1 # TYPE EXAMINATION CERTIFICATE

2 Directive 2014/34/EU of the European Parliament and of the Council of 26 February 2014

3 Type Examination Certificate Number: **CSACa 24ATEX1004X** Issue: **1**

4 Equipment: **AC93*-***, AC94*-***, AC95*-***, LP82*-***, LP92*-***, TA93*-***, VE80*-***, LPH82*-***, LPH92*-*** Series Transducer Sensors.**

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

6 Address: 7939 Rae Blvd.
Victor, NY 14564, USA

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

8 CSA Group Testing & Certification Inc., certifies, based on voluntary assessment, that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products 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 item 16.2.

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

EN IEC 60079-0:2018 EN 60079-31:2014 EN IEC 60079-7:2015/A1:2018

Where additional criteria beyond those given here have been used, they are listed in item 18 in the Schedule.

10 If the sign "X" is placed after the certificate number, it indicates that the product is subject to the "Specific Conditions of Use" listed in item 17 of this certificate.

11 This Type Examination Certificate relates only to the technical design of the specified product in accordance with the Directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this product, these are not covered by this certificate.

12 The marking of the product shall include the following (additional marking is provided in the Schedule as a part of item 15, if applicable):

II 3 GD
Ex ec IIC T*°C Gc
Ex tc IIIC T135°C Dc
T4 for ambient range of -40°C to +80°C
T3 for ambient range of -40°C to +121°C
T135°C for ambient range of -40°C to +80°C
*Temperature Class depends on the ambient temperature

Signed: Dave Magee
Title: Senior Director of Operations
Date: 23 April 2026

13 # SCHEDULE

14 **Type Examination Certificate Number:** **CSACa 24ATEX1004X** Issue: **1**

15 **Description:**

Vibration sensors which are used for acceleration measurement by means of piezo-electric device. The piezoelectric is subjected to compression pressure from a mass which produce a voltage in proportion to the acceleration. The voltage is then amplified by internal electronic circuitry. This can also be integrated within the amplifier board to produce a velocity output, referred to with a VE prefix. For the Loop Power and Premium Loop Power series (LP/LPH prefix), the output is converted to a 4-20 mA. These sensors can be used in conjunction with a temperature board to provide the temperature of the environment the sensor is contained within this configuration is referred to with a TA prefix. The sensors are mounted to the surface of the desired surface via a threaded bolt or by other means to be approved of by the authority having jurisdiction.

In terms of connectors and cables, there could be Various wiring configurations:

Model types	Connector type		
	Connector with 2 pins and 2 wire cables	Connector with 3 pins and 3 wire cables	Connector with 4 pins and 4 wire cables
AC93*-** Series - Low Capacitance Accelerometer (schematic INS10053) AC94*-** Series - Compact Accelerometer (schematic INS10048) VE80* Series - Velocity Sensor (schematic INS10074)	1 wire is for the sensing element and 1 common/ground.	N/A	N/A
AC949-XR Biaxial Accelerometer (schematic INS10048)	N/A	2 wires are for the different sensing elements and 1 common.	N/A
TA93* Series - Dual Output Accelerometer with Temperature INS10049+ INS10053	N/A	1 wire is for signal, 1 for temperature,1 shared common	N/A
AC950-XR Triaxial Accelerometer (schematic INS10048)	N/A	N/A	3 wires are for the different sensing elements and 1 common.
LP82*-** Series - Loop Power Velocity Sensor (schematic INS10026) LP92*-** Series - Loop Power Accelerometer (schematic INS10026) LPH82*-** Series – Premium Loop Power Velocity Sensor (schematic INS10179) LPH92*-** Series – Premium Loop Power Acceleration Sensor (schematic INS10179)	1 wire is for loop power and 1 wire is for loop power return	N/A	N/A

The construction of the cables with their assembly are shown on INS10196 connectors.

Part Number	Conductor Count	Cable Jacketing	Temperature Range
CB102	Two (2) Conductors	FEP Jacket	150
CB111	Two (2) Conductors	FEP Jacket	150
CB190	Two (2) Conductors	TPE Jacket	105
CB206	Two (2) Conductors	FEP Jacket with SS Armor	150
CB212	Three (3) Conductors	FEP Jacket with SS Armor	150
CB191	Three (3) Conductors	TPE Jacket	105
CB192	Four (4) Conductors	TPE Jacket	105
CB218	Four (4) Conductors	FEP Jacket with SS Armor	200
CB296	Two (2) Conductors	FEP Jacket with SS Armor	200
CB298	Four (4) Conductors	FEP Jacket with SS Armor	200

For models without integral cables, a cable should be used as per INS10125 with a temperature rating of at least 105ºC.

Connector P/N Q Series Q** where the first asterisk "*" is the number of pins (2 or 3) and the second asterisk is the type of the moulding material represented by the letter below:
- "R": Polyphenylene Sulphide, (PPS), or
- "A": Polycarbonate, or
- "N": Nylon

There is another 4 pins connector P/N JQ4* as described in drawing INS10196 with approved cables manufactured by CTC, temperature ratings 105ºC or CB218, CB298 manufactured by CTC, temperature ratings 200ºC containing a S500 -70 Silicone compound made O-ring, manufactured by Boyd Corp. ID: 7/16 by OD: 9/16 inch, 70A durometer, -50 to +240°C operation temperature

The insulator material use in the Cable Connector is Ryton R-4-230 which is a Polyphenylene Sulphide (PPS) material mentioned on the INS10120 connector drawing. It has an RTI (Imp and Elec) of 200°C for the material thickness of 0.71mm which in this case is thicker than that.

Variation 1 - This variation introduced the following changes:

i. Addition of Premium Loop Powered Sensors, models LPH82*-***, LPH92*-***.
ii. Addition of two alternative encapsulants.
iii. Addition of alternative cable molding materials, polycarbonate and nylon.

16 Drawings and documents:

16.1 Technical documents:

Refer to Certificate Annex.

16.2 Associated reports and certificate history:

Issue	Date	Report number	Comment
0	18 September 2024	R80042038A	The release of the prime certificate.
1	23 April 2026	R80288004A	The introduction of Variation 1.

17 **Specific conditions of use** (denoted by "X" after the certificate number):

17.1 Cables of the following CTC part numbers CB190, CB191 and CB192 are restricted only for use with sensors of a maximum ambient temperature of + 80 °C, the manufacturer shall ensure that the product is marked accordingly.

17.2 Temperature code depends on the ambient range: T4 for ambient range of -40°C to +80°C and T3 for ambient range of -40°C to +121°C.

17.3 The sensors have to be used with the cables, offered and sold by the manufacturer.

17.4 For applications in explosive dust atmospheres the equipment must not be exposed to charge generating mechanisms as flow of particles, charge spraying or strong electrostatic fields.

18 **Essential health and safety requirements of Annex II** (EHSRs):

The relevant EHSRs that are not addressed by the standards listed in item 9 of this certificate have been identified and conformity of the product demonstrated in the reports listed in item 16.2.

19 **Remarks and additional information:**

The use of this certificate is subject to the regulations applicable to holders of CSA Group Testing & Certification Inc. certificates.

Compliance of the product with the applicable safety requirements of the relevant industrial standards has not been verified and is not covered by this certificate.

19.1 **Conditions of manufacture:**

19.1.1 The equipment shall be subjected to dielectric strength test using test voltage of 500 VAC applied between circuit and earth for 60 seconds. Alternatively, a voltage of 20% higher may be applied for 1 second. There shall be no evidence of flashover or breakdown and the maximum current flowing during the test shall not exceed 5 mA r.m.s. at any time. Refer to IEC 60079-7:2017 Ed. 5.1 clause 7.1.

19.1.2 Cables of the following CTC part numbers CB190, CB191 and CB192 are restricted only for use with sensors of a maximum ambient temperature of + 80 °C, the manufacturer shall ensure that the product is marked accordingly.

Certificate Annexe

Document History

Issue - 0

Documents Introduced or Revised

Drawing	Sheets	Rev.	Date (stamp)	Title
INS10013	1 to 5	N	07 Nov 24	SENSORS, PIN CONNECTOR, HAZARDOUS AREA AC/LP/VE Series, TA Series, Triaxial, LP800/LP900
INS10014	1 to 8	H	07 Nov 24	SENSORS, ACCELEROMETERS, WITH INTEGRAL CABLE, HAZARDOUS AREA
INS10015	1 to 1	A	07 Nov 24	Labelling, Hazardous Locations
INS10149	1 to 5	E	07 Nov 24	Markings
INS10026	1 to 3	E	07 Nov 24	LP 4-20mA Schematic, BOM and Layout1
INS10048	1 to 3	D	07 Nov 24	AC Small series Schematic, BOM and Layout
INS10049	1 to 2	B	07 Nov 24	IS Temp Board Schematic
INS10053	1 to 3	E	07 Nov 24	New Low Cap IS sensor board
INS10074	1 to 3	C	07 Nov 24	Velocity Amp schematic, BOM and Layout
INS10076	1 to 3	B	07 Nov 24	Ultra Low Power Amp schematic, BOM and Layout
INS10120	1 to 9	G	07 Nov 24	Cross section drawing of hazardous rated connectors
INS10125	1 of 1	B	07 Nov 24	Cable Temperature Ratings chart
INS10129	1 to 2	A	07 Nov 24	Labeling Matrix, IECEx Zone 2

Issue - 1

Documents Introduced or Revised

Drawing	Sheets	Rev.	Date (Stamp)	Title
INS10179	1 to 3	B	31 Mar 26	LPH Main Board and Blocking Diode Schematic
INS10180	1 to 3	A	31 Mar 26	LPH Main Board and Blocking Diode BoM
INS10181	1 to 4	A	31 Mar 26	LPH Main Board and Blocking Diode Assembly
INS10188	1 to 8	A	31 Mar 26	Sensors, Pin Connector, Hazardous Area
INS10192	1 to 11	A	31 Mar 26	Sensors, Accelerometers, With Integral Cable, Hazardous Area
INS10196	1 to 9	A	31 Mar 26	Cross section drawing of hazardous rated connectors
INS10207	1 of 1	A	9 Apr 26	Marking File for CSA ATEX Zone 2
INS10209	1 to 3	A	31 Mar 26	ATEX Installation Control Drawing
MNX10133	1 to 9	A	9 Apr 26	ATEX Sensor Product Manual
INS10218	1 to 2	A	31 Mar 26	Zone 2 Labeling Matrix

* Note: The drawing revision may contain minor revision in the format of "A.1, (Major revision. Minor revision)", only editorial or administrative changes are permitted for such minor revisions.

Documents Removed

Drawing	Sheets	Rev.	Date (Stamp)	Title
INS10013	1 to 5	N	07 Nov 24	SENSORS, PIN CONNECTOR, HAZARDOUS AREA AC/LP/VE Series, TA Series, Triaxial, LP800/LP900
INS10014	1 to 8	H	07 Nov 24	SENSORS, ACCELEROMETERS, WITH INTEGRAL CABLE, HAZARDOUS AREA
INS10015	1 of 1	A	07 Nov 24	Labelling, Hazardous Locations
INS10076	1 to 3	B	07 Nov 24	Ultra Low Power Amp schematic, BOM and Layout
INS10149	1 to 5	E	07 Nov 24	Markings
INS10120	1 to 9	G	07 Nov 24	Cross section drawing of hazardous rated connectors
INS10129	1 to 2	A	07 Nov 24	Labeling Matrix, IECEx Zone 2