



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 SIR 11.0048X**

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Certificate history:

Status: **Current**

Issue No: 5

Issue 4 (2019-10-17)

Issue 3 (2017-03-01)

Issue 2 (2016-01-06)

Issue 1 (2015-12-23)

Issue 0 (2011-07-20)

Date of Issue: 2023-03-09

Applicant: **Balluff Inc.**
8125 Holton Drive
Florence KY 41042
USA
United States of America

Equipment: **Range of Linear Position Transducers BTL5 and BTL7**

Optional accessory:

Type of Protection: **Flameproof & Dust**

Marking: **BTL5**

Ex db IIC T6 Ga/Gb

Ex db IIC T5 Ga/Gb

Ex ta IIIC T85°C Da IP68

Ex ta IIIC T100°C Da IP68

Tamb -50°C to +65°C

Tamb -50°C to +80°C

BTL7

Ex db IIC T6 Ga/Gb

Ex db IIC T5 Ga/Gb

Ex ta IIIC T85°C Da IP68

Ex ta IIIC T100°C Da IP68

Tamb -50°C to +70°C

Tamb -50°C to +80°C

Approved for issue on behalf of the IECEx
Certification Body:

Michelle Halliwell

Position:

Director Operations, UK & Industrial Europe

Signature:
(for printed version)

Date:
(for printed version)

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:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom





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Date of issue: 2023-03-09

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Manufacturer: **Balluff Inc. (Identified by US on the label)**
8125 Holton Drive
Florence
KY 41042
United States of America

Manufacturing locations: **Balluff Inc. (Identified by US on the label)** **Balluff-Elektronika KFT**
8125 Holton Drive Pápai út 55
Florence 8200 Veszprém
KY 41042 **Hungary**
United States of America

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 60079-26:2014-10](#) Explosive atmospheres – Part 26: Equipment with Equipment Protection Level (EPL) Ga
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 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/SIR/ExTR11.0168/00](#)
[GB/SIR/ExTR19.0259/00](#)

[GB/SIR/ExTR15.0348/00](#)
[GB/SIR/ExTR23.0057/00](#)

[GB/SIR/ExTR17.0029/00](#)

Quality Assessment Reports:

[DE/PTB/QAR07.0009/10](#)

[GB/SIR/QAR11.0009/09](#)



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Date of issue: 2023-03-09

Issue No: 5

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.

Refer to Annex for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

Refer to the Annex.



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Date of issue: 2023-03-09

Issue No: 5

DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)

This issue, Issue 5, recognises the following change: refer to the certificate annex to view a comprehensive history:

1. Update to certification with reformatted drawings. 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 except for the new o-ring.
2. Addition of new cover to base o-ring.
3. Update standard IEC 60079-0:2011 to IEC 60079-0:2017.

Annex:

[IECEX SIR 11.0048X Iss 5 Annexe_1.pdf](#)



Equipment:

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.

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).

Specific Conditions of Use:

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 4.3 of IEC 60079-26.

Annexe to: IECEx SIR 11.0048X Issue 5
Applicant: Balluff Inc
Apparatus: Range of Linear Position Transducer



Conditions of Manufacture

The Manufacturer shall comply with the following:

1. Each enclosure shall be subjected to a routine overpressure test required to 89.63 Bar (1300psi) in accordance with clause 16 of IEC 60079-1:2007. The pressure shall be maintained for at least 10s and the enclosure shall show no signs of permanent deformation or damage.

Full Certificate change history

Issue 1 – this Issue introduced the following changes:

1. 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 BTLT and to revise the model coding.
2. The 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 BTL7 was reduced from -20°C to -50°C.
4. 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
5. 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 Ed2 and IEC 60079-26:2014 Ed 3.
6. Two, alternative manufacturing sites were recognised.

Issue 2 – this Issue introduced the following change:

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

Issue 3 – this Issue introduced the following changes:

1. 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.

Issue 4 – this Issue introduced the following change:

1. 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.

Issue 5 – this Issue introduced the following changes:

1. Update to certification with reformatted drawings. 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 except for the new o-ring.
2. Addition of new cover to base o-ring.
3. Update standard IEC 60079-0:2011 to IEC 60079-0:2017.