



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification Scheme for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: IECEx ITS 13.0024X

Issue No: 5

Certificate history:

Issue No. 5 (2019-02-21)

Issue No. 4 (2017-10-02)

Issue No. 3 (2016-10-03)

Issue No. 2 (2016-02-05)

Issue No. 1 (2014-08-07)

Issue No. 0 (2014-03-07)

Status: **Current**

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Date of Issue: **2019-02-21**

Applicant: **Scancon Encoders A/S**
Huginsvej 8,
DK-3400,
Hilleroed,
Denmark

Equipment: **SCA86XM, SCH86BXM & SCH86FXM Type Encoders**

Optional accessory:

Type of Protection: **Flameproof Ex db**

Marking:

Ex db I Mb

-40°C<Tamb<+70°C

IECEX ITS 13.0024X

*Approved for issue on behalf of the IECEx
Certification Body:*

P Moss

Position:

Certification Officer

*Signature:
(for printed version)*

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting the [Official IECEx Website](http://www.iecex.com).

Certificate issued by:

Intertek Testing & Certification Limited
ITS House, Cleeve Road,
Leatherhead,
Surrey, KT22 7SA
United Kingdom





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Manufacturer: **Scancon Encoders A/S**
Huginsvej 8,
DK-3400,
Hilleroed,
Denmark

Additional Manufacturing location(s):

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended.

STANDARDS:

The apparatus and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards:

IEC 60079-0 : 2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-1 : 2014-06 Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
Edition:7.0

*This Certificate **does not** indicate compliance with electrical safety and performance requirements other than those expressly included in the Standards listed above.*

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in

Test Report:

[GB/ITS/ExTR13.0027/01](#)
[GB/ITS/ExTR13.0027/04](#)

[GB/ITS/ExTR13.0027/02](#)

[GB/ITS/ExTR13.0027/03](#)

Quality Assessment Report:

[GB/EXV/QAR17.0015/01](#)



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The Incremental Encoder types SCA86XM, SCH86BXM, SCH86FXM are small stainless steel enclosures available in a "U"-shape with removable end cap or in a "drop-shape" with non-removable end cap 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; SCA86XM – Solid Shaft, SCH86BXM – Hollow Shaft, SCH86FXM – 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 $\leq 3/4$ ". 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 IEC 60079-28:2015.

SPECIFIC CONDITIONS OF USE: YES as shown below:

- Minimize the risk from electrostatic discharge - clean only with a damp cloth.
- Temperatures at the cable entry can reach 90 °C. Selection of cable must be appropriate for the ambient temperature range in which the product is 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 I Mb/IIC Gb and Ex tb IIIC Db cable glands.
- Use only suitably certified Ex db I Mb/IIC Gb and Ex tb IIIC Db blanking elements.
- Use only suitably certified Ex db I Mb/IIC Gb and Ex tb IIIC Db thread adapters.
- When installed in mining areas the enclosure must be protected from high risk impacts.



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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1:

Warning label amendment.
Removal of reference to pcb types from ordering code.

Issue 2:

Change of address from "Tranevang 1, 3450 Allerød, Denmark" to "Huginsvej 8, DK-3400, Hillerød, Denmark".
Rationalisation of Conditions of Certification.
Correction of cable temperature rating in Conditions of Certification.
Clarification of equipment description.

Issue 3:

Reduction of wall thickness for through shaft.
Addition of NPT threaded option.
Minor changes to drawings.

Issue 4:

Inclusion of new type of rotary seal.
Inclusion of an optical transmitter version of the encoder.
Update of IEC 60079-1 from Ed. 6 to Ed. 7.
Update of IEC 60079-31 from Ed. 1 to Ed.2.
Minor drawing changes not compromising the IECEx certification.

Issue 5:

Addition of new magnetic version of the encoder.
Removal of the Group II and Group III marking from the SCA86XM, SCH86BXM and SCH86FXM certificate.
Update from IEC 60079-0:2011 Ed 7 to IEC 60079-0:2017 Ed 7.
Minor drawing changes not compromising the IECEx certification.

Annex:

[Annex to IECEx ITS 13.0024X Iss 5.pdf](#)



Annex to IECEx Certificate of Conformity

Certificate No:	IECEx ITS 13.0024X	Issue No. 5
Annex No. 1		

Technical 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
*SC86XM ordering code mining Ex-dwg.	00142586	5	11.12.2018
*SC86XM Label for mining Ex-dwg.	00142587	8	11.12.2018
*Type SC86XM Installation Guide	00240738	2	11 Dec 2018
*Certification drawing – SC86XM-FO (mining)	90230786C	2	11-12-2018

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