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Schema di certificazione

# CESI-ATEX



PRD N. 018B  
Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC  
Signatory of EA, IAF and ILAC Mutual Recognition Agreements

- [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 14 ATEX 069 X**
- [4] Equipment: **Barrier cable glands series BXA.., BXC.. and BXN..**
- [5] Manufacturer: **RCN S.r.l.**
- [6] Address: **Regione Torame, via Crevacuore, I-13011 Borgosesia (Vercelli-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- B4031063.
- [9] Compliance with the Essential Health and Safety Requirements has been assured by compliance with:  
**EN 60079-0: 2012 EN 60079-1: 2007 EN 60079-7: 2007 EN 60079-31: 2009**
- [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:
- I M2 Ex d I Mb and Ex e I Mb  
and
  - II2GD Ex d IIC Gb and Ex e IIC Gb and  
Ex tb IIIC Db  
IP66 or IP66/68

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Date 2014.12.29 - Translation issued the 2014.12.29

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Approved  
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Testing & Certification Division  
Business Area Location  
Il Responsabile  
Fiorenzo Bregani

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## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 14 ATEX 069 X

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[15] **Description of equipment**

Barrier cable glands series **BXA..**, **BXN..** and **BXC..** are similar to normal cable glands, except a filling compound material is used to seal and clamp the individual cores of the cable, to prevent the transmission of an accidental internal ignition to the outside of the enclosure of the equipment on which they are mounted.

The Barrier cable glands series **BXA..**, **BXN..** and **BXC..** are suitable for inserting circular cables with single or multiple cores into Ex-d enclosures having threaded entries and Ex-e or Ex-tb enclosures having either threaded or plane entries. Attachment of the glands to an enclosure is by means of the male threaded portion on the male body.

The epoxy resin is used to facilitate sealing between the cores and the filling pot and to clamp the cables to prevent pulling or twisting forces being transmitted to the conductors connections too. Ingress protection of IP 66 or IP66/68 (30 m for 7 days) is maintained when the glands are installed in accordance with the manufacturer's instructions.

The composition of Barrier cable gland series is as follow:

- Type **BXA..**: Barrier cable gland for non armoured cable with male insert for flexible conduit;
- Type **BXC..**: Barrier cable gland for non armoured cable with female threaded hub at exit;
- Type **BXN..**: Barrier cable gland for non armoured cable with standard back-nut.

The Barrier cable glands series **BXA..**, **BXC..** and **BXN..** have an operating temperature range from -60°C up to +80°C, while the ambient temperature range should be from -60°C up to +60°C. Barrier cable glands types made of AVP steel are restricted to the lower temperature range of -20°C..

The Barrier cable glands standard thread sizes are cylindrical ISO Metric 965/1 and ISO 965/3 from M16x1.5 up to M50x1.5 or tapered NPT ANSI/ASME B1.20.1 from 3/8" up to 1-1/2". Alternative available threads are cylindrical ISO 228/1 or Pg (DIN 40430), tapered Gk CEI EN 60079-1 Annex 1 or ISO 10226.

The Barrier cable glands with M16, 3/8" and Pg11 threads are not admitted for Group I (mines) applications.

The IP66 degree of protection for Barrier cable glands with cylindrical threads is achieved with sealant put at least on two complete threads engaged of the threaded coupling while the IP 68 (30 m for 7 days) degree of protection is achieved with a Silicon flat washer. For all other threads (taper) the IP 66/68 degree of protection is achieved with sealant put at least on two complete threads engaged of the threaded coupling.

The Barrier cable glands are generally made of brass. The alternative materials Stainless steel, Free-cutting leaded steel (AVP) or Aluminium alloy can be supplied on demand.

The Barrier cable glands made of Free-cutting leaded steel (AVP) or Aluminium alloy are admitted for Group II applications only.

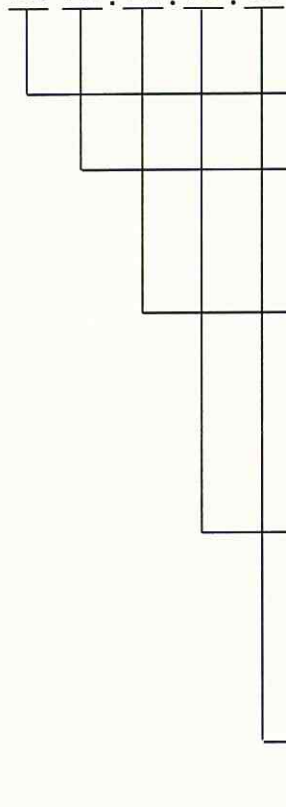
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## Schedule

[14] EC-TYPE EXAMINATION CERTIFICATE n. CESI 14 ATEX 069 X

### Identification of Barrier cable glands

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Code which identifies the series:

- BXA: Barrier cable gland with male insert for flexible conduit
- BXC: Barrier cable gland with female threaded hub at exit
- BXN: Barrier cable gland with standard back-nut

Size (see Table 1)

Male thread:

- I (16÷50): ISO metric pitch 1,5mm
- B (16÷50): GAS 228-1
- N (16÷50): NPT ANSI/ASME B1.20.1
- P (16÷50): PG DIN 40430
- U (20÷50): Gk CEI EN 60079-1 Annex I
- R (16÷50): ISO 10226

Female thread (BXC series only):

- I (16÷50): ISO metric pitch 1,5mm
- B (16÷50): GAS 228-1
- N (16÷50): NPT ANSI/ASME B1.20.1
- P (16÷50): PG DIN 40430
- U (20÷50): Gk CEI EN 60079-1 Annex I
- R (16÷50): ISO 10226

Manufacturing material:

- OT: Brass
- ON: Nickel plated brass
- S3,S4,S6: AISI 303, 304, 316L
- AVP: AVP steel (only for Group II)
- AL: Aluminium alloy Al11S (only for Group II)

Sizes and cable characteristics of barrier cable glands are listed on the following Table 1:

Table 1:

Barrier cable glands type BX..								
Size	Thread size			Gk	Cable dia. ranges			Max. cross sectional area of cores admitted (mm <sup>2</sup> )
	ISO 262 pitch 1.5	NPT, ISO 228, ISO 10226	Pg DIN 40430		Max Over multi cores (mm)	Max Over single core (mm)	Max. No. of cores (*) (mm)	
16	M 16 (**)	3/8" (**)	11 (**)	-	9.4	8.0	10	50.2
	M 20	1/2"	13,5					
20	M 20	1/2"	13,5	1/2"	12.4	10.5	15	86.5
			16					
25	M 25	3/4"	21	3/4"	17.6	14.0	30	153.9
32	M 32	1"	29	1"	22.8	18.5	50	268.7
40	M 40	1" ¼	36	1" ¼	28.0	24.5	75	471.2
50	M 50	1" ½	36	1" ½	34.5	29.5	80	683.1

(\*) – For Conductor diameter - Max. No. of cores limits relationship details, referring to the manufacturer's documents.

(\*\*) – The Barrier cable glands with M16, 3/8" and Pg11 threads are not admitted for Group I (mines) applications

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## Schedule

[14] **EC-TYPE EXAMINATION CERTIFICATE n. CESI 14 ATEX 069 X**

**Constructional characteristics**

Degree of protection (EN 60529):	IP 66 or IP 68 (30 m for 7 days).
Service temperature range:	- 60 up to + 80 °C for all models.
Service temperature range for types made of AVP steel:	minimum temp. restricted from -20°C.

[16] **Report n. EX- B4031063**

**Routine tests**

None.

**Descriptive documents (prot. EX- B4031067)**

- Technical note TF RCN14000R0 (126 pg.)	rev.0	dated	2014.11.10
- Flameproof barrier cable gland assembly instructions (4 pg.)	rev.0	dated	2014.11.10
- Declaration of Conformity FACSIMILE (1 pg.)	rev.0	dated	2014.10.27

One copy of all documents is kept in CESI files.

[17] **Special conditions for safe use (X)**

- The coupling of the Barrier cable glands 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 Barrier cable glands are mounted.
- The Barrier cable glands shall be mounted at the electrical apparatus in such a way that accidental rotation and loosening will be prevented.
- When the cores will be fitted inside the sealing pot by filling compound, the mounting should guarantee a sufficient quantity of compound around each single core to ensure the clamping of the cemented joint. This shall be done as indicated in the manufacturer instruction.
- When the Barrier cable glands type **BXA** and **BXC** are designed for use in Group I (mines) applications:
  - the cables should be installed in compliance with the requirements of the local code of practice;
  - conduits should provide additional mechanical protection only.
- The Barrier cable glands series **BXA..**, **BXC..** and **BXN..** have to be protected from hydraulic fluids, oils and greases when applied for Group I (mines) use.
- The Barrier cable glands made of Free-cutting leaded steel (AVP) or Aluminium alloy are admitted for Group II applications only.
- The Barrier cable glands should be installed within the following service temperature range:
  - **from - 60°C up to +80°C.**
  - **from - 20°C up to +80°C** for types made of AVP steel.
- The degree of protection IP66 or IP 66/68 (30 m for 7 days) according to the EN 60529 standard will be guaranteed for the Barrier cable glands if the holes into which Barrier cable glands are mounted are suitably sealed. To this scope the correct application of sealant which guaranties an **IP66** degree of protection on **cylindrical threads** and an **IP66/68** degree of protection on **tapered threads**, or the correct positioning of the plain gaskets (for **cylindrical threads only**) which guaranties an **IP66/68** degree of protection, shall be done as indicated in the manufacturer instruction.

[18] **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”.

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