



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

Status: **Current**

Date of Issue: **2017-03-01** Page 1 of 4

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
BTL7
Ex d IIC T6 Ga/Gb
Ex t IIIC T85°C Da IP68
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 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:

11 *EAG*
Certification Manager

Signature:
(for printed version)

Date:

2017-03-01

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](http://www.iecex.com).

Certificate issued by:

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

sira
CERTIFICATION





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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 út 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 Edition: 6.0	Explosive atmospheres - Part 0: General requirements
IEC 60079-1 : 2014-06 Edition: 7.0	Explosive atmospheres - Part 1: Equipment protection by flameproof enclosures "d"
IEC 60079-26 : 2014-10 Edition: 3.0	Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
IEC 60079-31 : 2013 Edition: 2	Explosive atmospheres - Part 31: Equipment dust ignition protection by enclosure "t"

*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 $\pm 20\%$ 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:

- 1 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.



Annex: IECEx SIR 11.0048X Iss 3 Annexe.pdf

Annexe to: IECEx SIR 11.0048X Issue 3

Applicant: Balluff Inc

Apparatus: Range of Linear Position Transducer



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

Key

- Q** = Quadrature output
- S** = SSI output
- T** = Profibus DP output
- H** = CANopen output
- V** = 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.
- l** = 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.
- o** = 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

BTLx-**aci**-Mm-J-DEXC- * - ** -no
 BTLx-**bcd**-Mm-J-DEXC- * - **
 BTLx-**Qcefg**-Mm-J-DEXC- * - **
 BTLx-**Sch**-Mm-J-DEXC- * - **
 BTLx-**Tcj0**-Mm-J-DEXC- * - **
 BTLx-**Hckl**-Mm-J-DEXC- * - **
 BTL7-Vcqr-Mm-J-DEXC- * - **

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.

Date: 01 March 2017

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Sira Certification Service

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