CERTIFICATE OF CONFORMITY

1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** **FM18US0166X**
3. **Equipment:** **07-91 Series Line Bushing**
   (Type Reference and Name) **Inter-Compartment Feedthroughs**
4. **Name of Listing Company:** **Bartec GmbH**
5. **Address of Listing Company:** **Max Eyth Strasse 16**
   D97980 Bad Mergentheim
   Germany
6. The examination and test results are recorded in confidential report number:

   1Q5A5.AE dated 12th December 1991

7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:

   FM Class 3600:2018, FM Class 3615:2018, FM Class 3810:1989

8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.
10. Equipment Ratings:

    Component for use as inter-compartment / feed-through in explosionproof / flameproof enclosures.

11. The marking of the equipment shall include:

    Company Name: Bartec, FM Diamond, Voltage Rating, and the Model #

Certificate issued by:

J. E. Marquedant
VP, Manager - Electrical Systems

6 April 2021
Date

To verify the availability of the Approved product, please refer to www.approvalguide.com

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SCHEDULE

US Certificate Of Conformity No: FM18US0166X

12. **Description of Equipment:**

General – The Line Bushings are components used to provide electrical connections through compartment walls in explosionproof housings. The Line Bushings consist of a sealing disk, epoxy resin, conductors, cylindrical /threaded sleeve and guide disk.

Construction – The standard sleeve is made of nickel plated brass and can either be threaded (metric ISO965/I and ISO 965 / III, medium fit or NPT: ANSI / ASME B1.20.1) or have a smooth cylindrical flamepath. The sleeve sizes range from M10x1 to M48x1.5. There are non-coded alternative sleeve materials of steel, stainless steel, aluminium or bronze. There are a variety of installation techniques recommended by the manufacturer. The conductors are sealed in the bushing with Epoxy Resin & Inorganic filler Nr. 03-3200-0001. This compound is retained within the bushing by a machined groove on the inside surface.

Ratings – The Line Bushings' rated isolation voltages are 250, 600, 660, and 1000 Volts (depending on the wire).

07-91ab-cde/*f**. Line Bushing.
a = Sleeve Type 0, 1, 4, 5, 6, 7 or A.
b = Isolation Voltage 0, 1, 2, 3, 4, 5, or 9.
c = Conductor Cross Sectional Area 0, 9, A, B, C, D, E, F, G, H, J, K, L, M, N, P, Q, R, S or Z.
d = Quantity of Cores 00 through 99 (99 is code circuit board).
e = Sleeve Size 0, 1, 2, 3, 4, 5, 6, 7, 9, C, D, E, F, G, K or L.
f = Code for Special Requirements A, S or X.
* = Symbols or figure for variations not effecting explosion protection, i.e. conductor length

13. **Specific Conditions of Use:**

1. The Line Bushing is intended for use as intercompartment/feed-throughs in explosionproof/flameproof enclosures.
2. Line Bushings require additional evaluation and testing in the end product to verify compliance to FM Approvals requirements.
3. Conductors shall not be subjected to a pull force of more than 7 lbf (31 N).
4. Operating temperature shall not exceed the marked maximum operating temperature of the conductors or 110°C whichever is less.
5. For f = "S" (Coax Cable Line Bushing) code option, line bushing is acceptable for up to 600 psi (41.4 Bar) over-pressure value.

14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

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16. **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
12th December 1991	Original Issue.
13th June 2018	Supplement 5: Report Reference: RR214285 dated 13th June 2018. Description of the Change: Updated Cerificate standards and format to latest versions. Delisted 37-94 Electrode Line Bushing from Certificate.
2nd July 2019	Supplement 6: Report Reference: PR452185 dated 2nd July 2019. Description of the Change: New configuration added with new hookup and thermal wires. FM 3810 corrected to 1989 edition as the line bushings have not be assessed to ANSI/UL 61010.
6th April 2021	Supplement 7: Report Reference: PR455234 dated 6th April 2021. Description of the Change: New configurations with two different wires added.

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