

DATTUS® III

fM1 Commercial & Industrial Gas Meter

Introduction

DATTUS III fM1

Building upon its proven lineage, Itron is proud to introduce the third-generation DATTUS, a solid-state gas meter suited for commercial and industrial gas measurement applications. The DATTUS III is built upon an electronics platform that includes a new solid chip thermal sensor, built-in temperature compensation, and datalogging as capabilities—standard. This platform is available in the fM1 model and will also be available in the fM2 and fM3 models.

The DATTUS meter uses fluidic oscillation technology. With no moving parts, the DATTUS meter is ideal for applications where continuous gas flow to the customer is required.

The fM1 incorporates a new sensor technology with a solid chip design. The sensor is encapsulated in glass but sensitive enough to detect gas oscillations critical for measurement. The glass coating offers excellent resistance to all types of solid and liquid contaminants.

Meter Type Options

- > **Basic** – Offers uncorrected measurement along with fixed-factor capability
- > **Basic TC** – Same as Basic, but programmed to include temperature compensation

Operational Advantages

Safety – Because the DATTUS uses solid-state technology, the meter cannot “lock up” or stop gas flow. This may be necessary in some applications such as gas measurement for hospitals, schools, or other applications where continuous gas service may be critical.

Robustness – The DATTUS meter may be subjected to many times its rated capacity without any damage to the meter; only an alarm is displayed letting the user know the meter was in an “overflow” condition. The DATTUS will measure normally once the flow is back within its operating range. With the new and improved solid sensor chip technology, the likelihood of damage from contamination is significantly reduced.

Application – Without mechanical elements impeding gas flow, the meter performs very well in application where slam-shut or slam-open loads are created because of the downstream equipment used.

Ease of Installation – Having completely aligned flanges is not necessary, nor is leveling of the meter. Neither torsion on the meter case or a non-level setting will affect meter performance.

Low Maintenance – Since the DATTUS meter doesn't have any rotating or moving parts, there are no associated maintenance requirements, such as oil changes that may be required for other meter types. Batteries are the only regular maintenance item for DATTUS, with battery life expectancy at nine to ten years for the DATTUS Basic and Basic TC models.



Features and Benefits

- > Static measurement technology
- > Built-in temperature compensation
- > Data logging standard
- > Four channels of configurable pulse outputs
- > Capacity sizes from 8C to 3M
- > Field upgradable meter capacity without service interruption
- > 9-10 year battery life
- > Configurable index orientation
- > MODBUS communication
- > Programmable fixed pressure compensation
- > Highly robust sensor design

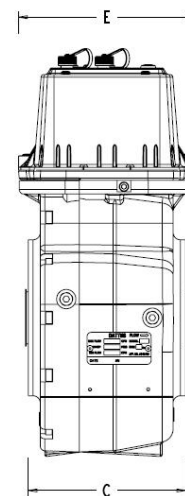
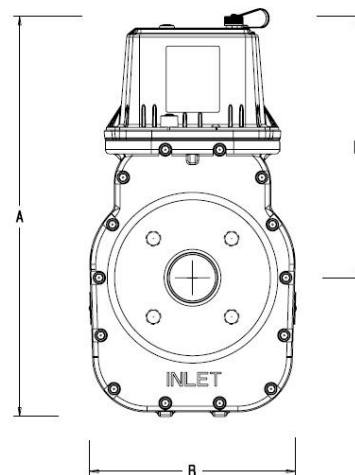
Pulse Outputs

- > 4 pulse output channels
- > Open drain N channel MOSFET, non-isolated
- > Dry contact
- > Switch off resistance > 2 Mohms
- > Switch on resistance ~ 250 ohms
- > Pulse duration: 10ms to 2 seconds or 50% duty cycle
- > Pulse value: user configurable for volume pulse or alarm output

Dimensions

Dimensions	Inches	Millimeter
A	17.2	437
B	8.8	224
C	6.75	171
D	11.25	286
E	7.6	193

*ANSI 125 2" Flanged



Data Logging

- > Data logging is standard
- > Four configurable loggers
- > Intervals from 30 seconds up to monthly
- > Four items may be logged in addition to uncorrected volume, including temperature, corrected volume, maximum flow rate, and battery voltages
- > Total of 2730 records available

Event logging

- > Records and time stamps meter alarms
- > Records and time stamps configuration changes
- > Uses a circular log
- > Additional "last occurrence" log

Temperature Compensation

- > Temperature sensing chip included on the sensor board and mounted in the gas stream
- > May enable or disable temperature compensation via software
- > Accuracy of +/- 1.8 degrees Fahrenheit
- > Programmable read frequency with minimum of 10 minutes

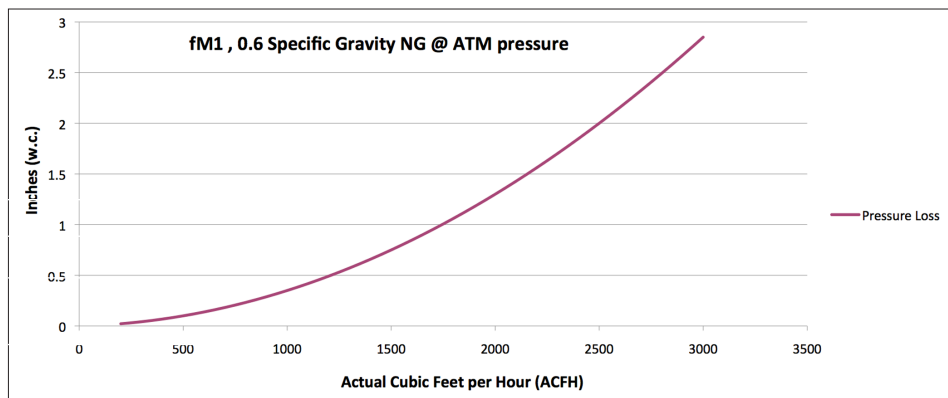
Specifications

Model	Start Flow (CFH)	Flow rate for +/- 2% acc.	Flow rate for +/- 1% acc.	Maximum Capacity
fM1	8	10	35	3750

Meter Sizing					
Meter Size	fM1 8C	fM1 1M	fM1 1.5M	fM1 2M	fM1 3M
Base Rating acfh (m3/h)	800 (22.7)	1000 (28.3)	1500 (42.5)	2000 (56.6)	3000 (85.0)
Meter Pressure psig (Bar)	Metering Capacity in MSCFH (m3/h)				
1 (0.07)	0.9 (24.2)	1.1 (30.2)	1.6 (45.4)	2.1 (60.5)	3.2 (90.7)
2 (0.14)	0.9 (25.7)	1.1 (32.2)	1.7 (48.2)	2.3 (64.3)	3.4 (96.5)
3 (0.21)	1.0 (27.3)	1.2 (34.1)	1.8 (51.1)	2.4 (68.2)	3.6 (102.3)
5 (0.34)	1.1 (30.3)	1.3 (37.9)	2.0 (56.9)	2.7 (75.9)	4.0 (113.8)
10 (0.69)	1.3 (38.0)	1.7 (47.5)	2.5 (71.3)	3.4 (95.1)	5.0 (142.6)
15 (1.03)	1.6 (45.7)	2.0 (57.2)	3.0 (85.7)	4.0 (114.3)	6.1 (171.5)
20 (1.38)	1.9 (53.4)	2.4 (66.8)	3.5 (100.1)	4.7 (133.5)	7.1 (200.3)
25 (1.72)	2.2 (61.1)	2.7 (76.4)	4.0 (114.6)	5.4 (152.8)	8.1 (229.1)
45 (3.10)	3.2 (91.9)	4.1 (114.8)	6.1 (172.2)	8.1 (229.7)	12.2 (344.5)
60 (4.13)	4.1 (114.9)	5.1 (143.7)	7.6 (215.5)	10.1 (287.3)	15.2 (431.0)
90 (6.20)	5.7 (161.1)	7.1 (201.3)	10.7 (302.0)	14.2 (402.7)	21.3 (604.0)
100 (6.89)	6.2 (176.4)	7.8 (220.6)	11.7 (330.8)	15.6 (441.1)	23.4 (661.7)
150 (10.3)	8.9 (253.3)	11.2 (316.7)	16.8 (475.0)	22.4 (633.4)	33.5 (950.0)
175 (12.1)	10.3 (291.8)	12.9 (364.7)	19.3 (547.1)	25.8 (729.5)	38.6 (1094.2)

Meter weight	Shipped weight	MAOP	Operating Temperature Range	Approvals for Intrinsic Safety
34 lbs.	38 lbs.	175 PSIG	-40° to +140° F	UL 913 Class I Div I CSA 22.2 No. 157

Pressure Loss Curve



About Itron Inc.

At Itron, we're dedicated to delivering end-to-end smart grid and smart distribution solutions to electric, gas and water utilities around the globe. Our company is the world's leading provider of smart metering, data collection and utility software systems, with nearly 8,000 utilities worldwide relying on our technology to optimize the delivery and use of energy and water. Our offerings include electricity, gas, water and heat meters; network communication technology; collection systems and related software applications; and professional services. To realize your smarter energy and water future, start here: www.itron.com.

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