



Type Examination Certificate **CML 18ATEX4312X Issue 0**

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **A2F, RA2F, A2FHC, RA2FHC, A2e, RA2e, A2eHC, RA2eHC, A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2eHT, RA2eHT, A2eHTHC, RA2eHTHC Series Cable Glands**
- 3 Manufacturer **CMP Products Ltd**
- 4 Address **Unit 36 Nelson Way,
Nelson Park East,
Cramlington, NE23 1WH,
United Kingdom**

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, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design of equipment intended for use in potentially explosive atmospheres given in Annex II of Directive 2014/34/EU.

The examination and test results are recorded in the confidential reports listed in Section 12.

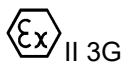
7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of certification (affecting correct installation or safe use). These are specified in Section 14.

8 This Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Annex VIII apply to the manufacture of the equipment or component.

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 60079-0:2018 IEC 60079-15:2017

10 The equipment shall be marked with the following:



II 3G

Ex nR IIC Gc

IP66 IP67 IP68 (30m for 12 hours)

Ts= -60°C to +130°C (A2F, RA2F, RA2FHC, A2e, RA2e, A2eHC, RA2eHC Series)

Ts= -60°C to +180°C (A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2eHT, RA2eHT, A2eHTHC, RA2eHTHC Series)



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11 Description

The A2F, RA2F, A2FHC, RA2FHC, A2e, RA2e, A2eHC, RA2eHC, A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2eHT, RA2eHT, A2eHTHC, RA2eHTHC Series Cable Glands allow circular unarmoured or braided/screened cables to enter associated enclosures to which they are fitted (as defined by their coding) without compromising the explosion protection that it provides. They are manufactured from the following component parts:

- Metallic entry item hexagonal in form which is partially threaded at one end with a male metric or NPT thread used to secure the entry item to the associated enclosure. At the other end there is a partially turned external surface which is provided for placement of the product markings. At this end the internal profiled bore of the component is partially threaded with a female thread to accept engagement of the outer seal nut.
- Elastomeric sealing ring which is inserted into the female threaded end of the entry item which, when displaced by tightening of the outer seal nut, secures the incoming cable in place, along with providing 'sealing' and ingress protection.
- Stepped skid washer hollow 'top hat' in form, is fitted into the recessed bore of the outer seal nut. Which upon tightening of the outer seal nut, aids axial displacement of the sealing ring and limits any twisting of the cable within the cable gland during installation.
- Metallic stepped skid washer in A2FHT Series and A2eHT series
- Metallic or Polymeric stepped skid washer in A2F Series and A2e Series (dependent upon gland size)
- Metallic outer seal nut, hexagonal in form, is partially threaded at one end with a male thread which engages with the entry items and upon tightening displaces the sealing ring onto the cable. Internally the bore is recessed at one end to accommodate the stepped skid washer, and the other end is machined with an internal radius to reduce the risk of damage to cable sheath/jacket.
- Model code series suffixed 'HC' for all cable gland model series, up to either gland size 75S or gland size 75 (dependent upon model series), which includes an alternative nut that is extended to provide a plain circular portion, to facilitate the connection of a hose that provides additional mechanical and environmental protection of the cable terminated within the cable gland. The compression nut may alternatively be machined with a dimensionally equivalent 'smaller' certified gland size hose connection feature. In this instance the upper cable sealing diameter range being reduced accordingly.



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The cable gland and sealing ring sizes are determined by the entry thread and cable range take sizes:

A2FHT and A2eHT Series					
Gland Size	Entry Thread			Cable outer sheath Ø	
	Standard (Metric)	Standard (NPT)	Optional (NPT)	Min. (mm)	Max. (mm)
16	M16x1.5	3/8"	-	3.2	8.0
20S16	M20x1.5	1/2"	3/4"	3.2	8.0
20S	M20x1.5	1/2"	3/4"	6.5	11.2
20	M20x1.5	1/2"	3/4"	7.0	13.5
25	M25x1.5	3/4"	1"	11.5	19.5
32	M32x1.5	1"	1 1/4"	19.0	25.5
40	M40x1.5	1 1/4"	1 1/2"	25.0	32.2
50S	M50x1.5	1 1/2"	2"	31.0	38.2
50	M50x1.5	2"	2 1/2"	35.6	44.0
63S	M63x1.5	2"	2 1/2"	41.5	49.9
63	M63x1.5	2 1/2"	3"	48.2	54.9
75S	M75x1.5	2 1/2"	3"	54.0	61.9

A2F and A2e Series					
Gland Size	Entry Thread			Cable outer sheath Ø	
	Standard (Metric)	Standard (NPT)	Optional (NPT)	Min. (mm)	Max. (mm)
16	M16x1.5	3/8"	-	3.2	8.7
20S16	M20x1.5	1/2"	3/4"	3.2	8.7
20S	M20x1.5	1/2"	3/4"	6.5	11.7
20	M20x1.5	1/2"	3/4"	7.0	14
25	M25x1.5	3/4"	1"	11.1	20.0
32	M32x1.5	1"	1 1/4"	18.2	26.3
40	M40x1.5	1 1/4"	1 1/2"	23.5	32.2
50S	M50x1.5	1 1/2"	2"	31.0	38.2
50	M50x1.5	2"	2 1/2"	35.6	44.0
63S	M63x1.5	2"	2 1/2"	41.5	49.9
63	M63x1.5	2 1/2"	3"	47.2	55.9
75S	M75x1.5	2 1/2"	3"	54.0	61.9
75	M75x1.5	3"	3 1/2"	61.1	67.9
90	M90x2.0	3 1/2"	4"	66.6	79.9
100	M100x2.0	3 1/2"	4"	76.0	89.0
115	M115x2.0	4"	5"	86.0	97.9
130	M130x2.0	5"	-	97.0	114.9



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Design Options

The front threaded entry item may be manufactured with a profiled groove to captivate an 'O' ring seal which locates on the mating face of the associated enclosure. This option having the cable gland type designation prefixed with the letter R, e.g. RA2FHT Series.

The front threaded entry item may be manufactured with any larger metric or NPT thread form size from the sizes certified.

The front threaded entry item may be manufactured with an alternative nearest equivalent recognised thread type and size to the metric thread sizes certified.

Metric threaded cable entry spigots of all cable gland model series to be manufactured with a thread pitch between 0.7mm and 2.0mm, with 1.5mm as standard.

The optional use of an internally fitted brass or brass plated ingress disc between the seal and the stepped washer component parts within 'A2e' Series & 'RA2e' Series, 'A2eHT' Series, 'RA2eHT' Series, 'A2F' Series, 'RA2F' Series, 'A2FHT' Series & 'RA2FHT' Series cable glands. Changing their function to a cable entry blanking device prior to cable installation, as a result, a Conditions of Manufacture was introduced.

The introduction of the following low profile 'across corners' envelope cable gland sizes, with the cable gland size suffix code designation 'P':

Gland Size	16P	20S16P	20SP	20P	25P*
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(* not available in aluminium)

The differences to the standard cable gland sizes, are-

- The entry item component is machined from round bar, equal to the standard gland size across corners dimensions, with a central portion machined to a hexagonal profile, having reduced across flats from the standard gland size. Along with a minor increase in length resulting from an increase to the conical wall thickness.
- The gland nut component (dependent upon model series and gland size), having reduced across flats and across corners dimensions from the standard gland size. Along with their maximum inner most bore dimension being reduced.
- The optional use of an internally fitted brass or brass plated ingress disc between the seal and the stepped washer component parts within 'A2e' Series & 'RA2e' Series, 'A2eHT' Series, 'RA2eHT' Series, 'A2F' Series, 'RA2F' Series, 'A2FHT' Series & 'RA2FHT' Series cable glands.



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Materials of manufacture:

The standard material supplied is:

Brass	BS EN 12164:2011/ BS EN 12168:2011 Grade CuZn39Pb3 (CW614N) All brass manufactured component parts can be optionally nickel plated to a maximum of 0.008mm
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Alternate materials are:

Stainless steel	BS EN 10088-3:2014 Grades 316S11, 316S13, 316S31, 316S33, 316L
Mild steel	BS EN 10277-2:2008 Grades 220M07, 230M07 (EN1A) / 220M07Pb, 230M07Pb (EN1APb)
Aluminium	BS EN 573-3:2013 / BS EN 755-1-3:2008 Grade 6082 T6, 6262 T6 / BS EN 1676:2010 Grade LM25 TF Aluminium will contain less than 6% magnesium

Alternative entry component thread forms:

Metric	ISO 965-1, ISO 965-3 medium fit (6g) for external threads
ET (Conduit)	BS31:1940 (1979), Table A
PG	DIN 40430:1971
BSPP	BS2779:1986 class A full form for external threads
BSPT	BS21:1985 standard threads only as clause 5.4, gauging to clause 5.2 system A
ISO	ISO 7/1:1994, gauging to ISO 7/2 clause 6.3 for external threads
NPT	ANSI/ASME B1.20.1-2013 gauging to clause 3.2 for external threads
NPSM	ANSI/ASME B1.20.1-2013 gauging to clause 6.4 for external threads

Notes:

- Sira 16ATEX4021X is superseded by this certificate.
- The product covered by Issue 0 of this certificate remains identical to that previously covered by Sira 16ATEX4021X.
- Where Sira 16ATEX4021X 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.



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12 Certificate history and evaluation Reports

Issue	Date	Associated report	Notes
0	27 Mar 2019	R12060C/00	Issue of Prime Certificate

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

13 Conditions of Manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- i. Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.
- ii. The front threaded entry item may be provided with, but not limited to, an alternative nearest equivalent recognised thread type and size to the metric thread, whilst maintaining a tolerance of fit, equal or better than, a medium fit to ISO 965-1 & ISO 965-3.
For example:
 - ET - BS 31:1940 (1979) Table 'A'
 - PG - DIN 40430:1971
 - BSPP - BS2279:1986 class A full form for external threads
 - BSPT - BS21:1985 standard threads only as clause 5.4, gauging to clause 5.2, system A.
 - ISO - ISO 7/1:1994 gauging to ISO 7/2 clause 6.3 for external threads.
 - NPSM - ANSI/ASME B1.20.1:1983 B1.20.1-1983 gauging to clause 9 for external threads.
- iii. Cable gland sizes with polymeric stepped skid washers may alternatively be supplied with metallic stepped skid washers.
- iv. Cable gland metallic parts are to be supplied in alike materials, alternatively a brass or nickel plated brass stepped skid washer may be used within steel and stainless-steel glands.
- v. The front threaded entry item of any model series, when manufactured with a larger thread form or larger technical equivalent thread form, to the standard metric or NPT sizes approved and detailed on the certification documentation will only differ as follows:
 - These entry item dimensions must remain the same:
 - The front bore diameter and profile and sealing ring taper angle.
 - Outer seal engagement thread diameter and length.
 - All other dimensions may be altered to match those of the larger approved cable gland size, provided that the overall cable gland protrusion length (whichever is greater between the original cable gland size or the larger approved cable gland size) is not exceeded.
- vi. Cable gland sizes 25P shall not be manufactured in aluminium.
- vii. Cable Glands supplied with ingress discs shall not be marked suitable for IPX7 or IPX8 applications.



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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. All cable gland types and sizes are only suitable for fixed installations. Cables must be effectively clamped to prevent pulling or twisting.

Certificate Annex



Certificate Number CML 18ATEX4312X
Equipment A2F, RA2F, A2FHC, RA2FHC, A2e, RA2e, A2eHC, RA2eHC, A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2eHT, RA2eHT, A2eHTHC, RA2eHTHC Series Cable Glands
Manufacturer CMP Products Ltd

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

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Drawing No	Sheets	Rev	Approved date	Title
GA925	1 of 2	02	27 Mar 2019	General Arrangement A2F - 25%
GA925	2 of 2	02	27 Mar 2019	General Arrangement A2F - 25%
GA926	1 of 2	02	27 Mar 2019	General Arrangement A2F – 100% & 25% HT
GA926	2 of 2	02	27 Mar 2019	General Arrangement A2F – 100% & 25% HT
SCH0405	1 of 4	01	27 Mar 2019	100% & 25% HT A2 Outer Seal Nut
SCH0405	2 of 4	01	27 Mar 2019	25% A2 Outer Seal Nut
SCH0405	3 of 4	01	27 Mar 2019	100% & 25% HT HC Nut
SCH0405	4 of 4	01	27 Mar 2019	25% HC Nut
SCH0406	1 of 4	01	27 Mar 2019	100% & 25% HT A2F Entry Item
SCH0406	2 of 4	01	27 Mar 2019	100% & 25% HT A2F Entry Item
SCH0406	3 of 4	01	27 Mar 2019	25% A2F Entry Item
SCH0406	4 of 4	01	27 Mar 2019	25% A2F Entry Item
SCH0407	1 of 2	01	27 Mar 2019	25% Polymeric/Metallic Step Washer
SCH0407	2 of 2	01	27 Mar 2019	Metallic Step Washer
SCH0408	1 of 2	01	27 Mar 2019	100% & 25% HT A2 Seals
SCH0408	2 of 2	01	27 Mar 2019	A2 Seals (standard/100)
SCH0411	1 of 4	00	27 Mar 2019	100% & 25% HT A2 'P' Gland Size Outer Seal Nut
SCH0411	2 of 4	00	27 Mar 2019	25% A2 'P' Gland Size Outer Seal Nut
SCH0411	3 of 4	00	27 Mar 2019	100% & 25% HT A2 'P' Gland Size HC Nut
SCH0411	4 of 4	00	27 Mar 2019	25% A2 'P' Gland Size HC Nut
SCH0412	1 of 4	00	27 Mar 2019	100% & 25% HT A2F 'P' Gland Size Entry Item
SCH0412	2 of 4	00	27 Mar 2019	100% & 25% HT A2F 'P' Gland Size 'item 1' Entry Body
SCH0412	3 of 4	00	27 Mar 2019	25% A2F 'P' Gland Size 'item 1' Entry Body
SCH0412	4 of 4	00	27 Mar 2019	25% A2E 'P' Gland Size 'item 1' Entry Body

Certificate Annex



Certificate Number CML 18ATEX4312X
Equipment A2F, RA2F, A2FHC, RA2FHC, A2e, RA2e, A2eHC, RA2eHC, A2FHT, RA2FHT, A2FHTHC, RA2FHTHC, A2eHT, RA2eHT, A2eHTHC, RA2eHTHC Series Cable Glands
Manufacturer CMP Products Ltd

Drawing No	Sheets	Rev	Approved date	Title
SCH0418	1 of 1	00	27 Mar 2019	'A' – Series Ingress Disc
MP888	1 of 4	13	27 Mar 2019	Manufacturing Tolerance Parameters