HUMMEL

smart & reliable connections

Cable Glands for „Hazardous Areas“



EXIOS

Cable Glands for „Hazardous Areas“



EXIOS



Ex d
Ex e

IECEx

ATEX

ABS

DNV

INMETRO

ktl

HUMMEL AG

smart & reliable connections









For more than 75 years, HUMMEL AG has delivered high-performance solutions for cable management applications, including cable glands, metal circular connectors, and enclosures. Our new, innovative EXIOS range of Ex d cable glands combines premium quality, reliability, and ease of installation—while prioritizing what matters most in hazardous areas: safety. EXIOS is engineered to meet the latest ATEX and IECEx requirements for hazardous area installations.

We continue to invest in Ex product development to deliver enhanced product performance and improved safety features—true to our company motto.

HUMMEL AG is recognized worldwide as a leading manufacturer of electromechanical components. We offer state-of-the-art design, toolmaking, plating, and assembly, supported by highly automated production processes. Our employees are trained to the highest standards.

Used primarily in offshore and onshore oil and gas exploration, EXIOS is rapidly gaining global recognition as a leading Ex gland for dual-seal and barrier applications. Alongside our established premium HSK range, HUMMEL provides cable glands for Ex d / Ex e / Ex i areas in V0-rated plastic, brass, nickel-plated brass, and stainless steel. A comprehensive, approved range of cable gland accessories completes the offering.

In addition, we provide the global coverage our customers require, with local points of contact worldwide. Visit the HUMMEL website to find our locations and our network of sales agents and distributors. Quality management is fundamental to our approach, and EXIOS is manufactured under an ISO 9001-certified quality system and in accordance with the latest international flameproof standards.

EXIOS IS THE NUMBER ONE CHOICE FOR ALL Ex d CABLE GLANDS



General:

The quality of our products has been certified by many different certification bodies and authorities.
HUMMEL AG is a certified manufacturer and supplier of electro-mechanical devices.

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What is an explosion?

So that an explosion can occur, three conditions must be fulfilled; see the explosion triangle diagramm.

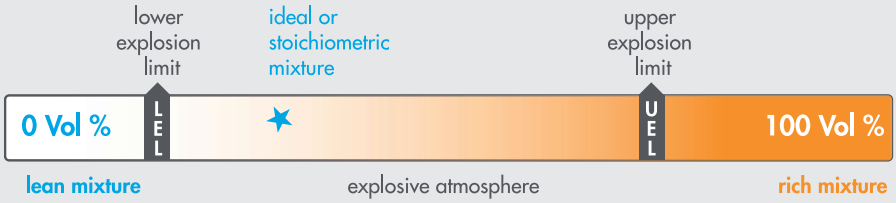
1. Fuel
2. Oxygen
3. Source of ignition

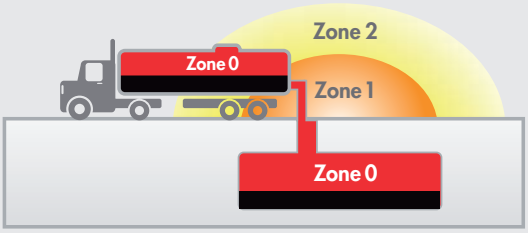
If one removes one of these three conditions, an explosion canno r.



Potentially Explosive Atmosphere

A potentially explosive atmosphere is understood to be a mixture of a combustible material and oxygen. Oxygen is generally present as a component of air. Combustible materials can be e.g.: gases, fluids, vapours, mist or dusts. If the proportion of oxygen falls below a certain value dependent on the material, known as the oxygen limit concentration, then this mixture cannot be ignited.





Zones IEC/CENELEC/ATEX

GAS	**Zone 0**	relates to areas in which a potentially explosive atmosphere consisting of a mixture of air and gases, vapours or mist exists continuously, for long periods or frequently
	Zone 1	relates to areas in which it can be considered that a potentially explosive atmosphere of gases, vapours or mist occurs occasionally
	Zone 2	relates to areas in which it is unlikely that a potentially explosive atmosphere of gases, vapours or mist might occur, but if it does occur then in all probability only seldom and for a short period
DUST	**Zone 20**	relates to areas in which a potentially explosive atmosphere consisting of a mixture of dust and air exists continuously, for long periods or frequently
	Zone 21	relates to areas in which it can be considered that a potentially explosive atmosphere of a mixture of dust and air occurs occasionally
	Zone 22	(note the difference between conductive and non-conductive dust!) relates to areas in which it is unlikely that a potentially explosive atmosphere of suspended dust might occur, but if it does occur then in all probability only seldom and for a short period

Zones IEC/CENELEC/ATEX

Group I Mining

- M1 high degree of safety EPL Ma
- M2 high degree of safety EPL Mb

Group II Non-Mining

- 1 very high degree of safety
  - Gas (Zone 0, 1, 2) EPL Ga
  - Dust (Zone 20, 21, 22) EPL Da
- 2 high degree of safety
  - Gas (Zone 1 ,2) EPL Gb
  - Dust (Zone 21,22) EPL Db
- 3 normal degree of safety
  - Gas (Zone 2) EPL Gc
  - Dust (Zone 22) EPL Dc

Gases and Dust

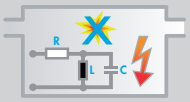
Gas		Dust	
IIA	Propane	IIIA	combustible dust
IIB	Ethylene	IIIB	non-conductive dust
IIC	Hydrogene	IIIC	conductive dust

Temperatur Classes

Temperature class	Highest permissible surface temperature of the operating facility	Ignition temperature of combustible materials
T1	450 °C	> 450 °C
T2	300 °C	> 300 °C < 450 °C
T3	200 °C	> 200 °C < 300 °C
T4	135 °C	> 135 °C < 200 °C
T5	100 °C	> 100 °C < 200 °C
T6	85 °C	> 85 °C < 100 °C

Protection Concepts

Electrical

Intrinsic safety Intrinsic safety Intrinsic safety	Ex ia Ex ib Ex ic	IEC 60079-11/EN 60079-11 IEC 60079-11/EN 60079-11 IEC 60079-11/EN 60079-11	Zone 0,1,2 Zone 1,2 Zone 2	Limit the energy	
Increased safety	Ex eb Ex ec	IEC 60079-7/EN 60079-7	Zone 1,2	No arcs, sparks or hot surfaces, IP54 or better.	
Flameproof enclosure	Ex db Ex dc	IEC 60079-1/EN 60079-1	Zone 1,2	Contain the explosion Use a flamepath.	

Dust Protection

Enclosure	Ex ta Ex tb Ex tc	IEC 60079-31/EN 60079-31	Zone 20,21,22	Dust tight enclosure IP6X	

International Protection, EN 60529

1. Code Protection against human access to hazardous parts	Protection of equipment against penetration of solid foreign objects	2. Code Penetration of water	Non-protected	protection against drip water (or dripping water)	Protected against vertically falling water drops when device is tilted up to 15°	Water sprayed at an angle up to 60° on either side of the vertical shall have no harmful effects	Water splashed from any direction shall have no harmful effects	Water projected in jets from any direction shall have no harmful effects	Water projected in powerful jets from any direction shall have no harmful effects	protection against temporary submersion	protection against permanent submersion
			IP x0	IP x1	IP x2	IP x3	IP x4	IP x5	IP x6	IP x7	IP x8
Non-protected	Non-protected	IP 0x	IP 00								
Protected against access to hazardous parts with the back of the hand	Protected against solid foreign objects larger in diameter than 50 mm	IP 1x	IP 10	IP 11	IP 12						
Protected against access to hazardous parts with a finger	Protected against solid foreign object larger in diameter than 12,5 mm	IP 2x	IP 20	IP 21	IP 22	IP 23					
Protected against access to hazardous parts with a tool larger in diameter than 25 mm	Protected against solid foreign objects larger in diameter than 2,5 mm	IP 3x	IP 30	IP 31	IP 32	IP 33	IP 34				
Protected against access to hazardous parts with a wire larger in diameter than 1,0 mm	Protected against solid foreign objects larger in diameter than 1 mm	IP 4x	IP 40	IP 41	IP 42	IP 43	IP 44				
Protected against access to hazardous parts with a wire larger in diameter than 1,0 mm	Prevents penetration of dust sufficient to cause damage inside the equipment.	IP 5x	IP 50				IP 54	IP 55			
Protected against access to hazardous parts with a wire larger in diameter than 1,0 mm	Dust proof	IP 6x	IP 60					IP 65	IP 66	IP 67	IP 68

Standards

IEC 60079-0
EN 60079-0
EN 60529

IEC 60079-1
EN 60079-1

IEC 60079-7
EN 60079-7

IEC 60079-31
EN 60079-31

EXIOS + STANDARD

- Dual seal on the inner and outer sheath of the cable
- Time-proven HUMMEL clamping system
- Armour acceptance range from 0 – 2,5 mm
- Exceptional clamping range
- Innovative „Interlocking Armour Cone“
- Zero torsion on cable cores and armour
- Fast and easy pre-assembly by hand by the use of profile material with maximum grip

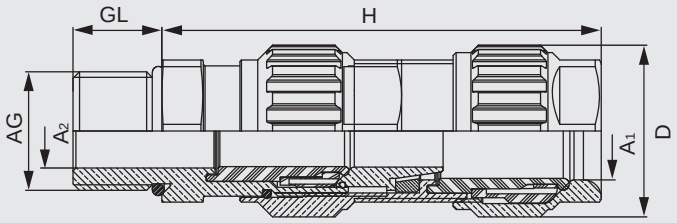
- According to the IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- II 2G Ex db eb IIC Gb / II 1D Ex ta IIIC Da
- Gb / Da

- IP 66, 67 and 68 (5 bar / 30 minutes)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard



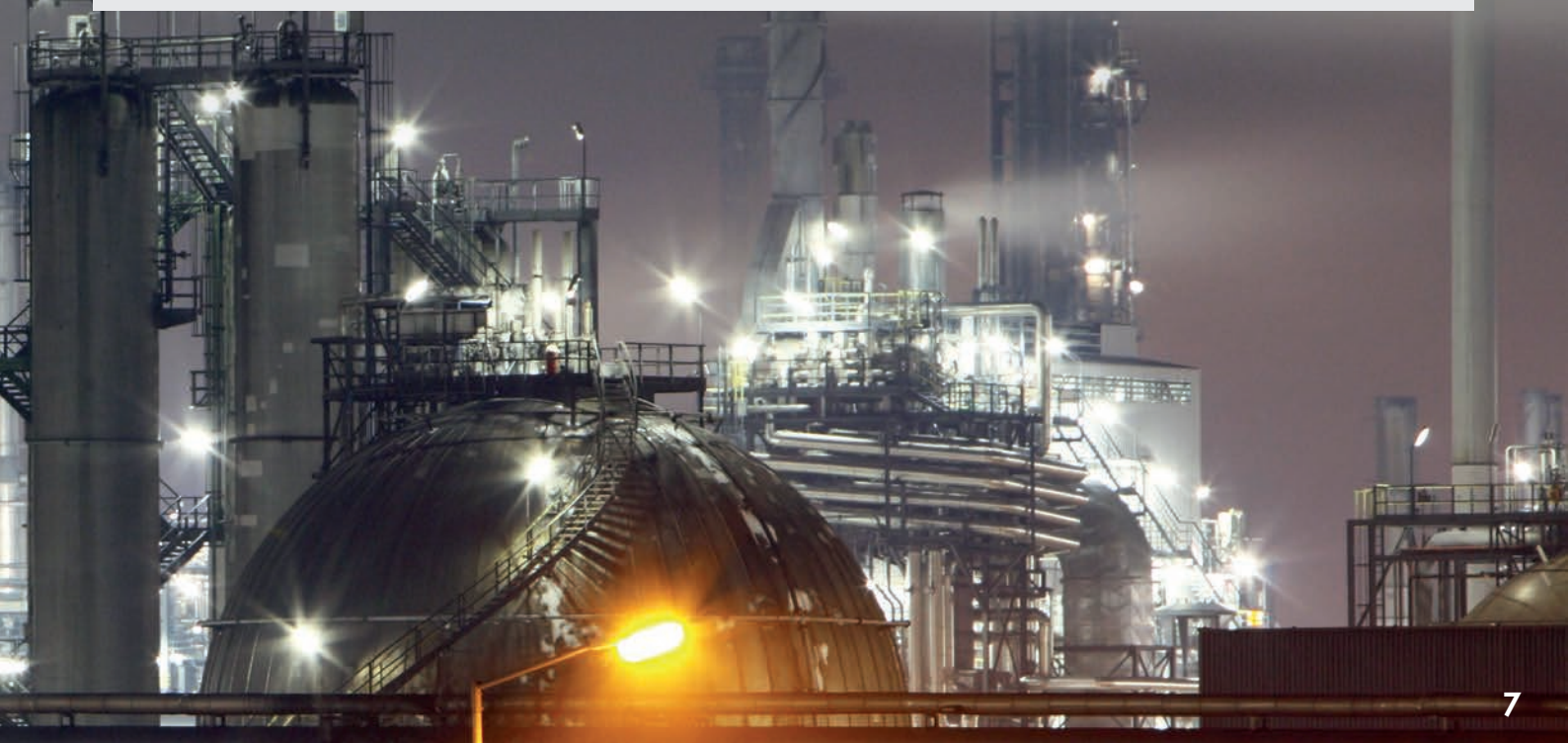
HUMMEL
smart & reliable connections

Type: EXIOS Standard	Materials and Technical Data
Material	brass
Seals / O-Rings	silicone, VMQ
Clamping insert	PA 6
Armour	Metallic Armour or Screen
Temperature Range	-60° C – 105° C (-76 °F – 221 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx BVS 10.0078 X BVS 10 ATEX E 062 X CSA 2557737



Metric brass

									Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 mm	Clamping ring 1	Clamping ring 2	Ring3 optional
1.605.2000.50	20 – 1	M20x1,5	22	27	69,5	16	6 – 12	3 – 8,1	0 – 0,7	0,7 – 1,25	–
1.605.2000.51	20 – 2	M20x1,5	24	29	74,3	16	9 – 16	6 – 12	0 – 0,7	0,7 – 1,25	–
1.605.2000.52	20 – 3	M20x1,5	30	35	80,5	16	12,5 – 20,5	9 – 14	0 – 0,7	0,7 – 1,4	–
1.605.2500.51	20 – 3	M25x1,5	30	35	80,5	16	12,5 – 20,5	9 – 14	0 – 0,7	0,7 – 1,4	–
1.605.2500.50	25	M25x1,5	36	42	91	16	16,9 – 26	12,5 – 20,5	0 – 0,7	0,9 – 1,6	0,7 – 1,4
1.605.3200.50	32	M32x1,5	46	52	96	16	22 – 33	16,9 – 26	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.605.4000.50	40	M40x1,5	55	64	107	16	28 – 41	22 – 33	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.605.5000.50	50	M50x1,5	65	73	131,5	16	36 – 52,6	28,9 – 44,4	0 – 1,0	1,5 – 2,5	1,0 – 2,0
1.605.6300.50	63	M63x1,5	80	90	144,5	16	46 – 65,3	39,9 – 56,3	0 – 1,0	1,5 – 2,5	1,0 – 2,0



EXIOS + STANDARD

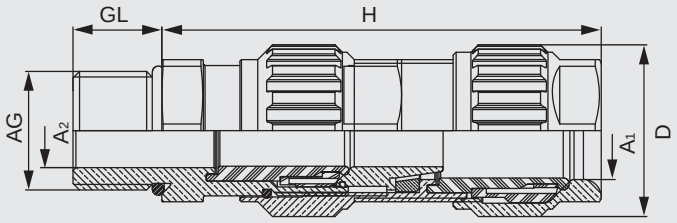
- Dual seal on the inner and outer sheath of the cable
- Time-proven HUMMEL clamping system
- Armour acceptance range from 0 – 2,5 mm
- Exceptional clamping range
- Innovative „Interlocking Armour Cone“
- Zero torsion on cable cores and armour
- Fast and easy pre-assembly by hand by the use of profile material with maximum grip

- According to the IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- II 2G Ex db eb IIC Gb / II 1D Ex ta IIIC Da
- Gb / Da

- IP 66, 67 and 68 (5 bar / 30 minutes)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard



Type: EXIOS Standard	Materials and Technical Data
Material	nickel-plated brass
Seals / O-Rings	silicone, VMQ
Clamping insert	PA 6
Armour	Metallic Armour or Screen
Temperature Range	-60° C – 105° C (-76 °F – 221 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx BVS 10.0078 X BVS 10 ATEX E 062 X CSA 2557737



Metric nickel plated brass

									Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 mm	Clamping ring 1	Clamping ring 2	Ring3 optional
1.605.1603.50	20 – 1	M16x1,5	22	27	69,5	16	6 – 12	3 – 8,1	0 – 0,7	0,7 – 1,25	–
1.605.2003.50	20 – 1	M20x1,5	22	27	69,5	16	6 – 12	3 – 8,1	0 – 0,7	0,7 – 1,25	–
1.605.2003.51	20 – 2	M20x1,5	24	29	74,3	16	9 – 16	6 – 12	0 – 0,7	0,7 – 1,25	–
1.605.2003.52	20 – 3	M20x1,5	30	35	80,5	16	12,5 – 20,5	9 – 14	0 – 0,7	0,7 – 1,4	–
1.605.2503.51	20 – 3	M25x1,5	30	35	80,5	16	12,5 – 20,5	9 – 14	0 – 0,7	0,7 – 1,4	–
1.605.2503.50	25	M25x1,5	36	42	91	16	16,9 – 26	12,5 – 20,5	0 – 0,7	0,9 – 1,6	0,7 – 1,4
1.605.3203.50	32	M32x1,5	46	52	96	16	22 – 33	16,9 – 26	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.605.4003.50	40	M40x1,5	55	64	107	16	28 – 41	22 – 33	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.605.5003.50	50	M50x1,5	65	73	131,5	16	36 – 52,6	28,9 – 44,4	0 – 1,0	1,5 – 2,5	1,0 – 2,0
1.605.6303.50	63	M63x1,5	80	90	144,5	16	46 – 65,3	39,9 – 56,3	0 – 1,0	1,5 – 2,5	1,0 – 2,0
1.605.7503.50	75	M75x1,5	95	107	154	16	57 – 78	50,5 – 68,2	0 – 1,0	1,5 – 2,5	1,0 – 2,0

NPT nickel plated brass

									Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 mm	Clamping ring 1	Clamping ring 2	Ring3 optional
1.605.3803.70	20 – 1	NPT 3/8"	22	27	69,5	16	6 – 12	3 – 8,1	0 – 0,7	0,7 – 1,25	–
1.605.1203.70	20 – 2	NPT 1/2"	24	29	74,3	20	9 – 16	6 – 12	0 – 0,7	0,7 – 1,25	–
1.605.1203.71	20 – 3	NPT 1/2"	30	35	80,5	20	12,5 – 20,5	9 – 14	0 – 0,7	0,7 – 1,4	–
1.605.3403.70	25	NPT 3/4"	36	42	91	20,5	16,9 – 26	12,5 – 20,5	0 – 0,7	0,9 – 1,6	0,7 – 1,4
1.605.1003.70	32	NPT 1"	46	52	96	25	22 – 33	16,9 – 26	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.605.5403.70	40	NPT 1 1/4"	55	64	107	26	28 – 41	22 – 33	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.605.6403.70	40	NPT 1 1/2"	55	64	107	26,5	28 – 41	22 – 33	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.605.2003.70	50	NPT 2"	65	73	131,5	27	36 – 52,6	28,9 – 44,4	0 – 1,0	1,5 – 2,5	1,0 – 2,0
1.605.5203.70	63	NPT 2 1/2"	80	90	144,5	40	46 – 65,3	39,9 – 56,3	0 – 1,0	1,5 – 2,5	1,0 – 2,0
1.605.3003.70	75	NPT 3"	95	107	154	41,5	57 – 78	50,5 – 68,2	0 – 1,0	1,5 – 2,5	1,0 – 2,0

EXIOS + STANDARD

The INOX version of the EXIOS always guarantees the best corrosion protection for offshore applications and other challenging areas.

- Dual seal on the inner and outer sheath of the cable
- Time-proven HUMMEL clamping system
- Armour acceptance range from 0 – 2,5 mm
- Exceptional clamping range
- Innovative „Interlocking Armour Cone“
- Zero torsion on cable cores and armour
- Fast and easy pre-assembly by hand by the use of profile material with maximum grip

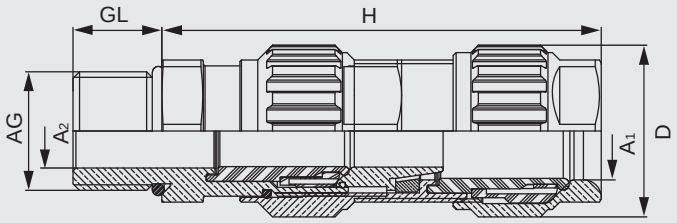
- According to the IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- II 2G Ex db eb IIC Gb / II 1D Ex ta IIIC Da
- Gb / Da

- IP 66, 67 and 68 (5 bar / 30 minutes)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard



HUMMEL
smart & reliable connections

Type: EXIOS Standard	Materials and Technical Data
Material	INOX 1.4404
Seals / O-Rings	silicone, VMQ
Clamping insert	PA 6
Armour	Metallic Armour or Screen
Temperature Range	-60° C – 105° C (-76 °F – 221 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx BVS 10.0078 X BVS 10 ATEX E 062 X CSA 2557737



Metric INOX 1.4404

									Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 mm	Clamping ring 1	Clamping ring 2	Ring3 optional
1.605.1602.50	20 – 1	M16 x 1,5	22	27	69,5	16	6 – 12	3 – 8,1	0 – 0,7	0,7 – 1,25	-
1.605.2002.50	20 – 1	M20 x 1,5	22	27	69,5	16	6 – 12	3 – 8,1	0 – 0,7	0,7 – 1,25	-
1.605.2002.51	20 – 2	M20 x 1,5	24	29	74,3	16	9 – 16	6 – 12	0 – 0,7	0,7 – 1,25	-
1.605.2002.52	20 – 3	M20 x 1,5	30	35	80,5	16	12,5 – 20,5	9 – 14	0 – 0,7	0,9 – 1,6	0,7 – 1,4
1.605.2502.50	25	M25 x 1,5	36	42	91	16	16,9 – 26	12,5 – 20,5	0 – 1	1,5 – 2,5	1 – 2
1.605.2502.51	20 – 3	M25 x 1,5	36	35	80,5	16	12,5 – 20,5	0,7 – 1,4	0 – 0,7	0,9 – 1,6	0,7 – 1,4
1.605.3202.50	32	M32 x 1,5	46	52	96	16	22 – 33	16,9 – 26	0 – 1	1,5 – 2,5	1 – 2
1.605.4002.50	40	M40 x 1,5	55	64	107	16	28 – 41	22 – 33	0 – 0,7	1,3 – 2	0,7 – 1,4
1.605.5002.50	50	M50 x 1,5	65	73	131,5	16	36 – 52,6	28,9 – 44,4	0 – 1	1,5 – 2,5	1 – 2
1.605.6302.50	63	M63 x 1,5	80	90	144,5	16	46 – 65,3	39,9 – 56,3	0 – 1	1,5 – 2,5	1 – 2
1.605.7502.50	75	M75 x 1,5	95	107	154	16	57 – 78	50,5 – 68,2	0 – 1	1,5 – 2,5	1 – 2

NPT INOX 1.4404

									Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 mm	Clamping ring 1	Clamping ring 2	Ring3 optional
1.605.3802.70	20 – 1	NPT 3/8"	22	27	69,5	16	6 – 12	3 – 8,1	0 – 0,7 mm	0,7 – 1,25	-
1.605.1202.70	20 – 2	NPT 1/2"	24	29	74,3	20	9 – 16	6 – 12	0 – 0,7 mm	0,7 – 1,25	-
1.605.1202.71	20 – 3	NPT 1/2"	30	35	80,5	20	12,5 – 20,5	9 – 14	0 – 0,7	0,7 – 1,4	-
1.605.3402.70	25	NPT 3/4"	36	42	91	20,5	16,9 – 26	12,5 – 20,5	0 – 0,7	1,3 – 2	0,7 – 1,4
1.605.1002.70	32	NPT 1"	46	52	96	25	22 – 33	16,9 – 26	0 – 0,7	1,3 – 2	0,7 – 1,4
1.605.5402.70	40	NPT 1 1/4"	55	64	107	26,5	28 – 41	22 – 33	0 – 0,7	1,3 – 2	0,7 – 1,4
1.605.6402.70	40	NPT 1 1/2"	55	64	107	26,5	28 – 41	22 – 33	0 – 0,7	1,3 – 2	0,7 – 1,4
1.605.2002.70	50	NPT 2"	65	73	131,5	27	36 – 52,6	28,9 – 44,4	0 – 0,7	0,7 – 1,4	-
1.605.5202.70	63	NPT 2 1/2"	80	90	144,5	40	46 – 65,33	9,9 – 56,3	0 – 1	1,5 – 2,5	1 – 2
1.605.3002.70	75	NPT 3"	95	107	154	41,5	57 – 78	50,5 – 68,2	0 – 0,7	0,7 – 1,4	-

EXIOS + BARRIER

The innovative and advanced design of the EXIOS is available as a barrier version.

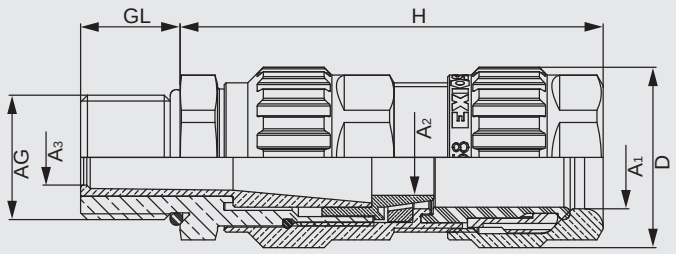
The EXIOS Barrier has all the outstanding EXIOS features, but uses a compound barrier to make it flameproof. Whenever installation requires a barrier gland, EXIOS Barrier is your solution.

- According to the IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- I M2 Ex db eb I Mb IIC Gb / Ex ta IIIC Da
- Equipment Protection Level MbGbDa

- IP 66, 67 and 68 (5 bar / 30 minutes)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard



Type: EXIOS BARRIER	Materials and Technical Data
Material	nickel-plated brass
Seals / O-Rings	silicone, VMQ
Compound	Epoxy-Putty
Clamping insert	PA 6
Armour	Metallic Armour or Screen
Temperature Range	-60° C – 85° C (-76 °F – 185 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx SIR 11.0044X Sira 11 ATEX 1110X CSA 2557737



Metric nickel plated brass

Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 max. inner sheath	⌀ A3 max. over cores	Armour ⌀ mm max. No. cores	Armour ⌀ mm Clamping ring 1	Armour ⌀ mm Clamping ring 2
1.606.1603.50	20 – 1	M16x1,5	22	27	69,5	16	6 – 12	8,2	7,9	8	0 – 0,7	0,7 – 1,25
1.606.2003.50	20 – 1	M20x1,5	22	27	69,5	16	6 – 12	8,2	7,9	8	0 – 0,7	0,7 – 1,25
1.606.2003.51	20 – 2	M20x1,5	24	29	74,3	16	9 – 16	12	8,8	10	0 – 0,7	0,7 – 1,25
1.606.2003.52	20 – 3	M20x1,5	30	35	80,5	16	12,5 – 20,5	14	11,5	15	0 – 0,7	0,7 – 1,4
1.606.2503.51	20 – 3	M25x1,5	30	35	80,5	16	12,5 – 20,5	14	11,5	15	0 – 0,7	0,7 – 1,4
1.606.2503.50	25	M25x1,5	36	42	91	16	16,9 – 26	20	16,4	25	0 – 0,7	0,9 – 1,6
1.606.3203.50	32	M32x1,5	46	52	96	16	22 – 33	26	21,4	45	0 – 0,7	1,3 – 2,0
1.606.4003.50	40	M40x1,5	55	64	107	16	28 – 41	33,2	27,6	70	0 – 0,7	1,3 – 2,0
1.606.5003.50	50	M50x1,5	65	73	131,5	16	36 – 52,6	44,2	37,5	85	0 – 1,0	1,5 – 2,5
1.606.6303.50	63	M63x1,5	80	90	144,5	16	46 – 65,3	56,2	47,3	120	0 – 1,0	1,5 – 2,5
1.606.7503.50	75	M75x1,5	95	107	154	16	57 – 78	68,2	58	150	0 – 1,0	1,5 – 2,5

NPT nickel plated brass

Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 max. inner sheath	⌀ A3 max. over cores	Armour ⌀ mm max. No. cores	Armour ⌀ mm Clamping ring 1	Armour ⌀ mm Clamping ring 2
1.606.3803.70	20 – 1	NPT 3/8"	22	27	64,0	16	6 – 12	8,2	7,9	8	0 – 0,7	0,7 – 1,25
1.606.1203.70	20 – 2	NPT 1/2"	24	29	68,0	20	9 – 16	12	8,8	10	0 – 0,7	0,7 – 1,25
1.606.1203.71	20 – 3	NPT 1/2"	30	35	73,0	20	12,5 – 20,5	14	11,5	15	0 – 0,7	0,7 – 1,4
1.606.3403.70	25	NPT 3/4"	36	42	81,3	20,5	16,9 – 26	20	16,4	25	0 – 0,7	0,9 – 1,6
1.606.1003.70	32	NPT 1"	46	52	85,5	25	22 – 33	26	21,4	45	0 – 0,7	1,3 – 2,0
1.606.5403.70	40	NPT 1 1/4"	55	64	94,4	26	28 – 41	33,2	27,6	70	0 – 0,7	1,3 – 2,0
1.606.6403.70	40	NPT 1 1/2"	55	64	94,4	26,5	28 – 41	33,2	27,6	70	0 – 0,7	1,3 – 2,0
1.606.2003.70	50	NPT 2"	65	73	116,3	27	36 – 52,6	44,2	37,5	85	0 – 1,0	1,5 – 2,5
1.606.5203.70	63	NPT 2 1/2"	80	90	127,6	40	46 – 65,3	56,2	47,3	120	0 – 1,0	1,5 – 2,5
1.606.3003.70	75	NPT 3"	95	107	136,5	41,5	57 – 78	68,2	58	150	0 – 1,0	1,5 – 2,5

EXIOS + BARRIER

The innovative and advanced design of the EXIOS is available as a barrier version.

The EXIOS Barrier has all the outstanding EXIOS features, but uses a compound barrier to make it flameproof. Whenever installation requires a barrier gland, EXIOS Barrier is your solution.

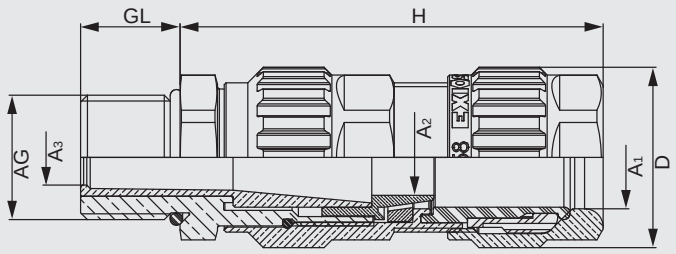
The INOX version of the EXIOS always guarantees the best corrosion protection for offshore applications and other challenging areas.

- According to the IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- I M2 Ex db eb I Mb IIC Gb / Ex ta IIIC Da
- Equipment Protection Level MbGbDa

- IP 66, 67 and 68 (5 bar / 30 minutes)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard



Type: EXIOS BARRIER	Materials and Technical Data
Material	INOX 1.4404
Seals / O-Rings	silicone, VMQ
Compound	Epoxy-Putty
Clamping insert	PA 6
Armour	Metallic Armour or Screen
Temperature Range	-60° C – 85° C (-76 °F – 185 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx SIR 11.0044X Sira 11 ATEX 1110X CSA 2557737



Metric INOX 1.4404

										Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 max. inner sheath	⌀ A3 max. over cores	max. No. cores	Clamping ring 1	Clamping ring 2
1.606.1602.50	20 – 1	M16 x 1,5	22	27	35,6	16	6 – 12	8,2	7,9	8	0 – 0,7	0,7 – 1,25
1.606.2002.50	20 – 1	M20 x 1,5	22	27	68,5	16	6 – 12	8,2	7,9	8	0 – 0,7	0,7 – 1,25
1.606.2002.51	20 – 2	M20 x 1,5	24	29	74,3	16	9 – 16	12	8,8	10	0 – 0,7	0,7 – 1,25
1.606.2002.52	20 – 3	M20 x 1,5	30	35	80,5	16	12,5 – 20,5	14	11,5	15	0 – 0,7	0,7 – 11,4
1.606.2502.51	20 – 3	M25 x 1,5	30	35	80,5	16	12,5 – 20,5	14	11,5	15	0 – 0,7	0,7 – 11,4
1.606.2502.50	25	M25 x 1,5	36	42	91	16	17 – 26	20	16,4	25	0 – 0,7	0,9 – 1,6
1.606.3202.50	32	M32 x 1,5	46	52	96	16	22 – 33	26	21,4	45	0 – 0,7	1,3 – 2
1.606.4002.50	40	M40 x 1,5	55	64	107	16	28 – 41	33,2	27,6	70	0 – 0,7	1,3 – 2
1.606.5002.50	50	M50 x 1,5	65	73	131,5	16	36 – 52,6	44,2	37,5	85	0 –	1,5 – 2,5
1.606.6302.50	63	M63 x 1,5	80	90	144,5	16	46 – 66	56,2	47,3	120	0 – 1	1,5 – 2,5
1.606.7502.50	75	M75 x 1,5	59	107	154	16	58 – 78	68,2	58	150	0 – 1	1,5 – 2,5

NPT INOX 1.4404

										Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 max. inner sheath	⌀ A3 max. over cores	max. No. cores	Clamping ring 1	Clamping ring 2
1.606.3802.70	20 – 1	NPT 3/8"	22	27	64	16	6 – 12	8,2	7,9	8	0 – 0,7	0,7 – 1,25
1.606.1202.70	20 – 2	NPT 1/2"	24	29	68	16	9 – 16	12	8,8	10	0 – 0,7	0,7 – 1,25
1.606.1202.71	20 – 3	NPT 1/2"	30	35	73	16	12,5 – 20,5	14	11,5	15	0 – 0,7	0,7 – 1,4
1.606.3402.70	25	NPT 3/4"	36	42	81,3	16	17 – 26	20	16,4	25	0 – 0,7	0,9 – 1,6
1.606.1002.70	32	NPT 1"	46	52	85,5	16	22 – 33	26	21,4	45	0 – 0,7	1,3 – 2
1.606.5402.70	40	NPT 1 1/4"	55	64	94,4	16	28 – 41	33,2	27,6	70	0 – 0,7	1,3 – 2
1.606.6402.70	40	NPT 1 1/2"	55	64	94,4	16	28 – 41	33,2	27,6	70	0 – 0,7	1,3 – 2
1.606.2002.70	50	NPT 2"	65	73	116,3	16	36 – 52,6	44,2	37,5	85	0 – 1	1,5 – 2,5
1.606.5202.70	63	NPT 2 1/2"	80	90	127,6	16	46 – 66	56,2	47,3	120	0 – 1	1,5 – 2,5
1.606.3002.70	75	NPT 3"	95	107	136,5	16	58 – 78	68,2	58	150	0 – 1	1,5 – 2,5

EXIOS + A2F

With the EXIOS A2F, HUMMEL follows the successful design of the EXIOS range of cable glands. This model is especially designed for unarmoured and braided cables where durability and quality is a must.

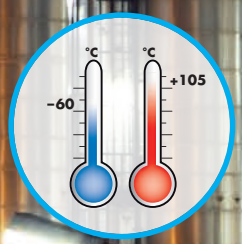
The EXIOS A2F incorporates the time-proven HUMMEL clamping system, which offers a large clamping range in a small gland size. Therefore a smaller gland size can often be used.

- According to the latest IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- II 2G Ex db eb IIC Gb / II 1D Ex ta IIIC Da
- Equipment Protection Level GbDa

- IP 66, 67 and 68 (5 bar)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard

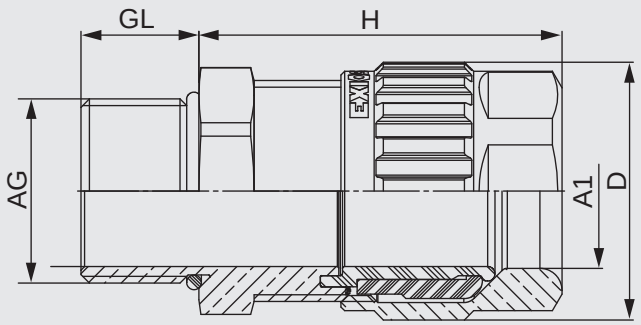






Ex d
Ex e
IECEx
ATEX
ABS
DNV
ktl

Type: EXIOS A2F	Materials and Technical Data
Material	nickel-plated brass
Seals / O-Rings	silicone, VMQ
Clamping insert	PA 6
Temperature Range	-60° C – 105° C (-76 °F – 221 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx DEK 12.0039X DEKRA 12 ATEX 0139X CSA 2557737



Metric nickel plated brass

Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm
1.608.1603.50	20 – 1	M16x1,5	22	27	35,6	16	6 – 12
1.608.2003.50	20 – 1	M20x1,5	22	27	35,6	16	6 – 12
1.608.2003.51	20 – 2	M20x1,5	24	29	39,7	16	9 – 16
1.608.2503.50	20 – 3	M25x1,5	30	35	47,5	16	12,5 – 20,5
1.608.3203.50	25	M32x1,5	36	42	47,8	16	16,9 – 26
1.608.4003.50	32	M40x1,5	46	52	51,1	16	22 – 33
1.608.5003.50	40	M50x1,5	55	64	56,8	16	28 – 41
1.608.6303.50	50	M63x1,5	65	73	65,4	16	40 – 52,6
1.608.7503.50	63	M75x1,5	80	90	70,3	16	51 – 65,3
1.608.9003.50	75	M90x2,0	95	107	76,2	20	62 – 78

NPT nickel plated brass

Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm
1.608.1203.70	20 – 1	NPT 1/2"	22/24	27	35,6	20	6 – 12
1.608.1203.71	20 – 2	NPT 1/2"	24	29	39,7	20	9 – 16
1.608.3403.70	20 – 3	NPT 3/4"	30	35	47,5	20,5	12,5 – 20,5
1.608.1003.70	25	NPT 1"	36	42	47,8	25	16,9 – 26
1.608.5403.70	32	NPT 1 1/4"	46	52	51,1	26	22 – 33
1.608.6403.70	40	NPT 1 1/2"	55	64	56,8	26,5	28 – 41
1.608.2003.70	50	NPT 2"	65	73	65,4	27	40 – 52,6
1.608.5203.70	63	NPT 2 1/2"	80	90	70,3	40	51 – 61
1.608.3003.70	75	NPT 3"	95	107	76,2	41,5	62 – 78

EXIOS + A2F

With the EXIOS A2F, HUMMEL follows the successful design of the EXIOS range of cable glands. This model is especially designed for unarmoured and braided cables where durability and quality is a must.

The EXIOS A2F incorporates the time-proven HUMMEL clamping system, which offers a large clamping range in a small gland size. Therefore a smaller gland size can often be used.

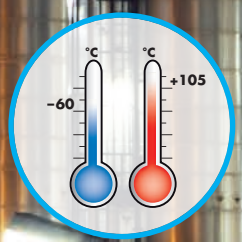
The INOX version of the EXIOS always guarantees the best corrosion protection for offshore applications and other challenging areas.

- According to the latest IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- II 2G Ex db eb IIC Gb / II 1D Ex ta IIIC Da
- Equipment Protection Level GbDa

- IP 66, 67 and 68 (5 bar)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard



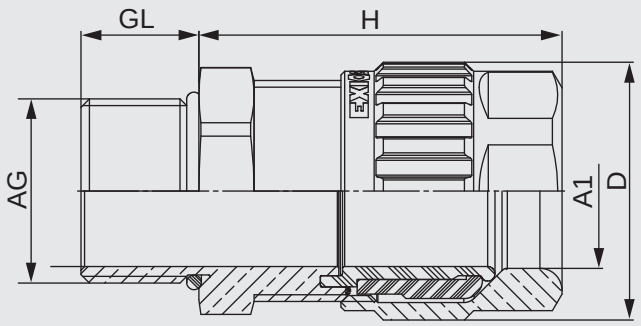




Ex d Ex e IECEx ATEX ABS DNV ktl

HUMMEL
smart & reliable connections

Type: EXIOS A2F	Materials and Technical Data
Material	INOX 1.4404
Seals / O-Rings	silicone, VMQ
Clamping insert	PA 6
Temperature Range	-60° C – 105° C (-76 °F – 221 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx DEK 12.0039X DEKRA 12 ATEX 0139X CSA 2557737



Metric INOX 1.4404

Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm
1.608.1602.50	20 – 1	M16 x 1,5	22	27	35,6	16	6 – 12
1.608.2002.50	20 – 1	M20 x 1,5	22	27	35,6	16	6 – 12
1.608.2002.51	20 – 2	M20 x 1,5	24	29	39,7	16	9 – 16
1.608.2502.50	20 – 3	M25 x 1,5	30	35	47,5	16	12,5 – 20,5
1.608.3202.50	25	M32 x 1,5	46	42	47,8	16	16,9 – 26
1.608.4002.50	32	M40 x 1,5	55	52	51,1	16	22 – 33
1.608.5002.50	40	M50 x 1,5	65	64	56,8	16	28 – 41
1.608.6302.50	50	M63 x 1,5	80	73	65,4	16	40 – 52,6
1.608.7502.50	63	M75 x 1,5	95	90	72	16	51 – 65,3
1.608.9002.50	75	M90 x 1,5	95	107	76,2	20	62 – 78

NPT INOX 1.4404

Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm
1.608.3802.70	20 – 1	NPT 3/8"	22	27	35,6	16	6 – 12
1.608.1202.70	20 – 1	NPT 1/2"	24	27	35,6	20	6 – 12
1.608.1202.71	20 – 2	NPT 1/2"	24	29	39,7	20	9 – 16
1.608.3402.70	20 – 3	NPT 3/4"	30	35	47,5	20,5	12,5 – 20,5
1.608.1002.70	25	NPT 1"	36	42	47,8	25	16,9 – 26
1.608.5402.70	32	NPT 1 1/4"	46	52	51,1	26	22 – 33
1.608.6402.70	40	NPT 1 1/2"	55	64	56,8	26,5	28 – 41
1.608.2002.70	50	NPT 2"	65	73	65,4	27	40 – 52,6
1.608.5202.70	63	NPT 2 1/2"	80	90	72	40	51 – 65,3
1.608.3002.70	75	NPT 3"	95	107	76,2	41,5	62 – 78

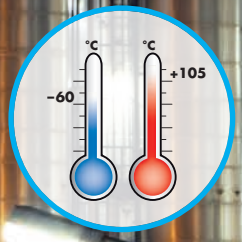
EXIOS +MZ

- Dual seal on the inner and outer sheath of the cable
- Time-proven HUMMEL clamping system
- Armour acceptance range from 0 – 2,5 mm
- Exceptional clamping range
- Innovative „Interlocking Armour Cone“
- Zero torsion on cable cores and armour
- Fast and easy pre-assembly by hand by the use of profile material with maximum grip
- With additional cable clamp (MZ)

- According to the IECEx and ATEX standards
- Ex eb / Ex db / Ex ta
- Zones 1, 2, 20, 21, 22
- II 2G Ex d e IIC Gb / II 1D Ex ta IIIC Da
- Equipment Protection Level Gb / Da

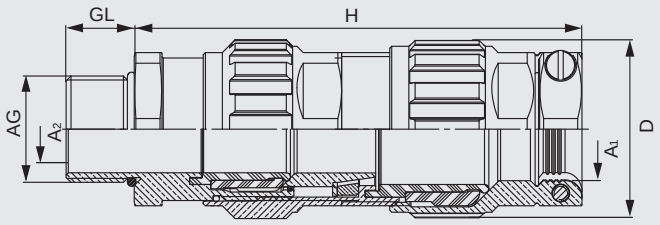
- IP 66, 67 and 68 (5 bar / 30 minutes)
- Halogen- and phosphorous-free
- Silicone Seals and O-Ring are standard





Ex d
Ex e
IECEx
ATEX
ABS
DNV
ktl

Type: EXIOS MZ	Materials and Technical Data
Material	nickel-plated brass
Seals / O-Rings	silicone, VMQ
Clamping insert	PA 6
Armour	Metallic Armour or Screen
Temperature Range	-60° C – 105° C (-76 °F – 221 °F)
Protection	IP 66, 67 and 68 (5 bar)
Certificate	IECEx BVS 10.0078 X BVS 10 ATEX E 062 X



Metric nickel plated brass

									Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 mm	Clamping ring 1	Clamping ring 2	Ring3 optional
1.6Z5.1603.50	20 – 1	M16 x 1,5	22	27	79	16	6 – 11	3 – 8,1	0 – 0,7	0,7 – 1,25	–
1.6Z5.2003.50	20 – 1	M20 x 1,5	22	27	79	16	6 – 11	3 – 8,1	0 – 0,7	0,7 – 1,25	–
1.6Z5.2003.51	20 – 2	M20 x 1,5	24	29	83,8	16	9 – 13	6 – 12	0 – 0,7	0,7 – 1,25	–
1.6Z5.2003.52	20 – 3	M20 x 1,5	30	35	91,5	16	12,5 – 17,5	9 – 14	0 – 0,7	0,7 – 1,4	
1.6Z5.2503.50	25	M25 x 1,5	36	42	105,7	16	16,9 – 24	12,5 – 20,5	0 – 0,7	0,9 – 1,6	0,7 – 1,4
1.6Z5.2503.51	20 – 3	M25 x 1,5	30	35	91,5	16	12,5 – 17,5	9 – 14	0 – 0,7	0,7 – 1,4	
1.6Z5.3203.50	32	M32 x 1,5	46	52	107	16	22 – 32,5	16,9 – 26	0 – 0,7	1,3 – 2	0,7 – 1,4
1.6Z5.4003.50	40	M40 x 1,5	55	64	120	16	28 – 39,5	22 – 33	0 – 0,7	1,3 – 2	0,7 – 1,4
1.6Z5.5003.50	50	M50 x 1,5	65	73	144,5	16	36 – 49	28,9 – 44,4	0 – 1	1,5 – 2,5	1 – 2
1.6Z5.6303.50	63	M63 x 1,5	80	90	157,5	16	46 – 64	39,9 – 56,3	0 – 1	1,5 – 2,5	1 – 2
1.6Z5.7503.50	75	M75 x 1,5	95	107	167	16	57 – 78	50,5 – 68,2	0 – 1	1,5 – 2,5	1 – 2

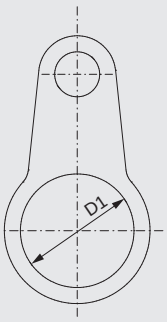
NPT nickel plated brass

									Armour ⌀ mm		
Number	Gland Size	AG	mm	D mm	H max.	GL mm	⌀ A1 mm	⌀ A2 mm	Clamping ring 1	Clamping ring 2	Ring3 optional
1.6Z5.1203.70	20 – 2	NPT 1/2"	24	29	83,8	20	9 – 13	6 – 12	0 – 0,7	0,7 – 1,25	–
1.6Z5.1203.71	20 – 3	NPT 1/2"	30	35	91,5	20	12,5 – 17,5	9 – 14	0 – 0,7	0,7 – 1,4	–
1.6Z5.3403.70	25	NPT 3/4"	36	42	105,7	20,5	16,9 – 24	12,5 – 20,5	0 – 0,7	0,9 – 1,6	0,7 – 1,4
1.6Z5.1003.70	32	NPT 1"	46	52	107	25	22 – 32,5	16,9 – 26	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.6Z5.5403.70	40	NPT 1 1/4"	55	64	120	26	28 – 39,5	22 – 33	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.6Z5.6403.70	40	NPT 1 1/2"	55	64	120	26,5	28 – 39,5	22 – 33	0 – 0,7	1,3 – 2,0	0,7 – 1,4
1.6Z5.2003.70	50	NPT 2"	65	73	144,5	27	36 – 49	28,9 – 44,4	0 – 1,0	1,5 – 2,5	1,0 – 2,0
1.6Z5.5203.70	63	NPT 2 1/2"	80	90	157,5	40	46 – 64	39,9 – 56,3	0 – 1,0	1,5 – 2,5	1,0 – 2,0
1.6Z5.3003.70	75	NPT 3"	95	107	167	41,5	57 – 78	50,5 – 68,2	0 – 1,0	1,5 – 2,5	1,0 – 2,0

Accessories

Earth tag brass





Metric	Item No.	NPT	Item No.
M16	1.022.1600.50	1/2"	1.022.1200.70
M20	1.022.2000.50	3/4"	1.022.3400.70
M25	1.022.2500.50	1"	1.022.1000.70
M32	1.022.3200.50	1 1/4"	1.022.5400.70
M40	1.022.4000.50	1 1/2"	1.022.6400.70
M50	1.022.5000.50	2"	1.022.2000.70
M63	1.022.6300.50	2 1/2"	1.022.5200.70
M75	1.022.7500.50	3"	1.022.3000.70

Red fibre washer



Metric	Item No.	NPT	Item No.
M16	1.326.1600.50	1/2"	1.326.1200.70
M20	1.326.2000.50	3/4"	1.326.3400.70
M25	1.326.2500.50	1"	1.326.1000.70
M32	1.326.3200.50	1 1/4"	1.326.5400.70
M40	1.326.4000.50	1 1/2"	1.326.6400.70
M50	1.326.5000.50	2"	1.326.2000.70
M63	1.326.6300.50	2 1/2"	1.326.5200.70
M75	1.326.7500.50	3"	1.326.3000.70

PVC shroud (LSF upon request)

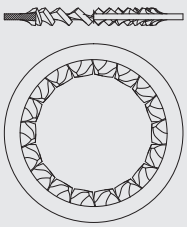


EXIOS Size	Item No.
20 – 1	1.802.2000.50
20 – 2	1.802.2000.51
20 – 3	1.802.2000.52
25	1.802.2500.50
32	1.802.3200.50
40	1.802.4000.50
50	1.802.5000.50
63	1.802.6300.50
75	1.802.7500.50

Accessories

Serrated Washer INOX

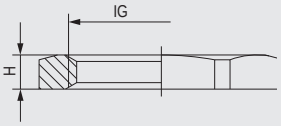




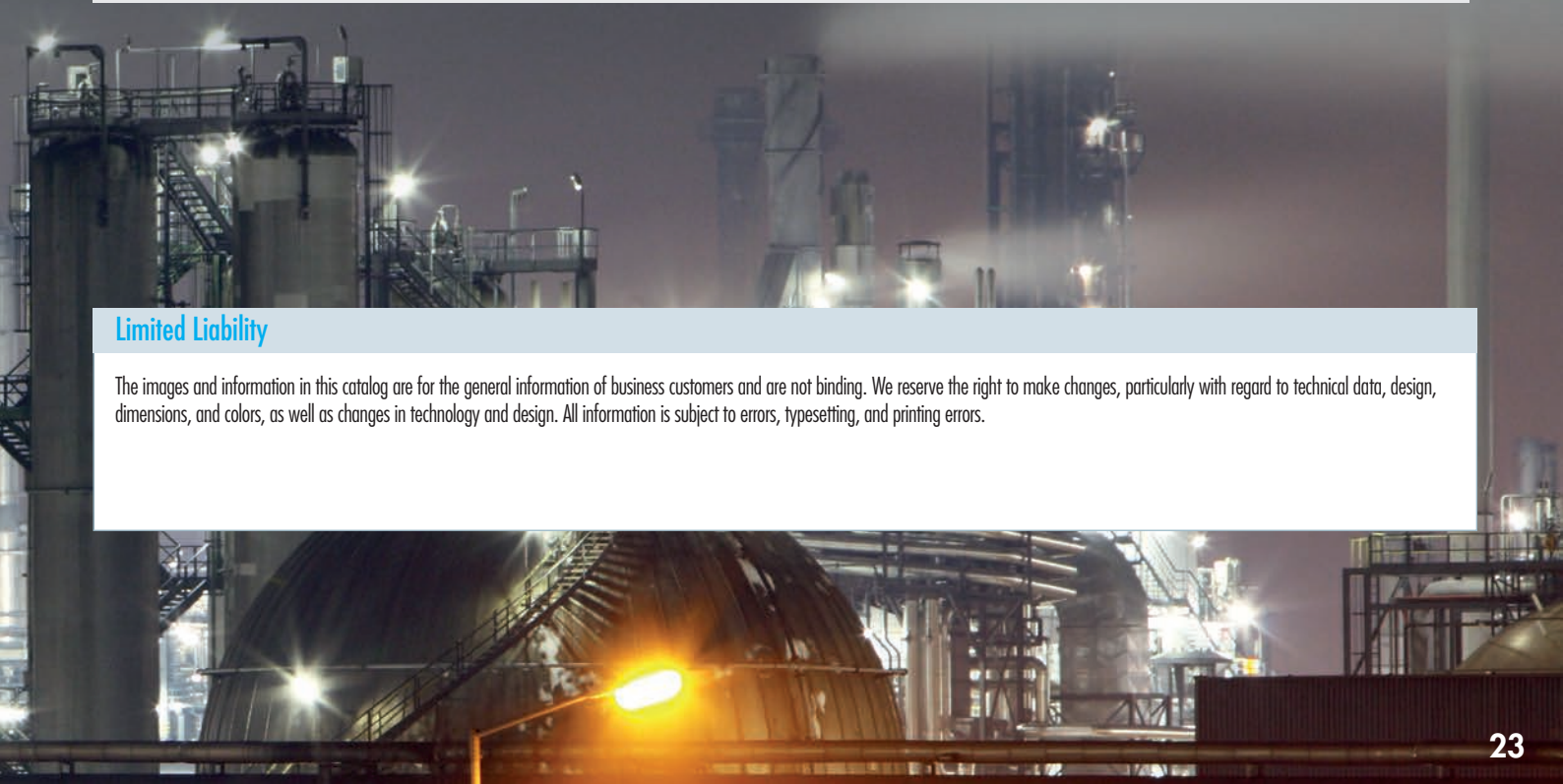
Metric	Item No.	NPT	Item No.
M16	1.329.1600.50	1/2"	1.329.1600.70
M20	1.329.2000.50	3/4"	1.329.3400.70
M25	1.329.2500.50	1"	1.329.1000.70
M32	1.329.3200.50	1 1/4"	1.329.5400.70
M40	1.329.4000.50	1 1/2"	1.329.6400.70
M50	1.329.5000.50	2"	1.329.2000.70
M63	1.329.6300.50	2 1/2"	1.329.5200.70
M75	1.329.7500.50	3"	1.329.3000.70

Locknut nickel plated brass (GM-Ms)





IG	H	mm	Item No. mm
M16x1,5	2,8	19	1.161.1600.50
M20x1,5	3,0	23	1.161.2000.50
M25x1,5	3,5	29	1.161.2500.50
M32x1,5	4,0	36	1.161.3200.50
M40x1,5	4,5	45	1.161.4000.50
M50x1,5	5,5	55	1.161.5000.50
M63x1,5	6,0	70	1.161.6300.50
M75x1,5	8,0	85	1.161.7500.50



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