IECEx Certificate of Conformity

INTERNATIONAL ELECTROTECHNICAL COMMISSION
IEC Certification Scheme for Explosive Atmospheres

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

Certificate No.: IECEx CSA 15.0049X

Issue No: 3

Certificate history:
Issue No. 3 (2017-11-17)
Issue No. 2 (2017-10-19)
Issue No. 1 (2017-04-18)
Issue No. 0 (2015-12-17)

Status: **Current**

Date of Issue: **2017-11-17**

Applicant: **Computational Systems Inc. A business unit of Emerson.**
835 Innovation Drive
Knoxville, TN 37932
United States of America

Equipment: **CSI 2140 Machinery Health Analyzer**
Optional accessory:

Type of Protection: **Ex ic**

Marking:
Ex ic [ic] IIC T4 Gc

Tamb: -20°C to +50°C

Approved for issue on behalf of the IECEx Certification Body: Dorin Stochitoiu

Position: Technical Advisor

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 the Official IECEx Website.

Certificate issued by:

CSA Group
178 Rexdale Boulevard
Toronto, Ontario M9W IR3
Canada

CSA Group

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Manufacturer: **Computational Systems Inc.**
835 Innovation Drive
Knoxville, TN 37932
United States of America

Additional Manufacturing location(s):

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 electrical apparatus 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 : 2011 Explosive atmospheres - Part 0: General requirements
Edition:6.0

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

*This Certificate **does not** indicate compliance with electrical 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:

CA/CSA/ExTR15.0056/00 CA/CSA/ExTR15.0056/01 CA/CSA/ExTR15.0056/02
CA/CSA/ExTR15.0056/03

Quality Assessment Report:

GB/SIR/QAR17.0002/00

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Schedule

EQUIPMENT:

Equipment and systems covered by this certificate are as follows:

The CSI 2140 Machinery Health Analyzer is a portable battery operated vibration analyzer used to collect data from rotating equipment in process plants, perform on-site analysis of the machine, and export results for storage and further analysis. T he overall size of the CSI 2140 is approximately 248 mm x 226mm x 40mm The power is supplied by an integral battery pack.

See annex attached to this certificate for equipment details and electrical parameters.

SPECIFIC CONDITIONS OF USE: YES as shown below:

See annex attached to this certificate for conditions of safe use.

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above):

Issue 1: Minor changes to the front panel descriptor text and aesthetics; Updates to cable part numbers; Removal of SD memory card and associated components; Changed applicants name to Computational Systems Inc. A business unit of Emerson

Issue 2: Minor drawing change to add an alternate light sensor in the keypad; Addition of a note about maximum RF power on the installation drawing; Addition of an alternate Wifi/Bluetooth boar

Issue 3: Update of the installation drawing

Annex:

Annex_to_IECEx_CSA_15.0049X_Issue_3.pdf

Equipment Description:

The CSI 2140 Machinery Health Analyzer is a portable battery operated vibration analyzer used to collect data from rotating equipment in process plants, perform on-site analysis of the machine, and export results for storage and further analysis. It supports up to four channels to collect data from vibration sensors and other sensors for displaying, processing and analyzing of the collected data for preventative purposes.
The overall size of the CSI 2140 is approximately 248 mm x 226mm x 40mm and the enclosure provides an ingress protection level of IP 54. The IP 65 marking on the product label is based on testing conducted to IEC 60529 only, whereas, IP 54 was achieved after thermal conditioning and mechanical testing to IEC 60079-0. The power is supplied by an integral customized 7.2Vdc, 11.6Ah Lithium battery pack.

The equipment has the following entity parameters:

Voltage Input:
Ui = +/- 30 Vdc
Ii = 100 mA
Pi = 665 mW
Ci = 105 pF
Li = 1032 nH

Tachometer Connection:

Ui = +/- 30 Vdc	Uo = +26.7 Vdc
Ii = 100 mA	Io = 135 uA
Pi = 665 mW	Po = 1.52 mW
Ci = 105 pF	Co = 321 nF
Li = 1032 nH	Lo = 100 mH

Accelerometer Output:
Uo = +25.2 Vdc
Io = 146 mA
Po = 920 mW
Co = 390 nF
Lo = 3.75 mH

Conditions of Certification / Special conditions of safe use:

1. The equipment is only capable of withstanding impact levels of 2J on the light transmitting parts and 4J on the remainder of the enclosure. Therefore, additional protection shall be provided to ensure that the equipment is not subjected to higher levels of mechanical impact.

2. The equipment shall be used such that it is always substantially protected from daylight and protected during storage and transit.

3. The equipment shall be implemented in accordance with control drawing D25671.

4. No precautions against electrostatic discharge are necessary for portable equipment that has an enclosure made of plastic, metal or a combination of the two, except where a significant static-generating mechanism has been identified. Activities such as placing the item in a pocket or on a belt, operating a keypad or cleaning with a damp cloth, do not present a significant electrostatic risk. However, where a static-generating mechanism is identified, such as repeated brushing against clothing, then suitable precautions shall be taken, e.g. the use of anti-static footwear.

5. The micro USB and Ethernet connections shall only be used in a non-hazardous area.