

1. UNITED KINGDOM CONFORMITY ASSESSMENT UK-TYPE EXAMINATION CERTIFICATE



2. Equipment or Protective systems intended for use in Potentially Explosive Atmospheres
UKSI 2016:1107 (as amended) – Schedule 3A, Part 1

3. UK-Type Examination Certificate No: FM21UKEX0170X

4. Equipment or protective system:
(Type Reference and Name) Model FT4X Thermal Mass Gas Flow Meter and Temperature Transmitter
MDot Max Series Thermal Mass Gas Flow Meter and Temperature Transmitter

5. Name of Applicant: Fox Thermal Instruments Inc

6. Address of Applicant 399 Reservation Rd,
Marina, California 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, Approved Body number 1725, in accordance with Regulation 42 of the Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016, UKSI 2016:1107 (as amended), certifies that this product has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Schedule 1 of the Regulations.

The examination and test results are recorded in confidential report number:

PR459733 dated 12th October 2021

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 UK-Type Examination certificate relates only to the design, examination and tests of the specified equipment or protective system in accordance with the Regulations. Further requirements of the Regulations apply to the manufacturing process and supply of this product. These are not covered by this certificate.

Certificate issued by:

7 February 2024

Victor Aluko-Oginni
Certification Manager, FM Approvals Ltd.

Date

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FM Approvals Ltd. Voyager Place, Maidenhead, Berkshire, SL6 2PJ. United Kingdom
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F UKEX 020 (Jan/21)



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



Main Enclosure:

II 2 G Ex db IIB+H₂ T6 or T4 Gb Ta = -20°C to +70°C

II 2 D Ex tb IIIC T85°C or T135°C Db Ta = -20°C to +70°C

Remote Enclosure:

II 2 G Ex db IIB+H₂ T4 Gb Ta = -20°C to +70°C

II 2 D Ex tb IIIC T135°C Db Ta = -20°C to +70°C

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

General - The Model FT4X and MDot Max Series Thermal Mass Gas 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 flowmeters 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.

Construction - The Model FT4X and MDot Max Series Thermal Mass Gas Flow Meter and Temperature Transmitter consists of a dual-compartment electronics housing with thread-on blank or window covers and a probe threaded into the housing base. The remote version of the Model FT4X and MDot Max Series Thermal Mass Gas Flow Meter and Temperature Transmitter consists of the same dual-compartment electronics housing attached to a smaller remote enclosure with probe. The enclosures are provided with 3/4 inch NPT openings. Probe mounting can be provided integrally, directly to the electronics housing, or can be remotely mounted, using the remote enclosure, up to 100 feet from the electronics housing.

Ratings - The Model FT4X and MDot Max Series Thermal Mass Gas Flow Meter and Temperature Transmitters operate at 12-28 Vdc (6W) or 100-240 Vac (7W). 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 at a maximum pressure of 740 psi.

The enclosures have an ingress protection rating of IP67.

See Annex for model codes.

14. **Specific Conditions of Use:**

1. The flamepaths of the equipment are not intended to be repaired. Consult the manufacturer if repair of the flamepath joints is necessary.
2. Refer to the manufacturer's instructions to reduce the potential of an electrostatic charging hazard on the equipment enclosure.
3. The equipment temperature code ratings are dependent on the enclosure configuration (local or remote). Refer to the following table for specific temperature code markings.

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Model Code	Temperature Code Marking-Gas		Temperature Code Marking-Dust	
	Main Enclosure	Remote Enclosure	Main Enclosure	Remote Enclosure
E1	T4	N/A	T135°C	N/A
E2	T4	N/A	T135°C	N/A
E3	T6	T4	T85°C	T135°C
E4	T6	T4	T85°C	T135°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 UK-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 UKCA Marking, FM Approvals Ltd accepts no responsibility for the compliance of the equipment against all applicable Regulations in all applications.

This Certificate has been issued in accordance with FM Approvals Ltd's UKCA 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 Approved Body.

18. Certificate History

Details of the supplements to this certificate are described below:

Date	Description
29 October 2021	Original Issue.
24 May 2022	<u>Supplement 1:</u> Report Reference: PR461840 dated 11 th May 2022 Description of the Change: Add 645i, 650i, 745i and 750i Series.
24 October 2022	<u>Supplement 2:</u> Report Reference: PR461958 dated 18 th October 2022. Description of the Change: Add MDot Max Series. Minor text corrections.

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Date	Description
16 November 2022	<u>Supplement 3:</u> Report Reference: RR234631 dated 8 th November 2022. Description of the Change: Minor documentation changes not affecting the equipment safety.
28 September 2023	<u>Supplement 4:</u> Report Reference: PR466793 dated 18 September 2023. Description of the Change(s): Remove 645i, 650i, 745i and 750i models and associated documentation changes.
7 February 2024	<u>Supplement 5:</u> Report Reference: RR239357 dated 28 January 2024. Description of the Change(s): Minor documentation changes not affecting the equipment safety.

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ANNEX

Model FT4X Inline

Description of Equipment:

FT4X-a-b-c-d. Thermal Mass Flow Meter and Temperature Transmitter (Inline).

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

b = Enclosure E1, E2, E3 or E4.

c = Communication BH, BN, B0 or RS.

d = Data logger, display and sensor L0, BLANK, D0, LD0, SH, SJ or SI.

Model FT4X Insertion

Description of Equipment:

FT4X-a-b-c-d. Thermal 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 = Enclosure E1, E2, E3 or E4.

c = Communication BH, BN, B0 or RS.

d = Data logger, display and sensor L0, BLANK, D0, LD0, SH, SJ or SI.

MDot Max Series Inline

Description of Equipment:

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

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

b = Enclosure E1, E2, E3 or E4.

c = Communication BH, BN, B0 or RS.

d = Data logger, display and sensor L0, BLANK, D0, LD0, SH, SJ or SI.

MDot Max Series Insertion

Description of Equipment:

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

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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 = Enclosure E1, E2, E3 or E4.

c = Communication BH, BN, B0 or RS.

d = Data logger, display and sensor L0, BLANK, D0, LD0, SH, SJ or SI.

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