

1 EC-TYPE EXAMINATION CERTIFICATE



2 **Equipment or Protective systems intended for use in Potentially Explosive Atmospheres - Directive 94/9/EC**

3 **EC-Type Examination Certificate No:** FM12ATEX0034X

4 **Equipment or protective system:** Model FT3 Thermal Gas Mass Flow Meter and Temperature Transmitter
(Type Reference and Name) Model TFH3000 Thermal Gas Mass Flow Meter and Temperature Transmitters

5 **Name of Applicant:** Fox Thermal Instruments Inc.

6 **Address of Applicant:** 399 Reservation Road
Marina, CA 93933
USA

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 Ltd, notified body number 1725 in accordance with Article 9 of Directive 94/9/EC of 23 March 1994, 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:

3041764 EC dated 17 July 2012

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 60079-0: 2009; EN 60079-1: 2007; EN 60079-31: 2009; EN 60529: 1991 + A1: 2000

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

11 This EC-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance to the directive 94/9/EC. 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.



Digitally signed by Mick Gower
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Date: 2015.02.06 15:28:50 Z

Mick Gower
Certification Manager, FM Approvals Ltd.

Issue date: 06th February 2015

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



II 2 G Ex d IIB+H₂ T^{°C} Gb Ta = -20°C to +70°C; IP67

II 2 D Ex tb IIIC T^{°C} Db Ta = -20°C to +70°C; IP67

*Temperature code ratings are dependent on external process temperature factors as well as equipment enclosure configuration. See the table below for specific temperature code markings.

Model Code		Temperature Code Marking (Gas)		Temperature Code Marking (Dust)	
Sensor Type	Enclosure	Main Enclosure	Remote Enclosure	Main Enclosure	Remote Enclosure
ST	E1	T4	N/A	135°C	N/A
ST	E2	T4	N/A	135°C	N/A
ST	E3	T6	T4	85°C	135°C
ST	E4	T6	T4	85°C	135°C
HT	E3	T6	T1	85°C	450°C
HT	E4	T6	T1	85°C	450°C

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

The Models FT3 and TFH3000 Thermal Gas Mass Flow Meter and Temperature Transmitters are used for measuring the mass flow of gases as well as the process gas temperature all in one package. The flow meters are available for inline or insertion applications. The product features 4-20mA and/or pulse outputs and is also available with an optional display/configuration panel. Digital communications options include USB, HART and RS485 Modbus.

The Models FT3 and TFH3000 Thermal Gas Mass Flow Meter and Temperature Transmitters operate at 24 Vdc (0.75 A) or 85-264 Vac (20 W). The transmitters provide a 4-20 mA and/or pulse output. The transmitters are rated for use in an ambient temperature range of -20°C to +70°C. The transmitter probes are rated for use in a process temperature range of -40°C to +121°C or 0°C to 343°C (HT version).

FT3-a-b-c-d-e-f. Thermal Gas Mass Flow Meter and Temperature Transmitter (Insertion).

a = Probe 04I, 05I, 06I, 07I, 08I, 09I, 10I, 11I, 12I, 13I, 14I, 15I, 16I, 17I, 18I, 19I, 20I, 21I, 22I, 23I, 24I, 25I, 26I, 27I, 28I, 29I, 30I, 31I, 32I, 33I, 34I, 35I, 36I, 15R, 18R, 24R, 30R or 36R.

b = Sensor material SS, SH, SJ or SL.

c = Sensor type ST or HT.

d = Enclosure E1, E2, E3 or E4.

e = Display and data logger D0, DD or DL.

f = Option boards B0, B1, MB, BH, BE or BP.

FT3-a-b-c-d-e-f. Thermal Gas Mass Flow Meter and Temperature Transmitter (Inline).

a = Flow body size 025P, 05P, 075P, 10P, 125P, 15P, 20P, 25P, 30P, 40P, 05F, 075F, 10F, 125F, 15F, 20F, 25F, 30F, 40F, 60F, 20PC, 25PC, 30PC, 40PC, 20FC, 25FC, 30FC or 40FC.

b = Sensor material SS or SH.

c = Sensor type ST or HT.

d = Enclosure E1, E2, E3 or E4.

e = Display and data logger D0, DD or DL.

f = Option boards B0, B1, MB, BH, BE or BP.

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TFH3000-a-b-c-d-e-f. Thermal Gas Mass Flow Meter and Temperature Transmitter (Insertion).

a = Probe 04I, 05I, 06I, 07I, 08I, 09I, 10I, 11I, 12I, 13I, 14I, 15I, 16I, 17I, 18I, 19I, 20I, 21I, 22I, 23I, 24I, 25I, 26I, 27I, 28I, 29I, 30I, 31I, 32I, 33I, 34I, 35I, 36I, 15R, 18R, 24R, 30R or 36R.

b = Sensor material SS, SH, SJ or SL.

c = Sensor type ST or HT.

d = Enclosure E1, E2, E3 or E4.

e = Display and data logger D0, DD or DL.

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TFH3000-a-b-c-d-e-f. Thermal Gas Mass Flow Meter and Temperature Transmitter (Inline).

a = Flow body size 025P, 05P, 075P, 10P, 125P, 15P, 20P, 25P, 30P, 40P, 05F, 075F, 10F, 125F, 15F, 20F, 25F, 30F, 40F, 60F, 20PC, 25PC, 30PC, 40PC, 20FC, 25FC, 30FC or 40FC.

b = Sensor material SS or SH.

c = Sensor type ST or HT.

d = Enclosure E1, E2, E3 or E4.

e = Display and data logger D0, DD or DL.

f = Option boards B0, B1, MB, BH, BE or BP.

14 Specific Conditions of Use:

Consult the manufacturer if dimensional information on the flameproof joints is necessary.

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 EC-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 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 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.

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18 Certificate History

Details of the supplements to this certificate are described below:

Date	Description
26 th July 2012	Original Issue.
15 th March 2013	<u>Supplement 1:</u> Report Reference: - 3041764 EC Supplement 1 Dated 12 th February 2013 Description of the Change: Addition of Model Type TFH3000.
10 th October 2013	<u>Supplement 2:</u> Report Reference: - 3041764rev130927 Dated 7 th October 2013 Description of the Change: Update the FT3 Boards and Manual.
16 th June 2014	<u>Supplement 3:</u> Report Reference: - 3041764rev140417 Dated 11 th June 2014 Description of the Change: Changes made to serial number labels and instruction manual required corrections.
06 th February 2015	<u>Supplements 4:</u> Report Reference: - 3041764rev141125 Dated 29 th January 2015 Description of the Change: Minor updates to manuals.

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