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
Ex COMPONENT CERTIFICATE

Certificate No.: **IECEx CML 19.0023U**

Certificate history:
Issue 0 (2019-04-15)

Status: **Current**

Issue No: 1

Date of Issue: 2020-10-02

Applicant: **Peppers Cable Glands Limited**
Stanhope Road, Camberley, Surrey, GU15 3BT
United Kingdom

Ex Component: ARMR and ARFR Range of 90º Adaptors and Reducers, AEMF and AEFF Range of 45º Adaptors and Reducers, ATMF and ATFF Range of 30º Adaptors and Reducers

This component is NOT intended to be used alone and requires additional consideration when incorporated into other equipment or systems for use in explosive atmospheres (refer to IEC 60079-0).

Type of Protection: **Flameproof "db", Increased Safety "eb", Restricted Breathing "nR", Dust Ignition "ta"**

Marking:
Ex db I Mb
Ex eb I Mb
Ex db IIC Gb
Ex eb IIC Gb
Ex nR IIC Gc
Ex ta IIIC Da

* Refer to description for ambient

Approved for issue on behalf of the IECEx Certification Body: **H M Amos MIET**

Position: **Certificate Manager**

Signature:
(for printed version)

Date:
(for printed version)

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:

Eurofins E&E CML Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom

IECEx Certificate of Conformity

Manufacturer: **Peppers Cable Glands Limited**
Stanhope Road, Camberley, Surrey, GU15 3BT
United Kingdom

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 component 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 60079-7:2015 Explosive atmospheres – Part 7: Equipment protection by increased safety "e"
Edition:5.0

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 component listed has successfully met the examination and test requirements as recorded in:

Test Report:

GB/CML/ExTR19.0061/00

Quality Assessment Reports:

GB/CML/QAR19.0022/00 GB/CML/QAR19.0022/01 GB/CML/QAR19.0022/02

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Ex Component(s) covered by this certificate is described below:

The ARMR and ARFR Range of 90° Adaptors and Reducers are manufactured from a metallic block body with a male thread at one end and a female thread machined into the body at 90° to the male thread.

The AEMF and AEFF Range of 45° Adaptors and Reducers are manufactured from a metallic block body with a male thread at one end and a female thread machined into the body at 45° to the male thread.

The ATMF and ATFF Range of 30° Adaptors and Reducers are manufactured from a metallic block with a male thread at one end and a female thread machined into the body at 30° to the male thread.

They are intended to provide cable entry options where space is limited or to avoid cable damage, additionally, they may be used to convert an existing cable entry aperture to a different threadform and/or size. Male thread forms may be replaced with an internal female thread. The products may additionally be metallic plated and the male thread may also be fitted with an optional O-ring seal.

Refer to Annex for full description and conditions of manufacture.

SCHEDULE OF LIMITATIONS:

Refer to Annex for Schedule of Limitations.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

Issue 1

Additional of updated QAR

GB/CML/QAR 19.0022

No other changes

Annex:

IECEx CML 19.0023U Iss. 1 Certificate Annex.pdf

Annexe to:	**IECEx CML 19.0023U Issue 1**
Applicant:	**Peppers Cable Glands Limited**
Apparatus:	**ARMR and ARFR Range of 90º Adaptors and Reducers** **AEMF and AEFF Range of 45º Adaptors and Reducers** **ATMF and ATFF Range of 30º Adaptors and Reducers**

Product Description

The ARMR and ARFR Range of 90° Adaptors and Reducers are manufactured from a metallic block body with a male thread at one end and a female thread machined into the body at 90° to the male thread. The AEMF and AEFF Range of 45° Adaptors and Reducers are manufactured from a metallic block body with a male thread at one end and a female thread machined into the body at 45° to the male thread. The ATMF and ATFF Range of 30° Adaptors and Reducers are manufactured from a metallic block with a male thread at one end and a female thread machined into the body at 30° to the male thread.

They are intended to provide cable entry options where space is limited or to avoid cable damage, additionally, they may be used to convert an existing cable entry aperture to a different threadform and/or size. Male thread forms may be replaced with an internal female thread. The products may additionally be metallic plated and the male thread may also be fitted with an optional O-ring seal.

The products are manufactured with the following threadform options:

ISO Metric	ISO 965-1:2013 and ISO 965-3:1998 - M16 to M100
NPT and NPSM	ANSI/ASME B1.20.1:1983 (R2001) - ¼" to 4"
BSPP	BS EN ISO 228-1 - ¼" to 4"
BSPT	BS21:1985 - ¼" to 4"
PG	DIN 40430 – 7 / 9 / 11 / 13.5 / 16 / 21 / 29 / 36 / 42 / 48
PG48F	NF C 68-312

Note: All threads are manufactured in accordance with EN 60079-1:2014 clauses 5.3 and C.2.2 (as applicable).

Note: The Angled Adapters and Reducers may be manufactured with other threadforms and pitches, provided that they are in accordance with the applicable requirements of EN 60079-1:2014 clause 5.3 and C.2.2.

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Design Options:

O-Ring seals

O-Ring seal materials fitted to male thread forms may be provided in the following materials to suit the application:

Nitrile
Silicone
Viton
Neoprene
Flurorosilicone
EPDM

Material of manufacture and marking

The Stopping Plugs may be manufactured from the following materials:

Brass	CW614N (CuZn 39Pb3)/ CZ121 3Pb, Ecobrass C69300/ C87850
Aluminium*	AW 6082 T6 AISI 1MgMn
Stainless Steel	1.4404/ 316L S11, 1.4401/ 316 S31, 1.4301/ 304, 1.4305/ 303

*Not suitable for Group I use

Surface coating

The products may additionally be metallic plated with either: Nickel, Zinc or Anodised (0.008 mm thick max.) to suit the application.

Product Type Reference

The product type reference is derived from the following options:

A-B-C-D-E-F-G		
A - Product Type		
ARMR	90° Male/Female Adaptor/Reducer	
ARFR	90° Female/Female Adaptor/Reducer	
AEMF	45° Male/Female Adaptor/Reducer	
AEFF	45° Female/Female Adaptor/Reducer	
ATMF	30° Male/Female Adaptor/Reducer	
ATFF	30° Female/Female Adaptor/Reducer	
B - IP Seal code		
0	No seal fitted	(-100°C to +400°C)
1	Nitrile O-ring	(-30°C to +100°C)
2	Neoprene O-ring	(-35°C to +90°C)
3	Silicone O-ring	(-60°C to +200°C)
4	Fluorosilicone O-ring	(-55°C to +200°C)
5	Viton O-ring	(-20°C to +180°C)
6	EPDM O-ring	(-50°C to +110°C)
C - Material of manufacture		
A	Aluminium	
B	Brass	
S	Stainless Steel	
D – Protection concept code		
E - Plating		
--	Not plated	
AN	Anodised	
NP	Nickel Plated	
ZP	Zinc	
F - Male thread (female for ARFR, AEFF and ATFF) size and type		
G - Female thread size and type		

Degree of protection

The Adaptors and Reducers, when installed in accordance with the manufacturer's instructions, are capable of providing, with an enclosure on which they are fixed, an ingress protection rating of IP 66.

The Adaptors and Reducers with parallel threads and fitted with sealing rings, when installed in accordance with the manufacturer's instructions, are capable of providing, with an enclosure on which they are fixed, an ingress protection rating of IP 66 / IPX8 to 100 m for 7 days.

The Adaptors and Reducers with tapered threads, fitted with sealing rings and installed in clearance holes, when installed in accordance with the manufacturer's instructions, are capable of providing, with an enclosure on which they are fixed, an ingress protection rating of IP 66 / IPX8 to 100 metres for 7 days.

Arrangements

The following arrangements are permitted:

			Female Thread											
			Metric											
			M16	M20	M25	M32	M40	M50	M63	M75	M80	M85	M90	M100
Male Thread	Metric	M16	A	A										
		M20	R	A	A									
		M25	R	R	A	A								
		M32	R	R	R	A	A							
		M40	R	R	R	R	A	A						
		M50	R	R	R	R	R	A	A					
		M63	R	R	R	R	R	R	A	A				
		M75	R	R	R	R	R	R	R	A	A	A		
		M80	R	R	R	R	R	R	R	R	A	A	A	A
		M85	R	R	R	R	R	R	R	R	R	A	A	A
		M90	R	R	R	R	R	R	R	R	R	R	A	A
		M100	R	R	R	R	R	R	R	R	R	R	R	A
	NPT / NPSM / BSPT / BSPP	⅜"	A	A										
		½"	R	A	A									
		¾"	R	R	A	A								
		1"	R	R	R	A	A							
		1 ¼"	R	R	R	R	A	A						
		1 ½"	R	R	R	R	R	A	A					
		2"	R	R	R	R	R	R	A	A				
		2 ½"	R	R	R	R	R	R	R	A	A	A	A	A
		3"	R	R	R	R	R	R	R	R	A	A	A	A
		3 ½"	R	R	R	R	R	R	R	R	R	R	R	A
	PG	PG9	A											
		PG11	A	A										
		PG13.5	A	A	A									
		PG16	A	A	A									
		PG21	R	A	A	A								
		PG29	R	R	A	A	A							
		PG36	R	R	R	A	A	A						
		PG42	R	R	R	R	R	A	A					
		PG48	R	R	R	R	R	A	A					

			Female Thread									
			NPT / NPSM / BSPT / BSPP									
			⅜"	½"	¾"	1"	1 ¼"	1 ½"	2"	2 ½"	3"	3 ½"
Male Thread	Metric	M16	A	A								
		M20	R	A	A							
		M25	R	R	A	A						
		M32	R	R	R	A	A					
		M40	R	R	R	R	A	A				
		M50	R	R	R	R	R	A	A			
		M63	R	R	R	R	R	R	A	A		
		M75	R	R	R	R	R	R	R	A	A	A
		M80	R	R	R	R	R	R	R	A	A	A
		M85	R	R	R	R	R	R	R	A	A	A
		M90	R	R	R	R	R	R	R	R	A	A
		M100	R	R	R	R	R	R	R	R	R	A
	NPT / NPSM / BSPT / BSPP	½"	A	A								
		¾"	R	A	A							
		1"	R	R	A	A						
		1 ¼"	R	R	R	A	A					
		1 ½"	R	R	R	R	A	A				
		2"	R	R	R	R	R	A	A			
		2 ½"	R	R	R	R	R	R	A	A		
		3"	R	R	R	R	R	R	R	A	A	
		3 ½"	R	R	R	R	R	R	R	R	A	A
		4"	R	R	R	R	R	R	R	R	R	A
	PG	PG9	A									
		PG11	A	A								
		PG13.5	A	A	A							
		PG16	A	A	A							
		PG21	R	A	A	A						
		PG29	R	R	A	A	A					
		PG36	R	R	R	A	A	A				
		PG42	R	R	R	R	R	A	A			
		PG48	R	R	R	R	R	A	A			

			Female Thread								
			PG								
			PG9	PG11	PG13.5	PG16	PG21	PG29	PG36	PG42	PG48
Male Thread	Metric	M16	A	A	A						
		M20	R	A	A	A	A				
		M25	R	R	R	A	A	A			
		M32	R	R	R	R	A	A	A		
		M40	R	R	R	R	R	A	A	A	
		M50	R	R	R	R	R	R	A	A	A
		M63	R	R	R	R	R	R	R	R	A
		M75	R	R	R	R	R	R	R	R	R
		M80	R	R	R	R	R	R	R	R	R
		M85	R	R	R	R	R	R	R	R	R
		M90	R	R	R	R	R	R	R	R	R
		M100	R	R	R	R	R	R	R	R	R
	NPT / NPSM / BSPT / BSPP	½”	R	A	A	A	A				
		¾”	R	R	R	A	A	A			
		1”	R	R	R	R	A	A	A		
		1 ¼”	R	R	R	R	R	A	A	A	
		1 ½”	R	R	R	R	R	R	A	A	A
		2”	R	R	R	R	R	R	R	R	A
		2 ½”	R	R	R	R	R	R	R	R	R
		3”	R	R	R	R	R	R	R	R	R
		3 ½”	R	R	R	R	R	R	R	R	R
	PG	PG9	A	A	A	A					
		PG11	A	A	A	A	A				
		PG13.5	R	A	A	A	A				
		PG16	R	R	A	A	A				
		PG21	R	R	R	R	A	A			
		PG29	R	R	R	R	R	A	A		
		PG36	R	R	R	R	R	R	A	A	A
		PG42	R	R	R	R	R	R	R	A	A
		PG48	R	R	R	R	R	R	R	R	A

Notes:

- Sira 10ATEX1132U, Sira 10ATEX4133U and IECEx SIR 10.0068U are superseded by certificates CML 19ATEX1091U, CML 19ATEX4093U and IECEx CML 19.0023U.
- The product covered by Issue 0 of this certificate remains identical to that previously covered by Sira 10ATEX1132U, Sira 10ATEX4133U and IECEx SIR 10.0068U.
- Where Sira 10ATEX1132U and/or Sira 10ATEX4133U and/or IECEx SIR 10.0068U 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.

Conditions of Manufacture

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

i. Aluminium devices shall not be marked with any information indicating that they are suitable for Group I use.

Schedule of Limitations

The following conditions relate to safe installation and/or use of the equipment.

i. Blanking elements shall not be used in conjunction with an adapter or reducer when installed into a flameproof 'Ex d' applications.

ii. The Ingress Protection rating that is required to ensure compliance with the standards used in this certificate was determined by testing the devices fitted into a representative enclosure having a smooth flat mounting surface. In practice, the interface between the male thread of the adapters/reducers and their associated enclosure cannot be defined; therefore, it is the user's responsibility to ensure that the appropriate Ingress Protection level is maintained at these interfaces.
The parallel threaded entry component threads will be suitably sealed using a method that is applicable to the associated equipment to which the adapters/reducers will be attached. This will be in accordance with the relevant installation code of practice and will ensure that any ingress protection requirements are maintained.
The threaded entry component threads without interface O-ring seals installed in an explosive dust atmosphere, within threaded entries, shall only be fitted into enclosures with either:
    - Parallel entries that will ensure that a minimum of 5 full threads of contact will be maintained, this is in accordance with clause 5.3.2 of EN 60079-31:2014.
    - Tapered entries that will ensure that a minimum of 3 full threads of contact will be maintained, this is in accordance with clause 5.3.2 of EN 60079-31:2014.

iii. Adaptors and Reducers shall not to be used for the direct inter-connection of enclosures.

iv. Only one adaptor or reducer is to be used with any single cable entry on the associated equipment.

v. The products are approved for a temperature range at their point of mounting based upon the interface seal:

0	No seal fitted	(-100°C to +400°C)
1	Nitrile O-ring	(-30°C to +100°C)
2	Neoprene O-ring	(-35°C to +90°C)
3	Silicone O-ring	(-60°C to +200°C)
4	Fluorosilicone O-ring	(-55°C to +200°C)
5	Viton O-ring	(-20°C to +180°C)
6	EPDM O-ring	(-50°C to +110°C)

vi. The adapters/reducers may be provided with the following, but not limited to, alternative thread forms, complying with the requirements of EN 50018:2000. For replacement of entry devices into equipment in existing installations only, that incorporate thread types that are no longer permitted by the current edition of EN 60079-1.
    - NPSM: ANSI/ASME B1.20.1: 1983
    - BSPT: BS21: 1995 (ISO 7/1; BS EN 10226-1: 2004)
    - BSPP: BS EN ISO 228-1: 2003; BS EN ISO 228-1: 2003
    - PG: DIN 40430: 1971