Physikalisch-Technische Bundesanstalt
Braunschweig und Berlin
Nationales Metrologieinstitut

(1) EU-TYPE EXAMINATION CERTIFICATE

(Translation)

(2) Equipment or Protective Systems Intended for Use in Potentially Explosive Atmospheres - **Directive 2014/34/EU**

(3) EU-Type Examination Certificate Number:

PTB 12 ATEX 4001 X **Issue: 1**

(4) Product: Pre-volume deflagration flame arrester, type Adapt-FS

(5) Manufacturer: ARMANO Messtechnik GmbH

(6) Address: Manometerstraße 5, 46487 Wesel-Ginderich, Germany

(7) This product and any acceptable variation thereto is 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 17 of the Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres, given in Annex II to the Directive.

The examination and test results are recorded in the confidential Test Report PTB Ex 19-48012.

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

EN ISO 16852:2016, **DIN EN ISO 16852:2017**

(10) If the sign "X" is placed after the certificate number, it indicates that the product is subject to the Specific Conditions of Use specified in the schedule to this certificate.

(11) This EU-Type Examination Certificate relates only to the design and construction of the specified product in accordance to the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(12) The marking of the protective system shall include the following:

Ex II G IIC

Konformitätsbewertungsstelle, Sektor Explosionsschutz Braunschweig, March 1, 2019
On behalf of PTB:

Dr.-Ing. D.-H. Frobese
Oberregierungsrat

PHYSIKALISCH-TECHNISCHE BUNDESANSTALT 22

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(13) # SCHEDULE

(14) **EU-Type Examination Certificate Number PTB 12 ATEX 4001 X, Issue: 1**

(15) Description of Product

The pre-volume deflagration flame arrester of type Adapt-FS shall reliably prevent flashback in the case of a deflagration of gas/air- and vapour/air mixtures of explosion group IIC with a maximum experimental safe gap ≥ 0.3 mm in an upstream volume of max. 0.2 l.

Changes with respect to previous editions

The company Armaturenbau GmbH changes into ARMANO Messtechnik GmbH.

(16) Test Report PTB Ex 19-48012

The test report consists of 3 pages, 30 drawings, operating instructions manual (8 pages), list of documents (2 pages), extract from the Commercial Register (4 pages) and the marking (1 page).

Result: The pre-volume deflagration flame arrester described under (15) complies with the requirements to the performance of flame arresters according to EN ISO 16852:2016, DIN EN ISO 16852:2017.

(17) Specific conditions of use

When the unit is used as deflagration volume protection, the following conditions shall be complied with:

1. The unprotected volume shall not exceed 0.2 l.
2. At the screwed adapter, the maximum piping length on the non-protected side between a potential ignition source and the deflagration volume protection device shall not exceed 3×D = 45 mm.
3. The nominal connection width on the non-protected side may be max. G1/2 or DN 15.
4. The nominal connection width on the protected side may be max. G1/2 or DN 15.
5. The inflammable gases and vapours occurring during operation may be classified into explosion group IIC with a maximum experimental safe gap ≥ 0.3 mm.
6. The maximum permissible operating pressure shall not exceed 110 kPa.
7. The maximum operating temperature is 60 °C.
8. The protected side shall be observed.

The conditions listed above shall be included in the operating instructions manual provided for each pre-volume deflagration flame arrester of type Adapt-FS, and they shall be implemented by the operating company.

SCHEDULE TO EU-TYPE EXAMINATION CERTIFICATE PTB 12 ATEX 4001 X, Issue: 1

(18) Essential health and safety requirements

Met by compliance with the aforementioned standards.

According to Article 41 of Directive 2014/34/EU, EC-type examination certificates which have been issued according to Directive 94/9/EC prior to the date of coming into force of Directive 2014/34/EU (April 20, 2016) may be considered as if they were issued already in compliance with Directive 2014/34/EU. By permission of the European Commission supplements to such EC-type examination certificates and new issues of such certificates may continue to hold the original certificate number issued before April 20, 2016.

Konformitätsbewertungsstelle, Sektor Explosionsschutz
On behalf of PTB:

Dr.-Ing. D.-H. Frobese
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Braunschweig, March 1, 2019