

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 SIR 11.0048X

issue No.:3

Certificate history:

Status:

Current

Issue No. 3 (2017-3-1) Issue No. 2 (2016-1-6) Issue No. 1 (2015-12-23)

Issue No. 0 (2011-7-20)

Date of Issue:

2017-03-01

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Applicant:

Balluf Inc.

8125 Holton Drive

Florence

KY 41042

United States of America

Equipment:

Range of Linear Position Transducers BTL5 and BTL7

Optional accessory:

Type of Protection:

Flameproof & Dust

Marking:

BTL5

Ex d IIC T6 Ga/Gb

Ex t IIIC T85°C Da IP68 Tamb -50°C to +65°C

Ex d IIC T6 Ga/Gb

Tamb -50°C to +70°C

Ex d IIC T5 Ga/Gb

Ex t IIIC T100°C Da IP68

Tamb -50°C to +80°C

Ex t IIIC T85°C Da IP68

Ex d IIC T5 Ga/Gb

Ex t IIIC T100°C Da IP68

Tamb -50°C to +80°C

Approved for issue on behalf of the IECEx

Certification Body:

N Jones

Position:

Signature: (for printed version)

Date:

Certification Manager

03-01

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.

Certificate issued by:

SIRA Certification Service CSA Group Unit 6, Hawarden Industrial Park Hawarden, Deeside, CH5 3US **United Kingdom**







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Manufacturer:

Balluff Inc. (Identified by US on the label)

8125 Holton Drive

Florence KY 41042

United States of America

Additional Manufacturing location(s):

Balluff Elektronika Kft (Identified by HU on the label)

Papai ut 55 Veszrem, 8200 Hungary

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 electrical 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: 2011

Explosive atmospheres - Part 0: General requirements

Edition: 6.0

IEC 60079-1: 2014-06

Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"

Edition: 7.0

IEC 60079-26 : 2014-

Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga

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Edition: 3.0

IEC 60079-31: 2013

Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

Edition: 2

This Certificate **does not** indicate compliance with 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/SIR/ExTR11,0168/00

GB/SIR/ExTR15.0348/00

GB/SIR/ExTR17.0029/00

Quality Assessment Report:

DE/PTB/QAR07.0009/04

GB/SIR/QAR11.0009/00



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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The BTL Series Linear Position Transducers are used for linear position measurement feedback applications. The output signal may be a digital pulse output, an analogue voltage or current output that corresponds to measured position. The Linear Position Transducers consist of stainless steel pressure housing and threaded screw on cover, with internal electrical devices rated for voltages 24 Vdc ±20% or in the range 10 Vdc to 30 Vdc, 3 W max for the BTL5 and 10 Vdc to 30 Vdc, 5 W max for the BTL7.

SPECIFIC CONDITIONS OF USE: YES as shown below:

When installed across a Zone 0 and Zone 1 boundary, the user/installer shall make sure that the equipment is installed in such a manner to ensure that the joint across the boundary is sufficiently tight in accordance with clause 4.6 of EN 60079-26.



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

Issue 1 - this Issue introduced the following changes:

The introduction of a new model, the Series BTL7, the certification code applicable to this model is:

Ex d IIC T6 Ga/Gb

Ex d IIC T5 Ga/Gb

Ex t IIIC T85 Da IP68

Ex t IIIC T100 Da IP68

Tamb -50°C to +70°C

Tamb -50°C to +80°C

The description was amended to recognise the BTL7 and to revise the model coding.

 Alternative cover materials were allowed to be used: Nitronic 60, SS316L, European equivalents 1,4404, 1,4571, and 14305.

3. The lower ambient temperature limit of the Series BTL5 was reduced from -20°C to -50°C.

 The cover o-ring was replaced; the new version is made from the same base material as the original, but can be used at lower temperatures.

Following appropriate assessment to demonstrate compliance with the latest technical knowledge, IEC 60079-0:2007 Ed 5, IEC 60079-1:2007 Ed 6, IEC 60079-31:2008 Ed 1 and IEC 60079-26:2006 Ed 2 were replaced by IEC 60079-0:2011 Ed 6, IEC 60079-1:2014 Ed 7, IEC 60079-31:2013 Ed 2 and IEC 60079-26:2014 Ed 3.

Two, alternative manufacturing sites were recognised.

Issue 2 - this Issue introduced the following changes:

The Annexe that should have appeared on Issue 1 was included.

Issue 3 - this Issue introduced the following changes:

 The recognition of minor drawing modifications; updated the locking screw, dimensional changes, introduction of tolerances and the updating of the approvals block; these amendments are administrative or involve changes to the design that do not affect the aspects of the product that are relevant to explosion safety.

2. The removal of Balluff GmbH Neuhausen Germany from the list of additional manufacturing locations.

BTLx-aci-Mm-J-DEXC- * - ** -no

BTLx-bcd-Mm-J-DEXC- * - **

BTLx-Sch-Mm-J-DEXC- * - **

BTLx-Tci0-Mm-J-DEXC- * - **

BTLx-Hcki-Mm-J-DEXC- * - **

BTL7-Vcgr-Mm-J-DEXC- * - **

BTLx-Qcefg-Mm-J-DEXC- * - **



The model code breakdown for the BTL series Linear Position Transducers is as follows:

Key

Q = Quadrature output

S = SSI output

T = Profibus DP outputH = CANopen outputV = EtherCAT output

x = 5 or 7

a = Digital pulse output: I, K, L, M, N, P or R.

b = Analog output: A, B, C, E or G.

c = Supply voltage: 1 or 5.

d = Analog output signal characteristic: 0, 1 or 7 for BTL5 or 00, 01, 02, 03, 04, 05, 06, 07, 10, 11, 70 for BTL7

e = Quadrature output signal frequency: 0, 1, 2 or 6.

f = Quadrature output resolution: 0, 1, 2, 3, 5, 6, 7 or 8.

g = Quadrature output mode/update rate: 0, 1, 2 or 4.

h = SSI output signal type, resolution and mode: Any alpha/numeric code (up to 3 digits) not effecting the Flameproof protection method)

i = BTL7 P/M Interface without DPI/IP interface: 10. BTL7 P/M Interface with DPI/IP interface: 11. Blank for BTL5.

j = Profibus output software configuration: 1, 2 or 3.

k = CANbus output software configuration: 1, 2 or 3.

CANbus output baud rate: 0, 1, 2, 3, 4, 5, 6, 7 or 8.

m = Stroke length in millimeters (Maximums: BTL5 = 5080 & BTL7 = 7620)

n = Interrogation method (if a = "R", otherwise blank): E or I.

• Recirculation count (if a = "R", otherwise blank): 1 to 16.

q = Number of magnets or address setting (Any alpha/numeric code not effecting the Flameproof protection method)

r = Protocol type (Any alpha/numeric code not effecting the Flameproof protection method)

* = S or M = Special electrical or internal mechanical modifications not affecting scheduled drawings or the Flame-proof Protection methods and not exceeding 3W for the BTL5 and 5W for the BTL7, followed by a 4 alpha/numeric combination (may also be left blank)

** = Entry code: TA12 = one modified ½"-14NPT entry and Kp = Certified cable gland with Pre-wired profibus cable length (two digit code represented in meters): 00 to 50

Note:

The IP68 rating includes a submersion rating of 167 ft (51 m) for 48 hours (TA model codes). The IP68 rating includes a submersion rating of 167 ft (51 m) for 30 minutes (Kp model codes).

Condition of Manufacture

The Manufacturer shall comply with the following:

i. Each enclosure shall be subjected to a routine overpressure test required to 89.63 Bar (1300psi) in accordance with clause 16 of EN60079-1:2014. The pressure shall be maintained for at least 10s and the enclosure shall show no signs of permanent deformation or damage.

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Form 9530 Issue 1

Date:

01 March 2017

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