

GOVERNMENT APPROVED TEST LABORATORY
IN TERMS OF ARP 0108: "REGULATORY REQUIREMENTS FOR EXPLOSION PROTECTED APPARATUS"

IA CERTIFICATE

Date Issued: **19 Mar 2024**
*Expiry date: **25 Jan 2027**
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Issue: 2

Ex – Type Examination Certificate

Certificate Number: **MS-XPL/21.0002**
Equipment: **Range of Cable Glands**
Model / Type: **A2F100, RA2F100, A2F100HC, RA2F100HC, A2e100, RA2e100, A2e100HC, RA2100HC, A2F100/M, RA2F100/M, A2F100HC/M, RA2F100HC/M & D3CDS**
Applicant: **CMP Products Limited**
Glasshouse Street
St Peters
Newcastle Upon Tyne
NE6 1BS
United Kingdom
Manufacturer: **CMP Products Limited**
Serial No: All serial numbers imported between issued- and expire date and all serial numbers covered by a valid report or acceptable product certification mark.

Supplied by
CMP Products Limited
Identified by Inspection Authority number
MS-XPL/21.0002

And as described in the Explolabs file number **XPL/21804/21.0002** is hereby certified "Explosion Protected (Refer to clause 1, for Ex Rating)", having been examined and inspected in accordance with the relevant requirements of South African Standards.

- SANS 60079-0: 2019 Ed 6** Explosive atmospheres Part 0: Equipment — General requirements
- IEC 60079-0: 2017 Ed 7**
- SANS 60079-1: 2015 Ed 5** Explosive atmospheres Part 1: Equipment protection by flameproof enclosures "d"
- IEC 60079-1: 2014 Ed 7**
- SANS 60079-7: 2023 Ed 4.1** Explosive atmospheres Part 7: Equipment protection by increased safety "e"
- IEC 60079-7: 2017 Ed 5.1**
- SANS 60079-15: 2022 Ed 5** Explosive atmospheres Part 15: Equipment protection by type of protection "n"
- IEC 60079-15: 2017 Ed 5**
- SANS 60079-31: 2014 Ed 2** Explosive atmospheres Part 31: Equipment dust ignition protection by enclosure "t"
- IEC 60079-31: 2013 Ed 2**

Risk of ignition provided:

Protection afforded	Equipment Protection Level (EPL)	Performance of protection	Conditions of operation	T class or Max Surface Temp (°C)
	Group			
High	Mb Group I	Suitable for normal operation and severe operating conditions	Equipment de-energized when explosive atmosphere present	150°C
High	Gb Group II	Suitable for normal operation and frequently occurring disturbances or equipment where faults are normally taken into account	Equipment remains functioning in zones 1 and 2	150°C
Enhanced	Gc Group II	Suitable for normal operation	Equipment remains functioning in zone 2	150°C
Very high	Da Group III	Two independent means of protection or safe even when two faults occur independently of each other	Equipment remains functioning in zones 20, 21 and 22	150°C

1. GENERAL

The marking of the Range of Cable Glands shall include the following:

Ex db I Mb

Ex eb I Mb

Ex db IIC Gb*

Ex eb IIC Gb*

Ex nR IIC Gc*

Ex ta IIIC Da*

IP66 IP67 IP68 (30m for 12 hours)

Ts: -60°C to +130°C

***Not A2F100/M, RA2F100/M, A2F100HC/M & RA2F100HC/M Series**

The A2F100, RA2F100, A2F100HC, RA2F100HC, A2e100, RA2e100, A2e100HC, RA2100HC, A2F100/M, RA2F100/M, A2F100HC/M, RA2F100HC/M & D3CDS Ranges of Cable Glands allow circular unarmored 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	
	Standard (Metric)	Standard	Optional (NPT)	Min. (mm)	Max. (mm)
16	M16 x1.5	3/8"	-	3.2	8.0
20S16	M20 x1.5	1/2"	3/4"	3.2	8.0
20S	M20 x1.5	1/2"	3/4"	6.5	11.2
20	M20 x1.5	1/2"	3/4"	7.0	13.5
20L	M20 x1.5	1/2"	3/4"	8.7	14
25	M25 x1.5	3/4"	1"	11.5	19.5
25L	M25 x1.5	3/4"	1"	14.0	20.0
32	M32 x1.5	1"	1 1/4"	19.0	25.5
32L	M32 x1.5	1"	1 1/4"	20.2	26.3
40	M40 x1.5	1 1/4"	1 1/2"	25.0	32.2
50S	M50 x1.5	1 1/2"	2"	31.0	38.2
50	M50 x1.5	2"	2 1/2"	35.6	44.0
63S	M63 x1.5	2"	2 1/2"	41.5	49.9
63	M63 x1.5	2 1/2"	3"	48.2	54.9
75S	M75 x1.5	2 1/2"	3"	54.0	61.9
75	M75 x1.5	3"	3 1/2"	61.1	67.9
90	M90 x2.0	3 1/2"	4"	66.6	79.9
100	M100 x 2.0	3 1/2"	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 Series.

The front threaded entry item may be manufactured with any larger metric or NPT thread form size from the 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' Series s & 'RA2F100' Series cable glands, gland sizes 16 through to and inclusive of 75S.

The option to manufacture with a 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*
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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 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 Series 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 thread forms:

ET (Conduit)
PG
BSPP
BSPT
ISO
NPS

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

Notes:

IECEX SIR 16.0006 is superseded by this certificate.

The product covered by Issue 0 of this certificate remains identical to that previously covered by IECEX SIR 16.0006.

Based on the following documentation: IECEX CML 18.0172 Issue 1.

2. INSTALLATION INSTRUCTIONS

It is the manufacturer's responsibility to supply installation instructions with each unit offered for sale as required by IEC/SANS 60079-0 Clause 30.

3. SPECIAL CONDITIONS FOR SAFE USE *(denoted by "X" after certificate number)*

None.

4. SCHEDULE OF LIMITATIONS *(denoted by "U" after certificate number)*

N/A

5. CONDITIONS OF CERTIFICATION

All production units must be covered by a QAN (Quality Assurance Notification), Product Mark Scheme or batch evaluation.

The following are conditions of manufacture:

- 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. Aluminium cable glands shall not be marked suitable for Group I applications.
- vi. Cable Glands supplied with ingress discs shall not be marked suitable for Group I applications.
- vii. Cable Glands supplied with ingress discs shall not be marked suitable for IPX7 or IPX8 applications.

6. MARKING

The following (or similar) information have to be clearly and permanently marked on all units:

Supplier : CMP Products Limited
 Manufacturer : CMP Products Limited
 Equipment : Range of Cable Glands
 Model/Type : A2F100, RA2F100, A2F100HC, RA2F100HC, A2e100, RA2e100, A2e100HC, RA2100HC, A2F100/M, RA2F100/M, A2F100HC/M, RA2F100HC/M & D3CDS
 Serial No. : ---
 Ex Rating : Ex db I Mb
 Ex eb I Mb
 Ex db IIC Gb*
 Ex eb IIC Gb*
 Ex nR IIC Gc*
 Ex ta IIIC Da*
 IP66 IP67 IP68 (30m for 12 hours)
 Ts: -60°C to +130°C
 *Not A2F100/M, RA2F100/M, A2F100HC/M & RA2F100HC/M Series
 IA Certificate No : MS-XPL/21.0002

This certification indicates compliance with R10.1 of the Mines Health and Safety Act and/or EMR 9(2) of the Occupational Health and Safety Act, provided that the apparatus is used as relevant in accordance with:

- i) SANS 10086 and IEC/SANS 61241-14 requirements as applicable;
- ii) Any conditions mentioned in the above report;
- iii) Any relevant requirements and codes of practice enforced in terms of the Mine Health and Safety Act or Occupational Health and Safety Act; and
- iv) Any restrictions and conditions enforced by the Chief Inspector of Mines or the Principal Inspector or the Chief Inspector: Occupational Health and Safety.
- v) A revision certificate replaces all previous version of the certificate.
- vi) * - Only covers equipment Imported between the "Issued" and "Expire" dates.
- vii) If and when your QAN (Quality Assurance Notification) Certificate for your equipment manufacturer expires during the valid period of the IA Certification (issued for your equipment) and a new certificate is not submitted the existing IA Certification will then be cancelled. It is thus the client's responsibility to always submit the updated and valid QAN certificate(s) to Explolabs (Pty) Ltd

Responsible Testing Officer:



D Maree

Technical Specialist

EXPLOLABS EXPLOSION PREVENTION SERVICES

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