



## EC TYPE-EXAMINATION CERTIFICATE

Equipment intended for use in Potentially Explosive Atmospheres Directive 94/9/EC

Certificate Number: **Sira 11ATEX1104X** Issue: **1**

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

Applicant: **Balluff Inc.**

Address: 8125 Holton Drive  
Florence  
KY 41042  
USA

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

Sira Certification Service, notified body number 0518 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, 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 14.2.

Compliance with the Essential Health and Safety Requirements, with the exception of those listed in the schedule to this certificate, has been assured by compliance with the following documents:

EN 60079-0:2009      EN 60079-1:2007      EN 60079-31:2009      EN60079-26:2007

If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to special conditions for safe use specified in the schedule to this certificate.

This EC type-examination certificate relates only to the design and construction of the specified equipment. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment.

The marking of the equipment shall include the following:

### BTL5



II 1/2GD  
Ex d IIC T6 Ga/Gb  
Ex t IIIC T85°C Da IP68  
T<sub>amb</sub> -50°C to +65°C



II 1/2GD  
Ex d IIC T5 Ga/Gb  
Ex t IIIC T100°C Da IP68  
T<sub>amb</sub> -50°C to +80°C

### BTL7



II 1/2GD  
Ex d IIC T6 Ga/Gb  
Ex t IIIC T85°C Da IP68  
T<sub>amb</sub> -50°C to +70°C



II 1/2GD  
Ex d IIC T5 Ga/Gb  
Ex t IIIC T100°C Da IP68  
T<sub>amb</sub> -50°C to +80°C

Project Number 70025516

C Ellaby  
Deputy Certification Manager

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## Sira Certification Service

Unit 6, Hawarden Industrial Park,  
Hawarden, CH5 3US, United Kingdom



## SCHEDULE

### EC TYPE-EXAMINATION CERTIFICATE

Sira 11ATEX1104X

Issue 1

#### 13 DESCRIPTION OF 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  $\pm 20\%$  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. 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 1/2"-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).

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## SCHEDULE

### EC TYPE-EXAMINATION CERTIFICATE

**Sira 11ATEX1104X**

**Issue 1**

**Variation 1** - This variation introduced the following changes:

- i. The introduction of a new model, the Series BTL7, the certification code applicable to this model is:  
Ex d IIC T6 Ga/Gb or 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.
- ii. Alternative cover materials were allowed to be used: Nitronic 60, SS316L, European equivalents 1.4404, 1.4571, and 14305
- iii. The lower ambient temperature limit of the Series BTL5 was reduced from -20°C to -50°C.
- iv. 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.
- v. Following appropriate assessment to demonstrate compliance with the latest technical knowledge, EN 60079-0:2009, EN 60079-1:2007, EN 60079-31:2009 and EN 60079-26:2007 were replaced by EN 60079-0:2012, EN 60079-1:2014, EN 60079-31:2014 and EN 60079-26:2015.

#### 14 DESCRIPTIVE DOCUMENTS

##### 14.1 Drawings

Refer to Certificate Annexe.

##### 14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	20 July 11	R2388A/00	The release of the prime certificate.
1	23 December 2015	R70025516A	The introduction of Variation 1.

#### 15 SPECIAL CONDITIONS FOR SAFE USE (denoted by X after the certificate number)

- 15.1 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.

#### 16 ESSENTIAL HEALTH AND SAFETY REQUIREMENTS OF ANNEX II (EHSRs)

The relevant EHSRs that are not addressed by the standards listed in this certificate have been identified and individually assessed in the reports listed in Section 14.2.

#### 17 CONDITIONS OF CERTIFICATION

- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 Each enclosure shall be subjected to a routine overpressure test required to 89.63 Bar (1300psi) in accordance with clause 16 of EN60079-1:2007. 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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# Certificate Annexe



**Certificate Number:** Sira 11ATEX1104X

**Equipment:** Range of Linear Position Transducers

**Applicant:** Balluff Inc.

## Issue 0

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
833107	1 of 1	3	06 Jun 11	COVER, ANALOG/DIGITAL EXPLOSION PROOF BTL
833124	1 of 1	2	06 Jun 11	FLANSCH BTL5-J-TA12 EXPLOSION PROOF BTL
833145	1 of 1	3	06 Jun 11	DECKEL BTL5-J-DECX-TA BUS COVER, PROFIBUS
833146	1 of 1	1	06 Jun 11	GROUND CLAMP, ANGLED EXPLOSION PROOF BTL
833147	1 of 1	1	06 Jun 11	GROUND CLAMP, FLAT EXPLOSION PROOF BTL
833149	1 of 1	1	06 Jun 11	BTL5 LINEAR POSITION TRANSDUCER TYPE BTL-J-DEXC-TA12
834394	1 of 1	1	06 Jun 11	HOUSING BTL5-J-TA12 WELDING DWG EXPLOSION PROOF BTL
834611	1 of 2	3	27 Jun 11	NAMEPLATE BTL5-J-TA12 EXPLOSION PROOF BTL
834611	2 of 2	3	06 Jun 11	NAMEPLATE BTL5-J-TA12 EXPLOSION PROOF BTL
834640	1 of 1	1	06 Jun 11	O-RING, 56.87 X 1.78 EXPLOSION PROOF BTL
835679	1 of 1	1	06 Jun 11	TS, SCREW, M4 X 10, DIN 912, A2 EXPLOSION PROOF BTL
838251	1 of 1	1	06 Jun 11	BTL5 LINEAR POSITION TRANSDUCER CANBUS/PROFIBUS
839145	1 of 1	1	06 Jun 11	WI, LOCKING SCREW BTL-5 DECX EXPLOSION PROOF BTL
839146	1 of 1	1	06 Jun 11	CAP, LOCKING SCREW EXPLOSION PROOF BTL
839532	1 of 1	1	06 Jun 11	SCREW, M6 X 25, DIN 912, A2 EXPLOSION PROOF BTL
861571	1 of 1	1	06 Jun 11	Li18C11Y_3GO,75+Li18Y(1x2x0,64AWG24/19)
861590	1 of 1	1	06 Jun 11	Cable Gland
863888	1 of 2	1	27 Jun 11	Name plate BTL5-J-KXX
863888	2 of 2	1	27 Jun 11	Name plate BTL5-J-KXX
863947	-	-	27 Jun 11	User Manual Addendum BLT5-T1_0-M_-J-DEXC-K_
863680	-	-	27 Jun 11	User guide BTL5_-M_-J-DEXC-TA12
T01408	1 of 1	9	06 Jun 11	BTL-Z/5-WAVEGUIDE-TUBE-EXP EXPLOSION PROOF BTL
T01565	1 of 1	5	06 Jun 11	BTL-Z/5-END-PLUG-EXP-PROOF EXPLOSION PROOF BTL

## Issue 1

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
922614	1 of 1	0	21 Dec 15	DECKEL BTL-J-DECX-TA Bus 'AO' (Tall Cover)
922681	1 of 1	0	21 Dec 15	FLANSCH BTL-J-TA12 'AO' (Enclosure)
922613	1 of 1	0	21 Dec 15	DECKEL BTL-J-DECX-TA ANA/DIG 'AO' (Short Cover)
833146	1 of 1	2	21 Dec 15	HALTEBUEGEL BTL-J-DEX-TA 'AO'
922594	1 of 1	0	21 Dec 15	HALTEPLATTE BTL J-DEX-TA 'AO'
922742	1 to 2	0	21 Dec 15	NAMEPLATE BTL-J-TA12 'AO'
922550	1 of 1	0	21 Dec 15	O-Ring, 56.87 X 1.78 FKM/FPM 72 BK 'AO'
922601	1 of 1	0	21 Dec 15	ZYLISHR M4x10-A4-70 AEHNL. DIN912 'AO'
838251	1 of 1	2	21 Dec 15	ASSY DWG BTL-J-DEXC-TA12-BUS 'AO'
922528	1 of 1	0	21 Dec 15	SCREW, M6 X 20, MOD 'AO'
899015	1 of 1	0	21 Dec 15	BTL WAVEGUIDE-TUBE-EXP 'AO'
899014	1 of 1	0	21 Dec 15	BTL END-PLUG-EXP-PROOF 'AO'
833149	1 of 1	2	21 Dec 15	ASSY DWG BTL-J-DEXC-TA12-ANA/DIG 'AO'
834394	1 of 1	2	21 Dec 15	Housing BTL-J-TA12 welding dwg 'AO'
863888	1 to 2	3	21 Dec 15	NAMEPLATE BTL-J-KP 'AO'

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