

**Product Data Sheet**

PS-00599, Rev. C

April 2006

# Micro Motion® H-Series Hygienic Mass, Density, and Volume Meter With MVD™ Technology



- Mass flow accuracy to  $\pm 0.10\%$ , volume flow accuracy to  $\pm 0.15\%$ , and density accuracy to  $\pm 0.001$  g/cc ( $\pm 1.0$  kg/m<sup>3</sup>) on liquids
- 32 Ra (0.8  $\mu$ m) internal surface finish, with 15 Ra (0.4  $\mu$ m) available
- EHEDG approved and 3-A authorized
- Self-draining
- Optional secondary containment



# Micro Motion® H-Series hygienic meter

Micro Motion H-Series meters offer highly accurate flow and density measurement for virtually any process fluid and with cleanability unmatched by any other dual-tube Coriolis flowmeter.

## Hygienic standards

Micro Motion H-Series meters feature a 32 Ra (0.8 µm) internal surface finish, which is both 3-A authorized and EHEDG certified. All H-Series meters can be installed to be self-draining.

Micro Motion H-Series meters are also available with an improved surface finish option. This option provides a fully electro-polished flow path with an average surface finish of 15 Ra (0.4 µm).

### 3-A

Micro Motion H-Series meters are authorized to 3-A Sanitary Standards for Milk and Dairy Products.

### EHEDG

Micro Motion H-Series meters are approved by the European Hygienic Equipment Design Group. H-Series sensors comply with the hygienic criteria of Machinery Directive 98/37/EC, annex 1 (additional essential health and safety requirements for certain categories of machinery), section 2.1 (agri-foodstuffs machinery). Test results show that Micro Motion H-Series sensors can be cleaned in place (CIP) at least as well as reference pipe.

### ASME BPE

All Micro Motion H-Series meters are designed according to strict ASME guidelines for Bio-Processing Equipment.

## Secondary containment

Micro Motion H-Series meters can be purchased with an optional secondary containment rating. This rating is supported by a pneumatic leak test of the sensor enclosure, along with documentation that describes how the safety of the sensor has been verified according to ASME B31.3 standards.

## Product selector

Micro Motion offers an online product selector and configurator for finding the best products to fit your application. To use this program, visit our web site at [www.micromotion.com](http://www.micromotion.com).

---

## Contents

Liquid flow performance . . . . .	3
Density performance (liquid only) . . . . .	4
Gas flow performance . . . . .	5
Temperature specifications . . . . .	7
Pressure ratings . . . . .	8
Vibration limits . . . . .	8
Environmental effects . . . . .	9
Hazardous area classifications . . . . .	10
Materials of construction . . . . .	16
Weight . . . . .	16
Dimensions . . . . .	17
Fitting options . . . . .	21
Ordering information . . . . .	22



# Liquid flow performance

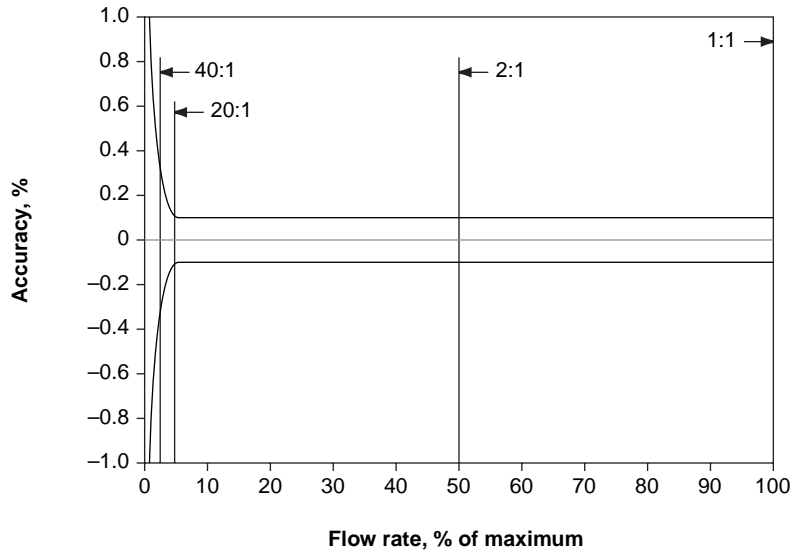
		Mass		Volume <sup>(1)</sup>	
		lb/min	kg/h	gal/min	l/h
<b>Maximum flow rate</b>	H025	76	2068	9	2068
	H050	180	4900	22	4900
	H100	820	22,320	98	22,320
	H200	2350	63,960	282	63,960
	H300	10,000	272,000	1200	272,000
<b>Mass flow accuracy<sup>(2)</sup></b>	Transmitter with MVD Technology	±0.10% of rate <sup>(3)(4)</sup>			
	All other transmitters <sup>(5)</sup>	±0.15% of rate ±[(zero stability / flow rate) × 100]% of rate			
<b>Volume flow accuracy<sup>(2)</sup></b>	Transmitter with MVD Technology	±0.15% of rate <sup>(6)(7)</sup>			
<b>Repeatability</b>	Transmitter with MVD Technology	±0.05% of rate <sup>(3)</sup>			
	All other transmitters	±0.10% of rate ±[½(zero stability / flow rate) × 100]% of rate			
		lb/min	kg/h	gal/min	l/h
<b>Zero stability</b>	H025	0.0065	0.1765	0.0008	0.1765
	H050	0.020	0.544	0.002	0.544
	H100	0.080	2.177	0.010	2.177
	H200	0.256	6.965	0.031	6.965
	H300	0.80	21.76	0.096	21.76

- (1) Volume measurement is based on a process-fluid density of 1 g/cc. For fluids with density other than 1 g/cc, the maximum volume flow rate equals the maximum mass flow rate divided by the fluid's density.
- (2) Stated flow accuracy includes the combined effects of repeatability, linearity, and hysteresis.
- (3) When flow rate < (zero stability / 0.001), then mass flow accuracy = ±[(zero stability / flow rate) × 100]% of rate and repeatability = ±[½(zero stability / flow rate) × 100]% of rate.
- (4) When ordered with the ±0.15% calibration option, mass flow accuracy on liquid = ±0.15% when flow rate ≥ (zero stability / 0.0015). When flow rate < (zero stability / 0.0015), then accuracy = ±[(zero stability / flow rate) × 100]% of rate.
- (5) Model H300 sensors are only compatible with MVD Technology transmitters.
- (6) When flow rate < (zero stability / 0.001), then volume flow accuracy on liquid = ±[1.5 × (zero stability / flow rate) × 100]% of rate and repeatability = ±[½(zero stability / flow rate) × 100]% of rate.
- (7) When ordered with the ±0.15% calibration option, volume flow accuracy on liquid = ±0.25% when flow rate ≥ (zero stability / 0.0017). When flow rate < (zero stability / 0.0017), then volume accuracy on liquid = ±[1.5 × (zero stability / flow rate) × 100]% of rate.

# Liquid flow performance *continued*

## Typical accuracy, turndown, and pressure drop with transmitter with MVD Technology

To determine accuracy, turndown, and pressure drop with your process variables, use the Micro Motion product selector and configurator, available at [www.micromotion.com](http://www.micromotion.com).



<b>Turndown</b>	<b>40:1</b>	<b>20:1</b>	<b>2:1</b>
Accuracy ( $\pm$ %)	0.26	0.13	0.10
Pressure drop			
<i>psi</i>	0.1	0.3	14.2
<i>bar</i>	0.01	0.02	0.98

## Density performance (liquid only)

<b>Accuracy<sup>(1)</sup></b>	$\pm 0.001 \text{ g/cm}^3$	$\pm 1.0 \text{ kg/m}^3$
<b>Repeatability</b>	$\pm 0.0005 \text{ g/cm}^3$	$\pm 0.5 \text{ kg/m}^3$
<b>Range</b>	Up to $5 \text{ g/cm}^3$	Up to $5000 \text{ kg/m}^3$

(1) Stated accuracy and repeatability with calibration option 1 (see page 24). With other calibration options, accuracy is  $\pm 0.002 \text{ g/cm}^3$  ( $2.0 \text{ kg/m}^3$ ) and repeatability is  $\pm 0.001 \text{ g/cm}^3$  ( $\pm 1.0 \text{ kg/m}^3$ ).

# Gas flow performance

When selecting sensors for gas applications, measurement accuracy is a function of fluid mass flow rate independent of operating temperature, pressure, or composition. However, pressure drop through the sensor is dependent upon operating temperature, pressure, and fluid composition. Therefore, when selecting a sensor for any particular gas application, it is highly recommended that each sensor be sized using Micro Motion's product selector, available at [www.micromotion.com](http://www.micromotion.com).

	Mass		Volume <sup>(1)</sup>	
	lb/min	kg/h	SCFM	Nm <sup>3</sup> /h
<b>Typical flow rates that produce approximately 10 psid (0.68 bar) pressure drop on air at 68 °F (20 °C) and 100 psi (6.8 bar)</b>				
H025	2	55	30	40
H050	6	180	90	140
H100	35	900	440	700
H200	80	2380	1160	1840
H300	490	14,900	7270	11,500

**Typical flow rates that produce approximately 50 psid (3.4 bar) pressure drop on natural gas (MW 16.675) at 68 °F (20 °C) and 500 psi (34 bar)**

H025	7	210	180	280
H050	25	690	580	970
H100	125	3410	2900	4580
H200	330	9000	7610	12,690
H300	1860	51,000	43,330	72,250

**Accuracy<sup>(2)</sup>**

Transmitter with MVD Technology	±0.50% of rate <sup>(3)</sup>
All other transmitters <sup>(4)</sup>	±0.70% of rate ±[(zero stability / flow rate) × 100]% of rate

**Repeatability**

Transmitter with MVD Technology	±0.25% of rate <sup>(3)</sup>
All other transmitters <sup>(4)</sup>	±0.35% of rate ±[(zero stability / flow rate) × 100]% of rate

		lb/min	kg/h
<b>Zero stability</b>	H025	0.0065	0.18
	H050	0.020	0.54
	H100	0.080	2.18
	H200	0.256	6.97
	H300	0.80	21.76

(1) Standard (SCFM) reference conditions are 14.7 psia and 68 °F. Normal (Nm<sup>3</sup>/h) reference conditions are 1.013 bar and 0 °C.

(2) Stated flow accuracy includes the combined effects of repeatability, linearity, and hysteresis.

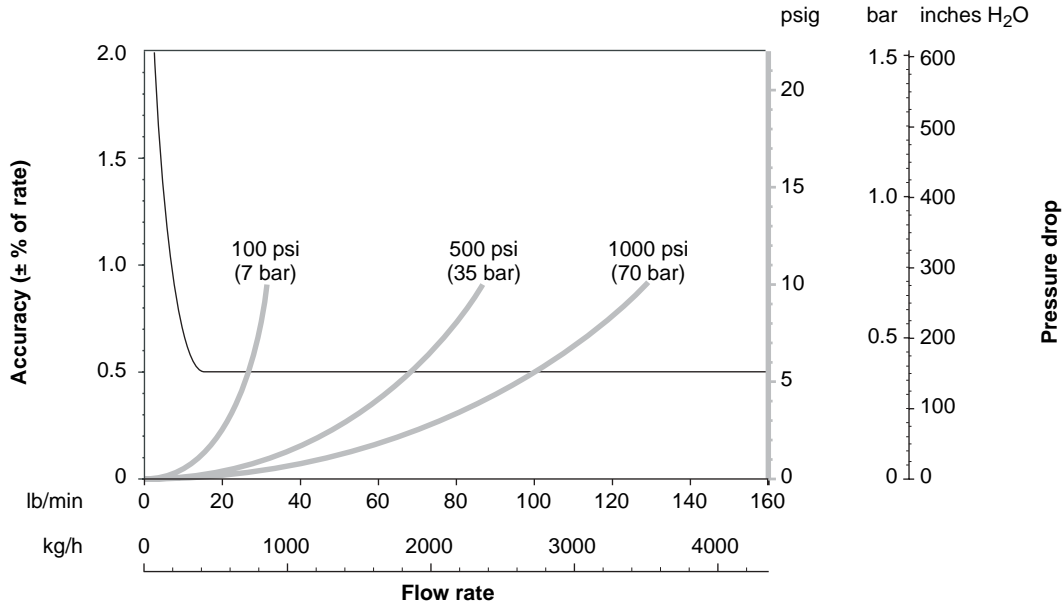
(3) When flow rate < (zero stability / 0.005), then accuracy = ±[(zero stability / flow rate) × 100]% of rate and repeatability = ±[½(zero stability / flow rate) × 100]% of rate.

(4) Model H300 is only compatible with transmitters with MVD Technology.

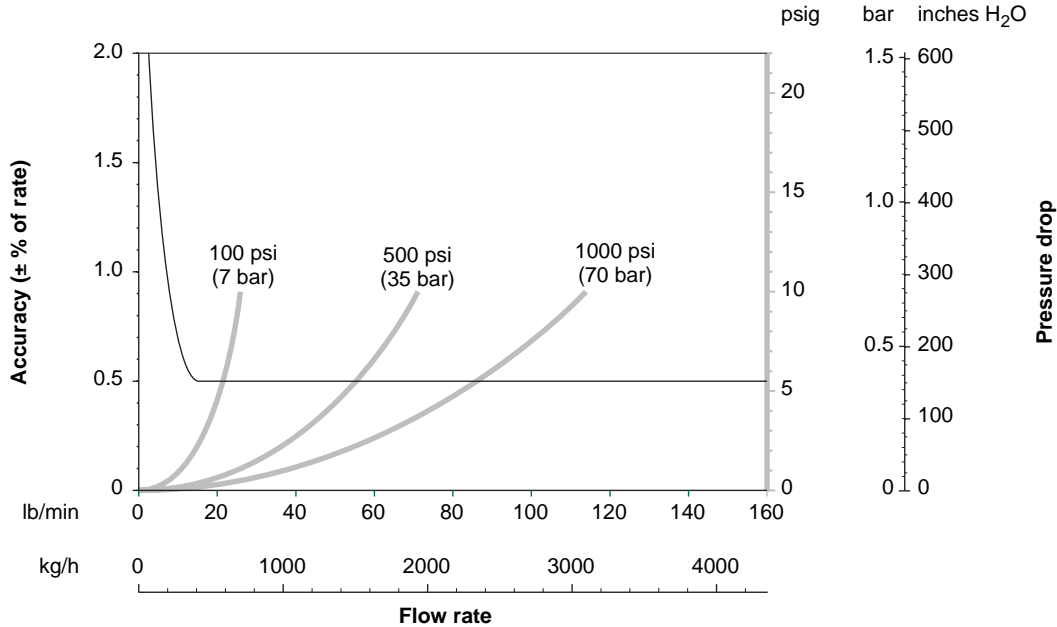
# Gas flow performance *continued*

## Typical accuracy and pressure drop with H100 with MVD Technology

Air at 68 °F (20 °C), static pressures as indicated on graph



Natural gas (MW 16.675) at 68 °F (20 °C), static pressures as indicated on graph



### Standard or Normal Volumetric Capability

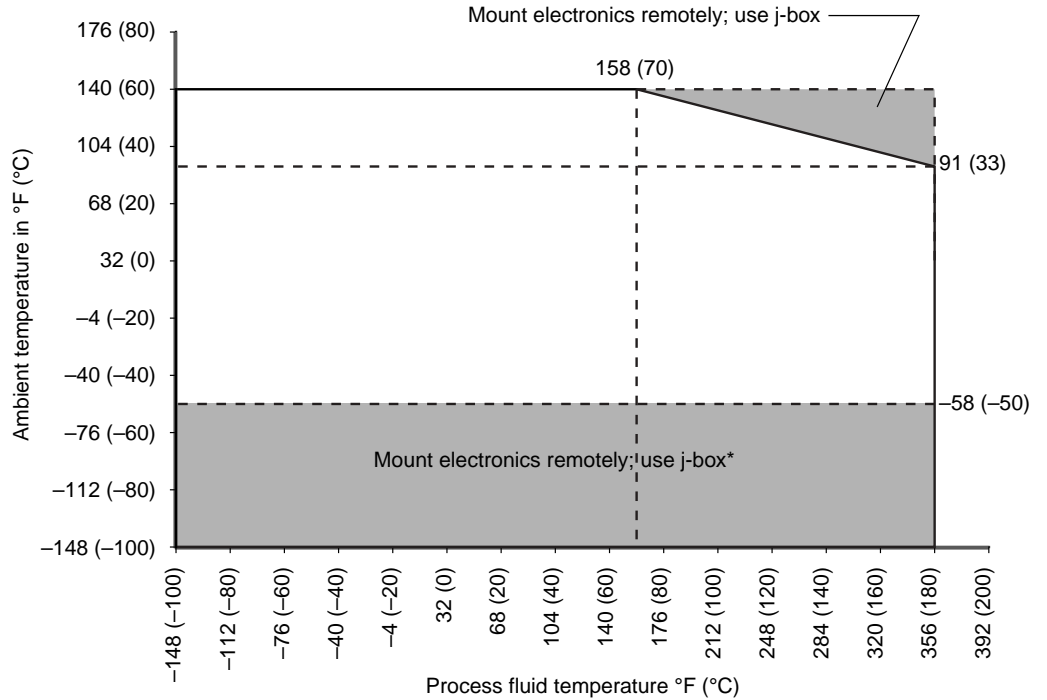
Standard and normal volumes are “quasi mass” flow units for any fixed composition fluid. Standard and normal volumes do not vary with operating pressure, temperature, or density. With knowledge of density at standard or normal conditions (available from reference sources), a Micro Motion meter can be configured to output in standard or normal volume units without the need for pressure, temperature, or density compensation. Contact your local sales representative for more information.

# Temperature specifications

**Accuracy** All models  $\pm 1\text{ }^{\circ}\text{C} \pm 0.5\%$  of reading in  $^{\circ}\text{C}$

**Repeatability** All models  $\pm 0.2\text{ }^{\circ}\text{C}$

**Temperature limits<sup>(1)</sup>** All models with all electronics options (except the IFT9701 transmitter)<sup>(2)(3)</sup>



\* When ambient temperature is below  $-58\text{ }^{\circ}\text{F}$  ( $-50\text{ }^{\circ}\text{C}$ ), a core processor must be heated to bring its local ambient temperature to between  $-58\text{ }^{\circ}\text{F}$  ( $-50\text{ }^{\circ}\text{C}$ ) and  $+140\text{ }^{\circ}\text{F}$  ( $+60\text{ }^{\circ}\text{C}$ ). Long-term storage of electronics at ambient temperatures below  $-58\text{ }^{\circ}\text{F}$  ( $-50\text{ }^{\circ}\text{C}$ ) is not recommended.

Sensors with integral IFT9701 transmitter<sup>(4)</sup>

Ambient temperature:  
 $+131\text{ }^{\circ}\text{F}$  ( $+55\text{ }^{\circ}\text{C}$ ) maximum

Process temperature:  
 $+257\text{ }^{\circ}\text{F}$  ( $+125\text{ }^{\circ}\text{C}$ ) maximum

(1) Temperature limits may be further restricted by hazardous area approvals. See pages 10–16.

(2) The difference in temperature between the process fluid and the case cannot exceed  $120\text{ }^{\circ}\text{F}$  ( $66\text{ }^{\circ}\text{C}$ ) for H300 sensors.

(3) The temperature extender option allows the sensor case to be insulated without covering the transmitter, core processor, or junction box, but does not affect temperature ratings.

(4) Refer to the IFT9701 Product Data Sheet for more information about its temperature limits.

# Pressure ratings

		psi	bar		
<b>Flow tube rating<sup>(1)</sup></b>	Sensor with standard surface finish	1450	100		
	Sensor with improved surface finish	1015	70		
<b>PED compliance</b>	Sensors comply with council directive 97/23/EC of 29 May 1997 on Pressure Equipment				
		<b>ASME B31.3 secondary containment rating<sup>(1)</sup></b>		<b>Burst pressure used to determine ASME B31.3 secondary containment rating</b>	
		psi	bar	psi	bar
<b>Housing rating<sup>(2)</sup></b>	H025	166	11.4	1884	130
	H050	135	9.3	1530	105
	H100	109	7.5	1281	88.3
	H200	64	4.4	760	52.4
	H300	256	17.7	2630	180

(1) Pressure rating at 77 °F (25 °C), according to ASME B31.3. For temperatures above 300 °F (148 °C), pressure needs to be derated as follows. Linear interpolation may be used between specified temperatures.

	<b>Flow tubes (316L sensors)</b>	<b>Housing (all sensors)</b>
up to 300 °F (up to 148 °C)	None	None
at 400 °F (204 °C)	7.2% derating	5.4% derating

(2) Sensor housing is only rated when the secondary containment case option is purchased.

# Vibration limits

Meets IEC 68.2.6, endurance sweep, 5 to 2000 Hz, 50 sweep cycles at 1.0 g



# Environmental effects

## Process temperature effect

Process temperature effect is defined as:

- For mass flow measurement, the worst-case zero offset due to process fluid temperature change away from the zeroing temperature.
- For density measurement, the maximum measurement offset due to process fluid temperature change away from the density calibration temperature.

	Process temperature effect		
	% of maximum flow rate per °C	on density accuracy per °C <sup>(1)</sup>	
		g/cc	kg/m <sup>3</sup>
H025	±0.00175	±0.0001	±0.1
H050	±0.00175	±0.0001	±0.1
H100	±0.00175	±0.0001	±0.1
H200	±0.00175	±0.0001	±0.1
H300	±0.0040	±0.0001	±0.1

## Pressure effect

Pressure effect is defined as the change in sensor flow and density sensitivity due to process pressure change away from the calibration pressure<sup>(2)</sup>. Pressure effect can be corrected.

	Pressure effect on flow accuracy	
	% of rate per psi	% of rate per bar
H025	-0.001	-0.015
H050	-0.001	-0.015
H100	-0.001	-0.015
H200	-0.001	-0.015
H300	-0.001	-0.015

	Pressure effect on density accuracy	
	g/cc per psi	kg/m <sup>3</sup> per bar
H025	None	None
H050	-0.00003	-0.43
H100	-0.00004	-0.58
H200	-0.00003	-0.43
H300	-0.00003	-0.43

(1) For -100 °C and above.

(2) Micro Motion uses a factory calibration pressure of 20 psig (1.4 bar).

# Hazardous area classifications

## CSA and CSA C-US

---

Models H025, H050, H100, and H200 with integrally mounted IFT9701 transmitter

Ambient temperature: +140 °F max. (+60 °C max.)  
Class I, Div. 2, Groups A, B, C, and D  
Class II, Div. 2, Groups F and G

Models H025, H050, H100, and H200 with junction box

Ambient temperature: +140 °F max. (+60 °C max.)  
Class I, Div. 1, Groups C and D  
Class I, Div. 2, Groups A, B, C, and D  
Class II, Div. 1, Groups E, F, and G

Models H025, H050, H100, and H200 with core processor or Model 1700/2700 transmitter

Ambient temperature: -40 to +140 °F (-40 to +60 °C)  
Class I, Div. 1, Groups C and D  
Class I, Div. 2, Groups A, B, C, and D  
Class II, Div. 1, Groups E, F, and G

Model H300 with junction box

Ambient temperature: +140 °F max. (+60 °C max.)  
Class I, Div. 1, Groups C and D  
Class I, Div. 2, Groups A, B, C, and D  
Class II, Div. 1, Groups E, F, and G

Model H300 with core processor or Model 1700/2700 transmitter

Ambient temperature: -40 to +140 °F (-40 to +60 °C)  
Class I, Div. 1, Groups C and D  
Class I, Div. 2, Groups A, B, C, and D  
Class II, Div. 1, Groups E, F, and G

---

# Hazardous area classifications *continued*

## ATEX<sup>(1)</sup>

Models H025, H050, H100, and H200 with integral core processor or Model 1700/2700 transmitter

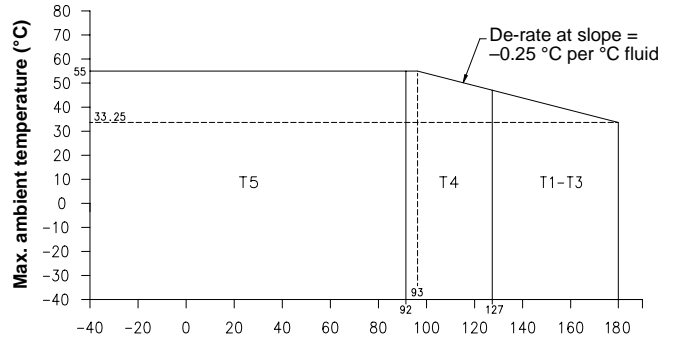
Transmitter with display:

CE 0575 Ex II 2 (1) G EEx ib IIB+H<sub>2</sub> T1-5  
II 2 D IP65 T °C

Core processor or transmitter without display:

CE 0575 Ex II 2 G EEx ib IIC T1-T5  
II 2 D IP65 T °C

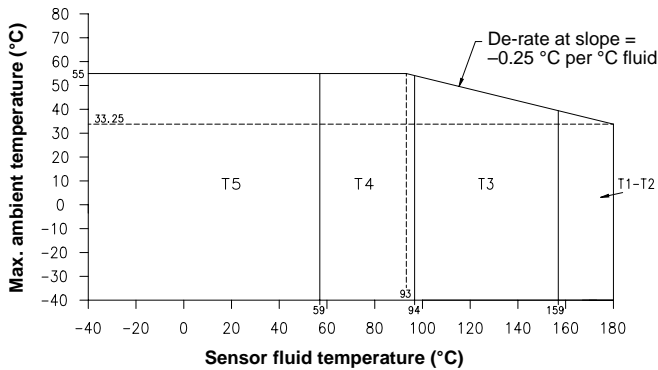
**H025 and H050 with C.I.C. A2**



**Sensor fluid temperature (°C)**

The maximum surface temperature for dust is as follows: T5:T 95 °C, T4:T 130 °C, T3-T1:T 183 °C.

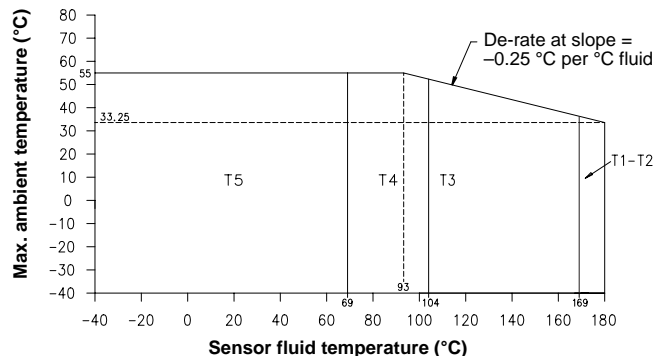
**H100 with C.I.C. A2**



**Sensor fluid temperature (°C)**

The maximum surface temperature for dust is as follows: T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2-T1:T 216 °C.

**H200 with C.I.C. A1**



**Sensor fluid temperature (°C)**

The maximum surface temperature for dust is as follows: T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 206 °C.

(1) ATEX "T" rating depends on the maximum temperature shown in the graphs above.

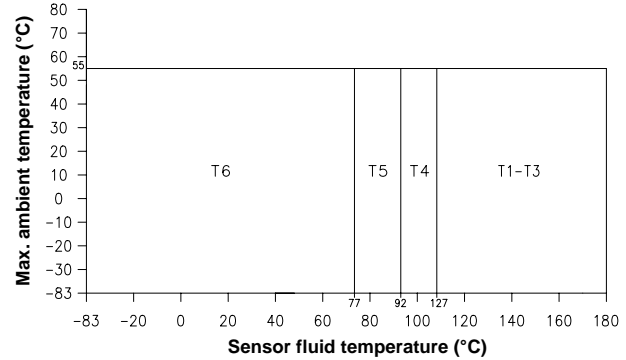
# Hazardous area classifications *continued*

## ATEX<sup>(1)</sup>

Models H025, H050, H100, and H200 with junction box when connected to an MVD transmitter

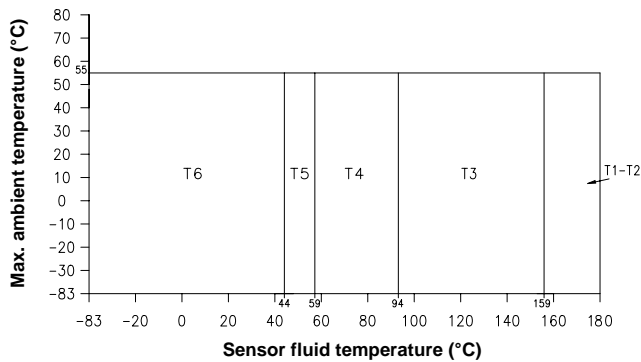
CE 0575 Ex II 2 G EEx ib IIC T1-T6  
II 2 D IP65 T °C

**H025 and H050 with C.I.C. A2**



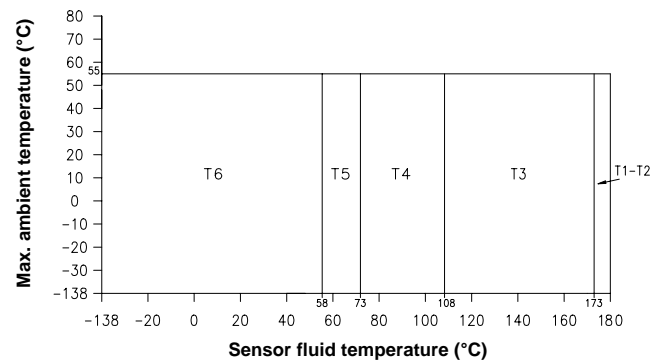
The maximum surface temperature for dust is as follows: T6:T 80 °C, T5:T 95 °C, T4:T 130 °C, T3-T1:T 183 °C. The minimum process and ambient temperature for dust is -40 °C.

**H100 with C.I.C. A2**



The maximum surface temperature for dust is as follows: T6:T 80 °C, T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 216 °C. The minimum process and ambient temperature for dust is -40 °C.

**H200 with C.I.C. A1**



The maximum surface temperature for dust is as follows: T6:T 80 °C, T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 202 °C. The minimum process and ambient temperature for dust is -40 °C.

(1) ATEX "T" rating depends on the maximum temperature shown in the graphs above.

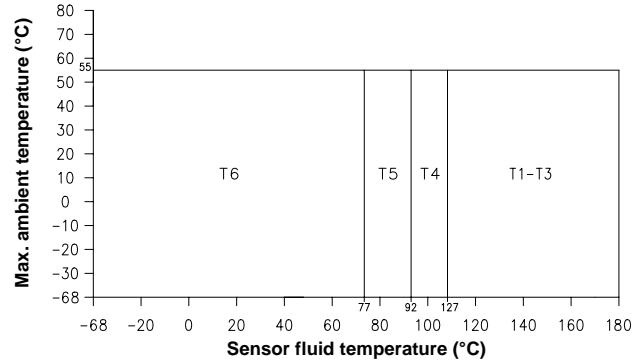
# Hazardous area classifications *continued*

## ATEX<sup>(1)</sup>

Models H025, H050, H100, and H200 with junction box when connected to a non-MVD transmitter

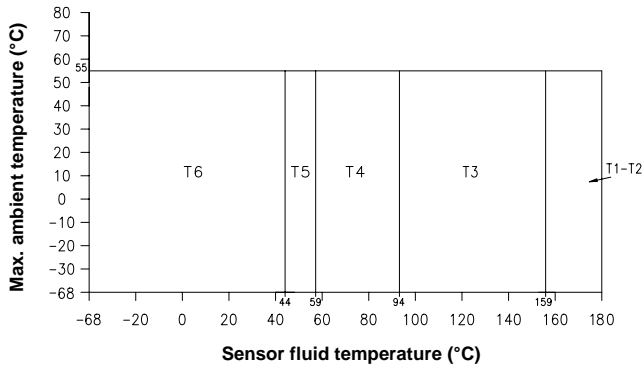
CE 0575 Ex II 2 G EEx ib IIC T1–T6  
II 2 D IP65 T °C

**H025 and H050 with C.I.C. A2**



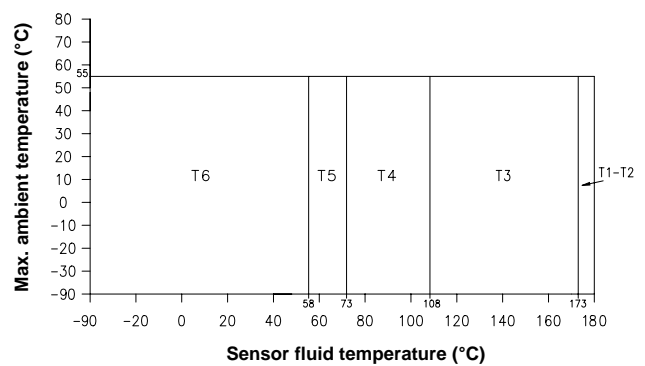
The maximum surface temperature for dust is as follows: T6:T 80 °C, T5:T 95 °C, T4:T 130 °C, T3–T1:T 183 °C. The minimum process and ambient temperature for dust is –40 °C.

**H100 with C.I.C. A2**



The maximum surface temperature for dust is as follows: T6:T 80 °C, T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 216 °C. The minimum process and ambient temperature for dust is –40 °C.

**H200 with C.I.C. A1**



The maximum surface temperature for dust is as follows: T6:T 80 °C, T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 202 °C. The minimum process and ambient temperature for dust is –40 °C.

(1) ATEX “T” rating depends on the maximum temperature shown in the graphs above.

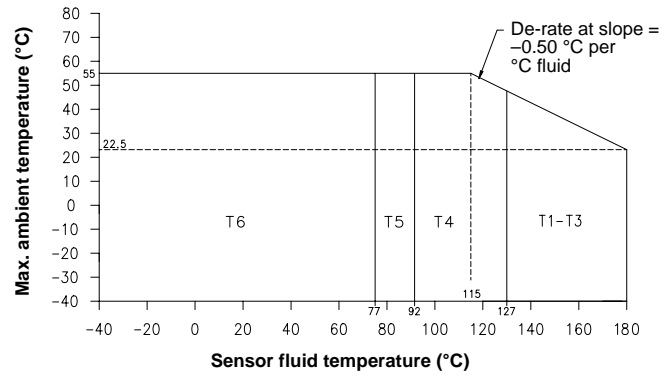
# Hazardous area classifications *continued*

## ATEX<sup>(1)</sup>

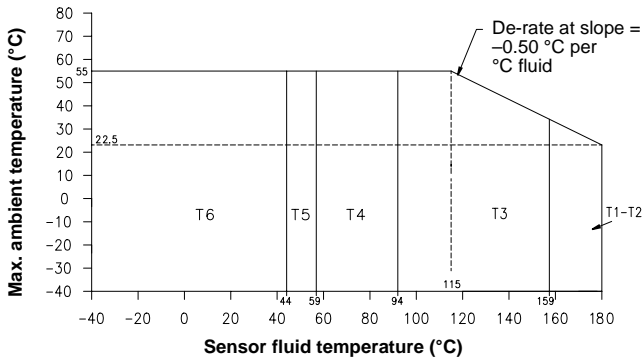
Models H025, H050, H100, and H200 with IFT9701 transmitter

CE 0575 Ex II 2 G EEx ib IIC T1-T6

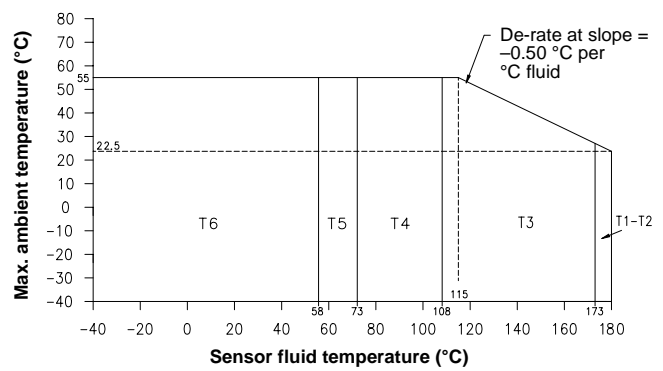
H025 and H050 with C.I.C. A2



H100 with C.I.C. A2



H200 with C.I.C. A1



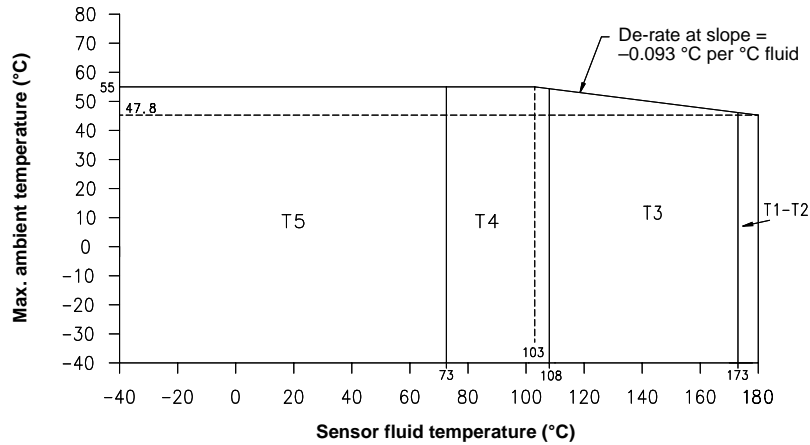
(1) ATEX "T" rating depends on the maximum temperature shown in the graphs above.

# Hazardous area classifications *continued*

ATEX<sup>(1)</sup>

Model H300 with core processor or Model 1700/2700 transmitter

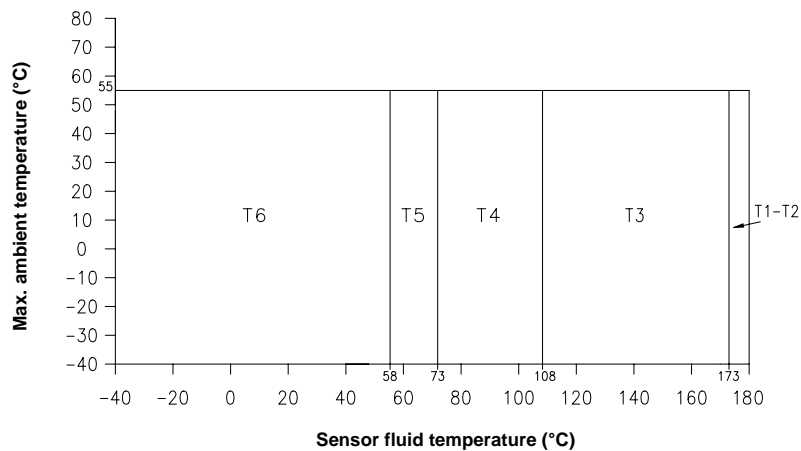
CE 0575 Ex II 2 G EEx ib IIB T1–T5  
II 2 D IP65 T °C



The maximum surface temperature for dust is as follows: T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 202 °C.

Model H300 with junction box when connected to an MVD transmitter

CE 0575 Ex II 2 G EEx ib IIB T1–T6  
II 2 D IP65 T °C



The maximum surface temperature for dust is as follows: T6:T 80 °C, T5:T 95 °C, T4:T 130 °C, T3:T 195 °C, T2 to T1:T 202 °C.

(1) ATEX "T" rating depends on the maximum temperature shown in the graphs above.

# Materials of construction

<b>Wetted parts<sup>(1)</sup></b>	Sensor with standard surface finish	316L stainless steel, 32 Ra (0.8 µm) surface finish
	Sensor with improved surface finish	316L stainless steel, 15 Ra (0.4 µm) electro-polished surface finish
<b>Housing</b>	Sensor	304L stainless steel
	Core processor	CF-3M stainless steel or polyurethane-painted aluminum; NEMA 4X (IP 65)
	Junction box	Polyurethane-painted aluminum; NEMA 4X (IP 65)

(1) General corrosion guidelines do not account for cyclical stress, and therefore should not be relied upon when choosing a wetted material for your Micro Motion flowmeter. Please refer to Micro Motion's corrosion guide for material compatibility information.

# Weight

Weights provided are the weight of the flowmeter with sanitary fittings.

	<b>H025</b>		<b>H050</b>		<b>H100</b>		<b>H200</b>		<b>H300</b>	
	lb	kg	lb	kg	lb	kg	lb	kg	lb	kg
Sensor with integrally mounted IFT9701 transmitter	14	7	16	7	24	11	47	21	—	—
Sensor with integrally mounted core processor <sup>(1)</sup>	13	6	15	7	23	11	42	19	136	62
Sensor with extended core processor <sup>(1)</sup>	14	7	16	7	24	11	43	20	137	62
Sensor with integrally mounted Model 1700 or 2700 transmitter	15	7	17	8	25	12	47	22	142	64
Sensor with junction box	9	4	10	5	18	8	41	19	135	61
Sensor with extended junction box	10	5	11	5	19	9	42	19	136	62

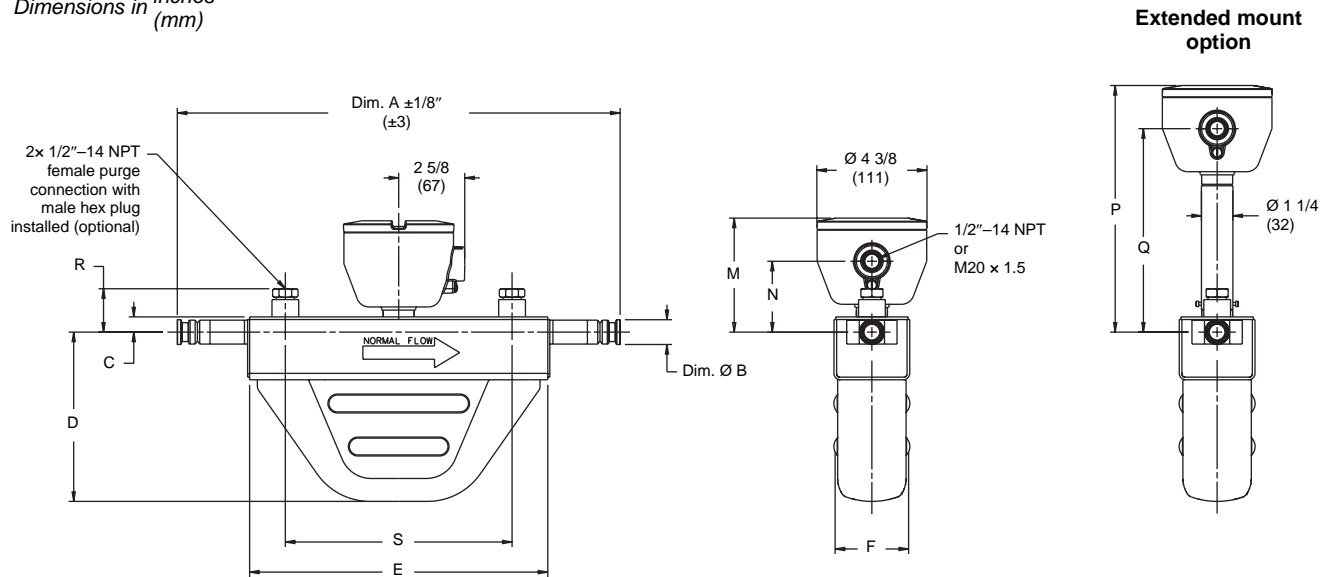
(1) Weights given are for sensor with stainless steel core processor. Subtract 4 lb (2 kg) for aluminum core housing option (electronics interface codes Q, V, W, and Y).



# Dimensions

## Sensor with core processor

Dimensions in inches  
(mm)



Dimensions<sup>(1)</sup>

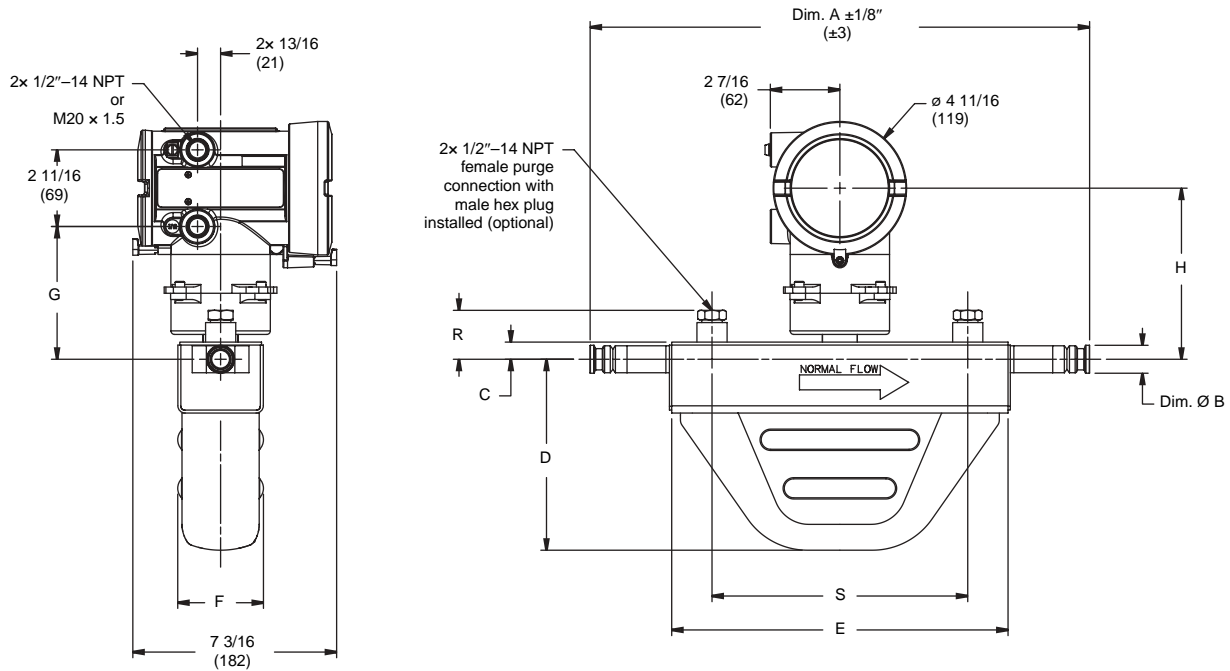
Model		C	D	E	F	M	N	P	Q	R	S
H025	in (mm)	5/8 (15)	5 1/8 (130)	9 3/4 (247)	2 13/16 (72)	4 7/16 (112)	2 11/16 (69)	9 13/16 (249)	8 1/16 (205)	1 3/4 (44)	7 1/2 (191)
H050	in (mm)	5/8 (15)	6 3/4 (171)	11 7/8 (301)	2 15/16 (74)	4 7/16 (112)	2 11/16 (69)	9 13/16 (249)	8 1/16 (205)	1 3/4 (44)	9 (229)
H100	in (mm)	7/8 (22)	9 1/8 (232)	14 7/8 (378)	4 1/8 (104)	4 11/16 (119)	2 15/16 (75)	10 1/16 (255)	8 5/16 (212)	2 (50)	12 (305)
H200	in (mm)	1 3/4 (44)	12 9/16 (319)	17 7/8 (454)	5 5/8 (144)	5 9/16 (141)	3 7/8 (98)	10 15/16 (278)	9 1/4 (234)	2 7/8 (73)	14 (356)
H300	in (mm)	3 1/2 (89)	7 1/4 (185)	27 3/4 (704)	5 7/8 (150)	7 1/4 (184)	5 9/16 (141)	12 5/8 (321)	10 15/16 (277)	4 1/2 (114)	21 (533)

(1) For dimensions A and B, see process fitting tables on page 21.

# Dimensions *continued*

## Sensor with integrally mounted Model 1700 or 2700 transmitter

Dimensions in *inches*  
(mm)



Dimensions<sup>(1)</sup>

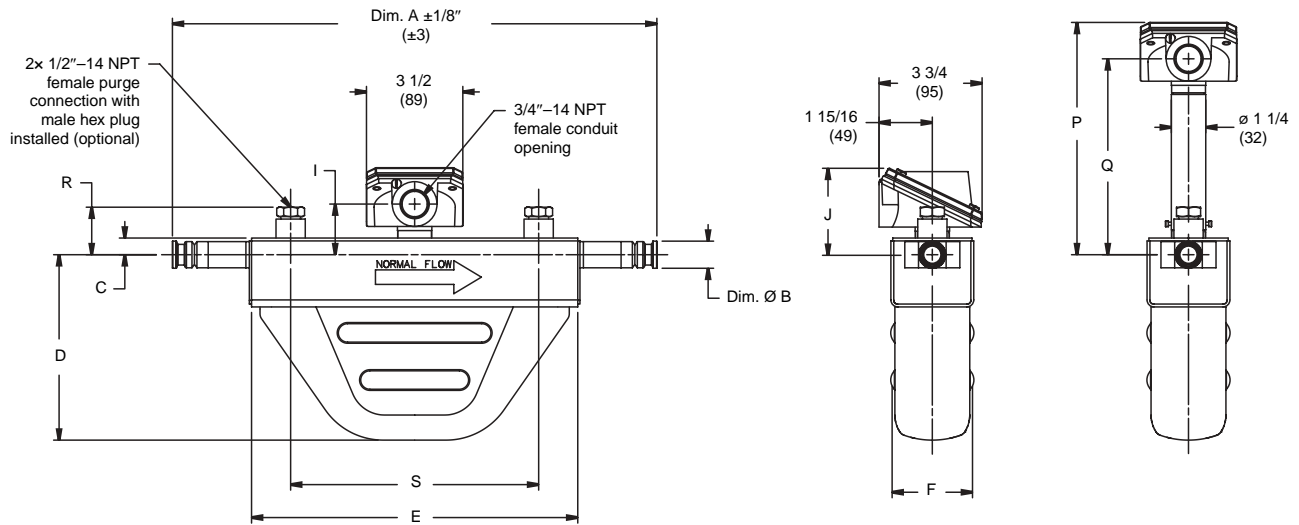
Model		C	D	E	F	G	H	R	S
H025	in (mm)	5/8 (15)	5 1/8 (130)	9 3/4 (247)	2 13/16 (72)	4 11/16 (119)	6 1/16 (154)	1 3/4 (44)	7 1/2 (191)
H050	in (mm)	5/8 (15)	6 3/4 (171)	11 7/8 (301)	2 15/16 (74)	4 11/16 (119)	6 1/16 (154)	1 3/4 (44)	9 (229)
H100	in (mm)	7/8 (22)	9 1/8 (232)	14 7/8 (378)	4 1/8 (104)	4 15/16 (126)	6 15/16 (160)	2 (50)	12 (305)
H200	in (mm)	1 3/4 (44)	12 9/16 (319)	17 7/8 (454)	5 5/8 (144)	5 13/16 (148)	7 13/16 (182)	2 7/8 (73)	14 (356)
H300	in (mm)	3 1/2 (89)	7 1/4 (185)	27 3/4 (704)	5 7/8 (150)	7 1/2 (191)	8 7/8 (225)	4 1/2 (114)	21 (533)

(1) For dimensions A and B, see process fitting tables on page 21.

# Dimensions *continued*

## Sensor with junction box

Dimensions in inches  
(mm)



Dimensions<sup>(1)</sup>

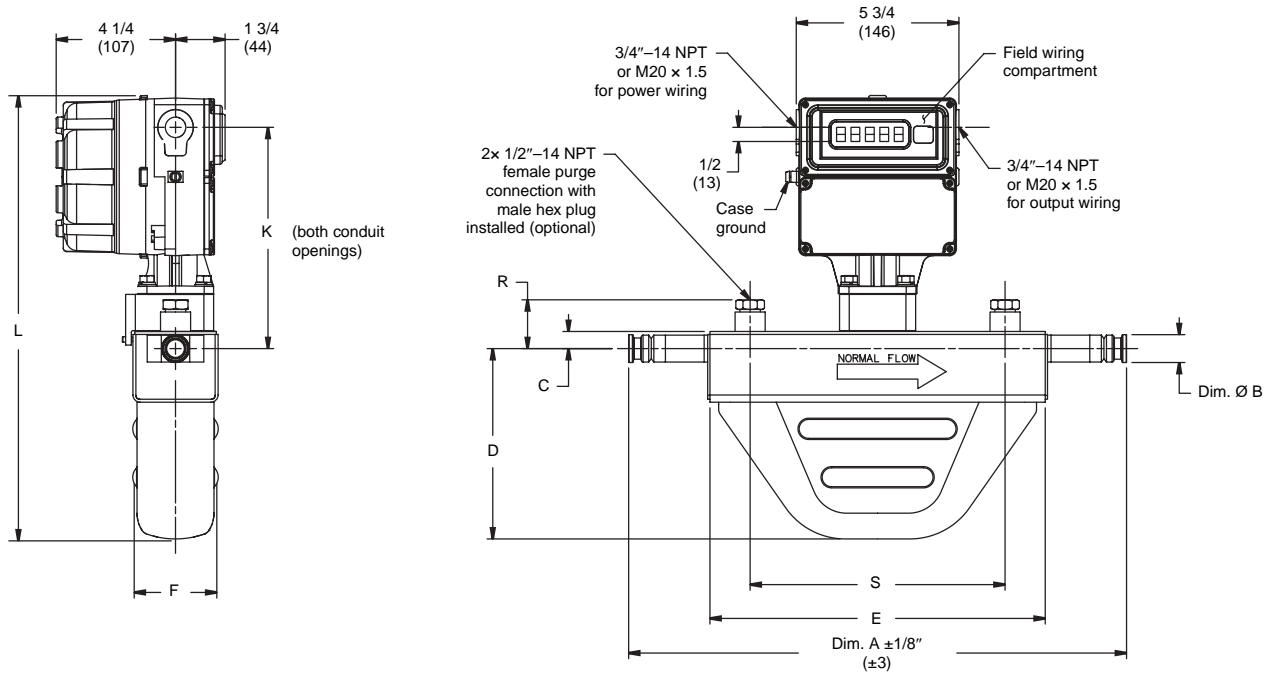
Model		C	D	E	F	I	J	P	Q	R	S
H025	in (mm)	5/8 (15)	5 1/8 (130)	9 3/4 (247)	2 13/16 (72)	1 13/16 (47)	3 3/16 (80)	8 7/16 (214)	7 1/8 (181)	1 3/4 (44)	7 1/2 (191)
H050	in (mm)	5/8 (15)	6 3/4 (171)	11 7/8 (301)	2 15/16 (74)	1 13/16 (47)	3 3/16 (80)	8 7/16 (214)	7 1/8 (181)	1 3/4 (44)	9 (229)
H100	in (mm)	7/8 (22)	9 1/8 (232)	14 7/8 (378)	4 1/8 (104)	2 1/16 (53)	3 7/16 (87)	8 11/16 (220)	7 3/8 (187)	2 (50)	12 (305)
H200	in (mm)	1 3/4 (44)	12 9/16 (319)	17 7/8 (454)	5 5/8 (144)	3 (76)	4 5/16 (109)	9 9/16 (243)	8 1/4 (209)	2 7/8 (73)	14 (356)
H300	in (mm)	3 1/2 (89)	7 1/4 (185)	27 3/4 (704)	5 7/8 (150)	4 11/16 (119)	6 (152)	11 3/8 (289)	10 1/16 (255)	4 1/2 (114)	21 (533)

(1) For dimensions A and B, see process fitting tables on page 21.

# Dimensions *continued*

## Sensor with integrally mounted IFT9701 transmitter

Dimensions in *inches*  
(*mm*)



Model		Dimensions <sup>(1)</sup>							
		C	D	E	F	K	L	R	S
H025	in (mm)	5/8 (15)	5 1/8 (130)	9 3/4 (247)	2 13/16 (72)	7 13/16 (199)	14 1/16 (358)	1 3/4 (44)	7 1/2 (191)
H050	in (mm)	5/8 (15)	6 3/4 (171)	11 7/8 (301)	2 15/16 (74)	7 13/16 (199)	15 11/16 (398)	1 3/4 (44)	9 (229)
H100	in (mm)	7/8 (22)	9 1/8 (232)	14 7/8 (378)	4 1/8 (104)	8 1/16 (205)	18 5/16 (466)	2 (50)	12 (305)
H200	in (mm)	1 3/4 (44)	12 9/16 (319)	17 7/8 (454)	5 5/8 (144)	8 15/16 (228)	22 5/8 (575)	2 7/8 (73)	14 (356)

(1) For dimensions A and B, see process fitting tables on page 21.

# Fitting options

	Fitting code	Dim. A face-to-face inches (mm)	Dim B. outside diam. inches (mm)
<b>H025 fitting options<sup>(1)</sup></b>			
1/2-inch sanitary fitting (Tri-Clamp compatible)	121	15 15/16 (404)	1 (25)
15mm DIN 11851 hygienic coupling	222	16 5/8 (423)	Rd 34 x 1/8
15mm DIN 11864-1A aseptic coupling	676	16 5/8 (423)	Rd 34 x 1/8
8A IDF Type CLF-W aseptic fitting	665	15 15/16 (404)	1 3/8 (35)
<b>H050 fitting options<sup>(1)</sup></b>			
3/4-inch sanitary fitting (Tri-Clamp compatible)	322	17 3/8 (441)	1 (25)
15mm DIN 11851 hygienic coupling	222	17 13/16 (452)	Rd 34 x 1/8
15mm DIN 11864-1A aseptic coupling	676	17 13/16 (452)	Rd 34 x 1/8
15A IDF Type CLF-W aseptic fitting	667	17 7/16 (442)	1 3/8 (35)
<b>H100 fitting options<sup>(1)</sup></b>			
1-inch sanitary fitting (Tri-Clamp compatible)	138	21 (533)	2 (50)
25mm DIN 11851 hygienic coupling	230	21 15/16 (558)	Rd 52 x 1/6
25mm DIN 11864-1A aseptic coupling	677	21 15/16 (558)	Rd 52 x 1/6
1s IDF Type CLF2-W aseptic fitting	668	21 (553)	2 (50)
<b>H200 fitting options<sup>(1)</sup></b>			
2-inch sanitary fitting (Tri-Clamp compatible)	352	21 5/16 (541)	2 1/2 (64)
50 mm DIN 11851 hygienic coupling	354	22 7/16 (569)	Rd 78 x 1/6
50 mm DIN 11864-1A aseptic coupling	678	22 7/16 (569)	Rd 78 x 1/6
2s IDF Type CLF2-W aseptic fitting	669	21 5/16 (541)	2 1/2 (64)
<b>H300 fitting options<sup>(1)</sup></b>			
3-inch sanitary fitting (Tri-Clamp compatible)	361	35 1/8 (893)	3 9/16 (91)
DN80 DIN 11851 aseptic coupling	685	35 1/8 (893)	Rd 110 x 1/4-7e 6e
DN80 DIN 11864-1A aseptic coupling	679	35 1/8 (893)	Rd 110 x 1/4-7e 6e
DN80 DIN 11864-2A aseptic flange	680	35 1/8 (893)	5 1/4 (133)
DN76.1 IDF (ISO 2853) aseptic coupling	664	35 1/8 (893)	3 1/2 (89)
3s IDF Type CLF2-W aseptic fitting	687	35 1/8 (893)	3 9/16 (91)
DN76 SMS 1145 aseptic coupling	694	35 1/8 (893)	Rd 98 x 1/6-7e 6e

(1) Fittings listed here are standard options. Other types of fittings are available. Contact your local Micro Motion representative.

# Ordering information

Model	Product description
	<b>Standard surface finish</b>
H025S	H-Series sensor; 1/4-inch; 316L stainless steel; 32 Ra (0.8 μm) surface finish
H050S	H-Series sensor; 1/2-inch; 316L stainless steel; 32 Ra (0.8 μm) surface finish
H100S	H-Series sensor; 1-inch; 316L stainless steel; 32 Ra (0.8 μm) surface finish
H200S	H-Series sensor; 2-inch; 316L stainless steel; 32 Ra (0.8 μm) surface finish
H300S	H-Series sensor; 3-inch; 316L stainless steel; 32 Ra (0.8 μm) surface finish
	<b>Improved surface finish</b>
H025F	H-Series sensor; 1/4-inch; 316L stainless steel; 15 Ra (0.4 μm) electro-polished surface finish
H050F	H-Series sensor; 1/2-inch; 316L stainless steel; 15 Ra (0.4 μm) electro-polished surface finish
H100F	H-Series sensor; 1-inch; 316L stainless steel; 15 Ra (0.4 μm) electro-polished surface finish
H200F	H-Series sensor; 2-inch; 316L stainless steel; 15 Ra (0.4 μm) electro-polished surface finish
H300F	H-Series sensor; 3-inch; 316L stainless steel; 15 Ra (0.4 μm) electro-polished surface finish
<b>Code</b>	<b>Process connection</b>
###	See fitting options on page 21.
<b>Code</b>	<b>Case options</b>
N	Standard case
B	Secondary containment with test report
P	Secondary containment with test report and purge fittings (1/2-inch NPT female)
<b>Code</b>	<b>Electronics interface</b>
Q	4-wire polyurethane-painted aluminum integral core processor for remotely mounted transmitter with MVD Technology
A	4-wire stainless steel integral core processor for remotely mounted transmitter with MVD Technology
V	4-wire polyurethane-painted aluminum integral core processor with extended mount for remotely mounted transmitter with MVD Technology
B	4-wire stainless steel integral core processor with extended mount for remotely mounted transmitter with MVD Technology
C	Integrally mounted Model 1700 or 2700 transmitter
W <sup>(1)</sup>	Polyurethane-painted aluminum integral core processor for MVD Direct Connect™ installations
D <sup>(1)</sup>	Stainless steel integral core processor for MVD Direct Connect installations
Y <sup>(1)</sup>	Polyurethane-painted aluminum integral core processor with extended mount for MVD Direct Connect installations
E <sup>(1)</sup>	Stainless steel integral core processor with extended mount for MVD Direct Connect installations
I <sup>(2)</sup>	Integrally mounted IFT9701 transmitter
R	9-wire polyurethane-painted aluminum junction box
H	9-wire polyurethane-painted aluminum junction box with extended mount
Continued on next page	

(1) When electronics interface W, D, Y, or E is ordered with approval codes C, A, or Z, an MVD Direct Connect I.S. barrier is supplied. No barrier is supplied when ordered with approval codes M or N.

(2) Not available with Model H300.

## Ordering information *continued*

Code	Conduit connections
	<b>Electronics interface codes Q, A, V, B, W, D, Y, and E</b>
B	1/2-inch NPT — no gland
E	M20 — no gland
F	Brass/nickel cable gland (cable diameter 0.335 to 0.394 inches [8.5 to 10 mm])
G	Stainless steel cable gland (cable diameter 0.335 to 0.394 inches [8.5 to 10 mm])
	<b>Electronics interface codes C and I (integral transmitter)</b>
A	No gland
	<b>Electronics interface codes R and H (9-wire junction box)</b>
A	3/4-inch NPT — no gland
H	Brass/nickel cable gland
J	Stainless steel cable gland
Code	Approvals
M <sup>(1)</sup>	Micro Motion standard (no approval)
N <sup>(1)</sup>	Micro Motion standard / PED compliant
C <sup>(1)</sup>	CSA (Canada only)
A <sup>(1)</sup>	CSA (U.S.A. and Canada)
Z <sup>(1)</sup>	ATEX — Equipment Category 2 (Zone 1) / PED compliant
Code	Language
A	Danish installation manual
C	Czech installation manual
D	Dutch installation manual
E	English installation manual
F	French installation manual
G	German installation manual
H	Finnish installation manual
I	Italian installation manual
J	Japanese installation manual
M	Chinese installation manual
N	Norwegian installation manual
O	Polish installation manual
P	Portuguese installation manual
S	Spanish installation manual
W	Swedish installation manual
B	Hungarian CE requirements and English installation manual
K	Slovak CE requirements and English installation manual
T	Estonian CE requirements and English installation manual
U	Greek CE requirements and English installation manual
L	Latvian CE requirements and English installation manual
V	Lithuanian CE requirements and English installation manual
Y	Slovene CE requirements and English installation manual
Continued on next page	

(1) When electronics interface W, D, Y, or E is ordered with approval codes C, A, or Z, an MVD Direct Connect I.S. barrier is supplied. No barrier is supplied when ordered with approval codes M or N.

## Ordering information *continued*

<b>Code      Future option 1</b>	
Z	Reserved for future use
<b>Code      Calibration options</b>	
Z	0.15% flow and 0.002 g/cc density calibration
1 <sup>(1)</sup>	0.10% flow and 0.001 g/cc density calibration
<b>Code      Future option 3</b>	
Z	Reserved for future use
<b>Code      Factory options</b>	
Z	Standard product
Y	CEQ surface finish (future option)
X	CEQ product
R	Restocked product (if available)
<b>Typical model number: H025S 121 N C A A E Z Z Z Z</b>	

(1) *Not available with electronic interface code I, available only with MVD Technology.*









© 2006 Micro Motion, Inc. All rights reserved. PS-00599, Rev. C

*Due to Micro Motion's commitment to continuous improvement of our products, all specifications are subject to change without notice. ELITE, ProLink, and the Micro Motion logo are registered trademarks, and MVD and MVD Direct Connect are trademarks of Micro Motion, Inc., Boulder, Colorado. The Emerson logo is a trademark of Emerson Electric Co. All other trademarks are property of their respective owners.*

**For the latest Micro Motion product specifications, view the PRODUCTS section of our web site at [www.micromotion.com](http://www.micromotion.com)**

#### **Micro Motion Inc. USA**

Worldwide Headquarters

7070 Winchester Circle  
Boulder, Colorado 80301

T +1 303-527-5200

+1 800-522-6277

F +1 303-530-8459

#### **Micro Motion Europe**

Emerson Process Management

Neonstraat 1

6718 WX Ede

The Netherlands

T +31 (0) 318 495 670

F +31 (0) 318 495 689

#### **Micro Motion Asia**

Emerson Process Management

1 Pandan Crescent

Singapore 128461

Republic of Singapore

T +65 6777-8211

F +65 6770-8003

#### **Micro Motion United Kingdom**

Emerson Process Management Limited

Horsfield Way

Bredbury Industrial Estate

Stockport SK6 2SU U.K.

T +44 0870 240 1978

F +44 0800 966 181

#### **Micro Motion Japan**

Emerson Process Management

1-2-5, Higashi Shinagawa

Shinagawa-ku

Tokyo 140-0002 Japan

T +81 3 5769-6803

F +81 3 5769-6844

