



1 **EC TYPE-EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

3 Certificate Number: **Sira 11ATEX1110X** Issue: **0**

4 Equipment: **EXIOS Barrier Cable Glands**

5 Applicant: **Hummel AG**

6 Address: **Division ET
Lise Meitner Str. 2
D-79211
Denzlingen
Germany**

7 This equipment and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential reports listed in Section 14.2.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2009 EN 60079-1:2007 EN 60079-7:2007 EN 60079-31:2009

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

11 This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of the equipment shall include the following:



I M2
Ex d I Mb
Ex e I Mb

or



II 2G
II 1D
Ex d IIC Gb Ta = -60°C to +85°C
Ex e IIC Gb Ta = -60°C to +85°C
Ex ta IIIC Da IP66

Project Number 23555

C Ellaby
Deputy Certification Manager

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SCHEDULE

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13 DESCRIPTION OF EQUIPMENT

The EXIOS BARRIER Range of Barrier Cable Glands are metallic and are intended for use with armoured or unarmoured cables. They allow the entry of the cable into enclosures without compromising the explosion protection provided by the enclosure, in accordance with relevant codes of practice.

The EXIOS BARRIER Range of Barrier Cable Glands, when installed with a sealing ring and in accordance with the manufacturer's instructions, are capable of providing, with an enclosure on which they are fixed, an ingress protection rating of IP 66 and IP68 to 50 metres for 30 minutes.

The EXIOS BARRIER Group I range comprises the following sizes

- Metric sizes M20 (22 A/F), M20 (24 A/F), M20 (30 A/F), M25, M32, M40, M50, M63, M75
- NPT sizes 1/2"(22 A/F), 1/2" (24 A/F), 1/2" (30 A/F), 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3"

The EXIOS BARRIER Group II range comprises the following sizes

- Metric sizes M16, M20 (22 A/F), M20 (24 A/F), M20 (30 A/F), M25, M32, M40, M50, M63, M75
- NPT sizes 3/8", 1/2"(22 A/F), 1/2" (24 A/F), 1/2" (30 A/F), 3/4", 1", 1 1/4", 1 1/2", 2", 2 1/2", 3"

The glands comprise from front (enclosure side) to rear (incoming cable side):

- Entry body to tighten into an associated enclosure which is fitted with a sealing ring; the front and rear having male threads.
- Front ferrule that fits into the entry body. The ferrule body is the main part of a two part chamber where a two-part epoxy putty setting compound is applied to provide an inner seal around the conductors. The external face when fitted into the entry body makes an unthreaded cylindrical flamepath.
- O-ring located between the entry body and mid cap to provide an ingress seal to the unthreaded flamepath between the entry body and front ferrule.
- Rear ferrule/ cone, second part of a two part compound chamber at front and cone for clamping cable armour, when available, at rear.
- Clamp ring that secures cable armour, when available, to the cone and also provides earth protection. The clamp ring must be used, even when unarmoured cables are used.
- Middle cap that has female thread at the front and secures ferrules in place within the entry body; the rear of the middle cap has a male thread to accept the back nut.
- Elastomeric cable outer sheath seal, fitted within the back nut.
- Non-metallic compression ring, fitted between outer sheath seal and back nut.
- Back nut with female thread that screws into the middle cap to compress the outer sheath seal.

The following table details the available thread sizes, maximum number of cores that the gland can accept and the range of acceptable cable sizes for the range.

Gland size	Entry thread size metric	Entry thread size NPT	Max. Ø over cores	Max. number of cores	Outer sheath seal range	
					Min.	Max.
16*	M16 x 1.5	3/8"	7.90 mm	8 x 0.8 mmØ	6 mm	12 mm
20-1	M20 x 1.5	1/2"	7.90 mm	8 x 0.8 mmØ	6 mm	12 mm
20-2	M20 x 1.5	1/2"	8.80 mm	10 x 0.8 mmØ	9 mm	16 mm
20-3	M20 x 1.5	1/2"	11.50 mm	15 x 0.8 mmØ	12.5 mm	20.5 mm

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Sira Certification Service

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SCHEDULE

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Gland size	Entry thread	Entry thread	Max. Ø	Max. number of cores	Outer sheath seal range	
25	M25 x 1.5	3/4"	16.40 mm	25 x 0.8 mmØ	16.9 mm	26 mm
32	M32 x 1.5	1"	21.40 mm	45 x 0.8 mmØ	22 mm	33 mm
40	M40 x 1.5	1 ¼"	27.60 mm	70 x 0.8 mmØ	28 mm	41 mm
50	M50 x 1.5	2"	37.50 mm	85 x 0.8 mmØ	36 mm	52.6 mm
63	M63 x 1.5	2 ½"	47.30 mm	120 x 0.8 mmØ	46 mm	65.3 mm
75	M75 x 1.5	3"	58.00 mm	150 x 0.8 mmØ	57 mm	78 mm

* Group II only.

The EXIOS BARRIER range may be manufactured from the following materials:

Brass grade CW614 (CuZn39Pb3)/ CZ121 3Pb
Stainless Steel grade AISI 316L (1.4404)

Additionally, brass may be provided with Nickel plating.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	14 October 2011	R23555A/00	The release of the prime certificate.

15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1 The cable glands shall not be used in enclosures where the temperature, at the point of mounting, is outside the range of -60°C to +85°C.
- 15.2 The entry component threads will be suitably sealed using a method that is applicable to the associated equipment to which the gland will be attached. This will be in accordance with the relevant installation code of practice and will ensure that any ingress protection requirements are maintained.
- 15.3 When glands without sealing rings are installed in an explosive dust atmosphere, they shall only be fitted into enclosures that provide cable entries with a minimum of 5 fully engaged threads, this is in accordance with clause 5.1.1 of EN 60079-31:2009

16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.

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Certificate Annexe

Certificate Number: Sira 11ATEX1110X
 Equipment: EXIOS Barrier Cable Glands
 Applicant: Hummel AG



Issue 0

Drawing	Sheets	Rev	Date (Sira stamp)	Title
E-10010830	1 of 1	-	02 Aug 2011	EXIOS General Arrangement – Metric gland
E-11010365	1 of 1	-	02 Aug 2011	EXIOS General Arrangement – NPT gland
E-11010882	1 of 1	-	14 Oct 2011	EXIOS Markings
E-11010720	1 of 1	-	19 Sep 2011	Back nut material details
E-11010721	1 of 1	-	19 Sep 2011	Middle cap material details
E-11010722	1 of 1	-	19 Sep 2011	Entry body material details
E-11010723	1 of 1	-	19 Sep 2011	Clamping ring material details
E-11010724	1 of 1	-	19 Sep 2011	Clamping cone material details
E-11010725	1 of 1	-	19 Sep 2011	Outer sealing ring material details
E-11010726	1 of 1	-	19 Sep 2011	Compound material details
E-11010735	1 of 1	-	19 Sep 2011	Compound pot material details
1050645160	1 of 1	-	02 Aug 2011	Entry body for M16
1050645200	1 of 1	1	02 Aug 2011	Entry body for M20-1
1.051.6052.00	1 of 1	2	02 Aug 2011	Entry body for M20-2
1.052.6052.00	1 of 1	3	02 Aug 2011	Entry body for M20-3
1.050.6052.50	1 of 1	3	02 Aug 2011	Entry body for M25
1.050.6053.20	1 of 1	3	02 Aug 2011	Entry body for M32
1.050.6054.00	1 of 1	3	02 Aug 2011	Entry body for M40
1.050.6055.00	1 of 1	3	02 Aug 2011	Entry body for M50
1.050.6056.30	1 of 1	3	02 Aug 2011	Entry body for M63
1.050.6057.50	1 of 1	2	02 Aug 2011	Entry body for M75
1000645380	1 of 1	-	02 Aug 2011	Entry body for NPT 3/8"
1.000.6051.20	1 of 1	3	02 Aug 2011	Entry body for NPT 1/2" (EXIOS 20-2)
1.001.6051.20	1 of 1	4	02 Aug 2011	Entry body for NPT 1/2" (EXIOS 20-3)
1.000.6053.40	1 of 1	3	02 Aug 2011	Entry body for NPT 3/4"
1.000.6051.00	1 of 1	3	02 Aug 2011	Entry body for NPT 1"
1.000.6055.40	1 of 1	3	02 Aug 2011	Entry body for NPT 1 1/4"
1.000.6056.40	1 of 1	3	02 Aug 2011	Entry body for NPT 1 1/2"
1.000.6052.A0	1 of 1	3	02 Aug 2011	Entry body for NPT 2"
1.000.6055.20	1 of 1	3	02 Aug 2011	Entry body for NPT 2 1/2"
1.000.6053.00	1 of 1	3	02 Aug 2011	Entry body for NPT 3"
1004645200	1 of 1	-	02 Aug 2011	Compound pot for M20-1
1005645200	1 of 1	-	02 Aug 2011	Compound pot for M20-2
1006645200	1 of 1	-	02 Aug 2011	Compound pot for M20-3
1004645250	1 of 1	-	02 Aug 2011	Compound pot for M25
1004645320	1 of 1	-	02 Aug 2011	Compound pot for M32
1004645400	1 of 1	-	02 Aug 2011	Compound pot for M40
1004645500	1 of 1	-	02 Aug 2011	Compound pot for M50
1004645630	1 of 1	-	02 Aug 2011	Compound pot for M63
1004645750	1 of 1	-	02 Aug 2011	Compound pot for M75
1002645200	1 of 1	-	02 Aug 2011	Clamping cone for M20-1
1007645200	1 of 1	-	02 Aug 2011	Clamping cone for M20-2
1012645200	1 of 1	-	02 Aug 2011	Clamping cone for M20-3
1002645250	1 of 1	-	02 Aug 2011	Clamping cone for M25
1002645320	1 of 1	-	02 Aug 2011	Clamping cone for M32
1002645400	1 of 1	-	02 Aug 2011	Clamping cone for M40

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Certificate Annexe

Certificate Number: Sira 11ATEX1110X
 Equipment: EXIOS Barrier Cable Glands
 Applicant: Hummel AG



Drawing	Sheets	Rev	Date (Sira stamp)	Title
1002645500	1 of 1	-	02 Aug 2011	Clamping cone for M50
1002645630	1 of 1	-	02 Aug 2011	Clamping cone for M63
1002645750	1 of 1	-	02 Aug 2011	Clamping cone for M75
1.003.6052.00	1 of 1	-	02 Aug 2011	Clamping ring for size 20-1, armour range 0 – 0.7 mm
1.004.6052.00	1 of 1	-	02 Aug 2011	Clamping ring for size 20-1, armour range 0.7 – 1.25 mm
1.008.6052.00	1 of 1	-	02 Aug 2011	Clamping ring for size 20-2, armour range 0 – 0.7 mm
1.009.6052.00	1 of 1	-	02 Aug 2011	Clamping ring for size 20-2, armour range 0.7 – 1.25 mm
1.013.6052.00	1 of 1	-	02 Aug 2011	Clamping ring for size 20-3, armour range 0 – 0.7 mm
1.014.6052.00	1 of 1	-	02 Aug 2011	Clamping ring for size 20-3, armour range 0.7 – 1.25 mm
1.003.6052.50	1 of 1	-	02 Aug 2011	Clamping ring for size 25, armour range 0 – 0.7 mm
1.004.6052.50	1 of 1	-	02 Aug 2011	Clamping ring for size 25, armour range 0.7 – 1.4 mm
1.005.6052.50	1 of 1	-	02 Aug 2011	Clamping ring for size 25, armour range 0.9 – 1.6 mm
1.003.6053.20	1 of 1	-	02 Aug 2011	Clamping ring for size 32, armour range 0 – 0.7 mm
1.004.6053.20	1 of 1	-	02 Aug 2011	Clamping ring for size 32, armour range 0.7 – 1.4 mm
1.005.6053.20	1 of 1	-	02 Aug 2011	Clamping ring for size 32, armour range 1.3 – 2.0 mm
1.003.6054.00	1 of 1	-	02 Aug 2011	Clamping ring for size 40, armour range 0 – 0.7 mm
1.004.6054.00	1 of 1	-	02 Aug 2011	Clamping ring for size 40, armour range 0.7 – 1.4 mm
1.005.6054.00	1 of 1	-	02 Aug 2011	Clamping ring for size 40, armour range 1.3 – 2.0 mm
1.003.6055.00	1 of 1	-	02 Aug 2011	Clamping ring for size 50, armour range 0 – 1.0 mm
1.004.6055.00	1 of 1	-	02 Aug 2011	Clamping ring for size 50, armour range 1.0 – 2.0 mm
1.005.6055.00	1 of 1	-	02 Aug 2011	Clamping ring for size 50, armour range 1.5 – 2.5 mm
1.003.6056.30	1 of 1	-	02 Aug 2011	Clamping ring for size 63, armour range 0 – 1.0 mm
1.004.6056.30	1 of 1	-	02 Aug 2011	Clamping ring for size 63, armour range 1.0 – 2.0 mm
1.005.6056.30	1 of 1	-	02 Aug 2011	Clamping ring for size 63, armour range 1.5 – 2.5 mm
1.003.6057.50	1 of 1	-	02 Aug 2011	Clamping ring for size 75, armour range 0 – 1.0 mm
1.004.6057.50	1 of 1	-	02 Aug 2011	Clamping ring for size 75, armour range 1.0 – 2.0 mm
1.005.6057.50	1 of 1	-	02 Aug 2011	Clamping ring for size 75, armour range 1.5 – 2.5 mm
1.000.6052.00	1 of 1	-	02 Aug 2011	Middle cap for M20-1
1.005.6052.00	1 of 1	-	02 Aug 2011	Middle cap for M20-2
1.010.6052.00	1 of 1	-	02 Aug 2011	Middle cap for M20-3
1.000.6052.50	1 of 1	-	02 Aug 2011	Middle cap for M25
1.000.6053.00	1 of 1	-	02 Aug 2011	Middle cap for M32
1.000.6054.00	1 of 1	-	02 Aug 2011	Middle cap for M40
1.000.6055.00	1 of 1	-	02 Aug 2011	Middle cap for M50
1.000.6056.30	1 of 1	-	02 Aug 2011	Middle cap for M63
1.000.6057.50	1 of 1	-	02 Aug 2011	Middle cap for M75
AAD3-TEX200	1 of 1	1	02 Aug 2011	Outer sealing ring for M20-1 (range 3-8.1)
AAD3-TEX201	1 of 1	1	02 Aug 2011	Outer sealing ring for M20-1 (range 6-12)
AAD3-TEX202	1 of 1	-	02 Aug 2011	Outer sealing ring for M20-2
AAD3-TEX203	1 of 1	-	02 Aug 2011	Outer sealing ring for M20-3
AAD3-TEX250	1 of 1	-	02 Aug 2011	Outer sealing ring for M25
AAD3-TEX320	1 of 1	-	02 Aug 2011	Outer sealing ring for M32
AAD3-TEX400	1 of 1	-	02 Aug 2011	Outer sealing ring for M40
AAD3-TEX500	1 of 1	-	02 Aug 2011	Outer sealing ring for M50 (range 28.9-44.4)
AAD3-TEX501	1 of 1	-	02 Aug 2011	Outer sealing ring for M50 (range 36.0-52.6)
AAD3-TEX630	1 of 1	-	02 Aug 2011	Outer sealing ring for M63 (range 39.9-56.3)
AAD3-TEX631	1 of 1	-	02 Aug 2011	Outer sealing ring for M63 (range 46.0-65.3)

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Certificate Annexe

Certificate Number: Sira 11ATEX1110X
Equipment: EXIOS Barrier Cable Glands
Applicant: Hummel AG



Drawing	Sheets	Rev	Date (Sira stamp)	Title
AAD3-TEX750	1 of 1	-	02 Aug 2011	Outer sealing ring for M75 (range 50.5-68.2)
AAD3-TEX751	1 of 1	-	02 Aug 2011	Outer sealing ring for M75 (range 57.0-78.0)
AAK5-TEX200	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M20-1 (range 3-8.1)
AAK5-TEX201	1 of 1	1	02 Aug 2011	Non-metallic compression ring for M20-1 (range 6-12)
AAK5-TEX202	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M20-2
AAK5-TEX203	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M20-3
AAK5-TEX250	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M25
AAK5-TEX320	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M32
AAK5-TEX400	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M40
AAK5-TEX500	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M50 (range 28.9-44.4)
AAK5-TEX501	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M50 (range 36.0-52.6)
AAK5-TEX630	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M63 (range 39.9-56.3)
AAK5-TEX631	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M63 (range 46.0-65.3)
AAK5-TEX750	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M75 (range 50.5-68.2)
AAK5-TEX751	1 of 1	-	02 Aug 2011	Non-metallic compression ring for M75 (range 57.0-78.0)
1.001.6052.00	1 of 1	1	02 Aug 2011	Back nut for M20-1
1.006.6052.00	1 of 1	-	02 Aug 2011	Back nut for M20-2
1.011.6052.00	1 of 1	-	02 Aug 2011	Back nut for M20-3
1.001.6052.50	1 of 1	-	02 Aug 2011	Back nut for M25
1.001.6053.00	1 of 1	-	02 Aug 2011	Back nut for M32
1.001.6054.00	1 of 1	-	02 Aug 2011	Back nut for M40
1.001.6055.00	1 of 1	-	02 Aug 2011	Back nut for M50
1.001.6056.30	1 of 1	-	02 Aug 2011	Back nut for M63
1.001.6057.50	1 of 1	-	02 Aug 2011	Back nut for M75

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