Type Examination Certificate CML 21UKEX4248 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 **A2F100, RA2F100, A2F100HC, RA2F100HC, A2e100, RA2e100, A2e100HC, RA2e100HC & D3DCS Ranges of 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 IEC 60079-0:2018 IEC 60079-15:2017+A1:2018

10 The equipment shall be marked with the following:

Ex II 3G

Ex nR IIC Gc

IP66 IP67 IP68 (30m for 12 hours)

Ts= -60°C to +130°C

D R Stubbings
Technical Director

11 Description

The A2F100, RA2F100, A2F100HC, RA2F100HC, A2e100, RA2e100, A2e100HC, RA2e100HC & D3CDS Ranges of 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.
- Metallic 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 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.

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

Gland Size	Entry Thread			Cable outer sheath Ø	
	Standard (Metric)	Standard (NPT)	Optional (NPT)	Standard (Metric)	Standard (NPT)
16	M16x1.5	3/8"	-	3.2	8.0
20S16	M20x1.5	½"	¾"	3.2	8.0
20S	M20x1.5	½"	¾"	6.5	11.2
20	M20x1.5	½"	¾"	7.0	13.5
20L	M20x1.5	½"	¾"	8.7	14
25	M25x1.5	¾"	1"	11.5	19.5
25L	M25x1.5	¾"	1"	14.0	20.0
32	M32x1.5	1"	1 ¼"	19.0	25.5
32L	M32x1.5	1"	1 ¼"	20.2	26.3
40	M40x1.5	1 ¼"	1 ½"	25.0	32.2
50S	M50x1.5	1 ½"	2"	31.0	38.2

Gland Size	Entry Thread			Cable outer sheath Ø	
	Standard (Metric)	Standard (NPT)	Optional (NPT)	Standard (Metric)	Standard (NPT)
50	M50x1.5	2”	2 ½”	35.6	44.0
63S	M63x1.5	2”	2 ½”	41.5	49.9
63	M63x1.5	2 ½”	3”	48.2	54.9
75S	M75x1.5	2 ½”	3”	54.0	61.9
75	M75x1.5	3”	3 ½”	61.1	67.9
90	M90x2.0	3 ½”	4”	66.6	79.9
100	M100x2.0	3 ½”	4”	76.0	89.0
115	M115x2.0	4”	5”	86.0	97.9
130	M130x2.0	5”	-	97.0	114.9

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. RA2F100 Range.

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.

The optional use of an internally fitted brass or brass plated ingress disc between the seal and the stepped washer component parts within 'A2F100' & 'RA2F100' Ranges, A2e100 & RA2e100 Ranges cable glands.

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	20LP	25P*	25LP*

(* 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 innermost bore dimension being reduced.

D3CDS Range

The D3CDS Range of Cable Glands are identical to the A2F100 Range, except the outer seal nut is replaced with an item which houses a cone and clamping ring to terminate the braid of the associated cable. The D3CDS Range is only available in sizes 40 to 75.

Materials of manufacture:

A2F100, RAF100, A2F100HC, RA2F100HC, A2F100/M, RA2F100/M, A2F100HC/M, RA2F100HC/M & D3CDS Ranges of Cable Glands are manufactured in brass, stainless steel, mild steel and aluminium. All brass manufactured component parts can be optionally nickel plated. All mild steel manufactured components can be optionally zinc plated.

Examples of alternative entry component threadforms:

ET (Conduit)
PG
BSPP
BSPT
ISO
NPSM
NPT

Metric entry threads of all model series to be manufactured with a pitch between 0.7 mm and 2.0 mm, with 1.5 mm as standard.

Notes:

- Sira 16ATEX4020 is superseded by this certificate.
- The product covered by Issue 0 of this certificate remains identical to that previously covered by Sira 16ATEX4020.
- Where Sira 16ATEX4020 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	02 July 2021	R13914AK/00	Issue of the prime certificate. CML 18ATEX4311, Issue 1 is attached and shall be referred to in conjunction with this certificate.

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

13 Conditions of Manufacture

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

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

i. 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.

ii. The front threaded entry item of any model range, when manufactured with a larger thread size 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.

iii. Cable gland model code series suffixed 'HC' manufacturer with a 3/8" NPT threaded spigot shall not be marked suitable for Group I applications.

iv. Cable gland sizes 25P and 25LP shall not be manufactured in aluminium.

v. Cable Glands supplied with ingress discs shall not be marked suitable for IPX7 or IPX8 applications.

14 Specific Conditions of Use

i. None

Certificate Annex

Certificate Number	**CML 21UKEX4248**
Equipment	**A2F100, RAF100, A2F100HC, RA2F100HC, A2F100/M, RA2F100/M, A2F100HC/M, RA2F100HC/M 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 18ATEX4311. In addition to the drawings listed on CML 18ATEX4311, the following drawings include the additional marking required for this UK Type Examination certification:

Drawing No	Sheets	Rev	Approved date	Title
GA926	1 to 2	04	02 July 2021	GENERAL ARRANGEMENTS A2F - 100% & 25% HIGH TEMP.