



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

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

Ex COMPONENT CERTIFICATE

Certificate No.:	IECEX CML 14.0003U	Issue No: 2	Certificate history:
Status:	Current	Page 1 of 4	Issue No. 2 (2018-11-30)
Date of Issue:	2018-11-30		Issue No. 1 (2017-11-17)
Applicant:	BARTEC GmbH Max-Eyth-Straße 16 97980 Bad Mergentheim Germany		Issue No. 0 (2014-04-25)
Ex Component:	Line Bushing II 1 G, type 07-96**-*///****		

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, Increased Safety**

Marking:

Ex db eb I Ma and/or Ex db eb IIC Gb

Ex db + eb / db IIC Ga/Gb

Ex db IIC Gb and/or Ex eb IIC Gb

Approved for issue on behalf of the IECEx
Certification Body:

H M Amos MIET

Position:

Certification Manager

Signature:
(for printed version)

Date:

November 30, 2018

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 the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Certification Management Limited
Unit 1, Newport Business Park
New Port Road
Ellesmere Port, CH65 4LZ
United Kingdom





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Manufacturer: **Bartec GmbH**
Max-Eyth.Straße 16
97980 Bad Mergentheim
Germany

Additional Manufacturing location(s):

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 Component 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 Ex 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 Edition:7.0	Explosive atmospheres - Part 0: Equipment - General requirements
IEC 60079-1 : 2014-06 Edition:7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-26 : 2014-10 Edition:3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
IEC 60079-7 : 2015 Edition:5.0	Explosive atmospheres – Part 7: Equipment protection by increased safety "e"

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

TEST & ASSESSMENT REPORTS:

A sample(s) of the Ex Component listed has successfully met the examination and test requirements as recorded in

Test Report:

[GB/CML/ExTR14.0003/00](#)

[GB/CML/ExTR17.0171/00](#)

[GB/CML/ExTR18.0270/00](#)

Quality Assessment Report:

[DE/TUN/QAR06.0017/09](#)



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Schedule

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

SCHEDULE OF LIMITATIONS:

See Annex for Schedule of Limitations



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1

1. Update to latest version standards
2. Add option to mark for category 2 only
3. Add a new resin
4. Add copper bolts to 300A
5. Minimum distance between holes of the line bushing reduced to 1mm.

Issue 2

1. Update to the marking code order and allowable additional marking options
2. Review against the latest edition of IEC 60079-0 (general requirements).

Annex:

[IECEX CML 14.0003U - Certificate Annex Issue 2.pdf](#)

Annexe to: IECEx CML 14.0003U Issue 2
Applicant: Bartec GmbH
Apparatus: Line Bushing II 1 G, type 07-96**_****/****



Description

The Line Bushing II 1 G, type 07-96**_****/**** is a gas-diffusion proof element for zone 0 separation, which electrically connects cables between flameproof enclosures, or between flameproof enclosures and enclosures designed to another approved type of protection.

The electrical connections to the bushing are either made directly at the connection facilities of the bushing connector studs or alternatively the bushing can be supplied with cable wire or hose lines.

The electrical connecting area can also be additionally potted.

Electrical data	Value		Unit
Rated insulation voltage	Up to	1,000	V
Rated cross section *	Max.	700	mm ²

Temperature data	Value		Unit
Temperature range at the maximum rating of the equipment (point of installation of the bushing)	Max.	-55 to +150 depends on used cables and casting resin	°C
		-55 to +200 At applications with conductor bolts without casting resin	

* depending on the terminal stud; non-sheathed cable or flexible sheathed cable used and the type of use (type of protection and category)

Mechanical data	Value
Number of bolts *	1 to 99

Flameproof data	Value	Unit
Thread type and size *	M10 x 1.0 to M250 x 2.0	
Sleeve diameter	10 to 250	mm
Length of sleeve joint	≥ 6 .9.5 .12.5 .25 .40	mm
Sleeve tolerance	-20 -20 -30 -30 -30	µm
	-60 -60 -100 -100 -100	µm

* According to the type and design of the bushing and connector head

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Line Bushing		Type	07- * * - * * * * / * * * *		
Code number		1,2,3 4 5 - 6 7 8 9 / 10			
1	Program	07 - Common code number			
2	Product sector	9 - Code number for component			
3	Type	6 - Line bushing (II 1 G and Gas-diffusion proof)			
4	Zone 0 side	0 = Flange with screw threads - Metric 1 = Flange with screw threads - NPT 2 = Flange with screw threads - Inch 3 = Flange 4 = Flange with screw threads - PG 5 = Flange with cylindrical sleeve, joint $12.5 \text{ mm} \leq L \leq 25 \text{ mm}$ 6 = Flange with cylindrical sleeve, joint $25 \text{ mm} \leq L \leq 40 \text{ mm}$ 7 = Flange with cylindrical sleeve, joint $L \geq 40 \text{ mm}$ 8 = Flange with cylindrical sleeve - special types 9 = Flange with cylindrical sleeve - fixing flange			
5	Rated insulation voltage	0 = Without 1 = 690 V 2 = 250 V 3 = 1,000 V 8 = > AC 50 V / DC 75 V 9 = ≤ AC 50 V / DC 75 V			
6	Diameter of studs	A = Special diameter (0.3 mm ... 30 mm)			
		B = 0.5 mm C = 0.6 mm D = 0.8 mm E = 1 mm F = 1.6 mm G = 2 mm H = 3 mm J = 4 mm K = 5 mm L = 6 mm M = 8 mm N = 10 mm P = 12 mm	S = 18 mm T = 20 mm U = 22 mm V = 24 mm W = 26 mm X = 28 mm Y = 30 mm Z = mixed		

Line Bushing		Type	07- * * - * * * * / * * * *
Code number		96	
		1,2,3 4 5 - 6 7 8 9 / 10	
		Q = 14 mm R = 16 mm	
7,8	Number of studs	01 = 1 02 = 2 ... up to 99 = 99	
9	Zone 1, 2 or safe area side	0 = Flange with screw threads - Metric 1 = Flange with screw threads - NPT 2 = Flange with screw threads - Inch 3 = Flange 4 = Flange with screw threads - PG 5 = Flange with cylindrical sleeve, joint $12.5 \text{ mm} \leq L \leq 25 \text{ mm}$ 6 = Flange with cylindrical sleeve, joint $25 \text{ mm} \leq L \leq 40 \text{ mm}$ 7 = Flange with cylindrical sleeve, joint $L \geq 40 \text{ mm}$ 8 = Flange with cylindrical sleeve - special types 9 = Flange with cylindrical sleeve - fixing flange A = connector, Intrinsically safe	
10	Variants without influence on explosion protection		

Schedule of Limitations

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

1. For determining the maximum current carrying capacity of the bushing conductor and wires, the self-heating and the temperature rise of the enclosure at point of installation at the maximum permissible ambient temperature should be considered.
2. The classification of the temperature class of the bushing is to be determined in the type test of the respective electrical equipment.
3. The threaded holes, into which the threaded bushings are screwed, shall meet the minimum requirement of IEC 60079-1, clause 5.3 (Table 3 or 4).
4. The cylindrical holes receiving bushings with a cylindrical sleeve, shall meet the minimum requirements of IEC 60079-1, clauses 5 and 5.2.3 and the maximum gaps defined in Table 1 or 2 (as required). The joint centre-line average surface roughness shall not exceed 6.3 μm .
5. The ambient temperature load at the place of installation must not adversely affect the cable bushing.
6. Bushings with cylindrical sleeves which are received via a non-threaded hole into a flameproof enclosure shall undergo type testing in accordance with IEC 60079-1, clause 15.2 (Non-transmission of an internal ignition) according to the group subdivision of the respective electrical equipment (Group I, IIA, IIB or IIC).
7. Bushings shall undergo type testing in accordance with IEC 60079-1, clause 15.1.3 (Overpressure test) according to the group subdivision of the respective electrical equipment (Group I, IIA, IIB or IIC) if the reference pressure of the equipment exceeds 20 bar.
8. The bushings shall be fixed to the electrical equipment in such a way that they are secured against rotation and self-loosening.
9. Connection at the terminal stubs, of the non-sheathed cables or flexible sheathed cables of the bushings shall be in an enclosure that complies with a standardised protection type in accordance with IEC 60079-0, clause 1.
10. If the bushing is to be used in connection with intrinsically safe circuits, the conditions of operation (safety-separated circuit) as specified in IEC 60079-11 shall be observed.