

# IECEX Certificate of Conformity

**INTERNATIONAL ELECTROTECHNICAL COMMISSION  
IEC Certification System for Explosive Atmospheres**

for rules and details of the IECEx Scheme visit [www.iecex.com](http://www.iecex.com)

## Ex COMPONENT CERTIFICATE

Certificate No.:	<b>IECEX CES 14.0016U</b>	Page 1 of 4	<u>Certificate history:</u> Issue 0 (2014-10-09)
Status:	<b>Current</b>	Issue No: 1	
Date of Issue:	2020-02-28		
Applicant:	<b>CORTEM S.p.A.</b> Via Aquileia 10 I - 34070 Villesse (GO) Italy		
Ex Component:	Breathing and Draining valves, series ECD..		

*This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).*

Type of Protection: **Flameproof enclosures 'd'; increased safety 'e'; Dust ignition protection 't'**

Marking: **Ex db IIB Gb or Ex db IIC Gb for ECD-1.. types;**  
**Ex db IIB Gb and Ex eb IIB Gb and Ex tb IIIC Db IP66 for ECD-2.. types**  
 or  
**Ex db IIC Gb and Ex eb IIC Gb and Ex tb IIIC Db IP66 for ECD-2.. types.**

PAD C0011550 (2776607) - USO AZIENDALE

Approved for issue on behalf of the IECEx Certification Body:

**Mirko Balaz**

Position:

**Head of IECEx CB**

Signature:  
(for printed version)

Date:

28-2-2020

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2. This certificate is not transferable and remains the property of the issuing body.
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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 14.0016U**

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Date of issue: 2020-02-28

Issue No: 1

Manufacturer: **CORTEM S.p.A.**  
Via Aquileia 10  
I - 34070 Villesse (GO)  
**Italy**

Additional manufacturing locations: **ELFIT S.p.A.**  
Via Aquileia, 12  
I-34070 Villesse (GO)  
**Italy**

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 equipment 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 60079-0:2011** Explosive atmospheres - Part 0: General requirements  
Edition:6.0

**IEC 60079-1:2014-06** Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"  
Edition:7.0

**IEC 60079-31:2013** Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"  
Edition:2

**IEC 60079-7:2015** Explosive atmospheres – Part 7: Equipment protection by increased safety "e"  
Edition:5.0

This Certificate **does not** indicate compliance with 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 Reports:

IT/CES/ExTR14.0019/00

IT/CES/ExTR14.0019/01

#### Quality Assessment Reports:

IT/CES/QAR06.0002/14

IT/CES/QAR13.0001/06



# IECEx Certificate of Conformity

Certificate No.: **IECEx CES 14.0016U**

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Date of issue: 2020-02-28

Issue No: 1

## **Ex Component(s) covered by this certificate is described below:**

The **ECD..** series of Breathing and Draining valves are designed to be fitted into threaded entries of flameproof Ex db or increased safety Ex eb 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 of 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 db IIC** for an ambient temperature up to +60°C.
- **Ex db 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 db IIC** and **Ex eb IIC** and **Ex tb IIC IP66** for an ambient temperature up to +60°C.
- **Ex db IIB** and **Ex eb IIB** and **Ex tb IIC IP66** when intended for use with an ambient temperature up to +150°C.

Degree of protection: IP 66 (IEC 60529) for types **ECD-2..** only.

The Breathing and Draining valves series **ECD..** characteristics are further described in the Annexe of this certificate.

## **SCHEDULE OF LIMITATIONS:**

The Breathing and Draining valves series **ECD..** - "**Schedule of Limitations**" for Ex Components are further described in the Annexe of this certificate.



# IECEX Certificate of Conformity

Certificate No.: **IECEX CES 14.0016U**

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Date of issue: 2020-02-28

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## **DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)**

### **Variation 1.1.**

The permitted minimal Ambient temperature is changed from **-50°C to -60°C.**

### **Variation 1.2.**

Breathing and Draining valves **ECD-1..** and **ECD-2..** series originally assessed in compliance to IEC 60079-1:2007, IEC 60079-7:2006 and IEC 60079-31:2008 have been re-assessed on the basis of the Standards IEC 60079-1:2014, IEC 60079-7:2015 and IEC 60079-31:2013.

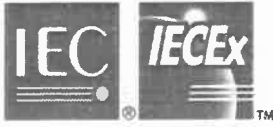
### **Variation 1.3.**

**ELFIT S.p.A. brand is added as additional manufacturer.**

For an internal management CORTEM and ELFIT the products can be market with each marking IECEx and ATEX. In this case the identification of manufacturer is made by the trademark of brand **CORTEM GROUP.**

## **Annex:**

Cortem IECEx CES 14.0016U Issue 1 - ANNEX - ECD1\_ECD2.pdf



# IECEX Certificate of Conformity



Prot: C0011550

**Annex to certificate:**

**IECEX CES 14.0016U Issue No.:1 of 2020-02-28**

**Applicant:**

**CORTEM S.p.A.**

**Via Aquileia 10, I - 34070 Villesse (GO), Italy**

**Ex Component:**

**Breathing and Draining valves series ECD..**

## General product information:

The **ECD..** series of Breathing and Draining valves are designed to be fitted into threaded entries of flameproof Ex db or increased safety Ex eb 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 of 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 db IIC** for an ambient temperature up to +60°C.
- **Ex db IIB** when intended for use with an ambient temperature up to +150°C.

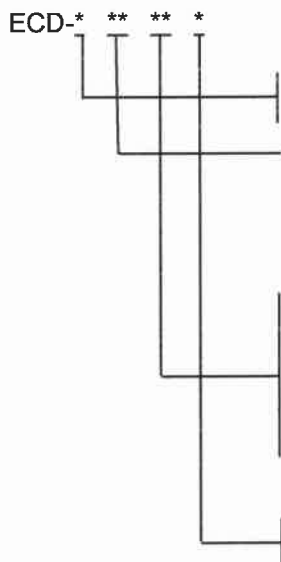
The **ECD-2..** type of Breathing and Draining valves are available in the following executions:

- **Ex db IIC** and **Ex eb IIC** and **Ex tb IIIC IP66** for an ambient temperature up to +60°C.
- **Ex db IIB** and **Ex eb 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 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:



#### Types of model:

- **1:** Ex db (execution for gas only)
- **2:** Ex db, Ex eb, 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



## IECEX Certificate of Conformity

CESI

Prot: C0011550

**Annex to certificate:**

**IECEX CES 14.0016U Issue No.:1 of 2020-02-28**

**Applicant:**

**CORTEM S.p.A.**

**Via Aquileia 10, I - 34070 Villesse (GO), Italy**

**Ex Component:**

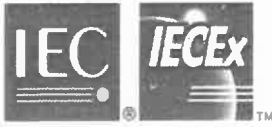
**Breathing and Draining valves series ECD..**

### “Schedule of Limitations” for Ex Components:

- 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 db IIC	Stainless steel, Aluminium alloy	Silicon	-60 °C	+60 °C
ECD-1..	II 2 G	Ex db IIB	Stainless steel, Aluminium alloy	Silicon	-60 °C	+150 °C
ECD-2..	II 2 GD	Ex db IIC Ex eb IIC Ex tb IIIC	Stainless steel, Aluminium alloy	Silicon	-60 °C	+60 °C
ECD-2..	II 2 GD	Ex db IIB Ex eb IIB Ex tb IIIC	Stainless steel, Aluminium alloy	Silicon	-60 °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:
    - motors with 900 mm of center high for gas group IIB;
    - motors with 500 mm of center high for gas group IIC;
    - enclosures with internal volume up to 157 liters for gas groups IIB and IIB + H<sub>2</sub>;
    - enclosures with internal volume up to 100 liters for gas group IIC.
- Furthermore the overpressure tests were conducted according to IEC 60079-1, section 15.2.3 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.



Prot: C0011550

**Annex to certificate:**

**Applicant:**

**Ex Component:**

## IECEX Certificate of Conformity

# CESI

**IECEX CES 14.0016U Issue No.:1 of 2020-02-28**

**CORTEM S.p.A.**

**Via Aquileia 10, I - 34070 Villesse (GO), Italy**

**Breathing and Draining valves series ECD..**

### Marking

#### CORTEM S.p.A. marking

The CORTEM S.p.A. which it is the manufacturer that normally put on the market the product with IECEX certificate number.

Example of CORTEM marking:

CORTEM ECD-1... Ex db IIC Gb IECEX CES 14.0016U

Ta - 60°C + 60°C

CORTEM ECD-1... Ex db IIB Gb IECEX CES 14.0016U

Ta -60°C +150°C

CORTEM ECD-2... Ex db IIC Gb/Ex eb IIC Gb

Ex tb IIIC Db - IP66 IECEX CES 14.0016U

Ta - 60°C + 60°C

CORTEM ECD-2... Ex db IIB Gb/Ex eb IIB Gb

Ex tb IIIC Db - IP66 IECEX CES 14.0016U

Ta -60°C +150°C

#### CORTEM GROUP marking

**ELFIT S.p.A. brand was added as additional manufacturer.** For an internal management of CORTEM and ELFIT, the products can be market with each marking IECEX and ATEX as shown on the following examples. In this case the identification of manufacturer is made by the trademark of brand **CORTEM GROUP**.

CORTEM and ELFIT are members of brand CORTEM GROUP

Example of CORTEM GROUP marking:



**CORTEM GROUP ECD-1... Ex 0722 II 2G CESI 01 ATEX 081U**  
**Ex db IIC Gb IECEX CES 14.0016U**



**CORTEM GROUP ECD-1... Ex 0722 II 2G CESI 01 ATEX 081U**  
**Ex db IIB Gb IECEX CES 14.0016U**



**CORTEM GROUP ECD-2... Ex 0722 II 2GD CESI 01 ATEX 081U**  
**Ex db IIC Gb/Ex eb IIC Gb Ex tb IIIC Db IP66 IECEX CES 14.0016U**



**CORTEM GROUP ECD-2... Ex 0722 II 2GD CESI 01 ATEX 081U**  
**Ex db IIB Gb/Ex eb IIB Gb Ex tb IIIC Db IP66 IECEX CES 14.0016U**