



## [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 013**

[4] Equipment: Solenoid type OW-18-A, OW-18/M, OW-18/S

[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-A2/005909.

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

**EN 50014: 1997 + A1..A2 EN 50020: 1994 EN 50284: 1999**

[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 1G EEx ia IIC T6 or EEx ia IIB T6 or EEx ia IIA T5

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

Il Responsabile

[13] **Schedule**

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 02 ATEX 013**

[15] **Description of equipment**

Solenoid type OW-18, OW-18/M and OW-18/S

The solenoid in subject is used to drive direction and pressure control valves.

### Electrical characteristics

- Type of protection	<b>EEx ia IIC T6</b>	<b>EEx ia IIB T6</b>	<b>EEx ia IIA T5</b>
- Maximum input voltage $U_i$ :	27 V 19.11 V	28 V	28 V
- Maximum input current $I_i$ :	130 mA 360 mA	250 mA	396 mA
- Maximum input power $P_i$ :	0.9 W 1.72 W	1.8 W	2.8 W
- Maximum internal capacitance $C_i$ :	0	0	0
- Maximum internal inductance $L_i$ :	0	0	0
- Nominal operating voltage	12 $\pm$ 26 V	12 $\pm$ 26 V	12 $\pm$ 26 V
- Ambient temperature	-20 $\pm$ +60 °C	-20 $\pm$ +60 °C	-20 $\pm$ +60 °C

(Maximum temperature of the fluid controlled by the valve  $\leq 60$  °C)

### Installation conditions

The equipment subject of this certificate shall be connected only with associated apparatus certified according to EN 50014 and EN 50020 standards with the electrical characteristics mentioned.

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 013**

[16] **Report**  
CESI EX-A2/05909

### **Routine tests**

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

### **Descriptive documents (prot. EX-A2/005913)**

- n. SAS-218-D/0	(6 pg.)	dated	15.01.2002
- n. t191	(3 pg.)	dated	15.01.2002
- n. 6-OW-131000-C Rev. 1		dated	10.01.2002
- n. 6-OW-130032-C Rev. 1		dated	10.01.2002
- n. 6-OW-130033-C Rev. 1		dated	10.01.2002
- n. 6-OW-131000-D Rev. 1		dated	10.01.2002
- n. 6-OW-130013-A		dated	11.09.1995
- n. 6-OW-110017 Rev. 2		dated	02.04.1998
- n. 6-OW-110021 Rev. 1		dated	22.04.1996
- n. t188		dated	10.01.2002

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. 01/04

to EC-Type Examination Certificate CESI 02ATEX013



Equipment: Solenoid type OW-18-A, OW-18/M, OW-18/S

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

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

### Admitted variation

constructional modifications; new types named OW-18/6 and OW-18/H; new electrical characteristics. The constructional modifications are specified in the descriptive documents annexed to this extension.

### Electrical characteristics

Type of protection: EEx ia IIC T6  
- Maximum input voltage  $U_i$ : 19.5 V  
- Maximum input current  $I_i$ : 360 mA  
- Maximum input power  $P_i$ : 1.64 W

Other electrical characteristics unchanged.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX013.

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

date 23 April 2004 - translation issued the 23<sup>th</sup> April 2004

prepared CERT – Enrico Radaelli *Enrico Radaelli*

verified CERT – Damiano Cavanna *Damiano Cavanna*

approved CERT – Ulisse Colombo

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

*Ulisse Colombo*  
Responsabile

page 1/2



## EXTENSION n. 01/04

to EC-Type Examination Certificate CESI 02ATEX013

Report n. EX-A4/012557

Descriptive documents (prot. EX-A4/012558)

- n. SAS-063-D/0		dated	14.01.2004
- n. t191/2	(pg. 5)	dated	14.01.2004
- n. 6-OW-201000-C		dated	14.01.2004
- n. 6-OW-200032-C		dated	13.01.2004
- n. 6-OW-200017		dated	14.01.2004
- n. 6-OW-200021		dated	14.01.2004
- n. 6-OW-201000-D		dated	14.01.2004
- n. t188-1		dated	14.01.2004

One copy of all documents is kept in CESI files.

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## EXTENSION n. 02/04



to EC-Type Examination Certificate CESI 02ATEX013

Equipment: Solenoid type OW-18-A, OW-18/M, OW-18/S

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

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

### Admitted variation

Constructional modifications.

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

Report n. EX-A4516498.

### Descriptive documents (prot. EX-A4516514)


- n. SAS-081-D/0 (pg. 2) dated 01.10.2004  
- n. 6-OW-211000-C Rev.1 dated 15.10.2004


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 02ATEX013.

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date 20 October 2004 - translation issued the 20 October 2004

prepared CERT – Enrico Radaelli 

verified CERT – Damiano Cavanna 

approved CERT – Ulisse Colombo

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page 1/1

Prot. A4516511 P: 1





**EXTENSION n. 03/06**  
to EC-Type Examination Certificate CESI 02ATEX013

Equipment: Solenoid type OW-18-A, OW-18/M, OW-18/S

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

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

**Admitted variation**

Constructional modifications.

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

**Report n. EX-A6024116.**

**Descriptive documents** (prot. EX-A6024125)

- n. SAS-314-D/0

dated 11.05.2006

- n. 6-OW-221000-C

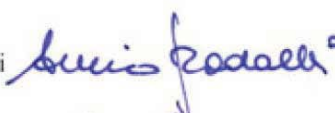
dated 16.05.2006


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 02ATEX013.

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**date** 18 September 2006 - translation issued the 18 September 2006

**prepared** GEN – Enrico Radaelli 

**verified** GEN – Damiano Cavanna 

**approved** GEN – Fiorenzo Bregani

**CESI**  
Centro Elettrotecnico Sperimentale Italiano  
Giacinto Motta SpA  
Business Unit GENERAZIONE  
Il Responsabile



page 1/1

Prot. A6024125 P: 1

## EXTENSION n. 04/08



to EC-Type Examination Certificate CESI 02ATEX013

Equipment: Solenoids type OW-18/\*, OW/M-18/\*, OW/BT-18/\*

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

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


### Admitted variation

- New type named OW/BT-18/\*.with minimum ambient temperature up to -40°C
- New type named OW/M-18/\* for Group I (mine).
- Constructional modifications.
- Documents revision for compliance to **EN60079-0 (2006), EN60079-11 (2007), EN60079-26 (2007)** standards.

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

### Marking

Solenoids type OW/M-18 shall be marked as follows:

 **I M2 Ex ia I or Ex ib I**

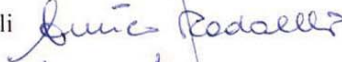
Solenoids type OW-18/\* and OW/BT-18/\* shall be marked as follows:


 **II 1G Ex ia IIA T5 or Ex ia IIB/IIC T6**

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX013.

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

**date** 05 May 2008 – translation issued the 05 May 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. 04/08

to EC-Type Examination Certificate CESI 02ATEX013

### Electrical characteristics

*Solenoids type OW/M-18/\**

- U<sub>i</sub>: 12,4V
- I<sub>i</sub>: 2,2 A
- P<sub>i</sub>: 6,82 W
- C<sub>i</sub>: 0
- L<sub>i</sub>: 0

Electrical characteristics remain unchanged for other solenoid types and they apply to solenoid type OW/M-18/\* also.

The detail of the electrical characteristics for each type is specified in the descriptive documents annexed to the certificate.

The following table reports, for each type of solenoid, the group and installation category, type of protection, temperature class and ambient temperature range.

Type	Group and category	Type of protection	Temperature class	Ambient temperature
OW-18/*	II 1G	Ex ia HB/IIC	T6	-20 °C <sub>+</sub> +60 °C
		Ex ia IIA	T5	-20 °C <sub>+</sub> +60 °C
OW/BT-18/*	II 1G	Ex ia HB/IIC	T6	-40 °C <sub>+</sub> +60 °C
		Ex ia IIA	T5	-40 °C <sub>+</sub> +60 °C
OW/M-18/*	I M2	Ex ia I or Ex ib I	150°C	-20 °C <sub>+</sub> +60 °C

Report n. EX-A8012760

### Routine tests

The manufacturer shall carry out the routine tests prescribed at clause 27 of EN 60079-0 Standard.

### Descriptive documents (prot. EX-A8012773)

- n. SAS-412-D/0	(pg. 3)	dated	28.02.2008
- n. 6-OW-231000-C		dated	03.03.2008
- n. 6-OW-210032-BT-C		dated	29.02.2008
- n. 6-OW-210032-C		dated	29.02.2008
- n. 6-OW-210032-M-C		dated	29.02.2008
- n. TT191/3	(pg. 6)	dated	27.02.2008
- Declaration of Conformity TT188/2		dated	27.02.2008

One copy of all documents is kept in CESI files.

### Essential Health and Safety Requirements

Essential Health and Safety Requirements are assured by compliance to the Standards:

- EN 60079-0: 2006 - Electrical apparatus for explosive gas atmospheres - Part 0: general requirements.
- EN 60079-11: 2007 - Explosive atmosphere - Part 11: equipment protection by intrinsic safety "i".
- EN 60079-26: 2007 - Electrical apparatus for explosive gas atmosphere - Part 26: construction, test and marking of group II, category 1G electrical apparatus.

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**EXTENSION n. 05/12**

**to EC-Type Examination Certificate CESI 02ATEX013**

**Equipment:** Solenoids type OW-18/\*, OW/M-18/\*, OW/BT-18/\*

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

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

**Admitted variation**

- Standard EN 60079-0: 2009, EN 60079-11:2007, EN 60079-26:2007 upgrade.

**Marking**

Solenoids type OW/M-18 shall be marked:

**Ex** I M2 Ex ia I Mb or Ex ib I Mb

**T<sub>amb.</sub>:** -20°C ÷ +60°C

Solenoids type OW-18/\* and OW/BT-18/\* shall be marked:

**Ex** II 1G Ex ia IIC T6 Ga or II 1G Ex ia IIB T6 Ga or II 1G Ex ia IIA T5 Ga

**T<sub>amb.</sub>:** -20°C ÷ +60°C or -40°C ÷ +60°C

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 02ATEX013.

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**Date** 15<sup>th</sup> March 2012- translation issued the 15th March 2012

**prepared**

M. T.

**verified**

Mirko Balaz

**approved**

**CESI S.p.A.**  
Fiorenzo Bragari

Testing & Certification Division  
Business Area Certification

Il Responsabile

Fiorenzo Bragari

Page 1/2



**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

## EXTENSION n. 05/12

to EC-Type Examination Certificate CESI 02ATEX013

### Electrical characteristics

All electrical characteristics are unchanged.

Type of protection	Ex ia IIC			Ex ia IIB	Ex ia IIA	(OW/M-18)
	Ex ia I	Ex ia I	Ex ia I	Ex ia I	Ex ia I	Ex ia I
	Ex ib I	Ex ib I	Ex ib I	Ex ib I	Ex ib I	Ex ib I
<b>Ci</b> (equivalent capacity)	0			0	0	0
<b>Li</b> (equivalent inductance)	0			0	0	0
<b>Ui</b> (max voltage)	27 V	19,11 V	19,5 V	28 V	28 V	12,4 V
<b>Ii</b> (max current)	130 mA	360 mA	360 mA	250 mA	396 mA	2200 mA
<b>Pi</b> (max power)	0,9 W	1,72 W	1,64 W	1,8 W	2,8 W	6,82 W
<b>VN</b> (working voltage)	12 ÷ 26 V			12 ÷ 26 V	12 ÷ 26 V	12 ÷ 26 V

### Routine test

The manufacturer shall carried out the routine tests prescribed at clause 27 of EN60079-0 Standard.

### Report n. EX-B2008530

#### Descriptive documents (prot. EX-B2008546)

- n. SAS-527-D/0		dated	14.02.2012
- n. TT191/4	(pages 4)	dated	15.02.2012
- n. 6-OW-210032-M-C		dated	15.02.2012
- n. 6-OW-210032-BT-C		dated	15.02.2012
- n. 6-OW-210032-C		dated	15.02.2012
- Declaration of conformity TT188/3		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 60079-11: 2007 - Equipment protection by intrinsic safety 'i'
- EN 60079-26: 2007 - Equipment with equipment protection level (EPL) Ga

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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>SOLENOIDI A SICUREZZA INTRINSECA INTRINSICALLY SAFE SOLENOIDS</b>	<b>OW-18/6, OW/BT-18/6, OW/M-18/6 OW-18/M, OW/BT-18/M, OW/M-18/M OW-18/S, OW/BT-18/S, OW/M-18/S OW-18/H, OW/BT-18/H, OW/M-18/H</b>

Modo di protezione / Protection mode

 II 1G Ex ia IIC T6 Ga	 II 1G Ex ia IIB T6 Ga	 II 1G Ex ia IIA T5 Ga
 I M2 Ex ia I Mb / Ex ib I Mb		

CERTIFICATO / CERTIFICATE **CESI 02 ATEX 013**

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

EN 60079-0 (2009)

EN 61000-6-3

EN 60079-11 (2007)

EN 60079-26 (2007)

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

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

**CESI**



protocollo

**B2008546**

firma

allegato al certificato

**CESI 02 ATEX 013**

data

**15/03/2012**

Data  
Date: 27/02/08

Firma  
Signature: .....