Note on instructions

When working in hazardous areas, the safety of personnel and equipment depends on compliance with the relevant safety regulations. The people in charge of installation and maintenance bear a special responsibility. It is essential that they have an exact knowledge of the applicable rules and regulations.

The instructions provide a summary of the most important safety measures and must be read by everyone working with the product so that they will be familiar with the correct handling of the product.

The instructions have to be kept for future reference and must be available throughout the expected life of the product.

Description

The II 1G type 07-96.... line bushing serves as a gas diffusion-proof separating element for zone 0 (I G/II G) while simultaneously providing an electrical connection for lines:

- between flameproof enclosures or
- between flameproof enclosures and enclosures of a recognized type of protection of category II 2 G or
- between flameproof enclosures and protected installations of category II 3 G or
- in a non-hazardous area.

The core piece of this gas diffusion-proof lead-through is a metal plate in which the stud-type bolts, cable wires or hose lines as required.

The electrical connection on both sides of the lead-through can be set forth with metal duct lines, which are also possible. The connector has to be clearly marked as intrinsically safe by the own-
er/managing operator.

Everyone working with the product so that they will be familiar with the correct handling of the product as specified in IEC/EN 60019-11 must be observed.

The instructions provide a summary of the most important safety measures and must be read by people in charge of installation and maintenance with the relevant safety regulations. The instructions have to be kept for future reference and must be available throughout the expected life of the product.
Operational Instruction (Translation)

Safety Instructions
This line bushing is suitable for use between flameproof enclosures or between flameproof enclosures and enclosures of a recognized type of protection of category II 2 G or between flameproof enclosures and protected installations of category II 3 G or in a non-hazardous area. Unprotected, incorrect installation can cause malfunctioning and the loss of explosion protection.

When determining the maximum current carrying capacity of the connection bolt, the connection cores, or the sheathed cable, consideration must be given to their self-heating and the enclosure heating at the place of installation at maximum ambient temperature.

Utilization in areas other than those specified or the modification of the product by anyone other than the manufacturer is not permitted and will exempt BARTEC from liability for defects and any further liability.

The generally applicable statutory rules and other binding directives relating to workplace safety, accident prevention and environmental protection must be observed.

The cable bushings may be operated only if they are clean and not damaged in any way. It is not permissible to convert or modify the line bushings.

Marking
Particularly important points in these instructions are marked with a symbol:

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.

NOTICE is used to address practices not related to personal injury.

Important instructions and information on effective, economical and environmentally compatible handling.
Operational Instruction (Translation)

Design with flange
- Screw the line bushing with flange securely in place using suitable screws.
  ➢ NOTICE! Tightening torques, see manufacturer’s instructions.
- If sealing materials are used, they must be selected to ensure compliance with the specified operating temperature and chemical resistance.
  ➢ CAUTION! Do not use sealing material over Ex gaps, see IEC/EN 60079-1, section 5.4.

Options
- Protection against twisting and self-loosening by retaining ring.
- Protection against twisting and self-loosening by gluing in place with a temperature-resistant adhesive.

Installation
Check when installing:
- The connection to the cores of the line bushing must be protected by an enclosure with a standardized type of protection.
- 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).
- Bushings shall undergo type testing of 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.

Connection possibilities
- Design with cable
  ➢ The core wires must be connected to terminals in the distribution box which are approved in accordance with IEC/EN 60079-7.
- Design with bolt
  ➢ When connecting the bolt, the clearance and creepage distances in accordance with IEC/EN 60079-7 must be observed.
  ➢ When establishing the electrical connection, make sure that the torque is not introduced into the insulating material.

Connection via universal connection terminal (similar to Dörstein)
- Screw universal connection terminal (1) onto bolt (2) hand tight into position.
- Tighten universal connection terminal (1) onto bolt (2) via screws (3).
  ➢ NOTICE! Tightening torque, see manufacturer’s instructions.
- Insert screw (4) into universal connection terminal (1).
- Insert cable lug (5).
- Secure cable lug (5) with retaining ring (6) and hexagonal nut (7).
  ➢ NOTICE! Tightening torque, see manufacturer’s instructions.

Connection between hexagonal nuts
- Screw hexagonal nut (8) onto bolt (9).
- Insert cable lug (10).
- Secure cable lug (10) with retaining ring (11) and hexagonal nut (12).
  ➢ NOTICE! To this end, when tightening the hexagonal nuts grip both nuts simultaneously with a suitable tool. Tightening torques, see manufacturer’s instructions.

Connection via screw
- Insert cable lug (13) onto bolt (14).
- Secure cable lug (13) with retaining ring (15) and screw (16).
  ➢ NOTICE! Observe tightening torques according to following table:

<table>
<thead>
<tr>
<th>Thread size</th>
<th>Max. tightening torque</th>
</tr>
</thead>
<tbody>
<tr>
<td>M4</td>
<td>1.2 Nm (0.08 lb.ft)</td>
</tr>
<tr>
<td>M5</td>
<td>2 Nm (0.14 lb.ft)</td>
</tr>
<tr>
<td>M6</td>
<td>3 Nm (0.21 lb.ft)</td>
</tr>
<tr>
<td>M8</td>
<td>6 Nm (0.41 lb.ft)</td>
</tr>
<tr>
<td>M10</td>
<td>10 Nm (0.69 lb.ft)</td>
</tr>
<tr>
<td>M12</td>
<td>15.5 Nm (1.06 lb.ft)</td>
</tr>
<tr>
<td>M16</td>
<td>30 Nm (2.06 lb.ft)</td>
</tr>
<tr>
<td>M20</td>
<td>52 Nm (3.57 lb.ft)</td>
</tr>
</tbody>
</table>
Connection visa flat plugs

**DANGER**

Danger of life caused by connection of flat plugs in an explosive atmosphere.

- It is only allowed to use flat plugs in non-Ex areas because they can give off arcs during connection that could ignite an existing potentially explosive atmosphere.

Versions with duct bolts can be equipped with flat plugs according to DIN 46244, 6.3 x 0.8 with retaining boreholes.

- Insert the flat plugs (17) securely.
  - NOTICE! The locking lug must be engaged in the retaining borehole.

**Commissioning**

Before commissioning, check that:

- The line bushings are assembled and installed correctly.
- The line bushings and conductors are not damaged.
- The cores have been laid correctly.
- The junction space is clean.
- The connection has been established properly.

**Operation**

**DANGER**

Death or serious injury due to improper use.

- The line bushings may be operated only within the technical limits that apply to them (see page 1).

**Maintenance and Fault Clearance**

**WARNING**

Risk of serious injury due to incorrect proceedings.

- Only authorized qualified personnel may do any of the work relating to maintenance and fault clearance.
- The IEC/EN 60079-17 and the IEC/EN 60079-19 must be observed.

**Maintenance**

**WARNING**

Risk of serious accidents due to damaged parts.

- Check line bushings, sealings, and cables regularly for cracks and damage. Make sure that they are properly established.

The owner/managing operator of the line bushings must keep them in good condition, operate them properly, monitor them and clean them regularly.

The owner/managing operator must schedule maintenance intervals which will suit the respective conditions of use.

**Fault Clearance**

**WARNING**

Risk of serious injury due to use of non-original spare parts.

- Use original parts only as replacements.

Defective line bushings cannot be repaired; they must be replaced considering this operational instruction and the operational instructions of the other components.

**Accessories, Spare Parts**

See BARTEC catalogue.

**Disposal**

The components in the line bushings contain metal and plastic parts. Therefore the statutory requirements for disposing of electronic scrap must be observed (e.g. disposal by an approved disposal company).

**Service Address**

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Germany
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Fax: +49 7931 597-119
**Operational Instruction (Translation)**

**Line Bushing explosion-proof and pressure-sealed Type 07-96.../.....**

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**Erklärung der Konformität**  
**Declaration of Conformity**  
**Attestation de conformité**

N° 01-9600-7C0002

<table>
<thead>
<tr>
<th>Wir</th>
<th>We</th>
<th>Nous</th>
</tr>
</thead>
<tbody>
<tr>
<td>erklären in alleiniger Verantwortung, dass das Produkt</td>
<td>declare under our sole responsibility that the product</td>
<td>attestons sous notre seule responsabilité que le produit</td>
</tr>
<tr>
<td>Leitungsdurchführung Ex und druckdicht</td>
<td>Line Bushing explosion-proof and pressure-sealed</td>
<td>Traversée de cloison Ex et étanche à la pression</td>
</tr>
</tbody>
</table>

**Typ 07-96.../.....**  
To which this declaration relates is in accordance with the provision of the following directives (D)  
se référant à cette attestation correspond aux dispositions des directives (D) suivantes

ATEX-Richtlinie 94/9/EG  
RoHS-Richtlinie 2011/65/EU  
and with the following norms or documents normatifs ci-dessous

EN 60079-0:2012  
EN 60079-1:2007  
EN 60079-2:2007  
EN 60684-4:2007  
EN 60684-1:2007

Kennzeichnung  
II 1/2 G Ex d + e IIC Ga/Gb  
I M 1 Ex d + e I Ma  
Procedure of EC-Type Examination / Notified Body  
Procédure d’examen CE de type / Organisme Notifié

CML 13ATEX1009U  
2503, Certification Management Limited,  
Unit 1 Newport Business Park New Port Road, Ellesmere Port CH65 4LZ, UK

0044

Bad Mergentheim, den 17.09.2014

[Signature]

ppa. Ewald Warmuth  
Geschäftsleitung / General Manager

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