1 **EU-TYPE EXAMINATION CERTIFICATE**

2 Equipment intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

3 Certificate Number: **Sira 09ATEX6335X** Issue: **3**

4 Equipment: **Type S and Type SX Double Acting and Spring Return Camtorc Actuators**
Type A Single Shot and Double Acting Camtorc Actuators
Type CS and Type CX Double Acting and Spring Return Camtorc Actuators

5 Applicant: **Imtex Controls Limited**

6 Address: Unit 4
Tenth Avenue
Deeside Industrial Park
Flintshire CH5 2UA
UK

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

8 CSA Group Netherlands B.V., Notified Body Number 2813 in accordance with Articles 17 and 21 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, 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 13463-1:2009 EN 13463-5:2003

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to Specific Conditions of Use identified in the schedule to this certificate.

11 This EU-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 IIC c T*
(* Refer to the Description of Equipment for applicable temperature classes and ambient temperature ranges.)

Project Number 1760

Signed:

Title: Director of Operations

CSA Group Netherlands B.V.
Utrechseweg 310,
6812 AR, Arnhem,
Netherlands

13 **DESCRIPTION OF EQUIPMENT**

All Camtorc actuators use the same pr iple to operate a rotary valve or damper. A profiled cam connected to a drive shaft enables linear motion from pistons driven under pressure in a cylinder to be converted to rotary motion (90° ± 2.5 degrees at either end of travel). The configuration alters depending on the actuator type. Hydraulic or pneumatic pressure is applied via supply ports onto pistons running within cylinders. This enables the cam/shaft mechanism of the actuator to drive in one direction, and return either by a similar hydraulic or pneumatic piston working in the opposite direction or by the force generated by a compressed spring. in both directions.

The Type S and Type SX Double Acting and Spring Return Camtorc Actuators with a carbon steel enclosure. The double acting version consists of two pistons (A and B) connected by spacer bars, with the cam between them. The cam is profiled so that it always makes contact with the centre of the piston face throughout the stroke. As pressure is applied to either piston A or B, the piston movement causes the cam and shaft assembly to rotate in either a clockwise or counter-clockwise direction.

The spring return actuator use the same parts as a double acting actuator but is fitted with a spring module at one end consisting of a cylinder and a third piston (C) preloaded with a spring nest. In operation, the supply pressure is applied to pistons A and C compressing the spring and rotating the cam as in the double acting actuator. When the supply pressure is removed, the ports connected pistons A and C are vented and the spring force returns the assembly to its original position.

The end of the stroke occurs either when the flat face of the cam comes up against the piston or the pistons hit end stops in either end of the assembly.

Type A Single Shot and Double Acting Camtorc actuators with a mainly aluminium enclosure. The double acting versions works in the same manner as the Type S series. The Single Shot version is driven in one direction utilizing hydraulic pressure but can only be returned to its original position by manually rotating the actuator shaft.

Type CS and Type CX Double Acting and Spring Return Camtorc Actuators. For double acting versions pneumatic supply should be connected to the Air Cylinder Supply Ports using suitably sized fittings. Double cylinder actuators will have 2 supply ports for each direction of travel (clockwise or anti-clockwise) whilst single cylinder actuators only have one supply port for each direction of travel. Pressure is applied via supply ports (connected as detailed above) onto the air piston(s) running within cylinders attached to the main body housing. The combined force of the pistons drives the cam/shaft mechanism of the actuator in one direction. When pressure switch to the other side of the pistons, the cam/shaft mechanism in the other direction.

For spring return versions, pneumatic supply should be connected to the Air Cylinder Supply Port and Spring Cylinder Supply Port using a suitably sized fitting. Single cylinder units only have a Spring Supply Port. Pressure is applied via supply ports (connected as detailed above) onto the air piston and spring piston running within cylinders attached to the main body housing. The combined force of the pistons drives the cam/shaft mechanism of the actuator and compresses the spring. When pressure is removed, the spring pushes the spring piston and, in turn, the cam/shaft mechanism in the other direction.

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Type S and Type SX (Models S & Z) – Double Acting – Hydraulic

Sixe	Double acting		Spring size (see A190219)		Hydraulic bore size (mm)		Supply pressure rating (barg)	
	Function	Module*	Min.	Max.	Min.	Max.	Min.	Max.
25	D	Mxxx	N/A	N/A	10	35	10	400
30	D	Mxxx	N/A	N/A	10	50	10	400
35	D	Mxxx	N/A	N/A	10	60	10	400
45	D	Mxxx	N/A	N/A	15	70	10	400
55	D	Mxxx	N/A	N/A	15	75	10	400
65	D	Mxxx	N/A	N/A	20	110	10	400
75	D	Mxxx	N/A	N/A	25	140	10	400
85	D	Mxxx	N/A	N/A	30	160	10	400
100	D	Mxxx	N/A	N/A	30	160	10	400
110	D	Mxxx	N/A	N/A	35	180	10	400
120	D	Mxxx	N/A	N/A	35	180	10	400
140	D	Mxxx	N/A	N/A	40	200	10	400
160	D	Mxxx	N/A	N/A	50	250	10	400

* Replace 'xxx' to specify the Hydraulic bore size supplied with any given actuator

Type S and Type SX (Models S & Z) – Spring Return Hydraulic

Sixe	Spring Return		Spring size (see A190219)		Hydraulic bore size (mm)		Supply pressure rating (barg)	
	Function	Module*	Min.	Max.	Min.	Max.	Min.	Max.
25	S	Mxxx	2	15	10	35	10	400
30	S	Mxxx	2	15	10	50	10	400
35	S	Mxxx	2	15	10	60	10	400
45	S	Mxxx	2	15	15	70	10	400
55	S	Mxxx	2	15	15	75	10	400
65	S	Mxxx	2	15	20	110	10	400
75	S	Mxxx	2	15	25	140	10	400
85	S	Mxxx	2	15	30	160	10	400
100	S	Mxxx	2	15	30	160	10	400
110	S	Mxxx	2	15	35	180	10	400
120	S	Mxxx	2	15	35	180	10	400
140	S	Mxxx	2	15	40	200	10	400
160	S	Mxxx	2	15	50	250	10	400

* Replace 'xxx' to specify the Hydraulic bore size supplied with any given actuator

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Type S and Type SX (Models S & Z) – Pneumatic

Sixe	Double acting		Spring size (see A190219)		Hydraulic bore size (mm)		Supply pressure rating (barg)	
	Function	Module	Min.	Max.	Min.	Max.	Min.	Max.
25	D	N/A	N/A	N/A	N/A	N/A	2	10.3
30	D	N/A	N/A	N/A	N/A	N/A	2	10.3
35	D	N/A	N/A	N/A	N/A	N/A	2	10.3
45	D	N/A	N/A	N/A	N/A	N/A	2	10.3
55	D	N/A	N/A	N/A	N/A	N/A	2	10.3
65	D	N/A	N/A	N/A	N/A	N/A	2	10.3
75	D	N/A	N/A	N/A	N/A	N/A	2	10.3
85	D	N/A	N/A	N/A	N/A	N/A	2	10.3
100	D	N/A	N/A	N/A	N/A	N/A	2	10.3
110	D	N/A	N/A	N/A	N/A	N/A	2	10.3
120	D	N/A	N/A	N/A	N/A	N/A	2	10.3
140	D	N/A	N/A	N/A	N/A	N/A	2	10.3
160	D	N/A	N/A	N/A	N/A	N/A	2	10.3

Type S and Type SX (Models S & Z) – Spring Return – Pneumatic

Sixe	Spring Return		Spring size (see A190219)		Hydraulic bore size (mm)		Supply pressure rating (barg)	
	Function	Module	Min.	Max.	Min.	Max.	Min.	Max.
25	S	N/A	2	15	N/A	N/A	2	10.3
30	S	N/A	2	15	N/A	N/A	2	10.3
35	S	N/A	2	15	N/A	N/A	2	10.3
45	S	N/A	2	15	N/A	N/A	2	10.3
55	S	N/A	2	15	N/A	N/A	2	10.3
65	S	N/A	2	15	N/A	N/A	2	10.3
75	S	N/A	2	15	N/A	N/A	2	10.3
85	S	N/A	2	15	N/A	N/A	2	10.3
100	S	N/A	2	15	N/A	N/A	2	10.3
110	S	N/A	2	15	N/A	N/A	2	10.3
120	S	N/A	2	15	N/A	N/A	2	10.3
140	S	N/A	2	15	N/A	N/A	2	10.3
160	S	N/A	2	15	N/A	N/A	2	10.3

Type A – Double Acting - Pneumatic

Sixe	Double acting		Spring size (see A190219)		Hydraulic bore size (mm)		Supply pressure rating (barg)	
	Function	Module	Min.	Max.	Min.	Max.	Min.	Max.
25	D	N/A	N/A	N/A	N/A	N/A	2	10.3
30	D	N/A	N/A	N/A	N/A	N/A	2	10.3
35	D	N/A	N/A	N/A	N/A	N/A	2	10.3
45	D	N/A	N/A	N/A	N/A	N/A	2	10.3
55	D	N/A	N/A	N/A	N/A	N/A	2	10.3
65	D	N/A	N/A	N/A	N/A	N/A	2	10.3
75	D	N/A	N/A	N/A	N/A	N/A	2	10.3

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Type A – Single Shot - Hydraulic

Size	Single Shot		Spring size (see A190219)		Hydraulic bore size (mm)		Supply pressure rating (barg)	
	Function	Module*	Min.	Max.	Min.	Max.	Min.	Max.
25	D	Mxxx	N/A	N/A	10	35	10	400
30	D	Mxxx	N/A	N/A	10	50	10	400
35	D	Mxxx	N/A	N/A	10	60	10	400
45	D	Mxxx	N/A	N/A	15	70	10	400
55	D	Mxxx	N/A	N/A	15	75	10	400
65	D	Mxxx	N/A	N/A	20	110	10	400
75	D	Mxxx	N/A	N/A	25	140	10	400

* Replace 'xxx' to specify the Hydraulic bore size supplied with any given actuator

Type CS and Type CX (models C & X) – Double Acting – Pneumatic

Size	Double acting		Spring size (see A190219)		Cylinder bore size (mm)		Supply pressure rating (barg)	
	Function	Module	Min.	Max.	Min.	Max.	Min.	Max.
30	D	N/A	N/A	N/A	80	160	2	10.3
40	D	N/A	N/A	N/A	100	200	2	10.3
50	D	N/A	N/A	N/A	130	250	2	10.3
70	D	N/A	N/A	N/A	160	300	2	10.3
85	D	N/A	N/A	N/A	200	350	2	10.3
100	D	N/A	N/A	N/A	230	400	2	10.3

Type CS and Type CX (models C & X) – Spring Return – Pneumatic

Size	Spring Return		Spring size (see A190219)		Cylinder bore size (mm)		Supply pressure rating (barg)	
	Function	Module	Min.	Max.	Min.	Max.	Min.	Max.
30	S	N/A	2	15	80	160	2	10.3
40	S	N/A	2	15	100	200	2	10.3
50	S	N/A	2	15	130	250	2	10.3
70	S	N/A	2	15	160	300	2	10.3
85	S	N/A	2	15	200	350	2	10.3
100	S	N/A	2	15	230	400	2	10.3

The temperature classification and associated ambient temperature depends upon the type of seals that are fitted to the Actuators, see table below

Material	Temperature classification	Ambient temperature range
Viton	T3	-20°C to +130°C
Nitrile NBR 70	T6	-20°C to +60°C
EDPM 70	T4	-40°C to +130°C

Variation 1 - This variation introduced the following changes:

i. The introduction of two new types of actuator, Models 'X' and 'Z' Types CX and SX), these are 316 stainless steel equivalents of Models C and S (Types CS and S); note that the tables in the Description of Equipment are modified to recognise the new models.

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EU-TYPE EXAMINATION CERTIFICATE **Sira 09ATEX6335X**
Issue 3

Variation 2 - This variation introduced the following changes:

i. The Applicant's address was changed:

From:	To:
Unit 5a Valley Industries	Unit 4, Tenth Avenue
Hadlow Road, Tonbridge	Deeside Industrial Park
Kent TN11 0AH	Flintshire CH5 2UA
UK	UK

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	21 January 2010	R51A21034A	The release of the prime certificate.
1	28 September 2010	R23136A/00	The introduction of Variation 1.
2	20 November 2014	R70015826A	The introduction of Variation 2.
3	15th October 2019	1760	• Transfer of certificate **Sira 09ATEX6335X** from Sira Certification Service to CSA Group Netherlands B.V.. • EC Type-Examination Certificate in accordance with 94/9/EC updated to EU Type-Examination Certificate in accordance with Directive 2014/34/EU. *(In accordance with Article 41 of Directive 2014/34/EU, EC Type-Examination Certificates referring to 94/9/EC that were in existence prior to the date of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Variations to such EC Type-Examination Certificates may continue to bear the original certificate number issued prior to 20 April 2016.)*

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

15.1 The user/installer shall ensure that all pneumatic equipment is supplied with air that has been filtered on the intake to prevent the ingress of dust or small particles into the parts where compression takes place.

15.2 Because the stored energy in the spring could be an ignition source of an explosion, the preloaded spring assembly within the actuator shall only be dismantled in a safe area when doing maintenance.

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.

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Certificate Annexe

Certificate Number: **Sira 09ATEX6335X**

Equipment: **Type S Series and Type SX Series**
Type A Series
Type CS Series and Type CX Series

Applicant: **Imtex Controls Limited**

Issue 0

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
A160179	1 of 1	A	05 Jan 10	ATEX Nameplate for Type S, CS and A
A190219	1 of 1	B	01 Dec 09	Camtorc range master model description
J100301	1 of 1	A	01 Dec 09	S-Type assembly – SR Pneumatic
J100302	1 of 1	A	01 Dec 09	S-Type assembly – DA Pneumatic
J100303	1 of 1	B	01 Dec 09	S-Type assembly – SR Hydraulic
J100304	1 of 1	-	01 Dec 09	S-Type assembly – DA Hydraulic
J100317	1 of 1	A	01 Dec 09	A Series Double Acting – Pneumatic
J100331	1 of 1	A	01 Dec 09	CS – SR Actuators – Single Cylinder
J100333	1 of 1	A	01 Dec 09	CS – SR Actuators – Double Cylinder
J100335	1 of 1	A	01 Dec 09	CS – DA Actuators – Single Cylinder
J100336	1 of 1	A	01 Dec 09	CS – DA Actuators – Double Cylinder
J100337	1 of 1	A	01 Dec 09	A Series Single Acting – Hydraulic
J100338	1 of 1	A	01 Dec 09	Camtorc Type S Actuator – Spring Return Dimensions
J100339	1 of 1	A	1 Dec 2009	Camtorc Type S Actuator – Double Acting Dimensions
J100340	1 of 1	A	01 Dec 09	Camtorc Type S Actuator Hydraulic – Spring Return Dimensions
J100341	1 of 1	A	01 Dec 09	Camtorc Type S Actuator Hydraulic – Double Acting Dimensions
J100342	1 of 1	-	01 Dec 09	Camtorc Type A Series Actuator Pneumatic – Double Acting Dimensions
J100343	1 of 1	-	01 Dec 09	Camtorc Type A Hydraulic – Single Action Actuator Dimensions
J100344	1 of 1	A	01 Dec 09	Camtorc Type C Pneumatic Actuators-Dimensions
J100347	1 of 1	-	01 Dec 09	Type S and Type A Actuator Operation
J100348	1 of 1	-	01 Dec 09	Type CS Actuator Operation
J100350	1 of 1	-	01 Dec 09	S Type Assembly – DA Hydraulic

Issue 1

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
A190219	1 of 1	C	12 Aug 10	Camtorc range master models description

Issue 2

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
A160179	1 of 1	B	13 Nov 14	ATEX Label Actuators Type S, CS and A

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