiano
Giacinto Motta SpA

Via R. Rubattino 54
20134 Milano - Italia
Telefono +39 022125.1
Fax +39 0221255440
www.cesi.it

Capitale sociale 8 550 000 Euro
interamente versato
Codice fiscale e numero
iscrizione CCIAA 00793580150

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

EXTENSION n. 01/08

to EC-Type Examination Certificate CESI 03 ATEX 057X

Electrical characteristics

Solenoid type OAM-230 and OAM/WP230

- Rated voltage supply:	230 Vac	240 Vac
- Rated power:	8 W	8 W
- Frequency:	50 Hz	60 Hz

The electrical characteristics of the others types and model of solenoid remain unchanged.

The detail of the electrical characteristics for each model of solenoid is reported in the descriptive document annexed to the certificate.

Installation conditions

- The solenoids shall be installed on a metallic base with a volume of minimum 0.2 dm^3 for each valve.
- 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 loosing.

Report n. EX-A8001919

Routine tests

The manufacturer shall carry out the routine tests prescribed at paragraph 27 of the EN60079-0 and at paragraph 16 of the EN60079-1 Standard.

Explosion proof solenoids.

The manufacturer is exempted from the overpressure test since the solenoids in subject have been submitted to an overpressure test at 33 bar, corresponding to four times the reference pressure.

The actuators are submitted to an individual overpressure test to verify the functionally suitability at the rated operating pressure.

Inductive transducer

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.

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

EXTENSION n. 01/08

to EC-Type Examination Certificate CESI 03 ATEX 057X

Descriptive documents (prot. EX-A8001926)

- n. SAS-430-D/0	(pg. 1)	dated	29.08.2007
- n. TT23/2	(pg. 5)	dated	30.08.2007
- n. 6-OAM-201000-I rev.1		dated	05.09.2007
- n. 6-OAM-202[illegible]-I rev.2		dated	05.09.2007
- n. 6-OZAM-101000-I rev.1		dated	06.09.2007
- n. 6-OZAM-102000-I rev.2		dated	06.09.2007
- n. 6-MZAM-220000-I rev.1		dated	05.09.2007
- n. 4-ETHAM-200000-I rev.1		dated	05.09.2007
- n. T-641/BT-I rev.2		dated	06.09.2007
- n. T-642/BT-I rev.2		dated	06.09.2007
- Declaration of Conformity TT33/2		dated	30.08.2007

One copy of all documents is kept in CESI files.

Special conditions for safe use

Do not expose to high risk of mechanical danger

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".

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

CESI

EXTENSION n. 02/12

to EC-Type Examination Certificate CESI 03ATEX057X

Equipment: Explosion proof solenoid series OA-; OZA; MZA-A-

Manufacturer: **ATOS S.p.A.**

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

Admitted variation

- Standard EN 60079-0: 2009, EN 60079-1:2007 upgrade.

Marking

The equipment shall be marked as follows:

I M2 Ex d I Mb

Tamb: -20°C / +40°C/+45°C/+60°C/+70°C.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 03ATEX057X.

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

Date 15th March 2012- translation issued the 15th March 2012

prepared	verified	approved
M. T.	Mirko Balaz	Fiorenzo Bregani

CESI S.p.A.
Testing & Certification Division
Business Area Certification
Il Responsabile
Fiorenzo Bregani

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
PRD N. 018B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

CESI S.p.A.
Via Rubattino 54
I-20134 Milano - Italy
Tel: +39 02 21251
Fax: +39 02 21255440
e-mail: info@cesi.it
www.cesi.it

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

EST-CE-ING-0

EXTENSION n. 02/12

to EC-Type Examination Certificate CESI 03ATEX057X

Electrical characteristics

All electrical characteristics are unchanged.

Maximum surface temperature and temperature on the supply cables related to the maximum ambient temperature

Solenoid type	**T amb.** Max ambient temperature (°C)	Max surface temperature (°C)	Cable temperature (°C)
OAM OAM/WP	70	150	≥ 90
OAM OAM/WP	45	150	- -
OZAM-A OZAM-A/WP	60	150	≥ 110
OZAM-A OZAM-A/WP	40	150	≥ 90
MZAM-A	60	150	≥ 110
MZAM-A	40	150	≥ 90
OZAM-T	60	150	≥ 110
OZAM-T	40	150	≥ 90

Transducer type	**T amb.** Max ambient temperature (°C)	Max surface temperature (°C)	Cable temperature (°C)	notes
ETHAM-4	70	150	≥ 90	1
	40	150	- -	1
	60	150	≥ 110	2
	40	150	≥ 90	2

Note 1: when connected to mechanical parts from which the max surface temperature is not influenced
Note 2: information shown only if the transducer is connected to the solenoid type OZAM-T

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

Installation conditions

- The solenoids shall be installed on a metallic base with a volume of minimum 0.2 dm^3 for each valve.
- 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 loosing.

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

EXTENSION n. 02/12

to EC-Type Examination Certificate CESI 03ATEX057X

Routine test
The manufacturer shall carry out the routine tests prescribed at paragraph 27 of the EN60079-0 and at paragraph 16 of the EN60079-1 Standard.

Explosion proof solenoids.
The manufacturer is exempted from the overpressure test since the solenoids have been submitted to an overpressure test at 33 bar, corresponding to four times the reference pressure.
The actuators are submitted to an individual overpressure test to verify the functionally suitability at the rated operating pressure.

Inductive transducer

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

Report n. EX-B2008531

Descriptive documents (prot. EX-B2008547)

- n. SAS-528-D/0		dated	14.02.2012
- n. TT23/3	(pages 5)	dated	16.02.2012
- n. T-641/BT-I		dated	15.02.2012
- n. T-642/BT-I		dated	15.02.2012
- Declaration of conformity TT33/3		dated	15.02.2012

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 atmospheres - Part 0: general requirements.
- EN 60079-1: 2007 - Explosive atmosphere - Part 1: equipment protection by explosion proof "d".

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

Dichiarazione di conformità Declaration of conformity	TT33/3 Atos spa

CE

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
SOLENOIDI ANTIDEFLAGRANTI **EXPLOSION-PROOF SOLENOIDS** **TRASDUTTORE INDUTTIVO** **INDUCTIVE TRANSDUCER**	**OAM OAM/WP** **OZAM OZAM-A/WP** **MZAM-A** **ETHAM-4/***

Modo di protezione / Protection mode

I M2 Ex d I Mb

CERTIFICATO **CESI 03 ATEX 057 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

EN 61000-6-1	X	**EN 60079-0** (2009)	X
EN 61000-6-3	X	**EN 60079-1** (2007)	X

Organismo Notificato / Notified body **n° 0722**

Notifica / Notification **CESI 02 ATEX 034 Q**

CESI

protocollo	firma
B2008547	
allegato al certificato	data
CESI 03 ATEX 057 X	15/03/2012

Data
Date: .....

Firma
Signature: .....

CESI

EXTENSION n. 03/15

to EC-Type Examination Certificate CESI 03ATEX057X

Equipment: Explosion proof solenoids type OAM, OAM/WP, OZAM, OZAM-A/WP, MZAM-A and Inductive transducer type ETHAM-4

Manufacturer: **ATOS S.p.A.**

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

Admitted variation

- Updating to **EN60079-0 (2012)** and **EN60079-1 (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:

Ex I M2 Ex db I Mb

Tamb: -20°C ÷ +40°C/+45°C/+60°C/+70°C.

Description and identification of the equipment

Unchanged.

Electrical characteristics

All the electrical characteristics remain unchanged.
The characteristics for each model are detailed in the descriptive documents annexed to the certificate.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 03ATEX057X.

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

Date 13 October 2015 - Translation issued the 13 October 2015

Prepared	**Verified**	**Approved**
Enrico Radaelli	Mirko Balaz	Roberto Piccin

CESI S.p.A.
Testing & Certification Division
Business Area Certification
Il Responsabile
(Roberto Piccin)

ACCREDIA
L'ENTE ITALIANO DI ACCREDITAMENTO
PRD N. 018B
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

CESI S.p.A.
Via Rubattino 54
I-20134 Milano - Italy
Tel: +39 02 21251
Fax: +39 02 21255440
e-mail: info@cesi.it
www.cesi.it

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

EST-CE-ING-0

CESI

EXTENSION n. 03/15

to EC-Type Examination Certificate CESI 03ATEX057X

Report n. EX-B5020934.

Routine test
Unchanged.

Descriptive documents (prot. EX-B5020945)

- Technical Note n. SAS-569-D/0	(pg. 7)	dated	23.09.2015
- Safety Instructions n. TT354	(pg. 4)	dated	23.09.2015
- n. 6 –OAM-210000-I		dated	07.07.2015
- n. 6 –OZAM-110000-I		dated	20.07.2015
- n. 6 –MZAM-230000-I		dated	20.07.2015
- n. 4 –ETHAM-210000-I		dated	09.07.2015
- n. 6 –OZATM-110000-I		dated	22.07.2015
- n. 6 -OAM-100050		dated	28.07.2015
- n. 6 -ETHAM-100050		dated	27.07.2015
- Declaration of Conformity TT352 *(fac simile)*		dated	23.09.2015

One copy of all documents is kept in CESI files.

Special conditions for safe use (X)

- Do not expose to high risk of mechanical danger.
- The solenoids shall be installed on a metallic base with a volume of minimum 0.2 dm^3 for each valve.
- The flamepaths characteristics are specified in the manufacturer drawings annexed to the certificate. 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 equipment. For the selection of the operating temperature of the cable, depending on the model of the equipment and the relevant installation and / or operation temperatures, 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: 2014 – Explosive atmospheres - Equipment protection by flameproof enclosures “d”.
- CEI EN 60079-1: 2008 (annex 1) – Explosive atmospheres – Equipment protection by flameproof enclosures “d”.

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

CE

fac simile

The Company

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

herewith declares conformity of the Products

Product	Type
EXPLOSION-PROOF SOLENOIDS	**OAM OAM/WP OZAM OZAM-A/WP MZAM-A**
INDUCTIVE POSITION TRANSDUCER	**ETHAM-4/***

Protection mode

I M2 Ex db I Mb
IP 66/67

CERTIFICATE N° **CESI 03 ATEX 057 X**

in accordance with the below applicable regulations

applicable EC Directive

2004/108/CE **94/9/CE**

As in accordance to the European Harmonised Standards

EN 61000-6-1	X	**EN 60079-0** (2012)	X
EN 61000-6-3	X	**EN 60079-1** (2014)	X

Notified body	**n° 0722**
Notification	**CESI 02 ATEX 034 Q**

CESI

protocollo	firma
B5020945	
allegato al certificato	data
CESI 03 ATEX 057 X	13/10/2015

Date: 23.09.2015 Signature: ..... Pag. 1/1

IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx CES 12.0007X issue No.:0

Certificate history:

Status: **Current**

Date of Issue: **2012-10-29** Page 1 of 3

Applicant: **ATOS S.p.A.**
Via alla Piana, 57
I - 21018 Sesto Calende (VA)
Italy

Electrical Apparatus: **Explosion proof solenoids type OAMI, OZAMI, OAMI/WP, OZAMI-A/WP, MZAMI-A and inductive position transducer type ETHAMI-4/***

Optional accessory:

Type of Protection: **Flameproof enclosures 'd'**

Marking: **Ex d I Mb**

Approved for issue on behalf of the IECEx Certification Body: Mirko Balaz

Position: Head of IECEx CB

Signature:
(for printed version) _____

Date: _____

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 the Official IECEx Website.

Certificate issued by:

CESI
Centro Elettrotecnico
Sperimentale Italiano S.p.A.
Via Rubattino 54
20134 Milano
Italy

IECEx Certificate of Conformity

Certificate No.: IECEx CES 12.0007X

Date of Issue: **2012-10-29** Issue No.: **0**

Manufacturer: **ATOS S.p.A.**
Via alla Piana, 57
I - 21018 Sesto Calende (VA)
Italy

Additional Manufacturing location(s):

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 electrical apparatus 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 : 2007-10 Edition: 5	Explosive atmospheres - Part 0:Equipment - General requirements
IEC 60079-1 : 2007-04 Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

*This Certificate **does not** indicate compliance with electrical 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:
IT/CES/ExTR12.0003/00

Quality Assessment Report:

IT/CES/QAR10.0003/01

IECEx Certificate of Conformity

Certificate No.: IECEx CES 12.0007X

Date of Issue: **2012-10-29** Issue No.: **0**

Schedule

EQUIPMENT:
Equipment and systems covered by this certificate are as follows:

On-off and proportional solenoids are used for the command of directional, flow or pressure control valves, operating in hazardous areas with explosive or flammable environment.
The following versions with the relevant model code are available:

Version	Model Code	Description
Solenoids	**OAMI-***	ON-OFF solenoid
	OZAMI-A-*	Proportional solenoid without position transducer
	MZAMI-A-*	Proportional solenoid without position transducer and without manual override
	OZAMI-T-*	Proportional solenoid with position transducer ETHAMI-4/*
Solenoids with protected manual override	OAMI/**WP-***	ON-OFF solenoid
	OZAMI-A-*/**WP**	Proportional solenoid without position transducer
Transducers	**E-THAMI-4/****	Inductive LVDT transducer used coupled with proportional solenoid or as single parts

* solenoids nominal power supply voltages,
** transducer versions,

For further information see Annex.

CONDITIONS OF CERTIFICATION: YES as shown below:

Do not expose to high risk of mechanical danger.
The flamepaths are specified in the manufacturer drawings; for information regarding the dimensions of the flameproof joints the manufacturer shall be contacted.
The conditions of the installation of the equipment are included within the safety instructions. For a safe use these assembling instructions are to be followed precisely.

Annexe: ATOS IECExCES12.0007X ANNEX - solenoids Mb.pdf

IECEx Certificate of Conformity

Prot: B2036032

Annex to certificate: **IECEx CES 12.0007X Issue No.0 of 2012-10-29**

Applicant: **ATOS S.p.A.**
via alla Piana, 57; I - 21018 Sesto Calende (VA), Italy

Electrical Apparatus: **Explosion proof solenoids type OAMI, OZAMI, OAMI/WP, OZAMI-A/WP, MZAMI-A and inductive position transducer type ETHAMI-4/***

Description of equipment

On-off and proportional solenoids are used for the command of directional, flow or pressure control valves, operating in hazardous areas with explosive or flammable environment; following versions with the relevant model code are available:

Tab A

Version	Model Code	Description
Solenoids	**OAMI-***	ON-OFF solenoid
	OZAMI-A-*	Proportional solenoid without position transducer
	MZAMI-A-*	Proportional solenoid without position transducer and without manual override
	OZAMI-T-*	Proportional solenoid with position transducer ETHAMI-4/*
Solenoids with protected manual override	OAMI**/WP-***	ON-OFF solenoid
	OZAMI-A-*/**WP**	Proportional solenoid without position transducer
Transducers	**E-THAMI-4/****	Inductive LVDT transducer used coupled with proportional solenoid or as single parts

* solenoids nominal power supply voltages, see Tab. IIa

** transducer versions, see Tab. B

Electrical characteristics

Available solenoids power supply
Rated voltage: 12 ÷ 220 Vdc , 12÷ 240 Vac (depending of the models)
Rated power: 3,5 ÷ 35 W (depending of the models)
The conditions of power supply of the equipment are included within the safety instructions.

Transducer supply
Power supply (VDC stabilized): ±15
Max power consumption: <1 W
Max current consumption: 28 mA

Ambient temperature range:
-20 ÷ +40 ℃
-20 ÷ +45 ℃
-20 ÷ +60 ℃
-20 ÷ +70 ℃

Annex to certificate: **IECEx CES 12.0007X Issue No.0 of 2012-10-29**

Applicant: **ATOS S.p.A.**
via alla Piana, 57; I - 21018 Sesto Calende (VA), Italy

Electrical Apparatus: **Explosion proof solenoids type OAMI, OZAMI, OAMI/WP, OZAMI-A/WP, MZAMI-A and inductive position transducer type ETHAMI-4/***

Description of equipment *(follows)*

The inductive transducers type ETHAMI-4/* are used separately for detect a position or coupling with explosion proof solenoids type OZAMI-T for detect the positions of the spools of directional or flow control proportional valves.

Tab. B - Transducers versions

Transducer	**Power supply**	**Power** (W)	**Description**
ETHAMI-4/1	± 15 VDC	<1	With voltages output, voltage resolution 3,3 V/mm
ETHAMI-4/2			With voltages output, voltage resolution 2,5 V/mm
ETHAMI-4/4			With voltages output, voltage resolution 1,25 V/mm
ETHAMI-4/8			With voltages output, voltage resolution 0,6 V/mm
ETHAMI-4/C			With current output 4÷20 mA or 0÷20 mA, a voltages to current converter circuit is used

Tab. C: max ambient temperature, connecting cable, temperature class, surface temperature

Tab C.1 - Solenoids

Solenoid Type	**Max ambient temperature** (℃)	**Max surface temperature** (℃)	**Connecting cable temperature** (℃)
OAMI OAMI/WP	70	150	≥ 90
OAMI OAMI/WP	45	150	- -
OZAMI-A OZAMI-A-*/WP	60	150	≥ 110
OZAMI-A OZAMI-A-*/WP	40	150	≥ 90
MIZAMI-A	60	150	≥ 110
MIZAMI-A	40	150	≥ 90
OZAMI-T	60	150	≥ 110
OZAMI-T	40	150	≥ 90

Annex to certificate: **IECEx CES 12.0007X Issue No.0 of 2012-10-29**

Applicant: **ATOS S.p.A.**
via alla Piana, 57; I - 21018 Sesto Calende (VA), Italy

Electrical Apparatus: **Explosion proof solenoids type OAMI, OZAMI, OAMI/WP, OZAMI-A/WP, MZAMI-A and inductive position transducer type ETHAMI-4/***

Tab. C: max ambient temperature, connecting cable, temperature class, surface temperature *(follows)*

Tab C.2 - Transducers

Transducer Type	Max ambient temperature (℃)	Max surface temperature (℃)	Connecting cable temperature (℃)	note
ETHAMI-4/*	70	150	≥ 90	(1)
	40	150	- -	(1)
	60	150	≥ 110	(2)
	40	150	≥ 90	(2)

Nota 1: when connected to mechanical parts that not influencing the surface temperature
Nota 2: if used together with the proportional solenoid, solenoid type OZAMI-T

Cable entries

The cable entry devices used on the enclosure shall be suitably certified according to the applicable standards and shall guarantee the degree of protection IP66 according to IEC 60529 standard .

Warning label

"Warning – do not open when energized"
"Use only cables suitable for temperature > XXX ℃" . *(see table C, above)*