



EU Type Examination Certificate

CML 13ATEX1009U Issue 2

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment **Line Bushing II 1 G, type 07-96**_****/******
- 3 Manufacturer **Bartec GmbH**
- 4 Address Max-Eyth-Straße 16,
97980 Bad Mergentheim
GERMANY
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 CML B.V. , Chamber of Commerce No 6738671, Hoogoorddreef 15, Amsterdam, 1101 BA, The Netherlands, Notified Body Number 2776, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 Annex II to the Directive.
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 conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 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

EN 60079-1:2014

EN 60079-7:2015

EN 60079-26:2015

- 10 The equipment shall be marked with the following:



II 1/2 G

Ex db + eb / db IIC Ga/Gb



I M 1

Ex db eb I Ma



II 2 G

Ex db IIC Gb

Ex eb IIC Gb



II 2 G

Ex db eb IIC Gb



II -/2 G

Ex db eb IIC Gb



II -/2 G

Ex eb IIC Gb



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11 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		96 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 = \leq 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 Q = 14 mm R = 16 mm					S = 18 mm T = 20 mm U = 22 mm V = 24 mm W = 26 mm X = 28 mm Y = 30 mm Z = mixed					
7,8	Number of studs	01 = 1 02 = 2 ... up to 99 = 99										



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Line Bushing		Type	07- * * - * * * * / * * * *
			96
Code number			1,2,3 4 5 - 6 7 8 9 / 10
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		

Variation 1

To permit the introduction of the following changes:

- i. To update the certificate reference to the 2014/34/EU Directive.
- ii. Update to the latest versions of the standards
- iii. Add option to mark for category 2 only
- iv. Add a new araldite resin
- v. Add copper bolts to 300A
- vi. Minimum distance between holes of the line bushing reduced to 1mm.

Variation 2

- i. Transfer of certificate to CML B.V.
- ii. Update to the marking code order and allowable additional marking options
- iii. Review against the latest edition of EN 60079-0 (general requirements).

12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	26 Feb 2014	R39A/00	First issue
1	17 Nov 2017	R2174A/00	This issue introduced variation 1
2	30 Nov 2018	R12063A/00	This issue has transferred the ATEX certificate to CML B.V and update to Marking Code.

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

13 Conditions of manufacture

None



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14 Schedule of Limitations

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

- 14.1 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.
- 14.2 The classification of the temperature class of the bushing is to be determined in the type test of the respective electrical equipment.
- 14.3 The threaded holes, into which the threaded bushings are screwed, shall meet the minimum requirement of EN 60079-1, clause 5.3 (Table 3 or 4).
- 14.4 The cylindrical holes receiving bushings with a cylindrical sleeve, shall meet the minimum requirements of EN 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.
- 14.5 The ambient temperature load at the place of installation must not adversely affect the cable bushing.
- 14.6 Bushings with cylindrical sleeves which are received via a non-threaded hole into a flameproof enclosure shall undergo type testing in accordance with EN 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).
- 14.7 Bushings shall undergo type testing in accordance with EN 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.
- 14.8 The bushings shall be fixed to the electrical equipment in such a way that they are secured against rotation and self-loosening.
- 14.9 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 EN 60079-0, clause 1.
- 14.10 If the bushing is to be used in connection with intrinsically safe circuits, the conditions of operation (safety-separated circuit) as specified in EN 60079-11 shall be observed.



Certificate Annex

Certificate Number CML 13ATEX1009U
Equipment Line Bushing II 1 G, type 07-96**-****/****
Manufacturer Bartec GmbH

The following documents describe the equipment or component defined in this certificate:

Issue 0

Drawing No	Sheets	Rev.	Approved date	Title
01-9600-650001	1 to 4	-	26 Feb 14	Line Bushing Ex and Pressure tight 07-96
01-9600-650002	1 of 1	-	26 Feb 14	Nameplate
01-9600-650001 BOM	1 to 3	-	26 Feb 14	Parts list
01-9600-650001 HLP	1 to 3	-	26 Feb 14	Material Specification

Issue 1

Drawing No	Sheets	Rev	Approved date	Title
01-9600-650001	1 to 2	A	17/11/2017	Leitungsdurchführung /Line bushing
01-9600-650002	1 of 1	A	17/11/2017	Leitungsdurchführung /Line bushing

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Drawing No	Sheets	Rev	Approved date	Title
01-9600-650002	1 of 1	B	30/11/2018	Leitungsdurchführung /Line bushing