

# 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**      **ITS10ATEX16925X R.1**

4. **Product:**                      Optical Encoder Type EXME-A\*, EXME-H\*, EM78-A\*, EM78-H\*

5. **Manufacturer:**      Scancon Encoders A/S                                      **Applicant:**      Scancon Encoders A/S

6. **Address:**                      Huginsvej 8, 3400 Hilleroed, Denmark                                      **Address:**      Huginsvej 8, 3400 Hilleroed, Denmark

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 Reports: 10045553, dated 28 June 2010, 101936470MAN-001, dated July 2015, 102072087CHE-002 Dated: October 2015, 102853327CHE-001 dated June 2017 and 104138915CHE-001 dated 16 March 2020.

9. Compliance with the Essential Health and Safety Requirements has been assured by compliance with standards EN IEC 60079-0:2018, 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 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  
-40 °C ≤ Ta ≤ +70°C



**Certificate issue date**

27<sup>th</sup> March 2020

**Fabrizio Massei**  
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

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### 13. DESCRIPTION OF THE EQUIPMENT OR PROTECTIVE SYSTEM

The Optical Encoders EXME 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 (EXME-A) or hollow type shaft (EXME-H). 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 shield, 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 four M20x1.5, M25x1.5, ½”NPT or ¾”NPT 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 300mA maximum current and voltage range from 4.5Vdc to 30Vdc.

Rated speed for type variants with seal max 3000rpm, without seal max. 6000rpm  
Max. permissible load on the shaft: axial 60N and 80N radial.

Additionally the encoders meet IP64/65/66/67/68 in accordance with EN 60529.

Type EM78 models are identical to the Type EXME models but with new Scancon Profibus electronics which includes a single cell PT-2150HT back-up battery.

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       |
|--|-------------|-------|------------|
| *Certification dwg Housing EXAG/EXME Ex dwg                                | 00231007C   | 1     | 06-11-2019 |
| *Certification drawing – H. shaft/shaft Ø17 EXAG/EXME Ex dwg               | 00231215C   | 1     | 06-11-2019 |
| Certification dwg – Cover Tube EXAG/EXME Ex dwg                            | 00132213C   | 4     | 17-05-2017 |
| *Certification drawing – H. shaft/shaft Ø30 EXAG/EXME Ex dwg               | 00231216C   | 1     | 06-11-2019 |
| Certification dwg – EXAG Back Cover Ex dwg                                 | 00132216C   | 4     | 17-05-2017 |
| *Encoder type EXAG/EXME “k” calculation Ex-dwg                             | 00241010    | 1     | 06.11.2019 |
| *Encoder type EXAG/EXME “m” calculation Ex-dwg                             | 00241011    | 1     | 06.11.2019 |
| Certification drawing – EXAG Back Cover, Internal External Earthing Ex dwg | 80230175C   | 2     | 17-05-2017 |
| *Certification drawing – EXAG/EXME Enclosure Ex dwg                        | 90231218C   | 1     | 06-11-2019 |
| Ring Cable Shoe Yellow – M4  | 06300054    | 1     | 09-07-2013 |



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### EU TYPE EXAMINATION CERTIFICATE NUMBER: ITS10ATEX16925X R.1

| TITLE  | DOCUMENT Nr | LEVEL | DATE         |
|--|-------------|-------|--------------|
| Allen Screw M4x25 ISO4762 A2-70  | 07130026    | 2     | 17-05-2017   |
| Allen screw M4x12 ISO4762 A2-70  | 07130059    | 3     | 18-10-2012   |
| Allen Screw M4x35 ISO4762 A2-70  | 07130063    | 3     | 18-10-2012   |
| Allen screw M4x50 ISO4762 A4-80  | 07130074    | 3     | 17-05-2017   |
| Allen screw M4x12 ISO4762 A4-80  | 07130094    | 3     | 17-05-2017   |
| Allen screw M4x35 ISO4762 A4-80  | 07130097    | 4     | 17-05-2017   |
| Allen screw M4x25 ISO4762 A4-80  | 07130102    | 2     | 17-05-2017   |
| Allen screw M4x55 ISO4762 A4-80  | 07130103    | 2     | 17-05-2017   |
| EXAG.. Adresse label 100x23 Ex-dwg.  | 00141742    | 2     | 05.01.2015   |
| *Warning Label for mining and surface Ex-dwg.  | 00241009    | 1     | 11.12.2018   |
| *PCB SC0713 component and layout details – Absolute Profibus and dual EX78 (absolute/incremental) encoder. | 00241242    | 1     | 19-12-2019   |
| *SC0713 Decoupling – Various   | 00241243    | 1.0   | 05-02-2020   |
| *Certification drawing – Rotary-Shaft Seal   | 00230847C   | 1     | 18-01-2018   |
| *Certification drawing – O-ring Ex dwg   | 00230849C   | 1     | 16-01-2018   |
| *EXME Ordering Code Ex-dwg   | 00240171    | 3     | 06.11.2019   |
| *EM78 Ordering Code Ex-dwg   | 00241226    | 1     | 06.11.2019   |
| *EXME Marking Label 100x23 Ex-dwg.   | 00241012    | 1     | 06.11.2019   |
| *EXME Marking label 100x35 Ex-dwg.   | 00241013    | 1     | 06.11.2019   |
| *Type EXME Installation Guide (3 pages)  | 00240719    | 4     | 06 Nov. 2019 |
| *Type EM78 Installation Guide (3 pages)  | 00241232    | 1     | 06 Nov. 2019 |

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.



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### 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 450MPa.
- 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 Reports: 10045553, dated 28 June 2010, 101936470MAN-001, dated July 2015, 102072087CHE-002 Dated: October 2015, 102853327CHE-001 dated June 2017 and 104138915CHE-001 dated 16 March 2020.

### 17. ROUTINE (FACTORY) TESTS

None

### 18. DETAIL OF CERTIFICATE CHANGES

#### **R.1 (27<sup>th</sup> March 2020):**

1. Addition of new Profibus electronics (including internal battery) in versions absolute or dual by means of a combination of absolute and incremental outputs – Type EM78 models only.
2. Addition of new SIL2 electronics – Type EXME models only.
3. Change of diameter/tolerance of housing/shaft flamepath.
4. Removal of the Group II and Group III marking from certification.
5. Update from EN 60079-0:2012/A11:2013 to EN IEC 60079-0:2018.
6. Addition of laminate covering over marking labels.
7. Minor drawing changes not compromising the ATEX certification.