# MODEL FT4X FLOW METER FEATURES

1.  **Direct Mass Measurement**
    The Fox FT4X measures the mass flow of gases directly Thousand Standard Cubic Feet per Day (MSCFD), Normal Cubic Meters per Hour (NM3H), Kilogram per Hour (Kg/Hr), and other mass units without the need for pressure or temperature compensation. It also provides standardized (normalized) gas flow measurement in standard volumetric units (ie SCFM) or mass units (ie LBS/M).  Outputs include two 4 to 20mA and one pulse/alarm. The Fox FT4X combines the latest advances in microprocessor electronics with cutting-edge manufacturing and robust sensor design.

2.  **Data Logger**
    The Data Logger records flow rate, totals, and other events and alarms. It supports 40 daily totals, settable Contract Time, date/time stamped alarm & event logs with a 7 year history, and a power off totalizer.

3.  **In-the-Pipe Calibration Validation with CAL-V™**
    The FT4X's CAL-V™ function allows operators to validate the meter's calibration accuracy by testing the functionality of the sensor and associated signal processing circuitry - all this with the simple push of a button.  Fox's innovative approach lets users validate calibration in-the-pipe and under actual process conditions.

4.  **Process Temperature Measurement**
    The FT4X measures the process gas temperature.  An isolated 4-20mA output programmable for flow or temperature is standard.

5.  **Outstanding Low Flow Capability, Wide Turn-Down Ratio**
    The Fox thermal flow meter is capable of providing precise measurement of extremely low velocity gas flows.  This results in a wide measurement range and a turn down ratio of up to 1000:1 (100:1 is typical).

6.  **Gas-SelectX®**
    The Model FT4X has many common gases pre-programmed into the meter so that the user can select a gas or create a custom gas mix from the gas menu to fit the application. Three gas menus are available: Pure Gas Menu, Mixed Gas Menu, and Oil & Gas Menu.

7.  **Accuracy**
    Accuracy compliant with EPA Title 40 CFR Part 98, EPA Title 40 CFR Part 60, BLM 3175, and API 14.10.

8.  **DDC-Sensor™**
    The non-cantilevered design of the DDC-Sensor™ is standard on all Fox FT4X flow meters. Instead of using traditional analog circuitry, the DDC-Sensor™ is interfaced directly to the FT4X microprocessor for more control, precision, and programmability.

9.  **NIST Traceable Calibration**
    The Fox Calibration Laboratory uses NIST traceable flow standards to ensure the highest level of accuracy and the fastest turn-around time.  A calibration certificate is supplied with every meter.

10. **Inline, Insertion, and Retractor Sizes**
    Inline type flow meters are available for 1.5" to 6" pipes.  Built-in flow conditioners reduce the requirement for long, straight pipe runs both upstream and down.  The inline flow bodies are available in either 316 stainless or carbon steel. Insertion type flow meters probes are available in 6" to 36" sizes, can be installed in pipe diameters of 1 ½" and up, and are easy to install. Retractor sizes are 15", 18", 24", 30", and 36".

11. **Pressure Ratings**
    The FT4X insertion meter is rated to 740 psig (51.02 barg) and the FT4X with a retractor is rated to 150 psig (10.3 barg). A 316 SS inline meter with NPT ends is rated for 500 psig (34.5 barg), a 316 SS inline meter with 150 lb. flanges is rated for 230 psig (15.6 barg), a carbon steel inline meter with NPT ends is rated for 300 psig (20.1 barg), a carbon steel inline meter with 150 lb. flanges is rated for 285 psig (19.7), and a carbon steel inline meter with 300 lb. flanges is rated for 740 psig (51.0).

12. **Display and Configuration Panel**
    The standard display and configuration panel displays flow rate, flow total, elapsed time, process temperature and alarms.  The Configuration Panel allows programming of a large variety of meter settings.

13. **Discrete Input and Output**
    The discrete input can be programmed to clear alarms or reset the totalizer.  The discrete output can be set to provide a signal when alarms are generated.

*Some of the features listed are optional features*

14. **Digital Communications**
    Bus options are HART and Modbus RTU (RS485).  The FT4X uses a standard USB port to connect to a PC.

15. **FT4X View™**
    Fox's free FT4X View™ software provides complete configuration and remote process monitoring functions.
    FT4X View™ lets you adjust meter configuration, evaluate transmitter alarm conditions, data log process information, and view measurements from your PC or control station. The FT4X View™ software automatically logs the date/time and results of each CAL-V™ test and can produce Calibration Validation Certificates at the conclusion of the tests.

16. **Enclosure and Area Rating**
    NEMA 4X enclosure approved for FM and FMc Class I, Division 1; ATEX/IECEx Zone 1 approved. CE mark.

17. **Input Power**
    The FT4X accepts 24VDC power or 85 to 264VAC (50-60 Hz) power is an option (100-240VAC for CE Mark).

18. **Approvals**
    CE:  Approved
       EMC Directive; 2014/30/EU
       Emissions and Immunity Testing: EN61326-1:2013
       Low Voltage Directive (LVD): 2014/35/EU
       Product Safety Testing: EN 61010-1: 2010
       Pressure Equipment Directive: 97/23/EC
       Weld Testing: EN ISO 15614-1 and EN ISO 9606-1, ASME B31.3

    FM (FM17US0061X) and FMc (FM17CA0032X): Approved
       Class I, Division 1, Groups B,C,D; Class II, Division 1, Groups E,F,G;
       Class III, Division 1; T6 or T4, Ta = - 40˚C to +70˚C;
       Class 1, Zone 1, AEx/Ex db IIB + H2 T6 or T4 Gb; Ta= -20˚C to +70˚C; Type 4X, IP67

    ATEX (FM17ATEX0015X): Approved
       II 2 G Ex db IIB + H2 T6 or T4 Gb Ta = - 20˚C to +70˚C; IP67
       II 2 D Ex tb IIIC T85˚C or T135˚C Db Ta = - 20˚C to +70˚C; IP67

    IECEx (IECEx FMG 17.0008X): Approved
       Ex db IIB + H2 T6 or T4 Gb Ta = - 20˚C to +70˚C; IP67
       Ex tb IIIC T85˚C or T135˚C Db Ta = - 20˚C to +70˚C; IP67

    UKEX (FM21UKEX0170X): Approved
       II 2 G Ex db IIB + H2 T6 or T4 Gb Ta = - 20˚C to +70˚C; IP67
       II 2 D Ex tb IIIC T85˚C or T135˚C Db Ta = - 20˚C to +70˚C; IP67

    ATEX and IECEx Standards:
       EN 60079-0: 2012 + A11:2013    EN 60079-1: 2014    EN 60079-31: 2014    EN 60529: 1991 +A1: 2000
       IEC 60079-0: 2011    IEC 60079-1: 2011    IEC 60079-31: 2013    IEC 60529: 2001

| Model Code | Temperature Code Marking - Divisions (All) | | Temperature Code Marking - Zones (Gas) | | Temperature Code Marking - Zones (Dust) | |
|---|---|---|---|---|---|---|
| Enclosure (variable 'b') | Main Enclosure | Remote Enclosure | Main Enclosure | Remote Enclosure | Main Enclosure | Remote Enclosure |
| E1 | T4 | N/A | T4 | N/A | T135°C | N/A |
| E2 | T4 | N/A | T4 | N/A | T135°C | N/A |
| E3 | T6 | T4 | T6 | T4 | T85°C | T135°C |
| E4 | T6 | T4 | T6 | T4 | T85°C | T135°C |

Temperature code ratings for Zones are dependent on external process temperature factors and equipment enclosure configuration.  See the table above for specific temperature code ratings.

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