



Mining And Surface Certification CC

CC 2008/202081/23



Certificate Number: MASC MS/15-0240X

Issue: 05 August 2015

Expire: 24 March 2018

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IA – CERTIFICATE

(Review required by MASC as per ARP 0108)
(Supplementary One: To include Group I)

IN TERMS OF REGULATION 21.17.2 OF THE MINERALS ACT (INCORPORATION THE MINE HEALTH AND SAFETY ACT) AND REGULATION 9 (1) OF THE ELECTRICAL MACHINERY REGULATIONS OF THE OCCUPATIONAL HEALTH AND SAFETY ACT

Ex – Type Examination

Certificate number:

MASC MS/15-0240X

Equipment:

Cable glands series KBA.. (Orion) and KBU.. (Crater) and KBAT.. (Taurus)

Serial No:

(See “Conditions of Certification”)

Requested by:

Powermite

Address:

92 Main Reef Rd
Technikon
Roodepoort

Manufacturer:

Bimed Teknik Aletler Sanayi Ve Ticaret A.Ş.

Address:

S.S Bakir Piriñ Sanayi Sitesi Leylak Caddesi no:15
TR34524
Beylikdüzü Istanbul
TURKEY

DESCRIPTION:

The cable glands series KBU.. (commercial gland family named CRATER), KBA.. (commercial gland family named ORION) and KBAT.. (commercial gland family named TAURUS) are suitable for inserting circular cables 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. 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 cable glands types KBA.. and KBAT.. should be also used for intrinsically safe circuits Ex-i. These cable glands should have a part painted light blue.

The types KBU.. 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 clamp.

The types KBA.. and KBAT.. glands are designed for steel wire armour or shielded cables and are comprised of a male body, lower sealing ring, grounding cone, swivel braid retainer, middle body, upper sealing ring and cap.

/ . When the...

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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.

The inner sealing rings can be made of Chloroprene with operating temperature range from -40°C to +100°C for types KBA.. and KBU.. while with operating temperature range from -40°C to +80°C for type KBAT.. or Silicon rubber with operating temperature range from -60°C to +130°C for type KBA.. and KBU.. while with operating temperature range from -60°C to +100°C for type KBAT.., with the exception of cable glands made of galvanized carbon steel which are restricted to the lower temperature range of -20°C.

The series KBA.. and KBU.. cable glands 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 M90 x1.5, while for series KBAT.. cable glands 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 tapered threads are GAS UNI ISO 7/1 while cylindrical threads are GAS UNI ISO 228/1, NPSM ANSI/ASME B1.20.1 and type PG DIN 40430. Thread type PG DIN 40430 can be used for "Ex e" execution only.

To guarantee the IP 66/68 degree of protection the cable glands series KBU.., KBA.. and KBAT.. with cylindrical threads have a sealing edge machined for fitting an elastomeric gasket, 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: Galvanized carbon steel type FE36; FE37 UNI 10233/4 or Stainless steel type AISI316; AISI304; AISI303.

Constructional Characteristics

Degree of protection (IEC/SANS 60529): IP 66 / IP 68 (50 m for 30 min.).

Service temperature range for **KBA** and **KBU** type:

- 40 ÷ + 100 °C for models with sealing rings made of Chloroprene rubber.
- 60 ÷ + 130 °C for models with sealing rings made of Silicon rubber.
- up to -20 °C for models made of Galvanized carbon steel.

Service temperature range for Taurus - **KBAT** type:

- 40 ÷ +80 °C for models with sealing rings made of Chloroprene rubber.
- 60 ÷ +100 °C for models with sealing rings made of Silicon rubber.
- up to -20 °C for models made of Galvanized carbon steel.

/ Identification...

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Cable glands series KBA.. (Orion) and KBU.. (Crater) and KBAT.. (Taurus)

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Identification of cable glands

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Code which identifies the type:

- **KBA:** cable gland for armoured or shielded cable
- **KBAT:** cable gland for armoured or shielded cable
- **KBU:** cable gland for non-armoured cable

Code which 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 and 2)

Type of thread:

- **N:** NPT ANSI/ASME B1.20.1
- **S:** NPSM ANSI/ASME B1.20.1
- **P:** PG DIN 40430 (*assessed for Ex e protection mode only*)
- **M:** UNI ISO 261 pitch 1,5
- **C:** GAS UNI ISO 228-1
- **G:** GAS UNI ISO 7-1

Manufacturing material:

- **B:** brass
- **X:** stainless steel
- **Z:** galvanized carbon steel

Part number and thread types and sizes of cable glands are listed on the followings:

Table 1, Table 2 and Table 3

Table 1:

KBA.. (Orion)				
Cable glands type / size	NPT	ISO pitch 1,5	Cable Dia. Ranges (mm)	
			Inner sheath	Armour sheath
KBA 01S..	3/8"	M16	3-8,5	6-12
KBA 01..	3/8"	M16	6-12	8,5-16
KBA 1S..	1/2"	M20	3-8,5	6-12
KBA 1..	1/2"	M20	6-12	8,5-16
KBA 1L..	1/2"	M20	12-14,5	16-20
KBA 2S..	3/4"	M25	6-12	8,5-16
KBA 2..	3/4"	M25	12-16	16-21
KBA 2L..	3/4"	M25	12-20	16-26
KBA 3S..	1"	M32	12-20	16-26
KBA 3..	1"	M32	15-26	20-33
KBA 4S..	1 1/4"	M40	15-26	20-33
KBA 4..	1 1/4"	M40	20-32	29-41
KBA 5S..	1 1/2"	M50	22-35	33-48
KBA 5..	1 1/2"	M50	27-41	36-52
KBA 6S..	2"	M63	35-45	43-57
KBA 6..	2"	M63	40-52	47-60
KBA 7S..	2 1/2"	M75	40-52	47-60
KBA 7..	2 1/2"	M75	45-60	54-70
KBA 8S..	3"	M90	45-60	54-70
KBA 8..	3"	M90	60-72	63-80

/ Table 2...

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Table 2:

KBAT.. (Taurus)				
Cable glands type / size	NPT	ISO pitch 1,5	Cable Dia. Ranges (mm)	
			Inner sheath	Armour sheath
KBAT 01L..	3/8"	M16	6-11	8-15
KBAT 1..	1/2"	M20	6-11	8-15
KBAT 1L..	1/2"	M20	10-15,5	13,5-21
KBAT 2S..	3/4"	M25	6-11	8-15
KBAT 2..	3/4"	M25	10-15,5	13,5-21
KBAT 2L..	3/4"	M25	13,5-20,5	18-27
KBAT 3..	1"	M32	13,5-20,5	18-27
KBAT 3..	1"	M32	18-27	23-33
KBAT 4..	1 1/4"	M40	23-33	29-41
KBAT 5..	1 1/2"	M50	29-41	35-48
KBAT 6..	2"	M63	35-48	42-56

Table 3:

KBU.. (Crater)			
Cable glands type / size	NPT	ISO pitch 1,5	Cable Dia. Ranges (mm)
KBU 01..	3/8"	M16	3-8,5
KBU 01L..	3/8"	M16	6-12
KBU 1..	1/2"	M20	6-12
KBU 1L..	1/2"	M20	12-14,5
KBU 2S..	3/4"	M25	6-12
KBU 2..	3/4"	M25	12-16
KBU 2L..	3/4"	M25	12-20
KBU 3S..	1"	M32	12-20
KBU 3..	1"	M32	15-26
KBU 4S..	1 1/4"	M40	15-26
KBU 4..	1 1/4"	M40	20-32
KBU 5S..	1 1/2"	M50	22-35
KBU 5..	1 1/2"	M50	27-41
KBU 6S..	2"	M63	35-45
KBU 6..	2"	M63	40-52
KBU 7S..	2 1/2"	M75	40-52
KBU 7..	2 1/2"	M75	45-60
KBU 8S..	3"	M90	45-60
KBU 8..	3"	M90	60-72

/ Variation 1.1...

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Variation 1.1

To the certificated cable glands types KBA..(Orion) and KBU..(Crater) the new cable glands type KBAT..(Taurus) has been added, with the following service temperature ranges:

- -40°C to +80°C for type KBAT.. cable glands with inner sealing rings made of Chloroprene (Neoprene);
- -60°C to +100°C for type KBAT.. cable glands with inner sealing rings made of Silicon rubber.

Unchanged the cable glands types KBA..(Orion) and KBU..(Crater) service temperature ranges.

Unchanged the constructional characteristics of cable glands types KBA..(Orion) and KBU..(Crater).

Variation 1.2

Upgraded Manufacturer's address.

MARKING

CESI marking remains applicable. The following MASC Certificate number (IA number) must be additionally applied to the equipment.

IA No: MASC MS/15-0240X

COMPLIANCE:

The equipment as described above and in MASC letter 15-0240 is hereby certified "Explosion Protected" Ex d I / IIC Gb Mb, Ex e I/IIC Gb Mb, Ex tb IIIC Db, IP 66/68, and is suitable for use in hazardous locations as stated below and as tested, assessed and inspected in accordance with the relevant requirements of SANS / IEC Standards:

The evaluation was conducted according to the requirements of:

- i) SANS (IEC) 60079-0 : 2011 "Explosive atmospheres – Part 0: Equipment — General requirements"**
- ii) SANS (IEC) 60079-1 : 2009 "Explosive atmospheres – Part 1: Equipment protection by flameproof enclosures 'd'"**
- iii) SANS (IEC) 60079-7 : 2007 "Explosive atmospheres – Part 7: Equipment protection by increased safety 'e'"**
- iv) SANS (IEC) 60079-31 : 2009 "Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosures 't'"**

Location	Zone 1 & 2 Zone 21 & 22	Mining /Gas Surface (As Applicable) Dust (As Applicable)
Hazard Frequency	---	Intermittent as could occur under normal operating conditions in hazardous area
Environment	Group I/ IIC/IIIC	Methane / Propane to Hydrogen / Dust (Metallic & non-metallic)
Surface Temperature		
Service/Ambient Temperature	"See Description"	(As Applicable)

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The use of apparatus in hazardous locations is subject to the following provisions as applicable, which shall be adhered to:

- i. SANS 10086 requirements;
- ii. Any conditions mentioned in the above document;
- iii. Codes of Practice enforced in terms of Regulations 21.17.2 of Minerals Act, by Chief Inspector of Mines;
- iv. Any restrictions and conditions enforced by Chief Inspectors of Mines, Principal Inspector (Group I equipment) of Chief Inspector of Factories (Group II equipment);
- v. Any relevant requirements of the MHS Act or the OHS Act.

CONDITIONS OF MANUFACTURE:

None

SPECIAL CONDITIONS OF USE (X):

KBA..(ORION) and KBU..(CRATER) cable glands:

- The coupling of the cable glands with the enclosures shall be made as indicated by the manufacturer in the documents annexed to the original IECEx 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 cable glands shall be installed in such a way that the temperature at the mounting point will remain within the following service temperature ranges:
 - -40°C to +100°C with inner sealing rings made of Chloroprene (Neoprene);
 - -60°C to +130°C with inner sealing rings made of Silicon rubber;
 - restricted up to -20°C for cable glands made of galvanized carbon steel.
- 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.
- The type KBAT-Taurus cable glands are only suitable for fixed installations. The cables must be effectively clamped to prevent pulling and twisting.

CONDITIONS OF CERTIFICATION:

1. This Certificate remains valid based on a three yearly review covered by an official MASC letter.
2. The apparatus must be additionally marked with the MASC marking details above.
3. This approval only covers the equipment as certified above and does not include any scheduled additions or variations / amendments / new issues to the certificate(s), made after the above date.
4. The equipment does not need to be re-tested when used on the conditions and with such restrictions as prescribed by CESI and in this approval.
5. The CESI certification must remain valid.

/6. The extent...

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6. The extent of the requirements in the ARP 0108 (or regulations) and SANS 10108 on the certification of the equipment must remain unchanged.
7. The Ex quality assurance notification/report for the equipment must remain valid.



F du Toit
TECHNICAL SPECIALIST

Mining And Surface Certification

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MASC takes no responsibility for any non-conformances, exclusions or any results / assessments not in compliance with the standards. By marking the equipment in accordance with the documentation / standard, the manufacturer attests on his own responsibility that the equipment has been constructed in accordance with the applicable requirements of the relevant standards and that the routine verifications and routine tests have been successfully completed and the product complies with the documentation and standard(s).

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