

TrendMassTer[®]

Thermal Mass Flow Meters

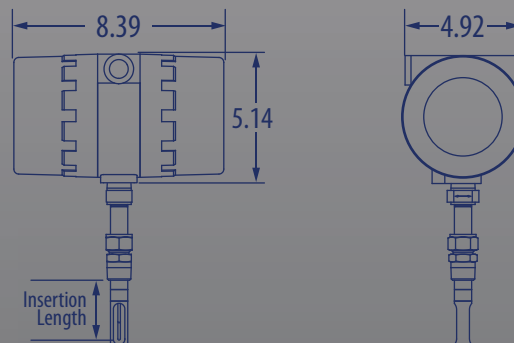
Research at **Delta M** has led to the development of a new Thermal Mass Flowmeter specifically designed to operate in gases. The new Delta M TrendMassTer[®] thermal mass flowmeter is based on the brand new *patented* RATIO-THERMIC[®] technology developed *exclusively* by the Delta M research group.



Theory of Operation

Our unique sensor uses the mass flowing through a process line much like an electrical circuit uses a resistor. Changes in fluid velocity, thermal conductivity, density, temperature, and pressure affect the value of this thermal resistor. Our microprocessor based electronics constantly monitor this thermal resistance and adjust the outputs based on these changes *and report* the actual mass flow in the process line *in real time*. This allows the output of direct mass flow without the need for a flow computer to assume mass flow rate from *separately* measured process variables, making *it more accurate*, and its installation and maintenance much simpler and more cost effective.

DELTA
CORPORATION 
REPEATABLE. RELIABLE. READY.



Instrument

Accuracy:

1% of rate to +0.5% of Full Scale

Repeatability:

±1% of reading

Time Response:

0.5 to 30 seconds

Temperature Effect:

0.1% per degree C within ± 20°C

Instrumental Enclosure:

Double sided non explosion proof (STD)

Double sided NEMA 4X(optional)

Electronics

Input Power:

AC 100 to 240 VAC; 47 to 63 Hz @ 15 watts.

DC 18 to 30 VDC @ 24 watts

Operating Temperature Range:

Standard 32° to 122° F (0° to 50° C)

Blind Display -20° to 185° F (-29° to 85° C)

Outputs:

Analog: dual 4-20 mA, isolated with external loop power

Digital: RS485

Switched: Dual open drain

Communications:

Simple 4 button (DS - Option)

RS485 configuration via control system or laptop

Air Mass Flow Rate Range

Pipe Size (in)	Maximum Range	
	SCFM	Nm ³ /h
2	300	500
6	2,500	4,400
8	4,400	7,500
10	7,000	11,900
12	10,050	17,100
18	19,900	33,800
24	35,700	60,700

Code - Model

TM6GNX - TrendMassTer® Gas Mass Flow Meter - Non Explosion Proof

Code - Process Connection

CF - .75 Inch Compression Fitting (316L SS)

SP - Spool Piece

SPL - Special

Code - Wetted Parts Material

S6 - 316 L Stainless Steel tube with Hastelloy C Twin Tips

HC - Hastelloy C

SM - Special Material

Code - Mounting Insertion Length

2.0 - 2 inch

6.0 - 6 inch

9.0 - 9 inch

12.0 - 12 inch

18.0 - 18 inch

24.0 - 24 inch

36.0 - 36 inch

48.0 - 48 inch

0.00 - Spool Piece or Flange (Contact Factory)

Code - Power Input

DC - 18 - 30 VDC

AC - 110 - 240 VAC (90 - 264 VAC)

Code - Configuration

LE - Local Electronics (Integral)

RE - Remote Electronics

Code - Display Options

BL - Blind (no display/keypad)

DS - Display with keypad

Code - Calibration

CB - Air Up to 60 m/s Maximum

Code - Special Options

00 - No Special Options

4x - Optional NEMA 4x Enclosure

CC - Ceramic Coat

EN - Extended Neck

HT - High Temperature to 650° F (350° C)*

LT - Live Tap

MT - Medium Temperature 480° F (250° C)*

TC - PTFE Coating

TG - Stainless Steel Tag

SPL - Special

TM6GNX - CF - S6 - 2.00 - AC - LE - DS - CB - 00

* MT and HT special options require EN and RE

Features & Benefits

- No moving parts - no mechanical failures
- Direct mass flow - no secondary measurements
- Low pressure drop - no restrictions
- Wide flow range - includes low flow
- All welded sensor construction - rugged and durable

Display Features

- 32 character LCD display (16 x 2 LED backlight)
- 4 button internal keypad for field configuration
- Selectable Variables - mass, volume, totalizer & temperature
- Constant data update

Sensor

Physical Design:

Shrouded for ruggedness

Fully Penetrated welds for long life

Wide variety of alloys & materials

Temperature Rating:

Standard: -58 to 300 °F (-50 to 150 °C)

Medium: to 480 °F (250 °C)

High: to 650 °F (350 °C)

Operating Pressure Range:

to 3000 PSIG

