



[1] SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE

[2] **Equipment or Protective System intended for use
in potentially explosive atmospheres
Directive 2014/34/EU**

[3] Supplementary EU-Type Examination Certificate number:

CESI 13 ATEX 033 X /06

[4] Product: **Cable glands KBA..(Orion), KBU..(Crater), MKBU..(M-Crater), KBAT..(Taurus), KBA..LT..(Orion LT), KBA-LSK..(Orion Lead Sheathed)**

[5] Manufacturer: **Bimed Teknik Aletler Sanayi Ve Ticaret A.Ş.**

[6] Address: **Deliklikaya Mah. Yüzbaşı Mehmet Hilmi Cad. No.28 İç Kapı No: 1
TR-34555 Arnavutköy - İstanbul (Turkey)**

[7] This supplementary certificate extends EC-Type Examination Certificate CESI 13 ATEX 033 X to apply to Product designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

[8] CESI, notified body n. 0722 in accordance with Article 17 of the Directive 2014/34/EU of the Parliament and Council of 26 February 2014, certifies that this Product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment or 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-C5008999.

[9] In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

[10] If the sign "X" is placed after the certificate number, it indicates that the Product in subject to special conditions for safe use specified in the schedule to this certificate.

[11] This EU-TYPE EXAMINATION CERTIFICATE relates only to the design, examination and tests of the specified Product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this Product. These are not covered by this certificate.

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

| | | | |
|--|---------------|--|---|
| | I M2 | Ex db I Mb and Ex eb I Mb | <i>» (only for types KBA and KBA..LT Standard, KBA-LSK, MKBU)</i> |
| | | <i>or</i> | |
| | II 2GD | Ex db IIC Gb and Ex eb IIC Gb Ex tb IIIC Db IP66/68 | <i>» (all types)</i> |

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Date 25.08.2025 - Translation issued the 25.08.2025

Prepared
Fabio Mariani

Verified
Alessandro Fedato

Approved
Giacomo Chiarini

[Signatures of Fabio Mariani, Alessandro Fedato, and Giacomo Chiarini]

Schema di certificazione

CESI-ATEX



[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

[15]

Description of the variation to the Product

Variation 6.1:

The address of the company and the manufacturing site have changed from:

S.S Bakir Pirinç Sanayi Sitesi Leylak Caddesi no:16

TR-34524 Beylikdüzü – Istanbul (Turkey)

to:

Deliklikaya Mah. Yüzbaşı Mehmet Hilmi Cad. No.28 İç Kapı No: 1

TR-34555 Arnavutköy - Istanbul (Turkey)

Description of Product

The cable glands series **KBU..** (commercial gland family named CRATER), **MKBU..** (commercial gland family named M-CRATER), **KBA..** (commercial gland family named ORION), **KBA..-LSK** (commercial gland family named ORION LEAD SHEATHED), **KBAT..** (commercial gland family named TAURUS) and **KBA..LT..** (commercial gland family named ORION LT) are suitable for inserting circular cables into Ex db enclosures having threaded entries and Ex eb or Ex tb enclosures having either threaded or plain entries.

Attachment of the glands to an enclosure is by means of the male threaded portion on the male body. An elastomeric inner sealing ring is used in each gland type to facilitate sealing between the cable and gland body and to clamp the cable to prevent pulling or twisting forces being transmitted to the conductor connections. Ingress protection of IP66/68 (50 m for 30 min.) is maintained when the glands are installed in accordance with the manufacturer's instructions.

The types **KBU..** and **MKBU..** glands are designed for non-armoured cables and are comprised of a male body, inner sealing ring, pressure ring and cap. When the cap is screwed onto the male body, the pressure ring comprises the lower sealing ring onto the outer sheath of the cable and realizes the clamping.

The Standard types **KBA..**, **KBA..LT..** and the type **KBAT..** cable glands are suitable for steel wire armoured cables, while the type **KBA..-LSK** is suitable for lead sheathed armoured cables only.

They are comprised of a male body, lower sealing ring, grounding cone, swivel braid retainer, middle body, upper sealing ring and cap. For type **KBA..-LSK** only are used a further contact spring and a metal washer to ground the lead sheath. When the middle body is screwed onto the male body the cable wire armour is clamped between the swivel braid retainer and the grounding cone and the lower sealing ring is compressed onto the inner sheath of the cable. Sealing of the cable outer sheath is facilitated by the upper sealing ring which is compressed onto the outer sheath when the cap is screwed onto the middle body.

For Universal types **KBAU..** and **KBAU..LT..** cable glands the armour reduction ring is used. With this additional ring, they can be used for shielded cables. When the armour reduction ring is taken out, then they can be used for armoured cables. While Offshore types **KBAO..** and **KBAO..LT..** cable glands instead of the grounding cone, shielding cone is used and they are used for shielded cables.

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[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

The cable glands **KBA..** Standard type and **KBA..-LSK** (from M20x1.5 up to M90x1.5 sizes and with the exclusion of Aluminium alloy), **KBA..LT..** Standard type (from M20x1.5 up to M130x2 sizes) and **MKBU..** type (M16x1.5 sizes excluded) only are for Group I (mines) executions. While all the cable gland types **KBA..**, **KBA..-LSK**, **KBU..**, **KBAT..** and **KBA..TL..** are for Group IIC and Group IIIC. The cable glands should be also used for intrinsically safe circuits Ex i and should have a part painted in light blue.

The **KBA..** cable glands series standard thread types are NPT ANSI/ASME B1.20.1 from 1/4" up to 3"½ and cylindrical ISO Metric 965/1 and ISO 965/3 from M12x1.5 up to M110x1.5.

The **KBA..-LSK** cable glands series standard thread types are NPT ANSI/ASME B1.20.1 from 1/2" up to 3" and cylindrical ISO Metric 965/1 and ISO 965/3 from M20x1.5 up to M90x1.5.

The **KBU..** and **MKBU..** cable glands series standard thread types are NPT ANSI/ASME B1.20.1 from 3/8" up to 3" and cylindrical ISO Metric 965/1 and ISO 965/3 from M16x1.5 up to M90x1.5.

For **KBA..LT..** cable glands series standard thread types are cylindrical ISO Metric 965/1 and ISO 965/3 from M20x1.5 up to M130x2 and tapered threads type NPT ANSI/ASME B1.20.1 from 1/2" up to 5", while for **KBAO..LT..** cable glands series standard thread types are cylindrical ISO Metric 965/1 and ISO 965/3 from M20x1.5 up to M32x1.5 and tapered threads type NPT ANSI/ASME B1.20.1 from 1/2" up to 1".

For **KBAT..** cable glands series standard thread types are cylindrical ISO Metric 965/1 and ISO 965/3 from M16x1.5 up to M63x1.5 and tapered threads type NPT ANSI/ASME B1.20.1 from 3/8" up to 2".

Alternative available cylindrical threads are GAS ISO 228/1, NPSM ANSI/ASME B1.20.1 and type PG DIN 40430. Thread type PG DIN 40430 can be used for "Ex eb" execution only.

To guarantee the IP 66/68 degree of protection the cable gland types **KBU..**, **MKBU..**, **KBA..**, **KBA..-LSK**, **KBAT..** and **KBA..LT..** with cylindrical threads have a sealing edge machined for fitting an O-ring, alternatively it is available a flat washer, while for all other threads the IP 66/68 degree of protection is achieved with sealant put at least on two complete threads engaged of the threaded coupling.

The cable glands are generally made in Brass. The following alternative materials can be supplied on demand:

- Nickel-plated Brass type CuZn39Pb3 EN 12164.
- Stainless steel type AISI316; AISI304; AISI303.
- Galvanized carbon steel type FE36; FE37 UNI 10233/4.
- Aluminium alloy EN AW-6026 EN 573-3 (**KBA..** type and sizes from M25x1.5 up to M75x1.5 only).

In addition, the cable glands can be supplied with an anti-tearing nut, only if specifically required by the purchaser.

[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Model identification

Identification of cable glands **KBA..**, **KBAT..**, **KBU..** and **MKBU..** type:

| **** | * | *** | * | (**) | ** | * | - | ** | |
|------|---|-----|---|------|----|---|---|----|---|
| | | | | | | | | | Code that identifies the type: - KBA : cable gland for armoured or shielded cable - KBAT : cable gland for armoured or shielded cable - MKB : cable gland for non-armoured cable - KBU : cable gland for non-armoured cable |
| | | | | | | | | | Code that identifies the cable type (KBA.. type only): - Blank : Standard (<i>for armoured cables only</i>) - U : Universal (<i>for armoured or shielded cables</i>) - O : Offshore (<i>for shielded cables only</i>) |
| | | | | | | | | | Size (<i>see Table 1, 2, 3 and 4</i>) |
| | | | | | | | | | Type of thread: - N : NPT ANSI/ASME B1.20.1 - S : NPSM ANSI/ASME B1.20.1 - P : PG DIN 40430 (<i>assessed for Ex eb protection mode only</i>) - M : ISO 261 pitch 1.5 - C : GAS ISO 228-1 |
| | | | | | | | | | Thread size (<i>see Table 1, 2, 3 and 4</i>) |
| | | | | | | | | | Manufacturing material: - A : Aluminium alloy (KBA.. type and M25 up to M75 sizes only) - B : brass - BN : nickel-plated brass - X : stainless steel - Z : galvanized carbon steel |
| | | | | | | | | | Seals material: - C : Chloroprene (Neoprene) - S : Silicon rubber |
| | | | | | | | | | Flat washer - Blank : none - WC : with flat washer in Chloroprene (Neoprene) - WS : with flat washer in Silicon rubber - WF : with flat washer in Fiber |

[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Identification of cable glands **KBA..-LSK** type:

| KBA | *** | * | (**) | ** | * | - | LSK | - | ** |
|-----|-----|---|------|----|---|---|-----|---|---|
| | | | | | | | | | |
| | | | | | | | | | Size (see Table 5) |
| | | | | | | | | | Type of thread: |
| | | | | | | | | | - N: NPT ANSI/ASME B1.20.1 |
| | | | | | | | | | - S: NPSM ANSI/ASME B1.20.1 |
| | | | | | | | | | - P: PG DIN 40430 (<i>assessed for Ex eb protection mode only</i>) |
| | | | | | | | | | - M: ISO 261 pitch 1.5 |
| | | | | | | | | | - C: GAS ISO 228-1 |
| | | | | | | | | | Thread size (see Table 5) |
| | | | | | | | | | Manufacturing material: |
| | | | | | | | | | - A: Aluminium alloy (<i>M25 up to M75 sizes only</i>) |
| | | | | | | | | | - B: brass |
| | | | | | | | | | - BN: nickel-plated brass |
| | | | | | | | | | - X: stainless steel |
| | | | | | | | | | - Z: galvanized carbon steel |
| | | | | | | | | | Seals material: |
| | | | | | | | | | - C: Chloroprene (Neoprene) |
| | | | | | | | | | - S: Silicon rubber |
| | | | | | | | | | Flat washer |
| | | | | | | | | | - Blank: none |
| | | | | | | | | | - WC: with flat washer in Chloroprene (Neoprene) |
| | | | | | | | | | - WS: with flat washer in Silicon rubber |
| | | | | | | | | | - WF: with flat washer in Fiber |

Types and thread sizes of cable glands **KBA..**, **KBAT..**, **KBU..**, **MKBU..** and **KBA..-LSK** type are listed on the followings [Table 1](#), [Table 2](#), [Table 3](#), [Table 4](#) and [Table 5](#).

[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Table 1:

| KBA., KBAU., KBAO.. (Orion) | | | | | |
|-----------------------------|-------|-------------|---------------|------------------------|---------------|
| Cable glands | | Thread size | | Cable Dia. ranges (mm) | |
| Type | Size | NPT | ISO pitch 1.5 | Inner sheath | Armour sheath |
| KBA | 0S.. | 1/4" | M 12 | 2-4 | 3-5.5 |
| KBA | 0SLM | - | M 12 | 3-7.5 | 6-12 |
| KBA | 0SLN | 1/4" | - | 3-8 | 6-12 |
| KBA | 01S.. | 3/8" | M 16 | 3-8.5 | 6-12 |
| KBA | 01.. | 3/8" | M 16 | 6-12 | 8.5-16 |
| KBA | 1S.. | 1/2" | M 20 | 3-8.5 | 6-12 |
| KBA | 1.. | 1/2" | M 20 | 6-12 | 8.5-16 |
| KBA | 1L.. | 1/2" | M 20 | 8.5-14.5 | 12-20 |
| KBA | 2XS.. | 3/4" | M 25 | 3-8.5 | 6-12 |
| KBA | 2S.. | 3/4" | M 25 | 6-12 | 8.5-16 |
| KBA | 2.. | 3/4" | M 25 | 8.5-16 | 12-21 |
| KBA | 2L.. | 3/4" | M 25 | 12-20 | 16-26 |
| KBA | 3XS.. | 1" | M 32 | 6-12 | 8.5-16 |
| KBA | 3S.. | 1" | M 32 | 12-20 | 16-26 |
| KBA | 3.. | 1" | M 32 | 15-26 | 20-33 |
| KBA | 4XS.. | 1 1/4" | M 40 | 12-20 | 16-26 |
| KBA | 4S.. | 1 1/4" | M 40 | 15-26 | 20-33 |
| KBA | 4.. | 1 1/4" | M 40 | 20-32 | 29-41 |
| KBA | 5XS.. | 1 1/2" | M 50 | 15-26 | 20-33 |
| KBA | 5X.. | 1 1/2" | M 50 | 20-32 | 29-41 |
| KBA | 5S.. | 1 1/2" | M 50 | 22-35 | 33-48 |
| KBA | 5.. | 1 1/2" | M 50 | 27-41 | 36-52 |
| KBA | 6XS.. | 2" | M 63 | 22-35 | 33-48 |
| KBA | 6X.. | 2" | M 63 | 27-41 | 36-52 |
| KBA | 6S.. | 2" | M 63 | 35-45 | 43-57 |
| KBA | 6.. | 2" | M 63 | 40-52 | 47-60 |
| KBA | 6LM | - | M 63 | 45-56 | 54-70 |
| KBA | 6LN | 2" | - | 45-52 | 54-70 |
| KBA | 7XS.. | 2 1/2" | M 75 | 35-45 | 43-57 |
| KBA | 7S.. | 2 1/2" | M 75 | 40-52 | 47-60 |
| KBA | 7.. | 2 1/2" | M 75 | 45-60 | 54-70 |
| KBA | 8XS.. | 3" | M 90 | 40-52 | 47-60 |
| KBA | 8S.. | 3" | M 90 | 45-60 | 54-70 |
| KBA | 8.. | 3" | M 90 | 60-72 | 63-80 |
| KBA | 9S.. | 3 1/2" | - | 45-60 | 54-70 |
| KBA | 9.. | 3 1/2" | - | 60-72 | 63-80 |
| KBA | 10S.. | - | M 110 | 45-60 | 54-70 |
| KBA | 10.. | - | M 110 | 60-72 | 63-80 |

Note: Aluminium alloy available from M25x1.5 (1/2"NPT) up to M75x1.5 (2 1/2"NPT) sizes only.

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[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Table 2:

| KBAT.. (Taurus) | | | | | |
|-----------------|-------|-------------|---------------|------------------------|---------------|
| Cable glands | | Thread size | | Cable Dia. ranges (mm) | |
| Type | Size | NPT | ISO pitch 1.5 | Inner sheath | Armour sheath |
| KBAT | 01L.. | 3/8" | M 16 | 6-11 | 8-15 |
| KBAT | 1.. | 1/2" | M 20 | 6-11 | 8-15 |
| KBAT | 1L.. | 1/2" | M 20 | 10-15.5 | 13.5-21 |
| KBAT | 2S.. | 3/4" | M 25 | 6-11 | 8-15 |
| KBAT | 2.. | 3/4" | M 25 | 10-15.5 | 13.5-21 |
| KBAT | 2L.. | 3/4" | M 25 | 13.5-20.5 | 18-27 |
| KBAT | 3.. | 1" | M 32 | 13.5-20.5 | 18-27 |
| KBAT | 3.. | 1" | M 32 | 18-27 | 23-33 |
| KBAT | 4.. | 1 1/4" | M 40 | 23-33 | 29-41 |
| KBAT | 5.. | 1 1/2" | M 50 | 29-41 | 35-48 |
| KBAT | 6.. | 2" | M 63 | 35-48 | 42-56 |

Table 3:

| KBU.. (Crater) | | | | |
|----------------|-------|-------------|---------------|------------------------|
| Cable glands | | Thread size | | Cable Dia. ranges (mm) |
| Type | Size | NPT | ISO pitch 1.5 | |
| KBU | 01.. | 3/8" | M 16 | 3-8,5 |
| KBU | 01L.. | 3/8" | M 16 | 6-12 |
| KBU | 1.. | 1/2" | M 20 | 6-12 |
| KBU | 1L.. | 1/2" | M 20 | 12-14,5 |
| KBU | 2S.. | 3/4" | M 25 | 6-12 |
| KBU | 2.. | 3/4" | M 25 | 12-16 |
| KBU | 2L.. | 3/4" | M 25 | 12-20 |
| KBU | 3S.. | 1" | M 32 | 12-20 |
| KBU | 3.. | 1" | M 32 | 15-26 |
| KBU | 4S.. | 1 1/4" | M 40 | 15-26 |
| KBU | 4.. | 1 1/4" | M 40 | 20-32 |
| KBU | 5S.. | 1 1/2" | M 50 | 22-35 |
| KBU | 5.. | 1 1/2" | M 50 | 27-41 |
| KBU | 6S.. | 2" | M 63 | 35-45 |
| KBU | 6.. | 2" | M 63 | 40-52 |
| KBU | 7S.. | 2 1/2" | M 75 | 40-52 |
| KBU | 7.. | 2 1/2" | M 75 | 45-60 |
| KBU | 8S.. | 3" | M 90 | 45-60 |
| KBU | 8.. | 3" | M 90 | 60-72 |

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[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Table 4:

| MKBU.. (M-Crater) | | | | |
|-------------------|---------|-------------|---------------|------------------------|
| Cable glands | | Thread size | | Cable Dia. ranges (mm) |
| Type | Size | NPT | ISO pitch 1.5 | |
| MKBU | 01M2.. | 3/8" | M 16 | 3-8.5 |
| MKBU | 01LM1.. | 3/8" | M 16 | 6-9 |
| MKBU | 01LM2.. | 3/8" | M 16 | 9-12 |
| MKBU | 1M1.. | 1/2" | M 20 | 6-9 |
| MKBU | 1M2.. | 1/2" | M 20 | 9-12 |
| MKBU | 1LM1.. | 1/2" | M 20 | 8.5-11.5 |
| MKBU | 1LM2.. | 1/2" | M 20 | 11.5-14.5 |
| MKBU | 2SM1.. | 3/4" | M 25 | 6-9 |
| MKBU | 2SM2.. | 3/4" | M 25 | 9-12 |
| MKBU | 2M1.. | 3/4" | M 25 | 8.5-12.5 |
| MKBU | 2M2.. | 3/4" | M 25 | 12.5-16 |
| MKBU | 2LM1.. | 3/4" | M 25 | 12-16 |
| MKBU | 2LM2.. | 3/4" | M 25 | 16-20 |
| MKBU | 3SM1.. | 1" | M 32 | 12-16 |
| MKBU | 3SM2.. | 1" | M 32 | 16-20 |
| MKBU | 3M1.. | 1" | M 32 | 15-20 |
| MKBU | 3M2.. | 1" | M 32 | 20-26 |
| MKBU | 4SM1.. | 1 1/4" | M 40 | 15-20 |
| MKBU | 4SM2.. | 1 1/4" | M 40 | 20-26 |
| MKBU | 4M1.. | 1 1/4" | M 40 | 20-26 |
| MKBU | 4M2.. | 1 1/4" | M 40 | 26-32 |
| MKBU | 5SM1.. | 1 1/2" | M 50 | 22-28 |
| MKBU | 5SM2.. | 1 1/2" | M 50 | 28-35 |
| MKBU | 5M1.. | 1 1/2" | M 50 | 27-35 |
| MKBU | 5M2.. | 1 1/2" | M 50 | 34-41 |
| MKBU | 6SM1.. | 2" | M 63 | 35-40 |
| MKBU | 6SM2.. | 2" | M 63 | 40-45 |
| MKBU | 6M1.. | 2" | M 63 | 40-46 |
| MKBU | 6M2.. | 2" | M 63 | 46-52 |
| MKBU | 7SM1.. | 2 1/2" | M 75 | 40-46 |
| MKBU | 7SM2.. | 2 1/2" | M 75 | 46-52 |
| MKBU | 7M1.. | 2 1/2" | M 75 | 45-52 |
| MKBU | 7M2.. | 2 1/2" | M 75 | 52-60 |
| MKBU | 8SM1.. | 3" | M 90 | 45-52 |
| MKBU | 8SM2.. | 3" | M 90 | 52-60 |
| MKBU | 8M1.. | 3" | M 90 | 60-66 |
| MKBU | 8M2.. | 3" | M 90 | 66-72 |

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[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Table 5:

| KBA..-LSK (Orion Lead Sheathed) | | | | | |
|---------------------------------|-------|-------------|---------------|------------------------|---------------|
| Cable glands | | Thread size | | Cable Dia. ranges (mm) | |
| Type | Size | NPT | ISO pitch 1.5 | Inner sheath | Armour sheath |
| KBA-LSK | 1S.. | 1/2" | M 20 | 3-8 | 6-12 |
| KBA-LSK | 1.. | 1/2" | M 20 | 6-11.5 | 8.5-16 |
| KBA-LSK | 1L.. | 1/2" | M 20 | 8.5-14 | 12-20 |
| KBA-LSK | 2XS.. | 3/4" | M 25 | 3-8 | 6-12 |
| KBA-LSK | 2S.. | 3/4" | M 25 | 6-11.5 | 8.5-16 |
| KBA-LSK | 2.. | 3/4" | M 25 | 8.5-15 | 12-21 |
| KBA-LSK | 2L.. | 3/4" | M 25 | 12-19 | 16-26 |
| KBA-LSK | 3XS.. | 1" | M 32 | 6-11.5 | 8.5-16 |
| KBA-LSK | 3S.. | 1" | M 32 | 12-19 | 16-26 |
| KBA-LSK | 3.. | 1" | M 32 | 15-25 | 20-33 |
| KBA-LSK | 4XS.. | 1 1/4" | M 40 | 12-19 | 16-26 |
| KBA-LSK | 4S.. | 1 1/4" | M 40 | 15-25 | 20-33 |
| KBA-LSK | 4.. | 1 1/4" | M 40 | 20-31 | 29-41 |
| KBA-LSK | 5XS.. | 1 1/2" | M 50 | 15-25 | 20-33 |
| KBA-LSK | 5X.. | 1 1/2" | M 50 | 20-31 | 29-41 |
| KBA-LSK | 5S.. | 1 1/2" | M 50 | 22-34 | 33-48 |
| KBA-LSK | 5.. | 1 1/2" | M 50 | 27-40 | 36-52 |
| KBA-LSK | 6XS.. | 2" | M 63 | 22-34 | 33-48 |
| KBA-LSK | 6X.. | 2" | M 63 | 27-40 | 36-52 |
| KBA-LSK | 6S.. | 2" | M 63 | 35-44 | 43-57 |
| KBA-LSK | 6.. | 2" | M 63 | 40-50 | 47-60 |
| KBA-LSK | 6L.. | 2" | M 63 | 45-50 | 54-70 |
| KBA-LSK | 7XS.. | 2 1/2" | M 75 | 35-44 | 43-57 |
| KBA-LSK | 7S.. | 2 1/2" | M 75 | 40-50 | 47-60 |
| KBA-LSK | 7.. | 2 1/2" | M 75 | 45-58 | 54-70 |
| KBA-LSK | 8XS.. | 3" | M 90 | 40-50 | 47-60 |
| KBA-LSK | 8S.. | 3" | M 90 | 45-68 | 54-70 |
| KBA-LSK | 8.. | 3" | M 90 | 60-70 | 63-80 |

Note: Aluminium alloy available from M25x1.5 (1/2"NPT) up to M75x1.5 (2 1/2"NPT) sizes only.

[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Identification of cable glands **KBA..LT..** type:

| | | | | | | | | | | |
|-----|---|-----|---|------|----|----|---|---|----|---|
| KBA | * | *** | * | (**) | LT | ** | * | - | ** | |
| | | | | | | | | | | Code that identifies cable glands for armoured or shielded cable |
| | | | | | | | | | | Code that identifies the cable type: |
| | | | | | | | | | | - Blank : standard (for armoured cables only) |
| | | | | | | | | | | - U : universal (for armoured or shielded cables) |
| | | | | | | | | | | - O : offshore (for shielded cables only) |
| | | | | | | | | | | Size (see Table 5 and 6) |
| | | | | | | | | | | Type of thread: |
| | | | | | | | | | | - N : NPT ANSI/ASME B1.20.1 |
| | | | | | | | | | | - S : NPSM ANSI/ASME B1.20.1 |
| | | | | | | | | | | - P : PG DIN 40430 (assessed for Ex eb protection mode only) |
| | | | | | | | | | | - M : ISO 261 pitch 1.5 (pitch 2.0 for sizes M90 up to M130) |
| | | | | | | | | | | - C : GAS ISO 228-1 |
| | | | | | | | | | | Thread size (see Table 5 and 6) |
| | | | | | | | | | | Orion-LT (Lower temperature) cable gland series |
| | | | | | | | | | | Manufacturing material: |
| | | | | | | | | | | - B : brass |
| | | | | | | | | | | - BN : nickel-plated brass |
| | | | | | | | | | | - X : stainless steel |
| | | | | | | | | | | - Z : galvanized carbon steel |
| | | | | | | | | | | Seals material: |
| | | | | | | | | | | - C : Chloroprene (Neoprene) |
| | | | | | | | | | | - S : Silicon rubber |
| | | | | | | | | | | Flat washer |
| | | | | | | | | | | - Blank : none |
| | | | | | | | | | | - WC : with flat washer in Chloroprene (Neoprene) |
| | | | | | | | | | | - WS : with flat washer in Silicon rubber |
| | | | | | | | | | | - WS : with flat washer in fiber |

Types and thread sizes of cable glands **KBA..LT..** type are listed on the followings [Table 6](#) and [Table 7](#).

Table 6:

| KBA..LT.. and KBAU..LT.. (Orion LT) | | | | | | |
|-------------------------------------|------|-------------|---------------|---------------|------------------------|---------------|
| Cable glands | | Thread size | | | Cable Dia. ranges (mm) | |
| Type | Size | NPT | ISO pitch 1.5 | ISO pitch 2.0 | Inner sheath | Armour sheath |
| KBA..LT | 1 | 1/2" | M 20 | - | 8.5-14.5 | 12-20 |
| KBA..LT | 2X | 3/4" | M 25 | - | 8.5-14.5 | 12-20 |
| KBA..LT | 2 | 3/4" | M 25 | - | 8.5-16 | 12-21 |
| KBA..LT | 3X | 1" | M 32 | - | 8.5-16 | 12-21 |
| KBA..LT | 9 | 3" 1/2 | - | M 90 | 70-82 | 78-90 |
| KBA..LT | 10S | 4" | - | M 100 | 80-92 | 88-100 |
| KBA..LT | 10 | 4" | - | M 110 | 90-101 | 98-110 |
| KBA..LT | 11S | 5" | - | M 130 | 100-115 | 109-123 |

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[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Table 7:

| KBAO..LT.. (Orion LT) | | | | | |
|-----------------------|------|-------------|---------------|------------------------|---------------|
| Cable glands | | Thread size | | Cable Dia. ranges (mm) | |
| Type | Size | NPT | ISO pitch 1.5 | Inner sheath | Armour sheath |
| KBA..LT | 1 | 1/2" | M 20 | 8.5-14.5 | 12-20 |
| KBA..LT | 2X | 3/4" | M 25 | 8.5-14.5 | 12-20 |
| KBA..LT | 2 | 3/4" | M 25 | 8.5-16 | 12-21 |
| KBA..LT | 3X | 1" | M 32 | 8.5-16 | 12-21 |

Ambient temperature

| | |
|--|---|
| Models with sealing rings made of Chloroprene rubber | - 40 ÷ + 100 °C for KBA* , KBA*-LSK , KBU* ; - 40 ÷ + 80 °C for MKBU* ; - 40 ÷ + 80 °C for KBAT* ; - 40 ÷ + 80 °C for KBA*LT* . |
| Models with sealing rings made of Silicon rubber..... | - 60 ÷ + 130 °C for KBA* , KBA*-LSK , KBU* ; - 60 ÷ + 80 °C for MKBU* ; - 60 ÷ + 100 °C for KBAT* ; - 60 ÷ + 80 °C for KBA*LT* . |
| Models made of Galvanized carbon steel | limited up to - 20 °C. |
| KBA* , KBA*-LSK models made of Aluminium alloy | up to + 80 °C. |
| Types for Group I (mines) execution..... | up to + 80 °C. |
| Models supplied with Fiber flat washer | - 50 ÷ + 80 °C for all types. |

The cable gland types, installation Group, manufacturer materials and ambient temperature ranges are reported in the table below:

| Type | Exec. | Materials | Seals | Tamb |
|---|------------------------------------|---|-------------|----------------|
| KBA.. KBA..-LSK | Group I | Brass, Nickel plated brass, Stainless steel | Chloroprene | -40°C ÷ +80°C |
| | | | Silicon | -60°C ÷ +80°C |
| | | Galvanised steel | All seals | -20°C ÷ +80°C |
| | Group IIC Group IIIC | Brass, Nickel plated brass, Stainless steel | Chloroprene | -40°C ÷ +100°C |
| | | | Silicon | -60°C ÷ +130°C |
| | | Aluminium alloy | Chloroprene | -40°C ÷ +80°C |
| | | | Silicon | -60°C ÷ +80°C |
| | | Galvanised steel | Chloroprene | -20°C ÷ +100°C |
| | | | Silicon | -20°C ÷ +130°C |
| KBU.. | Group IIC Group IIIC | Brass, Nickel plated brass, Stainless steel | Chloroprene | -40°C ÷ +80°C |
| | | | Silicon | -60°C ÷ +80°C |
| | | Galvanised steel | All seals | -20°C ÷ +80°C |
| MKBU.. | Group I Group IIC Group IIIC | Brass, Nickel plated brass, Stainless steel | Chloroprene | -40°C ÷ +80°C |
| | | | Silicon | -60°C ÷ +80°C |
| | | Galvanised steel | All seals | -20°C ÷ +80°C |
| KBA..LT.. | Group I Group IIC Group IIIC | Brass, Nickel plated brass, Stainless steel | Chloroprene | -40°C ÷ +80°C |
| | | | Silicon | -60°C ÷ +80°C |
| | | Galvanised steel | All seals | -20°C ÷ +80°C |
| KBAT... | Group IIC Group IIIC | Brass, Nickel plated brass, Stainless steel | Chloroprene | -40°C ÷ +80°C |
| | | | Silicon | -60°C ÷ +100°C |
| | | Galvanised steel | Chloroprene | -20°C ÷ +80°C |
| | | | Silicon | -20°C ÷ +100°C |
| Restricted use to the ambient temperature range of -50°C ÷ +80°C for all types whit fiber flat washers. | | | | |

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[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

[16]

Report n. EX-C5008999

Routine tests

None

[17]

Special conditions for safe use (X)

- The coupling of the 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 cable glands are mounted.
- The cable glands shall be mounted at the electrical apparatus in such a way that accidental rotation and loosening will be prevented.
- The **KBA..**, **KBA..-LSK**, **KBA..LT..** and **MKBU..** cable gland types have to be protected from hydraulic fluids, oils and greases when applied for Group I (mines) applications.
- The **KBA.. (Standard)** and **KBA..-LSK** cable gland types from M20x1.5 up to M90x1.5 sizes and **KBA..LT.. (Standard)** cable gland types all sizes only are admitted for Group I applications.
- The **KBA..-LSK** cable gland types M20x1.5 sizes with clamping range Ø3.0÷8.5 are admitted for Group II applications only.
- The **MKBU..** cable gland types M16x1.5 sizes are not admitted for Group I applications.
- The **KBA..** and **KBA..-LSK** cable gland types made of Aluminium alloy are not admitted for Group I applications and are available from M25x1.5 up to M75x1.5 sizes only.
- The **KBAT..** cable gland types are only suitable for fixed installations. The cables must be effectively clamped to prevent pulling and twisting.
- The cable glands shall be installed in such a way that the temperature at the mounting point will remain within the service temperature ranges according to the marking.
- The degree of protection IP 66/68 according to the EN 60529 standard will be guaranteed for the cable glands if the holes into which cable glands are mounted are suitably sealed. 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.

[18]

Essential Health and Safety Requirements

Compliance with the Essential Health and Safety Requirements is not affected by this variation.

EHSR are assured by compliance with safety conditions and by compliance with the following standards:

| | |
|------------------------------------|---|
| EN IEC 60079-0: 2018 | Explosive atmospheres - Part 0: Equipment - General requirements |
| EN 60079-1: 2014 | Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d" |
| EN IEC 60079-7:2015/A1:2018 | Part 7: Equipment protection by increased safety "e" |
| EN 60079-31:2014 | Part 31: Equipment dust ignition protection by enclosure "t" |

[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

[19]

Descriptive documents (prot. EX-C1014212)

| | | |
|--|-------|------------|
| - A4-14-IEC.56 Overall dimensions for KBALT (U) Grounding Cone Rev.2 | dated | 30/04/2021 |
| - A4-14-IEC.57 Overall dimensions for KBAOLT Orion LT Off-Shore Ground. Rev.1 | dated | 30/04/2021 |
| - A4-IEC.03 Technical Note (13 pg.) Rev.3 | dated | 30/04/2021 |
| - A4-IEC.56 Overall dimensions for KBA-KBAU Orion Grounding Cone Rev.3 | dated | 30/04/2021 |
| - A4-IEC.57 Overall dimensions for KBAO Orion Off-Shore Grounding Cone Rev.3 | dated | 30/04/2021 |
| - A4-IEC.65 Overall dimensions for KBA (U,O) Orion Swivel Braid Ring Rev.3 | dated | 30/04/2021 |
| - A4-MI-LSK Safety, Maintenance and Mounting Instruction (11 pg.) Rev.1 | dated | 30/04/2021 |
| - A4-TN-LSK Technical Note (8 pg.) Rev.1 | dated | 30/04/2021 |
| - MI.IEC.10 Safety and Mounting Instructions (25 pg.) Rev.3 | dated | 30/04/2021 |
| - A3-KBA(M)-LSK Cable glands metric thread KBA-LSK type Rev.0 | dated | 16/08/2018 |
| - A3-KBA(NPT)-LSK Cable glands NPT thread KBA-LSK type Rev.0 | dated | 16/08/2018 |
| - A4-IEC.311 Overall dimensions for contact spring Rev.0 | dated | 16/08/2018 |
| - A4-IEC.312 Overall dimensions for metal washer Rev.0 | dated | 16/08/2018 |
| - A4-IEC.313 Marking information for KBA-LSK Rev.0 | dated | 16/08/2018 |
| - A4-IEC.315 Manufacturing materials and their related datasheets Rev.0 | dated | 16/08/2018 |
| - A4-IEC.79 Adequate analysis and assessment of the risk(s) Rev.0 | dated | 21/04/2017 |
| - A3-14-IEC.01 Overall dimensions for KBAT Lower Seal Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.02 Overall dimensions for KBAT Metric Lower Body Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.03 Overall dimensions for KBAT Swivel Braid Ring Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.04 Overall dimensions for KBAT Cap Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.05 Overall dimensions for KBAT Grounding Cone Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.06 Overall dimensions for KBAT Upper seal Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.07 Overall dimensions for KBAT Upper Body Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.08 Overall dimensions for KBAT NPT Lower Body Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.09 Overall dimensions for KBAT O-Ring Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.61 Overall dimensions for KBALT (U,O) Metric Lower Body Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.62 Overall dimensions for KBALT (U,O) Cap Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.64 Overall dimensions for KBALT (U,O) Upper Body Rev.1 | dated | 01/09/2016 |
| - A3-14-IEC.68 Overall dimensions for KBALT (U,O) NPT Lower Body Rev.1 | dated | 01/09/2016 |
| - A3-14-KBAT(M) Drawing cable glands type KBAT with Metric thread Rev.1 | dated | 01/09/2016 |
| - A3-14-KBAT(NPT) Drawing cable glands type KBAT with NPT thread Rev.1 | dated | 01/09/2016 |
| - A3-IEC.58 Overall dimensions for KBU Cap Rev.1 | dated | 01/09/2016 |
| - A3-IEC.61 Overall dimensions for KBA (U,O)-KBU and MKBU Metric Lower Rev.2 | dated | 01/09/2016 |
| - A3-IEC.62 Overall dimensions for KBA (U,O) Cap Rev.2 | dated | 01/09/2016 |
| - A3-IEC.64 Overall dimensions for KBA (U,O) Upper Body Rev.2 | dated | 01/09/2016 |
| - A3-KBA(M) Drawing Cable glands type KBA with Metric thread Rev.0 | dated | 01/09/2016 |
| - A3-KBA(NPT) Drawing Cable glands type KBA with NPT thread Rev.0 | dated | 01/09/2016 |
| - A3-KBAO (M) Drawing Cable glands type KBAO Metric thread Rev.1 | dated | 01/09/2016 |
| - A3-KBAO (NPT) Drawing Cable glands type KBAO with NPT thread Rev.1 | dated | 01/09/2016 |
| - A3-KBAU (M) Drawing Cable glands type KBAU with Metric thread Rev.1 | dated | 01/09/2016 |
| - A3-KBAU (NPT) Drawing Cable glands type KBAU with NPT thread Rev.1 | dated | 01/09/2016 |
| - A3-KBU(M) Drawing Cable glands type KBU with Metric thread Rev.0 | dated | 01/09/2016 |
| - A3-KBU(NPT) Drawing Cable glands type KBU with NPT thread Rev.0 | dated | 01/09/2016 |
| - A3-MKBU (M) Drawing MKBU cable glands Metric thread Rev.0 | dated | 01/09/2016 |
| - A3-MKBU (NPT) Drawing MKBU cable glands NPT thread Rev.0 | dated | 01/09/2016 |
| - A4-14-IEC.10 Group II Marking Information for KBAT Cable Gland Rev.2 | dated | 01/09/2016 |
| - A4-14-IEC.55 Overall dimensions for KBAULT Orion LT Universal Armour Rev.0 | dated | 01/09/2016 |
| - A4-14-IEC.63 Overall dimensions for KBALT (U,O) Orion LT O-ring Rev.1 | dated | 01/09/2016 |
| - A4-14-IEC.65 Overall dimensions for KBALT (U,O) Orion LT Swivel Braid R. Rev.1 | dated | 01/09/2016 |
| - A4-14-IEC.67 Group I, Group II and Group III Marking Information KBALT Rev.1 | dated | 01/09/2016 |
| - A4-14-IEC.LT08 Overall dimensions for KBALT(U,O) Orion LT Lower Seal Rev.1 | dated | 01/09/2016 |
| - A4-14-IEC.LT09 Overall dimensions for KBALT(U,O) Orion LT Upper Seal Rev.1 | dated | 01/09/2016 |
| - A4-14-IEC.T70 Overall dimensions for KBAT flat washer Rev.1 | dated | 01/09/2016 |
| - A4-IEC.06 Drawing Clamping mode and IP protection degree Rev.1 | dated | 01/09/2016 |
| - A4-IEC.07 Drawing Use cable glands for Ex i circuits Rev.1 | dated | 01/09/2016 |

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[13]

Schedule

[14]

SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033 X /06

Descriptive documents, follows:

| | | |
|---|-------|------------|
| - A4-IEC.08 Overall dimensions for KBA(U,O), KBU and MKBU Lower Seal Rev.2 | dated | 01/09/2016 |
| - A4-IEC.09 Overall dimensions for KBA(U,O) Upper Seal Rev.2 | dated | 01/09/2016 |
| - A4-IEC.55 Overall dimensions for KBAU Orion Universal Armour Reductions Rev.2 | dated | 01/09/2016 |
| - A4-IEC.60 Pressure Ring dimensions for KBU cable glands type Rev.1 | dated | 01/09/2016 |
| - A4-IEC.63 Overall dimensions for KBA (U,O)-KBU and MKBU O-ring Rev.2 | dated | 01/09/2016 |
| - A4-IEC.67 Group II and Group III Marking Information for KBA Cable Glands Rev.2 | dated | 01/09/2016 |
| - A4-IEC.68 Overall dimensions for KBA (U,O)-KBU and MKBU NPT Lower Rev.2 | dated | 01/09/2016 |
| - A4-IEC.70 Overall Dimensions for flat washer (Fiber) Rev.1 | dated | 01/09/2016 |
| - A4-IEC.71 Overall Dimensions for flat washer (Chloroprene and Silicone) Rev.0 | dated | 01/09/2016 |
| - A4-IEC.72 Pressure ring dimensions for MKBU cable glands type Rev.0 | dated | 01/09/2016 |
| - A4-IEC.73 Seal 1 dimensions for MKBU cable glands type Rev.0 | dated | 01/09/2016 |
| - A4-IEC.74 CAP dimensions for MKBU cable glands type Rev.0 | dated | 01/09/2016 |
| - A4-IEC.75 Group I Marking Information for KBA and MKBU Cable Glands Rev.0 | dated | 01/09/2016 |
| - A4-IEC.76 Group II and Group III Marking information for KBU and MKBU Rev.0 | dated | 01/09/2016 |
| - A4-IEC.77 Threaded Enclosure Applications Rev.0 | dated | 01/09/2016 |
| - A4-IEC.78 Manufacturing materials and their related datasheets Rev.0 | dated | 01/09/2016 |
| - KBALT (M) Drawing Cable glands KBALT type with Metric thread Rev.1 | dated | 01/09/2016 |
| - KBALT (NPT) Drawing Cable glands type KBALT with NPT thread Rev.1 | dated | 01/09/2016 |
| - KBAOLT (M) Drawing Cable glands Metric thread KBAOLT type Rev.0 | dated | 01/09/2016 |
| - KBAOLT (NPT) Drawing Cable glands NPT thread KBAOLT Rev.0 | dated | 01/09/2016 |
| - KBAULT (M) Drawing Cable glands Metric thread KBALT type Rev.0 | dated | 01/09/2016 |
| - KBAULT (NPT) Drawing Cable glands NPT thread KBAULT Rev.0 | dated | 01/09/2016 |
| - A4-IEC.04 Drawing Equivalence table for threads male and female (18 pg.) Rev.1 | dated | 11/09/2014 |

One copy of all documents mentioned above is kept in CESI files.

Certificate history

| Issue N. | Issue Date | Summary description of variation |
|----------|------------|--|
| 06 | Current | Update of manufacturer's address |
| 05 | 28/09/2021 | Standard update to EN IEC 60079-0:2017 and EN IEC 60079-7:2015/A1:2018, editorial corrections and minor changes |
| 04 | 24/07/2019 | New cable gland KBA..LSK (Orion Lead Sheathed) type has been added. |
| 03 | 08/05/2017 | Updating to standards EN60079-1:2014, EN60079-7:2015 and EN60079-31:2014. New cable gland MKBU..(M-Crater) type has been added. New sizes for KBA..(Orion) and KBA..LT..(Orion LT) type has been added. Use of Aluminium alloy as manufacturing material for KBA..(Orion) types only. New execution for Group I for KBA..(Orion) and KBA..LT..(Orion LT) types. Extension to lower temperature of -50°C for models supplied with Fiber flat washer. Manufacturer address is changed. |
| 02 | 14/01/2015 | New sizes to cable glands series KBA..(Orion) have been added. New series KBALT.. (Orion-LT) cable glands has been added. New fiber flat washer types for IP degree of protection for all cable gland series have been added. Updated the identification coding system. |
| 01 | 08/04/2014 | New series KBAT.. (Taurus) cable gland has been added. |
| 00 | 15/07/2013 | First Issue of the Certificate. |

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