



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: FM25ATEX0016X

4. Equipment or protective system:
(Type Reference and Name) VortiFox Vortex Shedding Flowmeter

5. Name of Applicant: Fox Thermal Instruments Inc

6. Address of Applicant 399 Reservation Rd, Marina, California 93933,
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 26 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:

PR472261 dated 15th May 2025

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, 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.

Certificate issued by:

FM Approvals

16 May 2025

Certification Manager, FM Approvals Europe Ltd.

Date

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



ST Versions

II 2 G Ex db IIB+H2 T6...T2 Gb

II 2 D Ex tb IIIB T85°C Db

-40°C ≤ Tamb ≤ 60°C

HT Versions

II 2 G Ex db IIB+H2 85°C...405°C Gb

II 2 D Ex tb IIIB T85°C Db

-40°C ≤ Tamb ≤ 60°C

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

General – The VortiFox Vortex Shedding Flowmeters Models VF3, VF4 and VF4-R 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 and insertion applications. The VF4 and VF4-R in-line meters can be configured for pipe sizes from ½ inch to 12 inches while the VF3 insertion meter can be installed in any pipe two inches in diameter or greater. The VF4 in-line meters incorporate a split adapter design which allows the pressure transducer to be field serviceable.

Construction – The VortiFox flowmeter enclosure 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.

Ratings – The VortiFox Vortex Shedding Flowmeters operate from 12-36 VDC or 100-240 VAC, 4-20 ma. The VortiFox Vortex Shedding Flowmeters 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.

The enclosures have an ingress protection rating of IP66.

See Annex for model codes.

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 VortiFox Vortex Shedding Flowmeters standard temperature option (ST) process temperature range is -40°C to +260°C. The high temperature option (HT) process temperature range is -40°C to +400°C.

Tmax (Process)	Temperature Class Value (Gas)	
	ST Version	HT Version
80°C	T6	85°C
95°C	T5	100°C

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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. The documents are maintained under project 3061361.

18. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
16 May 2025	Original Issue.

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ANNEX

Model VF3

Description of Equipment:

VF3abcdefghijkl. Insertion VortiFox Vortex Shedding Flowmeter.

a = Multivariable options: V, VT, VTP, VTEP, VETEP, VT-EM, VTP-EM, VTEP-EM or VETEP-EM.

b = Probe length: SL, CL or EL.

c = Electronics enclosure: L or R (*). *Specify cable length.

d = Display options: DD.

e = Input power: DCL, DCH, DCHPOE or AC.

f = Output signal: 1AB, 1ABIP, 1AH, 1AHL, 1AM, 1AMIP, 3AB, 3ABIP, 3AH, 3AM or 3AMIP.

g = Temperature options: ST or HT.

h = Pressure options: P0, P1, P2, P3, P4 or P5.

j = Process connections: CNPT, C150, C16, C300, C40, C600, C63, CJ10, CJ20, CJ30, C900, PNPT, P150, P16, P300, P40, PJ10, PJ20, PNPTR, P150R, P16R, P300R, P40R, P600R, P63R, PJ10R, PJ20R, or PJ30R.

Model VF4

Description of Equipment:

VF4abcdefghijkl. In-Line VortiFox Vortex Shedding Flowmeter.

a = Multivariable options: V, VT, VTP, VTEP, VETEP, VT-EM, VTP-EM, VTEP-EM or VETEP-EM.

b = Flow body: 04, 06, 08, 12, 16, 24, 32, 48, 64, 80, 96.

c = Meter body material: C, S or H.

d = Process connection: 150, 300, 600, 900, W, 16, 40, 63, 100, J10, J20 or J30.

e = Electronics enclosure: L or R(*). *Specify cable length.

f = Display options: DD.

g = Input power: DCL, DCH, DCHPOE or AC.

h = Output: 1AB, 1ABIP, 1AH, 1AHL, 1AM, 1AMIP, 3AB, 3ABIP, 3AH, 3AM or 3AMIP.

j = Process: ST or HT.

k = Process pressure: P0, P1, P2, P3, P4 or P5.

Model VF4-R

Description of Equipment:

VF4-Rabcdefghijkl. In-Line VortiFox Vortex Shedding Flowmeter.

a = Multivariable options: V, VT, VTP, VTEP, VETEP, VT-EM, VTP-EM, VTEP-EM or VETEP-EM.

b = Flow body: 04, 06, 08, 12, 16, 24, 32, 48, 63, 80, or 96.

c = Meter body material: C, S or H.

d = Process connection: 150, 300, 600, 900, W, 16, 40, 63, 100, J10, J20 or J30.

e = Electronics enclosure: L or R (*). *Specify cable length

f = Display options: DD.

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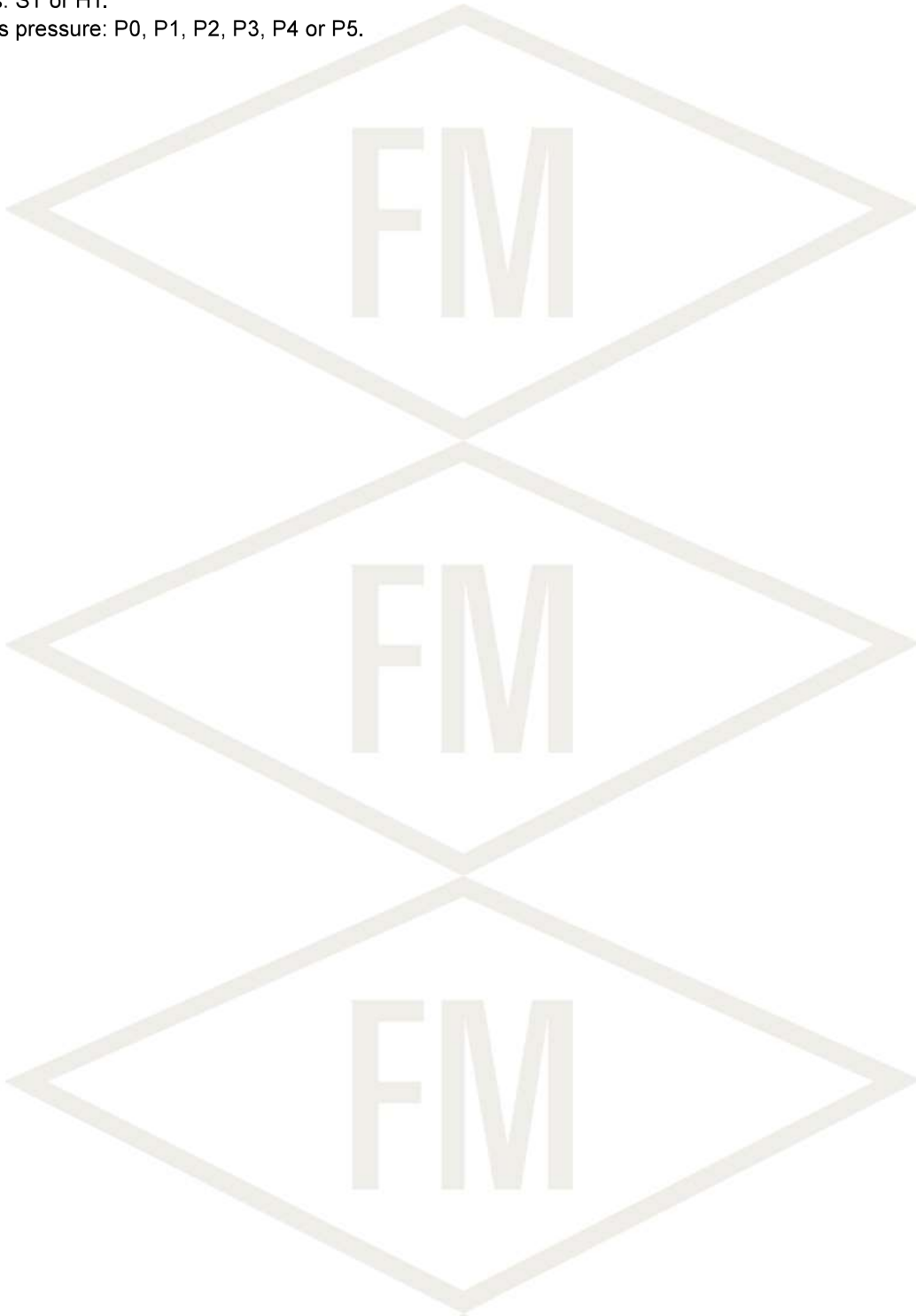
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g = Input power: DCL, DCH, DCHPOE or AC.

h = Output: 1AHL, 1AH, 1AM, 1AMIP, 1AB, 1ABIP, 3AH, 3AM, 3AMIP, 3AB or 3ABIP.

j = Process: ST or HT.

k = Process pressure: P0, P1, P2, P3, P4 or P5.



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Blueprint Report

VorTek LLC 1000007881

Class No. 3615

Original Project I.D. 3061361

Certificate I.D. FM25ATEX0016X

<u>Drawing No.</u>	<u>Revision Level</u>	<u>Drawing Title</u>	<u>Last Report</u>
101188	A	Fox Thermal Approvals Label	PR472261
1110037	C	Model Code Label	3061361
113542	A	VORTIFOX Instruction Manual	PR472261