

EU TYPE-EXAMINATION CERTIFICATE

1. EU type-examination Certificate (Module B)
2. Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)
3. EU type examination certificate Nr **ITS15ATEX18371X**
4. **Product:** Optical Encoder Type ***78E Mining
5. **Manufacturer:** Pepperl+Fuchs GmbH
6. **Address:** Lilienthalstrasse 200, 68307 Mannheim, Germany
7. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.
8. INTERTEK ITALIA S.p.A., Notified Body n° 2575 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and Council of the 26 February 2014, certifies that the equipment or protective system has been found to comply with the essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.

The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. 102337162CHE-002 dated December 2015
9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN 60079-0:2012 +A11:2013, EN 60079-1:2014 and EN 60079-31:2014 except in respect of those requirements referred to at item 16 of the Schedule.
10. If the sign X is placed after the certificate number, it indicates that the product is subject to Special Conditions for Safe 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. 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 product shall include the following:



I M2 Ex db I Mb
II 2G Ex db IIC T5 Gb
II 2D Ex tb IIIC T100 °C Db
-40 °C ≤ Ta ≤ +70°C

July 22, 2020

Certificate issue date

Alessandro Savio
Certification Officer
Intertek Italia S.p.A. (NB 2575)



PDR N° 277B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC

Signatory of EA, IAF and ILAC Mutual Recognition Agreements

This certificate has been issued by Intertek Italia S.p.A. NB 2575 on transfer from Intertek Testing & Certification Ltd. (NB 0359) using the same issued original certificate number.



This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Intertek Italia S.p.A. Via Miglioli, 2/A - 20063 Cernusco sul Naviglio, Milano - Italy



SCHEDULE

EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS15ATEX18371X

13. DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM

The Optical Encoders ***78E Mining are small flameproof enclosures containing electronics. The encoder housing is manufactured from stainless steel or acid proof stainless steel with a drive shaft in one end shield. The shaft can be either solid type shaft or hollow type shaft. The body makes one cylindrical joint with the drive end shield on another side. Each end shield (the drive end and the non-drive end) is secured to the body with six M4 counter bored socket head cap screws. O-rings are fitted to each cylindrical joint. There is a shaft seal on drive end seal, where two ball bearings are mounted to the cylindrical joint between the shaft and the drive end shield.

The encoder housing can be provided with up to two M20 x 1.5 or M25 x 1.5 threaded entries on the non-drive end shield. These threaded entries are closed with the suitable separately ATEX certified cable glands. All unused entries must be closed with suitable separately ATEX certified blanking elements. The apparatus is rated at 300 mA maximum current and voltage range from 10 V dc to 30 V dc.

Rated speed for type variants with seal max 3000 rpm, without seal max. 6000 rpm

Max. permissible load on the shaft: axial 60 N and 80 N radial.

Additionally the encoders meet IP64/65/66/67 in accordance with EN 60529.

Additional testing has also been carried out to permit the use of the following cable gland and cable combinations;

Cable gland	Cable	Minimum length
HSK INOX	Cable Lapp FD855CP	0.5m
HSK INOX	Cable Radox 125	2m
Hawke 501/453	Cable Lapp Robocable	2m

CE Marking shall be accompanied by the identification number of the Notified Body responsible for surveillance of production.

14. DRAWINGS AND DOCUMENTS

TITLE	DOCUMENT Nr	LEVEL	DATE
Description – Type ***78E/***78E Mining ATEX and IECEx Certification for rotary encoder type***78E (Sheets 1 to 5 of 5)	16-1227IN-00	-	2015-11-30
Instructions - Type ***78E/***78E Mining ATEX and IECEx Certification for rotary encoder type***78E (Sheets 1 to 6 of 6)	16-1227IN-09	-	2015-11-30
Type label - Type ***78E/***78E Mining ATEX and IECEx Certification for rotary encoder type***78E (Sheets 1 to 5 of 5)	16-1227IN-10	-	2015-11-30

Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.



SCHEDULE

EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS15ATEX18371X

15. SPECIAL CONDITIONS FOR SAFE USE

- It is a condition of certification that the flame paths have to comply with the manufacturers drawings and can only be repaired by the manufacturer.
- It is a condition of certification that the precautions must be taken to avoid dust from forming layers on the encoder.
- The fasteners used to secure enclosure body to end shields shall have a minimum yield stress of 450 MPa.
- Use only suitably certified Ex db I Mb/ Ex db IIC Gb and Ex tb IIIC Db cable glands, thread adapters and blanking elements.

16. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

The relevant essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. 102337162CHE-002 dated December 2015.

17. ROUTINE (FACTORY) TESTS

None.

18. DETAIL OF CERTIFICATE CHANGES

None.

EU TYPE-EXAMINATION CERTIFICATE

1. EU type-examination Certificate (Module B)
2. Equipment or Protective System intended for use in potentially explosive atmospheres (Directive 2014/34/EU)



3. EU type examination certificate Nr **ITS15ATEX18371X R.1**

4. **Product:** Optical Encoder Type ***78E Mining

5. **Manufacturer:** Pepperl+Fuchs SE

Applicant: Pepperl+Fuchs SE

6. **Address:** Lilienthalstrasse 200, 68307 Mannheim, Germany

Address: Lilienthalstrasse 200, 68307 Mannheim, Germany

7. This product and any acceptable variation thereto are specified in the schedule to this certificate and therein referred to.

8. INTERTEK ITALIA S.p.A., Notified Body n° 2575 in accordance with article 17 of the Directive 2014/34/EU of the European Parliament and Council of the 26 February 2014, certifies that the equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective system intended for use in potentially explosive atmosphere, given in Annex II of the Directive.

The examination and tests results are recorded in confidential technical evaluation Intertek Report Nr. 104893940CHE-001 dated 28 March 2022.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN IEC 60079-0:2018 and EN 60079-1:2014 except in respect of those requirements referred to at item 16 of the Schedule.

10. If the sign X is placed after the certificate number, it indicates that the product is subject to 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. 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 product shall include the following:



I M2 Ex db I Mb
-40 °C ≤ Ta ≤ +70°C

7th April 2022

Certificate issue date



Paul Moss
Certification Officer
Intertek Italia S.p.A. (NB 2575)



PDR N° 277B

Membro degli Accordi di Mutuo Riconoscimento EA, IAF e ILAC

Signatory of EA, IAF and ILAC Mutual Recognition Agreements



This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

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SCHEDULE

EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS15ATEX18371X R.1

13. DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM

The Optical Encoders ***78E Mining are small flameproof enclosures containing electronics. The encoder housing is manufactured from stainless steel or acid proof stainless steel with a drive shaft in one end shield. The shaft can be either solid type shaft or hollow type shaft. The body makes one cylindrical joint with the drive end shield on another side. Each end shield (the drive end and the non-drive end) is secured to the body with six M4 counter bored socket head cap screws. O-rings are fitted to each cylindrical joint. There is a shaft seal on drive end seal, where two ball bearings are mounted to the cylindrical joint between the shaft and the drive end shield.

The encoder housing can be provided with up to two M20 x 1.5 or M25 x 1.5 threaded entries on the non-drive end shield. These threaded entries are closed with the suitable separately ATEX certified cable glands. All unused entries must be closed with suitable separately ATEX certified blanking elements. The apparatus is rated at 300 mA maximum current and voltage range from 10 V dc to 30 V dc.

Rated speed for type variants with seal max 3000 rpm, without seal max. 6000 rpm.

Max. permissible load on the shaft: axial 60 N and 80 N radial.

Additionally the encoders meet IP64/65/66/67 in accordance with IEC 60529.

Production Site:

take-off GewerbePark 35, 78579 Neuhausen ob Eck, Germany

CE Marking shall be accompanied by the identification number of the Notified Body responsible for surveillance of production.

14. DRAWINGS AND DOCUMENTS

TITLE	DOCUMENT Nr	LEVEL	DATE
*Description – Type ***78E/***78E Mining ATEX and IECEx Certification for rotary encoder type***78E (Sheets 1 to 5 of 5)	16-1227IN-00A	-	2022-03-22
*Instructions - Type ***78E/***78E Mining ATEX and IECEx Certification for rotary encoder type***78E (Sheets 1 to 6 of 6)	16-1227IN-09A	-	2022-03-22
*Type label - Type ***78E/***78E Mining ATEX and IECEx Certification for rotary encoder type***78E (Sheets 1 to 5 of 5)	16-1227IN-10A	-	2022-03-22

Note: An * is included before the title of documents that are new or revised.
Copies of the above listed documents are kept at Intertek Italia S.p.A. archive.



SCHEDULE

EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS15ATEX18371X R.1

15. SPECIFIC CONDITIONS OF USE

- It is a condition of certification that the flame paths have to comply with the manufacturers drawings and can only be repaired by the manufacturer.
- It is a condition of certification that the precautions must be taken to avoid dust from forming layers on the encoder.
- The fasteners used to secure enclosure body to end shields shall have a minimum yield stress of 450 MPa.
- Use only suitably certified Ex db I Mb cable glands, thread adapters and blanking elements.

16. ESSENTIAL HEALTH AND SAFETY REQUIREMENTS

The relevant Essential Health and Safety Requirements have been identified and assessed in Intertek Report Nr. 104893940CHE-001 dated 28 March 2022.

17. ROUTINE (FACTORY) TESTS

None.

18. DETAIL OF CERTIFICATE CHANGES

R.0 (22 July 2020):

- Initial issue by Intertek Italia S.p.A. NB 2575 on transfer from Intertek Testing & Certification Ltd. (NB 0359) using the same issued original certificate number.

R.1 (7th April 2022):

- Update from EN 60079-0:2012+A11:2013 to EN IEC 60079-0:2018.
- Removal of Gas and Dust marking.
- Change of Applicant and Manufacturers name to Pepperl+Fuchs SE.