



1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 03ATEX1387** Issue: **9**

4 Equipment: **Logix Series 3200 Digital Positioner models IQ and MD and the Logix1400 Fieldbus Positioners**

5 Applicant: **Flowserve Corporation**

6 Address: **1350 North Mountain Springs Parkway  
PO Box 2200  
Springville  
Utah 84663 – 0903  
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 60079-0:2006                      EN 61241-0:2006  
EN 60079-1:2007                      EN 61241-1:2004

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 G D  
Ex d IIB +H<sub>2</sub> T5 (Ta = -40°C to +80°C)  
Ex tD A21 IP65 T95°C (Ta = -40°C to +80°C)**

Project Number    21793  
C. Index            13

C Ellaby  
Certification Officer

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## SCHEDULE

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#### 13 DESCRIPTION OF EQUIPMENT

Positioner Operation - The Logix Positioner is an electric feedback instrument. Positioning is based on a balance of two signals; one proportional to the command input signal and the other proportional to the valve stem position.

The supply pressure for the positioner pressure modulator is tapped off the main supply and is filtered as it passes through a field replaceable, coalescing filter element in the module. Next, it passes through an internal pressure regulator that regulates it to approximately 22 psig. The air then passes through an orifice that restricts the flow and air consumption.

The pressure modulator further controls the air to 6-12 psig, using a spring diaphragm flapper that is attracted by an electromagnet to a nozzle. A temperature compensated hall effect sensor mounted on a circuit board senses the spool valve position. The hall effect sensor and circuitry create an inner feedback loop, which determines how much current to send to the electromagnet for a desired spool valve position. The electromagnet in the feedback loop varies the nozzle-flapper spacing, which regulates the output pressure to 6-12 psig, proportional to the digital position algorithm.

When the command and stem position signals are equal, the system will be in equilibrium and the valve stem will be in the position called for by the command signal. If these opposing signals are not equal, the spool valve will move up (or down) and, by means of the pressure modulator, change the output pressures and flow rate. This will cause the actuator piston to move until the signal of the position sensor equalises with the command.

The Logix Positioner is constructed from the following major parts:

- Main housing
- Main housing cover
- Field termination cover
- Spool valve cover
- Driver module cover

The Logix Positioner relies on the following aspects for explosion protection:

- Threaded flamepaths
- Cylindrical flamepaths
- Sintered elements
- Overall mechanical strength

The Logix positioner has no welded joints that contribute to overall enclosure strength.

The Logix Positioner has the following characteristics:

- 22 mA maximum current draw
- 9 – 32 V source



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#### Variation 1

- i. The product name was changed:  
From: Logix Series 1000 Digital Positioner      To: Logix Series 3200 IQ Digital Positioner

#### Variation 2

- i. The dimensions of the main housing cover window recess wall were altered.

#### Variation 3

- i. The addition of three bosses on the enclosure for future use.
- ii. The addition of a manufactures note.

#### Variation 4

- i. Following appropriate re-assessment to demonstrate compliance with the requirements of the EN 60079 series of standards, the documents originally listed in section 9, EN 50014:1997 (amendments A1 to A2), EN 50018:2000 (A1) and EN 50281-1-1:1998 (A1), were replaced by EN 60079-0:2006, EN 60079-1:2007, EN61241-0:2006 and EN 61241-1:2004, the markings in section 12 were updated accordingly.
- ii. Non-safety critical dimension changes.
- iii. The update of drawings in-line with a previous variation.
- iv. The clarification of the descriptive documents.

#### Variation 5

- i. The introduction of a new, mylar, multiple concept protection nameplate.

#### Variation 6

- i. The mylar, multiple concept protection nameplate was revised to include the designation of software level installed.

#### Variation 7 - This variation introduced the following changes:

- i. To allow an edge break and tolerance change to the LED display window for the Logix 1000 digital positioner.
- ii. The introduction of a die cast machined version.
- iii. The recognition of minor drawing modifications; 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.

#### Variation 8 - This variation introduced the following changes:

- i. The recognition of minor drawing modifications to change the Notified Body number from 0158 to 0518.



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#### 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 2003	R51A10307A	The release of prime certificate.
1	23 February 2004	R51V11572A	The introduction of Variation 1.
2	26 January 2006	R51A13975A	Re-issued to introduce the changes described in report number R51A13975A and to incorporate variation 1.
3	16 May 2007	R52A16379C	This Issue covers the following changes: <ul style="list-style-type: none"><li>All previously issued certification was rationalised into a single certificate, Issue 3, Issues 0 to 2 referenced above are only intended to reflect the history of the previous certification and have not been issued as documents in this format.</li><li>The introduction of Variation 2.</li></ul>
4	18 October 2007	R52A17368A	The introduction of Variation 3.
5	20 June 2008	R51A17756A	The introduction of Variation 4.
6	14 August 2008	R51A20752A	The introduction of Variation 5.
7	30 December 2009	R21470A	The introduction of Variation 6.
8	4 February 2010	R21629A/00	The introduction of Variation 7.
9	13 September 2010	R21793A/00	The introduction of Variation 8.

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

None

#### 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.

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# Certificate Annexe

Certificate Number: Sira 03ATEX1387  
Equipment: Logix Series 3200 Digital Positioner  
models IO and MD and the Logix1400  
Fieldbus Positioners  
Applicant: Flowserve Corporation



Issue 0 and 1 (The drawings associated with these Issues were replaced by those listed in Issue 2)

## Issue 2

Number	Sheet	Rev.	Date	Title
126165	1 of 1	4	06 Dec 05	Flame Paths Of Logix 1000 Digital Positioner.
126171	1 to 2	4	18 Jul 03	Casting, Housing, Logix 1000 Digital Positioner, Die Cast
126174	1 of 1	1	03 Oct 03	Cover, Main Housing, Round Window, Logix 1000 Digital Positioner, Die Cast
130821	1 of 1	3	28 Apr 03	Flame Arrestor - .625 Dia., .50 Long, Logix 1000 Digital Positioner
130822	1 of 1	3	05 Mar 03	Flame Arrestor, .25 Dia., .50 Long, Logix 1000 Digital Positioner
130911	1 of 1	0	01 May 97	Washer, Seal Ring, Led Display, Logix 1000 Digital Positioner
130912	1 of 1	1	12 Jan 00	Retaining Ring, Internal, Bowed, Waldes Truarc N5001-175
130913	1 of 1	1	01 Jul 97	Window, Led Display, .25 Thick Glass, Logix 1000 Digital Positioner
130914	1 of 1	3	19 Nov 03	Bearing, Position Feedback, Logix 1000 Digital Positioner
137748	1 of 1	0	28 Dec 99	Cover, Customer Interface, Logix 1000 Digital Positioner, Die-cast
141390	1 of 1	2	16 Jul 01	Cover, Driver Module, Logix 1000 Digital Positioner
163481	-	2	11 Sep 01	Logix 1400 – General Arrangement Drawing
171177	1 of 1	2	14 Mar 01	Manifold, Driver Module Detachable, Two Piece, Logix 1000 Digital Positioner
171200	1 of 1	3	07 Jun 01	Plug, Pressure Sensor Logix 1000 Digital Positioner
175026	1 of 1	1	27 Jun 03	Nameplate Logix 1400
178343	1 of 1	2	16 Dec 02	Flame Paths Of Logix 1000 Digital Positioner Die Cast
178358	1 to 3	1	21 Mar 02	Housing, Logix 1000 Digital Positioner, M-20 Conduit Threads, Die Cast
178372	1 of 1	2	15 Nov 01	Plug Housing, Customer Interface Chamber, Logix 1000 Digital Positioner
185155	1 of 1	1	23 Jan 03	Shaft, Feedback, Logix 1000 Digital Positioner, Stainless Steel
190527	1 of 1	0	18 Dec 02	Cover, driver module extra vent, Logix 1000 digital positioner
192039	1 of 1	-	23 Aug 02	Manifold, Driver Module, detachable spool, Logix 1000IQ Digital Positioner
198769	2 of 2	4	02 May 05	Housing, Stainless Steel, Logix 3000IQ Digital Positioner,
198770	1 to 2	4	02 May 05	Housing, Stainless Steel, M20 conduit threads, logix 3200IQ Digital Positioner
198775	1 to 2	2	12 May 03	Housing, Logix 1000IQ Digital Positioner, Die Cast
198776	1 to 2	2	12 May 03	Housing, Logix 1000IQ Digital Positioner, M20 Conduit Threads, Die-Cast
199694	1 of 1	2	08 Jan 04	Nameplate, Logix 3200IQ CENELEC, ATEX, EEx d

## Issue 3

Number	Sheet	Rev.	Date	Title
126174	1 of 1	1	08 May 07	Cover Main Housing

## Issue 4

Number	Sheet	Rev.	Date	Title
198775	1 to 2	4	16 April 07	Housing, Logix 1000IQ Digital Positioner, Die Cast

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Fieldbus Positioners  
Applicant: Flowserve Corporation



**Issue 5** (A full set of certification drawings was submitted for assessment but only the following have been revised)

Number	Sheet	Rev.	Date (Sira stamp)	Title
126165	1 of 1	5	12 Feb 08	Flame Paths Of Logix 1000 Digital Positioner.
126171	1 to 2	7	12 Feb 08	Casting, Housing, Logix 1000 Digital Positioner, Die Cast
130913	1 of 1	2	12 Feb 08	Window, Led Display, .25 Thick Glass, Logix 1000 Digital Positioner
139765	1 of 1	0	12 Feb 08	Cover, Customer Interface, Logix 1000 Digital Positioner, Stainless steel.
192039	1 of 1	0	12 Feb 08	Manifold, Driver Module, detachable spool, Logix 1000IQ Digital Positioner
198769	1 to 2	5	12 Feb 08	Housing, Stainless Steel, Logix 3000IQ Digital Positioner,
198770	1 to 2	5	12 Feb 08	Housing, Stainless Steel, M20 conduit threads, logix 3200IQ Digital Positioner
198776	1 to 2	3	12 Feb 08	Housing, Logix 1000IQ Digital Positioner, M20 Conduit Threads, Die-Cast
199694	1 of 1	4	10 Jun 08	Nameplate, Logix 3200IQ CENELEC, ATEX, Ex d

## Issue 6

Number	Sheet	Rev.	Date	Title
255410	1 of 1	0	11 Aug 09	Multiple concept protection nameplate

## Issue 7

Number	Sheet	Rev.	Date (Sira stamp)	Title
255410	1 of 1	1	17 Dec 09	Multiple concept protection nameplate

## Issue 8

Number	Sheets	Rev.	Date (Sira stamp)	Title
126171	1 to 2	8	25 Jan 10	Casting, Housing, Logix 1000 Digital Positioner, Die Cast
141390	1 to 2	3	25 Jan 10	Cover, Driver Module Logix 1000 Digital Positioner
198769	1 of 2	6	25 Jan 10	Housing, Stainless Steel, Logix 3000iq Digital Positioner
198770	1 of 2	6	25 Jan 10	Housing, Stainless Steel, M20 Conduit Threads, Logix 3000iq Digital Positioner
198775	1 to 2	6	25 Jan 10	Housing, Logix 3000 Series Digital Positioner Die-Cast
198776	1 to 2	5	25 Jan 10	Housing, Logix 3000 Series Digital Positioner, M-20 Conduit Threads, Die-Cast

## Issue 9

Number	Sheets	Rev.	Date (Sira Stamp)	Title
199694	1 of 1	5	13 Jul 10	Nameplate, Logix 3200IQ, CENLEC, ATEX, EEx d
255410	1 of 1	2	13 Jul 10	Nameplate, Logix 3200, Sira, ATEX, Ex d, Ex tD, Ex ia, Ex iaD

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