IECEx TEST REPORT COVER

ExTR Reference Number..... :	US/FMG/ExTR25.0019/00
ExTR Free Reference Number..... :	PR472261
Compiled by + signature (ExTL) .... :	Marlon Mitchell
Reviewed by + signature (ExTL).... :	David Anderson
Endorsed by + signature (ExCB) ... :	J. E. Marquedant
Date of issue ..... :	22 May 2025
Ex Testing Laboratory (ExTL)..... :	FM Approvals LLC
Address ..... :	One Technology Way, Norwood, MA 02062, USA
	743 Reynolds Road, West Glocester, RI 02814, USA
Ex Certification Body (ExCB)..... :	FM Approvals LLC
Address ..... :	One Technology Way, Norwood, MA 02062, USA
Applicant's name..... :	Fox Thermal Instruments Inc.
Address ..... :	399 Reservation Road, Marina, CA 93933, USA
Standards associated with this ExTR package ..... :	IEC 60079-0:2017, IEC 60079-1:2014, IEC 60079-31:2013
Clauses considered ..... :	All clauses considered
Test Report Form Number..... :	ExTR Cover_10 (released 2022-10)
Related Amendments, Corrigenda or ISHs ..... :	IEC 60079-0:2017 + COR1:2020 + ISH1:2019 + ISH2:2019
	IEC 60079-1:2014 + COR1:2018 + ISH1:2020
	IEC 60079-31:2013 + ISH1:2022
Test item description..... :	VortiFox Vortex Shedding Flowmeter
Model/type reference ..... :	VF3, VF4, VF4-R
Code (e.g. Ex __ II__ T__)..... :	Standard Temperature (ST)
	Ex db IIB+H2 T6…T2 Gb
	Ex tb IIIB T85°C Db
	High Temperature (HT)
	Ex db IIB+H2 85°C…405°C Gb
	Ex tb IIIB T85°C Db
Rating..... :	12-36 Vdc, 100-240 Vac, 4-20 mA

ExTR Package Contents
Assembled ExTR documents and Additional reference material:
IECEx Test Report Cover

Manufacturer's name .....:	Fox Thermal Instruments Inc.
Address .....:	399 Reservation Road, Marina, CA 93933, USA
Trademark .....:	
Certificate No. (optional) .....:	IECEx FMG 25.0021X
QAR Reference No. (optional) .....:	GB/FME/QAR12.0003

Particulars: Test item vs. Test requirements

Classification of installation and use ..... :	Fixed
Ingress protection .....:	IP66
Rated ambient temperature range (°C).....:	-40°C to +60°C

General remarks:

The test results presented in this ExTR package relate only to the item or product tested.

- "(See Attachment #)" refers to additional information appended to the ExTR package.
- "(See appended table)" refers to a table appended to the ExTR package.
- Throughout this ExTR package, a point is used as the decimal separator.
- *Where the term "N/A" appears in any part of an ExTR package, it indicates that the associated issue was considered "Not applicable" to the involved evaluation.*
- *In accordance with IECEx 02, a Receiving ExCB may request a sample of the Ex equipment and copies of the documentation referred to in an ExTR Cover.*

The technical content of this ExTR package shall not be reproduced except in full without the written approval of the Issuing ExCB and ExTL.

In accordance with US government regulations, this Test Report cannot be used to support national certification in a country that is the subject of a comprehensive US trade embargo.

For a list of countries subject to a comprehensive trade embargo, see https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information.

Use of uncertainty of measurement for decisions on conformity (Decision rule):

No decision rule is specified by the standards associated with this ExTR package, when comparing the measurement result with the applicable limit according to the specification in these standards. The decisions on conformity are made without applying the measurement uncertainty as described in IECEx OD 012 (i.e. "simple acceptance" decision rule, previously known as "accuracy method").

General product information:

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.

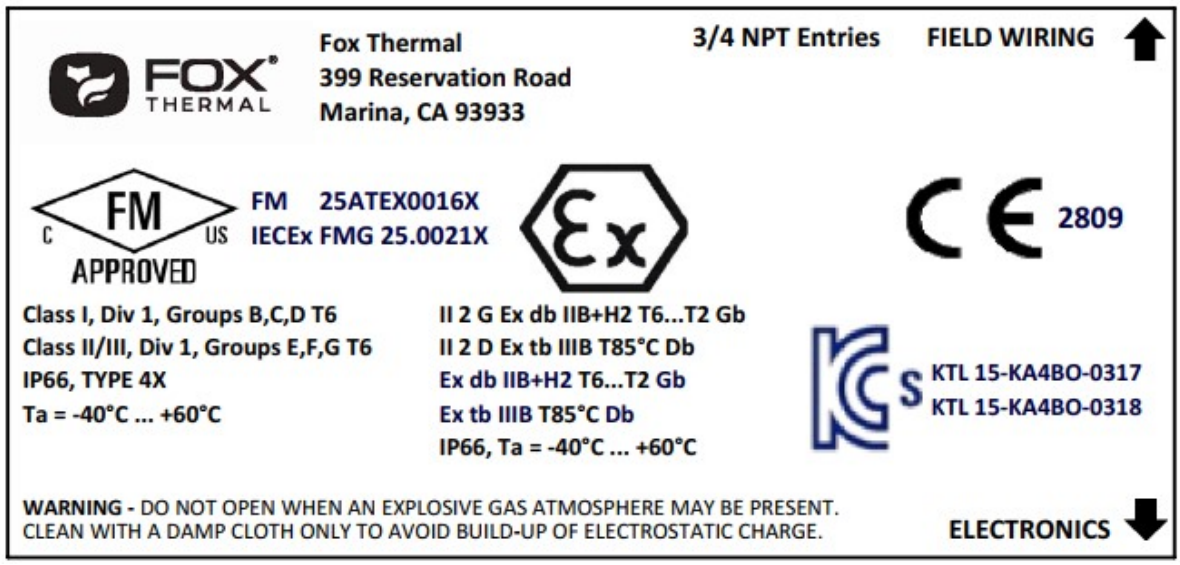
Ratings – The VortiFox Vortex Shedding Flowmeters operate from 12-36 VDC or 100-240 VAC, 4-20 ma. The VortiFox Vortex Shedding Flowmeters are for use in process temperatures of -40°C to +260°C with a high temperature option (HT) for process temperatures -40°C to +400°C.

Details of change (applicable only when revising an existing ExTR package):

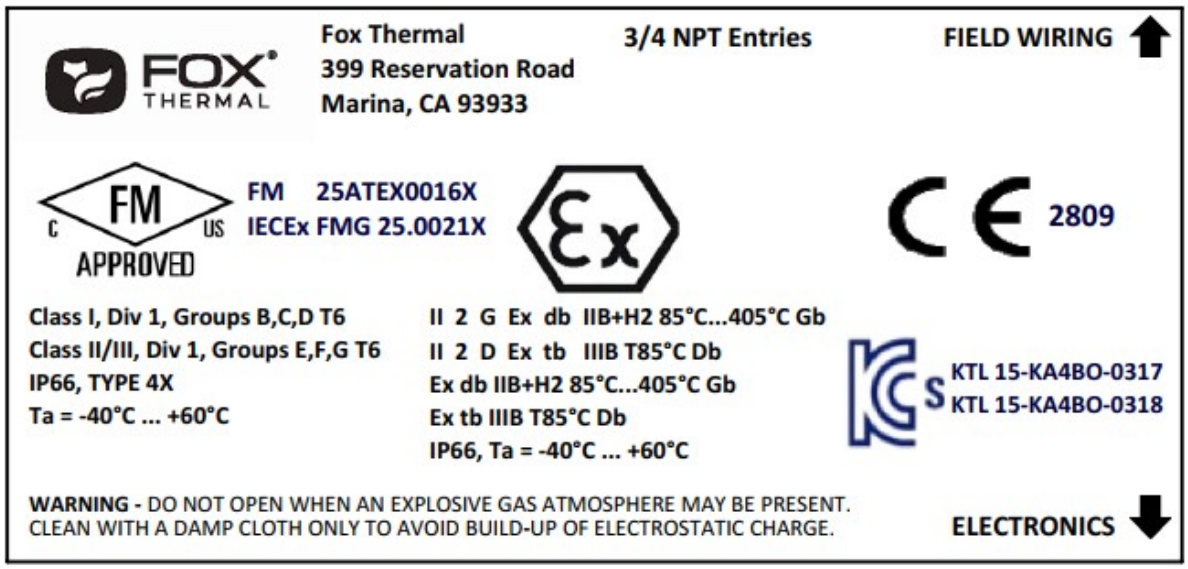
N/A

Copy of Marking Plate:

ST Version:



HT Version:



Details regarding 'trade agent' / 'local assembler' application in accordance with OD 203:

1. OEM's Certificate Number is IECEx FMG 17.0009X for the Pro-V (models M23, M24, M24R) Series Multi-Parameter Vortex Mass Flow Meters.
2. OEM's ExTRs are US/FMG/ExTR17.0027/00 and including supplements /01 to /10 for the Pro-V (models M23, M24, M24R) Series Multi-Parameter Vortex Mass Flow Meters.
3. The OEM has declared that the Fox Thermal Instruments Models VF3, VF4, VF4-R are identical to the Pro-V Series certified under IECEx FMG 17.0009X.
4. Fox Thermal Instruments has declared that the Models VF3, VF4, VF4-R are identical to the OEM's Pro-V Series certified under IECEx FMG 17.0009X.
5. A copy of the marking has been included in the section above.
6. A copy of the contractual agreement is filed with Vortek Instruments LLC, Fox Thermal Instruments Inc. and FM Approvals LLC.

7. The Trade Agent product labels, instruction manuals, model coding and QAR have been checked.

Testing not fully performed by ExTL staff at the above ExTL address:

N/A

National differences considered as part of this evaluation:

N/A

"Specific Conditions of Use" / "Schedule of Limitations":

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 Models VF3, VF4 and VF4-R standard 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.

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

Routine tests:

Routine tests are the responsibility of the OEM, Vortek Instruments LLC.

Date(s) of performance for all testing:

N/A - No testing performed as part of this ExTR.

Technical Documents

The following documents are on file under Project ID 3061361, certificate number IECEx FMG 25.0021X.

Title:	Drawing No.:	Rev. Level:	Date:
*MODEL CODE LABEL	1110037	C	2017-07-31
*Fox Thermal Approvals Label	101188	A	2025-04-28
*VORTIFOX Instruction Manual	113542	A	None

*Note: An * is included before the title of documents that are new or revised.*