



# 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 10.0002U	issue No.:1	Certificate history: Issue No. 1 (2014-8-21) Issue No. 0 (2010-6-30)
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: Optional accessory:	Three-pieces connection fittings series R., B.. and RB..		
Type of Protection:	Flameproof enclosure "d", Protection by enclosures "t"		
Marking:	Ex d IIC Gb for types R Ex d IIB Gb for types B, RB and Ex tb IIIC Db, IP66/67 for all types.		
Approved for issue on behalf of the IECEx Certification Body:	Mirko Balaz		
Position:	Head of IECEx CB		
Signature: (for printed version)			
Date:	21-08-2014		

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  
Il Responsabile  
Fiorenzo Bregani



# 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 60079-1 : 2007-04</b> Edition: 6	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
<b>IEC 60079-31 : 2008</b> Edition: 1	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure 't'

*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/ExTR10.0006/00

IT/CES/ExTR10.0006/01

#### Quality Assessment Report:

IT/CES/QAR06.0002/08



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## Schedule

### EQUIPMENT:

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

The Three-pieces connection fittings series R., B., and RB., are unions composed of three elements that screw on and turn independently thus allowing the connection of rigid parts (flameproof enclosure, metallic conduit and dust-tight enclosures).

- The Three-pieces connection fittings series R., are in execution Ex d IIC Gb and Ex tb IIIC Db, IP66/67.

- The Three-pieces connection fittings series B., and RB., are in execution Ex d IIB Gb and Ex tb IIIC Db, IP66/67.

The coupling between the Three-pieces connection fittings and the apparatus enclosures is made by means of threaded joints. The unions can be male-male (male ring, nut, male body), male-female (female ring, nut, male body) or female-female (female ring, nut, female body). The above-mentioned Three-pieces connection fittings can be made in Stainless Steel, Galvanized carbon steel (A 105 or A203), Aluminium alloy and Nickel plated brass.

For the technical data and the schedule of limitation see Annex

**CONDITIONS OF CERTIFICATION: NO**



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

### Variation 1.1

The Three-pieces connection fittings type R.. and B.. originally assessed in compliance with IEC 60079-0: 2004, IEC 60079-1:2007, IEC 61241-0:2004 and IEC 61241-1:2004, have been re-assessed on the basis of the Standards:

- IEC 60079-0: 2011 - Electrical apparatus for explosive atmospheres - Part 0: general requirements.
- IEC 60079-31: 2008 - Electrical apparatus for use in the presence of combustible dust - Part 31: protection by enclosures "t".

Upgraded the marking of the components in compliance to the new Standards assessed, including the equipment protection level (EPL) "Gb" and "Db".

### Variation 1.2

The Three-pieces connection fittings types R.. and B.. have been updated to the engaged thread lengths regarding the taper threads in compliance to the Clause 15.2 and Table no.6 of IEC 60079-1 Standard.

### Variation 1.3

To the Three-pieces connection fittings types R.. and B.. have been extended the Service temperature ranges and updated to the coding as follows:

- from -20°C to +60°C for type B and R for all constructional material;
- from -55°C to +60°C for type B and R made of stainless steel only;
- from -20°C to +150°C for type RB for all constructional material;
- from -55°C to +150°C for type RB made of stainless steel only.



# IECEX Certificate of Conformity



Prot: B4025872

Annex to certificate:

IECEX CES 10.0002U Issue No.:1 of 2014-08-21

Applicant:

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

Electrical Apparatus:

Three-pieces connection fittings series R., B. and RB..

### Identification and description of the component

The Three-pieces connection fittings series R., B. and RB. are unions composed of three elements that screw on and turn independently thus allowing the connection of rigid parts (flameproof enclosure, metallic conduit and dust-tight enclosures).

- The Three-pieces connection fittings series R. are in execution **Ex d IIC Gb** and **Ex tb IIIC Db, IP66/67**.
- The Three-pieces connection fittings series B. and RB. are in execution **Ex d IIB Gb** and **Ex tb IIIC Db, IP66/67**.

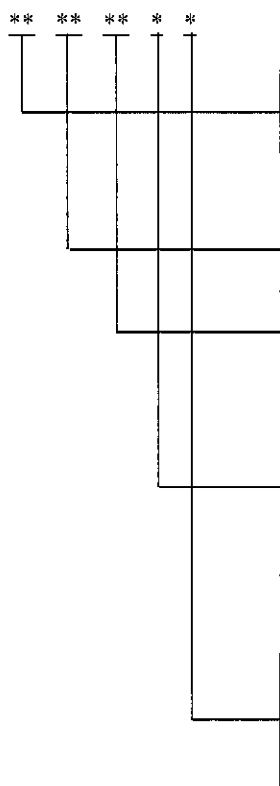
The coupling between the Three-pieces connection fittings and the apparatus enclosures is made by means of threaded joints. The unions can be male-male (male ring, nut, male body), male-female (female ring, nut, male body) or female-female (female ring, nut, female body).

The above-mentioned Three-pieces connection fittings can be made in Stainless Steel, Galvanized carbon steel (A 105), Low temperature Steel (A 203), Aluminium alloy and Nickel plated brass.

The Three-pieces connection fittings standard threads types are NPT ANSI/ASME B1.20.1 from 1/2" up to 4" and cylindrical ISO Metric 965/1 and ISO 965/3 from M20x1.5 up to M100x1.5. Alternative available tapered threads are Gk CEI EN 60079-1, Annex 1, while for cylindrical threads are EN ISO 228/1 or NPSM ANSI/ASME B1.20.1.

To guarantee the IP 66/67 degree of protection the Three-pieces connection fittings series R., B. and RB. have an IP 66/67 mechanical protection in-between the body and the ring, obtained by inserting an O-ring or plain gasket made of silicon rubber, while for external male cylindrical threads have a sealing edge machined for fitting a silicon gasket and for all other threads the IP 66/67 degree of protection is achieved with sealant put at least on two complete threads engaged of the threaded coupling.

### Identification of Three-pieces connection fittings:



Code which identifies the series:

- **R**: execution Ex d IIC Gb
- **B**: execution Ex d IIB Gb
- **RB**: execution Ex d IIB Gb for high temperature

Types of the two threads:

- **MM**: male-male
- **FF**: female-female
- **MF**: male-female

Size of threads (see table 1)

Type of threads:

- **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 UNI 228-1
- **Blank**: Gk CEI EN 60079-1 Annex 1

Manufacturing material:

- **A**: aluminium alloy
- **B**: nickel plated brass
- **S**: stainless steel
- **G**: galvanized carbon steel standard
- **GL**: galvanized steel for low temperatures

PAD B4025872 (2014517) - USO RISERVATO



# IECEX Certificate of Conformity



Prot: B4025872

Annex to certificate:  
Applicant:

IECEX CES 10.0002U Issue No.:1 of 2014-08-21  
CORTEM S.p.A., Via Aquileia 10,  
I - 34070 Villesse (GO), Italy

Electrical Apparatus:

Three-pieces connection fittings series R.. , B.. and RB..

Types, sizes and threads of Three-pieces connection fittings are listed on the following Table 1:

Table 1:

Three-pieces connection fittings type		Size code	NPT Thread	ISO pitch 1,5 Thread
Ex d IIB	Ex d IIC			
B.. or RB..	R..	1	1/2"	M 20
B.. or RB..	R..	2	3/4"	M 25
B.. or RB..	R..	3	1"	M 32
B.. or RB..	R..	4	1 1/4"	M 40
B.. or RB..	R..	5	1 1/2"	M 50
B.. or RB..	R..	6	2"	M 63
B.. or RB..	R..	7	2 1/2"	M 75
B.. or RB..	R..	8	3"	M 90
B.. or RB..	R..	9	3 1/2"	--
B.. or RB..	R..	10	4"	M 100

### Schedule of limitations

- The coupling of the Three-piece connection fittings 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 Three-piece connection fittings are mounted.
- The Three-piece connection fittings shall be mounted at the electrical apparatus in such a way that accidental rotation and loosening will be prevented.
- The Three-piece connection fittings shall be installed in such a way that the temperature at the mounting point will remain within the following service temperature ranges:

Three-pieces connection fittings type	Materials	Gasket	Amb. Temperature range
R.. or B..	Galvanised steel (ASTM A105 or A203), Stainless steel, Nickel plated brass, Aluminium alloy	Silicon	-20°C + +60°C
RB..	Galvanised steel (ASTM A105 or A203), Stainless steel, Nickel plated brass, Aluminium alloy	Silicon	-20°C + +150°C
R.. or B..	Stainless steel	Silicon	-50°C + +60°C
RB..	Stainless steel	Silicon	-50°C + +150°C



## IECEx Certificate of Conformity

# CESI

Prot: B4025872

**Annex to certificate:**

**IECEx CES 10.0002U Issue No.:1 of 2014-08-21**

**Applicant:**

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

**Electrical Apparatus:**

**Three-pieces connection fittings series R.. , B.. and RB..**

### Schedule of Limitations (follows):

- The IP 66/67 mechanical protection of the Three-piece connection fittings is obtained by inserting an O-ring or plain gasket made of silicon rubber, in-between the body and the ring as shown into the safety instruction.
- If the Three-piece connection fittings series **R..** and **B..** are intended for use with dust protection "Ex tb" the holes into which Three-piece connection fittings are mounted shall maintain the ingress protection rating of the enclosure. To this scope the correct positioning of the gaskets (for cylindrical threads) or the application of sealant on the threads (for tapered threads), shall be done as indicated in the manufacturer instruction.
- It is the final assemblers/users responsibility to ensure the threaded joint between the Three-piece connection fittings and the associated enclosure meet all the requirements of the applicable standards for the assembly.