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 CSAE 22.0039X**	Page 1 of 4	Certificate history:
Status:	**Current**	Issue No: 1	Issue 0 (2022-10-20)
Date of Issue:	2023-01-13		
Applicant:	**Greyline Instruments Canada Inc.** 16456 Sixsmith Drive Long Sault Ontario K0C 1P0 **Canada**		
Equipment:	**Ultrasonic Transducers Models: SE16A-z, SE16B-y, SE16C, and SE4x-A series**		
Optional accessory:			
Type of Protection:	**Intrinsically Safe**		
Marking:	Ex ia IIB T4 Ga		

Approved for issue on behalf of the IECEx Certification Body: **Michelle Halliwell**

Position: **Director Operations, UK & Industrial Europe**

Signature:
(for printed version)

Date:
(for printed version)

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:

CSA Group Testing UK Ltd
Unit 6, Hawarden Industrial Park
Hawarden, Deeside CH5 3US
United Kingdom

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Certificate No.: **IECEx CSAE 22.0039X**

Date of issue: 2023-01-13

Issue No: 1

Manufacturer: **Greyline Instruments Canada Inc.**
16456 Sixsmith Drive
Long Sault Ontario K0C 1P0
Canada

Manufacturing locations: **Greyline Instruments Canada Inc.**
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Long Sault Ontario K0C 1P0
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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 equipment 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 60079-0:2017 Explosive atmospheres - Part 0: Equipment - General requirements
Edition:7.0

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

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

GB/CSAE/ExTR22.0131/00 GB/CSAE/ExTR23.0001/00

Quality Assessment Report:

US/ETL/QAR21.0005/00

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EQUIPMENT:
Equipment and systems covered by this Certificate are as follows:

Ultrasonic Transducers Models: SE16A-z, SE16B-y, SE16C, and SE4x-A series

The models listed are variations on clamp-on Transit Time and/or Doppler ultrasonic transducers for measuring flow in any pipe material that conducts ultrasound including PVC, carbon steel, stainless steel, cast iron, fiberglass, and lined pipes. These clamp-on sensor are designed to fit on the outside of any pipe diameter from 0.5 to 84 inches.

These transducers operate by means of a piezo electric crystal that is energized from the source i.e. the associated apparatus. The sensor assembly consists of stainless steel housing with a small PCB and the piezo crystal. The assembly is encapsulated. The opening on the mating plane with the process connection is plugged with an acoustic medium.

The SE4x-A model is a doppler type clamp-on transducer containing two piezo electric circuits in a single sensor body. The SE16A, SE16B and SE16C models are transit time type clamp-on transducers each containing a single piezo electric circuit. The SE16A is the smallest sensor in the series, with frequency 2.56MHz. The SE16B is the medium size with frequency of 1.28MHz. The SE16C is the largest size with frequency 640kHz.

Refer to the Annexe for additional information

SPECIFIC CONDITIONS OF USE: YES as shown below:

1. All models of the assessed equipment are required to be connected to a properly rated I.S. barrier. The Ui & Ii parameters are the worst-case voltage and current from the combination of the barrier, but they cannot appear at the same time. It is the end-users' responsibility to ensure that the combined voltage and current of the connected barrier does not exceed the values of Table A.1 of IEC 60079-11:2011 Ed 6 (and EN IEC 60079-0:2018).
2. **Refer to the Annexe**

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DETAILS OF CERTIFICATE CHANGES (for issues 1 and above)
This issue, Issue 1, recognises the following changes;

1. Minor revisions to label drawings L-0161.01, L-0162.01, L-0163.01, and L-0043.01.
2. Triaxial cable connector part number 31-2-RFX is replaced with PL75-7 in drawings C-0161.01, C-0162.01, and C-0163.01.

Annex:

IECEx CSAE 22.0039X Issue 1 Annexe.pdf

Annexe to: **IECEx CSAE 22.0039X Issue 1**

Applicant: **Greyline Instruments Canada Inc.**

Apparatus: **Ultrasonic Transducers Models: SE16A-z, SE16B-y, SE16C, and SE4x-A series**

The connection types are as follows:

Connection Type	Part No.	SE4x-A	SE16A	SE16A-XXFT	SE16B	SE16C
Twin axial Bulkhead	10-06569,		X		X	X
Cable Gland M12 (integral cable)	A1100.12.065			X		
Strain Relief P9 (integral cable)	CF09AA-GY	X				

Model	Entity Parameters	Pi (W)	Ambient temp. (Ta °C)	Process temp. (Tp °C)	T-Code
SE16A	Ui = 10 V Ii = 680 mA Ci = 8 nF, Li = 15 µH	1.0	-40 to +60	-40 to +80	T4
		1.3	-40 to +40	-40 to +40	T4
SE16A-z	Ui = 10 V Ii = 680 mA *Ci = 37.5 nF *Li = 106.44 µH	1.0	-40 to +60	-40 to +80	T4
		1.3	-40 to +40	-40 to +40	T4
SE16B-y	Ui = 10 V Ii = 680 mA Ci = 8 nF, Li = 15 µH	1.0	-40 to +60	-40 to +80	T4
		1.3	-40 to +40	-40 to +40	T4
SE16C	Ui = 10 V Ii = 680 mA Ci = 11nF, Li = 22 µH	1.0	-40 to +60	-40 to +80	T4
		1.3	-40 to +40	-40 to +40	T4
SE4x-A-z	Ui = 10 V Ii = 500 mA *Ci = 49.04 nF *Li = 128.4 µH	1.0	-40 to +60	-40 to +80	T4
		1.3	-40 to +40	-40 to +40	T4

Specific Conditions of Use (Continued)

2. Maximum Cable lengths are specified, and these maximum values shall not be exceeded as per the following list. No changes are permitted to the cable.

Models With Integral Cables	Maximum Integral Cable Length
SE16A	152.4 m
SE16B	152.4 m
SE16C	152.4 m
SE4x-A	152.4 m

Full certificate change history

Issue 1 – this Issue introduced the following changes:

i. Minor revisions to label drawings L-0161.01, L-0162.01, L-0163.01, and L-0043.01.
ii. Triaxial cable connector part number 31-2-RFX is replaced with PL75-7 in drawings C-0161.01, C-0162.01, and C-0163.01.

Date: **13 January 2023**

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