



# 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](http://www.iecex.com)

Certificate No.: IECEx CES 14.0014 Issue No.:0 Certificate history:

Status: Current

Date of Issue: 2014-08-21 Page 1 of 4

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

Electrical Apparatus: Diode safety barriers, Type CA-8.2-50  
Optional accessory:

Type of Protection: Intrinsic Safety "i", Dust ignition protection "i"

Marking: [Ex ia Ga] IIC  
[Ex ia Da] IIIC


Approved for issue on behalf of the IECEx  
Certification Body:

Mirko Balaz

Position:

Head of IECEx CB

Signature:  
(for printed version)

  
21-08-2014

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

**CESI**  
**CESI** S.p.A.  
Testing & Certification Division  
Business Area Certification

Responsabile  
Florenzo Zecchi



# IECEX Certificate of Conformity

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

<b>IEC 60079-0 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 0: General requirements
<b>IEC 60079-11 : 2011</b> Edition: 6.0	Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
<b>IEC 60079-26 : 2006</b> Edition: 2	Explosive atmospheres - Part 26: Equipment with equipment protection level (EPL) Ga

*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/ExTR14.0010/00

Quality Assessment Report:  
IT/CES/QAR06.0002/08



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## Schedule

### EQUIPMENT:

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

**Diode safety barriers type CA-8.2-50** are intrinsically safe associated apparatus, made up for the protection of electrical devices installed in hazardous area.

The electrical construction of the barriers is composed of a plastic housing, equipped with DIN rail latch. Inside, incorporated by polyurethane resin, the electrical components. These components are, passive (diodes, resistors and fuses) and they are calculated to ensure the safety parameters allowed by the standard.

The mode of operation is based on the voltage limiting in relation to the characteristic curve of zener diodes in the configuration that, remain in the sleep state until the electrical parameters are maintained within the allowed values.

The barriers CA-8.2-50 are constructed to satisfy the Degree of Protection IP20 and shall be protected according from adverse environmental conditions such as water or dirt, exceeding the pollution severity level 2. The device shall be installed outside the hazardous area.

**CONDITIONS OF CERTIFICATION: NO**



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## EQUIPMENT(continued):

### Electrical characteristics

Um = 250 V

#### Intrinsically safe circuits:

Terminal 0 to ground or terminal 2 to ground

■ Uo =	9.8 V	Co =	3 µF
■ Io =	0.12 A	Lo =	2.5 mH
■ Po =	0.296 W	Lo/Ro =	30 µH/Ω

Tamb.: from -20°C up to +60°C

#### Circuits with both inductance and capacitance

	<u>gas Group IIC</u>	<u>gas Group IIB</u>	<u>gas Group IIA</u>
■ Co [µF]:	3.0	20	120
■ Lo [mH]:	2.5	12	20
■ Lo/Ro [µH/W]:	30	121	242

#### *Note (1) - Circuits with both inductance and capacitance*

The above maximum Co and Lo parameters apply where:

- the total inductance or capacitance of the external circuit (combined with C and L respectively) is less than 1% of the above values (cable excluded); or
- the inductance and capacitance are distributed as in a cable.

In all other situations e.g. the external circuit contains combined inductance and capacitance, where both are greater than 1% of the allowed value (excluding the cable), allow up to 50% of each of the L and C values as applicable.

Above values are referred to a single channel. The interconnection of the two channels of the barrier involves the possible voltage and current in the circuit. The evaluation of the system compatibility shall be performed according to IEC 60079-25 standard.

#### *In case of use series connected channels (terminal 0 - 2) electrical characteristics are:*

Uo = 19.6 V    Io = 0.12 A    Po = 0.588 W

Dust protection: The Diode safety barriers type CA-8.2-50 meets the spark ignition energy level requirements for Groups IIC or IIB apparatus.