EU-TYPE EXAMINATION

CERTIFICATE

Equipment or Protective System Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

1. **EU-Type Examination Certificate Number:** **ITS09ATEX16841X** **Issue 07**
2. **Product:** Incremental Encoder Type SCA86EX, SCH86BEX & SCH86FEX
3. **Manufacturer:** Scancon Encoders A/S
4. **Address:** Huginsvej 8, DK-3400, Hilleroed, Denmark
5. This product and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.
6. Intertek Testing and Certification Limited, Notified Body number 0359 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council dated 26 February 2014, certifies that the 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 of the Directive.
7. Compliance with the Essential Health and Safety Requirements has been assured by compliance with EN 60079-0:2018, EN 60079-1:2014 & EN 60079-31:2014 except in respect of those requirements referred to within item 14 of the Schedule.
8. If the sign “X” is placed after the certificate number, it indicates that the product is subject to the special conditions of use specified in the Schedule to this certificate.
9. 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.
10. The marking of the product shall include the following:

II 2 G Ex db IIC T5 Gb

II 2 D Ex tb IIIC T100°C Db

-40°C/-50°C* ≤ Ta ≤ +70°C

* -50°C applicable to magnetic version only

Certification Officer: P Moss **Date:** 21 February 2019

SCHEDULE:

EU-Type Examination Certificate Number: ITS09ATEX16841X Issue 07

11. Description of Equipment or Protective System

The Incremental Encoder types SCA86EX, SCH86BEX, SCH86FEX are small enclosures manufactured from stainless steel or aluminium available in a "U"-shape with removable end or in a "drop-shape" with non-removable end cap version with approximate dimensions of 70mm x 86mm x 130mm. These enclosures are populated with electronics and have a shaft passing through the main body. The shaft may be solid or hollow and with one or two ends free. The encoder designations detail the type of shaft used as follows; SCA86EX – Solid Shaft, SCH86BEX – Hollow Shaft, SCH86FEX – Hollow Shaft. The enclosures comprise of cylindrical flamepaths between the Housing & End Cap, End Cap & Cover (when "U"-shaped enclosure used). The rotating shaft also forms a cylindrical flamepath through the housing controlled by k & m factors and is held in place with 2 precision roller element bearings. The enclosure is provided with either one or two threaded cable entries which are fitted with either a certified M20 or M25 cable gland. Alternatively, the equipment can have either one or two holes in NPT size ≤ 3/4". Both internal and external earthing is provided.

Note: Optionally the encoder can be fitted with an optical transmitter – the optical radiation output of the apparatus with respect to explosion protection is covered in this certificate based on Exception 3) to the scope of EN 60079-28:2015.

12. Report Number

Intertek Report: 103678823CHE-001 Dated: 07 February 2019.

13. Special Conditions of Certification

(a). Special Conditions of Use

- Minimise the risk from electrostatic discharge - clean only with a damp cloth.
- Temperature at the cable gland or branching point could exceed 90°C – suitably rated cable must be used.
- No modifications must be made to the flamepaths of the enclosure without consultation to the manufacturer's drawings.
- Use only fasteners with minimum yield stress of 450MPa.
- Use only suitably certified Ex db IIC Gb and Ex tb IIIC Db cable glands.
- Use only suitably certified Ex db IIC Gb and Ex tb IIIC Db blanking elements.
- Use only suitably certified Ex db IIC Gb and Ex tb IIIC Db thread adapters.
- Lower ambient of -50°C is only applicable for the magnetic version of the SC86EX.
- For the magnetic version of the SC86EX, only Eriks NBR 70 Compound 366224 O-rings are to be used.

(b). Conditions of Manufacture - Routine Tests

- None

SCHEDULE:

EU-Type Examination Certificate Number: ITS09ATEX16841X Issue 07

14. Essential Health and Safety Requirements (EHSRs)

The relevant Essential Health and Safety Requirements (EHSRs) have been identified and assessed in Intertek Report: 103678823CHE-001 Dated: 07 February 2019.

15. Drawings and Documents

Title:	Drawing No.:	Rev. Level:	Date:
*Certification drawing – Housing SC86EX Ex dwg	00132575C	6	11-12-2018
*Certification drawing – End Cap SC86EX Ex dwg	00132576C	5	11-12-2018
Certification drawing – Cap SC86EX Ex dwg	00132820C	4	06-07-2017
*Certification drawing – Cover SC86EX Ex dwg	00132819C	6	11-12-2018
*Certification drawing – hollow shaft SC86EX EX dwg	00132577C	5	11-12-2018
*Certification drawing – Shaft SC86EX EX dwg	00132578C	5	11-12-2018
Internal/external earthing SC86EX-XM	00132829C	3	06-07-2017
*Encoder type SC86EX, SC86XM “k” calculation Ex-dwg	00132813A	3	11.12.2018
*Encoder type SC86EX, SC86XM “m” calculation Ex-dwg	00132813B	3	11.12.2018
*Encoder type SC86EX, SC86XM “k” calculation Ex-dwg	00132814A	3	11.12.2018
*Encoder type SC86EX, SC86XM “m” calculation Ex-dwg	00132814B	3	11.12.2018
*SC86EX-SC86XM enclosure	00132827	3	11-12-2018
Allen screw M4x12 ISO4762 A2-70	07130059	3	18-10-2012
Allen screw M4x12 ISO4762 A4-80	07130094	3	17-05-2017
Allen screw M4x16 ISO4762 A4-80	07130086	5	06-07-2017
Ring Cable Shoe Yellow – M4	06300054	1	09-07-2013
*Warning Label for mining and surface Ex-dwg.	00241009	1	11.12.2018
*Certification drawing – Rotary-Shaft Seal	00230847C	1	18-01-2018
*Certification drawing – O-ring Ex dwg	00230849C	1	16-01-2018
*SC86EX ordering code surface Ex-dwg	00142828	4	11-12-2018
SCA86EX, SCH86BEX SCH86FEX Marking drawing – surface Ex-dwg	00142581	8	06.07.2017
*Type SC86EX Installation Guide	00141508	12	11 Dec 2018
*Certification drawing – SC86EX-FO	90230763C	2	11-12-2018
*SCA86EX, SCH86BEX SCH86FEX Magnetic Marking drawing – surface Ex-dwg.	00241014	1	11.12.2018

*Note: An * is included before the title of documents that are new or revised.*

SCHEDULE:

EU-Type Examination Certificate Number: ITS09ATEX16841X Issue 07

16. Details of Certificate changes

Issue/Variation No	Date	Details of change
Original Issue	22 December 2009	Original issue. Report No ETS3539 dated 17 December 2009.
Variation 1	22 March 2010	Change of IP rating to IP65, IP66 or IP67 dependent on configuration. Enclosures can be made of stainless steel or acid-proof stainless steel. Report No ETS3887 dated 15 March 2010.
Variation 2	25 February 2014	Update from EN 60079-0:2009 to EN 60079-0:2012 + A11:2013. Update from EN 61241-0 and EN 61241-1 to EN 60079-31:2009. Report No 101235509MAN-001D dated February 2014.
Variation 3	4 August 2014	Warning label amendment. Removal of reference to PCB types from ordering code. Report No 101663066MAN-001D dated May 2014.
Variation 4	22 June 2015	Change of address. Additional material for label. New PCB layout options for terminal block PCB. Rationalisation of Conditions of Use. Correction of cable temperatures in Conditions of Use. Report No 101936470MAN-001 dated February 2015.
Variation 5	19 April 2016	Reduction in wall thickness of the rotating shaft and change in tolerance. Addition of ¾" NPT thread entry. Minor non-technical changes to drawings. Report No 102049593CHE-001 dated April 2016.
Issue 06	02 October 2017	Inclusion of new type of rotary seal. Inclusion of an optical transmitter version of the encoder. Update from EN 60079-1:2007 to EN 60079-1:2014. Update from EN 60079-31:2009 to EN 60079-31:2014. Minor drawing changes not compromising the ATEX certification. Report No 103054906CHE-001 dated September 2017.
Issue 07	This issue	Addition of new magnetic version of the encoder. Reduction of lower ambient from -40°C to -50°C (magnetic version only). Update from EN 60079-0:2012+A11:2013 to EN 60079-0:2018. Minor drawing changes not compromising the ATEX certification. Report No 103678823CHE-001 dated 07 February 2019.