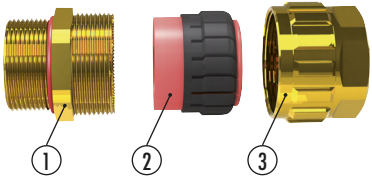
smart & reliable connections

Operating Instruction

EXIOS A2F



1. Entry Component
2. Sealing
3. Dome Nut

Operating temperature range	-60 °C – +105 °C
Protection	Type rating 4/4X/6 / IP 66, 67, 68 (5 bar – 30 min)

Certification Details: EXIOS A2F

II 2G Ex db eb IIC Gb / II 1D Ex ta IIIC Da

IECEx: DEK 12.0039X	ATEX: DEKRA 12ATEX0139 X
INMETRO: TÜV 13.0800 X	ABS: 21-2146207-PDA
CCC: 2021012313369922	DNV: TAE000024V

KTL/KCS: 14 KB4BO 0721 / 14 KB4BO 0718
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
CSA: 12.2557737X

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

EU Directive 2014/34/EU

HUMMEL AG
Lise-Meitner-Straße 2
79211 Denzlingen / Germany
Tel. +49 (0) 76 66 / 9 11 10 - 200
info@hummel.com

HUMMEL
smart & reliable connections

Table 1 – NPT

Gland Size	AG	mm	GL mm	mm A_1	Nm
20–1	NPT 3/8"	22	16	6–12	8
20–1	NPT 1/2"	22 / 24	20	6–12	8
20–2	NPT 1/2"	24	20	9–16	8
20–3	NPT 3/4"	30	20,5	12,5–20,5	12
25	NPT 1"	36	25	16,9–26	18
32	NPT 1 1/4"	46	26	22–33	30
40	NPT 1 1/2"	55	26,5	28–41	50
50	NPT 2"	65	27	40–52,6	60
63	NPT 2 1/2"	80	40	51–61	65
75	NPT 3"	95	41,5	62–78	135

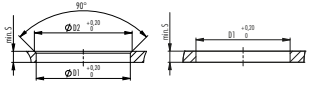
Table 2 – M

Gland Size	AG	mm	GL mm	mm A_1	Nm
20–1	M 16 x 1,5	22	16	6–12	8
20–1	M 20 x 1,5	22	16	6–12	8
20–2	M 20 x 1,5	24	16	9–16	8
20–3	M 25 x 1,5	30	16	12,5–20,5	12
25	M 32 x 1,5	36	16	16,9–26	18
32	M 40 x 1,5	46	16	22–33	30
40	M 50 x 1,5	55	16	28–41	50
50	M 63 x 1,5	65	16	40–52,6	60
63	M 75 x 1,5	80	16	51–65,3	65
75	M 90 x 2	95	20	62–78	135

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

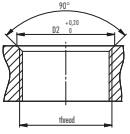
Installation conditions - through hole (only Ex-e)

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

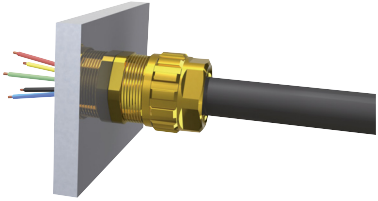
Thread	D1	D2	S
Pg7	12,7	13,2	2,5
Pg9	15,4	15,9	2,5
Pg11	18,8	19,3	2,5
Pg13,5	20,7	21,2	2,5
Pg16	22,8	23,3	2,5
Pg21	28,6	29,1	3
Pg29	37,4	38,4	3
Pg36	47,5	48,5	3
Pg42	54,5	55,5	3
Pg48	59,8	60,8	3

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

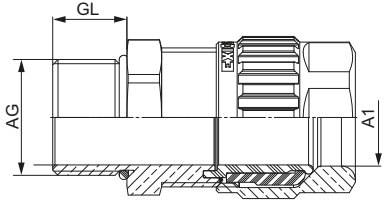
If the cable gland is used in a way that deviates from the specified installation conditions, the user must ensure the safety of the system.

ASSEMBLY



The Cable gland can be installed at the enclosure or etc, after that the cable can be assembled through the gland, the dome nut can now be tightened.

To speed up assembly, it can be tightened by hand to start with. Then tighten up using 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.
- There are no restrictions regarding the housing material.
- Sealing method: The sealing at the cable is done by the sealing insert. Sealing at the housing is done by an O-ring.
- Our metric-size cable glands are provided as standard with an O-ring on the connecting thread.
- 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.
- The cable glands are only permitted for permanently installed cables (25 %).
- In order to fulfill explosion protection type Ex d, the cable used must be round and compact, the cables must also take into consideration in particular the Regulations as per IEC 60079-14 Section 9.3. Observe the Regulations of IEC 60079-14 on direct insertion into the Ex d area.
- 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.
- The cable glands must not be used in enclosures where the temperature is outside the range of -60 °C to +105 °C.
- Glands without O-rings, which are used in dust-explosive atmospheres, may only be installed in enclosures where at least five complete threads can be engaged.

Hummel AG
Lise-Meitner-Straße 2, D-78211 Denzlingen
Telefon: ++49(0)7666-91110-0
Telefax: ++49(0)7666-91110-20
info@hummel.com
www.hummel.com

EU-Konformitätserklärung / EU-Declaration of Conformity

Produktbezeichnung / product name: **Kabelverschraubung / Cable Glands**
Typenbezeichnung / type: **EXIOS A2F**

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:

DEKRA 12 ATEX 0139 X

ausgestellt durch die benannte Stelle / Issued by:

DEKRA Testing and Certification GmbH	**DEKRA Certification B.V**
Dinnendahlstraße 9	Meander 1051
D-44809 Bochum	NL-6825 MJ Arnhem
EU-Notified Body 0158	EU-Notified Body 0344

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

II 2G	Ex db eb	IIC	Gb	IP66/IP68
II 1D	Ex ta	IIIC	Da	

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" Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
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)

Hummel AG
Lise-Meitner-Straße 2, D-78211 Denzlingen
Telefon: ++49(0)7666-91110-0
Telefax: ++49(0)7666-91110-20
info@hummel.com
www.hummel.com

EU-Konformitätserklärung / EU-Declaration of Conformity

Produktbezeichnung / product name: **Kabelverschraubung / Cable Glands**
Typenbezeichnung / type: **EXIOS A2F**

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:

DEKRA 12 ATEX 0139 X

ausgestellt durch die benannte Stelle / Issued by:

DEKRA Testing and Certification GmbH	**DEKRA Certification B.V**
Dinnendahlstraße 9	Meander 1051
D-44809 Bochum	NL-6825 MJ Arnhem
EU-Notified Body 0158	EU-Notified Body 0344

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

II 2G	Ex db eb	IIC	Gb	IP66/IP68
II 1D	Ex ta	IIIC	Da	

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" Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
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)

Dokument: FB Konformitätserklärung ATEX
Version: 2
Freigabe am: 24.10.2022
© by HUMMEL AG
Seite 1 von 2

Hummel AG
Lise-Meitner-Straße 2, D-78211 Denzlingen
Telefon: ++49(0)7666-91110-0
Telefax: ++49(0)7666-91110-20
info@hummel.com
www.hummel.com

UK Declaration of Conformity

product name: **Cable Glands**
type: **EXIOS A2F**

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:

DEKRA 12 ATEX 0139 X

Issued by:

DEKRA Testing and Certification GmbH	**DEKRA Certification B.V**
Dinnendahlstraße 9	Meander 1051
D-44809 Bochum	NL-6825 MJ Arnhem
EU-Notified Body 0158	EU-Notified Body 0344

Marking of the Ex-Products:

II 2G	Ex db eb	IIC	Gb	IP66/IP68
II 1D	Ex ta	IIIC	Da	

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

Dokument: FB UKDoC ATEX
Version: 1
Freigabe am: 24.10.2022
© by HUMMEL AG
Seite 1 von 2

Hummel AG
Lise-Meitner-Straße 2, D-78211 Denzlingen
Telefon: ++49(0)7666-91110-0
Telefax: ++49(0)7666-91110-20
info@hummel.com
www.hummel.com

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 transitional arrangement. This allows a self-declaration based on an ATEX certificate to mark the products in hazardous areas with UKCA.

Denzlingen den 04.02.2025

i.V. C. Koch

i.V. Carsten Koch
Director Engineering
ATEX Beauftragter

i.V. Christian Lelle

i.V. Christian Lelle
Head of TEC
Zulassungsbeauftragter

Dokument: FB UKDoC ATEX
Version: 1
Freigabe am: 24.10.2022
© by HUMMEL AG
Seite 2 von 2

ATEX-0139X-2-0425

www.hummel.com