



1 **TYPE EXAMINATION CERTIFICATE**

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

3 Type Examination Certificate Number: **Baseefa11ATEX0109X**

4 Equipment: **CSI A2130 Machinery Health Analyzer**

5 Manufacturer: **Computational Systems Incorporated (CSI)**

6 Address: **835 Innovation Drive, Knoxville, TN 37932, USA**

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

8 Baseefa certifies that this equipment has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment of Category 3 intended for use in potentially explosive atmospheres given in Annex II to European Union Directive 94/9/EC of 23 March 1994.

The examination and test results are recorded in confidential Report No. **GB/BAS/ExTR11.0118/00**

9 Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0: 2009 EN 60079-15: 2010

except in respect of those requirements listed at item 18 of the Schedule.

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 TYPE EXAMINATION CERTIFICATE relates only to the design of the specified equipment and not to specific items of equipment subsequently manufactured.

12 The marking of the equipment shall include the following :

Ex II 3G Ex nA nC IIC T4 Gc (-10°C ≤ T_a ≤ +50°C)

This certificate may only be reproduced in its entirety, without any change, schedule included.

Baseefa Customer Reference No. **5372**

Project File No. **09/0907**

This certificate is granted subject to the general terms and conditions of Baseefa. It does not necessarily indicate that the equipment may be used in particular industries or circumstances.

Baseefa

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Baseefa is a trading name of Baseefa Ltd
Registered in England No. 4305578. Registered address as above.

A handwritten signature in black ink, appearing to read "R S Sinclair".

R S SINCLAIR
DIRECTOR
On behalf of
Baseefa

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Schedule

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Certificate Number Baseefa11ATEX0109X

15 Description of Equipment

The CSI A2130* Machinery Health Analyzer is a portable instrument capable of processing and displaying vibration and velocity data. The equipment receives data from a number of types of sensor. Up to two accelerometers can be connected to provide vibration measurements and a tachometer connected to provide speed information. The information is stored on the equipment for downloading via its USB & Ethernet connections to an external device or can be stored onto a SD memory card. The equipment is powered by an internal rechargeable battery pack.

The CSI A2130* Machinery Health Analyzer comprises a number of inter-connected printed circuit boards mounted in a plastic enclosure encased in a rubber protective jacket. The front of the enclosure has a large LCD display surrounded by a membrane keypad to allow configuration and operation of the analyzer. External connection of the sensors is made via mechanically secured plug and socket connections along the top edge of the enclosure. Analyzer communication, external SD memory card slot and charger connections for use only in the non-hazardous area are made via plugs and sockets in compartments along the bottom edge of the enclosure.

There are four models of the CSI A2130* Machinery Health Analyzer. All are identical in terms of hardware but have different functionality. The models covered by this certificate are as follows: -

A21301Q Machinery Health Analyzer with a single analogue channel.

A21302Q Machinery Health Analyzer with two analogue channels.

A2130D1-Q Machinery Health Analyzer with data collection capability only.

B21300Q Machinery Health Analyzer without accessories.

The CSI A2130* Machinery Health Analyzers have the following electrical parameters: -

Accelerometer Inputs - ACC:

$$\begin{array}{ll} U_o = 21V \text{ d.c.} & U_i = \pm 9V \\ I_o = 2.9mA & I_i = 156\mu A \\ C_o = 0.1\mu F & C_i = 0 \\ L_o = 1mH & L_i = 0 \end{array}$$

Voltage / Tach Inputs - V / TACH:

$$\begin{array}{ll} U_o = 21V \text{ d.c.} & U_i = \pm 21V \\ I_o = 2.9mA & I_i = 181\mu A \\ C_o = 0.1\mu F & C_i = 0 \\ L_o = 1mH & L_i = 0 \end{array}$$

The various devices that can be used in conjunction with the CSI A2310* Machinery Health Analyzers (i.e. connected to the accelerometer and tachometer inputs) are listed below. These devices have not been certified by Baseefa and are not part of the certification of the CSI A2310* Machinery Health Analyzer.

- 1) Model A0430L3 Laser Speed Sensor.
- 2) Model A0760GP 2 Pin Accelerometer.
- 3) Model A06280A Dual Accelerometer Adapter for DB25 Input.
- 4) Model A06290A Dual Accelerometer Adapter for Turck Input.
- 5) Model A6121BL Accelerometer Cable, BNC to 2 pin Military.
- 6) Model A6121RD Accelerometer Cable, BNC to 2 pin Military.



- 7) Model D24844 Coiled Accelerometer Cable, Turck to 2 pin Military.
- 8) Model D24858 Straight Accelerometer Cable, Turck to 2 pin Military.
- 9) Model D24863 Speed Sensor Cable, Turck to 4 pin Lemo.

16 Report Number

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17 Special Conditions for Safe Use

1. The CSI A2130* Machinery Health Analyzer must always be used with the rubber protective jacket fitted.
2. The Accelerometer and Tachometer connections must not be separated when energised in the hazardous area.
3. The CSI A2130* Machinery Health Analyzer must only be powered using CSI Battery Pack Part No. D24974. This must only be charged or replaced in the non-hazardous area.
4. The SD Card, the DC Power, Ethernet and USB connections and the CPU reset located behind the covers on the bottom edge of the equipment must only be accessed and used in the non-hazardous area.
5. If any degradation of the screen (e.g. discolouration or cracks) is observed, the screen must be replaced.

18 Essential Health and Safety Requirements

All relevant Essential Health and Safety Requirements are covered by the standards listed at item 9.

19 Drawings and Documents

| Number | Sheet | Issue | Date | Description |
|----------|--------|-------|-----------|---|
| D24649 | 1 of 1 | 3 | 5/4/11 | Battery Door Gasket |
| D24967AS | 1 of 1 | 2A | 5/09/11 | 2130Q Analog Board Assembly Drawing |
| D24967FB | 1 to 3 | 2A | 5/07/11 | 2130Q Analog Board Fabrication Details |
| D24967SC | 1 to 9 | 2A | 04/27/11 | 2130Q Analog Board Schematic |
| D24968AS | 1 of 1 | 1A | 5/09/11 | 2130Q Connector Board Assembly Drawing |
| D24968FB | 1 & 2 | 1A | 05/05/11 | 2130Q Connector Board Fabrication Details |
| D24968SC | 1 & 2 | 1 | 3-Apr-08 | A2130Q Connector Board Schematic |
| D24969AS | 1 of 1 | 0 | 5/09/11 | 2130Q Display Board Assembly Drawing |
| D24969FB | 1 to 4 | 2B | 5/05/11 | 2130Q Display PCB Fabrication Details |
| D24969SC | 1 of 1 | 2 | 14-Jan-08 | 2130 Color Display Board |
| D24970AS | 1 of 1 | 0A | 5/09/11 | 2130Q Gas Gauge Board Assembly Drawing |
| D24970FB | 1 & 2 | 0A | 05/04/11 | 2130Q Battery Board Fabrication Detail |
| D24970SC | 1 of 1 | 0 | 09-Dec-03 | A2130Q Battery Pack PCB |
| D24974 | 1 of 1 | 4 | 4/20/11 | A2130Q Battery Pack |
| D25002 | 1 of 1 | 2 | 12/10/07 | Connector Panel |
| D25004 | 1 of 1 | 4 | 5/4/11 | 21302Q Assembly |
| D25055 | 1 of 1 | 1 | 5/09/11 | 2130Q ATEX Label |
| D25158AS | 1 of 1 | 0 | 5/09/11 | 2130Q Lead Free Memory PCB Assembly Drawing |
| D25158FB | 1 & 2 | 0A | 5/05/11 | 2130Q Memory PCB Fabrication Details |
| D25158SC | 1 & 2 | 0 | 3/08/07 | 2130Q Memory Board Schematic |
| D25264AS | 1 of 1 | 0 | 5/09/11 | 2130Q Lead Free Digital Board Assembly Drawing |
| D25264FB | 1 to 4 | 0A | 5/05/11 | 2130Q Lead Free Digital Board PCB Fabrication Details |

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| Number | Sheet | Issue | Date | Description |
|---------------|--------------|--------------|-------------|---|
| D25264SC | 1 to 10 | 0A | 27-Apr-11 | CSI Model 2130Q Lead Free Digital Board Schematic |
| D25319 | 1 & 2 | 3 | 5/10/11 | Keypad Conductive |
| D25358 | 1 of 1 | 0 | 5/03/11 | 2130Q Approval Label ATEX Version |