

EU-TYPE EXAMINATION CERTIFICATE



[1]

[2]

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

[3]

EU-Type Examination Certificate Number: **DEMKO 17 ATEX 1854X Rev. 0**

[4]

Product: **Industrial Encoder**

[5]

Manufacturer: **BEI SENSORS**

[6]

Address: **9 rue de Copenhague, SCHILTIGHEIM, 67013 STRASBOURG France**

[7]

This product and any acceptable variation thereto are specified in the schedule to this certificate and the documents therein referred to.

[8]

UL International Demko A/S, notified body number 0539 in accordance with Article 17 of the Council Directive 2014/34/EU of 26 February 2014, certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.
The examination and test results are recorded in confidential report no. **4787178785**

[9]

Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012+A11:2013

EN 60079-11:2012

[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 the certificate.

[12] The marking of the product shall include the following:

 **II 1 G Ex ia IIC T4 Ga**

Certification Manager

Jan-Erik Storgaard

This is to certify that the sample(s) of the Product described herein ("Certified Product") has been investigated and found in compliance with the Standard(s) indicated on this Certificate, in accordance with the ATEX Product Certification Program Requirements. This certificate and test results obtained apply only to the product sample(s) submitted by the Manufacturer. UL did not select the sample(s) or determine whether the sample(s) provided were representative of other manufactured product. UL has not established Follow-Up Service or other surveillance of the product. The Manufacturer is solely and fully responsible for conformity of all product to all applicable Standards, specifications, requirements or Directives. The test results may not be used, in whole or in part, in any other document without UL's prior written approval.

Date of issue: 2017-06-28

Notified Body

UL International Demko A/S, Borupvang 5A, 2750 Ballerup, Denmark
Tel. +45 44 85 65 65, info.dk@ul.com, www.ul.com



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Schedule

[14]

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Description of Product

The Models HH_9 and HH_B are intrinsically safe Industrial Digital Encoders, otherwise referred to as shaft position transmitters. The products are provided with a metallic enclosure incorporating electrical components providing data for remote shaft position indication. The encoder is to be powered by an associated apparatus.

Nomenclature: LP35 Intrinsic safety model option

HHA9 S E6 // E4 // 2G2 // V/US // VI // GMR // 020 // U6 ** **
I II III IV V VI VII VIII IX X XI XII

I - Type:

HHU9 – Hollow shaft
HHK9 – Blind shaft
HHA9 – Hollow shaft with integrated coupling
HHM9 – Solid shaft
HHUB – Hollow shaft, enclosed terminal block
HHKB – Blind shaft, enclosed terminal block
HHAB – Hollow shaft with integrated coupling, enclosed terminal block
HHMB – Solid shaft, enclosed terminal block

II - Special configuration

S – Special configuration

III - Shaft bore:

E3 – 3/8"
E4 – 1/2"
E5 – 5/8"
E6 – 3/4"
E8 – 1"
12 – 12 mm
14 – 14 mm
20 – 20 mm
30 – 30 mm

IV - Certification option

E4 – UL/ATEX/IECEX markings
E6 – ATEX/IECEX markings

V - Voltage/Output:

2G2 – 5V voltage and RS422 output

VI - Channels:

9 – AA/BB/ZZ/ with B before A, Z-gated A&B Hi
V/US – AA/BB/ZZ with B before A, Z-gated B Low
One to four digits – for other quadrature variations

VII - Cycles per turn:

Incremental – up to 10000 standard; 10000+ available

VIII - Output termination:

G3R – PVC jacket/26AWG/EU color code 8-wire twisted pair
GCR – PUR jacket/26AWG/EU color code 8-wire twisted pair
GPR – PUR jacket/26AWG/EU color code 6-wire twisted pair
E1R – PVC jacket/26AWG/USA color code 8-wire twisted pair
GMR – M12X1, 8-pin connector
GX – Terminal box with cable gland

IX - Cable length:

Any three digit number not exceeding "150"
Blank – No cable

X - Bore option:

U3 – With insulated sleeve
U4 – With metal sleeve
U5 – Blind sleeve
U6 – Through sleeve
** – No sleeve

XI - Tether option

B1 – tether arm (HHU9 option)
B2 – Tether fork (HHUB option)
** – No tether included

XII - Customer spec code

Blank or ** - no spec. code
Two digits - customer specific configuration

Schedule

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[14]

Temperature range

The ambient temperature range is -40 °C to +85 °C with a T4 temperature classification.

Electrical data

Intrinsically safe specifications/Entity Parameters:

See Control Drawing/Installation Instructions Document No. 2000/011

Encoder (without cable):

U_i: 9.5 Vdc
I_i: 367 mA
P_i: 870 mW
L_i: 0 mH
C_i: 1.1 uF

Encoder (with 15 meters of cable):

U_i: 9.5Vdc
I_i: 367mA
P_i: 870mW
L_i + L_{cable}: 0.120mH
C_i + C_{cable}: 1.124uF

Routine tests

Routine tests are not required

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Descriptive Documents

The scheduled drawings are listed in the report no. provided under item no. [8] on page 1 of this EU-Type Examination Certificate.

[17]

Specific conditions of use:

- The enclosures for these encoders may contain aluminum or aluminum alloy. Care must be taken to avoid the risk of ignition due to impact of friction.
- To prevent excessive heating caused by friction of shaft seals and bearings beyond the Temperature Code limits, these encoders shall be operated within the following constraints: Estimated Bearing Life = 18 Billion Revs (Cont. Max. Speed @ ½ Max. Load)

[18]

Essential Health and Safety Requirements

The Essential Health and Safety Requirements (EHSRs) covered by the standards listed at item 9.

Additional information

The manufacturer shall inform the notified body concerning all modifications to the technical documentation as described in Annex III to Directive 2014/34/EU of the European Parliament and the Council of 26 February 2014.

Accredited by DANAK under registration number 7011 to certification of products.