



**CSA
Group**

1 **EC TYPE-EXAMINATION CERTIFICATE**

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

3 Certificate Number: **Sira 15ATEX2152X** Issue: **0**

4 Equipment: **Transducer Sensors/AC9** Series and TA9** Series**

5 Applicant: **CTC - Connection Technology Center, Inc.**

6 Address: **7939 Rae Blvd.
Victor
New York 14564
USA**

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

8 Sira Certification Service, notified body number 0518 in accordance with Article 9 of 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 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 60079-0:2012

EN 60079-11:2012

The above list of documents may detail standards that do not appear on the UKAS Scope of Accreditation, but have been added through Sira's flexible scope of accreditation, which is available on request.

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 EC 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 1G

Ex ia IIC T3 Ga

Ta = -40°C to +121°C

Project Number 70009243

C Ellaby
Deputy Certification Manager

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SCHEDULE

EC TYPE-EXAMINATION CERTIFICATE

Sira 15ATEX2152X
Issue 0

13 DESCRIPTION OF EQUIPMENT

The devices, powered by IS Barriers matching the Entity Parameters, are transducer sensors used for acceleration measurement by means of piezo-electric devices. The piezo-electric device is subjected to compression pressure from a mass which produces a voltage in proportion to the acceleration. For the AC9** Series, the voltage is then amplified by internal electronic circuitry producing a 10 mV/g, 50 mV/g, or 100 mV/g signal. The TA9* Series is referred to as the accelerometer because it has a temperature output that is different from the AC9*. The sensors are mounted onto the desired surface using a threaded bolt.

The AC9** has sensing elements that are smaller than the TA9** series which allows it to be a compact version with one element, a version that measures two axis (biaxial) and a version that measures three axis (triaxial). Both the AC9** and TA9** come in cases that have the connector pins coming out of the top (top exit) and the side (side exit).

In terms of connectors and cables, the two models overlap slightly:

- The compact AC9** sensor has 2 pins and uses 2 wire cable, 1 wire is for the sensing element and 1 for common.
- The biaxial AC9** sensor has 3 pins and uses 3 wire cables, 2 wires are for the different sensing elements and 1 for common.
- The triaxial AC9** sensor has 4 pins and a 4 wire cable; 1 for each of the 3 sensing elements and 1 for common.
- The TA9** sensor has 3 pins and uses 3 wire cables, 1 wire is for the sensing element, 1 wire is for the temperature output and 1 is for common

The equipment has the following entity parameters:

AC9** without Cable

Ui = 28 VDC li = 120 mA Pi = 1 W Ci = 63.036 nF Li = 0 µH

AC9** with a maximum of 200 feet (61m) of Integral Cable:

Ui = 28 VDC li = 120 mA Pi = 1 W Ci = 72.836 nF Li = 42 µH

TA9** without Cable

Ui = 28 VDC li = 120 mA Pi = 1 W Ci = 1.5 nF Li = 0 µH

TA9** with a maximum of 1600 feet (488m) of Integral Cable:

Ui = 28 VDC li = 120 mA Pi = 1 W Ci = 80.2 nF Li = 336 µH

14 DESCRIPTIVE DOCUMENTS

14.1 Drawings

Refer to Certificate Annexe.

14.2 Associated Sira Reports and Certificate History

Issue	Date	Report number	Comment
0	12 June 2015	R70009243A	The release of the prime certificate.

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Sira Certification Service

Unit 6, Hawarden Industrial Park,
Hawarden, CH5 3US, United Kingdom



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Issue 0

- 15 **SPECIAL CONDITIONS FOR SAFE USE** (denoted by X after the certificate number)
- 15.1 Maximum Cable lengths are specified and these maximum values shall not be exceeded.
- 15.2 Cables with Part Numbers CB103, CB193, CB190, CB191, and CB192 are only applicable for use with sensors rated for a maximum ambient of +80°C.
- 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.
- 17 **CONDITIONS OF CERTIFICATION**
- 17.1 The use of this certificate is subject to the Regulations Applicable to Holders of Sira Certificates.
- 17.2 Holders of EC type-examination certificates are required to comply with the production control requirements defined in Article 8 of directive 94/9/EC.
- 17.3 The equipment shall be subjected to an electric strength test using a test voltage of 500 Vac applied between the circuit and earth for 60 s. Alternatively, a voltage of 20% higher may be applied for 1 s. There shall be no evidence of flashover or breakdown and the maximum current flowing shall not exceed 5 mA.
- 17.4 Cables with Part Numbers CB103, CB193, CB190, CB191, and CB192 are only applicable for use with sensors rated for a maximum ambient of +80°C, the manufacturer shall ensure that the product is marked accordingly.

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Certificate Annexe

Certificate Number: Sira 15ATEX2152X
Equipment: Transducer Sensors/AC9** Series and TA9** Series
Applicant: CTC - Connection Technology Center, Inc.



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Issue 0

Drawing no.	Sheets	Rev.	Date (Sira stamp)	Title
INS10012	1 to 8	F	11 Jun 15	Intrinsic Safe Sensor Control Drawing
INS10013	1 to 3	C	08 Jun 15	Sensors, Pin Connectors, Intrinsically Safe Models
INS10014	1 to 6	B	08 Jun 15	Sensors, Integral Cables, Hazardous Area Models
INS10015	1 of 1	A	08 Jun 15	Labelling, Intrinsically Safe Sensor, Top Connector
INS10017	1 of 1	D	08 Jun 15	Labelling Matrix, Intrinsically Safe Sensors, AC Series
INS10019	1 of 1	0	08 Jun 15	Trace, AC Series Amplifier, Intrinsically Safe
INS10020	1 of 1	0	08 Jun 15	Layout, AC Series Amplifier, Intrinsically Safe
INS10025	5 of 6	F	11 Jun 15	Label Drawing, IS SENSOR
INS10030	1 of 1	A	08 Jun 15	Ceramic, Piezoelectric, Schedule Drawing
INS10031	1 of 1	A	11 Jun 15	Sensing Element Assembly
INS10035	1 to 3	D	11 Jun 15	Class 1 Div 2/Zone 2 Sensor Control Drawing
INS10038	1 of 1	C	08 Jun 15	AC Series Labelling Matrix for Division 2
INS10043	1 of 1	A	08 Jun 15	Labelling Matrix, Intrinsically Safe Sensors, TA Series
INS10044	1 of 1	A	08 Jun 15	Trace, AC Small Series Amplifier, Intrinsically Safe
INS10045	1 of 1	A	08 Jun 15	Trace, TA Series Temperature Circuit Board, Intrinsically Safe
INS10048	1 of 1	A	08 Jun 15	AC Small Series Schematic, Intrinsically Safe
INS10049	1 of 1	A	08 Jun 15	IS Temp board Schematic
INS10051	1 of 1	C	08 Jun 15	Amplifier Low cap Low Noise 100mV/g BOM
INS10053	1 of 1	C	08 Jun 15	BOM Amplifier 100mV/g Low Noise & Low Cap IS version
INS10053	1 of 1	C	08 Jun 15	SCH Amplifier 100mV/g Low Noise & Low Cap IS version
INS10056	1 of 1	A	08 Jun 15	New Low Cap IS Sensor board
INS10057	1 of 1	A	08 Jun 15	10 mV/G IS board Bill of Materials
INS10058	1 of 1	A	08 Jun 15	50 mV/G IS board Bill of Materials
INS10059	1 of 1	A	08 Jun 15	100 mV/G IS board Bill of Materials

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