

# Dattus™ fM2

## Commercial & Industrial Gas Meter

- ▶ Maintenance Free Operation
- ▶ Two-Channel Programmable Pulse Outputs
- ▶ Will Not Bind
- ▶ No Oil Required
- ▶ No Leveling Required
- ▶ Highly Accurate Measurement

### Features

- Compact Design
- Configurable Index Orientation
- Instant Flow Rate Display
- Nominal 7-10 Years Battery Life
- Pressure Up to 150 psi
- Capacity Up to 9,000 cfh (base rating)
- Large Rangeability



### Applications

The Dattus fM2 meter is suited for commercial to light industrial gas measurement applications up to flow rates of 9000 actual cubic feet per hour (acfh). With no moving parts, the Dattus meter is ideal for applications where continuous gas flow to the customer is required. The Dattus meter will not cause an interruption of gas service which may be important for customers such as hospitals, nursing homes, schools, or factories using processes requiring uninterrupted gas flow.

### Description

The operation of the Dattus meter, see diagram on following page, is based on the fluidic oscillation principle. The measurement unit is comprised of three functional elements:

- ▶ Flow conditioner
- ▶ Jet nozzle formation
- ▶ Fluidic oscillator chamber

Gas enters (1) the meter and divides into two separate flow paths (2) these two flows recombine (3) as they exit the flow conditioner and enter the fluidic oscillation chamber through the nozzle. The process of dividing the flows eliminates upstream disturbances and creates well-conditional flow. In the fluidic oscillation chamber, a jet is formed (4) as the gas enters through the nozzle. The jet then starts oscillating back and forth (5).

Thermal sensors, located just after the nozzle, detect a temperature variance as the gas jet passes from one side to the other. The volume of gas passed through the meter is obtained

by counting the number of oscillations detected by the sensors.

### Meter Configuration

Dattus gas meters are available as:

- Basic - Standard meter features and fixed factor capability
- ETC - Electronic Temperature Compensation with fixed pressure factor capability
- Micro - Full live pressure and temperature correction and data logging with integral Gas Micro EVC.

### Standard Features

The basic meter performs volume metering based on the gas pressure and temperature in the meter. The functions available are shown below:

- Gas volume totaling
- Fixed factor correction
- Non-volatile memory for storing values and data
- Optical communication port for reading/writing of values
- Eight item programmable display
- Magnetic switch to change display values

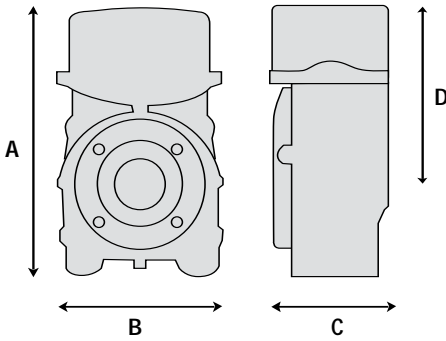
### Optional Features:

In addition to the standard functionality of the basic configuration, the following options can be added:

- Temperature correction using a temperature probe mounted in the gas flow
- Fixed Pressure Correction
- Full live pressure and temperature correction and data logging with integral Gas Micro EVC

► Dattus fM2 Dimensions (Inches)

A	B	C	D	Thread Depth
16.5"	10.6"	6.75"	10.0"	1.00"



Flange Type	Bolt Pattern Diameter*
ANSI 125 2"	4.75"
ANSI 125 3"	6.00"

Note: Flanges receive four 1-3/4" x 5/8" - 11 UNC 2B Bolts

## Construction

Measurement Unit:	Cast aluminum A356T6
External Cover:	ASA (Acrylonitrile Styrene Acrylate)
Index Housing:	UV stabilized polycarbonate

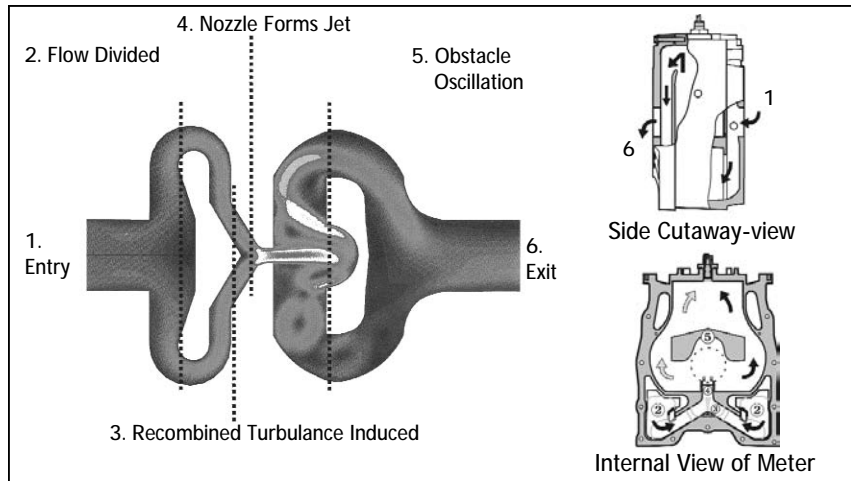
## Specifications

Meter Type:	Dattus
Meter Model:	fM2
Comparable Meters:	3,000 acfh to 9,000 acfh
Flanges:	2" and 3" ANSI 125
Flange to Flange Length:	6.75"
Maximum Allowable Operating Pressure (MAOP):	150 psig
Temperature Range:	-40°F to 140°F
Display:	Configurable up to 8 digits to show meter quantities and alarms

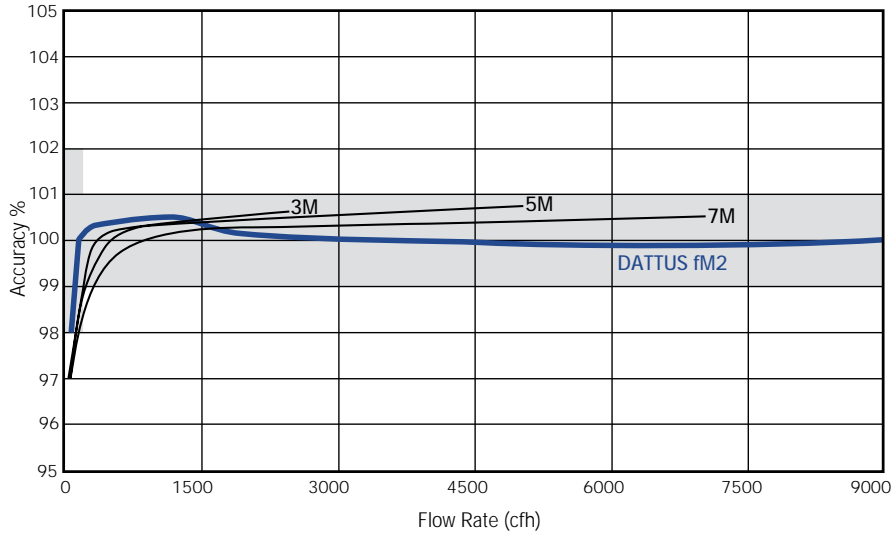
Shipping Weight:	42 lbs
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## Dattus Capacities at Indicated Metering Pressures

Metering Pressure PSIG	1	5	25	60	90	100	150
MSCFH	9.6	12.0	24.3	45.7	64.0	70.1	100.6



## Dattus Accuracy and Rotary Meter Comparison



### ► Rangeability

Dynamic Range:	400:1
Minimum Flow Rate:	22 acfh
Maximum Flow Rate:	9,000 acfh

### ► Pulse Output

Pulse Type:	Low frequency
Form Type:	A
Pulse duration:	250 ms
Pulse Value:	User Scalable

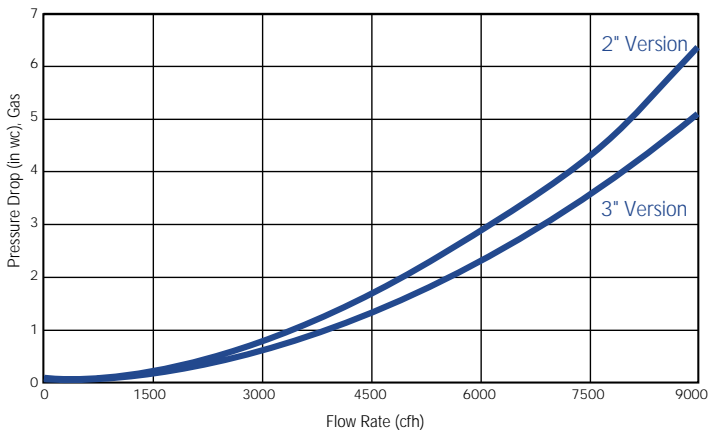
### ► Temperature Probe

Type:	PT1000, platinum resistance thermistor (RTD)
Typical accuracy:	0.1% of absolute measurement

## Pressure Drop, Gas (0.6 Specific Gravity) @ Atmospheric Conditions

Dattus Model	Flange Version	Flow Rate (acfh)	Pressure Drop gas (in w.c.)	Dynamic Range, +/- 2%	Dynamic Range, +/- 1%
fm2	2"	9000	6.38	409:1	150:1
		7968	5.00	362:1	133:1
		7000	3.89	318:1	116:1
		5000	2.06	227:1	83:1
		4918	2.00	225:1	82:1
		3481	1.00	158:1	58:1
		3000	0.75	136:1	50:1
	3"	2457	0.50	112:1	41:1
		9000	5.06	409:1	150:1
		8905	5.00	405:1	148:1
		7000	3.14	318:1	116:1
		5535	2.00	252:1	92:1
		5000	1.64	227:1	83:1
		3871	1.00	176:1	65:1
3000	0.61	136:1	50:1		
2750	0.50	125:1	46:1		

## Pressure Drop (2" and 3" Version)



## Limited Warranty

Actaris U.S. Gas, Inc., 970 Highway 127 North, Owenton, Kentucky 40359-9802, warrants this gas product against defects in materials and workmanship for the earlier of one (1) year from the date the product is shipped by Actaris or a period of one year from the date the product is installed by Actaris at the original purchaser's site. During such one-year period, provided that the original purchaser continues to own the product, Actaris will, at its sole option, repair any defects, replace the product or repay the purchase price.

- This warranty will be void if the purchaser fails to observe the procedures for installation, operation or service of the product as set forth in the Operating Manual and Specifications for the product or if the defect is caused by tampering, physical abuse or misuse of the product.

### ► Reference Information

- Dattus™ Technical Reference Guide  
Part No. 442002-001

- ACTARIS SPECIFICALLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING THOSE OF MERCHANTABILITY OR OF FITNESS FOR A PARTICULAR PURPOSE. UNDER NO CIRCUMSTANCES WILL ACTARIS BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND WHATSOEVER.

- Actaris' liability for any claim of any kind, including negligence and breach of warranty for the sale and use of any product covered by or furnished, shall in no case exceed the price allocable to the product or part thereof which gives rise to the claim.

- In the event of a malfunction of the product, consult your Actaris Service Representative or Actaris U.S. Gas, Inc., 970 Highway 127 North, Owenton, Kentucky 40359-9802.

**See Actaris Terms and Conditions of Sale for the full and complete terms of the limited warranty.**

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