



1 **EC TYPE EXAMINATION CERTIFICATE**

2 Equipment or protective system intended for use in potentially explosive atmospheres –
Directive 94/9/EC – Annex III

3 EC Type Examination Certificate No.: **TRAC14ATEX0023X**

4 Equipment: **42xx Series Strain gauge enclosures,
4255, 4256 & 4257**

5 Manufacturer: **LCM Systems Ltd.,**

6 Address: **Unit 15, Newport Business Park, Barry Way, Newport, Isle of Wight,
PO30 5GY, United Kingdom.**

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

8 TRaC Global Ltd, Notified Body number 0891 in accordance with Article 9 of the Council 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 or protective system intended for use in potentially explosive atmospheres given in Annex II to the Directive.

The examination and test results are recorded in the confidential report **TRA-023079-33-00A**.

9 Compliance with the Essential Health and Safety Requirements, with the exception of those listed in section 18 of the schedule to this certificate, has been assured by compliance with:

EN 60079-0:2012

EN60079-1:2007

EN60079-31:2009

10 If the sign "X" is placed after the certificate number then this indicates that the equipment or protective system is subject to special conditions of 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 in accordance with Directive 94/9/EC. Further requirements of this Directive apply to the manufacture and supply of this equipment.

12 The marking of this equipment or protective system shall include the following:

II 2 G Ex d IIC T6 Gb

II 2 D Ex tb IIIC T85°C Db IP6x T_{amb} -20°C to +55°C

This certificate and its schedules may only be reproduced in its entirety and without change. This certificate is issued in accordance with the TRaC Ex Certification Scheme.

S.P. Winsor

S P Winsor, Certification Team Leader

Issue date: 2014-10-03

Copy No.: 1e

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Form RF355 is16A

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13 **SCHEDULE TO EC TYPE EXAMINATION CERTIFICATE**

14 **TRAC14ATEX0023X**

15 **General description of equipment or protective system included within the scope of this certificate**

The 42xx series is a range of flameproof EPL Gb and dust ignition protected EPL Db strain gauge load measuring device enclosures which are constructed from either 304 or 316 stainless steel dependent upon the application and utilise, cylindrical, threaded and welded flameproof joints. The range comprises of 4255 Load Measuring Pin, 4256 Link Load Cell and 4257 CPA Compression Load Cell.

All enclosures are supplied either with a suitably ATEX certified bulkhead connector or a cable and cable entry device already fitted.

Electrical Rating 0-27Vdc.

4255 Load Measuring Pin

The load pin is cylindrical in construction and varies in both internal and external dimensions dependent upon the application but has an internal volume ranging between 5 and 500cm³. Fitted at the load measuring end of the enclosure is either a M16, M22, M30 or M50 threaded end cap. At the opposite end is an electronics enclosure in which the signal conditioning board and connections are mounted. This end is fitted either with an M16, M22, M30 or M50 threaded end cap or alternatively a 16mm or 30mm non-threaded end cap which forms a cylindrical joint with the enclosure. The non-threaded end cap is secured by four M3 x 10 cap head screws. The electronics end cap is tapped with either an M12, M16, M20 or M25 thread to allow the fitment of a cable gland or approved flameproof bulkhead connector.

4256 Link Load Cell

The link load cell is a three part construction and varies in both internal and external dimensions dependent upon the application but has an internal volume ranging between 40 and 500cm³. The three main parts are, the amplifier cap, the load cell element and the plug cap. The amplifier cap and plug cap form a cylindrical flamepath with the load cell element and secured together with M6 pan head screws fitted within the enclosure.

The end of the plug cap is fitted with an M50 threaded end cap which allows access to the M6 pan head screws. At the amplifier cap end, in which the signal conditioning board and connections are mounted, is fitted either with an M16, M22, M30 or M50 threaded end cap or alternatively a 16mm or 30mm non-threaded end cap which forms a cylindrical joint with the enclosure. The non-threaded end cap is secured by four M3 x 10 cap head screws. The amplifier end cap is tapped with either an M12, M16, M20 or M25 thread to allow the fitment of a cable gland or approved flameproof bulkhead connector.

4257 CPA Compression Load Cell

The CPA compression load cell consists of three main parts, the first of which is the load cell element which fits inside a cylindrical cover which is closed at both ends with a welded joint. Fitted on the side of the cover is the amplifier boss which is again cylindrical in construction. The amplifier boss can house the signal conditioning board and connections mounted within it and has a threaded end cap which has either an M16, M22, M30 or M50 thread. The side wall of the amplifier boss is threaded to allow the fitting of a cable gland or approved flameproof bulkhead connector.

A list of controlled Manufacturer's Documents is given in Appendix A to this schedule

16 **Test report No.:** **TRA-023079-33-00A.**

17 **“Special Conditions of Safe Use” for Ex Equipment:**

1. The M3 fasteners used to secure the end caps shall be high tensile stainless steel fasteners with a minimum grade of A2-70 or A4-70
2. The M6 fasteners used internally to secure the link load cell shall be stainless steel grade A2 or A4.
3. No modifications shall be made to the flamepaths of the equipment without consultation with the manufacturer.

18 **Essential health and safety requirements**

Covered by application of the standards listed in section 9 of this certificate and the assessment conducted in the test report listed in section 16 of this certificate.

19 **Additional information**

“Routine tests”, if any:

1. Each CPA Compression load cell to be subjected to a routine over pressure test of at least 13.98 Bar.

“Special conditions for manufacture”:

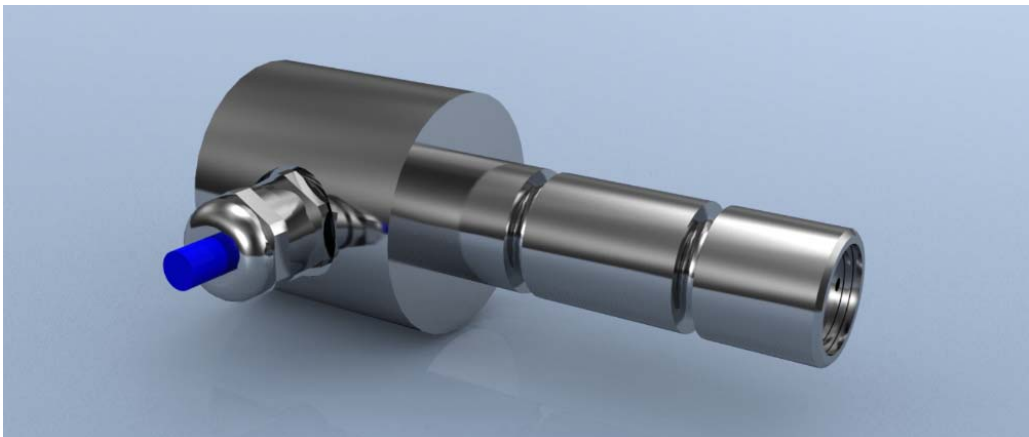
1. All equipment must be supplied either with suitable ATEX certified bulkhead connectors or cables and cable entry devices fitted.

Other information, if any:

None.

Photographs

4255 Load Measuring Pin



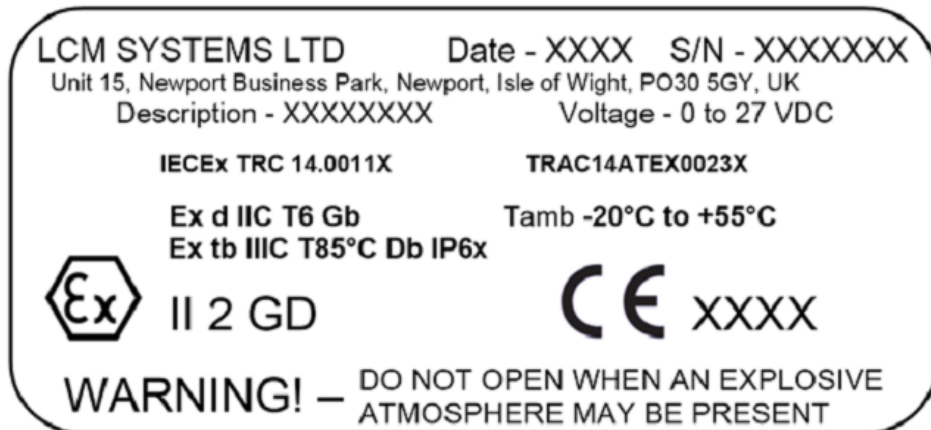
4256 Link Load Cell



4257 CPA Compression Load Cell



Details of markings



NOTE – Description completed with one of the following types and drawing numbers

LOAD CELL TYPE	DRAWING No.
LOAD PIN	4255
LINK LOAD CELL	4256
CPA LOAD CELL	4257

CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC14ATEX0023X

Details of variations to this certificate

- None

Notes to CE marking

In respect of CE Marking, TRaC Global Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

Notes to this certificate

TRaC certification reference: **TRA-023079-32-00**.

Throughout this certificate, the date format yyyy-mm-dd (year-month-day) is used.



CONTINUATION OF SCHEDULE TO CERTIFICATE TRAC14ATEX0023X

APPENDIX A - LIST OF CONTROLLED MANUFACTURER'S DOCUMENTS

Title:	Drawing No.:	Rev. Level:	Date:
LOAD PIN	LCM4255_SHT 1 of 2	A	2014-08-01
LOAD PIN	LCM4255_SHT 2 of 2	A	2014-08-01
Link Load Cell	LCM4256_SHT 1 of 2	A	2014-08-01
Link Load Cell	LCM4256_SHT 2 of 2	A	2014-08-01
CPA Load Cell	LCM4257	A	2014-08-01
M50 END CAP	4255/1	A	2014-08-01
M30 END CAP	4255/2	A	2014-08-01
M22 END CAP	4255/3	A	2014-08-01
M16 END CAP	4255/4	A	2014-08-01
16mm End Cap	4255/5	A	2014-08-01
30mm End Cap	4255/6	A	2014-08-01
30mm End Cap	4255/7	A	2014-08-01
30mm End Cap	4255/8	A	2014-08-01
ATEX & IECEx Label	4255/9	A	2014-07-30
Link Plug Cap Ø45	4256/1	A	2014-08-01
Link Amp Cap Ø45	4256/2	A	2014-08-01
Link Amp Cap Ø45	4256/3	A	2014-08-01
Link Plug Cap Ø57	4256/4	A	2014-08-01
Link Amp Cap Ø57	4256/5	A	2014-08-01
Link Amp Cap Ø57	4256/6	A	2014-08-01
CPA Amp Cap	4257/1	A	2014-08-01
Instruction Manual (5 sheets)	QMS REC 6	01	2014-07-24