1 # EU-TYPE EXAMINATION CERTIFICATE

2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 2014/34/EU**

3 **EU-Type Examination Certificate No:** **FM21ATEX0050X**

4 **Equipment or protective system: (Type Reference and Name)** **InnovaMass 240S and InnovaMass 241S Multivariable Mass Vortex Flowmeters**

5 **Name of Applicant:** **Sierra Instruments, Inc.**

6 **Address of Applicant:** **845 Harris Court, Bldg. L**
Monterey CA 93940
United States of America

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

8 FM Approvals Europe Ltd, notified body number 2809 in accordance with Article 17 of Directive 2014/34/EU of 26th February 2014, 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 confidential report number:

PR459655 dated 29th July 2022

9 Compliance with the Essential Health and Safety Requirements, with the exception of those identified in item 15 of the schedule to this certificate, has been assessed by compliance with the following documents:

EN IEC 60079-0:2018, EN 60079-1:2014,
EN 60079-31:2014 and EN 60529:1991+A1:2000+A2:2013

10 If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.

11 This EU-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 2014/34/EU. Further requirements of the Directive apply to the manufacturing process and supply of this equipment or protective system. These are not covered by this certificate.

12 The marking of the equipment or protective system shall include:

InnovaMass 240S and InnovaMass 241S (ST Versions)	InnovaMass Model 240S and InnovaMass 241S (HT Versions)
II 2 G Ex db IIB+H2 T6…T2 Gb	II 2 G Ex db IIB+H2 85°C…405°C Gb
II 2 D Ex tb IIIB T85°C Db	II 2 D Ex tb IIIB T85°C Db
-40°C ≤ Tamb ≤ 60°C	-40°C ≤ Tamb ≤ 60°C

Martin Crowe
Certification Manager, FM Approvals Europe Ltd.

Issue Date: 02nd August 2022

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13 **Description of Equipment or Protective System:**

General – Sierra Instrument's Multivariable Mass Vortex Flowmeters InnovaMass 240S and InnovaMass 241S utilize three primary sensing elements (a vortex shedding velocity sensor, an RTD temperature sensor and a solid-state pressure transducer) to measure the mass flow rate of gases, liquids and steam. The meters are available for in-line (InnovaMass 240S) and Insertion (InnovaMass 241S) applications. The InnovaMass 240S, in-line meter can be configured for pipe sizes from ½ inch to 12 inches while the InnovaMass 241S insertion meter can be installed in any pipe two inches in diameter or greater. The InnovaMass 240S in-line meter incorporates a new split adapter design which allows the pressure transducer to be field serviceable.

Construction – The InnovaMass 240S and InnovaMass 241S Multivariable Mass Vortex Flowmeters InnovaMass 240S and InnovaMass 241S flowmeter enclosures is a cylindrical shaped housing constructed of aluminium with a powder coat finish. Each end of the enclosure is closed via threaded covers (blank or windowed). The enclosure is provided with two ¾ inch-14 NPT entries. The joint between the meter body enclosure and process connection adapter is threaded. O-rings are provided on the threaded covers, in-line split adapter, and insertion adapter for environmental protection. The enclosures have an ingress protection rating of IP66

Ratings – The InnovaMass 240S and InnovaMass 241S Multivariable Mass Vortex Flowmeters operate from 12-36 VDC or 100-240 VAC, 4-20 ma. The InnovaMass 240S and InnovaMass 241S Multivariable Mass Vortex Flowmeters Models are for use in process temperatures of -40°C to 260°C with a high temperature option (HT) for process temperatures -40°C to +400°C.

InnovaMass 240Sabcdefghj. In-line Multivariable Mass Vortex Flowmeter.
a = Multivariable options V, VT, VTP, VTEP, VTEMS or VTPEMS.
b = Meter body Material and Process Connection. Stainless Steel (F, FD, G, GD, H, HD, W), Carbon Steel (FC, FCD, GC, GCD, HC, HCD, WC), or Hastelloy (FH, FHD, GH, GHD, HH, HHD, WH)
c = Flow body 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 or 12.
d = Electronics enclosure E2 or E4 (*) *Specify cable length.
e = Display options DD, NR.
f = Input power PV1L, PV1, or PS.
g = Output signal V4LH, V4H, V4M, V4B, V6H, V6M or V6B.
h = Temperature options ST or HT.
j = Pressure options MP0, MP1, MP2, MP3, MP4 or MP5.

InnovaMass 241Sabcdefghj. Insertion Multivariable Mass Vortex Flowmeter.
a = Multivariable options V, VT, VTP, VTEP, VTEMS or VTPEMS.
b = Probe length LS, LC or LE.
c = Electronics enclosure E2 or E4(*). *Specify cable length.
d = Display options DD. NR
e = Input power PC1L, PV1, or PS.
f = Output signal V4LH, V4H, V4M, V4B, V6H, V6M or V6B.
g = Temperature options ST or HT.
h = Pressure options MP0, MP1, MP2, MP3, MP4 or MP5.
j = Process connections CM, CF, CFD, CG, CGD, CH, CHD, PM, PMR, PF, PFD, PFR, PFDR, PG, PGD, PGR, PGDR, PHR or PHDR.

14 **Specific Conditions of Use:**

1. Contact Manufacturer regarding flamepath information.
2. Clean with a Damp cloth only to avoid build-up of electrostatic charge.
3. The InnovaMass 240S and InnovaMass 241S Multivariable Mass Vortex Flowmeters standard

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temperature option (ST) process temperature range is -40°C to 260°C. The high temperature option (HT) process temperature range is -40°C up to +400°C.

InnovaMass 240S and InnovaMass 241S Multivariable Mass Vortex Flowmeters		
Tmax (Process)	Temperature Class Value (Gas)	
	ST Version	HT Version
80°C	T6	85°C
95°C	T5	100°C
130°C	T4	135°C
195°C	T3	200°C
260°C	T2	300°C
400°C	N / A	405°C

15 **Essential Health and Safety Requirements:**

The relevant EHSRs that have not been addressed by the standards listed in this certificate have been identified and assessed in the confidential report identified in item 8.

16 **Test and Assessment Procedure and Conditions:**

This EU-Type Examination Certificate is the result of testing of a sample of the product submitted, in accordance with the provisions of the relevant specific standard(s), and assessment of supporting documentation. It does not imply an assessment of the whole production.

Whilst this certificate may be used in support of a manufacturer's claim for CE Marking, FM Approvals Europe Ltd accepts no responsibility for the compliance of the equipment against all applicable Directives in all applications.

This Certificate has been issued in accordance with FM Approvals Europe Ltd's ATEX Certification Scheme.

17 **Schedule Drawings**

A list of the significant parts of the technical documentation is annexed to this certificate and a copy has been kept by the Notified Body.

18 **Certificate History**

Details of the supplements to this certificate are described below:

Date	Description
02nd August 2022	Original Issue.

Blueprint Report

Sierra Instruments, Inc (1000002381)

Class No 3615

Original Project I.D. 459655

Certificate I.D. FM21ATEX0050X

Drawing No.	Revision Level	Drawing Title	Last Report
PLTA Agreement	26July2022	PLTA Agreement	PR459655