Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

(1) # EC-TYPE-EXAMINATION CERTIFICATE

(Translation)

(2) Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 94/9/EC**

(3) EC-type-examination Certificate Number:

PTB 00 ATEX 1116 U

(4) Component: Cable bushing II 1 G, type 07-96..-..../....

(5) Manufacturer: BARTEC Componenten und Systeme GmbH

(6) Address: 97980 Bad Mergentheim, Germany

(7) This component and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

(8) The Physikalisch-Technische Bundesanstalt, notified body No. 0102 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this component has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential report PTB Ex 01-10233.

(9) Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 50014: 1997 + A1 + A2 EN 50018: 1994 EN 50019: 1994 EN 50284: 1999

(10) The sign "U" placed behind the certificate number indicates that this certificate should not be confounded with certificates issued for equipment or protective systems. This Component Certificate only serves as a basis for the issuing of certificates for equipment or protective systems.

(11) This EC-type-examination Certificate relates only to the design and construction of the specified component in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this component.

(12) The marking of the component shall include the following:

II 1 G EEx de II I M 1 EEx de I

Zertifizierungsstelle Explosionsschutz
By order:

Dipl.-Phys. U. Völker

Braunschweig, March 27, 2001

(13) # SCHEDULE

(14) ## EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1116 U

(15) Description of component

The cable bushing II 1 G, type 07-96..-..../.... , is used as a gas-diffusion-tight element for zone 0 separation (I G / II G), which at the same time electrically connects cables between flameproof enclosures, or between flameproof enclosures and enclosures designed to another approved type of protection of category II 2 G, or flameproof enclosures and protected installations of category II 3 G or in a "non-explosive" area.

If required, the connecting area may in addition be resin-insulated.

Electrical data

Rated insulation voltage *)	up to	250 V	750 V	1000 V		
Rated cross section *)	max.	0.06 mm² ... 185 mm²				
No. of terminals		1 to 99				
Type and size of thread		M 10 x 1.5 to M 250 x 1.5 other thread types and sizes as marked				
Sleeve diameter		10 ... 250 mm				
Length of sleeve joint		≥ 6 mm	≥ 9.5 mm	≥ 12.5 mm	≥ 25 mm	≥ 40 mm
Sleeve tolerance		- 20 - 60	- 20 - 60	-30 -100	-30 -100	-30 -100
Temperatures at the location of the cable bushing for normal operation of the electrical apparatus		-55 °C to 150 °C				

The maximum current carrying capacity of the cable bushing shall be established on the basis of the heating rate of the cable bushing and that of the enclosure at the location starting from maximum admissible ambient temperatures.

The composition of the protection symbol will be based on the types of protection of the design actually used.

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

(16) Test report PTB Ex 01-10233

(17) Special conditions for safe use

None

Notes for installation and use

Tapped holes receiving cable bushings II 1 G with their screw threads shall meet the minimum requirements of EN 50018, section 5.3 (table 3). The cable bushing II 1 G is suited for use in electrical apparatus designed to type of protection Flameproof Enclosure "d" of groups I, IIA, IIB or IIC.

Cylindrical holes receiving cable bushings with cylindrical joint shall meet the minimum requirements of EN 50018, tables 1 or 2 (cylindrical joints). The joint surface has to be such that its centre-line average does not exceed R_a 6.3 µm.

The cable bushing II 1 G with cylindrical joint shall be included in the type test according to EN 50018, section 15 as required by the classification of the electrical apparatus in question (grouping I; IIA, IIB or IIC).

Should the reference pressure exceed 20 bar, the cable bushing II 1 G shall be included in the type test according to EN 50018, section 15.1.3 (overpressure test) as required by the classification of the electrical apparatus in question (grouping I; IIA, IIB or IIC).

The cable bushing II 1 G shall be fixed in the electrical apparatus in such a way that rotation and accidental loosening will be prevented.

Connection at the terminal studs, of the non-sheathed cables or of the flexible sheathed cables of cable bushing II 1 G shall proceed in enclosures that comply with a standardised type of protection in accordance with EN 50014, section 2.2.

The way in which temperatures will have to be associated with the temperature class of the cable bushing II 1 G shall be specified in the type test for the electrical apparatus in question.

The ambient temperature load at the place of installation must not adversely affect the cable bushing.

If cable bushing II 1 G is used in connection with intrinsically safe circuits, the conditions of operation (safety-separated circuit) as specified in EN 50020 shall be observed.

(18) Essential health and safety requirements

The tests and the favourable results these have produced reveal that the cable bushing II 1 G meets the requirements of directive 94/9/EC as well as those of the standards quoted on the cover sheet.

Zertifizierungsstelle Explosionsschutz
By order:

Dipl.-Phys. U. Völker

Braunschweig, March 27, 2001

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

1st SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1116 U

(Translation)

Equipment: Cable bushing II 1 G, type 07-96..-..../....

Marking: Ⓔx **II 1 G EEx de II I M 1 EEx de I**

Manufacturer: BARTEC GmbH

Address: Max-Eyth-Straße 16
97980 Bad Mergentheim, Germany

Description of supplements and modifications

The cable bushing II 1 G, type 07-96..-..../.... , may also be produced with the following modifications:

- With the II 1 G cable bushing, the grooves in the sleeve may be dispensed with.
- The II 1 G cable bushing version without encapsulation may be used within an extended temperature range.

  Temperature at the location of the cable bushing for rated operation of the electrical apparatus ..... –55 °C to 200 °C
- With the II 1 G cable bushing version without encapsulation, the terminal studs may be provided with insulating sleeves made from glass or ceramics.

Test report: PTB Ex 04-14214

Zertifizierungsstelle Explosionsschutz
By order:

Dr.-Ing. U. Klausmeyer
Regierungsdirektor

Braunschweig, December 9, 2004

Physikalisch-Technische Bundesanstalt

Braunschweig und Berlin

2nd SUPPLEMENT

according to Directive 94/9/EC Annex III.6

to EC-TYPE-EXAMINATION CERTIFICATE PTB 00 ATEX 1116 U

(Translation)

Equipment: Cable entry II 1 G, type 07-96..-..../....

Marking: Ⓔx **II 1 G Ex de II I M1 Ex de I**

Manufacturer: BARTEC GmbH previously BARTEC Componenten und Systeme GmbH

Address: Max-Eyth-Straße 16
97980 Bad Mergentheim, Germany

Description of supplements and modifications

Cable entry II 1 G, type 07-96..-..../.... , may also be manufactured with the following modifications:

- The electric bushing is of the flameproof type and it is gas-diffusion tight. For compliance with category 1 G, installation using the threaded or plug-in sleeve has to be included in assessments made for the application in question.
- The versions with bushing conductor stud may be equipped with flat connectors for tab receptacles 6.3. This type of connection is only accepted for factory-made wiring.
- The rated insulation voltage for versions without cast-resin cover, with creepage distance ≥ 12 mm, is now 690 V as a maximum.

Applied standards

EN 60079-0: 2004 EN 60079-1: 2004 EN 60079-7: 2003 EN 60079-26: 2004

Test report: PTB Ex 06-16321

Zertifizierstelle Explosionsschutz
By order:

Dr.-Ing. M. Thedens
Regierungsrat

Braunschweig, October 11, 2006