DNV·GL

TYPE APPROVAL CERTIFICATE

Certificate No: E-14044 File No: 828.90 Job Id: 262.1-018821-1

This is to certify: That the Cable Gland

with type designation(s) KBA, KBAO, KBAU, KBAT, KBA..LT, EBU, EBM, EBS, EBUF, EBMC, EBLQ, EBLS, EBLN, EBMS, NBU, BA, SV..H, BDRV, Metal adaptors and plugs (B-RA, B-RB, B-RM, B-RN, B-TS)

Issued to Bimed Teknik Aletler San. Tic. A.S. ISTANBUL, Turkey

is found to comply with Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application :

Hazardous areas cable glands & cable gland's accessories. Manufacturer's installation description shall be followed.

This Certificate is valid until **2019-06-30**. Issued at **Høvik** on **2015-03-10**

DNV GL local station: Istanbul

Approval Engineer: Marta Alonso Pontes

for **DNV GL**

Marit Laumann Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Certificate No:	E-14044
File No:	828.90
Job Id:	262.1-018821-1

Product description

Туре	ORION (KBA, KBAO, KBAU, KBALT)
Design specification/ Compliance	IEC 60079-0:2011, IEC 60079-1:2007, IEC 60079-31:2008,
code	IEC 60079-7:2006, IEC 62444 :2010
Classification Hazardous area	Ex d IIC Gb/ Ex e IIC Gb/ Ex tb IIIC Db
Certification	IECEx CES 13.0013X ; CESI 13 ATEX 033X
Continuous operating temperature	For Chloroprene rubber : -40°C to + 100°C (-40°C to + 80°C
range	for KBALT)
	For Silicon rubber : -60°C to + 130 °C (-60°C to + 80°C for
	KBALT)
	Up to -20°C for galvanized carbon steel models
Ingress protection	IP66/IP68
Gland material	Brass, stainless steel or galvanized carbon steel
Seal material	Chloroprene rubber or silicon rubber
Cable type	Armoured (KBA), Shielded (KBAO), Armored or shielded
	(KBAU and KBALT)
Gland sizes	Metric thread size:16,20,25,32,40,50,63,75,90
	NPT thread size :3/8",1/2",3/4",1",11/4",11/2",2", 21/2", 3

Туре	TAURUS (KBAT)
Design specification/ Compliance	IEC 60079-0:2011, IEC 60079-1:2007, IEC 60079-31:2008,
code	IEC 60079-7:2006, IEC 62444 :2010
Classification Hazardous area	Ex d IIC Gb/ Ex e IIC Gb/ Ex tb IIIC Db
Certification	IECEx CES 13.0013X ; CESI 13 ATEX 033X
Continuous operating temperature	For Chloroprene rubber : -40°C to + 80°C
range	For Silicon rubber : -60°C to + 100 °C
	Up to -20°C for galvanized carbon steel models
Ingress protection	IP66/IP68
Gland material	Brass, stainless steel or galvanized carbon steel
Seal material	Chloroprene rubber or silicon rubber
Cable type	Armoured
Gland sizes	Metric thread size:16,20,25,32,40,50,63
	NPT thread size :3/8",1/2",3/4",1",11/4",11/2",2"

Туре	OCTANS (EBU, EBM, EBS, EBUF, EBMC, EBLQ, EBLS, EBLN, EBMS)
Design specification/ Compliance	IEC/EN60079-0:2011(2012),IEC/EN60079-1:2007,
code	IEC/EN60079-31:2008(2009), IEC60079-7 :2006,
	IEC/EN62444:2010(2013)
Classification Hazardous area	Ex e IIC Gb/ Ex d IIC Gb/ Ex tb IIIC Db IP66/68
Certification	IMQ 13 ATEX 018X, IECEx IMQ 13.0006X
Continuous operating temperature	For Chloroprene rubber: -40°C to + 80°C
range	For Silicon rubber: -60°C to + 80 °C
Ingress protection	IP66/68
Gland material	Aluminium, stainless steel, brass
Seal material	Chloroprene rubber or silicon rubber
Cable type	Not armoured
Gland sizes	Metric thread size:8,12,16,20,25,32,40,50,63,75,90,100, 110
	NPT thread size: 1/4", 3/8", 1/2", 3/4", 1", 11/4", 11/2", 2", 21/2", 3, 4"

Certificate No:	E-14044
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Design specification/ Compliance codeIEC/EN60079-0:2011(2012), IEC/EN60444:2010(2013)Classification Hazardous areaEx e IIC Gb/ Ex tb IIIC Db IP66/68CertificationIMQ 13 ATEX 018X, IECEx IMQ 13.0006xContinuous operating temperature rangeFor Silicon rubber: -60°C to + 80°CIngress protectionIP66/68Gland materialAluminium, stainless steel, brassSeal materialEPDM rubber or siliconeCable typeNot armouredGland sizesMetric thread size: 12,16,20,25,32,40,50,63 NPT thread size: 11/4",3/8",1/2",3/4",1",11/4",11/4",2"TypeDORADO (BA)Design specification/ ComplianceEN60079-0:2009, EN60079-1:2007, EN60079-7:2007, EN60079-31:2009, EN60079-1:2007, EN60079-7:2007, codeCodeEN60079-0:2009, EN60079-1:2007, EN60079-7:2007, EN60079-31:2009, EN62444:2013Classification Hazardous areaEx d IIC Gb/ Ex a IIC Gb/ Ex d I Mb/ Ex e I Mb/ Ex tb IIIC Db IP66/68CertificationIMQ 11 ATEX 036, For Chioroprene rubber: -40°C to + 100°C For Silicone rubber: -40°C to + 180°CIngress protectionIP66/68Gland materialBrass, Stainless steelSeal materialNitrile rubber: chioroprene rubber or silicone rubberCable typeArmouredGland sizesMetric thread size: 16,20,25,32,40,50,63,75,90,110 NPT thread size: 3/8",1/2",3/4",1",1/4",1/2",2",2%,3, 4"TypePHOENIX (SVH)Design specification/ Compliance IEC/EN60079-0:2011(2012), IEC/EN60079-7:2006(2007), codeCable typeArmouredGland sizesMetric thread size: 16,20,25,32,40,50,63,75	Туре	NORMA (NBU)
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Gland material Aluminium, stainless steel, brass Seal material EPDM rubber or silicone Cable type Not armoured Gland sizes Metric thread size:12,16,20,25,32,40,50,63 NPT thread size:1/4",3/8",1/2",3/4",1",1¼",1½",2" Type DORADO (BA) Design specification/ Compliance code EN60079-0:2009, EN60079-1:2007, EN60079-7:2007, EN60079-31:2009 , EN62444:2013 Classification Hazardous area Ex d IIC Gb/ Ex d I Mb/ Ex e I Mb/ Ex tb IIIC Db IP66/68 Certification IMQ 11 ATEX 036, Continuous operating temperature range For Nitrile rubber: -30°C to + 120°C For Chloroprene rubber: -40°C to + 100°C For Silicone rubber: -40°C to + 100°C For Silicone rubber: -60°C to + 180°C Ingress protection IP66/68 Gland material Brass, Stainless steel Seal material Nitrile rubber, chloroprene rubber or silicone rubber Cable type Armoured Gland sizes Metric thread size: 16,20,25,32,40,50,63,75,90,110 NPT thread size: 3/8",1/2",3/4",1",1¼",1¼",1¼",1¼",1¼",1¼",1¼",1¼",1¼"	Ingress protection	1966/68
Seal materialEPDM rubber or siliconeCable typeNot armouredGland sizesMetric thread size:12,16,20,25,32,40,50,63 NPT thread size:12,16,20,25,32,40,50,63 NPT thread size:1/4",3/8",1/2",3/4",1",1¼",1½",2"TypeDORADO (BA)Design specification/ Compliance codeEN60079-0:2009, EN60079-1:2007, EN60079-7:2007, EN60079-31:2009, EN62444:2013Classification Hazardous areaEX d IIC Gb/ Ex e I IC Gb/ Ex d I Mb/ Ex e I Mb/ Ex tb IIIC Db IP66/68CertificationIMQ 11 ATEX 036, For Nitrile rubber: -30°C to + 120°C For Silicone rubber: -40°C to + 100°C For Silicone rubber: -60°C to + 180°CIngress protectionIP66/68Gland materialBrass, Stainless steelSeal materialNitrile rubber, chloroprene rubber or silicone rubberCable typeArmouredGland sizesMetric thread size: 16,20,25,32,40,50,63,75,90,110 NPT thread size: 3/8",1/2",3/4",1",1¼",1½",2",2",2½",3,4"TypePHOENIX (SV.H)Design specification/ Compliance codeIEC/EN60079-0:2011(2012), IEC/EN60079-7:2006(2007), IEC/EN60079-0:2011(2012), IEC/EN60079-7:2006(2007), IEC/EN60079-0:2011(2012), IEC/EN60079-7:2006(2007), IEC/EN60079-1:2008(2009), IEC/EN6444:2010(2013)Classification Hazardous areaEx e IIC Gb/ Ex tb IIIC Db IP66/68CertificationIMQ 13 ATEX 029X, IECEx IMQ 14.0002XContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°CIngress protectionIP66/68Gland materialBrass, stainless steelSeal materialSilicone rubber: -60°C to + 80°CCandi materialBrass, stainless steel <td>Gland material</td> <td>Aluminium, stainless steel, brass</td>	Gland material	Aluminium, stainless steel, brass
Cable typeNot armouredGland sizesMetric thread size:12,16,20,25,32,40,50,63 NPT thread size:1/4",3/8",1/2",3/4",1",1¼",1½",2"TypeDORADO (BA)Design specification/ Compliance codeEN60079-0:2009, EN60079-1:2007, EN60079-7:2007, EN60079-3:2007, EN60079-7:2007, EN60079-3:2009, EN62444:2013Classification Hazardous areaEx d IIC Gb/ Ex e IIC Gb/ Ex d I Mb/ Ex e I Mb/ Ex tb IIIC Db IP66/68CertificationIMQ 11 ATEX 036, For Nitrile rubber: -30°C to + 120°C For Chloroprene rubber: -40°C to + 100°C For Silicone rubber: -60°C to + 180°CIngress protectionIP66/68Gland materialBrass, Stainless steelSeal materialNitrile rubber, chloroprene rubber or silicone rubberCable typeArmouredGland sizesMetric thread size: 16,20,25,32,40,50,63,75,90,110 NPT thread size: 3/8",1/2",3/4",1",1½",2",2",2½",3,4"TypePHOENIX (SVH)Design specification/ Compliance codeEx e IIC Gb/ Ex tb IIIC Db IP66/68CertificationIMQ 13 ATEX 029X, IECEX IMQ 14.0002XContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°CIngress protectionIP66/68CertificationIMQ 13 ATEX 029X, IECEX IMQ 14.0002XContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°CCable typeNot armouredGland materialBrass, stainless steelSeal materialSilicone rubber: -60°C to + 80°CCable typeNot armouredColad cizerSilicone rubber: -60°C to + 80°C	Seal material	EPDM rubber or silicone
Gland sizesMetric thread size:12,16,20,25,32,40,50,63 NPT thread size:1/4",3/8",1/2",3/4",1",11/4",11/2",2"TypeDORADO (BA)Design specification/ Compliance codeEN60079-0:2009, EN60079-1:2007, EN60079-7:2007, EN60079-31:2009, EN62444:2013Classification Hazardous areaEx d IIC Gb/ Ex e IIC Gb/ Ex d 1 Mb/ Ex e I Mb/ Ex tb IIIC Db IP66/68CertificationIMQ 11 ATEX 036, For Nitrile rubber: -30°C to + 120°C For Silicone rubber: -40°C to + 100°C For Silicone rubber: -60°C to + 100°C For Silicone rubber: -60°C to + 180°CIngress protectionIP66/68Gland materialBrass, Stainless steelSeal materialNitrile rubber, chloroprene rubber or silicone rubberGland sizesMetric thread size: 16,20,25,32,40,50,63,75,90,110 NPT thread size: 3/8",1/2",3/4",1",11/4",11/2",2",21/2",3,4"TypePHOENIX (SV.H)Design specification/ Compliance codeEx e IIC Gb/ Ex tb IIIC Db IP66/68CertificationIMQ 13 ATEX 029X, IECEX IMQ 14.0002XFor Silicone rubber: -60°C to + 80°C rangeIngress protectionIP66/68Centinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°C rangeIngress protectionIP66/68CertificationIMQ 13 ATEX 029X, IECEX IMQ 14.0002XContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°C rangeIngress protectionIP66/68Gland materialBrass, stainless steelSeal materialSilicone rubber: -60°C to + 80°C rangeContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80	Cable type	Not armoured
TypeDORADO (BA)Design specification/ Compliance codeEN60079-0:2009, EN60079-1:2007, EN60079-7:2007, EN60079-31:2009, EN62444:2013Classification Hazardous areaEx d II C Gb/ Ex e IIC Gb/ Ex d I Mb/ Ex e I Mb/ Ex tb IIIC Db IP66/68CertificationIMQ 11 ATEX 036,Continuous operating temperature rangeFor Nitrile rubber: -30°C to + 120°C For Chloroprene rubber: -40°C to + 100°C For Silicone rubber: -60°C to + 180°CIngress protectionIP66/68Gland materialBrass, Stainless steelSeal materialMitrile rubber, chloroprene rubber or silicone rubberCable typeArmouredGland sizesMetric thread size: 16,20,25,32,40,50,63,75,90,110 NPT thread size: 3/8",1/2",3/4",1",11/4",11/2",2",2",2",2"/2",3,4"TypePHOENIX (SVH)Design specification/ Compliance codeIEC/EN60079-0:2011(2012), IEC/EN60079-7:2006(2007), IEC/EN60079-31:2008(2009), IEC/EN62444:2010(2013)Classification Hazardous areaEx e IIC Gb/ Ex tb IIIC Db IP66/68CertificationIMQ 13 ATEX 029X, IECEX IMQ 14.0002XContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°CIngress protectionIP66/68Gland materialBrass, stainless steelSeal materialSilicone rubber: -60°C to + 80°CContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°CContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°CContinuous operating temperature rangeFor Silicone rubber: -60°C to + 80°CContinuous operating temperature rangeFor Si	Gland sizes	Metric thread size:12,16,20,25,32,40,50,63 NPT thread size:1/4",3/8",1/2",3/4",1",1¼",1½",2"
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Cable type Not armoured	Seal material	Silicone rubber
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Giaria sizes Metric tirread size. 25	Gland sizes	Metric thread size: 25
NPT thread size: 3/4"		NPT thread size: 3/4"

Туре	VIRGO (BDRV) drain valve
Design specification/ Compliance	IEC/EN60079-0:2011(2012), IEC/EN60079-7:2006(2007),
Classification Hazardous area	Ex e IIC Gb/ Ex tb IIIC Db IP66
Certification	IMQ 13 ATEX 030 U, IECEx IMQ 14.0003U
Continuous operating temperature	-60°C to + 85°C
range	

Certificate No:	E-14044
File No:	828.90
Job Id:	262.1-018821-1

Ingress protection	IP66
Gland material	Brass, stainless steel
Seal material	Silicon rubber
Cable type	
Gland sizes	Metric thread size: 20,25 NPT thread size: 1/2".3/4"

Туре	Metal adaptors and plugs (B-RA, B-RB, B-RM, B-RN, B-TS)
Design specification/ Compliance code	IEC/EN60079-0:2011(2012), IEC/EN60079-7:2006(2007), IEC/EN60079-31:2008(2009), IEC/EN60079-1:2007
Classification Hazardous area	Ex d IIC Gb/ Ex e IIC Gb/ Ex tb IIIC Db
Certification	IECEx CES 13.0022X, CESI 13 ATEX 066X
Continuous operating temperature	For brass and stainless steel: -40°C to +100°C
range	For galvanized carbon steel: -20°C to +100°C
Ingress protection	IP66/68
Gland material	Brass, stainless steel, galvanized carbon steel
Seal material	Chloroprene rubber
Gland sizes	Metric thread size: 16,20,25,32,40,50,63,75,90,110 NPT thread size: 3/8",1/2",3/4",1",1¼",1½",2",2",2½",3, 4"

Application/Limitation

Manufacturer's application and assembly instructions shall be followed.

The information related to Ex certification from recognized test institution is given as information only. Applications where Ex certified equipment is required will in general be subject to approval case by case based on documentation as required in DNV rules.

Type Approval documentation

Documentation linked to App. Letter with Ref. MCANO381/PONT/262.1-018821-J-13 dated 06.02.2015

Tests carried out

Type tests in accordance with IEC/EN60079-0, IEC/EN60079-7, IEC/EN60079-31, IEC/EN60079-1 & IEC/EN 62444

Marking of product

BMD – type designation – Ex rating

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval are complied with and that no alterations are made to the product design or choice of materials.

The main elements of the periodical assessment are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Routines (RT) checked (if not available tests according to RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Periodical assessment to be performed at least every second year.

END OF CERTIFICATE