



IECEX Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

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

Certificate No.:	IECEX ITS 13.0025X	Page 1 of 4	<u>Certificate history:</u> Issue 4 (2017-10-02) Issue 3 (2016-10-03) Issue 2 (2016-02-05) Issue 1 (2014-08-07) Issue 0 (2014-03-07)
Status:	Current	Issue No: 5	
Date of Issue:	2019-02-21		
Applicant:	Scancon Encoders A/S Huginsvej 8 DK-3400 Hilleroed Denmark		
Equipment:	SCA86EX, SCH86BEX & SCH86FEX Type Encoders		
Optional accessory:			
Type of Protection:	Flameproof Ex db and Dust Ex tb		
Marking:	Ex db IIC T5 Gb Ex tb III C T100°C Db -40°C/-50°C* < Tamb < +70 °C * -50°C applicable to magnetic version only		

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 www.iecex.com or use of this QR Code.



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
locations:

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 equipment 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

IEC 60079-31:2013 Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"
Edition:2

This Certificate **does not** indicate compliance with 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 Reports:

[GB/ITS/ExTR13.0028/01](#)
[GB/ITS/ExTR13.0028/04](#)

[GB/ITS/ExTR13.0028/02](#)

[GB/ITS/ExTR13.0028/03](#)

Quality Assessment Report:

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



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

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 $\leq 3/4"$. 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 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.



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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 addresss from "Tranevang 1, 3450 Allerød, Denmark" to "Huginsvej 8, DK-3400, Hillerød, Denmark".
An additional material for the label has been added and a new PCB layout option for the terminal block PCB.
Rationalisation and improvement of 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.
Reduction of lower ambient from -40°C to -50°C (SC86EX magnetic version only).
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 13.0025X Iss 5.pdf](#)



Annex to IECEx Certificate of Conformity

Certificate No:	IECEX ITS 13.0025X	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
* 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.*

Certificate issued by:

intertek

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