1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 07ATEX2221** Issue: **4**

4 Equipment: **Range of Load Cells**

5 Applicant: **Elite Transducers Limited**

6 Address: 6 Zephyr House
Calleva Park
Aldermaston
Berkshire RG7 8JN
UK

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 60079-11:2012 EN 60079-26:2007 EN 60079-31:2014

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 1G
II 2D
Ex ia IIC T6
Ex tb IIIC Db T85°C
(-20°C ≤ T_a ≤ +60°C)

Project Number 70005589

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13 **DESCRIPTION OF EQUIPMENT**

The SELB, DELB, DELP, CLC, SLL, LPMW, LPCC, SM60 and KFP Load Cells are designed to be fitted into equipment such as weighing machines to measure the load applied to them. The Load Cells comprise a stainless steel block, fitted within recesses in this block are either one or two strain gauge arrangements, optional nickel resistors, terminal boards and amplifier PCBs. The electrical devices are encapsulated and sealed within the block by a welded stainless steel cover. An integral cable with a maximum length of 30 m permits connection to the Load Cell. An alternative version permits the amplifier board to be fully encapsulated in a steel enclosure that may be fitted external to the Load Cell.

The following versions of the load cell are permitted, each model may vary in size and shape within defined limits to cover a variety load capacities, additional, mechanical attachments may be added to create loading assemblies:

Model (Description)	Type (Description)	Issue	Amplifier	Connector	4/6 wire
SELB (Single Ended Load Beam)	RO (Rationalised Output)	0	No	Yes	4
SELB (Single Ended Load Beam)	RI (Rationalised Input)	0	No	Yes	4
DELB (Double Ended Load Beam)	RO (Rationalised Output)	0	No	Yes	4 & 6
DELB (Double Ended Load Beam)	RI (Rationalised Input)	0	No	Yes	4
DELP (Double Ended Load Pin)	EGW (Externally Gauged, Welded)	0	No	Yes	4
DELP (Double Ended Load Pin)	IGP (Internally Gauged, Potted)	0	No	Yes	4
DELP (Double Ended Load Pin)	IGP (Internally Gauged, Potted)	0	Yes	Yes	4
CLC (Compression Load Cell)	RO (Rationalised Output)	0	No	Yes	4
CLC (Compression Load Cell)	RO (Rationalised Output)	0	Yes	Yes	4
DELP (Double Ended Load Pin)	IGP (Internally Gauged, Potted)	1	Yes	Yes	6
DELP (Double Ended Load Pin)	DS1950-TB (Procon Triple Bridge)	2	No	No	4
DELP (Double Ended Load Pin)	DB (Double Bridge)	2	No	No	4
DELP (Double Ended Load Pin)	DB (Double Bridge)	2	Yes	Yes	4
SLL (Stainless Load Link)	SLL (Tension Link)	2	No	Yes	4 or 6
SLL (Stainless Load Link)	SLL (Tension Link)	2	Yes	Yes	4
LPMW (Low Profile Multi Webb)	SB (Single Bridge)	3	No	Yes	4 or 6
LPMW (Low Profile Multi Webb)	DB (Double Bridge)	3	No	Yes	4 or 6
LPCC (Low Profile Compression Cell)	SB (Single Bridge)	3	No	Yes	4 or 6
SM60 (Silo Mounted)	RO (Rationalised Output)	3	No	Yes	4 & 6
SM66 (Silo Mounted)	SB (Single Bridge)	3	No	Yes	4 or 6
KFP (Low Profile Multi Webb)	SB (Single Bridge)	3	No	Yes	4 or 6
KFP (Low Profile Multi Webb)	DB (Double Bridge)	3	No	Yes	4 or 6

NOTE - this list is definitive and not only includes the original Load Cells described in certificate Issue 0, but also covers versions introduced by subsequent Issues as indicated above.

The following safety description is applicable to all versions the Load Cells:

Ui = 28 V Pi = 1.3 W Ii = 300 mA Ci = 0.04 µF Li = 284 µH

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Variation 1 - This variation introduced the following changes:

i. An alternative version of the DELP-IGP-AMP Load Cell was recognised, this device has a plug connector in place of the integral cable and is designated the DELP-IGP-AMP-C Load Cell.
ii. The use of an alternative cable was permitted; this cable may be used with all versions of the Load Cells.

Variation 2 - This variation introduced the following changes:

i. The specification of a maximum input current, Ii = 300 mA, that is applicable to all products.
ii. The introduction of new versions of the Load Cells.

Variation 3 - This variation introduced the following changes:

i. The introduction of the new versions of the Load Cells; NOTE – a new, definitive list of products was included in the Description of Equipment, this not only includes the original Load Cells described in certificate Issue 0, but also covers versions introduced by subsequent Issues.
ii. Certain types of Load Cells (as defined in the list of products shown in the Description of Equipment) were permitted to have a six-core, integral cable where two cores are doubled up; when six core cables are used, the cable length is reduced to a maximum of 15 m.
iii. The integral cable of some types of Load Cells (as defined in the list of products shown in the Description of Equipment) may be replaced by a fixed connector and a mating half complete either with cable or without cable enabling the customer to fit wiring suitable for the system requirements.
iv. The defined thickness of the printed circuit board was changed to '0.7 mm minimum' in place of the restrictive statement of '0.7 mm'.
v. The existing high voltage electric strength test was recognised as a condition of certification and now includes the use of an alternative voltage of 700 Vdc applied for a period of 1 min.
vi. The use of alternatively sized enclosures for use with the 2 Wire Amplifier Box was allowed.
vii. The use of alternative, certification labels was recognised, these are either fitted to the 'SM' and 'KFP' products distributed by Soemer or the products distributed by Pat-Kruger.
viii. The list of certified drawings was rationalised to specify those currently in use.

Variation 4 - This variation introduced the following changes:

i. The use of generically specified RTV Silicone Gel Compounds was recognised.
ii. Following appropriate re-assessment, any previously listed standards, EN 60079-0: 2006, EN 60079-11: 2007, EN 60079-26: 2004, EN 61241-0: 2006 and EN 61241-1:2004 were replaced by, EN 60079-0:2012, EN 60079-11:2012, EN 60079-26:2007 and EN 60079-31:2014, the markings in Section 12 being updated accordingly to recognise the requirements of the latest standards.
iii. The recognition of minor drawing modifications which are mainly administrative but also include the use of alternative distributor certification labels, material and wiring changes.
iv. The load cells detailed in the product description were clarified.

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

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14.2 **Associated Sira Reports and Certificate History**

Issue	Date	Report no.	Comment
0	4 January 2008	R52L16503A	The release of the prime certificate.
1	1 May 2008	R52A18137B	The introduction of Variation 1.
2	30 April 2010	R21680A/00	The introduction of Variation 2.
3	16 September 2011	R25251A/00	This Issue covers the following changes: • The list products in the Description of Equipment was clarified and amended to cover not only those products covered by Issue 0, but also includes Load Cells introduced by subsequent Issues. • The introduction of Variation 3.
4	27 November 2014	R70005589A	The introduction of Variation 4.

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.

17.3 Each completed Load Cell shall be subjected to and pass an insulation test of either 500 Vac for a period of 1min or 700 Vdc for a period of 1 min. Any inputs shall be connected together and a test voltage shall be applied between them and the enclosure or frame.

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Certificate Annexe

Certificate Number: **Sira 07ATEX2221**

Equipment: **Range of Load Cells**

Applicant: **Elite Transducers Limited**

Issues 0, 1 & 2 - The drawings listed with these Issues were rationalised and have been superseded by those detailed in Issue 3.

Issue 3

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10005-GA-30	1 of 1	D	24 Aug 11	SELB Ro style G.A.
10006-GA-30	1 of 1	D	24 Aug 11	SELB Ri style G.A.
10007-CSP-40	1 of 1	D	24 Aug 11	Cable Specification
10008-CSP-40	1 of 1	D	24 Aug 11	Cable Specification
10009-GA-30	1 of 1	E	24 Aug 11	DELP IGP style G.A.
10010-GA-30	1 of 1	D	24 Aug 11	DELB Ro style G.A.
10011-LA-40	1 of 1	H	24 Aug 11	Certification Label
10012-LA-40	1 of 1	H	24 Aug 11	Certification Label
10014-GA-30	1 of 1	E	24 Aug 11	DELP EGW style G.A.
10020-GA-30	1 of 1	D	24 Aug 11	DELB Ri style G.A.
10021-CD-30	1 of 1	B	24 Aug 11	Amplifier PCB Schematic
10024-GA-30	1 of 1	E	24 Aug 11	DELP IGP AMP style G.A.
10028-CSP-40	1 of 1	B	24 Aug 11	Cable Specification
10029-SK-30	1 of 1	C	24 Aug 11	DELP EGW & IGP/AMP typical dimensions
10030-SK-30	1 of 1	C	24 Aug 11	DELB Ri typical dimensions
10031-SK-30	1 of 1	C	24 Aug 11	SELB typical dimensions
10032-SK-30	1 of 1	B	24 Aug 11	DELB Ro typical dimensions
10033-SK-30	1 of 1	B	24 Aug 11	DELB Ro & Ri typical dimensions
10034-OL-40	1 of 1	B	24 Aug 11	2 Wire Amplifier Box Mounted
10036-GA-30	1 of 1	C	24 Aug 11	CLC AMP style G.A.
10037-OL-40	1 of 1	B	24 Aug 11	CLC AMP typical dimensions
10038-GA-30	1 of 1	C	24 Aug 11	CLC style G.A.
10039-LA-40	1 of 1	A	24 Aug 11	Certification Label – Amplifier Box
10044-GA-30	1 of 1	C	24 Aug 11	DELP IGP AMP C style G.A.
10196-GA-30	1 of 2	H	24 Aug 11	DELP Triple Bridge – General Assy
10196-GA-30	2 of 2	H	24 Aug 11	DELP Triple Bridge – General Assy
10197-GA-30	1 of 2	G	24 Aug 11	DELP Dual Bridge – General Assy
10197-GA-30	2 of 2	G	24 Aug 11	DELP Dual Bridge – General Assy
10198-LA-40	1 of 1	C	24 Aug 11	Certification Label details
10199-LA-40	1 of 1	C	24 Aug 11	Certification Label
10229-SA-30	1 of 1	A	24 Aug 11	Gland end cover
10232-SA-30	1 of 1	B	24 Aug 11	Terminal Board Sub-Assy
10233-CSP-40	1 of 1	B	24 Aug 11	Type Polyurethane Cable Spec
10254-GA-30	1 of 2	D	24 Aug 11	DELP Dual Bridge Amp – General Assy
10254-GA-30	2 of 2	D	24 Aug 11	DELP Dual Bridge Amp – General Assy
10255-GA-30	1 of 2	B	24 Aug 11	Type SLL – General Assy
10255-GA-30	2 of 2	B	24 Aug 11	Type SLL – General Assy
10257-GA-30	1 of 2	B	24 Aug 11	Type SLL + AMP – General Assy
10257-GA-30	2 of 2	B	24 Aug 11	Type SLL + AMP – General Assy
10258-OL-30	1 of 1	B	24 Aug 11	Type SLL
10259-OL-30	1 of 1	B	24 Aug 11	Type SLL + AMP
PCB-333IS	1 to 3	B	24 Aug 11	Amplifier PCB BOM
10288-LA-40	1 of 1	B	24 Aug 11	ATEX Label for Soemer Load Cells
10329-GA-30	1 of 1	A	24 Aug 11	Type LPMW-SB – General Assy
10330-GA-30	1 of 1	A	24 Aug 11	Type LPMW-DB – General Assy

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Certificate Annexe

Certificate Number: **Sira 07ATEX2221**

Equipment: **Range of Load Cells**

Applicant: **Elite Transducers Limited**

Drawing	Sheets	Rev.	Date (Sira stamp)	Title
10331-WG-30	1 of 3	A	24 Aug 11	Type LPMW-SB – Single Bridge Configuration
10331-WG-30	2 of 3	A	24 Aug 11	Type LPMW-SB – Single Bridge Gauge Positioning
10331-WG-30	3 of 3	A	24 Aug 11	Type LPMW-SB – Single Bridge Wiring Diagram
10332-WG-30	1 of 3	A	24 Aug 11	Type LPMW-DB – Dual Bridge Configuration
10332-WG-30	2 of 3	A	24 Aug 11	Type LPMW-DB – Dual Bridge Gauge Positioning
10332-WG-30	3 of 3	A	24 Aug 11	Type LPMW-DB – Dual Bridge Wiring Diagram
10335-SK-40	1 of 1	A	24 Aug 11	Type LPMW – Low Profile Multi Webb Cell Dimensional Details
10336-SK-40	1 of 1	A	24 Aug 11	Type LPCC – Low Profile Compression Cell Dimensional Details
10337-GA-30	1 of 1	A	24 Aug 11	Type LPCC – Low Profile Compression Cell General Assembly
10338-GA-30	1 of 1	A	24 Aug 11	Type LPCC – Low Profile Compression Cell Wiring Diagram
10339-LA-40	1 of 1	A	24 Aug 11	ATEX Label for Pat-Kruger Load Cells
10340-SK-30	1 of 1	A	24 Aug 11	Connector/Cable Details
10341-SK-30	1 of 1	A	24 Aug 11	Connector/Cable Details
10344-CSP-40	1 of 1	A	24 Aug 11	6 Core Cable Specification

Issue 4

Drawing no.	Sheets	Rev	Date (Sira stamp)	Title
10005-GA-30	1 of 1	F	24 Oct 14	SELB Ro style General Assy
10006-GA-30	1 of 1	F	24 Oct 14	SELB RI style General Assy
10009-GA-30	1 of 1	G	25 Nov 14	DELP IGP style General Assy
10010-GA-30	1 of 1	F	24 Oct 14	DELB Ro style General Assy
10011-LA-40	1 of 1	K	17 Sep 14	Certification label
10012-LA-40	1 of 1	K	17 Oct 14	Certification label
10014-GA-30	1 of 1	G	24 Oct 14	DELP EGW style General Assy
10020-GA-30	1 of 1	F	24 Oct 14	DELB Ri style General Assy
10024-GA-30	1 of 1	G	24 Oct 14	DELP IGP AMP style General Assy
10029-SK-30	1 of 1	E	24 Oct 14	DELP EGW & IGP/AMP typical dimensions
10034-OL-40	1 of 1	D	24 Oct 14	2 Wire Amplifier Box Mounted
10036-GA-30	1 of 1	E	24 Oct 14	CLC AMP style General Assy
10037-OL-40	1 of 1	D	24 Oct 14	CLC AMP typical DIMN's
10038-GA-30	1 of 1	E	24 Oct 14	CLC style General Assy
10044-GA-30	1 of 1	E	24 Oct 14	DELP IGP AMP C style General Assy
10196-GA-30	1 to 2	K	24 Oct 14	DELP Triple Bridge- General Assy
10197-GA-30	1 to 2	J	24 Oct 14	DELP Dual Bridge General Assy
10198-LA-40	1 of 1	E	24 Oct 14	Certification label
10199-LA-40	1 of 1	E	24 Oct 14	Approval label Elite Pins
10254-GA-30	1 to 2	F	24 Oct 14	DELP Dual Bridge Amp- General Assy
10255-GA-30	1 to 2	D	24 Oct 14	Type SLL- General Assy
10257-GA-30	1 to 2	D	24 Oct 14	Type SLL + AMP – General Assy
10258-OL-30	1 of 1	C	24 Oct 14	Type SLL
10259-OL-30	1 of 1	C	24 Oct 14	Type SLL + AMP
10288-LA-40	1 of 1	D	24 Oct 14	Atex Label for Soemer Load Cells
10329-GA-30	1 to 1	C	24 Oct 14	Type LPMW-SB- general Assy
10330-GA-30	1 to 1	C	24 Oct 14	Type LPMW-DB- General Assy
10331-WG-30	1 of 3	B	24 Oct 14	Type LPMW-SB- Single Bridge Configuration
10331-WG-30	2 of 3	B	24 Oct 14	Type LPMW-SB-gauge Gauge Positioning
10331-WG-30	3 of 3	B	24 Oct 14	Type LPMW-SB- Wiring Diagram

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Applicant: **Elite Transducers Limited**

Drawing no.	Sheets	Rev	Date (Sira stamp)	Title
10332-WG-30	1 of 3	B	24 Oct 14	Type LPMW-DB- Dual Bridge Configuration
10332-WG-30	2 of 3	B	24 Oct 14	Type LPMW-DB- Dual Bridge Gauge Positioning
10332-WG-30	3 of 3	B	24 Oct 14	Type LPMW-DB- Gauge Wiring Diagram
10339-LA-40	1 of 1	C	17 Sep 14	ATEX label for Pat-Kruger Load Cells
10527-LA-40	1 of 1	C	17 Sep 14	ATEX LABEL for VETEC Load Cells
10535-LA-40	1 of 1	B	17 Sep 14	ATEX LABEL for DLM Load Cells
10337-GA-30	1 of 1	C	25 Nov 14	LPCC-Low Profile Compression Cell

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