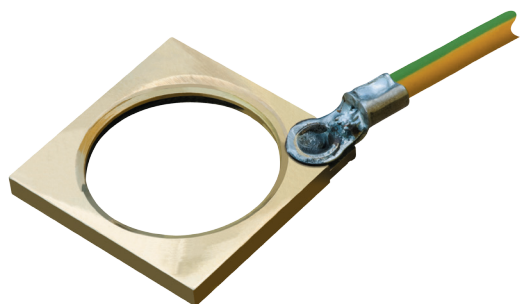




# Threaded earth plates - Redapt

Hazardous area accessories



## Features

- Maintains earth continuity
- International Ex certifications
- Various threadforms available
- Supplied with earth lead



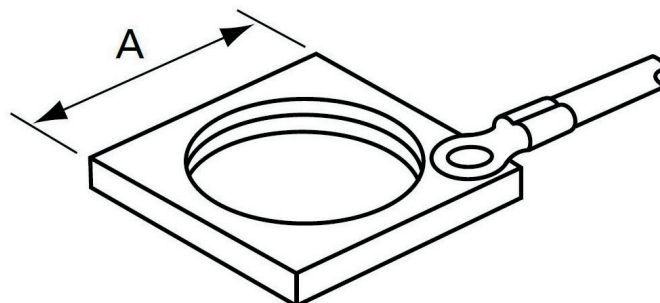
## Technical specification

Threaded earth plates	
ATEX marking	Ex II 2GD, Ex e II
ATEX certification	SIRA 00 ATEX 1073U
Temperature range	This product is classified as a component; these metallic products are not given an operating temperature range.
Material	brass

## Dimensions

THREAD SIZE	A	EARTH LEAD DIAMETER (length 300 mm)
M16	22.0	2.50 mm <sup>2</sup>
M20	30.0	2.50 mm <sup>2</sup>
M25	32.0	4.00 mm <sup>2</sup>
M32	38.0	6.00 mm <sup>2</sup>

All dimensions in mm.



## Ordering codes (Redapt)

DIGITS 1 & 2 DESCRIPTION (THREADED EARTH PLATE)	CODE	DIGIT 3		DIGIT 4		DIGIT 5		DIGITS 6 & 7 FEMALE / DIGITS 8 & 9 FEMALE (non applicable)					
		CERTIFICATE	CODE	MATERIAL	CODE	PLATING	CODE	THREAD SIZE / CODE					
Threaded earth plate	ET	Ex e	E	Brass	1	None	0	M16	03	½" NPT	29		
								M20	04	¾" NPT	30		
								M25	05	1" NPT	31		
								M32	06	1¼" NPT	32		
								M40	07	1½" NPT	33		
								M50	08	2" NPT	34		
								M63	09	2½" NPT	35		
								M75	10	3" NPT	36		
								Industrial	F				

Other sizes/threadforms available on request

PRODUCT CODE EXAMPLE	EARTH PLATE	Ex e	BRASS	PLATING (NONE)	M25	--	REFERENCE
	ET	E	1	0	05	00	= ETE100500

For more information about product coding, see page 3.25

# Breather drains (metallic) Ex e - Redapt

Hazardous area accessories



## Features

- Drains moisture from an enclosure (Ex e) and allows air to vent into atmosphere, minimising moisture build up
- The Ex certification of the equipment is not affected
- IEC Ex international certification
- Maintains IP66 ingress protection
- Available in 2 thread lengths: 10 mm with 2 drainage holes or 15 mm with 3 drainage holes
- Brass, stainless steel, aluminium and glass-filled nylon versions available



IP66

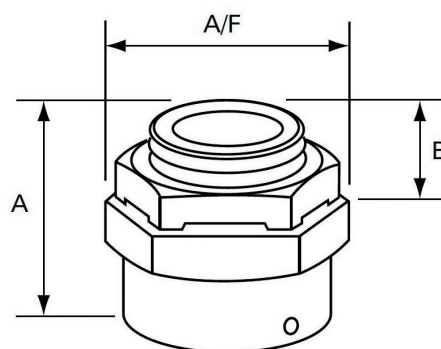
## Technical specification

Breather drains Ex e (metallic)	
ATEX marking (brass/stainless steel 316L)	Ex I M2, Ex e I Mb
	Ex II 2 GD, Ex e IIC Gb, Ex tb IIIC Db IP66
ATEX marking (aluminium)	Ex II 2 GD, Ex e IIC Gb, Ex tb IIIC Db IP66
ATEX certification	SIRA 99 ATEX 3050X
IEC Ex certification	IECEX SIR 08.0024X
Other certificates	CSA: 185887-2500003408 (LR 106084) EAC: TR RU C-GB.GB06.B.00106
Temperature range	Metallic body dependent on filter and seal material
	Nitrile: -30 °C to +100 °C (standard version)
	EPDM: -50 °C to +125 °C
	Neoprene: -40 °C to +100 °C
	Viton: -20 °C to +180 °C
	Silicone: -50 °C to +180 °C
	Fluorosilicone: -70 °C to +150 °C
Ingress protection	IP66
Material	Brass, aluminium, stainless steel 316L

## Dimensions

THREAD SIZE	ACROSS FLATS A/F	TOTAL LENGTH A	MALETHREAD LENGTH SIZE B
M20	28.60	23.00 (min)	10.00 (min)
M25	34.90	23.00 (min)	10.00 (min)
M32	41.30	23.00 (min)	10.00 (min)
½"NPT	28.60	28.00 (min)	15.00 (min)
¾"NPT	34.90	28.00 (min)	15.00 (min)
1"NPT	41.30	28.00 (min)	15.00 (min)

All dimensions in mm.



## Ordering codes (Redapt)

DIGITS 1 & 2 DESCRIPTION (BREATHER DRAINS Ex e)	DIGIT 3 CODE	DIGIT 4 CERTIFICATE CODE	DIGIT 5 MATERIAL CODE	DIGIT 6 PLATING CODE	DIGIT 7 THREAD SIZE / DIGITS 8 & 9 THREAD LENGTH CODE	DIGITS 6 & 7 THREAD SIZE / DIGITS 8 & 9 THREAD LENGTH
Breather drains Ex e	DP	Ex e	E	1	0	M20 04 10mm / 2 holes / with castellated locknut S1
				3	1	M25 05 10mm / 2 holes / no castellated locknut S2
				5	2	M32 06 15mm / 3 holes / with castellated locknut S3
						½" NPT 29 15mm / 3 holes / no castellated locknut S4
						¾" NPT 30
						1" NPT 31
	Industrial	F				

Other sizes/threadforms available on request

PRODUCT CODE EXAMPLE	BREATHER DRAIN	Ex e	ST.STEEL	PLATING (NONE)	M20	10mm 2 HOLES	REFERENCE
	DP	E	3	0	04	S1	= DPE3004S1

For more information about product coding, see page 3.25



# Breather drains (nylon) Ex e - Redapt



Type DPE4

## Features

- Drains moisture from an enclosure (Ex e) and allows air to vent into atmosphere, minimising moisture build up
- The Ex certification of the equipment is not affected
- IEC Ex international certification
- Maintains IP66 ingress protection
- Available in 2 thread lengths: 10 mm with 2 drainage holes or 15 mm with 3 drainage holes
- Brass, stainless steel and aluminium versions also available



IP66

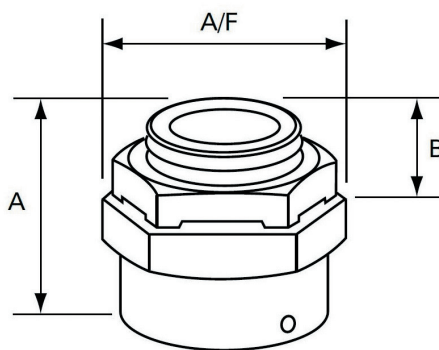
## Technical specification

Breather drains Ex e (nylon)	
ATEX marking (nylon)	Ex e IIC Gb, Ex tb IIIC Db IP66
ATEX certification	SIRA 99 ATEX 3050X, ITS16ATEX101338X
IEC Ex certification	IECEX SIR 08.0024X, IECEx ITS 16.0014X
Other certificates	CSA: 185887-2500003408 (LR 106084) EAC: TR RU C-GB.GB06.B.00106
Temperature range	Nylon body: -50 °C to +125 °C unless limited by filter material HDPE filter: -50 °C to +85 °C Nitrile: -30 °C to +100 °C (standard version) EPDM: -50 °C to +125 °C Neoprene: -40 °C to +100 °C Viton: -20 °C to +180 °C Silicone: -50 °C to +180 °C Fluorosilicone: -70 °C to +150 °C
Ingress protection	IP66
Material	Glass-filled nylon

## Dimensions

THREAD SIZE	ACROSS FLATS A/F	TOTAL LENGTH A	MALETHREAD LENGTH SIZE B
M20	28.60	23.00 (min)	10.00 (min)
M25	34.90	23.00 (min)	10.00 (min)
M32	41.30	23.00 (min)	10.00 (min)
½" NPT	28.60	28.00 (min)	15.00 (min)
¾" NPT	34.90	28.00 (min)	15.00 (min)
1" NPT	41.30	28.00 (min)	15.00 (min)

All dimensions in mm.



## Ordering codes (Redapt)

DIGITS 1 & 2 DESCRIPTION (BREATHER DRAINS Ex e)	DIGIT 3	DIGIT 4	DIGIT 5	DIGITS 6 & 7 THREAD SIZE / DIGITS 8 & 9 THREAD LENGTH
CODE	CERTIFICATE CODE	MATERIAL	PLATING	THREAD SIZE / CODE
Breather drains Ex e	DP	Ex e	E	Glass-filled nylon
			4	None
			0	
				M20 04 10mm / 2 holes / with castellated locknut S1
				M25 05 10mm / 2 holes / no castellated locknut S2
				M32 06 15mm / 3 holes / with castellated locknut S3
				½" NPT 29 15mm / 3 holes / no castellated locknut S4
				¾" NPT 30
				1" NPT 31
	Industrial	F		

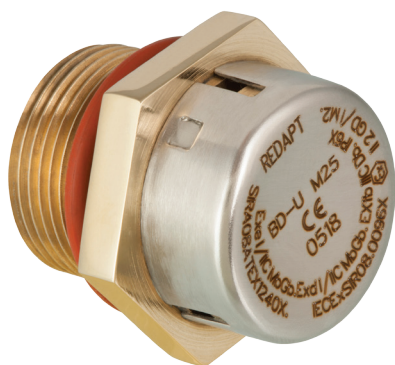
Other sizes/threadforms available on request

PRODUCT CODE EXAMPLE	BREATHER DRAIN	Ex e	ST.STEEL	PLATING (NONE)	M20	10mm 2 HOLES	REFERENCE
	DP	E	4	0	04	S1	= DPE3004S1

For more information about product coding, see page 3.25

# Breather drains Ex d/Ex e - Redapt

Hazardous area accessories



## Features

- Drains moisture from an enclosure (Ex d / Ex e) and allows air to vent into atmosphere, minimising moisture build up
- The Ex certification of the equipment is not affected
- IEC Ex international certification
- Maintains IP66 ingress protection
- Available in brass or stainless steel 316L and with various O-ring materials



IP66

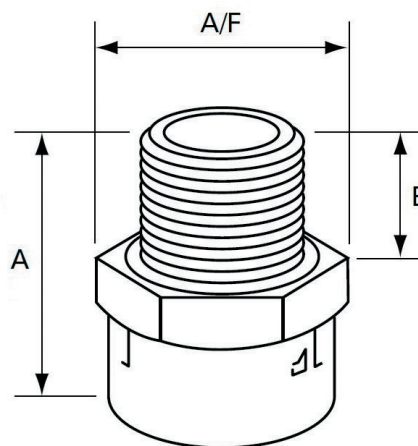
## Technical specification

Breather drains Ex d / Ex e	
ATEX marking	Ex I M2, Ex d I Mb, Ex e I Mb Ex II 2 GD, Ex d IIC Gb, Ex e IIC Gb, Ex tb IIIC Db IP6X
ATEX certification	SIRA 08 ATEX 1240X
IEC Ex certification	IECEx SIR 08.0096X
Temperature range	Metallic body dependent on filter and seal material Nitrile: -20 °C to +80 °C EPDM: -30 °C to +125 °C Neoprene: -20 °C to +100 °C Viton: -5 °C to +150 °C Silicone: -30 °C to +150 °C (standard version) Fluorosilicone: -50 °C to +150 °C
Ingress protection	IP66
Material	brass, stainless steel 316L

## Dimensions

THREAD SIZE	ACROSS FLATS A/F	TOTAL LENGTH A	MALETHREAD LENGTH SIZE B
M20	27.00	31.00 (min)	16.00 (min)
M25	31.75	31.00 (min)	16.00 (min)
½"NPT	27.00	35.00 (min)	20.00 (min)
¾"NPT	31.75	35.00 (min)	20.00 (min)

All dimensions in mm.



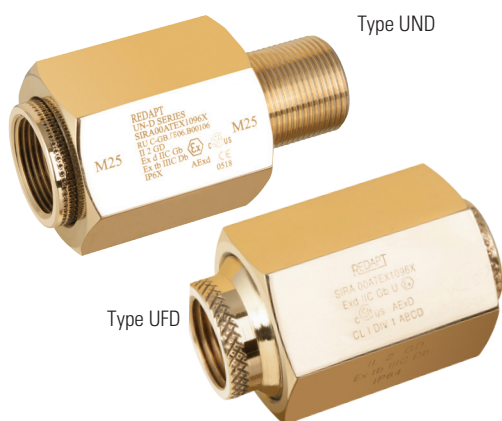
## Ordering codes (Redapt)

DIGITS 1 & 2 DESCRIPTION (BREATHER DRAINS Ex d/Ex e)	CODE	DIGIT 3 CERTIFICATE	DIGIT 4 CODE	DIGIT 5 MATERIAL	DIGIT 6 CODE	DIGIT 7 PLATING	DIGIT 8 CODE	DIGITS 6 & 7 THREAD SIZE / DIGITS 8 & 9 O-RING			
								THREAD SIZE / CODE	O-RING	REFERENCE	
Breather drains Ex d/Ex e	BD	Ex d / Ex e	U	Brass	1	None	0	M20	04	None	D0
					3	Nickel	1	M25	05	Silicone	D1
				Stainless steel 316L	2	Zinc	2	½" NPT	29	Fluorosilicone	D2
					3	None	2	¾" NPT	30	Viton	D3
								EPDM	D4		
								Neoprene	D5		
						Nitrile	D6				

Other sizes/threadforms available on request

PRODUCT CODE EXAMPLE	BREATHER DRAIN	Ex d / Ex e	BRASS	PLATING (NONE)	M20	SILICONE	REFERENCE
	BD	U	1	0	04	D1	= BDU1004D1

For more information about product coding, see page 3.25



### Features

- Solution to rotating connection
- Protects threads
- Maintains Ex certification
- Available in brass, stainless steel and aluminium
- Various threadforms available



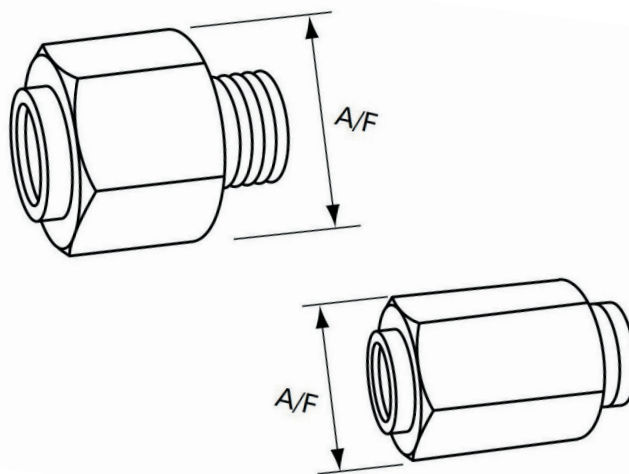
### Technical specification

	Unions
ATEX marking	Ex II 2 GD, Ex d IIC Gb, Ex tb IIIC Db, IP6X
ATEX certification	SIRA 00 ATEX 1096X
Other certificates	CSA: 1248014 (LR 106084) EAC: TR RU C-GB.GB06.B.00106
Temperature range	-50 °C to +180 °C
Ingress protection	IP66 / IP68
Material	brass, aluminium, stainless steel 316L

### Dimensions

UNION MALE TO FEMALE (UND)		UNION FEMALE TO FEMALE (UFD)	
THREAD SIZE	ACROSS FLATS A/F	THREAD SIZE	ACROSS FLATS A/F
M20	37.59	M20	37.59
M25	42.42	M25	42.42
M32	55.88	M32	55.88
M40	55.88	M40	55.88
M50	80.01	M50	80.01
M63	90.17	M63	90.17
M75	114.30	M75	114.30

All dimensions in mm.



### Ordering codes (Redapt)

DIGITS 1 & 2 DESCRIPTION (UNIONS)	DIGIT 3	DIGIT 4	DIGIT 5	DIGITS 6 & 7 MALE / DIGITS 8 & 9 FEMALE							
CODE	CERTIFICATE	CODE	PLATING	THREAD SIZE / CODE							
UNION M-F	UN	Ex d	D	Brass	1	None	0	M16	03	½" NPT	29
UNION F-F	UF			Stainless steel 316L	3	Nickel	1	M20	04	¾" NPT	30
				Aluminium	5	Zinc	2	M25	05	1" NPT	31
								M32	06	1¼" NPT	32
								M40	07	1½" NPT	33
								M50	08	2" NPT	34
								M63	09	2½" NPT	35
								M75	10	3" NPT	36
	Industrial		F								

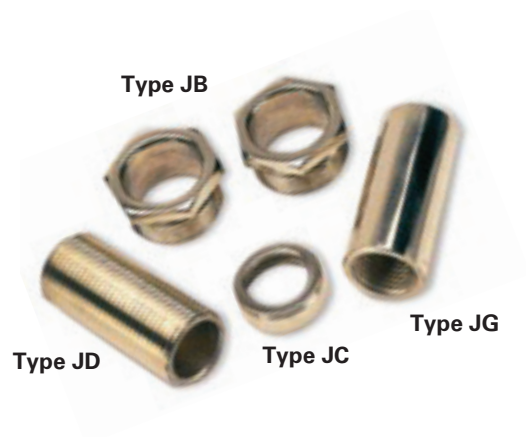
Other sizes/threadforms available on request

PRODUCT CODE EXAMPLE	UNION M-F	Ex d	ST.STEEL	PLATING (NONE)	M32	M25	REFERENCE
	UN	D	3	0	06	05	= UND300605

For more information about product coding, see page 3.25

# Accessories - metallic ISO / NPT threads - Raxton

Industrial cable glands and accessories



## Technical specification

- Different threadforms and materials available
- Male (JB) and female (JC) bushes are available
- Round couplers are type JG, and nipples are type JD
- Plating available on metallic finishes

### Nipples, couplers and bushes

Material: brass, mild steel, stainless steel 316L, aluminium, nylon

## Ordering codes (Raxton)

DIGITS 1 & 2 DESCRIPTION (NIPPLES...)	DIGIT 3		DIGITS 4 & 5 MALE / DIGITS 6 & 7 FEMALE				DIGIT 8		DIGIT 9		DIGIT 10	
	CODE	MATERIAL	CODE	THREADFORM/CODE	CERTIFICATE	CODE	SPECIAL	CODE	PLATING	CODE		
Male bush	JB	Brass	A	M16 11 ½" NPT	42	Industrial	X or blank	None (standard)	X or blank	None	blank	
Female bush	JC	Aluminium	B	M20 12 ¾" NPT	43					Nickel	N	
Nipple	JD	Mild steel	C	M25 13 1" NPT	44					Zinc	Z	
Round coupler	JG	Stainless steel 316L	E	M32 14 1¼" NPT	45					Chromatised	C	
			G	M40 15 1½" NPT	46					Special	S	
			R	M50 16 2" NPT	47							
				M63 17 2½" NPT	48							
				M75 18 3" NPT	49							

Other sizes/threadforms available on request

PRODUCT CODE EXAMPLE	MALE BUSH	BRASS	M25 (M)	--	--	CATALOG NUMBER
	JB	A	13	00		= JBA1300

For more information on product coding, see page 3.24



# Raxton product coding

## Hazardous area accessories

### Digits 1 & 2

DESCRIPTION	CODE	PAGE
M-F metallic adaptors	AB	3.4
M-F metallic reducers	BB	3.4
M-F glass-filled nylon adaptors	AJ	3.5
M-F glass-filled nylon reducers	BJ	3.5
Dome head stopping plugs	CQ	3.6
Flush fit stopping plugs	CB	3.7
Tamperproof flush fit stopping plugs	CF	3.7
Hex head stopping plugs	CK	3.8
Hollow hex head stopping plugs	CY	3.9
M-M adaptors	AR	3.10
F-F hex adaptors	AU	3.10
F-F round adaptors	AX	3.10

### Digit 3

MATERIAL	CODE
Brass	A
Aluminium	B
Mild steel	C
Stainless steel 316L	E
Glass-filled nylon	M

### Digit 8

CERTIFICATE	CODE
ATEX / IECEx / INMETRO / CSA / GOST Ex de (all certificates)	Y
ATEX Ex d	D
ATEX Ex e	E
Mining Group 1	M
Industrial	F
Industrial (no marking)	X

### Thread references

ISO	NPT		PG	BSP P		BSP T			
	SIZE	CODE		SIZE	CODE	SIZE	CODE		
M12	04	¼" NPT	40	PG7	20	½" BSP P	62	½" BSP T	52
M16	11	¾" NPT	41	PG9	21	¾" BSP P	63	¾" BSP T	53
M20	12	½" NPT	42	PG11	22	1" BSP P	64	1" BSP T	54
M25	13	¾" NPT	43	PG13.5	23	1¼" BSP P	65	1¼" BSP T	55
M32	14	1" NPT	44	PG16	24	1½" BSP P	66	1½" BSP T	56
M40	15	1¼" NPT	45	PG21	25	2" BSP P	67	2" BSP T	57
M50	16	1½" NPT	46	PG29	26	2½" BSP P	68	2½" BSP T	58
M63	17	2" NPT	47	PG36	27	3" BSP P	69	3" BSP T	59
M75	18	2½" NPT	48	PG42	28	SPECIAL BSP P	60	SPECIAL BSP T	50
M80 x 2.0	80	3" NPT	49	PG48	29				
M90 x 2.0	81	3½" NPT	86						
M100 x 2.0	82	4" NPT	87						
SPECIAL ISO	10	5" NPT	88						
		SPECIAL NPT	NT						

### Digit 9

SPECIAL	CODE
None (standard)	X or blank
O-ring	U

### Digit 10

PLATING	CODE
None	Blank
Nickel	N
Zinc	Z
Chrome	C

### Notes

The male thread is always specified first (digits 4+5), then the female thread (digits 6+7) with all of the digits used in case of M-M and F-F products. Other threadforms are available, please contact Customer Services.

The letter "F" (digit 8) indicates that the product is an industrial version marked with manufacturer and size. If there is no marking, i.e. with locknuts and washers, the letter "X" is then used.

The letter "U" (digit 9) indicates that the product is supplied with an O-ring. If there is no O-ring and no plating, the product code is finished at digit 8.

If there is no O-ring but plating is required, place the letter "X" for digit 9, then the corresponding letter for the required plating at digit 10.

Digit 10 for plating is blank if no plating is required.

PRODUCT CODE EXAMPLE	REDUCER	ST.STEEL	M32 (M)	M25 (F)	Ex d / Ex e	REFERENCE
	BB	E	14	13	Y	= BBE1413Y

For REDAPT product coding, see page 3.25



### Digits 1 & 2

DESCRIPTION	CODE	PAGE
M-F insulating adaptors	DB	3.11
M-F right angle adaptors	AR	3.12
M-F swivel adaptors inline	TA	3.13
M-F swivel adaptors (90°)	TP	3.13
M-F 'Y' adaptors	AY	3.14
M-F 'T' adaptors	AT	3.15
Earth lead adaptors	AE	3.16
Threaded earth plates	ET	3.17
Breather drains Ex e	DP	3.18
Breather drains Ex d/Ex e	BD	3.19
Unions	UN	3.20

### Digit 3

CERTIFICATE	CODE
Ex d I and IIC and Ex e I and IIC	U
Ex d I and IIC	D
Ex e I and IIC	E
Industrial (products with marking)	F

### Digit 4

MATERIAL	CODE
Brass	1
Mild steel	2
Stainless steel 316L	3
Aluminium	5

### Digit 5

PLATING	CODE
None	0
Nickel	1
Zinc	2
Chrome	6

### Thread references

ISO	NPT		PG		BSP P		BSP T		
	SIZE	CODE	SIZE	CODE	SIZE	CODE	SIZE	CODE	
M16	03	½" NPT	29	PG7	79	½" BSP P	55	½" BSP T	68
M20	04	¾" NPT	30	PG9	80	¾" BSP P	56	¾" BSP T	69
M25	05	1" NPT	31	PG11	81	1" BSP P	57	1" BSP T	70
M32	06	1¼" NPT	32	PG13.5	82	1¼" BSP P	58	1¼" BSP T	71
M40	07	1½" NPT	33	PG16	83	1½" BSP P	59	1½" BSP T	72
M50	08	2" NPT	34	PG21	84	2" BSP P	60	2" BSP T	73
M63	09	2½" NPT	35	PG29	85	2½" BSP P	61	2½" BSP T	74
M75	10	3" NPT	36	PG36	86	3" BSP P	62	3" BSP T	75
M80 x 2.0	11	3½" NPT	37	PG42	87	3½" BSP P	63	3½" BSP T	76
M85 x 2.0	12	4" NPT	38	PG48	88	4" BSP P	64	4" BSP T	77
M90 x 2.0	13	SPECIAL	NT	SPECIAL	PG	SPECIAL	BP	SPECIAL	BT
M100 x 2.0	14								
M110 x 2.0	15								
M120 x 2.0	BZ								
SPECIAL	MT								

### Digits 6 & 7 male threads/ digits 8 & 9 female threads

### PRODUCT CODE EXAMPLE

'Y' ADAPTOR	Ex d / Ex e	ST.STEEL	PLATING (NONE)	M32	M32	REFERENCE
AY	U	3	0	06	06	= AYU300606

### Product coding for DPE breather drains only (page 2.16)

PRODUCT	CERTIFICATE	MATERIAL	PLATING	THREAD SIZE	THREAD LENGTH	DRAINAGE HOLES	CASTELLATED LOCKNUT
DP Standard	E Ex e I and IIC	1 Brass	0 None	04 M20	S1 10 mm	2 holes	With
		3 Stainless steel 316L	1 Nickel	05 M25	S2 10 mm	2 holes	None
		4 Glass-filled nylon	2 Zinc	06 M32	S3 15 mm	3 holes	With
				29 1/2" NPT	S4 15 mm	3 holes	None
				30 3/4" NPT			
				31 1" NPT			

Notes: Glass-filled nylon version only available in S3 and S4 options (thread length 15 mm).  
NPT threaded versions only available in S3 and S4 options.

### Example

STANDARD	EX E I AND IIC	ST.STEEL	UNPLATED	M20	10 MM
DP	- E	- 3	- 0	- 04	- S1

### Product coding for BDU breather drains only (page 2.17)

PRODUCT	CERTIFICATE	MATERIAL	PLATING	THREAD SIZE	O-RING
BD Standard	U Ex d I and IIC et Ex e I and IIC	1 Brass	0 None	04 M20	D0 None
		3 Stainless steel	1 Nickel	05 M25	D1 Silicone
			2 Zinc	29 1/2" NPT	D2 Fluorosilicone
				30 3/4" NPT	D3 Viton
					D4 EPDM
					D5 Neoprene
			D6 Nitrile		

For RAXTON product coding, see page 3.24

### Example

STANDARD	EX E I AND IIC	ST.STEEL	UNPLATED	M20	O-RING SILICONE
BD	- U	- 3	- 0	- 04	- D1









V1301A04BA01  
Lagerbehälter 1304BA1  
Abwasser  
VDF-KI.2 -

<b>Selection guide - industrial cable glands .....</b>	<b>4.2</b>
<b>Brass or nickel-plated brass cable gland for non-armoured cable:</b>	
IGA2.....	4.4
<b>Brass or nickel-plated brass cable glands for armoured cable:</b>	
IGBW (single wire armoured (SWA) without seal) .....	4.5
IGCW (single wire armoured (SWA), single seal).....	4.6
IGCX (steel tape (STA) or wire braid (SWB) armoured, single seal).....	4.7
IGE1W (single wire armoured (SWA), double seal) .....	4.8
IGE1X (steel tape (STA) or wire braid (SWB) armoured, double seal).....	4.9
IGE2W (single wire armoured (SWA) lead sheathed cable, double seal) .....	4.10
IGE2X (steel tape (STA) or wire braid (SWB) armoured, lead sheathed cable, double seal).....	4.11
<b>Nickel-plated brass or stainless steel cable gland in for non-armoured cable or braided cable:</b>	
NEWCAP MS .....	4.12
NEWCAP CT (without braid interruption) .....	4.13
<b>Nickel-plated brass cable gland for flat cable / multi-wire cable:</b>	
NEWCAP MS multi-wire cable / flat cable .....	4.14
<b>Steel/iron alloy cable gland for non-armoured/tray cable:</b>	
CGB .....	4.16
<b>Accessories</b>	
Accessories - metallic ISO thread .....	4.18
Accessories - metallic Pg thread .....	4.20
Accessories - polyamide ISO thread .....	4.22
Accessories - polyamide Pg thread .....	4.23
Sealing accessories / Reducing ring .....	4.24
JUDODIX ISO conduit connector in nickel-plated brass.....	4.25
JUDODIX Pg conduit connector in nickel-plated brass.....	4.26
JUDODIX ISO/Pg conduit connector in stainless steel 316L.....	4.27








Additional products such as non-metallic cable glands can be found in our MOEM solutions catalogue

# Selection guide for cable glands for non-hazardous areas

Non-armoured cable glands		Cable type	Material options	Key points
<b>IGA2 cable gland page 4.4</b>		<ul style="list-style-type: none"> <li>Non-armoured</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP66</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>
<b>NEWCAP MS page 4.12</b>		<ul style="list-style-type: none"> <li>Non-armoured round cable</li> <li>Flexible braided cable</li> </ul>	<ul style="list-style-type: none"> <li>Nickel-plated brass</li> <li>Option: Stainless steel</li> </ul>	<ul style="list-style-type: none"> <li>EN 62444</li> <li>IP66 / IP68</li> <li>-20°C to +80°C</li> <li>Metric / Pg</li> </ul>
<b>NEWCAP CT page 4.13</b>		<ul style="list-style-type: none"> <li>Braided round cable</li> <li>EMC shielded cable</li> </ul>	<ul style="list-style-type: none"> <li>Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>EN 62444</li> <li>IP66 / IP68</li> <li>-20°C to +80°C</li> <li>Metric / Pg</li> </ul>
<b>NEWCAP MS MULTI- WIRED/ FLAT page 4.14</b>		<ul style="list-style-type: none"> <li>Multi-wired cable</li> <li>Flat cable</li> </ul>	<ul style="list-style-type: none"> <li>Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>EN 62444</li> <li>IP66 / IP68</li> <li>-20°C to +80°C</li> <li>Metric</li> </ul>
<b>CGB non- armoured cable gland page 4.16</b>		<ul style="list-style-type: none"> <li>Non-armoured</li> <li>Tray cable</li> </ul>	<ul style="list-style-type: none"> <li>Iron alloy/steel (depending on form)</li> <li>Option: Aluminum</li> </ul>	<ul style="list-style-type: none"> <li>cULus</li> <li>NEMA 3R</li> <li>-25°C to +40°C</li> <li>NPT</li> </ul>

Conduit connector		Conduit type	Material options	Key points
<b>JUDODIX conduit connector page 4.25</b>		<ul style="list-style-type: none"> <li>CAPRIPLAST flexible conduit (recommended)</li> </ul>	<ul style="list-style-type: none"> <li>Nickel-plated brass ss</li> <li>Option: Stainless steel 316L</li> </ul>	<ul style="list-style-type: none"> <li>IP66: NF EN 60529</li> <li>-5°C to +60°C</li> <li>Metric / PG</li> </ul>

# Selection guide for cable glands for non-hazardous areas

Armoured cable glands	Cable type	Material options	Key points
<b>IGBW</b> page 4.5 	<ul style="list-style-type: none"> <li>SWA</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP54</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>
<b>IGCW</b> page 4.6 	<ul style="list-style-type: none"> <li>SWA</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP64</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>
<b>IGCX</b> page 4.7 	<ul style="list-style-type: none"> <li>SWB</li> <li>STA</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP64</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>
<b>IGE1W</b> page 4.8 	<ul style="list-style-type: none"> <li>SWA</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP66</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>
<b>IGE1X</b> page 4.9 	<ul style="list-style-type: none"> <li>SWB</li> <li>STA</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP66</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>
<b>IGE2W</b> page 4.10 	<ul style="list-style-type: none"> <li>SWA</li> <li>Lead sheath cable</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP66</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>
<b>IGE2X</b> page 4.11 	<ul style="list-style-type: none"> <li>SWB</li> <li>STA</li> <li>Lead sheath cable</li> </ul>	<ul style="list-style-type: none"> <li>Brass</li> <li>Option: Nickel-plated brass</li> </ul>	<ul style="list-style-type: none"> <li>BS 6121 Part 1</li> <li>EN 62444</li> <li>EAC</li> <li>IP66</li> <li>-40°C to +80°C</li> <li>Metric / NPT</li> </ul>

# IGA2 - for non-armoured cable

Industrial cable glands and accessories



## Suitable for the following cable types:

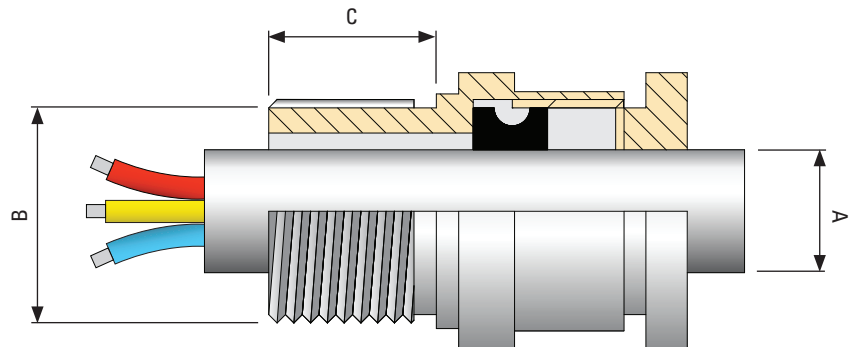
- Non-armoured cable

## Certifications and compliances

- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.A132.B.04663

## Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor and outdoor applications
- Provides mechanical retention and a weatherproof seal on the outer sheath of the cable
- Continuous operating temperature: -40 °C to +80 °C
- IP66
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



## Ordering codes

GLAND SIZE	SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (ISO)	ENTRY THREAD Ø (B)	ENTRY THREAD LENGTH (C)	Ø EXT. MIN - MAX (A)	ACROSS FLATS (E)	ACROSS FLATS (F)	SIZE (NPT)	CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)
20S	M20	IGA2M201BRNK2	IGA2M201NPNK2	20	15	8.00 - 11.40	22.00	22.00	1/2"	IGA2N0501BRNK2	IGA2N0501NPNK2
20L	M20	IGA2M202BRNK2	IGA2M202NPNK2	20	15	11.00 - 13.80	24.00	24.00	1/2"	IGA2N0502BRNK2	IGA2N0502NPNK2
25S	M25	IGA2M251BRNK2	IGA2M251NPNK2	25	15	12.50 - 17.50	27.00	27.00	3/4"	IGA2N0751BRNK2	IGA2N0751NPNK2
25L	M25	IGA2M252BRNK2	IGA2M252NPNK2	25	15	17.00 - 19.80	29.30	29.00	3/4"	IGA2N0752BRNK2	IGA2N0752NPNK2
32S	M32	IGA2M321BRNK2	IGA2M321NPNK2	32	15	18.00 - 22.80	34.50	34.50	1"	IGA2N1001BRNK2	IGA2N1001NPNK2
32L	M32	IGA2M322BRNK2	IGA2M322NPNK2	32	15	20.00 - 25.80	38.80	38.00	1"	IGA2N1002BRNK2	IGA2N1002NPNK2
40S	M40	IGA2M401BRNK2	IGA2M401NPNK2	40	20	23.50 - 29.00	42.50	42.50	1 1/4"	IGA2N1251BRNK2	IGA2N1251NPNK2
40L	M40	IGA2M402BRNK2	IGA2M402NPNK2	40	20	26.00 - 32.50	45.50	45.50	1 1/4"	IGA2N1252BRNK2	IGA2N1252NPNK2
50S	M50	IGA2M501BRNK2	IGA2M501NPNK2	50	20	32.00 - 39.00	55.50	55.50	1 1/2"	IGA2N1501BRNK2	IGA2N1501NPNK2
50L	M50	IGA2M502BRNK2	IGA2M502NPNK2	50	20	37.00 - 43.50	61.50	61.50	1 1/2"	IGA2N1502BRNK2	IGA2N1502NPNK2
63S	M63	IGA2M631BRNK2	IGA2M631NPNK2	63	20	43.50 - 49.50	65.50	61.50	2"	IGA2N2001BRNK2	IGA2N2001NPNK2
63L	M63	IGA2M632BRNK2	IGA2M632NPNK2	63	20	49.50 - 55.50	71.50	65.50	2"	IGA2N2002BRNK2	IGA2N2002NPNK2
75S	M75	IGA2M751BRNK2	IGA2M751NPNK2	75	20	55.00 - 61.50	77.00	71.50	2 1/2"	IGA2N2501BRNK2	IGA2N2501NPNK2
75L	M75	IGA2M752BRNK2	IGA2M752NPNK2	75	20	61.50 - 67.50	85.50	85.50	2 1/2"	IGA2N2502BRNK2	IGA2N2502NPNK2
90L	M90	IGA2M902BRNK2	IGA2M902NPNK2	90	20	67.50 - 79.50	100.00	100.00	3"	IGA2N3002BRNK2	IGA2N3002NPNK2

\* Sizes above 2" NPT will be supplied as an equivalent metric gland and appropriate metric to NPT adaptor.



### Suitable for the following cable types:

- Single wire armoured cable (SWA)

### Certifications and compliances

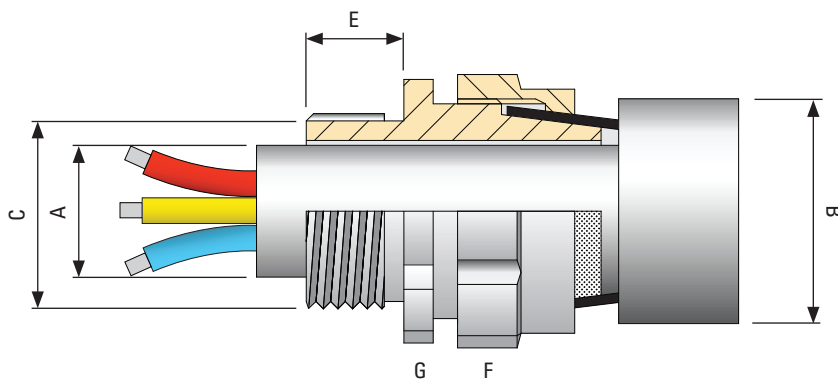
- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.A132.B.04663

### Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor applications
- Provides mechanical retention and earth continuity through armour wire termination.
- Continuous operating temperature: -40 °C to +80 °C
- IP54
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



IP54



### Ordering codes

GLAND SIZE	SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (ISO)	ENTRY THREAD Ø (C)	MIN LENGTH (E)	CABLE DIMENSIONS		ARMOUR THICKNESS	ACROSS FLATS (F)	ACROSS FLATS (G)	SIZE (NPT)	CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)
						Ø MAX (A)	Ø MAX (B)						
20S	M20	IGBWM201BRNK2	IGBWM201NPNK2	20	10	11.50	16.00	0.90/1.25	21.00	21.00	1/2"	IGBWN0501BRNK2	IGBWN0501NPNK2
20L	M20	IGBWM202BRNK2	IGBWM202NPNK2	20	10	14.00	19.50	0.90/1.25	25.00	24.00	1/2"	IGBWN0502BRNK2	IGBWN0502NPNK2
25L	M25	IGBWM252BRNK2	IGBWM252NPNK2	25	10	20.50	26.00	1.25/1.60	32.40	31.20	3/4"	IGBWN0752BRNK2	IGBWN0752NPNK2
32L	M32	IGBWM322BRNK2	IGBWM322NPNK2	32	10	26.00	33.00	1.60/2.00	40.50	39.50	1"	IGBWN1002BRNK2	IGBWN1002NPNK2
40L	M40	IGBWM402BRNK2	IGBWM402NPNK2	40	15	33.00	40.50	1.60/2.00	49.00	48.00	1 1/4"	IGBWN1252BRNK2	IGBWN1252NPNK2
50L	M50	IGBWM502BRNK2	IGBWM502NPNK2	50	15	43.50	52.00	2.00/2.50	61.00	60.50	1 1/2"	IGBWN1502BRNK2	IGBWN1502NPNK2
63L	M63	IGBWM632BRNK2	IGBWM632NPNK2	63	15	55.50	65.50	2.50	76.00	76.00	2"	IGBWN2002BRNK2	IGBWN2002NPNK2
75L	M75	IGBWM752BRNK2	IGBWM752NPNK2	75	15	68.00	78.00	2.50	88.00	88.00	2 1/2"	IGBWN2502BRNK2	IGBWN2502NPNK2



### Suitable for the following cable types:

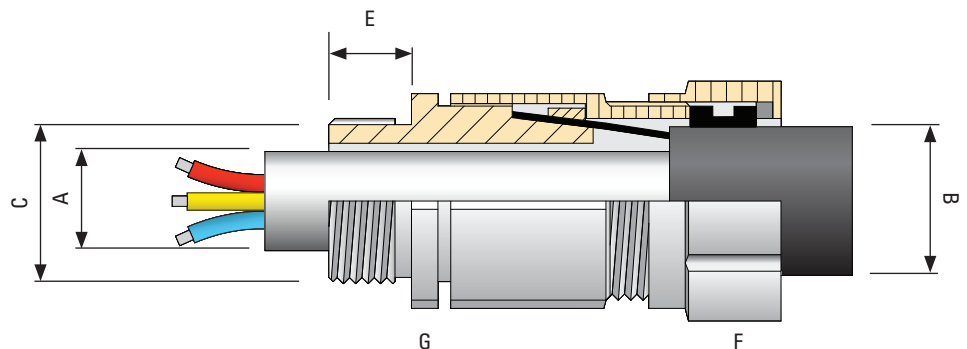
- Single wire armoured cable (SWA)

### Certifications and compliances

- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.A132.B.04663

### Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor and outdoor applications
- Provides mechanical retention, a weatherproof seal on the outer sheath of the cable and earth continuity through armour wire termination.
- Continuous operating temperature: -40 °C to +80 °C
- IP64
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



### Ordering codes

GLAND SIZE	SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (ISO)	ENTRY THREAD Ø C	MIN. LENGTH (E)	CABLE DIMENSIONS		ARMOUR THICKNESS	ACROSS FLATS (F)	ACROSS FLATS (G)	SIZE (NPT)	CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)
						Ø MAX A	Ø MIN-MAX B						
20S	M20	IGCWM201BRNK2	IGCWM201NPNK2	20	10	11.50	12.00-15.90	0.90	22.00	21.50	1/2"	IGCWN0501BRNK2	IGCWN0501NPNK2
20L	M20	IGCWM202BRNK2	IGCWM202NPNK2	20	10	14.00	15.00-19.50	0.90/1.25	26.00	25.00	1/2"	IGCWN0502BRNK2	IGCWN0502NPNK2
25S	M25	IGCWM251BRNK2	IGCWM251NPNK2	25	10	17.50	18.00-23.00	1.25	31.50	31.50	3/4"	IGCWN0751BRNK2	IGCWN0751NPNK2
25L	M25	IGCWM252BRNK2	IGCWM252NPNK2	25	10	20.00	22.00-25.80	1.25/1.60	34.00	33.00	3/4"	IGCWN0752BRNK2	IGCWN0752NPNK2
32S	M32	IGCWM321BRNK2	IGCWM321NPNK2	32	10	23.50	25.00-29.50	1.60	38.50	37.50	1"	IGCWN1001BRNK2	IGCWN1001NPNK2
32L	M32	IGCWM322BRNK2	IGCWM322NPNK2	32	10	26.00	26.50-32.00	1.60/2.00	41.00	40.00	1"	IGCWN1002BRNK2	IGCWN1002NPNK2
40S	M40	IGCWM401BRNK2	IGCWM401NPNK2	40	15	29.00	32.00-36.50	1.60	45.70	44.70	1 1/4"	IGCWN1251BRNK2	IGCWN1251NPNK2
40L	M40	IGCWM402BRNK2	IGCWM402NPNK2	40	15	32.50	33.50-40.30	1.60/2.00	49.70	48.70	1 1/4"	IGCWN1252BRNK2	IGCWN1252NPNK2
50S	M50	IGCWM501BRNK2	IGCWM501NPNK2	50	15	39.50	40.00-46.20	2.00	57.50	56.50	1 1/2"	IGCWN1501BRNK2	IGCWN1501NPNK2
50L	M50	IGCWM502BRNK2	IGCWM502NPNK2	50	15	43.50	46.00-51.70	2.00/2.50	62.00	61.00	1 1/2"	IGCWN1502BRNK2	IGCWN1502NPNK2
63S	M63	IGCWM631BRNK2	IGCWM631NPNK2	63	15	50.00	51.50-59.00	2.50	70.00	69.00	2"	IGCWN2001BRNK2	IGCWN2001NPNK2
63L	M63	IGCWM632BRNK2	IGCWM632NPNK2	63	15	56.00	59.00-65.50	2.50	78.50	77.50	2"	IGCWN2002BRNK2	IGCWN2002NPNK2
75S	M75	IGCWM751BRNK2	IGCWM751NPNK2	75	15	62.00	65.50-71.50	2.50	85.00	84.00	2 1/2"	IGCWN2501BRNK2	IGCWN2501NPNK2
75L	M75	IGCWM752BRNK2	IGCWM752NPNK2	75	15	68.00	71.50-77.50	2.50	92.00	92.00	2 1/2"	IGCWN2502BRNK2	IGCWN2502NPNK2

\* All NPT sizes will be supplied as an equivalent metric gland and appropriate metric to NPT adaptor.





### Suitable for the following cable types:

- Wire braid armoured cable (SWB)
- Steel tape armoured cable (STA)

### Certifications and compliances

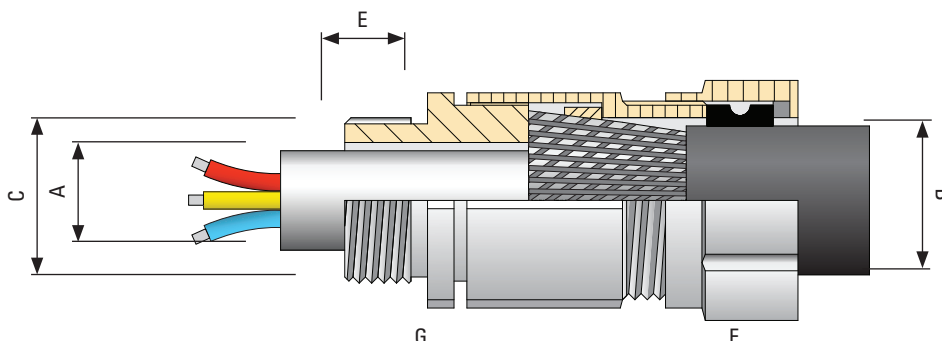
- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.A132.B.04663

### Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor and outdoor applications
- Provides mechanical retention, a weatherproof seal on the outer sheath of the cable and earth continuity through armour wire termination.
- Continuous operating temperature: -40 °C to +80 °C
- IP64
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



IP64



### Ordering codes

GLAND SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (ISO)	ENTRY THREAD (ISO) Ø (C)	MIN. LENGTH (E)	CABLE DIMENSIONS		ARMOUR THICKNESS	ACROSS FLATS (F)	ACROSS FLATS (G)	SIZE (NPT)	CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)	
					Ø MIN-MAX A	Ø MIN-MAX B							
20S	M20	IGCXM201BRNK2	IGCXM201NPNK2	20	10	11.50	12.00-15.90	0.40/0.80	22.00	21.50	1/2"	IGCXN0501BRNK2	IGCXN0501NPNK2
20L	M20	IGCXM202BRNK2	IGCXM202NPNK2	20	10	14.00	15.50-19.50	0.60/1.00	26.00	25.00	1/2"	IGCXN0502BRNK2	IGCXN0502NPNK2
25S	M25	IGCXM251BRNK2	IGCXM251NPNK2	25	10	17.50	18.00-23.00	0.60/1.10	31.50	31.50	3/4"	IGCXN0751BRNK2	IGCXN0751NPNK2
25L	M25	IGCXM252BRNK2	IGCXM252NPNK2	25	10	20.00	22.00-25.80	0.60/1.10	34.00	33.00	3/4"	IGCXN0752BRNK2	IGCXN0752NPNK2
32S	M32	IGCXM321BRNK2	IGCXM321NPNK2	32	10	23.50	25.00-29.50	0.60/1.20	38.50	37.50	1"	IGCXN1001BRNK2	IGCXN1001NPNK2
32L	M32	IGCXM322BRNK2	IGCXM322NPNK2	32	10	26.00	26.50-32.00	0.60/1.20	41.00	40.00	1"	IGCXN1002BRNK2	IGCXN1002NPNK2
40S	M40	IGCXM401BRNK2	IGCXM401NPNK2	40	15	29.00	32.00-36.50	0.60/1.20	45.70	44.70	1 1/4"	IGCXN1251BRNK2	IGCXN1251NPNK2
40L	M40	IGCXM402BRNK2	IGCXM402NPNK2	40	15	32.50	33.50-40.30	0.60/1.20	49.70	48.70	1 1/4"	IGCXN1252BRNK2	IGCXN1252NPNK2
50S	M50	IGCXM501BRNK2	IGCXM501NPNK2	50	15	39.50	40.00-46.20	0.60/1.50	57.50	56.50	1 1/2"	IGCXN1501BRNK2	IGCXN1501NPNK2
50L	M50	IGCXM502BRNK2	IGCXM502NPNK2	50	15	43.50	46.00-51.70	0.80/1.50	62.00	61.00	1 1/2"	IGCXN1502BRNK2	IGCXN1502NPNK2
63S	M63	IGCXM631BRNK2	IGCXM631NPNK2	63	15	50.00	51.50-59.00	0.80/1.50	70.00	69.00	2"	IGCXN2001BRNK2	IGCXN2001NPNK2
63L	M63	IGCXM632BRNK2	IGCXM632NPNK2	63	15	56.00	59.00-65.50	0.80/1.50	78.50	77.50	2"	IGCXN2002BRNK2	IGCXN2002NPNK2
75S	M75	IGCXM751BRNK2	IGCXM751NPNK2	75	15	62.00	65.50-71.50	0.80/1.50	85.00	84.00	2 1/2"	IGCXN2501BRNK2	IGCXN2501NPNK2
75L	M75	IGCXM752BRNK2	IGCXM752NPNK2	75	15	68.00	71.50-77.50	0.80/1.50	92.00	92.00	2 1/2"	IGCXN2502BRNK2	IGCXN2502NPNK2

\* All NPT sizes will be supplied as an equivalent metric gland and appropriate metric to NPT adaptor.

# IGE1W - for armoured cable

Industrial cable glands and accessories



## Suitable for the following cable types:

- Single wire armoured cable (SWA)

## Certifications and compliances

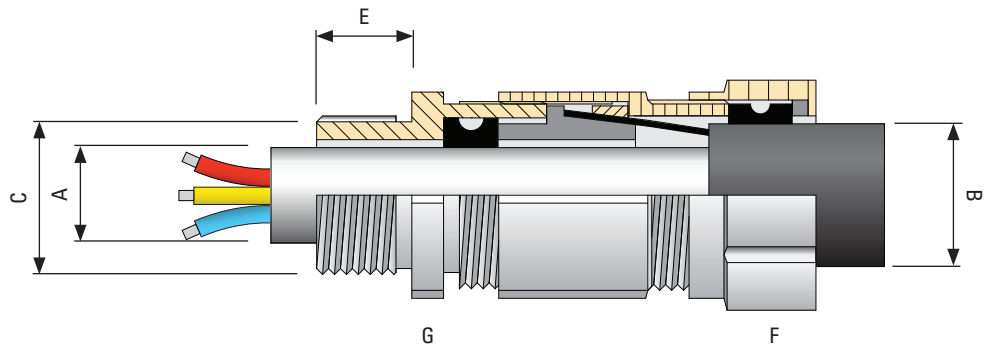
- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.A132.B.04663

## Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor and outdoor applications
- Provides mechanical retention, a weatherproof seal on the inner and outer sheath of the cable and earth continuity
- Continuous operating temperature: -40 °C to +80 °C
- IP66
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



IP66



## Ordering codes

GLAND SIZE	SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS(KIT) (ISO)	ENTRY THREAD		CABLE DIMENSIONS					CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)	
				Ø (C)	MIN. LENGTH (E)	MIN-MAX (A)	MIN-MAX (B)	ARMOUR THICKNESS	ACROSS FLATS (F)	ACROSS FLATS (G)			SIZE (NPT)
20S	M20	IGE1WM201BRNK2	IGE1WM201NPNK2	20	10	8.00-11.40	12.00-15.90	0.90	22.00	22.00	1/2"	IGE1WN0501BRNK2	IGE1WN0501NPNK2
20L	M20	IGE1WM202BRNK2	IGE1WM202NPNK2	20	10	11.00-13.90	15.50-19.50	0.90/1.25	26.00	26.00	1/2"	IGE1WN0502BRNK2	IGE1WN0502NPNK2
25S	M25	IGE1WM251BRNK2	IGE1WM251NPNK2	25	10	12.50-17.50	18.00-23.00	1.25	31.50	31.50	3/4"	IGE1WN0751BRNK2	IGE1WN0751NPNK2
25L	M25	IGE1WM252BRNK2	IGE1WM252NPNK2	25	10	14.00-19.80	22.00-25.80	1.25/1.60	34.00	34.00	3/4"	IGE1WN0752BRNK2	IGE1WN0752NPNK2
32S	M32	IGE1WM321BRNK2	IGE1WM321NPNK2	32	10	18.00-22.80	25.00-29.50	1.60	38.50	38.50	1"	IGE1WN1001BRNK2	IGE1WN1001NPNK2
32L	M32	IGE1WM322BRNK2	IGE1WM322NPNK2	32	10	20.00-25.80	26.50-32.00	1.60/2.00	41.00	41.00	1"	IGE1WN1002BRNK2	IGE1WN1002NPNK2
40S	M40	IGE1WM401BRNK2	IGE1WM401NPNK2	40	15	23.50-29.00	32.00-36.50	1.60	45.70	45.70	1 1/4"	IGE1WN1251BRNK2	IGE1WN1251NPNK2
40L	M40	IGE1WM402BRNK2	IGE1WM402NPNK2	40	15	26.50-32.50	33.50-40.30	1.60/2.00	49.70	49.70	1 1/4"	IGE1WN1252BRNK2	IGE1WN1252NPNK2
50S	M50	IGE1WM501BRNK2	IGE1WM501NPNK2	50	15	32.50-39.00	40.00-46.20	2.00	57.50	56.50	1 1/2"	IGE1WN1501BRNK2	IGE1WN1501NPNK2
50L	M50	IGE1WM502BRNK2	IGE1WM502NPNK2	50	15	37.00-43.50	46.00-51.70	2.00/2.50	62.00	61.00	1 1/2"	IGE1WN1502BRNK2	IGE1WN1502NPNK2
63S	M63	IGE1WM631BRNK2	IGE1WM631NPNK2	63	15	43.50-49.50	51.50-59.00	2.50	70.00	70.00	2"	IGE1WN2001BRNK2	IGE1WN2001NPNK2
63L	M63	IGE1WM632BRNK2	IGE1WM632NPNK2	63	15	49.50-55.50	59.00-65.50	2.50	78.50	77.50	2"	IGE1WN2002BRNK2	IGE1WN2002NPNK2
75S	M75	IGE1WM751BRNK2	IGE1WM751NPNK2	75	15	55.00-61.50	65.50-71.50	2.50	85.00	84.00	2 1/2"	IGE1WN2501BRNK2	IGE1WN2501NPNK2
75L	M75	IGE1WM752BRNK2	IGE1WM752NPNK2	75	15	61.50-67.50	71.50-77.50	2.50	92.00	92.00	2 1/2"	IGE1WN2502BRNK2	IGE1WN2502NPNK2

\* Sizes above 2" NPT will be supplied as an equivalent metric gland and appropriate metric to NPT adaptor.



### Suitable for the following cable types:

- Wire braid armoured cable (SWB)
- Steel tape armoured cable (STA)

### Certifications and compliances

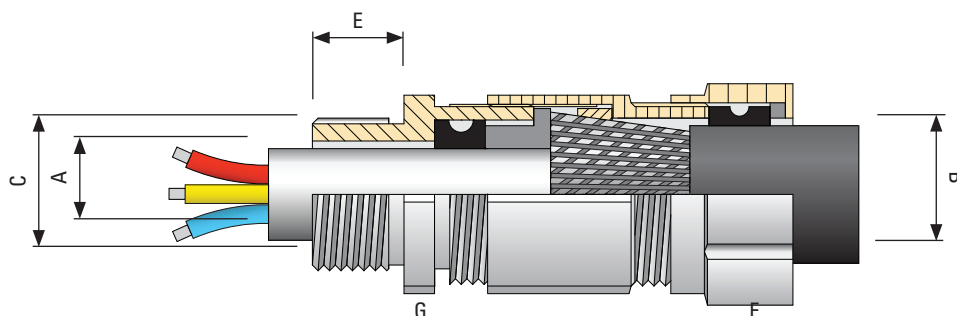
- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.A132.B.04663

### Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor and outdoor applications
- Provides mechanical retention, a weatherproof seal on the inner and outer sheath of the cable and earth continuity
- Continuous operating temperature: -40 °C to +80 °C
- IP66
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



IP66



### Ordering codes

GLAND SIZE SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (ISO)	ENTRY THREAD Ø (C)	CABLE DIMENSIONS							CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)	
				MIN. (E)	MIN-MAX (A)	MIN-MAX (B)	ARMOUR THICKNESS	ACROSS FLATS (F)	ACROSS FLATS (G)	SIZE (NPT)			
20S	M20	IGE1XM201BRNK2	IGE1XM201NPNK2	20	10	8.00-11.40	12.00-15.90	0.40/0.80	22.00	22.00	1/2"	IGE1XN0501BRNK2	IGE1XN0501NPNK2
20L	M20	IGE1XM202BRNK2	IGE1XM202NPNK2	20	10	11.00-13.90	15.50-19.50	0.60/1.00	26.00	26.00	1/2"	IGE1XN0502BRNK2	IGE1XN0502NPNK2
25S	M25	IGE1XM251BRNK2	IGE1XM251NPNK2	25	10	12.50-17.50	18.00-23.00	0.60/1.10	31.50	31.50	3/4"	IGE1XN0751BRNK2	IGE1XN0751NPNK2
25L	M25	IGE1XM252BRNK2	IGE1XM252NPNK2	25	10	14.00-19.80	22.00-25.80	0.60/1.10	34.00	34.00	3/4"	IGE1XN0752BRNK2	IGE1XN0752NPNK2
32S	M32	IGE1XM321BRNK2	IGE1XM321NPNK2	32	10	18.00-22.80	25.00-29.50	0.60/1.20	38.50	38.50	1"	IGE1XN1001BRNK2	IGE1XN1001NPNK2
32L	M32	IGE1XM322BRNK2	IGE1XM322NPNK2	32	10	20.00-25.80	26.50-32.00	0.60/1.20	41.00	41.00	1"	IGE1XN1002BRNK2	IGE1XN1002NPNK2
40S	M40	IGE1XM401BRNK2	IGE1XM401NPNK2	40	15	23.50-29.00	32.00-36.50	0.60/1.20	45.70	45.70	1 1/4"	IGE1XN1251BRNK2	IGE1XN1251NPNK2
40L	M40	IGE1XM402BRNK2	IGE1XM402NPNK2	40	15	26.50-32.50	33.50-40.30	0.60/1.20	49.70	49.70	1 1/4"	IGE1XN1252BRNK2	IGE1XN1252NPNK2
50S	M50	IGE1XM501BRNK2	IGE1XM501NPNK2	50	15	32.50-39.00	40.00-46.20	0.60/1.50	57.50	56.50	1 1/2"	IGE1XN1501BRNK2	IGE1XN1501NPNK2
50L	M50	IGE1XM502BRNK2	IGE1XM502NPNK2	50	15	37.00-43.50	46.00-51.70	0.80/1.50	62.00	61.00	1 1/2"	IGE1XN1502BRNK2	IGE1XN1502NPNK2
63S	M63	IGE1XM631BRNK2	IGE1XM631NPNK2	63	15	43.50-49.50	51.50-59.00	0.80/1.50	70.00	70.00	2"	IGE1XN2001BRNK2	IGE1XN2001NPNK2
63L	M63	IGE1XM632BRNK2	IGE1XM632NPNK2	63	15	49.50-55.50	59.00-65.50	0.80/1.50	78.50	77.50	2"	IGE1XN2002BRNK2	IGE1XN2002NPNK2
75S	M75	IGE1XM751BRNK2	IGE1XM751NPNK2	75	15	55.00-61.50	65.50-71.50	0.80/1.50	85.00	84.00	2 1/2"	IGE1XN2501BRNK2	IGE1XN2501NPNK2
75L	M75	IGE1XM752BRNK2	IGE1XM752NPNK2	75	15	61.50-67.50	71.50-77.50	0.80/1.50	92.00	92.00	2 1/2"	IGE1XN2502BRNK2	IGE1XN2502NPNK2

\* All NPT sizes will be supplied as an equivalent metric gland and appropriate metric to NPT adaptor.

# IGE2W - for armoured cable

Industrial cable glands and accessories



## Suitable for the following cable types:

- Single wire armoured cable (SWA)
- Lead sheathed cable

## Certifications and compliances

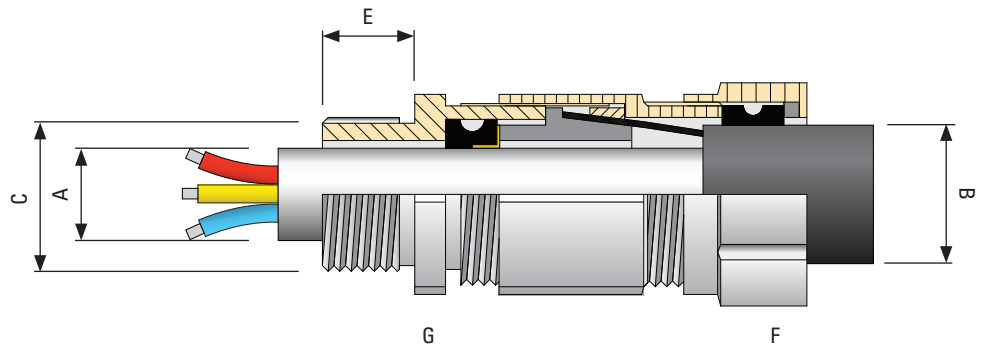
- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.AJ32.B.04663

## Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor and outdoor applications
- Provides mechanical retention, a weatherproof seal on the inner and outer sheath of the cable, lead sheath earthing and earth continuity through armour wire termination
- Continuous operating temperature: -40 °C to +80 °C
- IP66
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



IP66



## Ordering codes

GLAND SIZE	SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (ISO)	ENTRY THREAD Ø (C)	MIN. (E)	CABLE DIMENSIONS			ACROSS FLATS (F)	ACROSS FLATS (G)	SIZE (NPT)	CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)
						MIN-MAX (A)	MIN-MAX (B)	ARMOUR THICKNESS					
20S	M20	IGE2WM201BRNK2	IGE2WM201NPNK2	20	10	8.00-11.40	12.00-15.90	0.90	22.00	22.00	1/2"	IGE2WN0501BRNK2	IGE2WN0501NPNK2
20L	M20	IGE2WM202BRNK2	IGE2WM202NPNK2	20	10	11.00-13.90	15.50-19.50	0.90/1.25	26.00	26.00	1/2"	IGE2WN0502BRNK2	IGE2WN0502NPNK2
25S	M25	IGE2WM251BRNK2	IGE2WM251NPNK2	25	10	12.50-17.50	18.00-23.00	1.25	31.50	31.50	3/4"	IGE2WN0751BRNK2	IGE2WN0751NPNK2
25L	M25	IGE2WM252BRNK2	IGE2WM252NPNK2	25	10	14.00-19.80	22.00-25.80	1.25/1.60	34.00	34.00	3/4"	IGE2WN0752BRNK2	IGE2WN0752NPNK2
32S	M32	IGE2WM321BRNK2	IGE2WM321NPNK2	32	10	18.00-22.80	25.00-29.50	1.60	38.50	38.50	1"	IGE2WN1001BRNK2	IGE2WN1001NPNK2
32L	M32	IGE2WM322BRNK2	IGE2WM322NPNK2	32	10	20.00-25.80	26.50-32.00	1.60/2.00	41.00	41.00	1"	IGE2WN1002BRNK2	IGE2WN1002NPNK2
40S	M40	IGE2WM401BRNK2	IGE2WM401NPNK2	40	15	23.50-29.00	32.00-36.50	1.60	45.70	45.70	1 1/4"	IGE2WN1251BRNK2	IGE2WN1251NPNK2
40L	M40	IGE2WM402BRNK2	IGE2WM402NPNK2	40	15	26.50-32.50	33.50-40.30	1.60/2.00	49.70	49.70	1 1/4"	IGE2WN1252BRNK2	IGE2WN1252NPNK2
50S	M50	IGE2WM501BRNK2	IGE2WM501NPNK2	50	15	32.50-39.00	40.00-46.20	2.00	57.50	56.50	1 1/2"	IGE2WN1501BRNK2	IGE2WN1501NPNK2
50L	M50	IGE2WM502BRNK2	IGE2WM502NPNK2	50	15	37.00-43.50	46.00-51.70	2.00/2.50	62.00	61.00	1 1/2"	IGE2WN1502BRNK2	IGE2WN1502NPNK2
63S	M63	IGE2WM631BRNK2	IGE2WM631NPNK2	63	15	43.50-49.50	51.50-59.00	2.50	70.00	70.00	2"	IGE2WN2001BRNK2	IGE2WN2001NPNK2
63L	M63	IGE2WM632BRNK2	IGE2WM632NPNK2	63	15	49.50-55.50	59.00-65.50	2.50	78.50	77.50	2"	IGE2WN2002BRNK2	IGE2WN2002NPNK2
75S	M75	IGE2WM751BRNK2	IGE2WM751NPNK2	75	15	55.00-61.50	65.50-71.50	2.50	85.00	84.00	2 1/2"	IGE2WN2501BRNK2	IGE2WN2501NPNK2
75L	M75	IGE2WM752BRNK2	IGE2WM752NPNK2	75	15	61.50-67.50	71.50-77.50	2.50	92.00	92.00	2 1/2"	IGE2WN2502BRNK2	IGE2WN2502NPNK2

\* Sizes above 2" NPT will be supplied as an equivalent metric gland and appropriate metric to NPT adaptor.



# IGE2X - for armoured cable

Industrial cable glands and accessories



### Suitable for the following cable types:

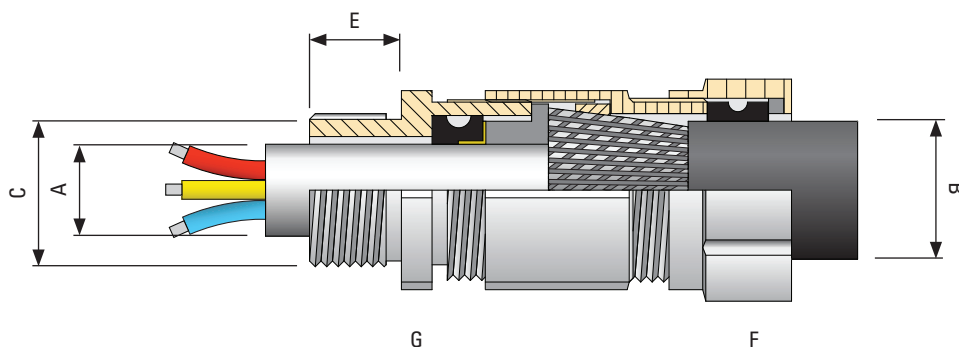
- Wire braid armoured cable (SWB)
- Steel tape armoured cable (STA)
- Lead sheathed cable

### Certifications and compliances

- B.S. 6121 Part 1: 1989
- EN 62444
- EAC Certificate no: RU C-GB.A132.B.04663

### Technical specification

- Material: brass, nickel-plated brass
- Suitable for indoor and outdoor applications
- Provides mechanical retention, a weatherproof seal on the inner and outer sheath of the cable, lead sheath earthing and earth continuity through armour wire termination
- Continuous operating temperature: -40 °C to +80 °C
- IP66
- The gland kit comprises of:
  - Cable gland
  - Shroud
  - Earth tag
  - Locknut
  - Nylon washer



IP66

### Ordering codes

GLAND SIZE	SIZE (ISO)	CATALOG NUMBER BRASS (KIT) (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (ISO)	Threadforms	CABLE DIMENSIONS								
					MIN. (E)	MIN-MAX (A)	MIN-MAX (B)	ARMOUR THICKNESS	ACROSS FLATS (F)	ACROSS FLATS (G)	SIZE (NPT)	CATALOG NUMBER BRASS (KIT) (NPT)	CATALOG NUMBER NICKEL-PLATED BRASS (KIT) (NPT)
20S	M20	IGE2XM201BRNK2	IGE2XM201NPNK2	20	10	8.00-11.40	12.00-15.90	0.40/0.80	22.00	22.00	1/2"	IGE2XN0501BRNK2	IGE2XN0501NPNK2
20L	M20	IGE2XM202BRNK2	IGE2XM202NPNK2	20	10	11.00-13.90	15.50-19.50	0.60/1.00	26.00	26.00	1/2"	IGE2XN0502BRNK2	IGE2XN0502NPNK2
25S	M25	IGE2XM251BRNK2	IGE2XM251NPNK2	25	10	12.50-17.50	18.00-23.00	0.60/1.10	31.50	31.50	3/4"	IGE2XN0751BRNK2	IGE2XN0751NPNK2
25L	M25	IGE2XM252BRNK2	IGE2XM252NPNK2	25	10	14.00-19.80	22.00-25.80	0.60/1.10	34.00	34.00	3/4"	IGE2XN0752BRNK2	IGE2XN0752NPNK2
32S	M32	IGE2XM321BRNK2	IGE2XM321NPNK2	32	10	18.00-22.80	25.00-29.50	0.60/1.20	38.50	38.50	1"	IGE2XN1001BRNK2	IGE2XN1001NPNK2
32L	M32	IGE2XM322BRNK2	IGE2XM322NPNK2	32	10	20.00-25.80	26.50-32.00	0.60/1.20	41.00	41.00	1"	IGE2XN1002BRNK2	IGE2XN1002NPNK2
40S	M40	IGE2XM401BRNK2	IGE2XM401NPNK2	40	15	23.50-29.00	32.00-36.50	0.60/1.20	45.70	45.70	1 1/4"	IGE2XN1251BRNK2	IGE2XN1251NPNK2
40L	M40	IGE2XM402BRNK2	IGE2XM402NPNK2	40	15	26.50-32.50	33.50-40.30	0.60/1.20	49.70	49.70	1 1/4"	IGE2XN1252BRNK2	IGE2XN1252NPNK2
50S	M50	IGE2XM501BRNK2	IGE2XM501NPNK2	50	15	32.50-39.00	40.00-46.20	0.60/1.50	57.50	56.50	1 1/2"	IGE2XN1501BRNK2	IGE2XN1501NPNK2
50L	M50	IGE2XM502BRNK2	IGE2XM502NPNK2	50	15	37.00-43.50	46.00-51.70	0.80/1.50	62.00	61.00	1 1/2"	IGE2XN1502BRNK2	IGE2XN1502NPNK2
63S	M63	IGE2XM631BRNK2	IGE2XM631NPNK2	63	15	43.50-49.50	51.50-59.00	0.80/1.50	70.00	70.00	2"	IGE2XN2001BRNK2	IGE2XN2001NPNK2
63L	M63	IGE2XM632BRNK2	IGE2XM632NPNK2	63	15	49.50-55.50	59.00-65.50	0.80/1.50	78.50	77.50	2"	IGE2XN2002BRNK2	IGE2XN2002NPNK2
75S	M75	IGE2XM751BRNK2	IGE2XM751NPNK2	75	15	55.00-61.50	65.50-71.50	0.80/1.50	85.00	84.00	2 1/2"	IGE2XN2501BRNK2	IGE2XN2501NPNK2
75L	M75	IGE2XM752BRNK2	IGE2XM752NPNK2	75	15	61.50-67.50	71.50-77.50	0.80/1.50	92.00	92.00	2 1/2"	IGE2XN2502BRNK2	IGE2XN2502NPNK2

\* All NPT sizes will be supplied as an equivalent metric gland and appropriate metric to NPT adaptor.



### Suitable for the following cable types:

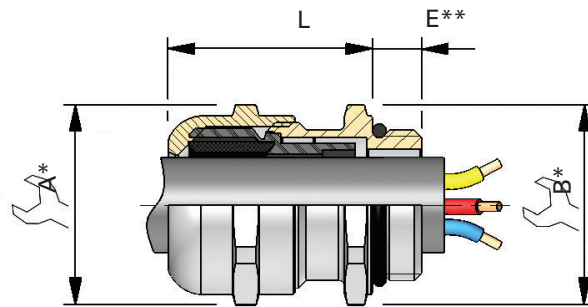
- Non-armoured cable

### Certifications and compliances

- EN 62444

### Technical specification

- Material: nickel-plated brass and stainless steel 316L  
(It is recommended that a suitable lubricant is used on all threads of stainless steel 316L versions, we recommend HTL lubricant)
- The NEWCAP-MS ensures the tightness on the cable outer sheath and the electrical continuity of the braided armour (EMC application)
- Continuous operating temperature: -20 °C to +80 °C
- IP66/IP68 tested 30 m/7 days on surface Ra 1.6 µm max.
- For ISO versions in nickel-plated brass with long thread (15 mm) replace the last digit in the order code with "2"



\* For 'across corners' dimensions, multiply 'across flats' dimensions by 1.1

\*\* For « E » see thread dimensions charts on page 5.18

### Ordering codes

THREAD SIZE (ISO)	THREAD SIZE (Pg)	BRAID THICKNESS	CABLE DIAMETER MIN - MAX	A	B	L	NEWCAP SIZE	CATALOG NUMBER NICKEL-PLATED BRASS (ISO)	CATALOG NUMBER STAINLESS STEEL 316L (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (Pg)	CATALOG NUMBER STAINLESS STEEL 316L (Pg)
12	Pg7	0.70	3.00-6.50	15	15	18.00	4	CAP187124	CAP187129	CAP186074	CAP186079
16	-	0.70	3.00-6.50	15	18	18.00	4	CAP187544	CAP187549	-	-
16	Pg9	0.70	4.50-10.00	20	20	24.00	5	CAP187164	CAP187169	CAP186094	CAP186099
20	-	0.70	4.50-10.00	20	22	24.00	5	CAP187554	CAP187559	-	-
20	Pg11	0.80	6.00-13.00	24	24	27.00	6	CAP187204	CAP187209	CAP186114	CAP186119
-	Pg13	0.80	6.00-13.00	24	24	27.00	6	-	-	CAP186134	CAP186139
25	-	0.80	6.00-13.00	24	27	27.00	6	CAP187564	CAP187569	-	-
25	Pg16	0.85	10.00-18.00	30	30	28.00	7	CAP187254	CAP187259	CAP186174	CAP186179
32	Pg21	0.85	10.00-18.00	30	34	28.00	7	CAP187574	CAP187579	CAP186194	CAP186199
32	Pg21	0.95	16.00-24.50	38	38	30.00	8	CAP187324	CAP187329	CAP186184	CAP186189
-	Pg29	0.95	16.00-24.50	38	38	30.00	8	-	-	CAP186284	CAP186289
40	-	0.95	16.00-24.50	38	43	30.00	8	CAP187584	CAP187589	-	-
40	Pg29	1.00	22.00-32.00	47	47	33.00	9	CAP187404	CAP187409	CAP186294	CAP186299
50	-	1.00	22.00-32.00	47	54	33.00	9	CAP187594	CAP187599	-	-
50	Pg36	1.15	29.00-40.50	57	57	37.00	10	CAP187504	CAP187509	CAP186364	CAP186369
63	-	1.15	29.00-40.50	57	68	37.00	10	CAP187604	CAP187609	-	-
63	Pg48 DIN	1.75	37.00-53.00	75	75	48.00	11	CAP187634	CAP187639	CAP186484	CAP186489
-	No48 NFC	1.75	37.00-53.00	75	75	48.00	11	-	-	CAP186494	CAP186499



### Suitable for the following cable types:

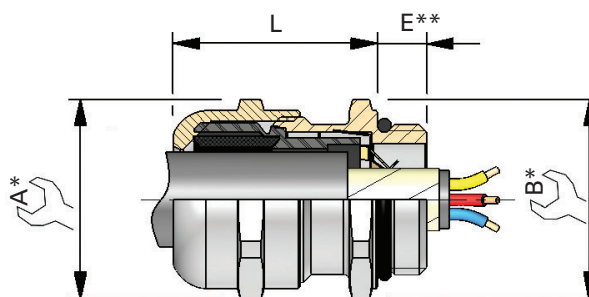
- Non-armoured cable
- Shielded cable (EMC applications)

### Certifications and compliances

- EN 62444

### Technical specification

- Material: nickel-plated brass
- The NEWCAP-CT ensures the tightness on the cable outer sheath and the electrical continuity of the braided armour (EMC application) without interrupting the braided armour
- Continuous operating temperature: -20 °C to +80 °C
- IP66/IP68 tested 30 m/7 days on surface Ra 1.6 µm max.



\* For 'across corners' dimensions, multiply 'across flats' dimensions by 1.1

\*\* For « E » see thread dimensions charts on page 5.18

### Ordering codes

THREAD SIZE (ISO)	THREAD SIZE (Pg)	BRAID THICKNESS	DIAMETER ON SHIELD	CABLE DIAMETER MIN - MAX	A	B	L	NEWCAP SIZE	CATALOG NUMBER NICKEL-PLATED BRASS (ISO)	CATALOG NUMBER STAINLESS STEEL 316L (ISO)	CATALOG NUMBER NICKEL-PLATED BRASS (Pg)
12	Pg7	0.70	3.00	3.00-6.50	15	15	18.00	4	CAP189124	CAP189129	CAP169074
16	-	0.70	3.00	3.00-6.50	15	18	18.00	4	CAP189544	-	-
16	Pg9	0.70	4.50	4.50-10.00	20	20	24.00	5	CAP189164	CAP189169	CAP169094
20	-	0.70	4.50	4.50-10.00	20	22	24.00	5	CAP189554	-	-
20	Pg11	0.80	6.00	6.00-13.00	24	24	27.00	6	CAP189204	CAP189209	CAP169114
-	Pg13	0.80	6.00	6.00-13.00	24	24	27.00	6	-	-	CAP169134
25	-	0.80	6.00	6.00-13.00	24	27	27.00	6	CAP189564	-	-
25	Pg16	0.85	10.00	10.00-18.00	30	30	28.00	7	CAP189254	CAP189259	CAP169164
32	Pg21	0.85	10.00	10.00-18.00	30	34	28.00	7	CAP189574	-	CAP169194
32	Pg21	0.95	15.00	16.00-24.50	38	38	30.00	8	CAP189324	CAP189329	CAP169214
-	Pg29	0.95	15.00	16.00-24.50	38	38	30.00	8	-	-	CAP169284
40	-	0.95	15.00	16.00-24.50	38	43	30.00	8	CAP189584	CAP189589	-
40	Pg29	1.00	20.50	22.00-32.00	47	47	33.00	9	CAP189404	CAP189409	CAP169294
50	-	1.00	20.50	22.00-32.00	47	54	33.00	9	CAP189594	CAP189599	-
50	Pg36	1.15	27.50	29.00-40.50	57	57	37.00	10	CAP189504	CAP189509	CAP169364
63	-	1.15	27.50	29.00-40.50	57	68	37.00	10	CAP189604	CAP189609	-
63	Pg48 DIN	1.75	34.50	37.00-53.00	75	75	48.00	11	CAP189634	CAP189639	CAP169484
-	No48 NFC	1.75	34.50	37.00-53.00	75	75	48.00	11	-	-	CAP169494

# NEWCAP MS multi-wired / flat

Industrial cable glands and accessories



## Suitable for the following cable types:

- Non-armoured cable
- Multi-wire cable
- Flat cable

## Certifications and compliances

- EN 62444

## Technical specification

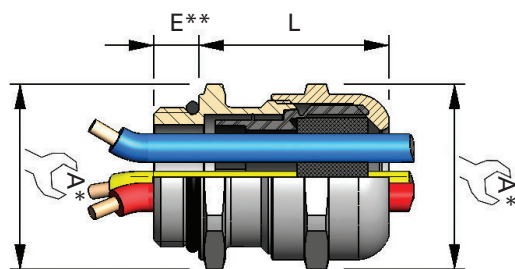
- Material: nickel-plated brass
- The NEWCAP-MS ensures the tightness of flat outer sheath cable or multi-wire outer sheath cable
- Continuous operating temperature: -20 °C to +80 °C
- IP66/IP68 tested 30 m/7 days on surface Ra 1.6 µm max.



IP66

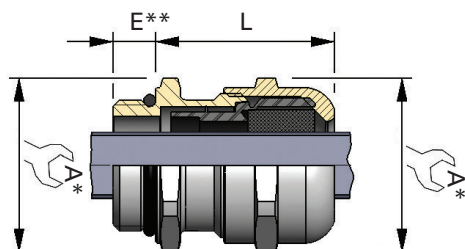
IP68

NEWCAP - MS multi-wired



THREAD SIZE (ISO)	CABLE DIAMETER MIN - MAX	NUMBER OF CABLES	A	L	SIZE	CATALOG NUMBER
16	1.50-3.00	2	20	24.00	5	CAP187334
16	2.50-4.00	2	20	24.00	5	CAP187424
20	3.00-5.00	2	20	27.00	6	CAP187524
20	2.50-5.00	3	24	27.00	6	CAP187534
20	4.00-6.00	2	24	28.00	6	CAP187624
25	5.00-7.00	3	30	28.00	7	CAP187734
25	6.00-8.00	2	30	28.00	7	CAP187824
32	4.00-6.00	4	38	30.00	8	CAP187814
32	4.50-7.00	4	38	30.00	8	CAP187744
40	4.00-6.00	4	47	33.00	9	CAP187764

NEWCAP - MS flat



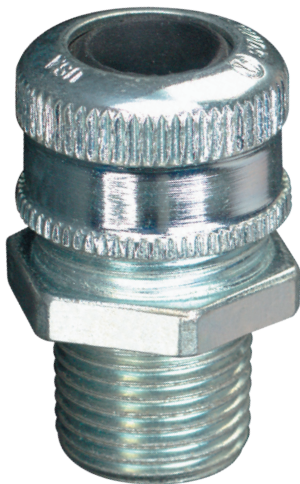
THREAD SIZE (ISO)	CABLE WIDTH MIN - MAX	CABLE THICKNESS MIN - MAX	A	L	SIZE	CATALOG NUMBER
25	11.00-13.00	4.5-6.0	30	28.00	7	CAP187134
32	11.00-18.00	5.0-7.0	38	30.00	8	CAP187184
40	21.00-24.00	5.0-8.5	47	33.00	9	CAP187224
40	24.00-27.00	8.0-11.5	47	33.00	9	CAP187274
50	30.00-32.50	5.0-9.0	57	37.00	10	CAP187304
50	29.00-31.00	10.0-14.0	57	37.00	10	CAP187314
50	32.50-35.50	9.0-12.0	57	37.00	10	CAP187354
50	34.00-37.00	4.5-6.5	57	37.00	10	CAP187374
50	38.00-40.00	10.0-14.0	57	48.00	10	CAP187414
63	38.00-42.00	4.5-6.5	75	48.00	11	CAP187444

\* For 'across corners' dimensions, multiply 'across flats' dimensions by 1.1

\*\* For « E » see thread dimensions charts on page 5.18







**Suitable for the following cable types:**

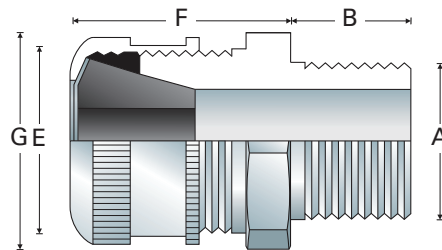
- GCD cord and cable fittings are listed for use with flexible cords and tray cable types TC, TC-ER, TC-ER-HL, ITC, ITC-ER, ITC-HL, PLTC and PLTC-ER cables.
- Non-armoured cable
- Tray cable

**Certifications and compliances**

- cULus Listed – UL File E23223
- Suitable for use in Class I, Div. 2 hazardous locations when installed in accordance with NEC501.10(B)(4)
- Suitable for use in wet locations

**Technical specification**

- Material:
  - Form A - D bodies and gland nuts – steel with zinc electroplate and chromate finish coat
  - Form E - F bodies and gland nuts – Feraloy® iron alloy with electrogalvanized and aluminum acrylic paint
- Available in all aluminum construction
- Standard neoprene seal
- Weatherproof seal on outer sheath of cable
- Available with NPT threads
- Temperature range: -25 °C to +40 °C
- NEMA 3R





THREAD SIZE A	OUTER SHEATH 'E' MIN - MAX	EXTERNAL DIAMETER 'G'	ACROSS FLATS	ACROSS CORNERS 'G'	GLAND LENGTH 'F' LESS ENTRY	THREAD LENGTH 'B'	NPT CATALOG NUMBER	
3/8"	A	0.125 - 0.250	1.063	-	0.750	0.875	0.540	CGB3814
3/8"	A	0.250 - 0.375	1.063	-	0.750	0.875	0.540	CGB3816
3/8"	A	0.375 - 0.437	1.063	-	0.750	0.875	0.540	CGB3817
3/8"	B	0.125 - 0.250	1.313	-	1.000	1.125	0.540	CGB3892
3/8"	B	0.250 - 0.375	1.313	-	1.000	1.125	0.540	CGB3893
3/8"	B	0.375 - 0.500	1.313	-	1.000	1.125	0.540	CGB3894
1/2"	A	0.125 - 0.250	1.000	-	0.875	0.969	0.625†	CGB114†
1/2"	A	0.250 - 0.375	1.000	-	0.875	0.969	0.625†	CGB116†
1/2"	A	0.375 - 0.437	1.000	-	0.875	0.969	0.625†	CGB117†
1/2"	B	0.125 - 0.250	1.313	-	1.125	1.250	0.690*†	CGB192*†
1/2"	B	0.250 - 0.375	1.313	-	1.125	1.250	0.690*†	CGB193*†
1/2"	B	0.375 - 0.500	1.313	-	1.125	1.250	0.690*†	CGB194*†
1/2"	B	0.500 - 0.625	1.313	-	1.125	1.250	0.690*†	CGB195*†
1/2"	C	0.625 - 0.750	1.750	-	1.500	1.656	0.625*	CGB196*†
1/2"	C	0.750 - 0.875	1.750	-	1.500	1.656	0.625*†	CGB197*†
3/4"	B	0.125 - 0.250	1.375	-	1.250	1.405	0.625†	CGB292†
3/4"	B	0.250 - 0.375	1.375	-	1.250	1.405	0.625†	CGB293†
3/4"	B	0.375 - 0.500	1.375	-	1.250	1.405	0.625†	CGB294†
3/4"	B	0.500 - 0.625	1.375	-	1.250	1.405	0.625†	CGB295†
3/4"	C	0.625 - 0.750	1.750	-	1.630	1.780	0.625*†	CGB296*†
3/4"	C	0.750 - 0.875	1.750	-	1.630	1.780	0.625*†	CGB297*†
3/4"	D	0.875 - 1.000	2.500	2.250	2.130	2.250	0.625*†	CGB298*†
1"	B	0.250 - 0.375	1.375	-	1.375	1.550	0.625†	CGB393†
1"	B	0.375 - 0.500	1.375	-	1.375	1.550	0.625†	CGB394†
1"	C	0.500 - 0.625	1.688	-	1.500	1.656	0.688*†	CGB395*†
1"	C	0.625 - 0.750	1.688	-	1.500	1.656	0.688*†	CGB396*†
1"	C	0.750 - 0.875	1.688	-	1.500	1.656	0.688*†	CGB397*†
1"	C	0.875 - 1.000	1.688	-	1.500	1.656	0.688†	CGB3239†
1"	D	0.875 - 1.000	2.375	2.375	2.125	2.250	0.830*†	CGB398*†
1"	D	1.000 - 1.188	2.375	2.375	2.125	2.250	0.830*†	CGB399*†
1"	D	1.188 - 1.375	2.375	2.375	2.125	2.250	0.830*†	CGB3911*†
1 1/4"	D	0.875 - 1.000	2.313	2.250	2.125	2.250	0.830	CGB498†
1 1/4"	D	1.000 - 1.188	2.313	2.250	2.125	2.250	0.830	CGB499†
1 1/4"	D	1.188 - 1.375	2.313	2.250	2.125	2.250	0.830	CGB4911†
1 1/4"	E	1.375 - 1.625	2.625	3.000	-	-	0.688	CGB4913
1 1/4"	E	1.625 - 1.875	2.625	3.000	-	-	0.688	CGB4915
1 1/2"	D	0.875 - 1.000	2.313	2.250	2.130	2.250	0.956	CGB598†
1 1/2"	D	1.000 - 1.188	2.313	2.250	2.130	2.250	0.956	CGB599†
1 1/2"	D	1.188 - 1.375	2.313	2.250	2.130	2.250	0.956	CGB5911†
1 1/2"	E	1.375 - 1.625	2.625	3.000	-	-	0.813	CGB5913
1 1/2"	E	1.625 - 1.875	2.625	3.000	-	-	0.813	CGB5915
2"	E	1.375 - 1.625	2.625	3.000	-	-	0.813	CGB6913
2"	E	1.625 - 1.875	2.625	3.000	-	-	0.813	CGB6915
2"	F	1.875 - 2.188	2.563	3.813	-	-	0.813	CGB6917
2"	F	2.188 - 2.500	2.563	3.813	-	-	0.813	CGB6920
2 1/2"	E	1.375 - 1.625	2.625	3.125	-	-	1.000	CGB7913
2 1/2"	E	1.625 - 1.875	2.625	3.125	-	-	1.000	CGB7915
2 1/2"	F	1.875 - 2.188	2.625	3.875	-	-	1.438	CGB7917
2 1/2"	F	2.188 - 2.500	2.625	3.875	-	-	1.000	CGB7920
3"	F	1.875 - 2.188	2.625	3.875	-	-	1.000	CGB8917
3"	F	2.188 - 2.500	2.625	3.875	-	-	1.000	CGB8920

To order options, add suffix after gland type, e.g:

CGB192-SG (for sealing gasket)

CGB195-SA (for aluminum construction)

All dimensions in inches unless otherwise stated.

† With optional aluminum construction

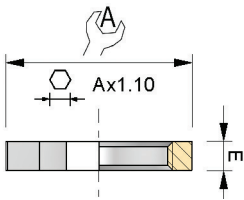
\* With optional sealing gasket

# Accessories - metallic thread ISO

Industrial cable glands and accessories

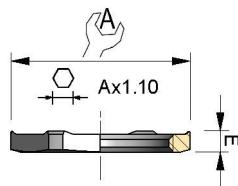
## Technical specification

- Material: nickel-plated brass / stainless steel 316L (stainless steel 316L: replace the last digit with '9')
- ISO threadforms to EN 60423
- Adaptors, stopping plugs and reducers: IP66, IP68 with composite or neoprene washer



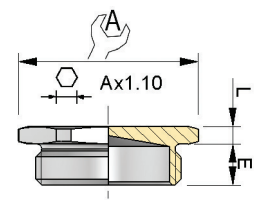
### Ordering codes - Locknut

ISO	A	E	ORDER UNIT	CATALOG NUMBER
10	12.0	2.5	20	CAP221094
12	23.0	3.0	20	CAP221294
16	29.0	4.0	20	CAP221694
20	35.0	4.0	20	CAP222094
25	44.0	4.5	20	CAP222594
32	60.0	4.8	10	CAP223294
40	69.0	5.0	10	CAP224094
50	87.0	6.5	1	CAP225094
63	103.0	6.5	1	CAP226394
75	104.0	8.0	1	CAP227594
90	122.0	8.0	1	CAP229094
110	132.0	9.0	1	CAP221104



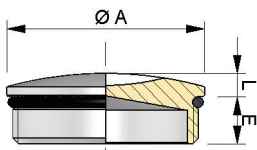
### Ordering codes - Earthing locknut

ISO	A	E	ORDER UNIT	CATALOG NUMBER
10	12.0	2.5	20	CAP229104
12	14.0	3.0	20	CAP229124
16	18.0	3.0	20	CAP229164
20	23.0	3.0	20	CAP229204
25	28.0	3.0	20	CAP229254
32	36.0	3.5	10	CAP229324
40	44.0	4.0	10	CAP229404
50	54.0	5.0	1	CAP229504
63	70.0	6.0	1	CAP229634



### Ordering codes - Hex head stopping plug

ISO	A	L	E	ORDER UNIT	CATALOG NUMBER
12	15.0	2.5	6.5	20	CAP197124
16	18.0	2.5	6.5	20	CAP197164
20	23.0	3.0	6.5	20	CAP197204
25	28.0	3.0	7.0	20	CAP197254
32	36.0	3.5	8.0	10	CAP197324
40	44.0	4.0	8.0	1	CAP197404
50	54.0	4.5	9.0	1	CAP197504
63	67.0	5.5	10.0	1	CAP197634

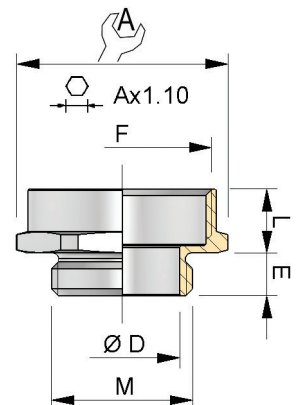


### Ordering codes - Dome head stopping plug

ISO	A	L	E	ORDER UNIT	CATALOG NUMBER
12	14.0	3.0	5.0	20	CAP196124
16	18.0	3.0	6.0	20	CAP196164
20	22.0	3.0	6.5	20	CAP196204
25	27.0	4.0	7.0	20	CAP196254
32	34.0	4.0	8.0	10	CAP196324
40	44.0	5.0	8.0	1	CAP196404
50	54.0	5.5	9.0	1	CAP196504
63	67.0	6.0	10.0	1	CAP196634

### Ordering codes - Adaptor M/F

ISO M	ISO F	A	L	E	øD	ORDER UNIT	CATALOG NUMBER
12	16	18.0	8.0	5.0	8.8	10	CAP755334
16	20	22.0	8.0	6.0	12.5	10	CAP750274
20	25	27.0	9.0	6.0	16.2	10	CAP750544
25	32	36.0	10.5	7.0	21.0	1	CAP750814
32	40	42.0	10.5	8.0	28.0	1	CAP751084
40	50	52.0	11.5	8.0	35.8	1	CAP751354
50	63	67.0	12.5	9.0	45.8	1	CAP751624

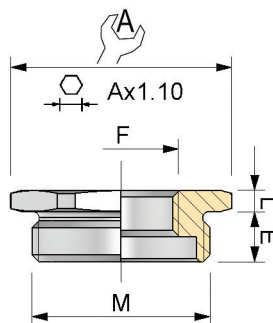


# Accessories - metallic thread ISO

Industrial cable glands and accessories

## Technical specification

- Material: nickel-plated brass / stainless steel 316L (stainless steel 316L: replace the last digit with '9')
- ISO threadforms to EN 60423
- Adaptors, stopping plugs and reducers: IP66, IP68 with composite or neoprene washer



## Ordering codes - Reducer

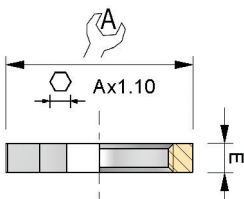
ISO M	ISO F	A	L	E	ORDER UNIT	CATALOG NUMBER
16	12	18.0	2.5	6.0	10	CAP755834
20	12	22.0	3.0	6.0	5	CAP750044
20	16	22.0	3.0	6.0	10	CAP750024
25	16	28.0	3.0	7.0	10	CAP750034
25	20	28.0	3.0	7.0	10	CAP750294
32	16	36.0	3.5	8.0	1	CAP759104
32	20	36.0	3.5	8.0	10	CAP750304
32	25	36.0	3.5	8.0	10	CAP750564
40	16	44.0	4.0	8.0	1	CAP759164
40	20	44.0	4.0	8.0	1	CAP759204
40	25	44.0	4.0	8.0	1	CAP750574
40	32	44.0	4.0	8.0	1	CAP750834
50	40	54.0	4.5	9.0	1	CAP751204
63	50	67.0	5.0	10.0	1	CAP751374

# Accessories - metallic Pg thread

Industrial cable glands and accessories

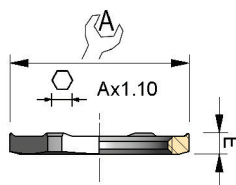
## Technical specification

- Material: nickel-plated brass / stainless steel 316L (stainless steel 316L: replace the last digit with '9')
- Pg electrical threadforms - guide: UTE C 68-311 – DIN 40430
- Adaptors, stopping plugs and reducers: IP66, IP68 with composite or neoprene washer



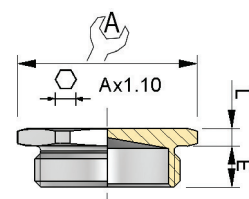
Ordering codes - Locknut

Pg	A	E	ORDER UNIT	CATALOG NUMBER
Pg7	15.0	3.0	20	CAP280704
Pg9	18.0	3.0	20	CAP280904
Pg11	21.0	3.0	20	CAP281104
Pg13	23.0	3.0	20	CAP281304
Pg16	26.0	3.0	20	CAP281604
Pg21	32.0	3.5	20	CAP282104
Pg29	41.0	4.0	10	CAP282904
Pg36	51.0	5.0	10	CAP283604
Pg42	58.0	5.0	1	CAP284204
No 48 NFC	64.0	6.0	1	CAP284804
Pg48 DIN	64.0	6.0	1	CAP284884



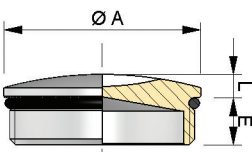
Ordering codes - Earthing locknut

Pg	A	E	ORDER UNIT	CATALOG NUMBER
Pg7	15.0	3.0	20	CAP280794
Pg9	18.0	3.0	20	CAP280994
Pg11	21.0	3.0	20	CAP281194
Pg13	23.0	3.0	20	CAP281394
Pg16	26.0	3.0	20	CAP281694
Pg21	32.0	3.5	20	CAP282194
Pg29	41.0	4.0	10	CAP282994
Pg36	51.0	5.0	10	CAP283694
Pg42	58.0	5.0	1	CAP284294
No 48 NFC	64.0	6.0	1	CAP284894
Pg48 DIN	64.0	6.0	1	CAP284994



Ordering codes - Hex head stopping plug

Pg	A	L	E	ORDER UNIT	CATALOG NUMBER
Pg7	15.0	2.5	6.5	100	CAP190704
Pg9	18.0	2.5	6.5	100	CAP190904
Pg11	21.0	3.0	7.0	100	CAP191104
Pg13	23.0	3.0	7.0	100	CAP191304
Pg16	26.0	3.5	7.0	100	CAP191604
Pg21	32.0	4.0	8.0	100	CAP192104
Pg29	41.0	4.0	8.5	10	CAP192904
Pg36	51.0	5.0	8.5	10	CAP193604
Pg42	58.0	6.0	10.0	1	CAP194204
No 48 NFC	64.0	6.5	11.0	1	CAP194804
Pg48 DIN	64.0	6.5	11.0	1	CAP194884

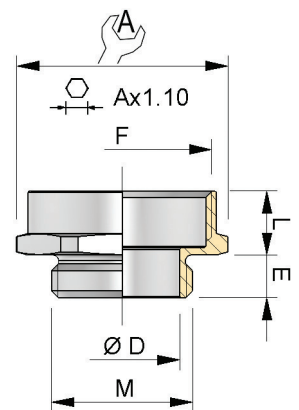


Ordering codes - Dome head stopping plug

Pg	øA	L	E	ORDER UNIT	CATALOG NUMBER
Pg7	14.0	2.5	6.5	20	CAP196074
Pg9	17.0	2.5	6.5	20	CAP196094
Pg11	20.0	3.0	7.0	20	CAP196114
Pg13	22.0	3.0	7.0	20	CAP196134
Pg16	24.0	3.5	7.0	20	CAP196174
Pg21	30.0	4.0	8.0	20	CAP196214
Pg29	39.0	4.0	8.5	10	CAP196294
Pg36	50.0	5.0	8.5	10	CAP196364
Pg42	57.0	6.0	10.0	1	CAP196424
No 48 NFC	64.0	6.5	11.0	1	CAP196484
Pg48 DIN	64.0	6.5	11.0	1	CAP196494

Ordering codes - Adaptor M/F

Pg M	Pg F	A	L	E	øD	ORDER UNIT	CATALOG NUMBER
Pg7	Pg9	17.0	7.5	4.0	10.0	50	CAP070904
Pg9	Pg11	20.0	8.5	5.0	12.0	50	CAP091104
Pg9	Pg13	22.0	8.5	5.0	12.0	50	CAP091304
Pg11	Pg13	22.0	8.5	6.0	15.0	50	CAP111304
Pg11	Pg16	24.0	8.5	6.0	15.0	50	CAP111604
Pg13	Pg16	24.0	8.5	6.0	16.5	50	CAP131604
Pg13	Pg21	30.0	8.5	6.0	16.5	50	CAP132104
Pg16	Pg21	30.0	10.0	6.0	18.5	50	CAP162104
Pg21	Pg29	40.0	11.5	7.0	24.0	10	CAP212904
Pg29	Pg36	50.0	11.5	8.0	32.0	1	CAP293604
Pg36	Pg42	58.0	15.0	8.0	41.0	1	CAP364204
Pg36	No 48 NFC	64.0	15.0	8.0	41.0	1	CAP364804
Pg42	No 48 NFC	64.0	15.0	8.0	48.0	1	CAP424804
Pg36	Pg48 DIN	64.0	15.0	8.0	41.0	1	CAP364884
Pg42	Pg48 DIN	64.0	15.0	8.0	48.0	1	CAP424884



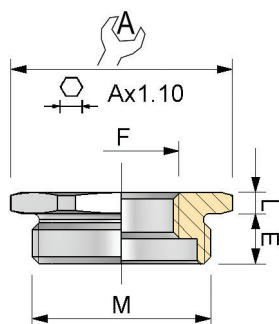
All dimensions in mm.

# Accessories - metallic Pg thread

Industrial cable glands and accessories

## Technical specification

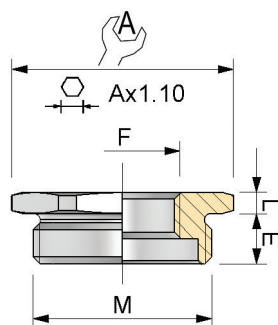
- Material: nickel-plated brass / stainless steel 316L (stainless steel 316L: replace the last digit with '9')
- Pg electrical threadforms - guide: UTE C 68-311 – DIN 40430
- Adaptors, stopping plugs and reducers: IP66, IP68 with composite or neoprene washer



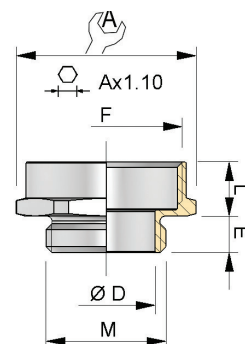
Ordering codes - Reducer

Pg M	Pg F	A	L	E	ORDER UNIT	CATALOG NUMBER
Pg9	Pg7	16.0	2.0	5.0	100	CAP090704
Pg11	Pg7	20.0	2.0	6.0	100	CAP110704
Pg11	Pg9	20.0	2.0	6.0	100	CAP110904
Pg13	Pg9	22.0	2.5	6.0	100	CAP130904
Pg13	Pg11	22.0	2.5	6.0	100	CAP131104
Pg16	Pg9	24.0	2.5	6.0	100	CAP160904
Pg16	Pg11	24.0	2.5	6.0	100	CAP161104
Pg16	Pg13	24.0	2.5	6.0	100	CAP161304
Pg21	Pg9	30.0	3.0	7.0	100	CAP210904
Pg21	Pg11	30.0	3.0	7.0	100	CAP211104
Pg21	Pg13	30.0	3.0	7.0	100	CAP211304
Pg21	Pg16	30.0	3.0	7.0	100	CAP211604
Pg29	Pg16	38.0	3.0	8.0	50	CAP291604
Pg29	Pg21	38.0	3.0	8.0	50	CAP292104
Pg36	Pg21	38.0	3.5	8.0	10	CAP362104
Pg36	Pg29	48.0	3.5	8.0	10	CAP362904
Pg42	Pg29	58.0	4.0	10.0	1	CAP422904
Pg42	Pg36	58.0	4.0	10.0	1	CAP423604
No 48 NFC	Pg29	62.0	4.0	10.0	1	CAP482904
No 48 NFC	Pg36	62.0	4.0	10.0	1	CAP483604
No 48 NFC	Pg42	62.0	4.0	10.0	1	CAP484204
Pg48 DIN	Pg36	62.0	4.0	10.0	1	CAP483684
Pg48 DIN	Pg42	62.0	4.0	10.0	1	CAP484284

Type 1:



Type 2:



Ordering codes - Adaptor

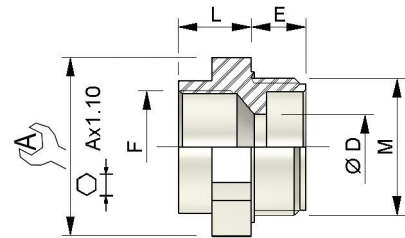
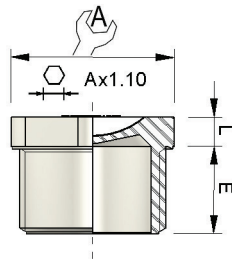
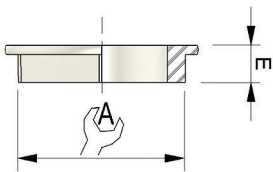
Pg M	ISO F	A	L	E	øD	TYPE	ORDER UNIT	CATALOG NUMBER
Pg7	12	14.0	7.0	6.5	9.8	1	10	CAP751774
Pg7	16	19.0	8.5	6.5	9.8	1	1	CAP750094
Pg9	12	19.0	2.5	6.5	-	2	10	CAP751844
Pg9	16	19.0	8.5	6.5	12.0	1	10	CAP750104
Pg9	20	22.0	8.5	6.5	12.0	1	10	CAP750364
Pg11	12	21.0	3.0	7.0	-	2	1	CAP751874
Pg11	16	21.0	7.5	7.0	-	2	10	CAP750114
Pg11	20	22.0	8.5	7.0	15.0	1	10	CAP750374
Pg13	16	23.0	3.0	7.0	-	2	10	CAP750124
Pg13	20	24.0	8.5	7.0	16.8	1	10	CAP750384
Pg13	25	27.0	9.5	7.0	16.8	1	1	CAP750644
Pg16	16	27.0	3.0	8.0	-	2	10	CAP750134
Pg16	20	27.0	7.5	8.0	18.5	1	10	CAP750394
Pg16	25	27.0	9.5	8.0	18.8	1	10	CAP750654
Pg21	25	32.0	3.5	8.0	-	2	10	CAP750864
Pg21	32	34.0	10.5	8.0	24.0	1	10	CAP750924
Pg29	32	42.0	4.0	8.5	-	2	10	CAP750934
Pg29	40	42.0	10.5	8.5	32.8	1	1	CAP751194
Pg36	40	51.0	4.5	8.5	-	2	1	CAP751294
Pg36	50	53.0	11.5	8.5	42.5	1	1	CAP751464
Pg42	50	58.0	4.5	10.0	-	2	1	CAP751474
Pg42	63	67.0	13.0	10.0	49.5	1	1	CAP751734
Pg48 DIN	50	54.0	5.0	11.0	-	2	1	CAP751484
Pg48 DIN	63	67.0	13.0	11.0	54.5	1	1	CAP751744

# Accessories - polyamide ISO thread

Industrial cable glands and accessories

## Technical specification

- Material: polyamide 6/6, colour grey
- ISO threadforms to EN 60423
- Adaptors, stopping plugs and reducers: IP66, IP68 with composite or neoprene washer



### Ordering codes - Locknut

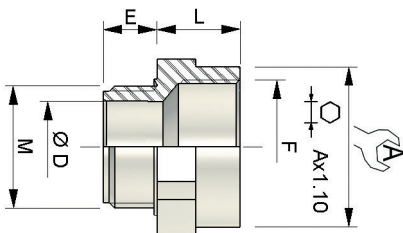
ISO	A	E	ORDER UNIT	CATALOG NUMBER
12	18.0	4.5	20	CAP261273
16	22.0	5.0	20	CAP261673
20	26.0	5.5	20	CAP262073
25	32.0	6.0	20	CAP262573
32	41.0	7.0	10	CAP263273
40	50.0	8.0	1	CAP264073
50	60.0	8.0	1	CAP265073
63	75.0	9.0	1	CAP266373

### Ordering codes - Hex head stopping plug

ISO	A	L	E	ORDER UNIT	CATALOG NUMBER
12	15.0	4.0	15.0	20	CAP190126
16	19.0	4.0	15.0	20	CAP190166
20	23.0	4.0	15.0	20	CAP190206
25	28.0	5.0	15.0	20	CAP190256
32	36.0	5.5	15.0	20	CAP190326
40	44.0	5.5	15.0	10	CAP190406
50	54.0	6.0	16.0	10	CAP190506
63	67.0	6.5	17.0	1	CAP190636

### Ordering codes - Reducer

ISO M	ISO F	A	L	E	ORDER UNIT	CATALOG NUMBER
20	12	24.0	4.0	8.0	10	CAP750015
20	16	24.0	4.5	8.0	10	CAP750025
25	12	29.0	6.0	8.0	10	CAP750275
25	16	29.0	6.0	8.0	10	CAP750285
25	20	29.0	6.0	8.0	10	CAP750295
32	12	36.0	6.0	8.0	10	CAP750535
32	16	36.0	6.0	10.0	10	CAP750545
32	20	36.0	6.0	10.0	10	CAP750555
32	25	36.0	6.0	10.0	10	CAP750565
40	16	36.0	6.0	10.0	1	CAP750805
40	20	46.0	6.0	10.0	1	CAP750815
40	25	46.0	6.0	10.0	1	CAP750825
40	32	46.0	6.0	10.0	1	CAP750835
50	20	55.0	6.0	10.0	1	CAP751075
50	25	55.0	6.0	12.0	1	CAP751085
50	32	55.0	6.0	12.0	1	CAP751095
50	40	55.0	6.0	12.0	1	CAP751105
63	25	68.0	6.0	12.0	1	CAP751345
63	32	68.0	6.0	12.0	1	CAP751355
63	40	68.0	6.0	12.0	1	CAP751365
63	50	68.0	6.0	12.0	1	CAP751375



### Ordering codes - Adaptor

ISO M	ISO F	A	L	E	D	ORDER UNIT	CATALOG NUMBER
16	20	24.0	13.0	8.0	11.5	10	CAP750265
20	25	29.0	15.0	9.0	15.5	10	CAP750245
25	32	36.0	15.0	11.0	20.0	10	CAP750705

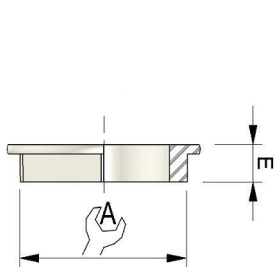


# Accessories - polyamide Pg thread

Industrial cable glands and accessories

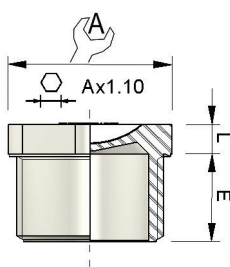
## Technical specification

- Material: polyamide 6/6, colour grey
- Pg electrical threadforms - guide: UTE C 68-311 – DIN 40430
- Adaptors, stopping plugs and reducers: IP66, IP68 with composite or neoprene washer



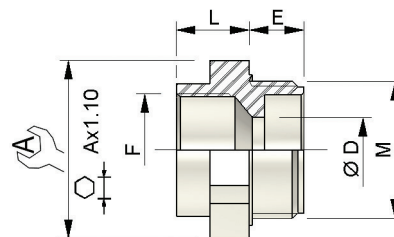
Ordering codes - Locknut

Pg	A	E	ORDER UNIT	CATALOG NUMBER
Pg7	15.0	4.5	20	CAP260770
Pg9	19.0	4.5	20	CAP260970
Pg11	22.0	5.0	20	CAP261170
Pg13	24.0	5.5	20	CAP261370
Pg16	27.0	6.0	20	CAP261670
Pg21	32.0	6.5	20	CAP262170
Pg29	41.0	7.5	10	CAP262970
Pg36	54.0	9.0	10	CAP263670
Pg42	60.0	9.0	1	CAP264270
No 48 NFC	67.0	9.5	1	CAP264870
Pg48 DIN	67.0	9.5	1	CAP264878



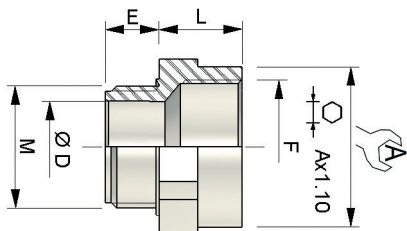
Ordering codes - Hex head stopping plug

Pg	A	L	E	ORDER UNIT	CATALOG NUMBER
Pg7	15.0	4.0	8.0	20	CAP190770
Pg9	19.0	4.5	10.0	20	CAP190970
Pg11	22.0	4.5	10.5	20	CAP191170
Pg13	24.0	5.0	11.0	20	CAP191370
Pg16	27.0	5.0	12.0	20	CAP191670
Pg21	32.0	5.5	12.5	20	CAP192170
Pg29	40.0	5.5	13.5	10	CAP192970
Pg36	54.0	6.0	15.0	10	CAP193670
Pg42	59.0	6.5	15.0	1	CAP194270
No 48 NFC	64.0	6.5	15.0	1	CAP194870
Pg48 DIN	64.0	6.5	10.0	1	CAP194879



Ordering codes - Reducer

Pg M	Pg F	A	L	E	ORDER UNIT	CATALOG NUMBER
Pg9	Pg7	19.0	11.0	7.0	10	CAP090770
Pg11	Pg7	22.0	10.5	8.0	10	CAP110770
Pg11	Pg9	22.0	12.0	8.0	10	CAP110970
Pg13	Pg9	24.0	11.5	9.0	10	CAP130970
Pg13	Pg11	24.0	12.0	9.0	10	CAP131170
Pg16	Pg9	27.0	11.5	9.0	10	CAP160970
Pg16	Pg11	27.0	12.0	9.0	10	CAP161170
Pg16	Pg13	27.0	13.0	9.0	10	CAP161370
Pg21	Pg11	32.0	11.5	10.0	10	CAP211170
Pg21	Pg13	32.0	12.5	10.0	10	CAP211370
Pg21	Pg16	32.0	12.5	10.0	10	CAP211670
Pg29	Pg13	41.0	12.5	12.0	1	CAP291370
Pg29	Pg16	41.0	12.5	12.0	1	CAP291670
Pg29	Pg21	41.0	16.5	12.0	5	CAP292170
Pg36	Pg29	55.0	16.5	14.0	5	CAP362970
Pg42	Pg36	60.0	20.5	16.0	1	CAP423670
No 48 NFC	Pg36	65.0	20.5	16.0	1	CAP483670



Ordering codes - Adaptor

Pg M	Pg F	A	L	E	ORDER UNIT	CATALOG NUMBER
Pg7	Pg9	19.0	13.5	6.5	10	CAP070970
Pg9	Pg11	22.0	14.0	7.0	10	CAP091170
Pg11	Pg13	24.0	14.0	8.0	10	CAP111370
Pg13	Pg16	27.0	14.0	9.0	10	CAP131670
Pg16	Pg21	32.0	18.5	9.0	10	CAP162170
Pg21	Pg29	41.0	19.5	10.0	1	CAP212970
Pg29	Pg36	55.0	22.0	12.0	1	CAP293670
Pg36	Pg42	60.0	21.0	14.0	1	CAP364270
Pg36	No 48 NFC	65.0	23.5	14.0	1	CAP364870

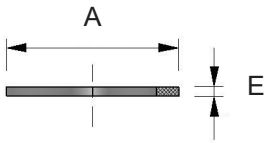
All dimensions in mm.

# Sealing accessories / reducing ring

Industrial cable glands and accessories

## Technical specification

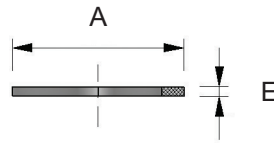
- Material: composite, neoprene or perbunan
- Applications: cable glands, stopping plugs, reducers, adaptors, etc



### Ordering codes - Composite sealing washer

Pg	A	E	ORDER UNIT	CATALOG NUMBER
Pg7	17.0	1.5	20	CAP240750
Pg9	21.0	1.5	20	CAP240950
Pg11	25.0	1.5	20	CAP241150
Pg13	27.0	1.5	20	CAP241350
Pg16	31.0	1.5	20	CAP241650
Pg21	39.0	1.5	20	CAP242150
Pg29	50.0	1.5	10	CAP242950
Pg36	64.0	1.5	10	CAP243650
Pg42	73.0	1.5	1	CAP244250
No 48 NFC	79.0	2.0	1	CAP244850
Pg48 DIN	79.0	2.0	1	CAP244850
G2 1/2"	94.0	2.0	1	CAP245050
G3"	107.0	2.0	1	CAP246050
G4"	133.0	2.0	1	CAP248050

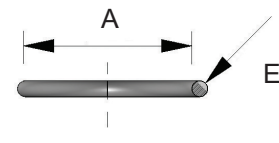
Operating temperature: -60 °C to +140 °C



### Ordering codes - Neoprene sealing washer

Pg	A	E	ORDER UNIT	CATALOG NUMBER
Pg7	17.0	1.2	20	CAP240749
Pg9	21.0	1.2	20	CAP240949
Pg11	24.0	1.2	20	CAP241149
Pg13	27.0	1.2	20	CAP241349
Pg16	30.0	1.2	20	CAP241649
Pg21	35.0	1.2	20	CAP242149
Pg29	45.0	1.2	20	CAP242949
Pg36	60.0	1.2	20	CAP243649
Pg42	65.0	1.2	1	CAP244249
No 48 NFC	71.0	1.2	1	CAP244849
Pg48 DIN	71.0	1.2	1	CAP244849
G2 1/2"	90.0	1.2	1	CAP244949
G3"	109.0	1.2	1	CAP246049
G4"	136.0	1.2	1	CAP248049

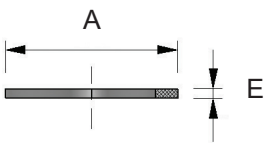
Operating temperature: -35 °C to +120 °C



### Ordering codes - Perbunan O-ring

Pg	A	E	ORDER UNIT	CATALOG NUMBER
Pg7	10.0	1.3	20	CAP240746
Pg9	12.0	1.6	20	CAP240946
Pg11	16.0	1.6	20	CAP241146
Pg13	16.0	1.6	20	CAP241346
Pg16	18.5	1.6	20	CAP241646
Pg21	23.5	1.8	20	CAP242146
Pg29	32.0	1.6	20	CAP242946
Pg36	41.0	1.8	10	CAP243646
Pg42	46.0	1.8	10	CAP244246
No 48 NFC	55.0	2.0	10	CAP244846
Pg48 DIN	55.0	2.0	10	CAP244846

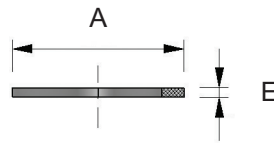
Operating temperature: -30 °C to +100 °C



### Ordering codes - Composite sealing washer

ISO	A	E	ORDER UNIT	CATALOG NUMBER
10	15.0	1.2	20	CAP221045
12	18.0	1.2	20	CAP221245
16	22.0	1.2	20	CAP221645
20	27.0	1.2	20	CAP222045
25	35.0	1.5	20	CAP222545
32	43.0	1.5	10	CAP223245
40	55.0	1.5	10	CAP224045
50	69.0	1.5	1	CAP225045
63	82.0	2.0	1	CAP226345
75	94.0	2.0	1	CAP227545
90	110.0	2.0	1	CAP229045
110	130.0	2.0	1	CAP221145

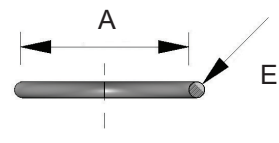
Operating temperature: -60 °C to +140 °C



### Ordering codes - Neoprene sealing washer

ISO	A	E	ORDER UNIT	CATALOG NUMBER
10	15.0	1.2	20	CAP221049
12	18.0	1.2	20	CAP221249
16	18.0	1.2	20	CAP221649
20	22.0	1.2	20	CAP222049
25	24.0	1.5	20	CAP222549
32	30.0	1.5	10	CAP223249
40	42.0	1.5	10	CAP224049
50	52.0	1.5	1	CAP225049
63	63.0	2.0	1	CAP226349
75	90.0	2.0	1	CAP227549
90	106.0	2.0	1	CAP229049
110	126.0	2.0	1	CAP221149

Operating temperature: -35 °C to +120 °C



### Ordering codes - Perbunan O-ring

ISO	A	E	ORDER UNIT	CATALOG NUMBER
12	10.0	1.8	20	CAP241244
16	12.5	1.8	20	CAP241644
20	17.0	1.8	20	CAP242044
25	22.0	1.8	20	CAP242544
32	28.0	1.6	20	CAP243244
40	37.0	1.8	10	CAP244044
50	46.0	1.8	10	CAP245044
63	57.0	1.8	10	CAP246344

Operating temperature: -30 °C to +100 °C



### Ordering codes - Perbunan reducing ring for NEWCAP cable glands

GLAND SIZE	MIN	MAX	CATALOG NUMBER
5 / 4	3.0	6.5	CAP180504
6 / 5	4.5	10.0	CAP180605
7 / 6	6.0	13.0	CAP180706
8 / 7	10.0	18.0	CAP180807
9 / 8	16.0	24.5	CAP180908
10 / 9	22.0	32.0	CAP181009
11 / 10	29.0	40.5	CAP181110
12 / 11	37.0	53.0	CAP181211



## JUDODIX ISO conduit connector



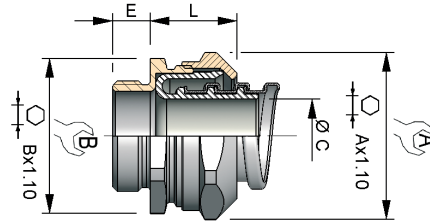
IP66

### Certifications

- ISO metric thread to- NF EN 60423 and NF EN 50262

### Technical specification

- Material: nickel-plated brass, polyethylene end cap
- Temperature range: -5 °C to +60 °C
- IP66: NF EN 60529
- For CAPRIPLAST conduit, please see our MOEM catalogue



### Ordering codes - JUDODIX ISO male fitting

CONDUIT SIZE	MALE FITTING ISO THREAD	E	L	C	HEXAGON A	HEXAGON B	MALE FITTING REFERENCE
7	12	6.0	10.0	7.5	19.0	17.0	CAP339124
9	16	6.0	12.5	9.0	22.0	20.0	CAP339164
11	20	7.0	13.0	11.5	26.0	24.0	CAP339224
13	20	7.0	13.0	13.5	28.0	26.0	CAP339204
16	25	8.0	14.0	15.0	30.0	28.0	CAP339254
21	25	8.0	16.5	20.0	36.0	34.0	CAP339264
21	32	8.0	16.5	20.0	36.0	36.0	CAP339324
29	32	8.0	19.5	26.5	47.0	45.0	CAP339334
29	40	10.0	19.5	26.5	47.0	45.0	CAP339404
36	40	10.0	26.0	34.5	60.0	56.0	CAP339414
36	50	11.0	26.0	34.5	60.0	56.0	CAP339504
48	63	11.0	32.5	45.5	74.0	70.0	CAP339634
3	90	22.0	51.0	70.5	120.0	110.0	CAP339904

### Ordering codes - JUDODIX ISO female fitting

CONDUIT SIZE	FEMALE FITTING ISO THREAD	E	L	C	HEXAGON A	HEXAGON B	FEMALE FITTING REFERENCE
7	12	6.0	10.0	7.5	19.0	17.0	CAP629124
9	16	6.0	12.5	9.0	22.0	20.0	CAP629164
11	20	7.0	13.0	11.5	26.0	24.0	CAP629224
13	20	7.0	13.0	13.5	28.0	26.0	CAP629204
16	25	8.0	14.0	15.0	30.0	28.0	CAP629254
21	25	8.0	16.5	20.0	36.0	34.0	CAP629264
21	32	8.0	16.5	20.0	36.0	36.0	CAP629324
29	32	8.0	19.5	26.5	47.0	45.0	CAP629334
29	40	10.0	19.5	26.5	47.0	45.0	CAP629404
36	40	10.0	26.0	34.5	60.0	56.0	CAP629414
36	50	11.0	26.0	34.5	60.0	56.0	CAP629504
48	63	11.0	32.5	45.5	74.0	70.0	CAP629634
3	90	22.0	51.0	70.5	120.0	110.0	CAP629904

All dimensions in mm.

# JUDODIX Pg conduit connector

Industrial cable glands and accessories



## JUDODIX Pg conduit connector

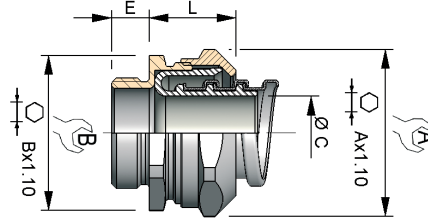


### Certifications

- Pg electrical thread to UTE C 68311 - DIN 40430 guide

### Technical specification

- Material: nickel-plated brass, polyethylene end cap
- Temperature range: -5 °C to +60 °C
- IP66: NF EN 60529
- For CAPRIPLAST conduit, please see our MOEM catalogue



IP66

### Ordering codes - JUDODIX Pg male fitting

CONDUIT SIZE	MALE FITTING Pg THREAD	E	L	C	HEXAGON A	HEXAGON B	MALE FITTING REFERENCE
7	Pg7	6.0	10.0	7.5	19.0	17.0	CAP330704
9	Pg9	6.0	12.5	9.2	22.0	20.0	CAP330904
11	Pg11	7.0	13.0	11.9	26.0	24.0	CAP331104
13	Pg13	7.0	13.0	13.5	28.0	26.0	CAP331304
16	Pg16	8.0	14.0	15.0	30.0	28.0	CAP331604
21	Pg21	8.0	16.5	20.0	36.0	34.0	CAP332104
29	Pg29	8.0	19.5	26.5	47.0	45.0	CAP332904
36	Pg36	8.0	26.5	34.5	60.0	56.0	CAP333604
48	Pg48 DIN	10.0	33.0	45.0	74.0	70.0	CAP334884
48	No 48 NFC	10.0	33.0	45.0	74.0	70.0	CAP334804
3	3"	11.0	60.0	70.5	120.0	120.0	CAP335304
4	4"	22.0	60.0	96.0	150.0	150.0	CAP335404

### Ordering codes - JUDODIX Pg female fitting

CONDUIT SIZE	FEMALE FITTING Pg THREAD	E	L	C	HEXAGON A	HEXAGON B	FEMALE FITTING REFERENCE
7	Pg7	6.0	10.0	7.5	19.0	17.0	CAP620704
9	Pg9	6.0	12.5	9.2	22.0	20.0	CAP620904
11	Pg11	7.0	13.0	11.9	26.0	24.0	CAP621104
13	Pg13	7.0	13.0	13.5	28.0	26.0	CAP621304
16	Pg16	8.0	14.0	15.0	30.0	28.0	CAP621604
21	Pg21	8.0	16.5	20.0	36.0	34.0	CAP622104
29	Pg29	10.0	19.5	26.5	47.0	45.0	CAP622904
36	Pg36	11.0	26.5	34.5	60.0	56.0	CAP623604
48	No 48 NFC	10.0	33.0	45.0	74.0	70.0	CAP624804



# JUDODIX 316L ISO/Pg conduit connector

Industrial cable glands and accessories

## JUDODIX 316L ISO/Pg conduit connector

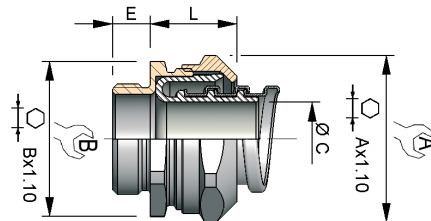


### Certifications

- ISO metric thread to- NF EN 60423 and NF EN 50262
- Pg electrical thread to UTE C 68311 - DIN 40430 guide

### Technical specification

- Material: Stainless steel 316L, polyethylene end cap
- Temperature range: -5 °C to +60 °C
- IP66: NF EN 60529
- For CAPRIPLAST conduit, please see our MOEM catalogue



### Ordering codes - JUDODIX ISO 316L male fitting

CONDUIT SIZE	MALE FITTING ISO THREAD	E	L	C	HEXAGON A	HEXAGON B	MALE FITTING REFERENCE
7	12	6.0	10.0	7.5	19.0	17.0	CAP339129
9	16	6.0	12.5	9.0	22.0	20.0	CAP339169
11	20	7.0	13.0	11.5	26.0	24.0	CAP339229
13	20	7.0	13.0	13.5	28.0	26.0	CAP339209
16	25	8.0	14.0	15.0	30.0	28.0	CAP339259
21	25	8.0	16.5	20.0	36.0	34.0	CAP339269
21	32	8.0	16.5	20.0	36.0	36.0	CAP339329
29	32	8.0	19.5	26.5	47.0	45.0	CAP339339
29	40	10.0	19.5	26.5	47.0	45.0	CAP339409
36	40	10.0	26.0	34.5	60.0	56.0	CAP339419
36	50	11.0	26.0	34.5	60.0	56.0	CAP339509
48	63	11.0	32.5	45.5	74.0	70.0	CAP339639
3	90	22.0	51.0	70.5	120.0	110.0	CAP339909

### Ordering codes - JUDODIX Pg 316L male fitting

CONDUIT SIZE	MALE FITTING Pg THREAD	E	L	C	HEXAGON A	HEXAGON B	MALE FITTING REFERENCE
7	Pg7	6.0	10.0	7.5	19.0	17.0	CAP330709
9	Pg9	6.0	12.5	9.2	22.0	20.0	CAP330909
11	Pg11	7.0	13.0	11.9	26.0	24.0	CAP331109
13	Pg13	7.0	13.0	13.5	28.0	26.0	CAP331309
16	Pg16	8.0	14.0	15.0	30.0	28.0	CAP331609
21	Pg21	8.0	16.5	20.0	36.0	34.0	CAP332109
29	Pg29	8.0	19.5	26.5	47.0	45.0	CAP332909
36	Pg36	8.0	26.5	34.5	60.0	56.0	CAP333609
48	Pg48 DIN	10.0	33.0	45.0	74.0	70.0	CAP334889
48	No 48 NFC	10.0	33.0	45.0	74.0	70.0	CAP334809
3	3"	11.0	60.0	70.5	120.0	120.0	CAP335309
4	4"	22.0	60.0	96.0	150.0	150.0	CAP335409



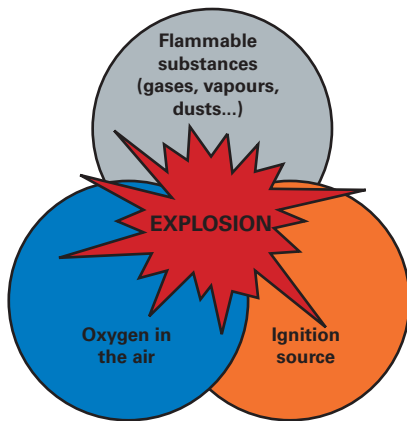
option  
316L



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# Risk of explosions

## Technical guide



An explosion may be produced when the 3 elements come together

In the chemicals, oil and agrofood industries many dangerous substances in the forms of gas, smoke, liquid, powder or dust are used or released during the manufacture, processing or storage of such products as: gases, hydrocarbons, plastics, varnishes, paints, drugs, powders, cereals, cosmetics, glues, etc...

Conditions that produce explosions:

- Flammable substances (gas, vapours, dusts...)
- Oxygen in the air
- Source of ignition

When flammable substances are mixed with oxygen in the ambient air in certain proportions, only an ignition source is required to produce an explosion. This ignition source can be: a naked flame, a mechanical or electrical spark, static electricity, or simply a hot surface.

To prevent explosions when electrical energy is used, it is essential to use ATEX electrical equipment which has been specially designed for this kind of hazardous environment.

### Dangerous substances:

There are two main families: flammable gases, vapours and liquids in one family, dust in layers or clouds in the other.

The following table gives a non-exhaustive list of the most common substances:

#### Gases and vapours

Methane	Hydrogen	Ethane
Acetone	Town gas	Butane
Petrol	Ammonia	Carbon bisulphide
Diesel	Methanol	Kerosene
Acetylene	Hexane	Carbon monoxide
Propane	Fuel oil	Nitromethane
Xylene	Ethyl nitrite	Ethyl alcohol
Styrene	Ethyl acetate	Limonene
Propanol	Ether	Butadiene
Benzene	Naphthalene	Pentane

#### Dusts

Starch (wheat)	Milk powder
Wheat (bulk)	Flour / wheat
Cocoa	Soya (flour)
Rice	Corn starch
Sugar	Cellulose
Malt	Aluminium
Paracetamol	Acetylsalicylic acid
Polystyrene	Ascorbic acid
Sulphur	Asphalt
Soap	Cork

### Sources of ignition:

Where combustible materials are processed and with the presence of oxygen in the air, the ignition source is the only element that can be readily eliminated to prevent an explosion.

13 sources of ignition are specified in EN 1127-1, the most common ones are:

#### Heat

- Open flames
- Hot surfaces
- Hot gases or gases under pressure
- Sunlight
- Infra-red light



#### Electric sparks

- Opening and closing of contacts
- Short-circuit
- Overvoltage
- Static discharges



#### Mechanical sparks

- Friction
- Hammering
- Grinding



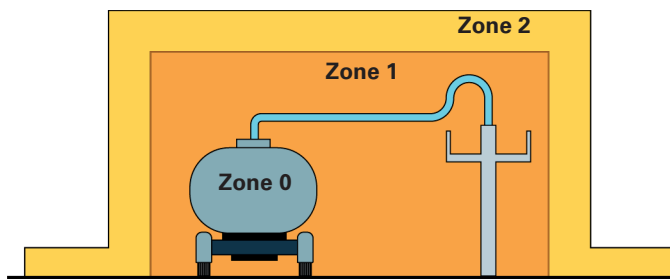


### Hazardous zones

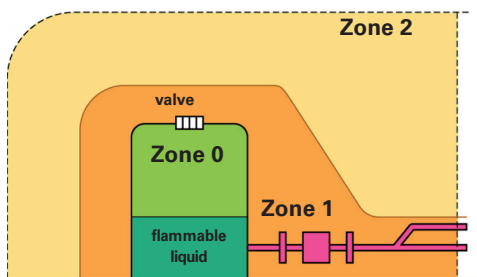
Application of the ATEX Directive 99/92/EC requires users to assess the explosion risks of their plants and to produce a classification of the hazardous zones. There are three Zone types according to the likelihood of a potentially explosive atmosphere being present, and two separate applications according to the nature of the mixture (gases or dusts).

	EXPLOSIVE ATMOSPHERE PRESENT EITHER CONTINUOUSLY OR FOR LONG PERIODS	EXPLOSIVE ATMOSPHERE PRESENT INTERMITTENTLY IN NORMAL OPERATING CONDITIONS	EXPLOSIVE ATMOSPHERE PRESENT OCCASIONALLY IN ABNORMAL OPERATING CONDITIONS
Gases	<b>Zone 0</b>	<b>Zone 1</b>	<b>Zone 2</b>
Dusts	<b>Zone 20</b>	<b>Zone 21</b>	<b>Zone 22</b>

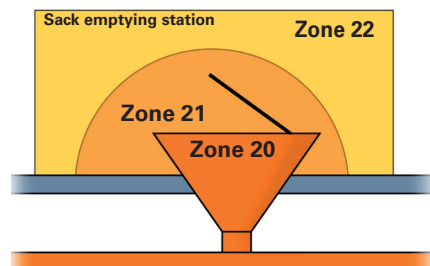
These areas must take into account any external parameters (ventilation, openings, heating etc.) that can modify the scope of the zones. The illustration below gives an example of classification into hazardous zones of an unloading station for a flammable liquid. The principle is the same for dust, only the name changes and becomes Zone 20, 21, 22. Beyond Zones 2 or 22, an explosive mixture is no longer likely to occur; this is "outside the classified zone" and standard industrial equipment can be used.



Zone classification example: Loading/ discharging flammable liquids from a road transport tanker without stand-alone ventilation.



Another example of Gas Zone classification according to EN 60079-10-1



Example of Dust Zone classification according to EN 60079-10-2

### Comments

- Equipment certified for Zone 0 can also be used in Zones 1 and 2.
- Equipment certified for Zone 22 **cannot** be used in Zones 20 and 21.
- Zone 0 (inside tank) and Zone 20 (inside silo) are zones where there is no fixed electrical equipment (apart from measurement sensors).
- Equipment certified for Zone 21 **cannot** be used in Zone 1.

"GAS" certified ATEX equipment (especially "e" increased safety equipment) is protected by means of its enclosure and by each internal component.

However, "DUST" certified ATEX equipment is only protected by means of its external enclosure. Nevertheless a lot of equipment has double "GAS" and "DUST" certification which can be used in both of these two zone types.

# Protection methods

## Technical guide

Several protection methods are recognized by the IEC (International Electrotechnical Commission) and the CENELEC (European Committee for Electrotechnical Standardization). Each protection method is symbolized by a letter given on the equipment's ATEX label.

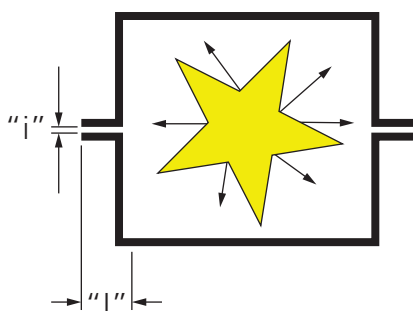
Several protection methods can be used on the same equipment. In this case the relevant symbols appear one after the other (ex : Ex db eb op is q IIC T4 Gb).

### Main protection methods of electrical materials

TYPE	SYMBOL	TYPE OF PROTECTION	GROUP	EQUIPMENT CATEGORY	EQUIPMENT PROTECTION LEVEL (EPL)	CENELEC / IEC STANDARDS	PROTECTION CONCEPT
d	da	flameproof enclosure	II	1 G	Ga	60079-1	Parts that can ignite an explosive atmosphere are sited in an enclosure, which must withstand an internal explosion and prevent the spread of the explosion to the outside
	db	flameproof enclosure		2 G	Gb	60079-1	
	dc	flameproof enclosure		3 G	Gc	60079-1	
e	eb	increased safety	II	2 G	Gb	60079-7	Measures are taken from the design stage to prevent internal heat build-up, as well as any arcing or sparks, inside or on the outside of an electrical appliance
	ec	increased safety		2 D	Db	60079-7	
i	ia	intrinsic safety	II	1 G	Ga	60079-11	Limitation of electrical energy and internal heat, which prevents any ignition
	ib	intrinsic safety		2 G	Gb	60079-11	
	ic	intrinsic safety		3 G	Gc	60079-11	
nA	nA	non-sparking equipment	II	3 G	Gc	60079-15	Suppression of electrical arcs, sparks or internal heat
nC	nC	enclosed equipment	II	3 G	Gc	60079-15	Must contain an internal explosion or must prevent flame transmission
nR	nR	restricted breathing enclosure	II	3 G	Gc	60079-15	Enclosure designed to limit penetration of Ex atmosphere
m	ma	encapsulation	II	1 G	Ga	60079-18	Enclosure designed to exclude Ex atmosphere by means of encasing parts in resin
	mb	encapsulation		2 G	Gb	60079-18	
	mc	encapsulation		3 G	Gc	60079-18	
op is	op is	optical radiation inherent safety	II	1 G	Ga	60079-28	Limitation of light energy produced, (for example by an LED), to prevent ignition of the surrounding explosive atmosphere
	op is	optical radiation inherent safety		2 G	Gb	60079-28	
	op is	optical radiation inherent safety		3 G	Gc	60079-28	
t	ta	protection by enclosure	III	1 D	Da	60079-31	The construction of the equipment prevents any dust penetration inside
	tb	protection by enclosure		2 D	Db	60079-31	
	tc	protection by enclosure		3 D	Dc	60079-31	

The most common protection methods for ATEX lighting and ATEX low voltage equipment are flameproof enclosure "d" and increased safety "e"; details are below:

#### Flameproof enclosure 'd'

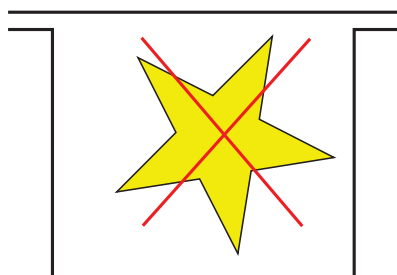


Any components that create electrical arcs are housed in an enclosure which must have three functions:

- contain an explosion from within, with no permanent deformation.
- ensure that no flame can be transmitted to the outside atmosphere.
- at every exterior point have temperatures less than the auto-ignition temperature of the gases present.

Standards define the gap "i" and point length (L) values according to the gas group. Flameproof enclosures are generally made of cast aluminium or alloy (minimum IP54) and require **regular and rigorous** maintenance (greasing of the seals and tightening torques).

#### Increased safety 'e'



Each component is designed not to create sparks or excessive heating; therefore:

- air gaps are larger
- terminals are specific (self-loosening impossible)
- the enclosure is at least IP54, made of antistatic and shock resistant (7Nm) material.

Increased safety enclosures are generally made of polyamide or reinforced polyester. Conductor connection must be rigorous (stripping and tightening) and instructions on usage voltages and currents must be complied with. The temperature class takes into account the hottest point of the equipment.

### Directive ATEX 2014/34/UE

From 20 April 2016, electrical equipment used in potentially explosive atmospheres within the European Union must comply with this Directive and bear the standard ATEX marking. This directive is an evolution of the directive 94/9/CE.

The Directive defines "essential" safety requirements for manufacturers and requires classification of equipment into groups and categories, while identifying gas and dusts aspects.

	EQUIPMENT CATEGORIES	FLAMMABLE SUBSTANCES	PROTECTION LEVELS	PROTECTION, FAULTS
Equipment group I (mines)	<b>M1</b>	Methane Dusts	Very high	2 means of protection or 2 separate faults
	<b>M2</b>	Methane Dusts	High	1 mean of protection normal operation
Equipment group II (surface industries)	<b>1</b>	Gases, vapours, mists, dusts	Very high	2 means of protection or 2 separate faults
	<b>2</b>	Gases, vapours, mists, dusts	High	1 mean of protection ordinary and frequent failure
	<b>3</b>	Gases, vapours, mists, dusts	Normal	Level of protection required

The nature of the atmosphere is specified by the letter "G" for gases/vapours and "D" for dusts.


### Directive 1999/92/CE

This Directive requires users to employ a number of measures aimed at ensuring the safety of workers, including :

- the assessment of explosion hazards in plants
- the classification of different hazardous zones (voir page 4.?) and signalling
- the holding of a document on protection against explosions
- the implementation of technical and organizational safety measures
- compliance with selection criteria for electrical equipment according to the table to the right:

	ZONES	EQUIPMENT CATEGORY
Gases	0: Permanent presence	1G
	1: Intermittent presence	2G or 1G
	2: Occasional presence	3G, 2G or 1G
Dusts	20: Permanent presence	1D
	21: Intermittent presence	2D or 1D
	22: Occasional presence	3D, 2D or 1D



### ATEX Marking



**CROUSE-HINDS**  
SERIES

**eLLK 92036/36** <sup>2</sup>  
**12266875101**


BVS 16 ATEX E 123 / IECEx BVS 16.123 <sup>3</sup>

<sup>4</sup>  <sup>5</sup>  II 2G Ex de mb ib IIC T4 Gb  
II 2D Ex tb IIIC T80°C Db <sup>7</sup>  $T_a = -25^\circ\text{C bis } +55^\circ\text{C}$

AC: 110-254V 50-60Hz <sup>8</sup>  
DC: 110-250V

Lampe: G13-81-IEC <sup>6</sup>  
Snr.: D123456 2016 <sup>9</sup>

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 <sup>10</sup>

- <sup>1</sup> Manufacturer's name and address
- <sup>2</sup> Equipment name / type
- <sup>3</sup> EU (ATEX) certificate number
- <sup>4</sup> CE marking / Number of notified body monitoring quality system
- <sup>5</sup> ATEX marking
- <sup>6</sup> Equipment Group II: surface industries / Equipment Category / Nature of atmosphere - G: gas; D: dust
- <sup>7</sup> Gas and dust marking
- <sup>8</sup> Electrical characteristics
- <sup>9</sup> Serial number / year of manufacture
- <sup>10</sup> End of life / disposal information

# Classification groups for gas and vapours

## Technical guide

### Gas and vapour classification

Group II (surface industries) has three subdivisions IIA, IIB and IIC defined according to the maximum experimental safe gap (MESG) for Exd enclosures or according to the minimum ignition energy (MIE) for intrinsic safety equipment. Most EATON products presented in this catalogue are designed for group IIC (the most dangerous) and therefore can be used practically anywhere. However note that for certain flameproof products (spotlights, boxes) we generally propose two separate solutions for groups IIB and IIC.

It is better only to use ExdIIC solutions in the presence of hydrogen, acetylene, carbon bisulphide or ethyl nitrate because of the high cost of this equipment. ExdIIB solutions are sufficient for all other gas or vapour types.

Equipment using only the Exe increased safety protection method does not have the A, B or C subdivision because it can be used whatever gas is present.

### Temperature classes

Each gas has a specific auto-ignition temperature. When this temperature is reached, the gas ignites spontaneously, with no spark or electrical arc. This auto-ignition temperature must therefore be considered as a limit not to be reached, whether or not in normal operation. The standards define six temperature classes (T1 to T6) corresponding to six maximum surface temperatures (450°C to 85°C).

Temperature class T6 is the most severe.

#### MAXIMUM TEMPERATURE FOR EQUIPMENT

CLASS	C°	EXAMPLES OF GASES/VAPOURS
T1	450 °C	Hydrogen 560 °C Methane 537 °C
T2	300 °C	Ethylene 425 °C Acetylene 305 °C
T3	200 °C	Kerosene 210 °C
T4	135 °C	Ethyl-ether 160 °C
T5	100 °C	
T6	85 °C	Carbon disulphide 95 °C

e.g. on a flameproof lamp, a T6 temperature class marking means that the lamp's surface temperature will always be less than or equal to 85°C. Each gas has a specific autoignition temperature.

e.g. kerosene ignites spontaneously from 210°C. If you want to install a lamp near a kerosene loading station, the lamp must be classed at least T3 so as not to cause an explosion (a lamp classed T4, T5 or T6 would also suit).

### Summary table

#### CLASSIFICATION OF GAS AND VAPOURS IN GAS GROUPS AND TEMPERATURE CLASSES

	T1	T2	T3	T4	T5	T6
I	Methane					
II A	Acetone, ethane, ethylacetate, ammonia, benzol, acetic acid, carbon oxyde, methanol, propane, toluene	Ethyl-alcohol, i-amyl-acetate, n-butane, n-butyl-alcohol	Petrol, diesel, kerosene, heating oils, n-hexane	Acetal-deyde Ethyl-ether		
II B	Town gas	Ethylene				
II C	Hydrogen	Acetylene				Carbon disulphide

This table shows the temperature classes and the gas group for the most common products. Equipment that is IIC T4 Ex certified would be suitable in 99% of cases; only the presence of carbon disulphide would require IIC T6 Ex certified equipment.

### Classification groups for dust

Following the same principles for gas and vapors, dusts are divided into 3 groups:

GROUP	TYPE OF DUST	SIZE	RESISTANCE
IIIA	Airbourne combustible dust	> 500 µm	-
IIIB	Non-conductive dust	≤ 500 µm	> 10 <sup>3</sup> Ω m
IIIC	Conductive dust	≤ 500 µm	≤ 10 <sup>3</sup> Ω m

Each type of dust was subject to detailed studies to obtain their flammability characteristics (INRS brochures/silos guide etc.). Dusts are singular because their auto-ignition temperatures differ according to whether the dust is in a cloud or a layer. Since many other parameters can modify these auto-ignition values (particle size, humidity, ambient temperature etc.), a calculation including a safety factor must be performed in each case.

- In the case of dust in a cloud, the maximum surface temperature of the equipment must not exceed two thirds of the ignition temperature, in degrees Celsius, of the air/dust mixture (T1).
- In the case of dust in layers less than 5 mm, a safety factor of 75°C must be deducted from the layer auto-ignition temperature, in degrees Celsius, of the relevant dust (T2).

The choice of equipment must be done by taking the worst result.

The table below gives the results obtained for the most common dusts (indicative values only):



	IDENTIFICATION No. IFA / INRS	DUST CLOUD		DUST LAYER 5MM		MAXIMUM SURFACE TEMPERATURE TO USE FOR EQUIPMENT SELECTION
		T° AUTO IGNITION (T1)	T° EQUIPMENT SURFACE (2/3 OF T1)	T° AUTO IGNITION (T2)	T° EQUIPMENT SURFACE (T2-75°C)	
Bulk wheat	3466	490 °C	326 °C	290 °C	215 °C	215 °C
Cocoa powder	3469	590 °C	393 °C	250 °C	175 °C	175 °C
Wheat starch	3525	380 °C	253 °C	530 °C	455 °C	253 °C
Powdered milk	2046	460 °C	306 °C	330 °C	255 °C	255 °C
Soya flour	1264	430 °C	286 °C	420 °C	345 °C	286 °C
Sulphur	2535	240 °C	160 °C	250 °C	175 °C	160 °C
Charcoal	254	520 °C	346 °C	320 °C	245 °C	245 °C
Sugar, pectin	232	410 °C	273 °C	380 °C	305 °C	273 °C

Source : GESTIS-CARATEX database

NOTE : It is up to the operator to know precisely the characteristics of the dust present on the site and to make the calculations on a case by case basis.

NOTE : on ATEX products with "DUST" certification, the maximum surface temperature is indicated in words within the dust markings on the label (see page 6.5). This should not be confused with temperature class T1 to T6 which only concerns gases and vapours!

### Operating temperature

ATEX electrical equipment is generally designed for operation in an ambient temperature between - 20 °C and + 40 °C. For some devices with batteries, this temperature range may be reduced (for example -5 °C à + 35 °C for a back-up luminaire). For special applications in very hot or very cold countries, some products have been specifically designed to have a wider operating temperature range (for example up to -50 °C or up to +60 °C). The list of special certifications is available on request from our technical services.

NOTE : do not confuse the maximum surface temperature of a dust-certified device (for example: T85 °C) or the temperature class of a gas-certified device (for example: T4) with the permissible ambient temperature of the equipment. These are very distinct characteristics.



ATEX electrical equipment with increased safety is often manufactured in high quality plastics, specially selected and tested for use in extremely severe environments (chemicals, petrochemicals, offshore, deserts etc.). These materials have been used for many years and have proven reliability. The main uses are :

- polyamide: junction boxes, control centres, portable lamps
- polycarbonate: translucent bowls for lamps or glasses
- polyester : distribution panels, boxes, control centres

The table below gives data supplied by plastics manufacturers on their resistance to a series of chemicals.

	POLYAMIDE	POLYESTER	POLYCARBONATE
Acetic acid (up to 25%)	0	+	+10 °C
Acetone	+	+	-
Ammonia (23%)	+	+10 %	-
Benzene 60/140°C	+	+	+
Benzole (23%)	+	+	-
Boric acid 3%	+	+	+
Butane	+	+	+
Chloric gas (wet)	0	+	-
Chlorinated lime	0	+	+
Chlorite bleach solution	0	+	
Chromic acid (10%)	-	+	+
Citric acid up to 32%	+	+	+
Cyclohexane	+	+	+
Diesel	+	+	+
Ethyl alcohol (up to 30 %)	0	+	0.96 %
Ethyl glycol	0	+	+
Formaldehyde	+	+	+
Fuel oil	+	+	+
Glycerine	+	+	+
Glycol	+	+	+
Kerosene	+	+	+
Lactic acid, conc. 20%	+	+	+
Machine oil	0	+	+
Methyl alcohol	0	+	0
Mineral oil	+	+	
Petroleum	+	+	-
Phosphoric acid, conc.	-	+	+
Premium petrol (up to 60°C)	+	+	-
Sea water	+	+	+
Soapy water (23°C)	+	+	+
Sodium base liquor (20-25°C)	+	+5 %	-
Sodium chloride	0	+	+
Sulphur dioxide, dry (23°C)	+	+	0
Sulphuric acid 5-30% and 70%	0	+	+
Tartaric acid + up to 10%	0	+	+
Turpentine (23°C)	+	+	-
Uric acid (up to 20%)	+	+	+

**Symbol key: + = stable 0 = limited stability - = unstable**

# Degrees of IP and IK protection

## Technical guide

### Marking of degree of protection of electrical equipment for use in explosive atmospheres

In the relevant IEC(EN) standards, distinction is made between:

#### IEC / EN 60529

Degree of protection by enclosure (IP Code) and

#### IEC / EN 62262

Mechanical protection by enclosure (IK Code)

**CROUSE-HINDS**  
SERIES

CEAG


D-69412 Eberbach

**IP66/67 / IK 10**

T<sub>a</sub> = -25°C bis +55°C

4 Gb  
Db

www.ceag.de  
in Germany



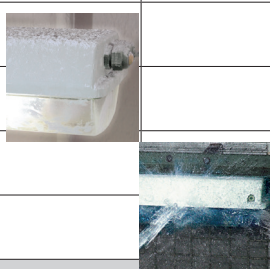
### IP-Code - Degrees of protection to IEC/EN 60529

This standard describes a system with fixed gradations and test methods for classifying the degrees of protection provided by enclosures of electrical equipment against the ingress of solid foreign objects and the ingress of water (see Table 1). The specified test is a type test and is carried out on clean and new equipment at temperatures ranging from 15°C to 35°C. The first digit of the IP Code describes the protection of persons against access to hazardous parts and, at the same time, the protection of the enclosure against the ingress of foreign bodies.

The second digit specifies the protection of the enclosure with regard to harmful effects due to the ingress of water. With the second number, numbers up to 6 indicate that the requirements for all the lower numbers are met. With numbers > 6 the protection for lower numbers is not necessarily given. The code number for the lower degrees of protection need not be stated in the code. If an enclosure meets the requirements for both areas, this shall be indicated using a combined marking.

**Table 1: Ingress protection IP according to CEI/EN 60529**

FIRST DIGIT Protection against the ingress of foreign bodies		SECOND DIGIT Protection against the ingress of water with adverse effect
No protection	0	0 No protection
≥ 50 mm diameter	1	1 Vertically dripping water
≥ 12.5 mm diameter	2	2 Dripping water at ± 15° angle
≥ 2.5 mm diameter	3	3 Sprayed water
≥ 1.0 mm diameter	4	4 Splashed water
Dust protected	5	5 Water jets
Dust-tight	6	6 Powerful water jets
		7 Temporary immersion
		8 Continuous immersion
		9 High pressure/temperature of water jets



IP56

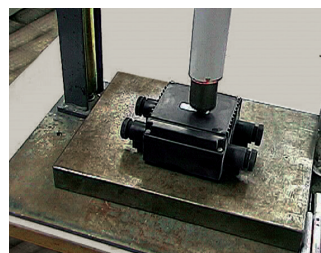
### Degree of protection of explosion-protected equipment

Unlike industrial equipment where testing of the degree of protection may be carried out on new test sample, with explosion-protected equipment, if the degree of protection is a constituent element of the type of protection, tests shall be carried out on "aged" and mechanically stressed test samples.

EN 60079-0 specifies this aging process where, among other things, the aging of plastics and the resistance to aging of seals is tested. This is followed by a mechanical test that simulates a prolonged use of the equipment for the application and is fundamentally different to the tests for equipment for industrial applications only.

### IK Code - Mechanical degree of protection to IEC/EN 62262

This standard describes a system with fixed gradations and test methods for classifying the mechanical degree of protection (resistance to impact) provided by enclosures. The specified test is a type test and is carried out on clean and new equipment at temperatures ranging from 15 °C to 35 °C.



Impact test of an explosion protected junction box

**Table 2: Impact IK according to CEI/EN 62262**

Impact energy (J)	IK code
--	IK 00
0.14 J	IK 01
0.2 J	IK 02
0.35 J	IK 03
0.5 J	IK 04
0.7 J	IK 05
1 J	IK 06
2 J	IK 07
5 J	IK 08
10 J	IK 09
20 J	IK 10



### Examples provided by the UTE C 15.103 standard (September 1997)

INDUSTRIAL FACILITIES			INDUSTRIAL FACILITIES			TECHNICAL FACILITIES		
INDUSTRIAL FACILITIES	IP	IK	INDUSTRIAL FACILITIES	IP	IK	TECHNICAL FACILITIES	IP	IK
Abattoirs	55	08	Perfumes (manufacture and storage)	31	07	Energy storage	23	02, 07
Batteries (manufacture)	33	07	Paper mills (preparation)	34, 35	07	Lifts/elevators (machinery and pulley room)	20	07, 08
Acids (manufacture and storage)	33	07	Paints (manufacture and storage)	33	08	Electrical facilities	20	07
Alcohol (manufacture and storage)	33	07	Gypsum (processing, storage)	50	07	Control rooms	20	02
Aluminium (manufacture)	51, 53	08	Gunpowder	55	08	Workshops	21, 23	07, 08
Animals (breeding)	45	07	Chemical products (manufacture)	30, 50	08	Laboratories	21, 23	02, 07
Asphalt, bitumen (storage)	53	07	Petroleum refinery	34, 35	07	Air conditioning units/washers	24	07
Wool spinning, card weaving	50	08	Saltworks	33	07	Garages (used only for parking vehicles) surface area not exceeding 100 m <sup>2</sup>	21	07
Laundries	23, 24	07	Soap (manufacture)	31	07	Machinery room	31	07, 08
Woodworking	50	08	Sawmills	50	08	Water pumps/boosters	23	07, 08
Butchers	24, 25	07	Locksmiths	30	08			
Bakeries	50	07	Cereal or sugar silos	50	07			
Breweries	24	07	Brush maker	50	08			
Brickyards	53, 54	08	Soda (manufacture and storage)	33	07			
Rubber (working with, processing)	54	07	Sulphur (processing)	51	07			
Carbide (manufacture and storage)	51	07	Spirits/alcohol (warehouses)	33	07			
Cartridge factory (munitions)	53	08	Sugar refineries	55	07			
Packaging (manufacture)	33	07	Tanneries	35	07			
Quarries	55	08	Fabric dyeing	35	07			
Celluloid (product manufacture)	30	08	Textiles and fabrics (manufacture)	51	07			
Cellulose (manufacture)	34	08	Varnish (fabrication, application)	33	08			
Coal (storage)	53	08	Glassworks	33	08			
Delicatessens	24, 25	07	Zinc plating	31	08			
Boiler rooms	30	08						
Lime furnaces	50	08						
Fabrics (warehouses)	30	07						
Chlorine (manufacture and storage)	33	07						
Chrome plating	33	07						
Cement works	50	08						
Coking plant	53	08						
Adhesives (manufacture)	33	07						
Bottling plants	35	08						
Liquid fuel (storage)	31, 33	08						
Degreasing (treatment)	51	07						
Leather (manufacture and storage)	31	08						
Copper (mineral processing)	31	08						
Detergents (product manufacture)	53	07						
Distilleries	33	07						
Electrolysis	03	08						
Ink (manufacture)	31	07						
Fertilizer (manufacture and storage)	53	07						
Explosives (manufacture and storage)	55	08						
Ironworks (fabrication and processing)	51	08						
Cotton mills	50	07						
Furs (treatment)	50	07						
Cheese manufacturing	25	07						
Gas (plants and storage)	31	08						
Tar (processing)	33	07						
Nurseries (horticulture)	50	07						
Metal engraving	33	07						
Oil (extraction)	31	07						
Hydrocarbons (manufacture)	33, 34	08						
Printers	20	08						
Dairies	25	07						
Laundrettes, public washhouses	25	07						
Liqueurs (manufacture)	21	07						
Liquid halogen (using)	21	08						
Inflammable liquids (storage, workshop or usage of)	21	08						
Magnesium (manufacture, processing, storage)	31	08						
Machinery workshops	20	08						
Plastic materials (manufacture)	51	08						
Joinery	50	08						
Metal treatment	31, 33	08						
Engines (testing of)	30	08						
Munitions (storage)	33	08						
Nickel (mineral processing)	33	08						
Domestic waste treatment	53, 54	07						
Paper (manufacture)	33, 34	07						
Paper (warehouses)	31	07						

PUBLIC FACILITIES			PUBLIC FACILITIES		
PUBLIC FACILITIES	IP	IK	PUBLIC FACILITIES	IP	IK
Auditoriums, conference centres, meeting rooms, exhibition halls or multi-purpose buildings:					
L Halls	20	02, 07			
Stages/arenas	20	08			
Decor stores	20	08			
Wigmakers/cobblers	20	07			
M Retail stores, commercial centres					
Sales premises	20	08			
Storage and material handling/packaging	20	08			
O Hotels and guest house rooms	20	02			
P Dance halls and games halls	20	07			
Educational establishments, summer camps:					
R Teaching halls	20	02			
Dormitories	20	08			
S Libraries, archives	20	02			
Exhibitions:					
Halls and rooms	21	02			
T Reception for materials and merchandise	20	07			
Health institutions:					
U Bedrooms	20	02			
Incineration	21	07, 08			
Operating rooms	20	07			
Central sterilisation	24	02, 07			
Pharmacies and laboratories, with more than 10L of inflammable liquids	21, 23	02, 07			
V Institutions of worship	20	02			
W Administration, banks	20	02			
Covered sports facilities:					
X Sports halls	21	07, 08			
Premises containing refrigeration plants	21	08			
Y Museums	20	02			
PA Outdoor establishments	25	08, 10			
CTS Marquees and tents	44	08			
SG Inflatable structures	44	08			
Premises normally open to the public:					
Storage, warehousing	20	08			
Packaging facilities	20	08			
Archives	20	02			
Storage of films and magnetic media	20	02			
Laundries	24	07			
Various workshops	21	07, 08			

FACILITIES - MISCELLANEOUS			FACILITIES - MISCELLANEOUS		
FACILITIES - MISCELLANEOUS	IP	IK	FACILITIES - MISCELLANEOUS	IP	IK
Camping and caravanning grounds	34	07			
Marinas, quays	34	08			
Construction sites	44	08			
Loading docks	35	08			
Streets, courtyards, gardens and other outdoor locations	34, 35	07			
Fairgrounds	33	08			
Pools, ponds:					
volume 0	28	02			
volume 1	25	02			
volume 2	22, 24	02			
Saunas	34	02			
Fountains	37	02			
Water treatment (local)	24, 25	07, 08			

GARAGES AND PARKING AREAS SURFACE AREA LARGER THAN 100 M <sup>2</sup>			GARAGES AND PARKING AREAS SURFACE AREA LARGER THAN 100 M <sup>2</sup>		
GARAGES AND PARKING AREAS SURFACE AREA LARGER THAN 100 M <sup>2</sup>	IP	IK	GARAGES AND PARKING AREAS SURFACE AREA LARGER THAN 100 M <sup>2</sup>	IP	IK
Parking areas	21	07, 10			
Wash areas (inside the facility)	25	07			
Security zones - indoors	21	07			
Security zones - outdoors	24	07			
Lubricating areas	23	08			
Workshops	21	08			

COLLECTIVE USE BUILDINGS			COLLECTIVE USE BUILDINGS		
COLLECTIVE USE BUILDINGS	IP	IK	COLLECTIVE USE BUILDINGS	IP	IK
Offices	20	02			
Libraries	20	02			
Archives	20	02			
Information offices	20	02			
Drawing rooms	20	02			
Reprographics and documentation areas	20	02			
Sorting rooms	20	07			
Restaurants and canteens	21	07			
Large kitchens	20				
Sports halls	21	07, 08			
Barracks	21	07			
Meeting rooms	20	02			
Waiting rooms, lounges, halls	20	02			
Medical consultation rooms (no specific equipment)	20	02			
Demonstration/exhibition halls	20	02, 07			

# Cable glands installation guide

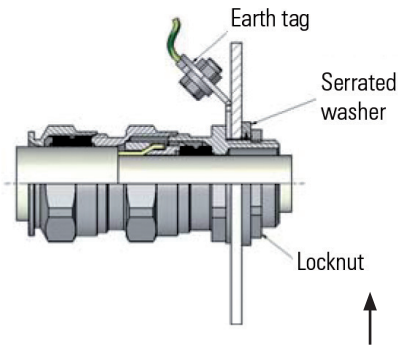
Technical guide

## Fixing - blank hole

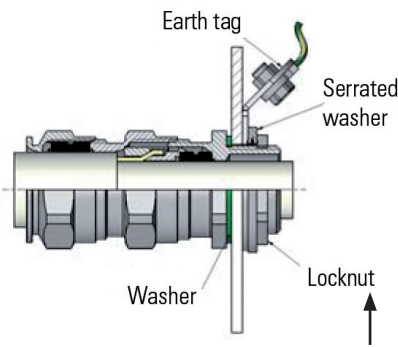
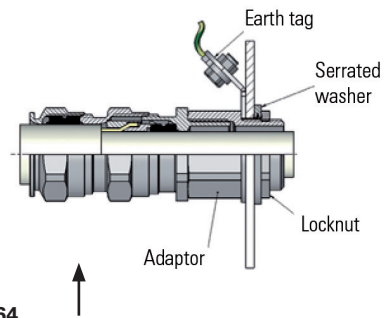
CABLE GLAND

CABLE GLAND WITH ACCESSORIES

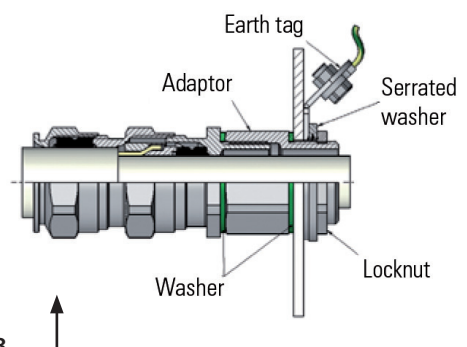
ISO



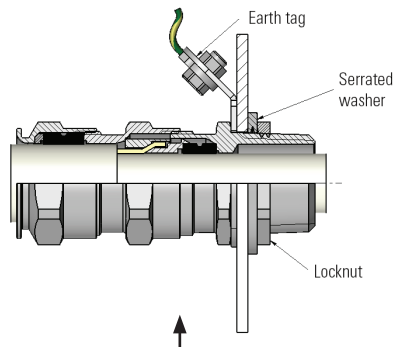
WITHOUT WASHER: IP64



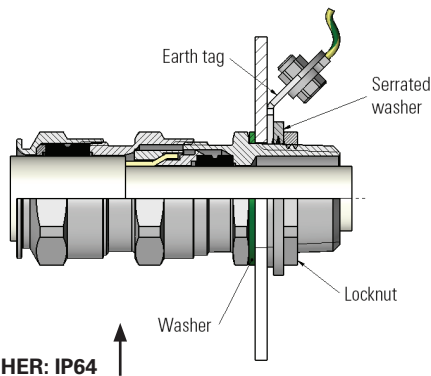
WITH WASHER: IP66 / IP68



NPT  
Ex e et Ex t applications only  
(ISO thread is preferable)



WITHOUT IP WASHER: IP54 (Ex e only)



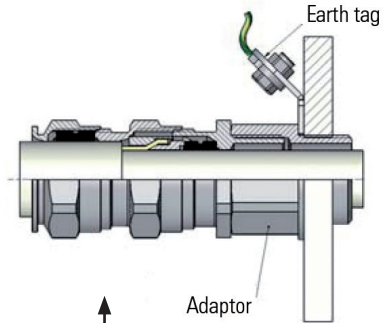
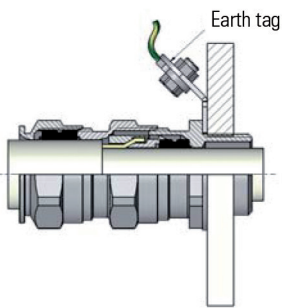
WITH IP WASHER: IP64

## Fixing - threaded hole

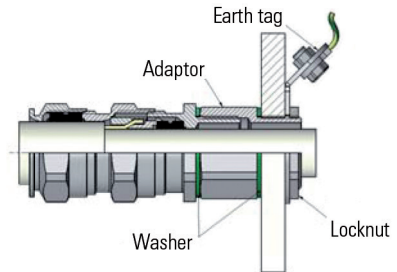
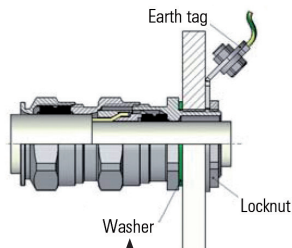
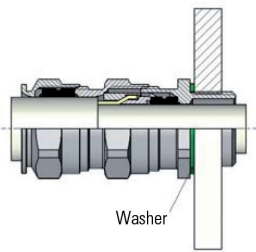
### CABLE GLAND

### CABLE GLAND WITH ACCESSORIES

ISO

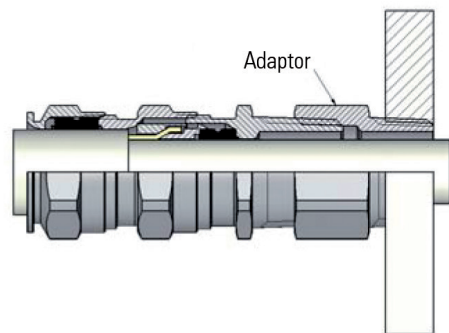
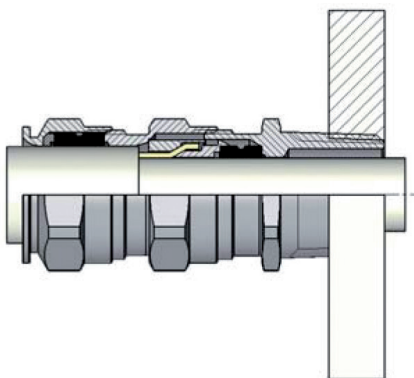


WITHOUT WASHER: IP64



WITH WASHER: IP66 / IP68

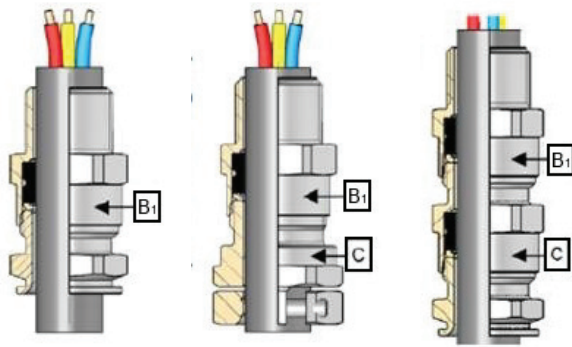
NPT  
Ex d Applications



IP66 / IP68 (HTL4 lubricant recommended)

# ADE cable gland markings

## Technical guide



ADE-1F2

ADE-1F2 A  
(Anchorage)

ADE-1F2 DS

### ADE-1F2, 1F2 A, 1F2 DS n° 3 - 17

**B<sub>1</sub>**

#### Mandatory Ex marking on the body:

(for all sizes see the colour coding diagram below)

Example for size n°5:

\\Eaton-CHS-1.ADE-1F2.n°5.NPT1/2.cableØ7-12.INERIS12ATEX0032X-IECEXINE12.0025X.1  
 LISTED CL I Zn.1 II 0 XE V 031ST 031ST CE 0081 I12G SABS MS/15-0314X  
 cable SL AEx e II II 0 XE TS sn (h) (h) Ex 20XX I12D CEPEL 05.0558X  
 cable TC-ER-HL Z 4Z I 70

**C**

#### Additional marking for Group I (Mine) on end cap:

Depending on the metal (excluding aluminum), the size number and the fixing thread of the gland:

ADE (Ex) IM2 Ex db I Ex eb I

Colour code for first line:

Manufacturer's name or registered trademark

Gland model

Thread form/size

Cable external diameter range (if space available)

IP (if space available)  
 Special conditions according to approval between the manufacturer and the user

ATEX & IECEx certificate numbers

Marking **B<sub>1</sub>**, real size examples according to the cable entry size (n°XX), see below using this colour code for the first and the other three lines.

Colour code for other three lines:

Specific marking for **UL Zone 1** certificate E310130 used with TC-ER-HL cable up to Ø 1 inch with 1F2, 1F2 A & 1F2 DS up to N°8

**cULus "e" Zone 2** - E310130 with TC-ER, PLTC, ITC, MV et TC non-armoured cable - E314047 with non-armoured **Marine** cable

Marking to ATEX directive

Alternative marking showing levels of protection of equipment (EPL) for Gas & Dust explosive atmospheres (if space available)

Ex Certificate numbers

Additional Ex Certificate numbers (if space available)

Example for ADE-1F2 n°3 NPT 1/2":

\\EatonCHS1.ADE1F2n°3NPT1/2.INERIS12ATEX0032X-IECEXINE12.0025X.1  
 LISTED CL I Zn.1 II 0 XE V 031ST 031ST CE 0081 I12G SABS MS/15-0314X  
 cable SL AEx e II II 0 XE TS sn (h) (h) Ex 20XX I12D CEPEL 05.0558X  
 cable TC-ER-HL Z 4Z I 70

Example for ADE-1F2 n°4 NPT 1/2":

\\EatonCHS1.ADE1F2.n°4.NPT1/2.Ø4.5-8.5.INERIS12ATEX0032X-IECEXINE12.0025X.1  
 LISTED CL I Zn.1 II 0 XE V 031ST 031ST CE 0081 I12G SABS MS/15-0314X  
 cable SL AEx e II II 0 XE TS sn (h) (h) Ex 20XX I12D CEPEL 05.0558X  
 cable TC-ER-HL Z 4Z I 70

Minimum for ADE-1F2 n°5 to 8 example for n°5 NPT 1/2":

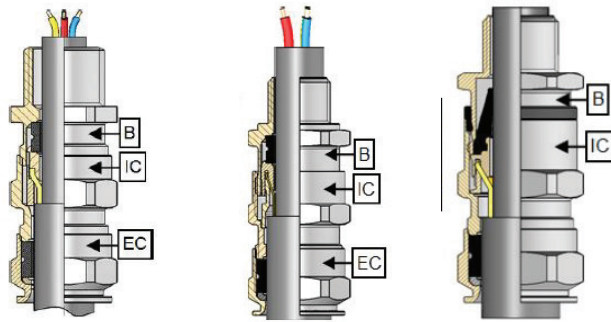
\\Eaton-CHS-1.ADE-1F2.n°5.NPT1/2.cableØ7-12.INERIS12ATEX0032X-IECEXINE12.0025X.1  
 LISTED CL I Zn.1 II 0 XE V 031ST 031ST CE 0081 I12G SABS MS/15-0314X  
 cable SL AEx e II II 0 XE TS sn (h) (h) Ex 20XX I12D CEPEL 05.0558X  
 cable TC-ER-HL Z 4Z I 70

Marking for ADE-1F2 sizes n°9 to 17, example for n°10 NPT 1 1/2":

\\\\EATON-Crouse.Hinds.Series-1.ADE-1F2.n°10.NPT1"1/2.cableØ29-41.-IP66./IP68.-.INERIS.12ATEX0032X.-.IECEX.INE.12.0025X.\\\\

\\\\ CL I Zn.2 SL Ex.e.II AEx.e.II LISTED LISTED CE 0081 I12G Ex db/bb IIC CEPEL 05.0558X NEPSI.NO.JYJ13.1082X  
 LISTED LISTED I12D Ex tb IIIC IP66 CCoE N° P360379 TC.RU.C.FR.ГБ05.B.00858  
 LISTED LISTED I13G Ex nRc IIC SABS MS/15-0314X KOS.15.AV4B.O.0249-0456

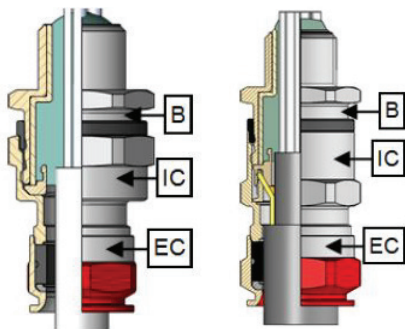
### ADE-1FC, 4F, 5F, 6F, 6FC series



ADE-4F

ADE-5F

ADE-6F



ADE-1FC

ADE-6FC

**B** Thread form/size marking on the body:  
Example: M20x1.5

**IC** Mandatory Ex marking on inner cap:  
(for all sizes see the colour coding diagram below)  
Example for size n°5:

\\Eaton-CHS-1.ADE-5F.n°5.cable7-12..IP66/68..INERIS12ATEX0032X-IECEXiNE12.0025X\\  

 CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0559X  
 AEx e II II 2G TS CEPEL 05.0559X  
 CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0559X  
 AEx e II II 2G TS CEPEL 05.0559X  
 KOS15BO.0483-0486

**EC** Additional marking for Group I (Mine) on end cap:  
Depending on the metal (excluding aluminum), the size number and the fixing thread of the gland:

ADE IM2 Ex db I Ex eb I |||||

#### Colour code for first line:

Manufacturer's name or registered trademark

Gland model

Thread form/size

Cable external diameter range (if space available)

IP (if space available)  
Special conditions according to approval between the manufacturer and the user

ATEX & IECEx certificate numbers

Marking **IC**, real size examples according to the cable entry size (n°XX), see below using the colour code for the first and the other three lines.

#### Colour code for other three lines:

cULus "e" Zone 1 certificate E314047 with armoured Marine cable

cULus "e" Zone 2 certificate E310130 with TC-ER, PLTC, ITC, MV et TC armoured cable

Marking to ATEX directive

Alternative marking showing levels of protection of equipment (EPL) for Gas & Dust explosive atmospheres (if space available)

Ex Certificate numbers

Additional Ex Certificate numbers (if space available)

Minimum marking for ADE-5F n°4 and n°5, example for n°4:

\\EatonCHS1.ADE5Fn°4.04.5-8.5..IP66/68..INERIS12ATEX0032X-IECEXiNE12.0025X\\  

 CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0559X  
 AEx e II II 2G TS CEPEL 05.0559X  
 CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0559X  
 AEx e II II 2G TS CEPEL 05.0559X  
 KOS15BO.0483-0486

Example for ADE-5F n°6:

\\EATON-Crouse.Hinds.Series-1.ADE-5F.n°6.cableØ10-16..IP66/68..INERIS12ATEX0032X-IECEXiNE12.0025X\\  

 CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0559X  
 AEx e II II 2G TS CEPEL 05.0559X  
 CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0559X  
 AEx e II II 2G TS CEPEL 05.0559X  
 KOS.15.AV4BO.0483-0486

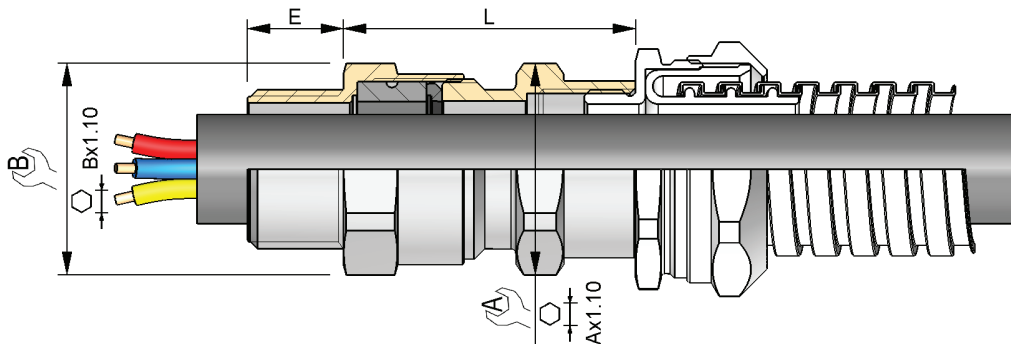
Marking for ADE-5F sizes n°7 to 17, example for n°10:

\\EATON-Crouse.Hinds.Series-1.ADE-5F.n°10.cableØ29-41.-.IP66./IP68.-.INERIS.12ATEX0032X.-.IECEX.INE.12.0025X.\\

CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0558X  
 AEx e II II 2G TS CEPEL 05.0558X  
 CL I Zn.1 II 2G SABS MS/15-0314X  
 SL Ex e II II 2G TS CEPEL 05.0558X  
 AEx e II II 2G TS CEPEL 05.0558X  
 KOS.15.AV4BO.0249-0456

# ADCC conduit gland dimension data

## Technical guide



### ADCC conduit gland length - metric

MALE THREAD SIZE	CABLE SEALING RANGE	FEMALE THREAD SIZE			BSPP			ADE GLAND SIZE
		ISO	L	NPT	L	L	L	
M20	0	M20	50.3	N050	49.2	G050	50.3	3
M20	1	M20	51.2	N050	50.1	G050	51.2	4
M20	2	M20	54.0	N050	52.9	G050	54.0	5
M20	3	M20	56.8	N050	55.4	G050	56.5	6
M20	3	M25	57.0	N075	56.4	G075	57.0	6
M25	2	M25	57.0	N075	56.4	G075	57.0	6
M25	3	M25	60.7	N075	59.8	G075	61.1	7
M25	3	M32	61.3	N100	63.4	G100	64.3	7
M32	2	M32	61.3	N100	63.4	G100	64.3	7
M32	3	M32	67.6	N100	68.6	G100	70.5	8
M32	3	M40	67.6	N125	70.2	G125	70.6	8
M40	2	M40	67.6	N125	70.2	G125	70.6	8
M40	3	M40	71.3	N125	73.8	G125	74.5	9
M40	3	M50	71.7	N150	74.3	G150	74.7	9
M50	1	M50	72.7	N150	75.3	G150	75.7	9
M50	2	M50	74.9	N150	77.5	G150	77.9	10
M50	3	M50	78.0	N150	80.0	G150	79.5	11
M50	3	M63	79.0	N200	82.0	G200	82.0	11
M63	2	M63	80.0	N200	83.0	G200	83.0	11
M63	3	M63	83.0	N200	85.0	G200	87.0	12
M63	3	M75	84.0	N250	96.2	G250	87.0	12
M75	2	M75	85.0	N250	97.2	G250	88.0	12
M75	3	M75	90.5	N250	101.3	G250	93.3	13
M75	3	M90	95.5	N300	104.6	G300	93.3	13
M90	2	M90	101.7	N300	111.0	G300	99.7	14
M90	3	M90	108.7	N300	115.5	G300	106.7	15
M110	2	M110	107.7	N350	116.7	G350	105.8	16
M110	3	M110	116.2	N400	127.5	G400	114.2	17

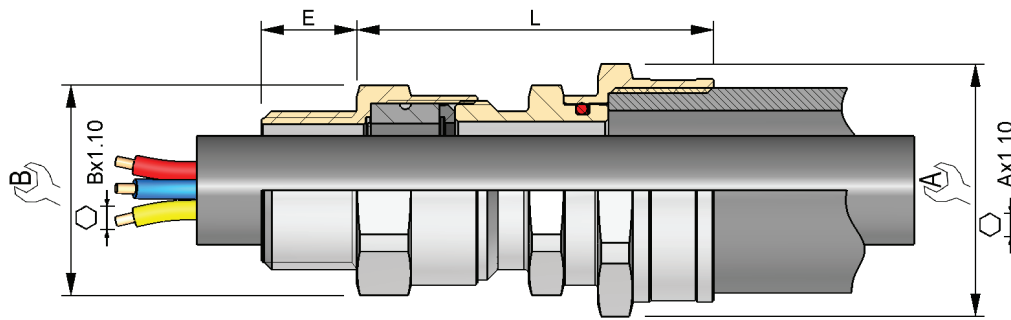
### ADCC conduit gland length - NPT

MALE THREAD SIZE	CABLE SEALING RANGE	FEMALE THREAD SIZE			BSPP			ADE GLAND SIZE
		ISO	L	NPT	L	L	L	
1/2"	0	M20	57.5	N050	56.4	G050	57.5	3
1/2"	1	M20	56.4	N050	55.3	G050	56.4	4
1/2"	2	M20	59.6	N050	58.5	G050	59.6	5
1/2"	3	M20	64.0	N050	62.6	G050	63.7	6
1/2"	3	M25	64.2	N075	63.6	G075	64.2	6
3/4"	2	M25	64.2	N075	63.6	G075	64.2	6
3/4"	3	M25	68.2	N075	70.9	G075	71.8	7
3/4"	3	M32	68.8	N100	70.9	G100	71.8	7
1"	2	M32	73.6	N100	75.7	G100	76.6	7
1"	3	M32	79.9	N100	80.9	G100	82.8	8
1"	3	M40	79.9	N125	82.5	G125	82.9	8
1 1/4"	2	M40	80.6	N125	83.2	G125	87.5	8
1 1/4"	3	M40	84.3	N125	86.8	G125	87.5	9
1 1/4"	3	M50	84.7	N150	87.3	G150	87.7	9
1 1/2"	1	M50	85.2	N150	87.8	G150	88.2	9
1 1/2"	2	M50	88.1	N150	90.7	G150	91.1	10
2"	2	M63	89.7	N200	92.7	G200	98.2	11
2"	3	M63	95.2	N200	92.7	G200	98.2	12
2"	3	M75	96.2	N250	108.4	G250	99.2	12
2 1/2"	2	M75	109.5	N250	121.7	G250	112.5	12
2 1/2"	3	M75	115.5	N250	126.3	G250	118.3	13
2 1/2"	3	M90	120.5	N300	129.6	G300	118.3	13
3"	2	M90	126.2	N300	135.5	G300	124.2	14
3"	3	M90	130.7	N300	137.5	G300	128.7	15
3 1/2"	2	M90	131.9	N350	138.7	G350	129.9	15
3 1/2"	3	M110	134.4	N350	143.4	G350	132.5	16
4"	3	M110	139.7	N400	151.0	G400	137.7	17

### Thread code guide (ADE series / ADCC / ADCS glands only)

ISO THREAD	ISO THREAD CODE	NPT THREAD	NPT THREAD CODE	BSPP THREAD	BSPP THREAD CODE
16	M16	1/2" NPT	N050	1/2" BSPP	G050
20	M20	3/4" NPT	N075	3/4" BSPP	G075
25	M25	1" NPT	N100	1" BSPP	G100
32	M32	1 1/4" NPT	N125	1 1/4" BSPP	G125
40	M40	1 1/2" NPT	N150	1 1/2" BSPP	G150
50	M50	2" NPT	N200	2" BSPP	G200
63	M63	2 1/2" NPT	N250	2 1/2" BSPP	G250
75	M75	3" NPT	N300	3" BSPP	G300
90	M90	3 1/2" NPT	N350	3 1/2" BSPP	G350
110	M110	4" NPT	N400	4" BSPP	G400

All dimensions in mm.



### ADCS conduit gland length - metric

MALE THREAD SIZE	CABLE SEALING RANGE	FEMALE THREAD SIZE			ADE GLAND SIZE		
		ISO	L	NPT	L	BSPP	L
M20	0	M20	43.7	N050	43.1	G050	3
M20	1	M20	44.6	N050	44.0	G050	4
M20	2	M20	47.3	N050	46.7	G050	5
M20	3	M20	49.7	N050	50.6	G050	6
M20	3	M25	51.2	N075	51.1	G075	6
M25	2	M25	51.2	N075	51.1	G075	6
M25	3	M25	54.5	N075	55.9	G075	7
M25	3	M32	54.5	N100	55.9	G100	7
M32	2	M32	54.5	N100	55.9	G100	7
M32	3	M32	62.6	N100	66.7	G100	8
M32	3	M40	64.1	N125	67.2	G125	8
M40	2	M40	64.1	N125	67.2	G125	8
M40	3	M40	66.9	N125	71.5	G125	9
M40	3	M50	68.4	N150	71.5	G150	9
M50	1	M50	68.4	N150	71.5	G150	9
M50	2	M50	69.1	N150	73.7	G150	10
M50	3	M50	73.5	N150	78.1	G150	11
M50	3	M63	75.0	N200	78.5	G200	11
M63	2	M63	75.0	N200	78.5	G200	11
M63	3	M63	76.5	N200	81.5	G200	12
M63	3	M75	78.0	N250	90.7	G250	12
M75	2	M75	78.0	N250	90.7	G250	12
M75	3	M75	84.8	N250	99.0	G250	13
M75	3	M90	91.3	N300	101.1	G300	13
M90	2	M90	93.5	N300	103.3	G300	14
M90	3	M90	101.8	N300	113.1	G300	15
M110	2	M110	101.4	N350	114.1	G350	16
M110	3	M110	110.4	N400	123.7	G400	17

### ADCS conduit gland length - NPT

MALE THREAD SIZE	CABLE SEALING RANGE	FEMALE THREAD SIZE			ADE GLAND SIZE		
		ISO	L	NPT	L	BSPP	L
1/2"	0	M20	43.7	N050	43.1	G050	3
1/2"	1	M20	44.6	N050	44.0	G050	4
1/2"	2	M20	47.3	N050	46.7	G050	5
1/2"	3	M20	49.7	N050	50.6	G050	6
1/2"	3	M25	51.2	N075	51.1	G075	6
3/4"	2	M25	51.2	N075	51.1	G075	6
3/4"	3	M25	54.5	N075	55.9	G075	7
3/4"	3	M32	54.5	N100	55.9	G100	7
1"	2	M32	54.5	N100	55.9	G100	7
1"	3	M32	62.6	N100	66.7	G100	8
1"	3	M40	64.1	N125	67.2	G125	8
1 1/4"	2	M40	64.1	N125	67.2	G125	8
1 1/4"	3	M40	66.9	N125	71.5	G125	9
1 1/4"	3	M50	68.4	N150	71.5	G150	9
1 1/2"	1	M50	68.4	N150	71.5	G150	9
1 1/2"	2	M50	69.1	N150	73.7	G150	10
2"	2	M63	75.0	N200	78.5	G200	11
2"	3	M63	76.5	N200	81.5	G200	12
2"	3	M75	78.0	N250	90.7	G250	12
2 1/2"	2	M75	78.0	N250	90.7	G250	12
2 1/2"	3	M75	84.8	N250	99.0	G250	13
2 1/2"	3	M90	91.3	N300	101.1	G300	13
3"	2	M90	93.5	N300	103.3	G300	14
3"	3	M90	101.8	N300	113.1	G300	15
3 1/2"	2	M90	101.8	N350	114.5	G350	15
3 1/2"	3	M110	114.1	N350	114.1	G350	16
4"	3	M110	123.7	N400	133.7	G400	17

### Thread code guide (ADE series / ADCC / ADCS glands only)

ISO THREAD	ISO THREAD CODE	NPT THREAD	NPT THREAD CODE	BSPP THREAD	BSPP THREAD CODE
16	M16	1/2" NPT	N050	1/2" BSPP	G050
20	M20	3/4" NPT	N075	3/4" BSPP	G075
25	M25	1" NPT	N100	1" BSPP	G100
32	M32	1 1/4" NPT	N125	1 1/4" BSPP	G125
40	M40	1 1/2" NPT	N150	1 1/2" BSPP	G150
50	M50	2" NPT	N200	2" BSPP	G200
63	M63	2 1/2" NPT	N250	2 1/2" BSPP	G250
75	M75	3" NPT	N300	3" BSPP	G300
90	M90	3 1/2" NPT	N350	3 1/2" BSPP	G350
110	M110	4" NPT	N400	4" BSPP	G400

All dimensions in mm.

# Thread dimensions

## Technical guide

### ADE range

ISO THREAD	STANDARD LENGTH	NPT THREAD	STANDARD LENGTH
12	15.0	3/8" NPT	16.6
16	15.0	1/2" NPT	22.2
20	15.0	3/4" NPT	22.5
25	15.0	1" NPT	27.3
32	15.0	1 1/4" NPT	28.0
40	15.0	1 1/2" NPT	28.5
50	16.0	2" NPT	29.2
63	17.0	2 1/2" NPT	42.5
75	18.0	3" NPT	44.0
90	22.0	3 1/2" NPT	45.2
110	22.0	4" NPT	46.5

### NEWCAP range

ISO THREAD	STANDARD LENGTH	STEEL LENGTH	Pg THREAD	STANDARD LENGTH
12	6.5	15.0	Pg7	6.5
16	6.5	15.0	Pg9	6.5
20	6.5	15.0	Pg11	6.5
25	7.0	15.0	Pg13.5	6.5
32	8.0	15.0	Pg16	7.0
40	8.0	15.0	Pg21	8.0
50	9.0	15.0	Pg29	8.0
63	10.0	15.0	Pg36	9.0
			Pg42	9.0
			Pg48	10.0

### Metric (ISO)

THREAD	EXTERNAL DIAMETER	THREADS PER INCH	PITCH
16 mm (M16)	16.0	16.93	1.50
20 mm (M20)	20.0	16.93	1.50
25 mm (M25)	25.0	16.93	1.50
32 mm (M32)	32.0	16.93	1.50
40 mm (M40)	40.0	16.93	1.50
50 mm (M50)	50.0	16.93	1.50
63 mm (M63)	63.0	16.93	1.50
75 mm (M75)	75.0	16.93	1.50

### National Pipe Thread (NPT) to ANSI / ASME 1983

THREAD	EXTERNAL DIAMETER	THREADS PER INCH	PITCH
1/8" NPT	10.30	27.0	0.940
1/4" NPT	13.72	18.0	1.410
3/8" NPT	17.15	18.0	1.410
1/2" NPT	21.34	14.0	1.810
3/4" NPT	26.67	14.0	1.810
1" NPT	33.40	11.5	2.200
1 1/4" NPT	42.16	11.5	2.200
1 1/2" NPT	48.26	11.5	2.200
2" NPT	60.33	11.5	2.200
2 1/2" NPT	73.03	8.0	3.175
3" NPT	88.90	8.0	3.175
4" NPT	114.24	8.0	3.175

### Panzergewinde (Pg) to EN 40430

THREAD	EXTERNAL DIAMETER	THREADS PER INCH	PITCH
Pg7	12.5	20.0	1.27
Pg9	15.5	18.0	1.4112
Pg11	18.6	18.0	1.4112
Pg13.5	20.4	18.0	1.4112
Pg16	22.5	18.0	1.4112
Pg21	28.3	16.0	1.5875
Pg29	37.0	16.0	1.5875
Pg36	47.0	16.0	1.5875
Pg42	54.0	16.0	1.5875
Pg48	59.3	16.0	1.5875



## References to IEC standards

60079-14/Ed.5: Explosive atmospheres - Part 14 : Electrical installations design, selection and erection

60079-0/Ed.6: Explosive atmospheres - Part 0 : Equipment - General requirements

## Extract from IEC 60079-14/Ed.5

### 10.2 Selection of cable glands

Cable glands shall be in accordance with IEC 60079-0 and shall be selected to maintain the requirements of the protection technique according to the table below:

PROTECTION TECHNIQUE FOR THE EQUIPMENT	CABLE GLANDS, ADAPTORS AND BLANKING ELEMENTS PROTECTION TECHNIQUE			
	Ex d	Ex e	Ex n	Ex t
Ex d	<b>X</b>			
Ex e	<b>X</b>	<b>X</b>		
Ex 'i' and Ex 'nL' - Group II <sup>a</sup>	<b>X</b>	<b>X</b>	<b>X</b>	
Ex 'i' - Group III <sup>a</sup>				<b>X</b>
Ex 'm'	Ex "m" would not normally be applied to wiring connections. The protection technique for connections shall suit the wiring system used.			
Ex 'n' except Ex 'nL'	<b>X</b>	<b>X</b>	<b>X</b>	
Ex 'o'	Ex "o" would not normally be applied to wiring connections. The protection technique for connections shall suit the wiring system used.			
Ex 'p', all types	<b>X</b>	<b>X</b>	<b>X<sup>b</sup></b>	
Ex 'pD'				<b>X</b>
Ex 'q'	Ex "q" would not normally be applied to wiring connections. The protection technique for connections shall suit the wiring system used.			
Ex 's'	Only as allowed by the conditions of the certificate.			
Ex 't'				<b>X</b>

**X** denotes permitted use.

a) If only one intrinsically safe circuit is applied, then there are no specified requirements for cable glands.

b) Only permitted for Gc installations.

To meet the ingress protection requirement it may also be necessary to seal between the cable glands, adaptors and blanking elements and the enclosure (for example by means of a sealing washer or thread sealant).

Note 2: In order to meet the minimum requirement of IP54, threaded cable entry devices into threaded cable entry plates or enclosures of 6 mm or greater thickness need no additional sealing between the cable entry device and the entry plate or enclosure providing the axis of the cable entry device is perpendicular to the external surface of the cable entry plate or enclosure.

# Selection of cable glands

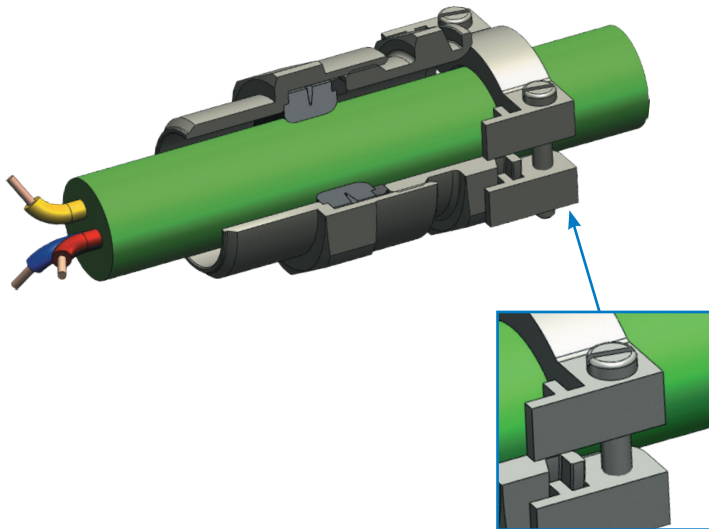
## Technical guide

### 10.3 Connections of cables to equipment

Cable glands shall be installed in a manner that after installation they are only capable of being released or dismantled by means of a tool.

If additional clamping is required to prevent pulling and twisting of the cable transmitting the forces to the conductor terminations inside the enclosure, a clamp shall be provided, as close as practicable to the gland along the cable.

#### Capri ADE gland with clamping module



**NOTE 1** Cable clamps within 300 mm of the end of the cable gland are preferred.

Cables shall be routed straight from the cable gland to avoid lateral tension that may compromise the seal around the cable. Where cable glands, blanking elements and adaptors with tapered threads are used in enclosures having gland plates with unthreaded entries, care shall be taken to use appropriate fittings to maintain the enclosure integrity.

**NOTE 2** Tapered threads include NPT threads.

When braided or armoured cables have been terminated within the cable gland, the body components that are intended to retain and secure the cable braid or armour should not be able to be released manually or opened by hand without the use of a tool.

The connection of cables to the electrical equipment shall be effected by means of cable glands appropriate to the type of cable used and shall maintain the explosion protection integrity of the relevant type of protection.

Where the threaded entry or hole size is different to that of the cable gland, a threaded adaptor complying with Table 10 shall be fitted.

### 10.6 Additional requirements for type of protection 'd' – flameproof enclosures

#### 10.6.1 General

Where cables enter into flameproof equipment via flameproof bushings through the wall of the enclosure which are part of the equipment (indirect entry), the parts of the bushings outside the flameproof enclosure shall be protected in accordance with one of the types of protection listed in IEC 60079-0. For example, the exposed parts of the bushings are within a terminal compartment which may either be another flameproof enclosure or will be protected by type of protection "e".

If an Ex 'd' gland clamping by the sealing ring (compression) is used with braided or armoured cable, it shall be of the type where the braid or armour is terminated in the gland and compression takes place on the inner cable sheath. For fine braided cable, where the braid is less than 0.15 mm diameter and has coverage of at least 70 % compression only on the outer sheath is accepted.

**NOTE 1** Flame propagation of flame may occur through the interstices between the strands of standard stranded conductors, or between individual cores of a cable. Special cable construction can be employed as means of reducing and preventing flame propagation. Examples include compacted strands, sealing of the individual strands, and extruded bedding. Further information is given in Annex E.

Flameproof cable glands, adaptors or blanking elements, having parallel threads may be fitted with a sealing washer between the entry device and the flameproof enclosure provided that, after the washer has been fitted, the applicable thread engagement is still achieved. Thread engagement shall be at least five full threads. Suitable grease may be used provided it is non-setting, non-metallic and non-combustible and any earthing between the two is maintained.

Where taper threads are used, the connection shall be made wrench tight.

The addition of holes or alteration to thread form is only permitted when in compliance with the certification documents and completed by the manufacturer or certified workshops. Where the threaded entry or hole size is different to that of the cable gland, a flameproof threaded adaptor complying with IEC 60079-1 shall be fitted which complies with thread engagement requirements detailed above. Unused cable entries shall be sealed with a flameproof blanking element complying with IEC 60079-1, which shall be fitted directly to the hole (no threaded adaptor shall be used), and shall comply with thread engagement requirements detailed above and shall be secured against loosening.

**NOTE 2** Non-threaded cable glands can be used if certified with the complete equipment or if certified as equipment.

### 10.6.2 Selection of cable glands

The cable entry system shall comply with one of the following:

- a) Cable glands sealed with setting compound (barrier cable glands) in compliance with IEC 60079-1 and certified as equipment;
- b) Cables and glands meeting all of the following:
  - cable glands comply with IEC 60079-1 and are certified as equipment
  - cables used comply with 9.3.2(a)
  - the connected cable is at least 3 m in length;
- c) Indirect cable entry using combination of flameproof enclosure with a bushing and increased safety terminal box;
- d) Mineral-insulated metal-sheathed cable with or without plastic outer covering with appropriate flameproof cable gland complying with IEC 60079-1;
- e) Flameproof sealing device (for example a sealing chamber) specified in the equipment documentation or complying with IEC 60079-1 and employing a cable gland appropriate to the cables used. The sealing device shall incorporate compound or other appropriate seals which permit stopping around individual cores. The sealing device shall be fitted at the point of entry of cables to the equipment.

**NOTE 1** The minimum length of cable is to minimize the potential for flame transmission through the cable (see also Annex E);

**NOTE 2** If the cable gland and actual cable are certified as a part of the equipment (enclosures) then compliance to 10.6.2 is not necessary.

#### Extract from IEC 60079-0/Ed.6:

Annex A - Supplementary requirements for cable glands

#### A.2.3 Clamping

##### A.2.3.1 General

Cable glands shall provide clamping of the cable in order to prevent pulling or twisting applied to it from being transmitted to the connections. Such clamping can be provided by a clamping device, sealing ring or filling compound. Whichever clamping arrangement is used, it shall be capable of meeting the relevant type tests in Clause A.3.

##### A.2.3.2 Group II or III cable glands

Cable glands for Group II or III equipment, without a clamping device, shall also be accepted as complying with this annex if they are capable of passing the clamping tests with values reduced to 25 % of those required in Clause A.3. The descriptive documents shall then state that such cable glands may not provide sufficient clamping and that the user shall provide additional clamping of the cable to ensure that pulling and twisting is not transmitted to the terminations. Such cable glands shall be marked with the symbol "X" to indicate this specific condition of use according to item e) of 29.3.

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# Bi-metallic corrosion

## Technical guide

### Principles

Bi-metallic corrosion occurs when two metals, with different potentials, are in electrical contact while immersed / in contact in an electrically conducting corrosive liquid / atmosphere. Because the metals have different natural potentials, a current will flow from the anode (more electronegative) metal to the cathode (more electropositive), which will increase the corrosion on the anode.

This additional corrosion is bi-metallic corrosion. It is also referred to as a galvanic corrosion, dissimilar metal corrosion or contact corrosion. The electrode potential is determined by many factors but the only fluid / atmospheres for which these factors are really well documented is sea water.

The value of the potential for any alloy, even in sea water, can be changed by a variety of factors such as temperature, velocity, biocide treatment, etc. Selection table below are thereby indicatives.

### Key corrosion prevention points

- Don't mix metals. If only one material is used in a construction, the problem is avoided.
- Consider area effect to avoid bi-metallic corrosion. The area effect should also be considered in avoiding corrosion damage.
- Remember stainless steels, such as 316L, have a thin, protective oxidized film and while this is intact, corrosion rates are very low and the alloy is said to be in its passive state.
- The bi-metallic corrosion rate of many copper-based and of stainless steel in sea-water, depends upon the flow rate of the water as well as on the area ratio. Natural brass alloys tend to become less noble with increasing flow rate and to corrode more - thereby plating brass will improve the performance, while stainless steels become more noble and corrode less. In well-aerated flowing solutions, stainless steels are also likely to become passive and corrode less.



### Indoor use

CABLE GLAND MATERIAL	MATERIAL OF ENCLOSURE				
	STAINLESS STEEL 316L	MILD STEEL	BRASS	ALUMINIUM	NON-MÉTALLIQUE
Nickel-plated brass	S	S	S	S	S
Stainless steel 316L	S	S	S	S	S
Aluminium	S	L	L	S	S
Polyamide	S	S	S	S	S

### Outdoor use in seawater environment

Nickel-plated brass	L	NC	S	NC	S
Stainless steel 316L	S	L	L	NC	S
Aluminium	NC	NC	NC	S	S
Polyamide	S	S	S	S	S

**S** Suitable

**L** Limited corrosion

**NC** Not compliant. Severe corrosion - do not use

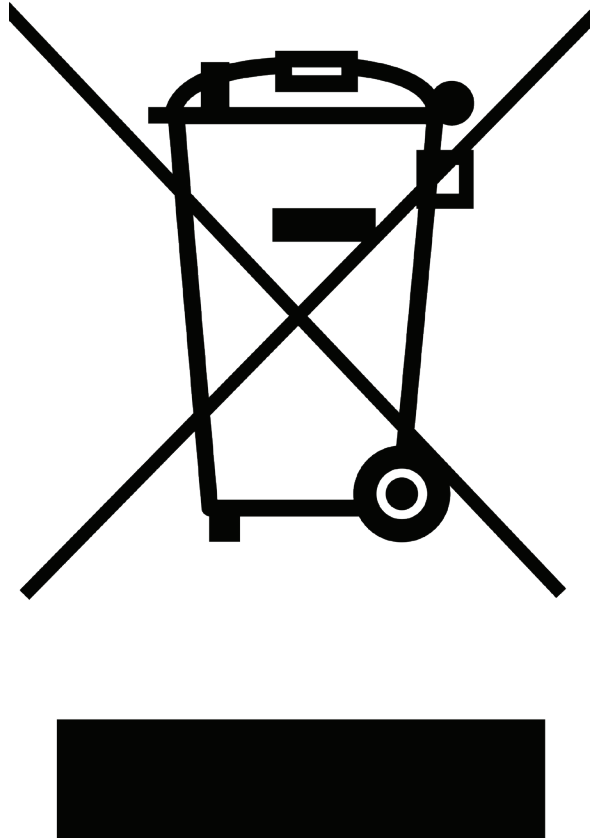
Eaton markets and sells products all over the world and many of our products must comply with various directives and legislation related to controlling, reducing or eliminating hazardous substances. Many of the latest initiatives originate from these European directives and apply to products sold in various European countries. Industries such as automotive, medical and electrical have specific requirements that relate directly to these standards. Some of the most common referred to directives include:

## REACH: Registration, Evaluation and Authorization of CHemicals

REACH (EC 1907/2006) came into force in June 2007 and replaced a patchwork of pre-existing legislation. REACH aims to: (i) ensure a high level of protection for human health and the environment; (ii) make the people who place chemicals on the EU market responsible for understanding and managing the risks associated with their use; and (iii) promote the use of alternative, i.e. greener/safer chemicals. REACH applies to substances (or articles containing such) manufactured or imported or into Europe in quantities of 1 ton per year or more.

## WEEE: Waste Electrical and Electronic Equipment

This is legislation for electrical and electronic equipment in end life (Directive 2012/19/EU) and promoting the collection and recycling of such equipment. It has been in force since February 2003. The objective is to increase the recycling and/or re-use of such products. Producers and importers must contribute to collection of this waste. A marking identifies the producer and a pictogram shows that the product is subject to selective collection.



## RoHS: Restriction of Hazardous Substances

The goal of RoHS (Directive (EU) 2017/2102) is to control the use of certain hazardous substances in the production of new electrical and electronic equipment (EEE) and it is a partner directive to the WEEE legislation. The RoHS regulations came into force in July 2006 and apply to those businesses defined as producers that manufacture or assemble electrical or electronic equipment in the EU or import electrical or electronic equipment from outside Europe. RoHS restricts the use of mercury, lead, hexavalent chromium, cadmium and a range of flame retardants notably polybrominated biphenyls and polybrominated diphenyl ethers, and from 2019, 4 phthalates (BBP, DEHP, DBP and DIBP) will be added to this list.



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