STEP 8

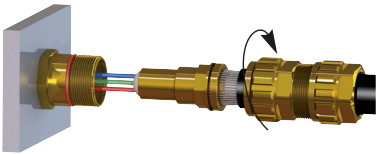


Fig. 9

The cable can now be inserted into the entry component. The sleeve should be inserted carefully. (Fig. 9) Now screw the gland body hand-tight on the entry component. Allow compound to cure. Conductors should not be disturbed until compound has cured.

STEP 9

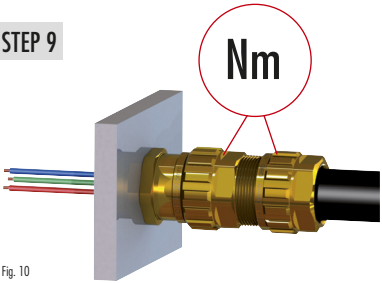


Fig. 10

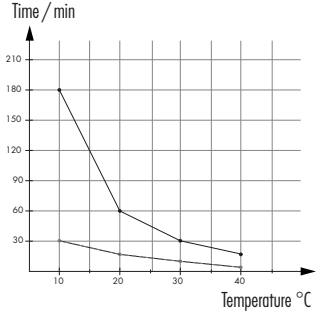
After the compound has cured, the gland body and the dome nut can be tightened fast with an open-ended spanner (Nm).

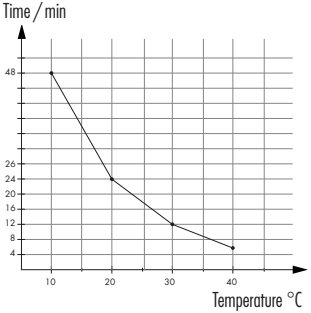
General information:

- The max. surface roughness of the device or housing cannot exceed Rz 16.
- The connection hole for the cable gland must be perpendicular to the sealing surface of the housing. In addition, the seal of the cable gland must completely cover the sealing surface on the housing.
- The installation of earthtags is only permitted on the sealing surface between the housing and the cable gland. The user has to ensure the tightness with regard to IP and explosion protection.
- If an EMC connection of the device / cable gland is provided, the housing material must consist of conductive material. If this conductive material is coated with a non-conductive material, a special EMC lock nut must be used. There are no further restrictions of the housing material.
- The sealing at the cable is done by the sealing insert and the compound. Sealing at the housing is done by an O-ring.

- Before initial operation of the facilities, the assembly is to be checked to see that it conforms to these installation instructions, to the applicable national and international standards, as well as those applicable to the use in question.
- Suitable tools must be used for the assembly; furthermore, the installation may only be carried out by qualified electricians or by trained staff.
- Any modification which differs from the condition as delivered is not permitted.
- At the specified maintenance intervals it is recommended to check the compression fittings and tighten as necessary.
- In the case of NPT connecting threads, the end-user must ensure that the necessary IP protection is guaranteed; this can be done using a suitable thread sealing agent.
- When installing the cable gland through bore holes, care should be taken that the maximum diameters are not exceeded.
- The cable glands are provided with a sealing ring with an axial sealing height of at least 5 mm. With reference to the clearance groove, the end-user should ensure that at least five complete turns of the connector thread are made. In order to guarantee a screw depth of 8 mm, the enclosure should have a wall thickness of min. 10 mm; if <10 mm, then if necessary, use a washer when cable entries are attached to the flameproof enclosure.
- When determining the temperature ranges of the device in the dust Ex-area, the Regulations of EN 60079-0 and EN 60079-31 must be taken into consideration.
- The screw connection is only approved for one-time use/assembly. There is no guarantee or liability for multiple/repeated use of the screw connection in a used condition.

Table 2

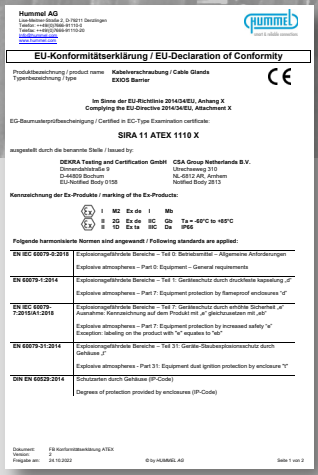




----- 35 % (Hand tight)

—— 50% (mechanically fixed)

—— 100 % (Final set)



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EU-Konformitätserklärung / EU-Declaration of Conformity

Produktbezeichnung / product name: **Kabelverschraubung / Cable Glands**
Typenbezeichnung / type: **EXIOS Barrier**

CE

Im Sinne der EU-Richtlinie 2014/34/EU, Anhang X
Complying the EU-Directive 2014/34/EU, Attachment X

EG-Baumusterprüfbescheinigung / Certified in EC-Type Examination certificate:

SIRA 11 ATEX 1110 X

ausgestellt durch die benannte Stelle / issued by:

DEKRA Testing and Certification GmbH
Dinnendahlstraße 9
D-44809 Bochum
EU-Notified Body 0158

CSA Group Netherlands B.V.
Utrechtseweg 310
NL-6812 AR, Arnhem
Notified Body 2813

Kennzeichnung der Ex-Produkte / marking of the Ex-Products:

I	M2	Ex db	I	Mb	
II	2G	Ex db	IIC	Gb	Ta = -60°C to +65°C
II	1D	Ex ta	IIIC	Da	IP66

Folgende harmonisierte Normen sind angewandt / Following standards are applied:

EN IEC 60079-0:2018	Explosionsgefährdete Bereiche – Teil 0: Betriebsmittel – Allgemeine Anforderungen Explosive atmospheres – Part 0: Equipment – General requirements
EN 60079-1:2014	Explosionsgefährdete Bereiche – Teil 1: Geräteschutz durch druckfeste kapselung „d" Explosive atmospheres – Part 7: Equipment protection by flameproof enclosures "d"
EN IEC 60079-7:2015/A1:2018	Explosionsgefährdete Bereiche – Teil 7: Geräteschutz durch erhöhte Sicherheit „e" Ausnahme: Kennzeichnung auf dem Produkt mit „e" gleichzusetzen mit „eb" Explosive atmospheres – Part 7: Equipment protection by increased safety "e" Exception: labeling on the product with "e" equates to "eb"
EN 60079-31:2014	Explosionsgefährdete Bereiche – Teil 31: Geräte-Staubexplosionsschutz durch Gehäuse „t" Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
DIN EN 60529:2014	Schutzarten durch Gehäuse (IP-Code) Degrees of protection provided by enclosures (IP-Code)

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Im Sinne der EU-Richtlinie 2011/65/EU, Anhang IV
Complying the EU-Directive 2011/65/EU, Attachment IV

Folgende Normen sind angewandt / Following standards are applied:

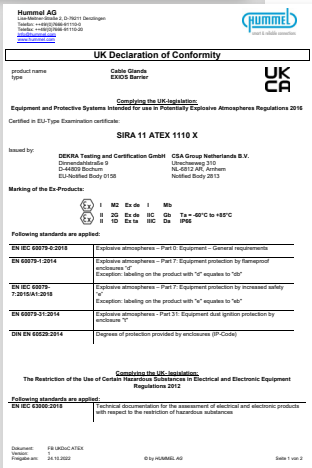
EN IEC 63000:2018	Technische Dokumentation zur Beurteilung von Elektro- und Elektronikgeräten hinsichtlich der Beschränkung gefährlicher Stoffe Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

Die oben genannten Produkte werden in alleiniger Verantwortung der HUMMEL AG entwickelt und gefertigt.
We declare that the above articles were developed and manufactured in the responsibility of Hummel AG.

Denzlingen den 04.02.2025

i.V. Carsten Koch
Director Engineering
ATEX Beauftragter

i.V. Christian Latte
Head of TEC
Zulassungsbeauftragter



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UK Declaration of Conformity

product name: **Cable Glands**
type: **EXIOS Barrier**

UK CA

Complying the UK-legislation:
Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016

Certified in EU-Type Examination certificate:

SIRA 11 ATEX 1110 X

issued by:

DEKRA Testing and Certification GmbH
Dinnendahlstraße 9
D-44809 Bochum
EU-Notified Body 0158

CSA Group Netherlands B.V.
Utrechtseweg 310
NL-6812 AR, Arnhem
Notified Body 2813

Marking of the Ex-Products:

I	M2	Ex db	I	Mb	
II	2G	Ex db	IIC	Gb	Ta = -60°C to +65°C
II	1D	Ex ta	IIIC	Da	IP66

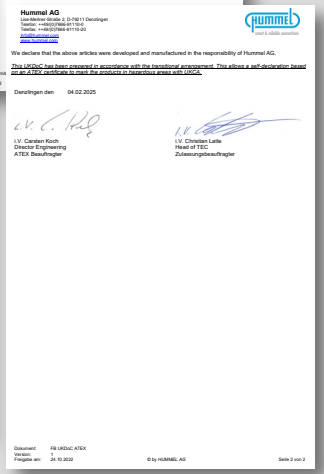
Following standards are applied:

EN IEC 60079-0:2018	Explosive atmospheres – Part 0: Equipment – General requirements
EN 60079-1:2014	Explosive atmospheres – Part 7: Equipment protection by flameproof enclosures "d" Exception: labeling on the product with "d" equates to "db"
EN IEC 60079-7:2015/A1:2018	Explosive atmospheres – Part 7: Equipment protection by increased safety "e" Exception: labeling on the product with "e" equates to "eb"
EN 60079-31:2014	Explosive atmospheres – Part 31: Equipment dust ignition protection by enclosure "t"
DIN EN 60529:2014	Degrees of protection provided by enclosures (IP-Code)

Complying the UK- legislation:
The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Following standards are applied:

EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances



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We declare that the above articles were developed and manufactured in the responsibility of Hummel AG.

This UKDoC has been prepared in accordance with the international arrangement. This allows a self-declaration based on an EU TEC certificate to mark the products in hazardous areas with UKCA.

Denzlingen den 04.02.2025

i.V. Carsten Koch
Director Engineering
ATEX Beauftragter

i.V. Christian Latte
Head of TEC
Zulassungsbeauftragter

ATEX-11002-0725

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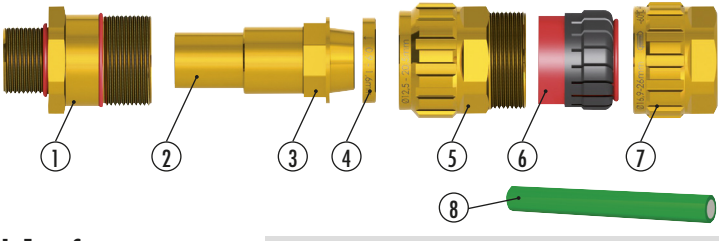
Operating Instruction

EXIOS + BARRIER



1. Entry Component
2. Compound Sleeve
3. Interlocking Armour Cone
4. Armour Clamping Ring
5. Gland Body
6. Outer Sheath Sealing
7. Dome Nut
8. Compound

Operating temperature range	-60 °C – +85 °C
Protection	Type rating 4/4X/6 / IP 66, 67, 68 (5 bar)

Certification Details: EXIOS Barrier

I M2 Ex d I Mb / Ex e I Mb
II 2G Ex d IIC Gb / Ex e IIC Gb
II 1D Ex ta IIIC Da IP 66 / 67 / 68
IECEx: Sir 11.0044X
ATEX: Sira 11ATEX1110X

Class I, Div 2, ABCD; Class II, Div 1 & 2, EFG
Class I, Zone 1, AEx de IIC Gb; Zone 20, AEx ta IIIC, T125°C Da

DIN EN IEC 60079-0 : 2019
DIN EN 60079-1 : 2015
DIN EN IEC 60079-7 / A1:2018
DIN EN 60079-31 : 2014
DIN EN 60529 : 2014

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HUMMEL
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Notified body	DEKRA Testing and Certification GmbH Dinnendahlstraße 9 44809 Bochum / Germany	CSA Group Netherlands B.V. Utrechtseweg 310 6812 AR Arnhem / Netherlands
ID number	0158	2813

Marking

The products and / or their smallest packaging units are marked as specified below. Products marked otherwise may not be used under this type-examination certificate. Non-compliance shall void the manufacturer's liability.

- Manufacturer's name or Trademark
- IECEx Sir 11.0044X
- Sira 11ATEX1110X
- Ⓔx I M2 Ex db I Mb / Ex e I Mb (M 20 – M 75, 1/2" NPT – 3" NPT)
- Ⓔx II 2G Ex db IIC Gb / Ex e IIC Gb
- Ⓔx II 1D Ex ta IIIC Da
- Type and connecting thread size
- CE-mark incl. ID number of notified body
- -60 °C ≤ Ta ≤ +85 °C
- Clamping range

Safety

The products may only be used within the specified temperature range. The manufacturer shall not be liable for damage caused by use in non-specified fields of application. Only qualified personnel may carry out work in hazardous areas. All relevant regulations must be observed in this case!

Resistance / Endurance

The products consist of:

Body of gland:	Brass / plated brass / stainless steel
Gasket and O-ring:	Silicone

STEP 1

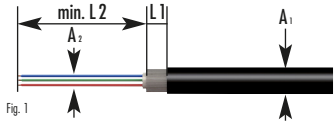


Fig. 1

The cable is to be prepared as shown in Fig. 1. Measurements L 1 and L 2 should be kept to. Measurement L 1 can be read off in the Table 1. Choose measurement L 2 depending on the installation.

Important
The EXIOS Barrier Cable Gland is typically designed for use with armoured cables. However it is also possible and permitted to use with NON-ARMOURED cables. In this case it is important to use one clamping ring as a spacer for the installation!

STEP 2

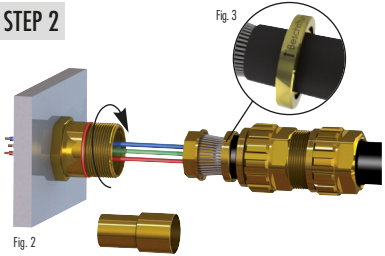


Fig. 2

The cable gland is delivered with 2 armour clamping rings. Choose the appropriate clamping ring as per Table; the other one must not be used. Remove the brass compound tube. After that, prepare the installation as in Fig. 2. Care should be taken with the correct installation of the armour clamping ring, Fig. 3.

Recommended torque only refer to inspection specifications acc. to listed standards. Individual torques may differ due to type and character of the cable.

STEP 3

Install the entry component on the device or housing (~15Nm). The end-user is responsible for ensuring that, at the point of installation, the adapter for the entry component has been made ready in accordance with regulations. The entry component can be provided with a locknut to keep it from working loose.

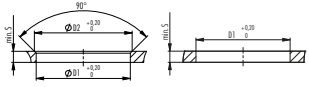
Tabelle 1

	AG						Armour Acceptance Range ∅ mm					
Size	M	NPT	mm	∅ mm A_1	max. ∅ mm A_1	max. no. of cores	Ring I	Ring II	Ring III (optional)	L 1 mm	LC mm	Nm
20–1	M 16/20	3/8"	22	6–12	7,90	8	0,0–0,7	0,7–1,25	–	20	25	8
20–2	M 20	1/2"	24	9–16	8,80	10	0,0–0,7	0,7–1,25	–	20	35	12
20–3	M 20 M 25	1/2"	30	12,5–20,5	11,50	15	0,0–0,7	0,7–1,4	–	20	35	12
25	M 25	3/4"	36	16,9–26	16,40	25	0,0–0,7	0,9–1,6	0,7–1,4	20	35	18
32	M 32	1"	46	22–33	21,40	45	0,0–0,7	1,3–2,0	0,7–1,4	30	35	30
40	M 40	1 1/4" 1 1/2"	55	28–41	27,65	70	0,0–0,7	1,3–2,0	0,7–1,4	30	35	50
50	M 50	2"	65	36–52,6	37,50	85	0,0–1,0	1,5–2,5	1,0–2,0	35	45	60
63	M 63	2 1/2"	80	46–65,3	47,30	120	0,0–1,0	1,5–2,5	1,0–2,0	40	45	65
75	M 75	3"	95	57–78	58,00	150	0,0–1,0	1,5–2,5	1,0–2,0	45	45	135

Dimensions and specifications may be changed without prior notice.

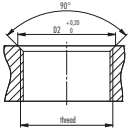
Installation conditions - through hole (only Ex-e)

The cable gland must be fixed with a lock nut



Installation conditions - thread

For all thread sizes the thread tolerance is 6g



Thread	D1	D2	S
M6x1	6	7,3	2,5
M8x1,25	8	9	2,5
M10x1,5	10	10,4	2,5
M12x1,5	12	13	2,5
M16x1,5	16	17	2,5
M20x1,5	20	21	2,5
M25x1,5	25	26	2,5
M32x1,5	32	33	2,5
M40x1,5	40	41	2,5
M50x1,5	50	51	2,5
M63x1,5	63	64	2,5
M75x1,5	75	76	2,5
M80x2	80	81	4
M90x2	90	91	5
M100x2	100	101,3	5
M110x2	110	111	5

Thread	D1	D2	S
Pg7	12,7	13,2	2,5
Pg9	15,4	15,9	2,5
Pg11	18,8	19,3	2,5
Pg13,5	20,7	21,2	2,5
Pg16	22,8	23,3	2,5
Pg21	28,6	29,1	3
Pg29	37,4	38,4	3
Pg36	47,5	48,5	3
Pg42	54,5	55,5	3
Pg48	59,8	60,8	3

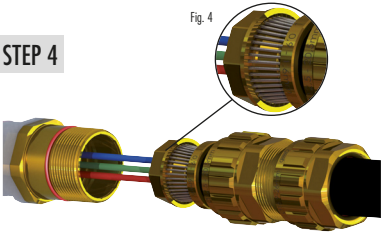
Thread	D1	D2	S
NPT 3/8"	17,3	18	4
NPT 1/2"	21,1	22	5
NPT 3/4"	26,7	27,5	4
NPT 1"	34,3	35	4
NPT 1 1/4"	41,9	42,5	5
NPT 1 1/2"	48,8	49,5	5
NPT 2"	61,1	62,0	5
NPT 2 1/2"	74,0	76,5	6
NPT 3"	89,8	92,5	6

D1: through hole
D2: countersink

If the cable gland is used in a way that deviates from the specified installation conditions, the user must ensure the safety of the system.

STEP 4

Fig. 4



Position the armour of the cable so that all parts of the armour are in contact with the armour cone (Fig.4) and the ends of the armour touch the edge of the armour cone.

Now screw the gland body hand-tight on the entry component. It helps if, while doing so, the cable is pushed slightly in towards the device or the housing. Finally, with the appropriate open-ended spanner, tighten fast in order to securely clamp the armour.

STEP 5

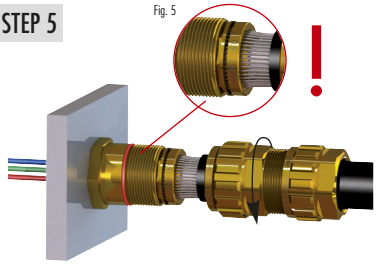


Fig. 5

After that, loosen the gland body and check for correct seating of the armour (Fig. 5). The armour must be firmly clamped. If need be, repeat step 4.

Preparing the Compound:
Please check the compound's expiry date and take note of the contents of the attached Safety Data sheet. Use the protective gloves included, as well as suitable eye protection. The compound can be applied at temperatures between +10 °C and +40 °C. Application is ideally carried out at room temperature (+20 °C). Processing time is approx. 15 min. Please see Table 2 for Cure Time of the Compound.

STEP 6

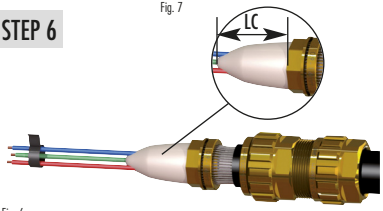


Fig. 7

Fig. 6

Mix and knead the appropriate quantity of compound for the job until a completely uniform colour is achieved. Now, as in Fig. 6, apply the compound between and around the individual conductors. Filling the sleeve completely is easy if the compound has first of all been given a conical shape as in Fig. 7. To stop the conductors moving out of place, they should be fixed with tape.

STEP 7

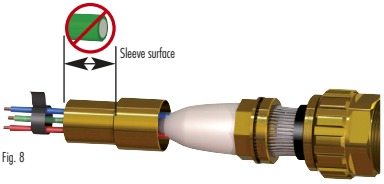


Fig. 8

Now push the sleeve and the armour cone together. This causes the compound to be compressed. Remove the excess compound which squeezes out. Care should be taken that the sleeve has been filled right up to the end. The outside of the sleeve is to be kept clean; if necessary, clean the surface.