IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx SIM 17.0010**

Certificate history:
Issue 0 (2018-04-06)

Status: **Current**

Issue No: 1

Date of Issue: 2020-06-30

Applicant: **CMP Products Ltd**
Glasshouse Street
St Peters
NEWCASTLE UPON TYNE
NE6 1BS
United Kingdom

Equipment: **A2F100, RA2F100, A2F100HC, RA2F100HC, A2F100/M, RA2F100/M, A2F100HC/M, RA2F100HC/M and D3CDS Range of cable glands**

Optional accessory:

Type of Protection: **Flameproof "d", Increased Safety "e", Dust ignition protection by enclosure "t", Non-sparking "n"**

Marking: Refer annex for marking details.

Approved for issue on behalf of the IECEx Certification Body: **John Ellis**

Position: **Senior Certification Officer**

Signature: (for printed version)

Date: 30 June 2020

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.

Certificate issued by:

Safety in Mines Testing and Research Station (Simtars)
2 Robert Smith Street, REDBANK QLD 4301
Australia

IECEx Certificate of Conformity

Certificate No.: **IECEx SIM 17.0010**

Date of issue: 2020-06-30

Issue No: 1

Manufacturer: **CMP Products Limited**
Unit 36 Nelson Way
Nelson Park East
Cramlington
Northumberland, NE23 1WH
United Kingdom

Additional manufacturing locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements.This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :
The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1:2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

IEC 60079-15:2017 Explosive atmospheres - Part 15: Equipment protection by type of protection "n"
Edition:5.0

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

IEC 60079-7:2017 Explosive atmospheres - Part 7: Equipment protection by increased safety "e"
Edition:5.1

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:
A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Reports:

GB/CML/ExTR18.0295/00 GB/CML/ExTR19.0239/00 GB/CML/ExTR20.0010/00

Quality Assessment Report:

GB/CML/QAR19.0001/01

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Refer annex for equipment description.

SPECIFIC CONDITIONS OF USE: NO

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1:
- Change in ExCB and replacement of both the ExTR and QAR referred to in issue 0 of this certificate
- Up-issue of IEC 60079-0 standard from Edition 6.0 to Edition 7
- Up-issue of IEC 60079-7 standard from Edition 5 to Edition 5.1
- Up-issue of IEC 60079-15 standard from Edition 4 to Edition 5.0
- Addition of D3CDS model series
- Inclusion of a universal certificate schedule drawing CSD001
- Change in manufacturer's address – remove Unit 03
- The introduction of a new variant hose connection models A2F100HC (16) and RA2F100HC (16) for gland sizes 20 and 20L
- The removal of c from nRc marking
- Minor drawing changes

Annex:

IECEx SIM 17.0010-1 CMP A2F.RA2F Annex.pdf

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Annex associated with Issue 0

Manufacturer's documents:

Drawing No	Subject	Rev.	Date
GA926A (Sheet 1 of 2)	GENERAL ARRANGEMENT A2F - 100% & 25% HIGH TEMP.	00	04/01/18
MP 888	TOLERANCES	10	08/01/2016
SCH0405 (Sheet 1 of 4)	100% & 25% HT A2 OUTER SEAL NUT	01	21/06/17
SCH0405 (Sheet 3 of 4)	100% & 25% HT HC NUT	01	21/06/17
SCH0406 (Sheet 1 of 4)	100% & 25% HT A2F ITEM 1	01	21/06/17
SCH0407 (Sheet 2 of 2)	METALLIC STEP SKID	01	21/06/2017
SCH0408 (Sheet 1 of 2)	100% & 25% HIGH TEMP. A2 SEALS	01	21/06/2017
SCH0408 (Sheet 2 of 2)	A2 SEALS (STANDARD/100)	01	21/06/2017
SCH0411 (Sheet 1 of 4)	100% & 25% HT A2 P OUTER SEAL NUT	00	21/06/2017
SCH0411 (Sheet 3 of 4)	100% & 25% HT A2 P HC NUT	00	21/06/2017
SCH0412 (Sheet 1 of 4)	100% & 25% HT A2F P Item 1	00	21/06/2017
SCH0418 Sheet 1 of 1	A – Series Ingress Disc	00	21/06/2017
FI492	Installation Instructions for A2F100, RA2F100 Cable Gland	11	-
FI510	Installation Instructions for A2F100HC, RA2F100HC Cable Gland	11	-

Equipment:

The A2F100 Series 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.

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- 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.

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

Gland Size	Entry Thread			Cable Sheath Ø (mm)	
	Standard (metric)	Standard (NPT)	Optional (NPT)	Min.	Max.
16	M16 x 1.5	⅜”	-	3.2	8.0
20S/16	M20 x 1.5	½”	¾”	3.2	8.0
20S	M20 x 1.5	½”	¾”	6.5	11.2
20	M20 x 1.5	½”	¾”	7.0	13.5
20L	M20 x 1.5	½”	¾”	8.7	14.0
25	M25 x 1.5	¾”	1”	11.5	19.5
25L	M25 x 1.5	¾”	1”	14.0	20.0
32	M32 x 1.5	1”	1 ¼”	19.0	25.5
32L	M32 x 1.5	1”	1 ¼”	20.2	26.3
40	M40 x 1.5	1 ¼”	1 ½”	25.0	32.2
50S	M50 x 1.5	1 ½”	2”	31.0	38.2
50	M50 x 1.5	2”	2 ½”	35.6	44.0
63S	M63 x 1.5	2”	2 ½”	41.5	49.9
63	M63 x 1.5	2 ½”	3”	48.2	54.9
75S	M75 x 1.5	2 ½”	3”	54.0	61.9
75	M75 x 1.5	3”	3 ½”	61.1	67.9
90	M90 x 2.0	3 ½”	4”	66.6	79.9
100	M100 x 2.0	3 ½”	4”	76.0	89.0
115	M115 x 2.0	4”	5”	86.0	97.9
130	M130 x 2.0	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.
- Alternative materials of manufacture for metallic components:
  - Brass to BS EN 12164:2011 / BS EN 12168:2011 Grade CuZn39Pb (CW614N)
  - Stainless steel to BS EN 10088-3:2014 Grades 316S11, 316S13, 316S31 or 316S33, 316L

  - Mild steel to BS EN 10277-2:2008 Grades 220M07, 230M07 (EN1A)/220M07Pb, 230M07Pb (EN1APb)
  - Aluminium to BS EN 573-3:2013 / BS EN 755-1, -2, & -3:2008 Grades 6082 T6 or 6262 T6, BS EN 1676:2010 grade LM25 TF
- The front threaded entry item may be manufactured with any larger metric or NPT thread form size from the sizes certified.
- To permit metric threaded cable entry spigots of all cable gland model series to be manufactured with a thread pitch between 0.7 mm and 2.0 mm, with 1.5 mm as standard.
- 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, 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 inner most bore dimension being reduced.
- Introduction of a 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. As a result a Condition of Manufacture was introduced.
  Note: 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.
- To permit A2F100, RA2F100, A2F100HC and RA2F100HC cable gland model series (not manufactured from aluminium) to be marked Ex db I Mb and/or Ex eb I Mb, as a result a Condition Of Manufacture was introduced.
- The introduction of A2F100/M, RA2F100/M, A2F100HC/M and RA2F100HC/M cable gland model series. These cable gland model series being identical in manufactured parts, design options, and accommodating the same type and size of cables to the current A2F100, RA2F100, A2F100HC, RA2F100HC cable gland series. The A2F100/M, RA2F100/M, A2F100HC/M and RA2F100HC/M cable gland model series are not permitted to be manufactured from aluminium, and are marked suitable for Group I Ex db and / or Group I Ex eb only.
- To permit the optional use of an internally fitted brass or brass plated ingress disc between the seal and the stepped washer component parts within ‘A2F100’ Series & ‘RA2F100’ Series cable glands, gland sizes 16 through to and inclusive of 75S. Changing their function to a cable entry blanking device prior to cable installation, as a result Conditions of Manufacture were introduced.

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Conditions of Manufacture:

- 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.
- The front threaded entry item of any model series, 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.
- Cable gland model code series suffixed 'HC' manufactured with a 3/8" NPT threaded spigot shall not be marked suitable for Group I applications.
- Cable gland sizes 25P and 25LP shall not be manufactured in aluminium.
- Aluminium cable glands shall not be marked suitable for Group I applications.
- Cable Glands supplied with ingress discs shall not be marked suitable for Group I applications
- Cable Glands supplied with ingress discs shall not be marked suitable for IPX7 or IPX8 applications.

Marking:

A2F100 and RA2F100 Series
A2F100HC and RA2F100HC Series
Ex db I Mb (not aluminium)
Ex eb I Mb (not aluminium)
Ex db IIC Gb
Ex eb IIC Gb
Ex ta IIIC Da
Ex nRc IIC Gc
IP66, IP67, IP68 (30 m for 12 hrs)
-60 °C to +130 °C (service temperature range)

A2F100/M and RA2F100/M Series
A2F100HC/M and RA2F100HC/M Series
Ex db I Mb (not aluminium)
Ex eb I Mb (not aluminium)
IP66, IP67, IP68 (30 m for 12 hrs)
-60 °C to +130 °C (service temperature range)

Notes:

- The cable gland may alternatively be marked with a single concept of protection or any combination thereof as detailed above.
- The 'EPL' codes may be omitted from the marking string.

Annex associated with Issue 1 (variations)

Manufacturer's documents:

Drawing No	Subject	Rev.	Date
GA926A (Sheet 1 of 2)	GENERAL ARRANGEMENT A2F - 100% & 25% HIGH TEMP.	01	09/06/2020

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Certificate No.: **IECEx SIM 17.0010** Issue No.: 1

Annex

Drawing No	Subject	Rev.	Date
MP 888 (Sheets 1 to 4 of 4)	CMP Default Specification	13	10/04/2018
SCH0405 (Sheet 1 of 4	100% & 25% HT A2 OUTER SEAL NUT	02	11/12/2019
SCH0405 (Sheet 3 of 4)	100% & 25% HT HC NUT	02	11/12/2019
CSD001 (Sheets 1 to 2 of 2)	Design and Material Options	1	10/10/2019
SCH0525	D3CDS ITEM 1	00	23/12/2019
SCH0526	D3CDS NUT	00	23/12/2019
SCH0527	LOCKING RING	00	23/12/2019
SCH0528	CONE & SLEEVE	00	23/12/2019
FI492	Installation Instructions for A2F100, RA2F100 Cable Gland	11	04/19

Equipment:

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.

Marking:

A2F100 and RA2F100 Series
A2F100HC and RA2F100HC Series
Ex db I Mb (not aluminium)
Ex eb I Mb (not aluminium)
Ex db IIC Gb
Ex eb IIC Gb
Ex ta IIIC Da
Ex nR IIC Gc
IP66, IP67, IP68 (30 m for 12 hrs)
-60 °C to +130 °C (service temperature range)

A2F100/M and RA2F100/M Series
A2F100HC/M and RA2F100HC/M Series
Ex db I Mb (not aluminium)
Ex eb I Mb (not aluminium)
IP66, IP67, IP68 (30 m for 12 hrs)
-60 °C to +130 °C (service temperature range)

Notes:

- The cable gland may alternatively be marked with a single concept of protection or any combination thereof as detailed above.
- The 'EPL' codes may be omitted from the marking string.

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