



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 00ATEX1037X** Issue: **14**

4 Equipment: **BX Series Limit Switches**

5 Applicant: **Honeywell International**

6 Address: **11 West Spring Street
Freeport
Illinois 61032
USA**

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

8 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.

9 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 60079-0:2012

EN 60079-1:2007

IEC 60079-31:2013 Ed 2

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

10 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.

11 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.

12 The marking of the equipment shall include the following:



II 2 GD

Ex d IIC T6 Gb

Ex tb IIIC T85°C Db

Ta -#°C to +70°C ('#' -12°C or -40°C dependant upon seal material)

Project Number 70004704

C Ellaby
Deputy Certification Manager

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13 DESCRIPTION OF EQUIPMENT

The equipment is fitted with various limit and cable pull switches with varying methods of operation resulting in the depression of one of various plunger options of the equipment. Being covered with either a fluorocarbon or fluorosilicone seal. The plunger in turn actuates a micro-switch within the enclosure body. The enclosure body of the equipment is rectangular shape with a circular section in the middle. The circular section is fitted with a threaded cover, which is locked in place by a metal strap retained by an M4 star socket headed screw. The base of the enclosure provides one of various threaded cable entry point types for use with a suitably certified cable gland. Each model in the series has its own BX unique type reference e.g. BX3AC1A1 - 1AB.

Product code nomenclature: *abcdef – gh*

a Series type	BX
b Conduit size code	None - ½" - 14 NPT or ¾" - 14 NPT 3 - PG 13.5 4 - 20 mm 5 - PF ½"
c Head code	A - Side rotary, momentary B - Top rotary, momentary C - Top plunger, plain D - Top plunger, roller# E - Side plunger, momentary, plain F - Side plunger, momentary, roller G - Top plunger, without over-travel mechanism H - Side rotary, momentary, low pre-travel, low torque J - Wobble stick K - Cat whisker L - Side rotary, momentary, sequential M - Side rotary, momentary, centre neutral N - Side rotary, maintained P - Side rotary, momentary, low pre-travel, low differential travel R - Side rotary, momentary, low torque V - Top plunger, adjustable W - Side plunger, adjustable
d Seal code	None - Fluorosilicone sealed head C - Fluorocarbon sealed head
e Body & basic switch code	1A - Slow acting, 3NC – 1NO 1E - Slow acting, 3NC – 1NO, gold plated contacts 3E - 1NC – 1NO, gold plated contacts 3K - 1NC – 1NO 3N - 1NC – Direct acting 4K - 1NC – 1NO, ¾" - 14 Conduit (does not apply to conduit codes 3, 4 & 5) 4L - 2NC – 2NO 4M - 2NC – 2NO, Sequential 4N - 2NC – NO, Centre neutral 4S - 2NC – 2NO, Gold plated contacts

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Sira Certification Service

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	4T	-	2NC – 2NO, Sequential, gold plated contacts
	4U	-	2NC – 2NO, Centre neutral, gold plated contacts
	7L	-	2NC – 2NO, 1/2" - 14 Conduit (does not apply to conduit codes 3, 4 & 5)
	7N	-	2NC – 2NO, Centre neutral, 1/2" - 14 conduit (does not apply to conduit codes 3, 4 & 5)
	7S	-	2NC – 2NO, Gold plated contacts, 1/2" - 14 conduit (does not apply to conduit codes 3, 4 & 5)
	7T	-	2NC – 2NO, Sequential, gold plated contacts, 1/2" - 14 conduit (does not apply to conduit codes 3, 4 & 5)
	7U	-	2NC – 2NO, Centre neutral, gold plated contacts, 1/2" - 14 conduit
f	Modification code		
	(optional)		
	1	-	CW rotation
	2	-	CCW rotation
	3	-	Head assembled with actuator to right side
	4	-	Head assembled with actuator to left side
	5	-	Head assembled with actuator towards mounting surface
	6	-	Roller perpendicular to mounting surface
	8	-	Roller on side plunger in vertical position
g	Actuator code		
	(optional)		
	1	-	Fixed rollerless, 1.500" radius
	1A	-	Fixed 3/4" x 1/4" nylon roller, 1.500" radius
	1C	-	Fixed 3/4" x 1/4" nylon roller, 1.500" radius (roller position reversed)
	2	-	Adjustable rollerless
	2A	-	Adjustable 3/4" x 1/4" nylon roller
	2C	-	Adjustable 3/4" x 1/4" nylon roller (roller position reversed)
	2J	-	Adjustable 1" x 1/2" nylon roller
	2K	-	Adjustable 1 1/2" x 1/4" nylon roller
	3E	-	Yoke 3/4" x 1/4" nylon roller
	3M	-	Yoke 3/4" x 1/4" nylon roller (roller position reversed)
	3S	-	Yoke 3/4" x 1/4" nylon roller (rollers on same side)
	4	-	Hub only
	4M	-	Hub, aluminium rod
	5	-	Offset, rollerless
	5A	-	Offset, 3/4" x 1/4" nylon roller
	5C	-	Offset, 3/4" x 1/4" nylon roller (roller position reversed)
	7A	-	Plastic wobble stick
	8A	-	Whisker, 5 1/2" long
	9A	-	Fixed 3/4" x 1/2" nylon roller, 1.33" radius
	9C	-	Fixed 3/4" x 1/2" nylon roller, 1.33" radius (roller position reversed)
h	Bulk pack code		
	(optional)		
	B	-	Indicates bulk packaging of 25 units

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a	Series type	BX2
b	Conduit size code	None - 1/2" - 14 NPT or 3/4" - 14 NPT 4 - 20 mm
c	Head code	A - Side rotary, momentary B - Top rotary, momentary C - Top plunger, plain D - Top plunger, roller E - Side plunger, momentary, plain F - Side plunger, momentary, roller G - Top plunger, without over-travel mechanism H - Side rotary, momentary, low pre-travel, low torque L - Side rotary, sequential M - Side rotary, centre neutral N - Side rotary, maintained P - Side rotary, momentary, low pre-travel, low differential travel R - Side rotary, momentary, low torque
d	Body & basic switch code	3E - High fidelity 3K - 1NC – 1NO 3N - 1NC – Direct acting 4K - 1NC – 1NO 4L - 2NC – 2NO 4M - 2NC – 2NO, Sequential 4N - 2NC – NO, Centre neutral 4S - 2NC – 2NO, High fidelity contacts 4T - 2NC – 2NO, Sequential, high fidelity contacts 4U - 2NC – 2NO, Centre neutral, high fidelity contacts 7L - 2NC – 2NO 7N - 2NC – 2NO, Centre neutral 7S - 2NC – 2NO, High fidelity 7T - 2NC – 2NO, Sequential, high fidelity contacts 7U - 2NC – 2NO, Centre neutral, high fidelity contacts
f	Modification code	1 - CW rotation 2 - CCW rotation 3 - Head assembled with actuator to right side 4 - Head assembled with actuator to left side 5 - Head assembled with actuator towards mounting surface 6 - Roller perpendicular to mounting surface 8 - Roller on side plunger in vertical position
g	Actuator code	1A - Fixed 3/4" x 1/4" nylon roller, 1.5" radius 1C - Fixed 3/4" x 1/4" nylon roller, 1.5" radius 2A - Adjustable 3/4" x 1/4" nylon roller 2C - Adjustable 3/4" x 1/4" nylon roller 1E - Fixed 3/4" x 1/2" bronze roller 2E - Adjustable 3/4" x 1/4" bronze roller 1F - Fixed 3/4" x 1/4" nylon roller 2F - Adjustable 3/4" x 1/4" bronze roller
h	Bulk pack code (optional)	B - Indicates bulk packaging of 25 units

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Variation 1 (Dated 5 September 2003) - This variation introduced the following changes:

- i. The introduction of alternative plunger options.
- ii. The introduction of an updated general arrangement drawing.
- iii. The introduction of fluorocarbon as a seal material, identified using the letter C in the product coding.
- iv. The introduction of the following ambient temperature ranges:
Fluorosilicone sealed head, Ta -40°C to +70°C
Fluorocarbon sealed head, Ta -12°C to +70°C

Variation 2 (Dated 5 September 2003) - This variation introduced the following change:

- i. The introduction of a red painted housing component part to be used within the assembly of the BX Limit Switch, type designation BX4G1A.

Variation 1 (Dated 15 November 2006) - This variation introduced the following change:

- i. The recognition of minor, administrative drawing modifications.

Variation 2 (Dated 4 June 2008) - This variation introduced the following changes:

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 and EN 61241 series of standards, the documents originally listed in section 9, EN 50014:1997, EN 50018:1994 and EN 50281-1-1:1998, were replaced, the markings in section 12 were updated accordingly and the drawings were rationalised, the description was also changed in line with the IECEx certification.
- ii. The Applicant's name and address was changed from Honeywell Control Systems Ltd, 11309 Chetlain Lane, Galena, IL 61036-0327, USA.

Variation 3 (Dated 10 September 2009) - This variation introduced the following change:

- i. The recognition of minor drawing modifications; these changes affect the machining detail only.

Variation 4 (Dated 26 January 2010) - This variation introduced the following changes:

- i. The introduction of the BX2 Series of limit switches, that incorporate the following modifications.
 - The use of an alternative plunger, actuator.
 - Minor machining detail changes.

Variation 5 (Dated 09 June 2010) - This variation introduced the following changes:

- i. The introduction of minor drawing changes.

Variation 6 - This variation introduced the following changes:

- i. The recognition of minor administrative drawing changes.
- ii. The dimensions of the drive screw diameter were changed, consequently, the Special Condition For Safe Use, clause 15.2, was amended.

Variation 7 - This variation introduced the following change:

- i. The minimum wall thickness on one face of the enclosure was reduced from 4.14 mm (0.163 inches) to 3.18 mm (0.125 inches).



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Variation 8 - This variation introduced the following change:

- i. The SS clamp and Torx head screw, used to prevent equipment cover rotation, was replaced with a VE clamp and M4 x 0.7, 18-8 Stainless Steel Flat Head Phillips Machine Screw.

Variation 9 - This variation introduced the following change:

- i. Following appropriate assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents previously listed, EN 60079-0:2006, EN 61241-0:2006 and EN 61241-1:2004, were replaced by those EN 60079-0:2012, EN 60079-1:2007 and IEC 60079-31:2013 Ed 2, the markings were updated accordingly as detailed in Section 12 and a Special Condition For Safe Use and a Condition of Manufacture were introduced.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report no.	Comment
0	7 August 2000	R51X5740A	The release of the prime certificate.
1	5 September 2003	R51A7521A	The introduction of Variation 1.
2	26 October 2004	V51V12308A	The introduction of Variation 2.
3	6 July 2005	R51A11672A	The prime certificate was re-issued to introduce the changes described in report number R51A11672A and to incorporate Variations 1 and 2 dated as above.
4	23 May 2006	R51A15078A	The prime certificate was re-issued to introduce the changes described in report number R51A15078A.
5	15 November 2006	R51A15422A	The introduction of Variation 1.
6	25 June 2008	R51L16753A	This Issue covers the following changes: <ul style="list-style-type: none">• All previously issued certification was rationalised into a single certificate, Issue 6, Issues 0 to 5 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.• The introduction of Variation 2.
7	18 May 2009	N/A	Re-Issued to correct certificate number on Pages 2 to 5
8	10 September 2009	R51L19404A	The introduction of Variation 3.
9	26 January 2010	R19963A/00	The introduction of Variation 4.
10	09 June 2010	R21937A/00	The introduction of Variation 5.
11	19 September 2012	R27774A/00	The introduction of Variation 6.
12	10 September 2013	R31259A/00 R51L16753A/01	This Issue covers the following changes: <ul style="list-style-type: none">• Report no. R51L16753A/01 replaced R51L16753A.• The introduction of Variation 7.
13	10 December 2013	R29943A/00	The introduction of Variation 8.
14	24 June 2014	R70004704A	The introduction of Variation 9.

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

- 15.1 When fitted with a fluorocarbon seal, the BX Series Limit Switches shall only be used where the ambient temperature is within the range -12°C to +70°C, when fitted with a fluorosilicone seal, the BX Series Limit Switches shall only be used where the ambient temperature is within the range -40°C to +70°C.
- 15.2 The maximum constructional gap (i_c) is less than that required by Table 2 of EN 60079-1:2007 clause 5.2.2 as detailed below:

Flamepath	Maximum Gap (mm)	Comment
Push rod and bearing	0.076	Cylindrical spigot joint
Bearing and housing	0.02	Cylindrical spigot joint

- 15.3 The equipment has a non-conducting coating and may generate an ignition-capable level of electrostatic charges under certain extreme conditions. The user should ensure that the equipment is not installed in a location where it may be subjected to external conditions (such as high-pressure steam) which might cause a build-up of electrostatic charges on non-conducting surfaces. Additionally, cleaning of the equipment should be done with a damp cloth.

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 The products shall be marked with the following ambient temperature ranges dependant upon the type of sealing material used in their construction:
Fluorocarbon sealed head - Ta -12°C to +70°C
Fluorosilicone sealed head - Ta -40°C to +70°C
- 17.4 To avoid a build-up of electrostatic charge on the external surface of the equipment, when used in Group II applications, the thickness of powder coating applied to the external surface of the product shall not exceed a thickness of 0.2mm.

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Certificate Annexe

Certificate Number: Sira 00ATEX1037X
Equipment: BX Series Limit Switches
Applicant: Honeywell International



Issues 0 to 5

The drawings associated with these Issues were replaced by those listed in Issue 6.

Issue 6

Drawing No.	Sheet	Issue	Rev.	Date	Title
BX Series Chart 3	1 of 1	11	E	15 May 08	Switch – Enclosed
LS-22057	1 of 1	4	C	Nov 00	Representative Cover Drawing
LS-20756-S	1 of 1	12	D	04 May 06	Cover Casting Drawing
LS-20944	1 of 1	18	B	11 Jun 00	Representative Housing Drawing
052.1.84-S	1 of 1	13	F	04 May 06	Housing Casting Drawing
LS-22150	1 of 1	-	3	03 Aug 06	Plunger, Actuator
LS-22151	1 of 1	-	4	03 Aug 06	Plunger, Actuator
LS-22169	1 of 1	-	3	03 Aug 06	Plunger, Actuator
LS-22158	1 of 1	-	6	16 Apr 08	Nameplate, Flexible
LS-21805	1 of 1	2	A	Apr 98	Label, Stock (Blank)
LS-22164	1 of 1	-	3	25 Aug 06	Conduit Entry Label
GL-48196	1 of 1	1	-	20 Jun 00	Label, Stock (Blank)
50033501	1 of 1	-	C	20 Jun 08	Warning Label,
LS-21788	1 of 1	4	A	Apr 98	Label, Stock (Blank)

Issue 7 No new drawings were introduced.

Issue 8

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
LS20944	1 of 1	C	10 Sep 09	Housing, Die Cast
LS20945	1 of 1	C	10 Sep 09	Housing
052.1.84-5	1 of 1	G	10 Sep 09	Housing

Issue 9

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
BX Series Chart 4	1 of 3	B	19 Jan 10	Switch, Explosion Proof
BX Series Chart 4	2 of 3	B	19 Jan 10	Switch, Explosion Proof
BX Series Chart 4	3 of 3	B	19 Jan 10	Switch, Explosion Proof
BX Series Chart 5	1 of 1	A	19 Jan 10	Switch, Explosion Proof
EN-11171	1 of 1	C	19 Jan 10	Pin, Straight Head
LS-20759	1 of 1	B	19 Jan 10	Seal, Ring
LS-21943	1 of 1	C	19 Jan 10	Seal, Collapsible
LS-21944	1 of 1	D	19 Jan 10	Seal, Collapsible
LS-22169	1 of 1	4	19 Jan 10	Plunger, Actuator
50031249	1 of 2	B	19 Jan 10	Housing, Die Cast
50031249	2 of 2	B	19 Jan 10	Housing, Die Cast
50031307	1 of 1	A	19 Jan 10	Enclosure, Investment Cast
50031452	1 of 1	B	19 Jan 10	Cover, Investment Cast (SST BX)
50031453	1 of 1	B	19 Jan 10	Cover, Investment Cast (SST BX Machined)
50042818	1 of 1	B	19 Jan 10	Nameplate, Rigid
50046762	1 of 1	B	19 Jan 10	Nameplate, Rigid

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Certificate Annexe

Certificate Number: Sira 00ATEX1037X
Equipment: BX Series Limit Switches
Applicant: Honeywell International



Issue 10

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
LS-20756-S	1 of 1	14	09 Jun 10	Cover, Die Cast
LS-22057	1 of 1	5	09 Jun 10	Cover, Die Cast
LS-22169	1 of 1	5	09 Jun 10	Plunger, Actuator
50031307	1 of 1	B	09 Jun 10	Enclosure, Investment Cast
50033501	1 of 1	D	09 Jun 10	Label, Flexible

Issue 11

Drawing	Sheets	Rev.	Date(Sira stamp)	Title
GL-48196	1 of 1	2	12 Jul 12	Label, Stock
LS-20944	1 of 1	21	12 Jul 12	Housing, Die Cast
LS-20945	1 of 1	21	12 Jul 12	Housing, Die Cast
LS-21788	1 of 1	5	12 Jul 12	Label, Stock
LS-22151	1 of 1	5	12 Jul 12	Plunger, Actuator
LS-22169	1 of 1	6	12 Jul 12	Plunger, Actuator
BX Series Chart 4	1 of 3	D	12 Jul 12	Switch, Explosion Proof
50031307	1 of 1	C	12 Jul 12	Enclosure, Investment Cast

Issue 12

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
052.1.84-S	1 of 1	15	28 Aug 13	Housing, Die Cast
BX Series Chart 3	1 of 1	12	28 Aug 13	Switch - Enclosed

Issue 13

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
BX Series Chart 3	1 of 1	13	23 Oct 13	Switch Enclosed

Issue 14

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
BX Series Chart 3	1 of 1	14	10 Jun 14	Switch - Enclosed
BX Series Chart 5	1 of 1	B	10 Jun 14	Switch - Explosion Proof
LS-22157	1 of 1	6	10 Jun 14	Label, Flexible
LS-22158	1 of 1	8	10 Jun 14	Nameplate, Flexible
50042818	1 of 1	E	10 Jun 14	Nameplate, Rigid
50046762	1 of 1	E	10 Jun 14	Nameplate, Rigid
50033501	1 of 1	E	10 Jun 14	Label, Flexible

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