LCM SYSTEMS

Solutions in Load Cell Technology

Instruction Manual

Operator Instructions for Cabled ATEX/IECEx Intrinsically Safe (Ex i) Load Links

LCM Systems Ltd
Unit 15, Newport Business Park
Barry Way, Newport
Isle of Wight PO30 5GY UK
Tel: +44 (0)1983 249264
Fax: +44 (0)1983 249266
sales@lcmsystems.com
www.lcmsystems.com

CE

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1. OPERATING INSTRUCTIONS

1.1 Introduction

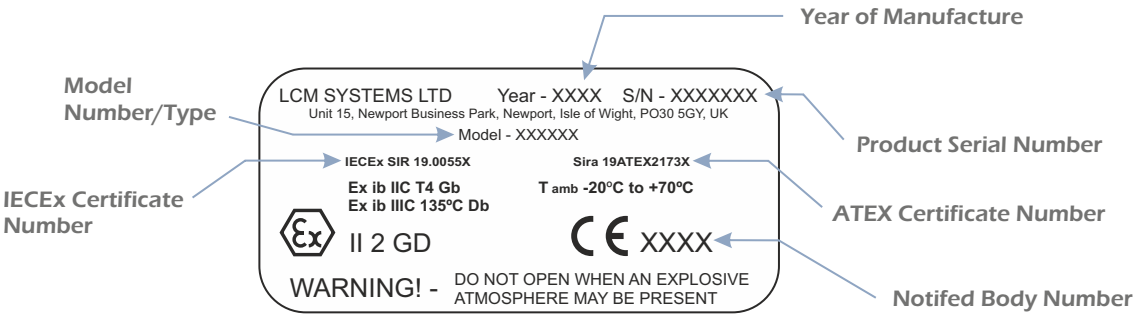
This manual refers to the LCM Systems range of ATEX and IECEx certificated intrinsically safe (Ex i) cabled load links. This and any reference documents should be read and understood before installing or operating any LCM systems ATEX/IECEx cabled load link. All LCM Systems ATEX/IECEx cabled load links will be accompanied by a general arrangement drawing or datasheet, calibration certificate, declaration of conformity and a copy of LCM Systems ATEX/IECEx certificates.

All LCM System Ex i cabled load links are available with two analogue output options, a mV/V strain gauge bridge output, or 2-wire 4-20mA output. The 4-20mA output is supplied via an ICA5ATEX miniature load cell amplifier. Both output types are suitable for use in hazardous environments zones 1and 2.

All Ex i load links are designed and manufactured in accordance with Directive 2014/34/EU and the following standards: EN 60079-0, EN 60079-11.

1.2 Markings and labels

Each load link will have the serial number and the safe working load (SWL) engraved on the side. Customer specific markings may also be engraved if required.



Year: Year the product is manufactured

Product Serial Number: Individual serial number allocated to each product

Model/Type Number: Load link (all LCM System cabled load link designs are done in accordance with certification drawing LCM4815-ATEX_SHT1 & SHT2. LCM Systems allocate an individual model number for each new design i.e. LCMXXXX-ATEX (where X=0-9), example LCM5201-ATEX)

Certificate Numbers: IECEx SIR 19.0055X and Sira 19ATEX2173X

Markings: II 2G
Ex ib IIC T4 Gb
Ex ib IIIC T135ºC Db
T amb -20ºC to +70ºC

Warnings: DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT

Supplier:
LCM Systems Ltd
Unit 15, Newport Business Park,
Barry Way, Newport
Isle of Wight PO30 5GY
United Kingdom

Service: (REPAIR, SUPPORT)
LCM Systems Ltd
Tel: +44(0)1983 249264
Fax: +44(0)1983 249266
e-mail: sales@lcmsystems.com

1.3 Checks prior to installation

To ensure safe and problem free installation, the load link must be properly transported/stored and must be installed and placed into operation by a competent person who is certified to install hazardous area products. Standard engineering and rigging practices must also be followed in addition to this guide.

Unpacking

Before removing the load link inspect the packaging for signs of damage and immediately inform the supplier if any damage is found. Unpack the load link carefully, taking care not to damage the cable, cable gland or connector. Please ensure that calibration and instruction data is not inadvertently discarded with packing material.

a) Inspect the wireless housing for signs of damage including any marks which may obscure the information on the labels.

b) Check the ambient temperature of the environment the load link will be operating in does not exceed the certified -20°C to + 70°C range.

c) Check that the load link is suitable for the environment with regards to IP rating (ingress protection) and corrosion resistance (high chloride environments).

d) Verify that the load link certificate is in accordance with the hazardous area assessment as to EN60079-15 (current issue).

e) If the load link is fitted with a cable and gland, check that the gland has not come loose during transit or storage and that the cable is still securely in place.

f) If the load link is fitted with a connector, check the connector has not come loose during transit or storage, check the plug and socket for any damage and check that the connector mates correctly.

g) For all load links, check the cable for damage, such as cuts or abrasions, especially where the cable enters the gland or connector assembly.

IMPORTANT NOTE:
In order for load links fitted with a 2-wire 4-20mA amplifier to remain ATEX compliant, the total amount of capacitance that can be connected to a load pin (Co) must not exceed 33nF (0.033uF). This value must include the total cable capacitance and the Ci value of the barrier supplying the unit. If the installation includes any ATEX junction boxes their Ci values must also be included.

The total capacitance of the load link with the attached cable will be shown on the general arrangement drawing and will also be included on the declaration of conformity.

When installing in a hazardous zone, the load link must be connected via an approved ATEX Barrier with the following parameters:

Uo = 28V, Io = 100mA, Po = 0.7W, Barrier Impedance = 300Ω.

These are maximum values; actual barrier parameters will vary. However, the barrier impedance is not permitted to change.

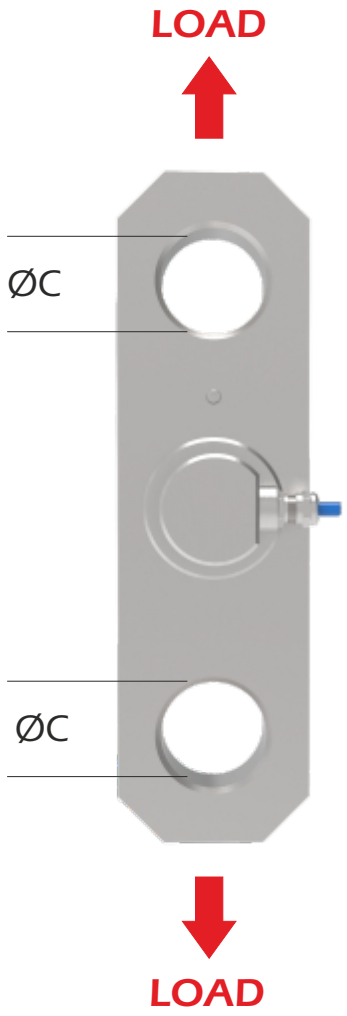
The maximum capacitance, Cc, can be taken as the capacitance between all cores connected together and the screen. See Annex C of the installations standard EN60079-14 for details. A safety margin of +10% has been added.

1.4 Installation & operation

Load links are normally classified as portable devices and so correct installation is critical to maintain product life cycle. To avoid damage or loss of accuracy during installation, the following points should be followed:

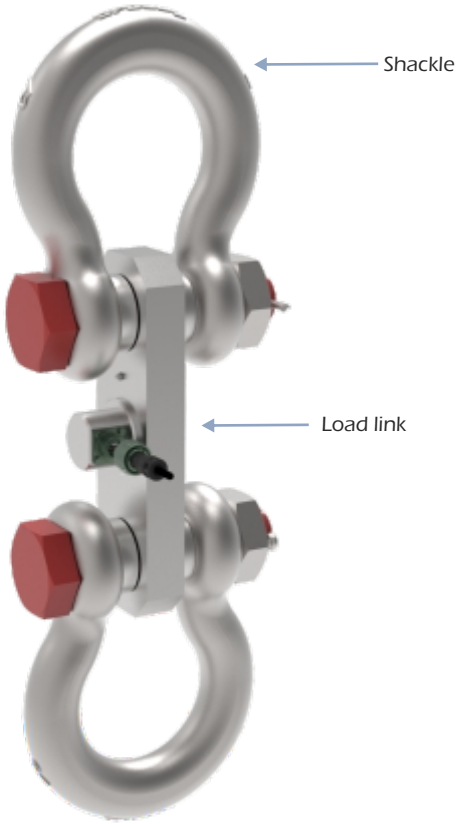
- The direction of load applied to the link should be linear as shown below
- Ensure that the load link does not experience torque or bending forces during operation.
- The load link should only be loaded in tension using the ØC holes as shown below.
- For optimal performance, a tight tolerance with the ØC loading holes is recommended.

Please note that all load links installed in hazardous areas must be in accordance with the installation standard EN60079-14.

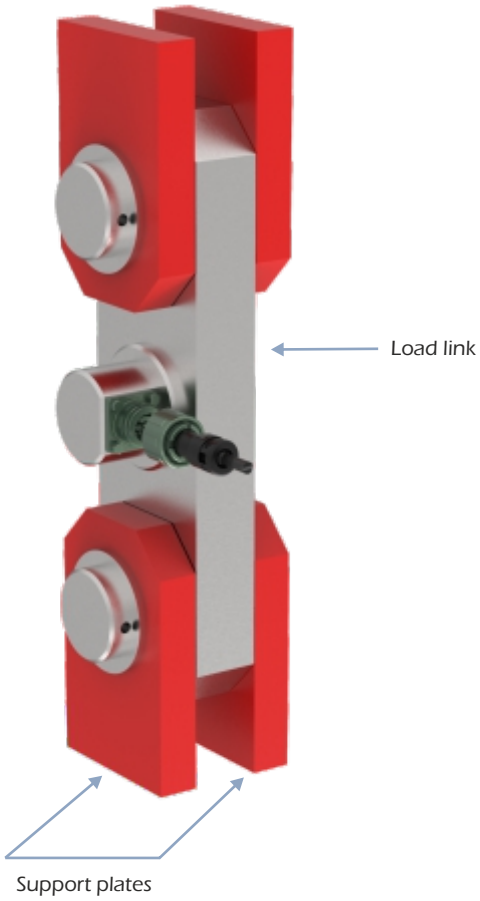


- When the load link has been installed check the displayed output is not negative, as this may indicate either a fault or a compressive force is being applied to the load link. See the diagrams overleaf for details on correct loading.
- When applying load to the load link, the output should increase in the positive direction. Use the calibration certificate for reference and lift a known load to check the load link is correctly calibrated.
- The zero load output given on the calibration certificate is the output of the load link when no load is applied. This includes removal of the load caused by any lifting accessories. The load on an installed load link will comprise of the weight of your assembly (including sheaves, blocks, shackles, rope, hooks etc) and the active load (load being lifted). Therefore, the output with no active load will be greater than the zero output indicated on the calibration certificate.

Shackle Installation



Pin and clevis Installation

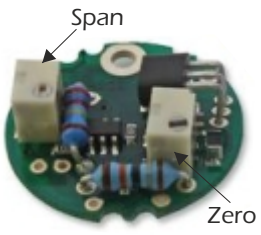


1.5 Calibration

All LCM Systems load links are calibrated in UKAS traceable test machines to best simulate normal loading conditions.

LCM Systems endeavour to match the loading conditions that would be experienced in service, but it is not possible to totally simulate the on-site structure for every load link manufactured. It is for this reason that for optimum system accuracy, a calibration in the final assembly is recommended. On-site calibration should be performed in accordance with the manual for the instrument the load link is connected to. For load links fitted with an ICA5ATEX amplifier the following adjustments are also available:

- When applying the **low** calibration conditions (weight or force). Set the output to 4mA adjusting the **Zero** potentiometer as shown.
- When applying the known **high** calibration conditions (ideally between 75% and full scale) adjust the **Span** potentiometer to give the required output current for the known input. i.e. 16mA for 4-20mA final calibration with 75% input or 20mA if 100% input as shown.

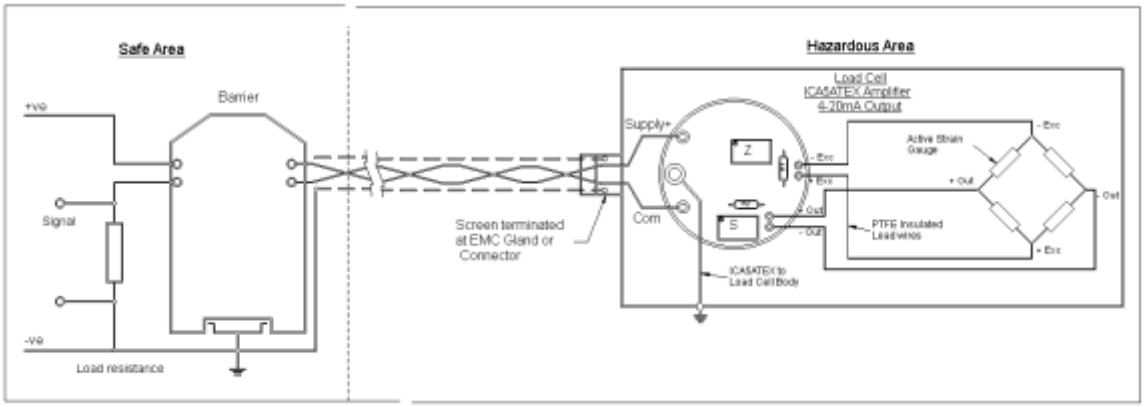


- **Note:** The ICA5ATEX 2-wire 4-20mA amplifier is unipolar i.e. zero strain input = 4mA and full range input = 20mA output. For Bidirectional load cells, 4mA = - full range, zero = 12mA and + full range = 20mA output (these are example setups only and actually ranges may vary).

Note: The Load link should never be opened to perform the following calibration adjustment if an explosive atmosphere may be present.

1.6 Connection details (4-20mA outputs)

Cable connections details are dependent on the cable used and must be compliant with the installation standard EN60079-14. Below shows the standard connection detail for a 4-20mA connection to a barrier. See below and the product general arrangement drawing for full connection details.



The barrier shown above limits the amount of electrical energy that can be transferred into the hazardous area, thereby preventing the ignition of a flammable atmosphere in the event of a fault condition occurring.

A simple passive barrier is shown in this illustration, but this can be replaced by an isolated barrier to avoid ground loops that may affect measurement accuracy and stability. These devices provide three-way isolation between power, input and output. Please refer to section 4 - Special conditions of safe use.

Two examples of suitable barriers are:
MTL7706+ (passive zener diode type with active current limit) manufactured by MTL Instruments
KFD2-STC4-EX1/2 (3-way isolated type) manufactured by Pepperl and Fuchs.

1.7 Warnings/Hazards

Load links are highly stressed devices and commonly have safety factors between three and five times the rated capacity under static conditions. Fatigue applications and environmental factors can contribute to reducing this margin.

The user should determine media effects on the exposed load link materials. Where a corrosive environment is present load links can often be manufactured from corrosion resistant materials or alternatively, isolation barriers can be employed between the corrosive environment and the load link. The following points should be followed to avoid potentially hazardous situations:

- During installation and maintenance appropriate PPE must be used to avoid the potential of a spark caused by electrostatic discharge.
- The load link should NEVER be opened when an explosive atmosphere is present.
- Load links are sealed units which should not be dismantled. Removing the end cap is permitted, but only to adjust the span and zero when performing a calibration. This should only be done by a competent person in a nonexplosive atmosphere.
- The accuracy of the system is dependent upon correct installation of the load link.
- Load links must not be subjected to shock loads, such as using a hammer to force the link into position.
- The load link should never be placed in a potential explosive environment which the product is not suitably certified for (ATEX or IECEx).
- Load link material and any applied treatments (heat treatments etc.) should be verified as suitable for the environment before the load link is installed. Some heat treatments which LCM use are not suitable for marine environments/high chloride (for example, 17-4PH heat treated to H900).

- Avoid use within 20 to 30 minutes of rapid changes in temperature, for example moving the device from a cold vehicle to a warm room. The change in temperature can affect the accuracy of the device. The operating temperature is -20 to +70ºC or -4 to 158ºF.

2. CABLE INFORMATION

2.1 Cable details

Load links using intrinsic safety as a protection method have restricted current and voltage supply. These restrictions limit the length of cable and the number of other passive products which can be included in an intrinsically safe system. Please refer to section 4. Special Conditions of Safe Use.

Using the ÖLFLEX® EB CY cable shown in the table below as an example. The maximum length for the output cable would be: 33nF /250pF = 132m (multiply the pF/m figure given in the table below by the length in metres to obtain the total capacitance of each cable).

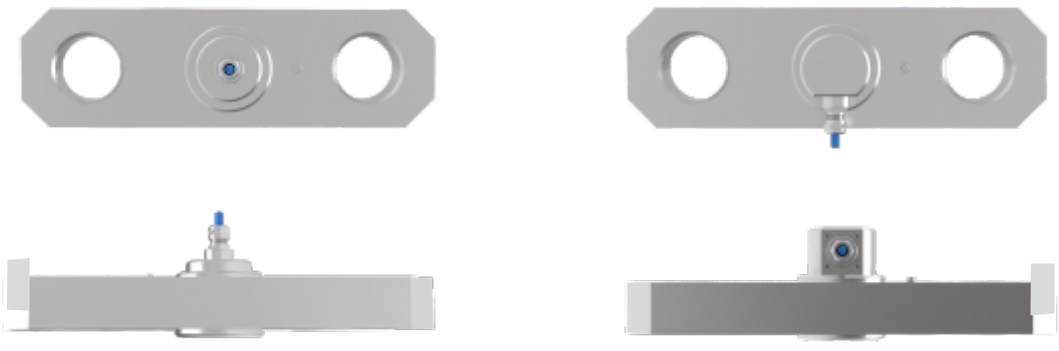
Cable	Specifications
ÖLFLEX® EB CY - PVC screened control cable	Cores and mm² per conductor: 4 x 0.75 Outer diameter: 7mm Mutual capacitance: core/core approximately 160pF/m core/screen: approximately 250pF/m Fixed installation: 6 x outer diameter Nominal voltage: U0/U: 300/500V Test voltage: 3000V Temperature range: occasional flexing -5ºC to +70ºC Fixed installation: -40ºC to +80ºC
LiYC11Y - PUR screened control cable	Cores and mm² per conductor: 4 x 0.22 Outer diameter: 7mm Mutual capacitance: core/core approximately 95±5pF/m core/screen: approximately 210±20pF/m Fixed installation: 10 x outer diameter Nominal voltage: U0/U: 300V Test voltage: 2500V Temperature range: occasional flexing -40ºC to +105ºC Fixed installation: -40ºC to +105ºC

2.2 Cable gland and connector configurations

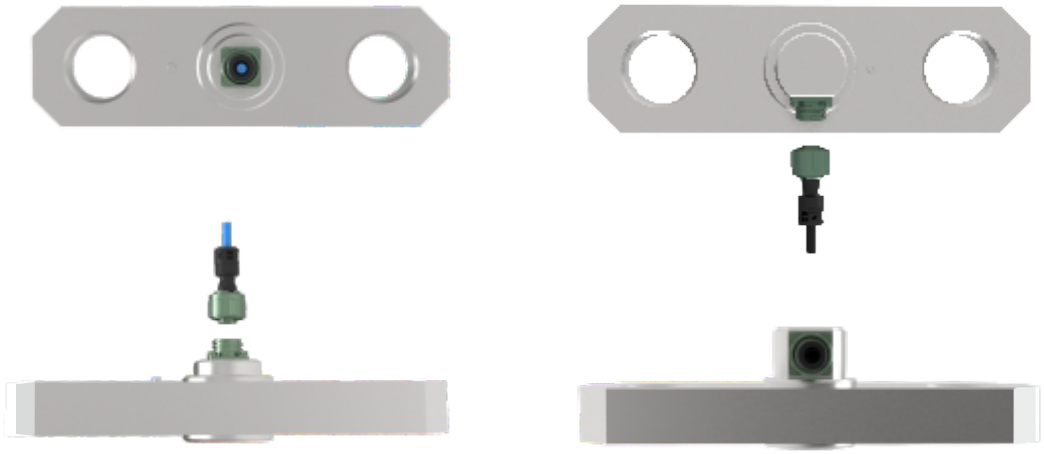
All cable gland wiring colours or connector pin details are shown on the calibration certificate supplied. The removal or replacement of the cable gland or bulkhead connector or any adjustment or repair must only be performed by LCM Systems.

Examples of cable gland and connector arrangements:

Cable gland versions



Connector versions



2.3 Mating and de-mating a connector assembly

- Check both halves of the connector for any damage or obstructions.
- Align the connector assembly and mate the two halves. Press firmly to ensure they are fully engaged.
- Tighten the locking sleeve (finger tight only) to complete the mating process.
- Always fully disengage the locking sleeve before attempting to un-mate the connector.

3. SPECIFICATIONS, APPROVALS & ONGOING MAINTENANCE/CARE

3.1 Load Link Specifications

LCM Systems Ex i cabled load links are supplied as to the specifications shown on the TLL data sheet. Alternatively a general arrangement drawing is supplied to show the specification of non-standard custom designs.

3.2 Environmental Approvals

For load links fitted with a 2-wire 4-20mA output, the output shall not exceed the sum of uncertainties when subjected to an electric field of 10V/m over the frequency range 80 to 600MHz.

CE Approvals	European EMC Directive	2004/108/EC BS EN 61326-1:2006 BS EN 61326-2-3:2006

3.3 Inspection and repair

Repair – This equipment is certified for use in hazardous locations, therefore no modifications are allowed. Repairs must only be performed by personnel specifically trained for repairs of this equipment.

Inspection – All LCM System load links should be subject to periodic inspection which should include, but is not exclusive to, the follow checks.

- Perform a complete run through of the installation and operation section of this manual, sections 1.3 to 1.5.
- Check output at zero load (check for a shift in zero offset, verify against calibration certificate).
- Check that the labels are still firmly attached, and the information is still readable.

- Check for excessive wear on the load cell which could compromise performance or the IP rating.
- Inspect the cable and the cable connector or gland for any signs of damage or excessive wear.

3.4 Storage

When not in use load links should be stored undercover in a dry environment (max humidity 95% non-condensing) at a storage temperature of -20°C to +70°C (max range -40°C to +85°C, depending on cable and cable exit fitted to the load cell).

4. SPECIAL CONDITIONS FOR SAFE USE

Special conditions for safe use	
1	The apparatus must be supplied by an approved ATEX Barrier with the following parameters: Uo = 28V, Io = 100mA, Po = 0.7W, Barrier Impedance 300Ω. These are maximum values; actual barrier parameters will vary. However, the barrier impedance is not permitted to change.
2	External inductance connected shall take into account the electrical parameters of the cable, Lc, and the combined amount shall be less than or equal to 3mH.
3	External capacitance connected shall take into account the electrical parameters of the cable, Cc, and the combined amount shall be less than or equal to 33nF.
4	The enclosure used to house the ICA5ATEX must be metallic and not contain, by mass, more than 10% in total of aluminum, magnesium, titanium and zirconium or 7.5% in total of aluminum, magnesium or zirconium and <65% copper.
5	The ICA5ATEX PCB must be mounted completely within an ATEX approved metallic apparatus enclosure as per the manufacturer's instructions.
6	Cable glands used for entry to an enclosure must be metallic and rated to maintain a minimum IP54 level of protection. Alternatively, ATEX approved glands in both metallic and non-metallic material are permitted.
7	Each ICA5ATEX PCB must be subjected to and pass a 500Vrms or 700Vdc dielectric strength test from live parts to earth when disconnected from the earth stud.
8	PCB tracks must maintain a minimum 0.2mm separation distance to the enclosure wall.
9	PCB tracks must maintain a minimum separation distance to the enclosure wall as required by the amplifier ATEX approval.

5. NOTICES

5.1 ATEX Certificates

1 **EU-TYPE EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 19ATEX2173X** Issue: **0**

4 Equipment: **LCM range of load cells**

5 Applicant: **LCM Systems Ltd.**

6 Address: Unit 15,
Newport Business Park,
Barry Way,
Newport 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 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 IEC 60079-0:2018 EN 60079-11:2012

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

Project Number 70095218

Signed: J A May

Title: Director of Operations

CSA Group Netherlands B.V.
Utrechtseweg 310, Building B42,
6812AR, Netherlands

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 19ATEX2173X**
Issue 0

13 **DESCRIPTION OF EQUIPMENT**

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 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

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:

Ui = 28V, Ii = 100mA, Pi = 0.7W, Ci = 49.39nF, Li=20µH

14 **DESCRIPTIVE DOCUMENTS**

14.1 **Drawings**

Refer to Certificate Annexe.

CSA Group Netherlands B.V.
Utrechtseweg 310, Building B42,
6812AR, Netherlands

SCHEDULE

EU-TYPE EXAMINATION CERTIFICATE **Sira 19ATEX2173X**
Issue 0

14.2 **Associated Reports and Certificate History**

Issue	Date	Report number	Comment
0	27 January 2020	R70095218A	The release of the prime certificate.

15 **SPECIFIC CONDITIONS OF USE** (denoted by X after the certificate number)

15.1 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.

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.

CSA Group Netherlands B.V.
Utrechtseweg 310, Building B42,
6812AR, Netherlands

Certificate Annexe

Certificate Number: **Sira 19ATEX2173X**

Equipment: **LCM range of load cells**

Applicant: **LCM Systems Ltd.**

Issue 0

Drawing	Sheets	Rev.	Date	Title
LCM4814-ATEX_SHT1	1 of 1	Initial	10 Jan 20	ATEX LOAD PIN (Radial)
LCM4814-ATEX_SHT2	1 of 1	Initial	10 Jan 20	ATEX LOAD PIN (Axial)
LCM4815-ATEX SHT1	1 of 1	Initial	10 Jan 20	ATEX Load Link, (Radial)
LCM4815-ATEX SHT2	1 of 1	Initial	10 Jan 20	ATEX Load Link, (Axial)
LCM4816-ATEX_SHT1	1 of 1	Initial	10 Jan 20	Column Load Cell (GA),
LCM4817-ATEX_SHT1	1 of 1	Initial	10 Jan 20	Diaphragm Load Cell (tension)
LCM4817-ATEX_SHT2	1 of 1	Initial	10 Jan 20	Diaphragm Load Cell (Compression)
LCM4814-ATEX_SHT4	1 of 1	Initial	10 Jan 20	Ex Label (Intrinsic safety)
4814-ATEX_SHT5	1 of 1	A	28 Jan 20	Cable Exits (connectors)

CSA Group Netherlands B.V.
Utrechtseweg 310, Building B42,
6812AR, Netherlands

5.2 IECEx Certificate

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

IECEx Certificate of Conformity

Certificate No.:	IECEx SIR 19.0055X	Page 3 of 3
Date of issue:	2020-01-27	Issue No: 0

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:

Ui = 28V, Ii = 100mA, Pi = 0.7W, Ci = 49.39nF, Li=20µH

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.**
Annaratus	**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

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 4815 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:

Ui = 28V, Ii = 100mA, Pi = 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 electrical 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 5mA.

Date: 27 January 2020

Form 9530 Issue 1

Sira Certification Service
Unit 6 Howarden Industrial Park,
Hawarden, CH5 3US, United Kingdom
Tel: +44 (0) 1244 670900
Email: ukinfo@csagroup.org
Web: www.csagroupuk.org

5.3 Copyright

5.4 About

LCM Systems is a specialist provider of standard and bespoke load cells, load pins, load shackles, load links and associated instrumentation, with over 30 years' experience in supplying innovative load measurement solutions to many different industries worldwide. Whatever the application and however demanding the environment, we can provide a system to meet your needs.

www.lcmsystems.com

LCM Systems Ltd
Unit 15, Newport Business Park
Barry Way, Newport
Isle of Wight PO30 5GY UK
Tel: +44 (0)1983 249264
Fax: +44 (0)1983 249266
sales@lcmsystems.com
www.lcmsystems.com

Issue 1
Issue date: 25/03/2019
APPROVED
(Unapproved if printed)