



IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION IEC Certification System for Explosive Atmospheres

for rules and details of the IECEx Scheme visit www.iecex.com

Certificate No.: **IECEx SIR 19.0055X** Page 1 of 3 [Certificate history:](#)

Status: **Current** Issue No: 0

Date of Issue: 2020-01-27

Applicant: **LCM Systems Ltd**
Unit 15, Newport Business park
Barry way, Newport
Isle of Wight
PO30 5G
United Kingdom

Equipment: **LCM range of load cells**

Optional accessory:

Type of Protection: **Intrinsically Safe**

Marking: Ex ib IIC T4 Gb
Ex ib IIIC T135°C Db
Ta = -20°C to +70°C

Approved for issue on behalf of the IECEx
Certification Body:

Neil Jones

Position:

Certification Manager

Signature:
(for printed version)

Date:

1. This certificate and schedule may only be reproduced in full.
2. This certificate is not transferable and remains the property of the issuing body.
3. The Status and authenticity of this certificate may be verified by visiting www.iecex.com or use of this QR Code.



Certificate issued by:

SIRA Certification Service
CSA Group
Unit 6, Hawarden Industrial Park
Hawarden, Deeside, CH5 3US
United Kingdom

sira
CERTIFICATION





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Manufacturer: **LCM Systems Ltd**
Unit 15, Newport Business park
Barry way, Newport
Isle of Wight
PO30 5G
United Kingdom

Additional
manufacturing
locations:

This certificate is issued as verification that a sample(s), representative of production, was assessed and tested and found to comply with the IEC Standard list below and that the manufacturer's quality system, relating to the Ex products covered by this certificate, was assessed and found to comply with the IECEx Quality system requirements. This certificate is granted subject to the conditions as set out in IECEx Scheme Rules, IECEx 02 and Operational Documents as amended

STANDARDS :

The equipment and any acceptable variations to it specified in the schedule of this certificate and the identified documents, was found to comply with the following standards

IEC 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

IEC 60079-11:2011 Explosive atmospheres - Part 11: Equipment protection by intrinsic safety "i"
Edition:6.0

This Certificate **does not** indicate compliance with safety and performance requirements other than those expressly included in the Standards listed above.

TEST & ASSESSMENT REPORTS:

A sample(s) of the equipment listed has successfully met the examination and test requirements as recorded in:

Test Report:

[GB/SIR/ExTR20.0014/00](#)

Quality Assessment Report:

[GB/SIR/QAR15.0012/04](#)



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EQUIPMENT:

Equipment and systems covered by this Certificate are as follows:

The range of load cells is designed to convert an applied load into a proportional output signal.

The load cells in the range are comprised of a stainless steel body containing a strain gauge bridge and an optional Ex component certified signal conditioning unit on a single printed circuit board (ICA5ATEX). Electrical connections are made via cable gland or multi-pin bulkhead connector. The internal access to the enclosures may be via threaded cap, or bolted cap, both types are fitted with elastomeric sealing rings.

The electrical parameters for all types in the range are:

$U_i = 28V$, $I_i = 100mA$, $P_i = 0.7W$, $C_i = 49.39nF$, $L_i = 20\mu H$

Refer to the Annexe for additional information.

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. When fitted with a Mantracourt type ICA5ATEX PCB strain gauge amplifier PCB the LCM range of load cells must be supplied by an Ex certified barrier with a minimum source resistance of 300Ω .

Annex:

[IECEx SIR 19.0055X Annexe Issue 0.pdf](#)

Annexe to: IECEx SIR 19.0055X Issue 0
Applicant: LCM Systems Ltd.
Apparatus: LCM range of load cells



The range consists of the following types:

- a. **Type LCM4814 Load Pin**
 - i. Radial with the option of using a ICA5ATEX conditioning PCB
 - ii. Axial with the option of using a ICA5ATEX conditioning PCB
 - b. **Type LCM4815 Load Link**
 - i. Axial with the option of using a ICA5ATEX conditioning PCB
 - ii. Radial with the option of using a ICA5ATEX conditioning PCB
 - c. **Type LCM4816 Column Load Cell**
 - i. Radial with the option of using a ICA5ATEX conditioning PCB
 - d. **Type LCM4817 Diaphragm Load Cell**
 - i. Compression with the option of using a ICA5ATEX conditioning PCB
 - ii. Tension/compression with the option of using a ICA5ATEX conditioning PCB
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- a. The LCM 4814 Load Pins comprise a stainless steel body containing a strain gauge bridge and an optional Ex component certified signal conditioning unit printed circuit board. Electrical connections are made via a cable gland.
 - b. LCM 4815 Load Links comprise a stainless steel body upon which is mounted a strain gauge bridge and an optional Ex component certified signal conditioning unit, printed circuit board. Electrical connections are made via a cable gland.
 - c. LCM 4816 Compression load cells comprise a stainless steel body upon which is mounted a strain gauge bridge and an optional Ex component certified signal conditioning unit printed circuit board. Electrical connections are made via a cable gland or a bulkhead connector.
 - d. LCM4817 Tension/compression load cells comprise a stainless steel body upon which is mounted a strain gauge bridge and an optional Ex component certified signal conditioning unit printed circuit board. Electrical connections are made via a cable gland or a bulkhead connector.

The electrical parameters for all types in the range are:

$U_i = 28V$, $I_i = 100mA$, $P_i = 0.7W$

Conditions of Manufacture

- i. The LCM range of load cells may incorporate a previously Ex component certified ICA5ATEX strain gauge amplifier (TRAC10ATEX11248U). It is therefore the responsibility of the manufacturer to continually monitor the status of the certification associated with this device. The manufacturer shall inform Sira of any modifications to the device that may impinge upon the explosion safety design of the LCM range of load cells.
- ii. In accordance with IEC 60079-11:2011 clause 10.3, each manufactured sample of the equipment shall be subjected to a routine electric strength test using a test voltage of 500 Vac applied between the circuit and enclosure. There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.