



EU Type Examination Certificate CML 19ATEX1371X Issue 0

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Type EX-60*, EX-65*, EX-70* and EX-75* Range of Barrier Cable Glands and Stopper Boxes**
- 3 Manufacturer **Amphenol EEC, Inc.**
- 4 Address 1701 Birchwood Ave, Des Plaines, Illinois 60018, United States of America
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V., Chamber of Commerce No 6738671, Koopvaardijweg 32, 4906CV Oosterhout, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:

EN IEC 60079-0:2018	EN 60079-1:2014
EN IEC 60079-7:2015+A1:2018	EN 60079-31:2014

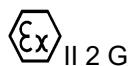
10 The equipment shall be marked with the following:



Ex db I Mb

Ex eb I Mb

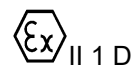
(-60°C to 135°C)



Ex db IIC Gb

Ex eb IIC Gb

(-60°C to 135°C)



Ex ta IIIC Da

(-60°C to 135°C)

A Snowden

A Snowden MIET
Assistant Certification Manager



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11 Description

The **EX-60***, **EX-65***, **EX70*** and **EX-75*** Range of Barrier Cable Glands & Stopper Boxes are metallic and are intended for use with differing cables or conductors dependent on their type. They allow the entry of the cable or conductors into flameproof, increased safety, restricted breathing and dust protected enclosures without compromising the explosion protection provided by the enclosure, in accordance with relevant codes of practice. All types comprise of various entry thread sizes, which are dependent upon gland size and their cable sealing ability range.

The EX-60*, EX-65*, EX70* and EX-75* Range of Barrier Cable Glands & Stopper Boxes, when installed with the silicone O-ring provided by the manufacturer, have an ingress protection rating of IP66 and IP68 (tested at a depth of 100 m for 7 days).

Design Options for all Type EX-60*, EX-65*, EX70* and EX-75* Barrier Cable Glands and Stopper Boxes

The entry component and EX-75* conduit nut internal thread forms:

- ISO Metric to BS3643-1:2007 and BS 3643-3:2007 6g fit (male) 6H (female)
- NPT to ANSI/ASME B1.20.1:1983, gauging to clause 8
- NPSM to ANSI/ASME B1.20.1:1983, gauging to clause 9
- BSPT to BS 21:1985 (ISO 7/1) standard threads only clause 5.4, gauging to clause 5A, system A
- BSPP to BS 2779:1986 (ISO 228/1) class A full form external threads'
- PG to DIN 40430:1971
- ET to BS 31:1940 (1979) Table 'A'

Alternative material of construction is as follows and denoted by letter designation in the type number:

- Brass to BS EN 12164 / BS EN 12165 / BS EN 12168 CW614N CuZn39Pb3
- Ecobrass to C69300
- Stainless Steel to EN 10088-3 grades 316S11, 316S31 316L

Additionally, all metallic materials may be surface coated to limit electrolytic reaction between dissimilar materials, providing the coating does not alter the dimensions of the component part.



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The EX-70* Range of Barrier Cable Glands are suitable for use with unarmoured, braided and screened, circular cables; they comprise:

- A threaded entry body to tighten into an associated enclosure; this is fitted with a silicone O-ring and internally coated with a release agent.
- A ferrule, fitted with an external nitrile O-ring, which fits into the entry body to make a part chamber into which a two-part epoxy putty setting compound is applied to provide an inner seal around the conductors.
- A union nut that couples the entry body and ferrule together.
- A seal housing, enclosing a white silicone, elastomeric, cable outer sheath seal and a plastic skid washer, that is screwed and secured into the ferrule with adhesive.
- A back nut that screws into the seal housing to compress the outer sheath seal.

Type EX-70* Compound – Filled Cable Glands:

Gland Size	Standard Entry Threads		Max Diameter Over Cores	Max No. of Cores	Outer Sheath	
	Metric	NPT			Min	Max
16	M20	1/2"	10.4	15	3.4	8.4
20S	M20	1/2"	10.4	35	4.8	11.7
20	M20	1/2"	12.5	40	9.5	14.0
25	M25	3/4"	17.8	60	11.7	20.0
32	M32	1"	23.5	80	18.1	26.3
40	M40	1 1/4"	28.8	130	22.6	32.2
50S	M50	1 1/2"	34.2	200	28.2	38.2
50	M50	2"	39.4	400	33.1	44.1
63S	M63	2"	44.8	400	39.3	50.1
63	M63	2 1/2"	50.0	425	46.7	56.0
75S	M75	2 1/2"	55.4	425	52.3	62.0
75	M75	3"	60.8	425	58.0	68.0
80	M80	3"	64.4	425	61.9	72.0
85	M85	3"	69.8	425	69.1	78.0
90	M90	3 1/2"	75.1	425	74.1	84.0
100	M100	3 1/2"	80.5	425	81.8	90.0

Design options:

A brass continuity washer may be fitted in the 20S to 100 sizes that are used with lead inner sheathed cables, glands with this modification are designated with a '2' in their type number.



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The EX-65* Range of Barrier Cable Glands are suitable for use with, unarmoured, braided and screened, circular and non-circular cables. They may also be used as a line bushing for terminating flying leads or for the direct inter-connection of associated enclosures; they comprise:

- A threaded entry body to tighten into an associated enclosure; this is fitted with a silicone O-ring and internally coated with a release agent
- A ferrule, fitted with an external nitrile O-ring, which fits into the entry body to make a part chamber into which a two-part epoxy putty setting compound is applied to provide an inner seal around the conductors.
- A union nut that couples the entry body and ferrule together
- A back nut that is screwed and secured into the ferrule with adhesive.

Type EX-65* Compound filled Cable Glands

Gland Size	Standard Entry Threads		Max Diameter Over Cores	Max No. of Cores	Outer Sheath Max
	Metric	NPT			
20S	M20	½"	10.4	35	11.7
20	M20	½"	12.5	40	14.0
25	M25	¾"	17.8	60	20.0
32	M32	1"	23.5	80	26.3
40	M40	1 ¼"	28.8	130	32.2
50S	M50	1 ½"	34.2	200	38.2
50	M50	2"	39.4	400	44.1
63S	M63	2"	44.8	400	50.1
63	M63	2 ½"	50.0	425	56.0
75S	M75	2 ½"	55.4	425	62.0
75	M75	3"	60.8	425	68.0
80	M80	3"	64.4	425	72.0
85	M85	3"	69.8	425	78.0
90	M90	3 ½"	75.1	425	84.0
100	M100	3 ½"	80.5	425	90.0

Design option:

A brass continuity washer may be fitted in the 20S to 100 sizes that are used with lead inner sheathed cables, glands with this modification are designated with a '2' in their type number.



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The EX-60* Range of Barrier Cable Glands are suitable for use with circular, pliable wire, single wire and steel tape armoured cables along with braided/screened and unarmoured cables; they comprise:

- A threaded entry body to tighten into an associated enclosure, this fitted with a silicone O-ring and internally coated with a release agent.
- A cone, fitted with an external nitrile O-ring, which fits into the entry component to make a part chamber into which a two part epoxy putty setting compound is applied to provide an inner seal around the conductors.
- A clamp ring that secures cable armour to the cone and also provides earth protection.
- A mid-cap component that fastens to the entry body to captivate the clamp ring, cone and epoxy putty.
- A back nut, enclosing a white, silicone, elastomeric, cable outer sheath seal and skid washer, that screws onto the external thread of the mid cap.

Type EX-60* Compound-Filled Cable Glands:

Gland Size	Standard Entry Threads		Max Ø Over Cores	Max No. of Cores	Inner Sheath Max	Outer Sheath		Reduced Bore		Armour Dia/Thickness (Universal)
	Metric	NPT				Min	Max	Min	Max	
16	M20	½"	10.4	15	11.7	8.4	13.5	6.7	10.3	0.15 – 1.25
20S	M20	½"	10.4	35	11.7	11.5	16.0	9.4	12.5	*0.15 – 1.25
20	M20	½"	12.5	40	14.0	15.5	21.1	12.0	17.6	**0.15 – 1.25
25	M25	¾"	17.8	60	20.0	20.3	27.4	16.8	23.9	0.15 – 1.6
32	M32	1"	23.5	80	26.3	26.7	34.0	23.2	30.5	0.15 – 2.0
40	M40	1 ¼"	28.8	130	32.2	33.0	40.6	28.6	36.2	0.2 – 2.0
50S	M50	1 ½"	34.2	200	38.2	39.4	46.7	34.8	42.4	0.2 – 2.5
50	M50	2"	39.4	400	44.1	45.7	53.2	41.1	48.5	0.2 – 2.5
63S	M63	2"	44.8	400	50.1	52.1	59.5	47.5	54.8	0.3 – 2.5
63	M63	2 ½"	50.0	425	56.0	58.4	65.8	53.8	61.2	0.3 – 2.5
75S	M75	2 ½"	55.4	425	62.0	64.8	72.2	60.2	68.0	0.3 – 2.5
75	M75	3"	60.8	425	68.0	71.1	78.0	66.5	73.4	0.3 – 2.5
80	M80	3"	64.4	425	72.0	77.0	84.0	71.9	79.4	0.45 – 3.15
85	M85	3"	69.8	425	78.0	79.6	90.0	75.0	85.4	0.45 – 3.15
90	M90	3 ½"	75.1	425	84.0	88.0	96.0	82.0	91.4	0.45 – 3.15
100	M100	3 ½"	80.5	425	90.0	92.0	102.0	87.4	97.4	0.45 – 3.15

Design options:

A brass continuity washer may be fitted in the 20S to 100 sizes that are used with lead inner sheathed cables, glands with this modification are designated with a '2' in their type number.



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The EX-60* size 20s and 20 cable glands to be used with an alternative, cone component; in this form, the glands are designated CX-C** (see details below) and are only suitable for braided cables.

Entry thread size	Gland Size	Max Ø Over Cores (mm)	Max No. of Cores	Max Inner Sheath (mm)	Outer Sheath (standard) (mm)		Braid dia.	
					Min	Max	Min	Max
M20 x 1.5	20S	10.4	8	11.7	11.5	16.0	0.15	0.35
M20 x 1.5	20	12.5	14	14.0	15.5	21.1	0.15	0.5

The EX-60* may be used with an alternative outer sheath seal that is red in colour and has a reduced bore size that accommodates an alternative range of outer sheath cable sizes; in this form, the glands are designated EX-60*R (see details below):

Entry thread size	Gland Size	Max Ø Over Cores (mm)	Max No. of Cores	Max Inner Sheath (mm)	Outer Sheath (standard) (mm)		Braid dia.	
					Min	Max	Min	Max
M20 x 1.5	20S	10.4	8	11.7	9.4	12.5	0.15	0.35
M20 x 1.5	20	12.5	14	14.0	12.0	17.6	0.15	0.5

The EX-75* Range of Conduit Stopper Boxes are suitable for use with circular cables, non-circular cables or conductors carried in conduit, providing a flameproof barrier entry into enclosures. Additionally, they may be used as a line bushing for terminating flying leads or for the direct inter-connection of associated enclosures; they comprise:

- a threaded entry body to tighten into an associated enclosure, this is fitted with a silicone O-ring and internally coated with a release agent.
- a ferrule, fitted with an external nitrile O-ring, which fits into the entry body to make a part chamber into which a two-part epoxy putty setting compound is applied to provide an inner seal around the conductors or flying leads.
- a union nut that couples the entry body and ferrule together
- a conduit nut that is screwed and secured into the ferrule with adhesive.

Stopper Box Size	Standard Entry Threads		Max Cable Diameter	Max Ø over cores	Max no of Cores	Standard male connection thread size		Standard female connection thread sizes	
	Metric	NPT				Metric	NPT	Metric	NPT
20	M20	½"	14.0	12.5	40	M20	½"	M20	½"
25	M25	¾"	20.0	17.8	60	M25	¾"	M25	¾"
32	M32	1"	26.3	23.5	80	M32	1"	M32	1"
40	M40	1 ¼"	32.2	28.8	130	M40	1 ¼"	M40	1 ¼"
50S	M50	1 ½"	38.2	34.2	200	M50	1 ½"	M50	1 ½"
50	M50	2"	44.1	39.4	400	M50	2"	M50	2"
63S	M63	2"	50.1	44.8	400	M63	2"	M63	2"



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Stopper Box Size	Standard Entry Threads		Max Cable Diameter	Max Ø over cores	Max no of Cores	Standard male connection thread size		Standard female connection thread sizes	
	Metric	NPT				Metric	NPT	Metric	NPT
63	M63	2 ½"	56.0	50.0	425	M63	2 ½"	M63	2 ½"
75S	M75	2 ½"	62.0	55.4	425	M75	2 ½"	M75	2 ½"
75	M75	-	68.0*	60.8*	425	M75	-	M75	2 ½" *
75	-	3"	68.0	60.8	425	-	3"	-	3"
80	M80	3"	72.0	64.4	425	M80	3"	M80	3"
85	M85	3"	78.0	69.8	425	M85	3"	M85	3"
90	M90	3 ½"	84.0	75.1	425	M90	3 ½"	M90	3 ½"
100	M100	3 ½"	90.0	80.5	425	M100	3 ½"	M100	3 ½"

Note: 2 ½" NPT thread option (Max Cable Diameter = 65.0) (Max Diameter over Cores = 58.1) *
2 ½" NPSM thread option (Max Cable Diameter = 67.0) (Max Diameter over Cores = 59.9) *

Notes:

Certificate Sira 05ATEX1124X / IECEx SIR 07.0109X is superseded by certificate CML 19ATEX1371X / IECEx CML 19.0113X.

The product covered by Issue 0 of this certificate remains identical to that previously covered by Sira 05ATEX1124X / IECEx SIR 07.0109X.

Where Sira 05ATEX1124X / IECEx SIR 07.0109X is specified in other product certification, or other technical specifications, this certificate reference for the product shall be used in its place; updating of the other product certificate or technical specification is not required

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	22 Apr 2021	R12631E/00	Issue of Prime Certificate

Note: Drawings that describe the equipment or component are listed in the Annex.

13 Conditions of Manufacture

None.



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14 Specific Conditions of Use (Special Conditions)

The following conditions relate to safe installation and/or use of the equipment.

- i. The cable glands/stopper boxes shall not be used in enclosures where the temperature, at the point of entry/mounting, is outside of the range -60°C to +135°C.
- ii. The interface seals comply with the requirements of the standards listed on this certificate when the cable glands are fitted to a representative enclosure having a smooth flat mounting surface. In practice the interface between the male thread of the glands and their associated enclosure cannot be defined, therefore it is the users' responsibility to ensure that the appropriate ingress protection level is maintained at these interfaces.
- iii. The threaded entry component threads without interface O-ring seals installed in an explosive dust atmosphere, within threaded entries, shall only be fitted into enclosures that have either:
 - parallel entries that will ensure that a minimum of 5 full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079 31:2014
 - tapered entries that will ensure that a minimum of 3 ½ full threads of contact will be maintained, this is in accordance with clause 5.1.2 of EN 60079-31:2014

Certificate Annex

Certificate Number CML 19ATEX1371X
Equipment Type EX-60*, EX-65*, EX-70* and EX-75* Range of Barrier Cable Glands and Stopper Boxes
Manufacturer Amphenol EEC, Inc.



The following documents describe the equipment or component defined in this certificate:

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Drawing No	Sheets	Rev	Approved date	Title
AMP/ATX/CRC	1 of 1	7	22 Mar 2021	Trade Agent Label Drawing EX-60 Cable Gland Range
AMP/ATX/CRU	1 of 1	7	22 Mar 2021	Trade Agent Label Drawing EX-65 and EX-70 Cable Gland Ranges
AMP/ATX/CRS	1 of 1	7	22 Mar 2021	Trade Agent Label Drawing EX-75 Cable Gland Range