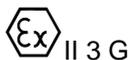


**Type Examination Certificate CML 21UKEX4250X Issue 0****United Kingdom Conformity Assessment**

- 1 Product or Protective System Intended for use in Potentially Explosive Atmospheres UKSI 2016:1107 (as amended)
- 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 Eurofins E&E CML Limited, Newport Business Park, New Port Road, Ellesmere Port, CH65 4LZ, United Kingdom, 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 Schedule 1 of the Regulations.  
  
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 specific conditions of use (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. Further requirements of the Regulations apply to the manufacturing process and supply of the product. These are not covered by this certificate.
- 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:



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:

<b>A2FHT and A2eHT Series</b>					
<b>Gland Size</b>	<b>Entry Thread</b>			<b>Cable outer sheath Ø</b>	
	<b>Standard (Metric)</b>	<b>Standard (NPT)</b>	<b>Optional (NPT)</b>	<b>Min. (mm)</b>	<b>Max. (mm)</b>
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

<b>A2F and A2e Series</b>					
<b>Gland Size</b>	<b>Entry Thread</b>			<b>Cable outer sheath Ø</b>	
	<b>Standard (Metric)</b>	<b>Standard (NPT)</b>	<b>Optional (NPT)</b>	<b>Min. (mm)</b>	<b>Max. (mm)</b>
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

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	09 July 2021	R13914AM_00	Issue if the prime certificate. CML 18ATEX4312X, Issue 0 is attached and shall be referred to in conjunction with this certificate.

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



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### **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.

### **14 Specific Conditions of Use**

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 21UKEX4250X  
**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 defined in this certificate:

### Issue 0

For drawings describing the equipment, refer to attached certificate CML 18ATEX4312X, Issue 0. In addition to the drawings listed on CML 18ATEX4312X, Issue 0, the following drawings include the additional marking required for this Type Examination certification:

Drawing No	Sheets	Rev	Approved date	Title
GA925	1 to 2	03	09 July 2021	GENERAL ARRANGEMENTS A2F - 25%
GA926	1 to 2	04	09 July 2021	GENERAL ARRANGEMENTS A2F - 100% & 25% HIGH TEMP.