



## EU Type Examination Certificate CML 15ATEX1142X Issue 2

- 1 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU
- 2 Equipment Shaft and Hollow-Shaft Absolute Encoders SCA108EX, SCH108BEX & SCH108FEX
- 3 Manufacturer Scancon Encoders A/S
- 4 Address Huginsvej 8  
3400 Hilleroed  
Denmark
- 5 The equipment is specified in the description of this certificate and the documents to which it refers.
- 6 Certification Management Limited, Unit 1 Newport Business Park, New Port Road, Ellesmere Port CH65 4LZ, UK, Notified Body Number 2503, in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment intended for use in potentially explosive atmospheres given in Annex II to the Directive.  
The examination and test results are recorded in the confidential reports listed in Section 12.
- 7 If an 'X' suffix appears after the certificate number, it indicates that the equipment is subject to conditions of safe use (affecting correct installation or safe use). These are specified in Section 14.
- 8 This EU Type Examination certificate relates only to the design and construction of the specified equipment or component. Further requirements of Directive 2014/34/EU Article 13 apply to the manufacture of the equipment or component and are separately certified.
- 9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the confidential report, has been demonstrated through compliance with the following documents:  
EN 60079-0:2012 + A11:2013                      EN 60079-1:2014                      EN 60079-31:2014
- 10 The equipment shall be marked with the following:



II 2 G / II 2 D

Ex db IIB+H2 T5 Gb

Ex tb IIIC T100°C Db

Ta= -40°C to +70°C



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## 11 Description

The Incremental Absolute Encoder types SCA108EX, SCH108BEX and SCH108FEX are small encoders manufactured from stainless steel or aluminium available in a “U”-shape with approximate dimensions of 110 mm x 108 mm x 162 mm. These encoders 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 encoders contain a backup battery: primary lithium battery of type LS 14250 (lithium-thionyl chloride – Li-SOCl<sub>2</sub>), size ½ R6 – ½ AA 3.6 V nominal. Rotation speed of the encoder shaft is limited to 3000 rpm.

The encoder designations detail:

SC\*108\*EX - \*\*\*\*\* - \*\* - \*\* - \*\* - \*\* - \*\* - \* - \*\*

A B C D E F G H I J

A..... the type of shaft used as follows:

SCA108EX – Solid Shaft

SCH108BEX – Through Hollow Shaft

SCH108FEX – Hollow Shaft

B..... output definition: singleturn / multiturn-D(Dual output) (e.g. “13/12-D”)

C..... material: AISI303 (SR), AISI316 (SA), or EN AW 6026 (AL)

D..... output protocol: Profibus, Ethernet (e.g. “DP”)

E..... shaft diameter type .... (e.g. “03”)

F..... shaft, length/depth (e.g. “12”)

G..... IP rating (e.g. “65”)

H..... type of cable outlet (e.g. EC03)

I..... flange type (e.g. “A”)

J..... accessory (e.g. “00” for none)

Additionally, the encoders meet IP65/66/67/68 (1 hour / 1 meter) in accordance to EN 60529.

The enclosures comprise cylindrical flame-paths between the End Cap & Housing and End Cap & Cover. The rotating shaft also forms a cylindrical flame-path through the housing and is held in place with 2 precision roller element bearings. The enclosure is provided with either one or two threaded cable entries M25 x 1.5- 6H; Depth= 18 (±0.1) mm; 11 full threads, or with up to three threaded cable entries M20 x 1.5- 6H; Depth= 18 (±0.1) mm, or 1/2 and 3/4 inch NPT; ≥ 6 threads provided.

Both internal and external earthing is provided.



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### Variation 1

This variation introduces the following modifications:

- i. Increase of upper ambient temperature from +55°C to +70°C
- ii. Addition of IP68 rating
- iii. Change of sealing materials
- iv. Revised manufacturing tolerances associated with flamepaths

### Variation 2

This variation introduces the following modifications:

- i. To permit changes to the marked ATEX Notified Body number
- ii. Removal of specified property class for enclosure fasteners

## 12 Certificate history and evaluation reports

Issue	Date	Associated report	Notes
0	06/10/2016	R815A/00	Issue of prime certificate
1	10/02/2017	R1884A/00	Introduction of Variation 1
2	05/02/2018	R11450A/00	Introduction of Variation 2

Note: Drawings that describe the equipment or component are listed in the Annex.

## 13 Conditions of manufacture

The following conditions are required of the manufacturing process for compliance with the certification.

- 13.1 Where the product incorporates certified parts or safety critical components the manufacturer shall ensure that any changes to those parts or components do not affect the compliance of the certified product that is the subject of this certificate.

## 14 Special Conditions for Safe Use (Conditions of Certification)

The following conditions relate to safe installation and/or use of the equipment.

- 14.1 No modifications to be made to the flamepaths of the enclosure
- 14.2 No user replaceable items inside - including internal backup battery
- 14.3 Use only fasteners with a minimum yield stress of 450 MPa
- 14.4 Use only suitably certified Ex d/db and/or Ex tb cable glands
- 14.5 Use only suitably certified Ex d/db and/or Ex tb blanking elements
- 14.6 Use only suitably certified Ex d/db and/or Ex tb thread adapters
- 14.7 To minimise the risk from electrostatic discharge - clean only with a damp cloth
- 14.8 It is a condition of certification that the precautions must be taken to avoid dust from forming layers on the encoder.
- 14.9 Temperatures at the cable entry can reach 85°C. Selection of cable must be appropriate for the ambient temperature range in which the product is used.

## Certificate Annex



**Certificate Number** CML 15ATEX1142X  
**Equipment** Shaft and Hollow-Shaft Absolute Encoders SCA108EX,  
 SCH108BEX & SCH108FEX  
**Manufacturer** Scancon Encoders A/S

The following documents describe the equipment or component defined in this certificate:

### Issue 0

Drawing No	Sheets	Rev	Approved date	Title
90132914C1	1 of 1	1	06/10/2016	Certification drawing - SCH108Ex - General arrangement
90132914C2	1 of 1	1	06/10/2016	Certification drawing SCH108Ex – Enclosure
90132914C3	1 of 1	1	06/10/2016	Cert. drw. SCH108Ex – PCB details - earthing connection
90132914C5	1 to 2	3	06/10/2016	SCH108Ex – Flame paths, m&k calculation
00122838C	1 of 1	4	06/10/2016	Certification drawing - Housing SC108Ex Ex dwg
00132840C	1 of 1	4	06/10/2016	Certification drawing - Cap SC108Ex Ex dwg
00132994C1	1 of 1	3	06/10/2016	Certification drawing – Cover SC108Ex Ex dwg
00132841C	1 of 1	3	06/10/2016	Certification drawing – Cover variations SC108Ex Ex dwg
00132842C	1 of 1	2	06/10/2016	Certification drawing – shaft/H. shaft SC108EX EX dwg
07000110	1 of 1	2	06/10/2016	Rotary Seal Ø35/Ø42x4 FPM/PTFE
07000140	1 of 1	1	06/10/2016	Rotary Seal Ø48/Ø65x7 FPM
90133001	1 of 1	3	06/10/2016	SCH108BEX Ø31.75 Type 04 - EC03-AL Ex dwg
90230406	1 of 1	1	06/10/2016	SCH108BEX Ø31.75 Type 04 - EC05-AL Ex dwg
90132914	1 of 1	3	06/10/2016	SCH108BEX Ø31.75 Type 04 - EC03-SA Ex dwg
90133002	1 of 1	3	06/10/2016	SCH108FEX Ø31.75 Type 04 - EC03-AL Ex dwg
90133003	1 of 1	3	06/10/2016	SCA108EX Ø15x20 Type 01 - EC03 - AL
00142933	1 of 1	9	06/10/2016	SC108EX Marking Label 100x35 Ex-dwg
00240274	1 of 1	2	06/10/2016	Warning label Ex dwg
00142947	1 of 1	2	06/10/2016	Ordering code for SC108Ex

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**Equipment** Shaft and Hollow-Shaft Absolute Encoders SCA108EX,  
SCH108BEX & SCH108FEX  
**Manufacturer** Scancon Encoders A/S

### Issue 1

Drawing No	Sheets	Rev	Approved date	Title
90132914C1	1 of 1	2	10/02/2017	Certification drawing SC108Ex - general arrangement
90132914C3	1 of 1	2	10/02/2017	Cert.drw. SCH108Ex – PCB details - earthing connection
90132914C5	1 to 2	4	10/02/2017	SCH108Ex – Flame paths, m&k calculating
00132840C	1 of 1	5	10/02/2017	Certification drawing - Cap SC108Ex Ex dwg
00132994C1	1 of 1	5	10/02/2017	Certification drawing - Cover SC108Ex Ex dwg
90133001	1 of 1	4	10/02/2017	SCH108BEX Ø31.75 Type 04 - EC03- AL Ex dwg
90230406	1 of 1	2	10/02/2017	SCH108BEX Ø31.75 Type 04 - EC05- AL Ex dwg
90132914	1 of 1	4	10/02/2017	SCH108BEX Ø31.75 Type 04 - EC03- SA Ex dwg
90133002	1 of 1	4	10/02/2017	SCH108FEX Ø31.75 Type 04 - EC03- AL Ex dwg
90133003	1 of 1	4	10/02/2017	SCA108EX Ø15x20 Type 01 - EC03- AL Ex dwg
00142933	1 of 1	10	10/02/2017	SC108EX Marking Label 100x35 Ex-dwg
00142948A	1 to 4	1	10/02/2017	Control Document to Installation Guide

### Issue 2

The complete list of certified drawings is given in the table below,

Drawing No	Sheets	Rev	Approved date	Title
90132914C1	1 of 1	2	05/02/2018	Certification drawing - SCH108Ex - General arrangement
90132914C2	1 of 1	1	05/02/2018	Certification drawing SCH108Ex – Enclosure
90132914C3	1 of 1	2	05/02/2018	Cert. drw. SCH108Ex – PCB details - earthing connection
90132914C5	1 to 2	4	05/02/2018	SCH108Ex – Flame paths, m&k calculation
00122838C	1 of 1	4	05/02/2018	Certification drawing - Housing SC108Ex Ex dwg

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Drawing No	Sheets	Rev	Approved date	Title
00132840C	1 of 1	5	05/02/2018	Certification drawing - Cap SC108Ex Ex dwg
00132994C1	1 of 1	5	05/02/2018	Certification drawing – Cover SC108Ex Ex dwg
00132841C	1 of 1	3	05/02/2018	Certification drawing – Cover variations SC108Ex Ex dwg
00132842C	1 of 1	2	05/02/2018	Certification drawing – shaft/H. shaft SC108EX EX dwg
90133001	1 of 1	5	05/02/2018	SCH108BEX Ø31.75 Type 04 - EC03- AL Ex dwg
90230406	1 of 1	3	05/02/2018	SCH108BEX Ø31.75 Type 04 - EC05- AL Ex dwg
90132914	1 of 1	5	05/02/2018	SCH108BEX Ø31.75 Type 04 - EC03- SA Ex dwg
90133002	1 of 1	5	05/02/2018	SCH108FEX Ø31.75 Type 04 - EC03- AL Ex dwg
90133003	1 of 1	5	05/02/2018	SCA108EX Ø15x20 Type 01 - EC03- AL Ex dwg
00142933	1 of 1	11	05/02/2018	SC108EX Marking Label 100x35 Ex-dwg
00240274	1 of 1	2	05/02/2018	Warning label Ex dwg
00142947	1 of 1	3	05/02/2018	Ordering code for SC108Ex



## Certificate and File Transfer

This document confirms the transfer of the following referenced certificates and files.

**Receiving Notified Body:**

CML B.V.,  
Hoogoorddreef 15  
1101BA,  
Amsterdam,  
The Netherlands  
(Notified Body number 2776)

**(Original) Issuing Notified Body:**

Certification Management Limited (Eurofins E&E CML Limited)  
Newport Business Park,  
New Port Road,  
Ellesmere Port  
CH65 4LZ  
United Kingdom  
(Notified Body number 2503)

**Manufacturer:**

Scancon Encoders A/S  
Huginsvej 8  
3400 Hilleroed  
Denmark

**Certificates transferred**

CML 15ATEX1142X

The manufacturer may use this document as evidence of continuity of certification.

Where the certification documentation or markings require updating to reflect the transfer, for example, change to Notified Body number, this is permitted without submission of updated documentation to CML.

The manufacturer shall apply to CML for any other changes to the product design.

Signed

On behalf of  
CML B.V.

**D R Stubbings MIET**

Technical Director

Monday, 21 October 2019

On behalf of  
CML UK

**A C Smith**

Technical Operations Director

Monday, 21 October 2019

On behalf of  
Scancon Encoders A/S

**Eckhard Hahne**

Managing Director

Monday, 21 October 2019

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