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Schema di certificazione

CESI-ATEX

[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 033X /05

[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.S.**

[6] **Address: S.S Bakir Pirinç Sanayi Sitesi Leylak Caddesi no:16
TR - 34524 Beylikdüzü – Istanbul (Turkey)**

[7] This supplementary certificate extends EC-Type Examination Certificate CESI 13 ATEX 033 X to apply to products 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 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-C1014211.

[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 equipment or protective system is 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 equipment or protective system in accordance to the Directive 2014/34/EU. 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 db I Mb and Ex eb I Mb | » (only for types KBA and KBA..LT Standard, KBA-LSK, MKBU) |
| | | or
Ex db IIC Gb and Ex eb IIC Gb | |
| | II 2GD | Ex tb IIIC Db | » (all types) |
| | | IP66/68 | |

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Date 28/09/2021 - Translation issued the 28/09/2021

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

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[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033X /05**

[15] **Description of the variation**

Variation 5.1:

The certified Cable glands types **KBA..(Orion)**, **KBU..(Crater)**, **MKBU..(M-Crater)**, **KBAT..(Taurus)**, **KBA..LT..(Orion LT)** and **KBA..-LSK (Orion Lead Sheathed)** previously assessed in compliance to EN 60079-0:2012/A11:2013 and EN 60079-7:2015, has been re-assessed on the basis of the standards bring in the paragraph [18].

Variation 5.2:

Editorial corrections on the following clamping range sizes:

KBA, KBAU ans KBAO type

Cable Gland Type	Size ISO Pitch 1,5	Size NPT ANSI B1.20.B1	Cable Diameter Range	
			D min-max	D1 min-max
KBA0SLM	M12x1.5	\\	3.0-7.5	6.0-12.0
KBA0SLN	\\	1/4"	3.0-8.0	6.0-12.0
KBA6LM	M63x1.5	\\	45.0-56.0	54.0-70.0
KBA6LN	\\	2"	45.0-52.0	54.0-70.0

For alternative threads "P", "C" and "S", the "M" – Metric sizes apply.

KBA-LSK

Cable Gland Type	Size ISO Pitch 1,5	Size NPT ANSI B1.20.B1	Cable Diameter Range	
			D min-max	D1 min-max
KBA-LSK6LN	\\	1/4"	45.0-50.0	54.0-70.0

Variation 5.3:

In order to use M20 size KBA, KBAO, KBALT, KBAOLT Type cable glands with an armoured cable having min. 0.7 mm armour; the grounding cone and braid ring dimensions has changed. The min. armoured allowed in previous design was 0.9 mm but now changed as 0.7 mm.

Variation 5.4:

Dimensional corrections have been applied to the drawings A4-IEC.65, A4-IEC.57, A4-IEC.56, A4-14-IEC.57 and A4-14-IEC.56.

Description of equipment

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 plane 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.

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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 grounding 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.

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 glands 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 threads types are NPT ANSI/ASME B1.20.1 from 1/4" up to 3 1/2" and cylindrical ISO Metric 965/1 and ISO 965/3 from M12x1.5 up to M110x1.5.

The **KBA..-LSK** cable glands series standard threads 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 threads 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 threads 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 threads 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 threads 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 glands 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.

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[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033X /05**

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
- **MKBU:** cable gland for non-armoured cable
- **KBU:** cable gland for non-armoured cable

Code that identifies the cable type (*KBA.. type only*):

- **Blank:** Standard (*for armoured cables only*)
- **U:** Universal (*for armoured or shielded cables*)
- **O:** Offshore (*for shielded cables only*)

Size (*see Table 1, 2, 3 and 4*)

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
- **C:** GAS ISO 228-1

Thread size (*see Table 1, 2, 3 and 4*)

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

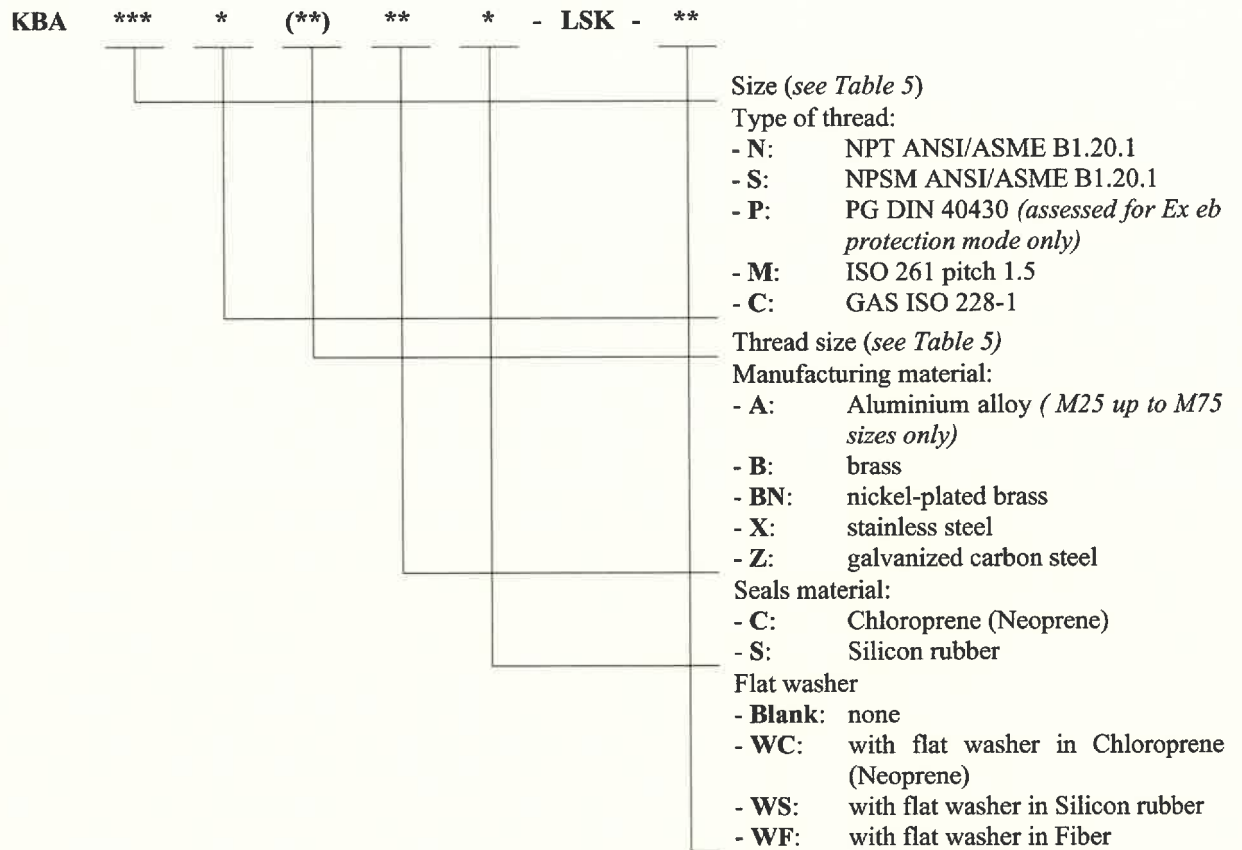
- **Blank:** none
- **WC:** with flat washer in Chloroprene (Neoprene)
- **WS:** with flat washer in Silicon rubber
- **WF:** with flat washer in Fiber

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Identification of cable glands KBA..-LSK type:



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](#).

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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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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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Table 4:

MKBU.. (M-Crater)				
Cable glands		Thread size		Cable Dia.
Type	Size	NPT	ISO pitch 1.5	ranges (mm)
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 ¼"	M 40	15-20
MKBU	4SM2..	1 ¼"	M 40	20-26
MKBU	4M1..	1 ¼"	M 40	20-26
MKBU	4M2..	1 ¼"	M 40	26-32
MKBU	5SM1..	1 ½"	M 50	22-28
MKBU	5SM2..	1 ½"	M 50	28-35
MKBU	5M1..	1 ½"	M 50	27-35
MKBU	5M2..	1 ½"	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 ½"	M 75	40-46
MKBU	7SM2..	2 ½"	M 75	46-52
MKBU	7M1..	2 ½"	M 75	45-52
MKBU	7M2..	2 ½"	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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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 ¼"	M 40	12-19	16-26
KBA-LSK	4S..	1 ¼"	M 40	15-25	20-33
KBA-LSK	4..	1 ¼"	M 40	20-31	29-41
KBA-LSK	5XS..	1 ½"	M 50	15-25	20-33
KBA-LSK	5X..	1 ½"	M 50	20-31	29-41
KBA-LSK	5S..	1 ½"	M 50	22-34	33-48
KBA-LSK	5..	1 ½"	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 ½"	M 75	35-44	43-57
KBA-LSK	7S..	2 ½"	M 75	40-50	47-60
KBA-LSK	7..	2 ½"	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

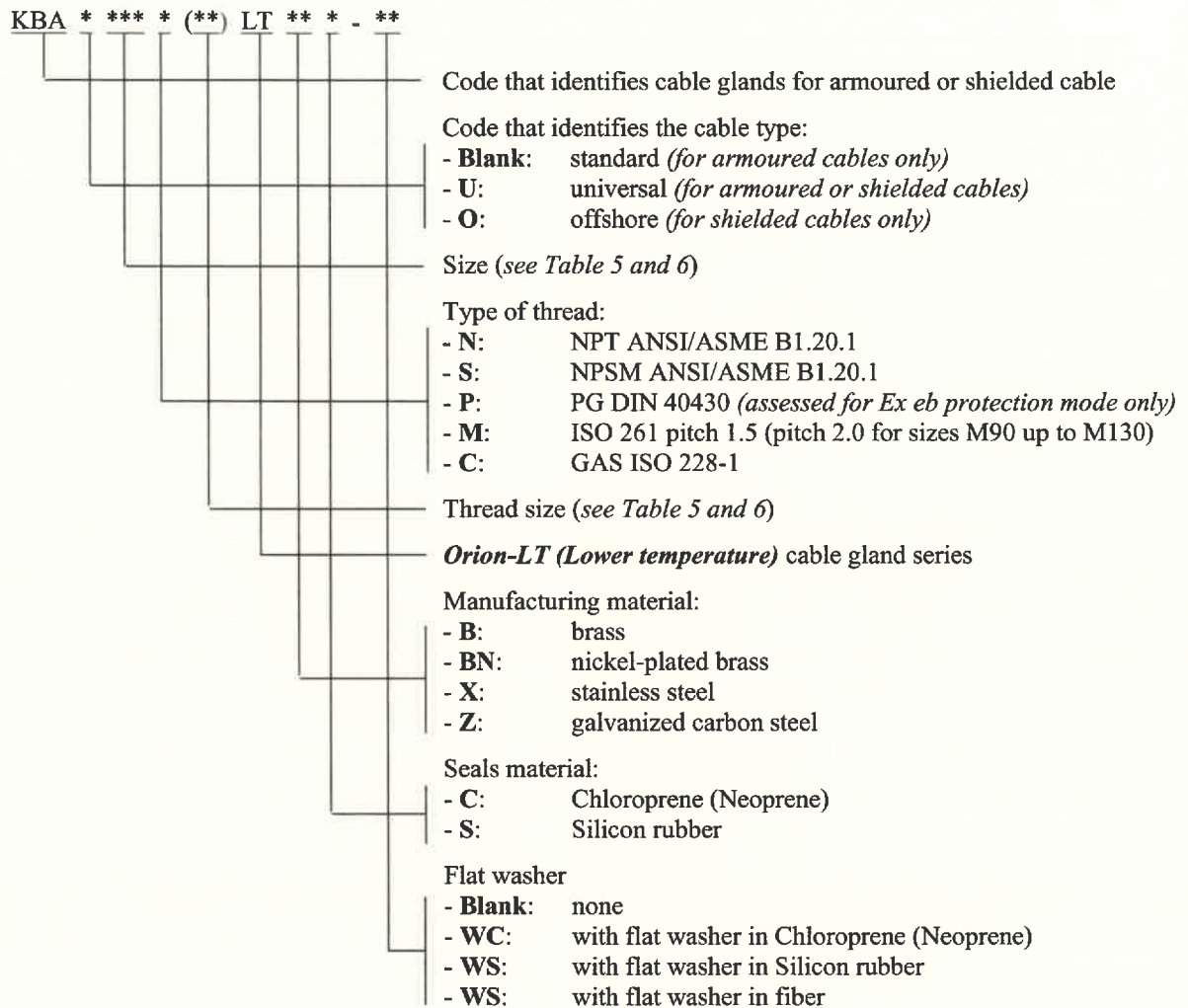
Note: Aluminium alloy available from M25x1.5 (1/2"NPT) up to M75x1.5 (2 ½"NPT) sizes only.

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



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" ½	-	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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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
		Galvanised steel	Silicon	-60°C ÷ +80°C
			<i>All seals</i>	-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	
KBU..	Group IIC Group IIIC	Brass, Nickel plated brass, Stainless steel	Chloroprene	-40°C ÷ +80°C
			Silicon	-60°C ÷ +80°C
	Galvanised steel	<i>All seals</i>	-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	<i>All seals</i>	-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	<i>All seals</i>	-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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[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033X /05**

[16] **Report n. EX-C1014211.**

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 glands 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 glands types from M20x1.5 up to M90x1.5 sizes and **KBA..LT.. (Standard)** cable glands types all sizes only are admitted for Group I applications.

The **KBA..-LSK** cable glands types M20x1.5 sizes with clamping range Ø3.0÷8.5 are admitted for Group II applications only.

The **MKBU..** cable glands types M16x1.5 sizes are not admitted for Group I applications.

The **KBA..** and **KBA..-LSK** cable glands 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 glands type 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 accordingly to the marking.

The degree of protection IP 66/68 according to the IEC 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 assured by compliance to the following harmonized standards:

EN IEC 60079-0:2018	Explosive atmospheres – Part 0: Equipment - General requirements
EN 60079-1:2014	Part 1: Equipment protection by flameproof enclosure "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"

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[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033X /05**

[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 pag.) 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 pag.) Rev.1	dated	30/04/2021
- *A4-TN-LSK Technical Note (8 pag.) Rev.1	dated	30/04/2021
- *MI.IEC.10 Safety and Mounting Instructions (25 pag.) 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 informations 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 NPT 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

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[14] **SUPPLEMENTARY EU-TYPE EXAMINATION CERTIFICATE n. CESI 13 ATEX 033X /05**

Descriptive documents (follows)

- 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
- 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 OrionUniversal 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 KBAULT 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 pag.) Rev.1	dated	11/09/2014

*Note: an * is included before the title of documents that are new or revised.*

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

Certificate history

Issue nr	Issue Date	Summary description of variation
00	15/07/2013	First Issue of the Certificate.
01	08/04/2014	New series KBAT.. (Taurus) cable gland has been added.
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.
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.
04	24/07/2019	New cable gland KBA..-LSK (Orion Lead Sheathed) type has been added.
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

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