



[1] **EC-TYPE EXAMINATION CERTIFICATE**

[2] **Component intended for use on/in equipment or protective system
intended for use in potentially explosive atmospheres
Directive 94/9/EC**

[3] EC-Type Examination Certificate number:

CESI 01 ATEX 081 U

[4] Component: Breathing and draining valve series ECD

[5] Manufacturer: **EL.FIT S. p. A.**

[6] Address: Via Aquileia 8 Villesse (Gorizia – Italy)

[7] This component 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 component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of components 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-A1/033982.

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

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

[10] The sign "U" placed after the certificate number indicates that this certificate must not be mistaken for a certificate intended for an equipment or protective system. This partial certification may be used as a basis for certification of an equipment or protective system.

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

[12] The marking of the component shall include the following:



II 2 G EEx d IIC

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date 14th November, 2001 - translation issued on 27th November, 2001

prepared CERT – M. Balaz

approved CERT – U. Colombo

CESI
GENTRO ELETTROTECNICO SPERIMENTALE ITALIANO
Business Unit Certificazione

Il Responsabile

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[13]

Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 01 ATEX 081 U**

[15] **Description of component**

The breathing and draining valve series ECD is made in aluminium alloy or in stainless steel.

It is designed for installation on flameproof enclosures with a breathing or draining function according to the type of mounting.

The breathing and draining valve series ECD can be mounted on flameproof enclosures of the group IIC without limits of volume.

In case of use of cylindrical threads the coupling between the valve and the enclosure shall be made according to the documents annexed to this certificate.

[16] **Report n. EX-A1/033982**

Routine tests

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

Descriptive documents (prot. EX-A1/033983)

| | | |
|--|-------|------------|
| - n° A4-756 Rev. 0 | dated | 27.05.1999 |
| - n° A4-757 Rev. 0 | dated | 27.05.1999 |
| - n° A4-758 Rev. 0 | dated | 27.05.1999 |
| - n° A4-759 Rev. 0 | dated | 27.05.1999 |
| - n° A4-760 Rev. 0 | dated | 27.05.1999 |
| - n° A4-761 Rev. 0 | dated | 27.05.1999 |
| - n° A4-762 Rev. 0 | dated | 27.05.1999 |
| - n° A3-215 Rev. 0 | dated | 27.05.1999 |
| - Safety instructions Annexe A/8 Rev. 0 (4 p.) | dated | 27.05.1999 |
| - Attestation of conformity for components | dated | 27.05.1999 |

One copy of all documents is kept in CESI files.

[17] **Schedule of limitations**

None.

[18] **Essential Health and Safety Requirements**

Covered by standards.

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EXTENSION n. 01/07



to EC-Type Examination Certificate CESI 01ATEX 081U

Component: Breathing and draining valve series ECD.

Manufacturer: **EL.FIT S.p.A.**

Address: Via Aquileia 12, Villesse (GO)

Admitted variation

- Updating to EN 60079-0 (2006), EN 60079-1 (2004), Standards
- New breathing and draining valve type ECD-2..with new protection modes
- Updating of nameplate
- New ambient temperature range

Components identification

Breathing and draining valves series ECD shall include the following markings:
valves type ECD-1..



II 2G Ex d II C



II 2G Ex d II B

for Ta - 50 °C ÷ + 150 °C

valves type ECD-2..



II 2GD Ex d IIC / Ex e II ; Ex tD A21 IP 66



II 2GD Ex d II B / Ex e II ; Ex tD A21 IP 66 for Ta - 50 °C ÷ + 150 °C

The valves series ECD-... are essentially constituted by a threaded external body containing an operating rods, manufactured in compliance with the par. 5 and 7 of the EN 60079-1 Standard. The valves type ECD-1.. are usable for equipment with protection mode "Ex d". The new valves type ECD-2.., are characterized by a sealing gasket and can be used on equipment with protection mode "Ex d" or "Ex e" or "Ex tD" with the guarantee of a protection degree IP66.

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 01ATEX081U.

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date 05/02/2009 - Rev. 01 of translation of the Extension 01/07 issued on 21/05/2007

prepared Sergio Mezzetti

verified Mirko Balaz

approved Fiorenzo Bregani

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

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EXTENSION n. 01/07

to EC-Type Examination Certificate CESI 01ATEX 081U

Constructive characteristics

- The threads generally used are of type NPT in sizes of 1/2 " or 3/8 " (ANSI-ASME B.1.20.1); different threads can be used according to the documents annexed to this extension.
- Ambient temperature:
 - for valves type E.CD-1.. Ta : - 50 °C ÷ + 60 °C for equipment of group IIC
Ta: - 50 °C ÷ + 150 °C only for equipment of group IIB
 - for valves type ECD-2.. Ta : - 20 °C ÷ + 60 °C for equipment of group IIC
Ta : - 50 °C ÷ + 60 °C for equipment of group IIC (valves with silicon gaskets)
Ta : - 50 °C ÷ + 150 °C only for equipment of group IIB (valves with silicon gaskets)

Report n. EX-A7014010

Routine tests

The manufacturer shall carry out the routine tests prescribed at the following Standards:

- EN 60079-0 (2006) – par.27 for components of Cat. 2G
- EN 60079-0 (2006) – par.27 and EN 61241-0 (2006) – par. 24 for components of Cat. 2GD

Descriptive documents (prot. EX-A7014011)

- | | | | |
|------------------------------------|---------|-------|------------|
| - Technical Note A4-756 (3 pg.) | Rev. 01 | dated | 13/02/2007 |
| - Drawing n. A3-215 (sheet 1 of 2) | Rev. 01 | dated | 13/02/2007 |
| - Drawing n. A3-215 (sheet 2 of 2) | Rev. 01 | dated | 13/02/2007 |
| - Drawing nA4-760 | Rev. 01 | dated | 03/02/2007 |
| - Attestation of Conformity | | dated | 13/02/2007 |
| - Safety Instruction A/8 (5 pg.) | Rev. 01 | dated | 13/02/2007 |

One copy of all documents is kept in CESI files.

Schedule of limitations

- The max. operating temperature admitted for valves of type ECD-1.. is the same of the equipment on which the valves is assembled, having the same temperature class assigned to the equipment itself.
- The max. operating temperature admitted for valves of type ECD-2.. is function of the o-ring gaskets type used:
 - Tmax. = + 80 °C with NBR gaskets
 - Tmax. = + 110 °C with EDPM gaskets
 - Tmax. = + 180 °C with silicon SI/50 gaskets
- For maintaining the equipment degree of protection IP, during the normal use, the pin of valve must be completely screwed and the o-ring gasket correctly positioned on its seat.

Essential Health and Safety Requirements

The Health and Safety Requirements are assured by compliance with the following Standards:

- EN 60079-0 : 2006: Electrical apparatus for explosive gas atmospheres. General requirements
- EN 60079-1 : 2004 Flamoproof enclosures "d".
- EN 60079-7 : 2003 Increased safety "e"
- EN 61241-0 : 2006 Electrical apparatus for use in the presence of combustible dust General requirements
- EN 61241-1 : 2004 Protection by enclosures "tD".

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**EXTENSION n. 02/14**

to EC-Type Examination Certificate CESI 01 ATEX 081U

Component: Breathing and Draining valve series ECD.**Manufacturer:** EL.FIT S.p.A.**Address:** Via Aquileia, 12 – 34070 Villesse (GO) – Italy.**Admitted variation**

- Update to new edition of EN 60079-0: 2012, EN 60079-1: 2007, EN 60079-7: 2007, EN 60079-31: 2009 standards.
- Update of marking.

Conformity to new edition of the harmonized European standard

The component subject of the certificate CESI 01 ATEX 081U and annexed extension are conform to the standards:

EN 60079-0: 2012 EN 60079-1: 2007 EN 60079-7: 2007 EN 60079-31: 2009

The components shall be marked as follows:

| | | | |
|--|-------|--|---|
| | II2G | Ex d IIC Gb Ta.. | <i>for models ECD-1.. and Ta -50°C ÷ +60°C</i> |
| | | OR | |
| | II2G | Ex d IIB Gb Ta.. | <i>for models ECD-1.. and Ta -50°C ÷ +150°C</i> |
| | | OR | |
| | II2GD | Ex d IIC Gb and Ex e IIC Gb and Ex tb IIIC Db IP66 Ta.. | <i>for models ECD-2.. and Ta -50°C ÷ +60°C</i> |
| | | OR | |
| | II2GD | Ex d IIB Gb and Ex e IIB Gb and Ex tb IIIC Db IP66 Ta.. | <i>for models ECD-2.. and Ta -50°C ÷ +150°C</i> |

This extension and annexed descriptive documents must be annexed to the EC-Type Examination Certificate CESI 01 ATEX 081U.

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Date 28th July 2014 - translation issued the 28th July 2014Prepared
Mirko BalazApproved
Fiorenzo Bregani

CESI S.p.A.

Testing & Certification Division
Business Area CertificationResponsible

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EXTENSION n. 02/14

to EC-Type Examination Certificate CESI 01 ATEX 081U

Description of component

The **ECD..** series of Breathing and Draining valves are designed to be fitted into threaded entries of flameproof Ex-d and threaded or plane entries of increased safety Ex-e enclosures, depending on the type, to avoid the formation of moisture and water condensation. The valves are made of Stainless steel or Aluminium alloy and consisting on a male threaded external body containing a pin internally retained to the assembly by a retaining ring. The **ECD-2..** type is characterized by sealing gaskets which guarantee a degree of protection IP66.

The **ECD-1..** type of Breathing and Draining valves are available in the following executions:

- **Ex d IIC** for an ambient temperature up to +60°C.
- **Ex d IIB** when intended for use with an ambient temperature up to +150°C.

The **ECD-2..** type of Breathing and Draining valves are available in the following executions:

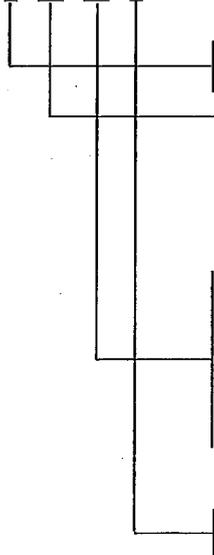
- **Ex d IIC** and **Ex e IIC** and **Ex tb IIIC IP66** for an ambient temperature up to +60°C.
- **Ex d IIB** and **Ex e IIB** and **Ex tb IIIC IP66** when intended for use with an ambient temperature up to +150°C.

The coupling between the Breathing and Draining valves and the apparatus enclosures is made by means of male threaded joints. The standard available thread are tapered 3/8" or 1/2" NPT ANSI/ASME B1.20.1 or cylindrical ISO Metric 965/1 and ISO 965/3 M16x1.5 or M20x1.5. Other available thread types are Gk CEI EN 60079-1, Annex 1, NPSM ANSI/ASME B1.20.1, PG DIN 40430 and GAS EN ISO 228-1.

To guarantee the IP 66 degree of protection the **ECD-2..** series of Breathing and Draining valves have fitted a silicon O-ring in-between the body and the pin and a plain gasket on the mounting thread.

Identification of Breathing and Draining valves:

ECD-* ** ** *



Types of model:

- **1:** Ex d (execution for gas only)
- **2:** Ex d, Ex e, Ex tb (execution for gas and dusts)

Size of thread:

- **10:** 3/8" (or M16)
- **15:** 1/2" (or M20)

Type of thread:

- **N:** NPT ANSI/ASME B1.20.1
- **I:** ISO metric pitch 1,5mm
- **NC:** NPSM ANSI/ASME B1.20.1
- **P:** PG DIN 40430
- **C:** GAS EN ISO 228-1
- **Blank:** Gk CEI EN 60079-1 Annex 1.

Type of material:

- **Blank:** aluminium alloy
- **S:** stainless steel

Report n. EX- B4013405

Routine tests

None.

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EXTENSION n. 02/14

to EC-Type Examination Certificate CESI 01 ATEX 081U

Descriptive documents (prot. EX- B4013408)

| | | | |
|--|-------|-------|------------|
| - Technical note A4-1133 (pg. 3) | rev.0 | dated | 18.02.2013 |
| - Mounting Instruction A/8 (pg. 5) | rev.2 | dated | 18.02.2013 |
| - Attestation of Conformity no. 0134 (pg. 1) | | dated | 18.02.2013 |
| - Drawing no. A4-5690 (6 sheets) | rev.0 | dated | 18.05.2012 |

One copy of all documents is kept in CESI files.

Schedule of limitations

- The coupling of the Breathing and Draining valves with the enclosures shall be made as indicated by the manufacturer in the documents annexed to this certificate in order to respect the type of protection of the electrical apparatus on which Breathing and Draining valves are mounted.
- The Breathing and Draining valves shall be mounted at the electrical apparatus in such a way that accidental rotation and loosening will be prevented.
- The Breathing and Draining valves shall be installed in such a way that the temperature at the mounting point will remain within the following service temperature ranges:

| Type | Category | Exec. | Materials | Gaskets | Operating temperature range | |
|--------|----------|-----------------------------------|-------------------------------------|---------|-----------------------------|------------|
| | | | | | Min. Temp. | Max. Temp. |
| ECD-1. | II 2 G | Ex d IIC | Stainless steel, Aluminium alloy | Silicon | -50 °C | +60 °C |
| ECD-1. | II 2 G | Ex d IIB | Stainless steel, Aluminium alloy | Silicon | -50 °C | +150 °C |
| ECD-2. | II 2 GD | Ex d IIC Ex e IIC Ex tb IIC | Stainless steel, Aluminium alloy | Silicon | -50 °C | +60 °C |
| ECD-2. | II 2 GD | Ex d IIB Ex e IIB Ex tb IIC | Stainless steel, Aluminium alloy | Silicon | -50 °C | +150 °C |

- The IP 66 mechanical protection of the Breathing and Draining valves type **ECD-2** is obtained by inserting an O-ring made of silicon rubber in-between the body and the pin and furthermore when the pin is completely screwed as shown into the mounting instruction.
 - If the Breathing and Draining valves type **ECD-2** are intended for use with dust protection "Ex tb" the holes into which Breathing and Draining valves are mounted shall maintain the ingress protection rating of the enclosure. To this scope the correct positioning of the gaskets, shall be done as indicated in the manufacturer instruction.
 - The Breathing and Draining valves were mounted and tested for use on:
 - enclosures with internal volume up to 157 liters for gas groups IIB and IIB + H₂;
 - enclosures with internal volume up to 100 liters for gas group IIC.
 - motors with 900 mm of center high for gas group IIB;
 - motors with 500 mm of center high for gas group IIC;
- Furthermore the overpressure tests were conducted according to EN 60079-1, section 15.1.3 with a test pressure up to 160 bars.
- It is the final assemblers/users responsibility to ensure the threaded joint between the Breathing and Draining valves and the associated enclosure meet all the requirements of the applicable standards for the assembly.

EXTENSION n. 02/14

to EC-Type Examination Certificate CESI 01 ATEX 081U

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 – Part 0: Equipment - General requirements;
- EN 60079-1: 2007 Explosive atmospheres – Part 1: Equipment protection by flameproof enclosure “d”;
- EN 60079-7: 2007 Explosive atmospheres – Part 7: Equipment protection by increased safety “e”.
- EN 60079-31: 2009 Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure “t”.