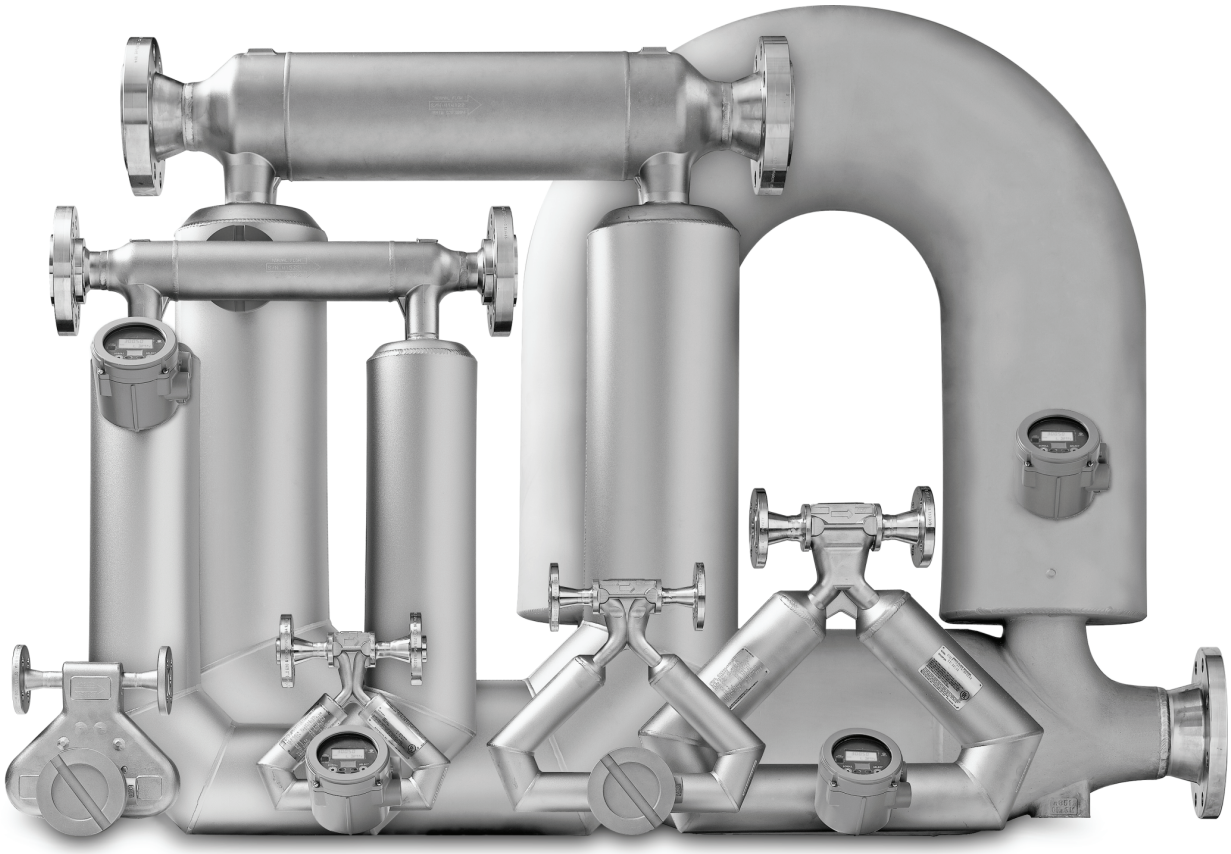
Product Data Sheet
PS-00374, Rev. F
June 2006

Micro Motion® ELITE®
Mass Flow and Density Meters
With MVD™ Technology



- Unsurpassed performance: mass flow accuracy to ±0.05% of rate, and density accuracy to ±0.0002 g/cm^3 (±0.2 kg/m^3)
- For mass and volume flow measurement of both gases and liquids
- Wide range of sizes from 1/10″ to 6″ (3 mm to 150 mm)
- Now available with Micro Motion's newest transmitter, the Model 2400S

Micro Motion®

SERV' INSTRUMENTATION

EMERSON™
Process Management

Micro Motion® ELITE® mass flow and density meters

Micro Motion® ELITE® meters are the leading meters for precision flow and density measurement. ELITE meters offer the most accurate measurement available for virtually any process fluid, while exhibiting exceptionally low pressure drop. Every ELITE meter features standard secondary containment, and is available with stainless steel or nickel alloy wetted parts and a wide variety of process connections to meet your every need.

ELITE meters have been designed for special applications. The CMF010 provides remarkably high performance in low-flow applications. The high-pressure CMF010P is suitable for applications up to 6000 psi (413 bar). The Model CMF400 meter offers the most accurate measurement available in a high-capacity meter. Models CMF200, CMF300, and CMF400 are available in high-temperature and extreme high-temperature versions that provide accurate measurements in severe environments up to 800 °F (427 °C).

Product selector program

Micro Motion offers an on-line program for finding the best products to fit your application. The product selector program allows you to specify the parameters that matter to you, such as accuracy, flow capacity, pressure drop, or turndown. To use the product selector program, visit our web site at **www.micromotion.com**.

Contents

Liquid flow performance

		Mass		Volume[1]			
		lb/min	kg/h	gal/min	l/h	bbl/hr	m^3/h
Maximum flow rate	CMF010	4	108	0.4	108		
	CMF025	80	2180	10	2180		
	CMF050	250	6800	30	6800		
	CMF100	1000	27,200	120	27,200		
	CMF200	3200	87,100	385	87,100	550	87
	CMF300	10,000	272,000	1200	272,000	1700	272
	CMF400	20,000	545,000	2400	545,000	3400	545
Mass and volume flow accuracy[2][3]	Model 2400S transmitter or enhanced core processor	±0.05% of rate[4][5]					
	Transmitter with MVD Technology	±0.10% of rate[6]					
	All other transmitters	±0.10% ±[(zero stability / flow rate) × 100]% of rate					
Mass and volume flow repeatability	Model 2400S transmitter or enhanced core processor	±0.025% of rate[4][5]					
	Transmitter with MVD Technology	±0.05% of rate[6]					
	All other transmitters	±0.05% ±[½(zero stability / flow rate) × 100]% of rate					
		lb/min	**kg/h**				
Zero stability	CMF010	0.000075	0.002				
	CMF010P	0.00015	0.004				
	CMF025	0.001	0.027				
	CMF050	0.006	0.163				
	CMF100	0.025	0.680				
	CMF200	0.08	2.18				
	CMF300	0.25	6.80				
	CMF400	1.50	40.91				

(1) Specifications for volumetric flow rate are based on a process-fluid density of 1 g/cm³ (1000 kg/m³). For fluids with density other than 1 g/cm³ (1000 kg/m³), the volumetric flow rate equals the mass flow rate divided by the fluid's density.

(2) Stated flow accuracy includes the combined effects of repeatability, linearity, and hysteresis. All specifications for liquids are based on reference conditions of water at 68 to 77 °F (20 to 25 °C) and 15 to 30 psig (1 to 2 bar), unless otherwise noted.

(3) The calibration option for ±0.05% flow accuracy is not available with high-temperature sensor models or Model CMF010P.

(4) When flow rate is less than zero stability / 0.0005, accuracy = ±[(zero stability / flow rate) × 100]% of rate, and repeatability = ±[½(zero stability / flow rate) × 100]%

(5) When ordered with the ±0.10% factory calibration option, accuracy on liquid = ±0.10% when flow rate ≥ zero stability / 0.001. When flow rate < zero stability / 0.001, accuracy equals ±[(zero stability / flow rate) × 100]% of rate and repeatability equals ±[½(zero stability / flow rate) × 100]% of rate.

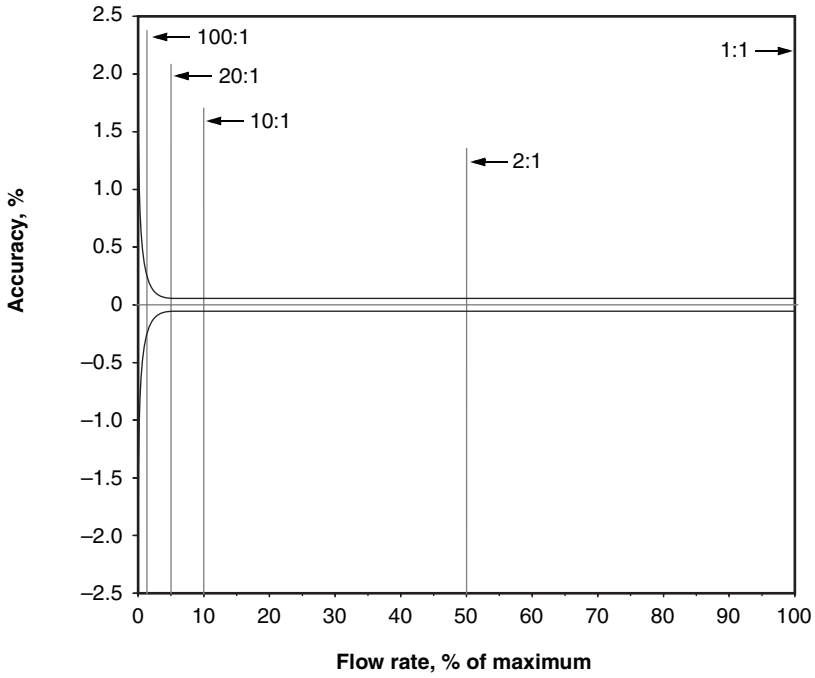
(6) When flow rate is less than zero stability / 0.001, accuracy equals ±[(zero stability / flow rate) × 100]% of rate and repeatability equals ±[½(zero stability / flow rate) × 100]% of rate.

Liquid flow performance *continued*

Typical accuracy, turndown, and pressure drop with CMF100 and 2400S transmitter or enhanced core processor

The graph below is an example of the relationship between accuracy, turndown, and pressure drop when measuring the flow of water with a Model CMF100 sensor and Model 2400S transmitter or enhanced core processor.

Actual pressure drop is dependent on process conditions. To determine accuracy, turndown, and pressure drop with your process variables, use Micro Motion's product selector, available at **www.micromotion.com**.



Turndown from maximum flow rate	***500:1***	***100:1***	***20:1***	***10:1***	***2:1***
Accuracy (±%)	1.25	0.25	0.05	0.05	0.05
Pressure drop					
psi	~0	~0	0.2	0.7	13.5
bar	~0	~0	0.01	0.05	0.93

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**.

	Mass		Volume[1]	
	lb/min	kg/h	SCFM	Nm^3/h
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)				
CMF010M, CMF010H	0.30	8	4	6
CMF010P	0.2	6	3	5
CMF025	4	110	60	90
CMF050	10	300	145	230
CMF100	50	1300	640	1000
CMF200	150	4000	2000	3100
CMF300	490	13,300	6500	10,300
CMF400	1250	34,000	16,600	26,250
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 (34.0 bar)				
CMF010M, CMF010H	1	30	30	45
CMF010P	0.9	25	20	35
CMF025	16	450	380	600
CMF050	40	1140	970	1530
CMF100	185	5000	4300	6700
CMF200	560	15,200	13,000	20,500
CMF300	1850	50,500	43,000	68,000
CMF400	4700	128,000	109,000	172,000

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

Gas flow performance *continued*

Mass flow accuracy[1]	Transmitters with MVD Technology (including Model 2400S)	±0.35% of rate[2]	
	All other transmitters	±0.50% of rate $\pm\left[\left(\frac{\text{zero stability}}{\text{flow rate}}\right)\times 100\right]$% of rate	
Mass flow repeatability	Transmitters with MVD Technology (including Model 2400S)	±0.20% of rate[2]	
	All other transmitters	±0.25% of rate $\pm\left[\left(\frac{\text{zero stability}}{\text{flow rate}}\right)\times 100\right]$% of rate	
		lb/min	**kg/h**
Zero stability	CMF010	0.000075	0.002
	CMF010P	0.00015	0.004
	CMF025	0.001	0.027
	CMF050	0.006	0.163
	CMF100	0.025	0.680
	CMF200	0.08	2.18
	CMF300	0.25	6.80
	CMF400	1.50	40.91

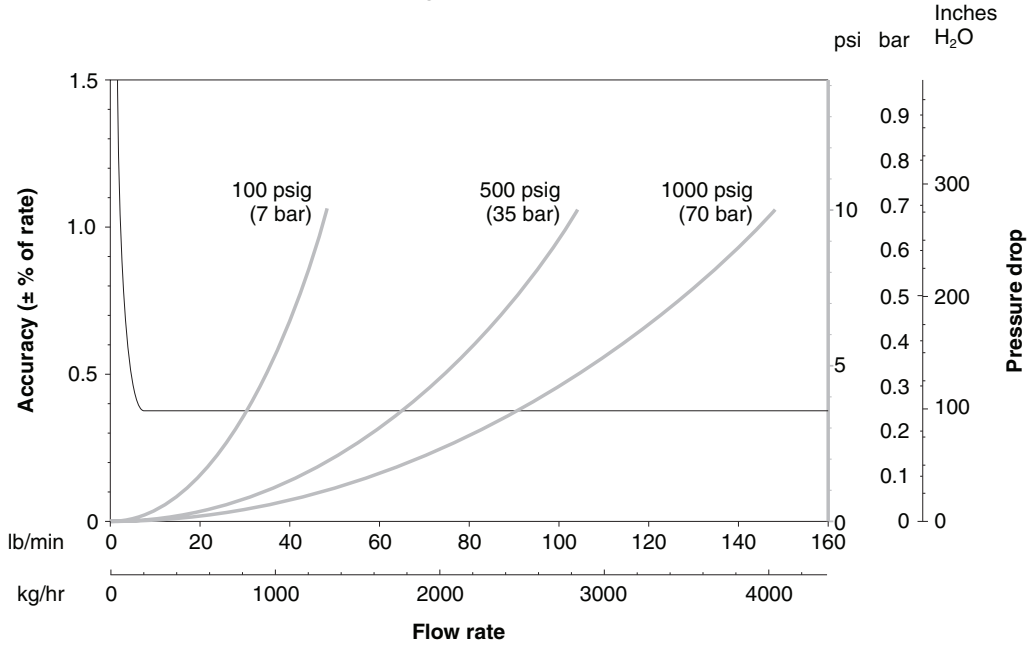
(1) Flow accuracy includes the combined effects of repeatability, linearity, and hysteresis.

(2) When flow rate is less than zero stability / 0.0035, accuracy equals ±[(zero stability / flow rate) × 100]% of rate and repeatability equals ±[½(zero stability / flow rate) × 100]% of rate.

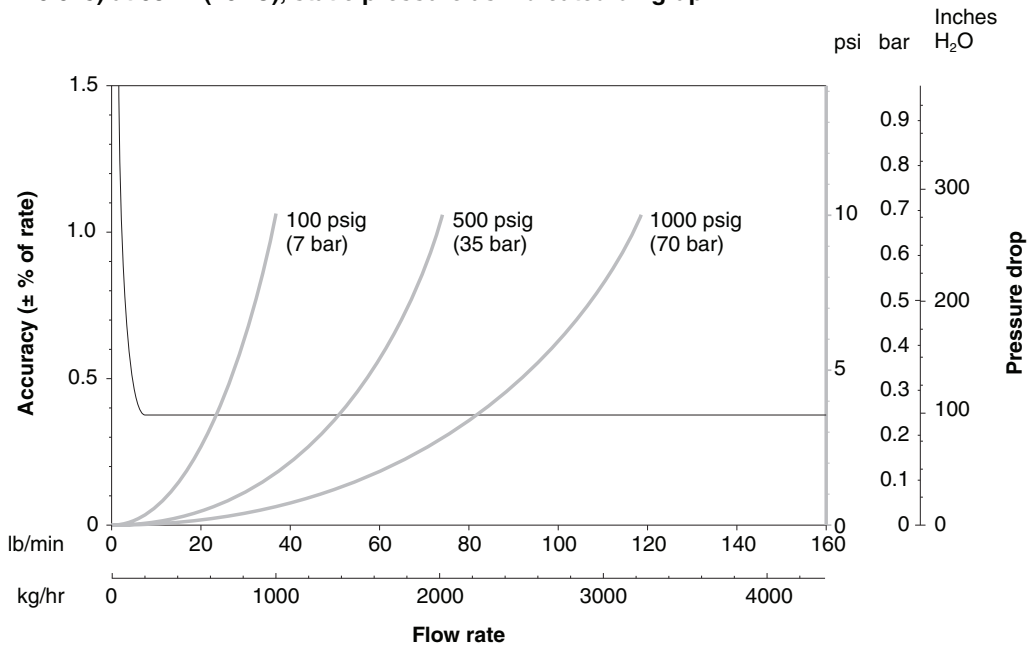
Gas flow performance *continued*

Typical mass flow accuracy and pressure drop with CMF100 and transmitter 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 pressure 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.

Density performance (liquid only)

		With 2400S transmitter or enhanced core processor		With transmitter with MVD Technology (except Model 2400S), standard core processor, or RFT9739 transmitter		With IFT9701 transmitter	
		g/cm³	kg/m³	g/cm³	kg/m³	g/cm³	kg/m³
Accuracy(1)	Model CMF010 and high-temperature models	±0.0005	±0.5	±0.0005(2)	±0.5(2)	±0.002(2)	±2.0(2)
	All other models	±0.0002	±0.2	±0.0005	±0.5	±0.002	±2.0
Repeatability	Model CMF010 and high-temperature models	±0.0002	±0.2	±0.0002(2)	±0.2(2)	±0.001(2)	±1.0(2)
	All other models	±0.0001	±0.1	±0.0002	±0.2	±0.001	±1.0
Range	All models	up to 5	up to 5000	up to 5	up to 5000	up to 5	up to 5000

(1) Accuracy includes the combined effects of repeatability, linearity, and hysteresis. Specifications for ±0.0002 g/cm³ (±0.2 kg/m³) density accuracy are based on reference conditions of water at 68 to 140 °F (20 to 60 °C) and 15 to 30 psig (1 to 2 bar). All other accuracy specifications are based on reference conditions of water at 68 to 77 °F (20 to 25 °C) and 15 to 30 psig (1 to 2 bar), unless otherwise noted.

(2) For these combinations of sensors and transmitters, density accuracy and repeatability differ slightly from standard meter performance. Contact Micro Motion for performance data.

Power consumption

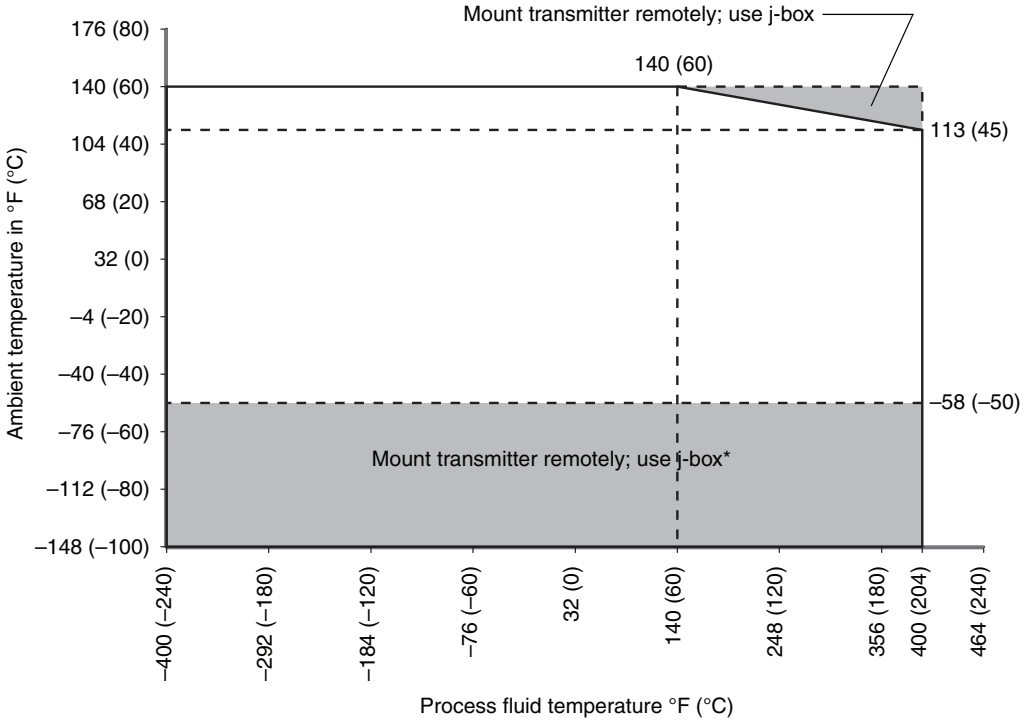
Meter with core processor	4 watts maximum
Meter with Model 2400S transmitter	7 watts maximum
Meter with Model 1700/2700 transmitter	Refer to transmitter documentation

Vibration limits

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

Temperature specifications

Accuracy	All models	±1 °C ± 0.5% of reading in °C
Repeatability	All models	±0.2 °C
Temperature limits[1]	All models except high-temperature models[2]	



* *When ambient temperature is below –58 °F (–50 °C), a core processor or Model 2400S transmitter must be heated to bring its local ambient temperature to between –58 °F (–50 °C) and +140 °F (+60 °C). Long-term storage of electronics at ambient temperatures below –58 °F (–50 °C) is not recommended.*

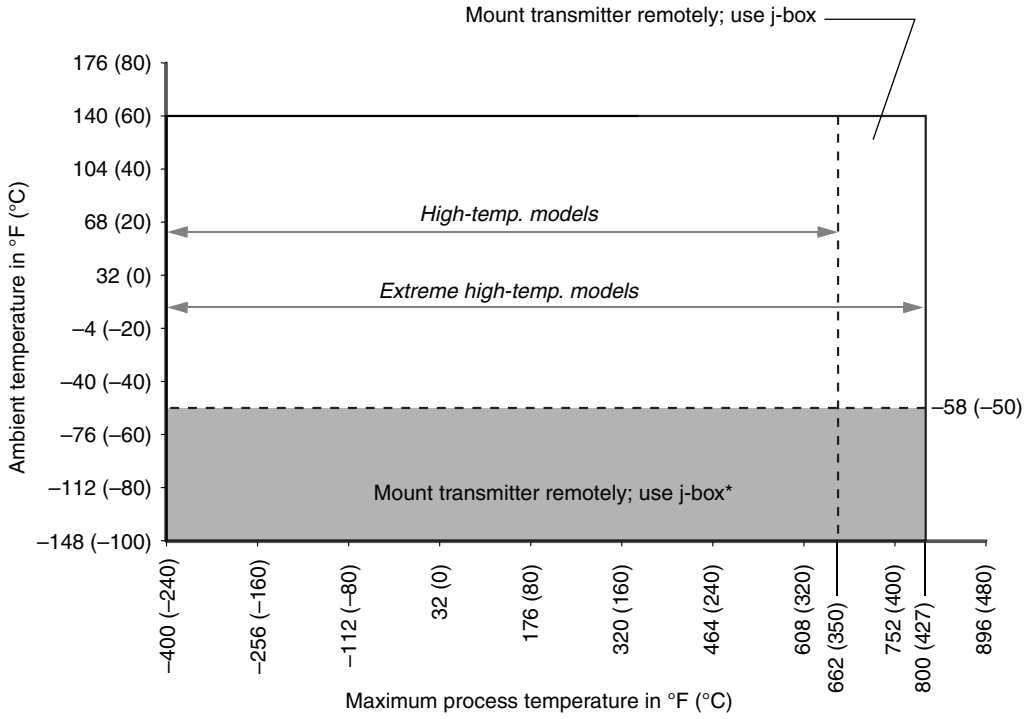
(1) Temperature limits may be further restricted by hazardous area approvals. See pages 13–20.

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

Temperature specifications *continued*

Temperature limits[1]

High-temperature models



* *When ambient temperature is below –58 °F (–50 °C), a core processor or Model 2400S transmitter must be heated to bring its local ambient temperature to between –58 °F (–50 °C) and +140 °F (+60 °C). Long-term storage of electronics at ambient temperatures below –58 °F (–50 °C) is not recommended.*

(1) Temperature limits may be further restricted by hazardous area approvals. See pages 13–20.

Pressure ratings

Flow tube rating [1]		psi	bar
	316L and 304L stainless steel sensors	1450	100
	Hastelloy C-22 sensors	2160	148
	High-pressure CMF010P	6000	413

PED compliance Sensors comply with council directive 97/23/EC of 29 May 1997 on Pressure Equipment

Housing rating		ASME B31.3 secondary containment rating [1]		Burst pressure	
		psi	bar	psi	bar
	CMF010[2]	425	29	3042	209
	CMF025	850	58	5480	377
	CMF050	850	58	5286	364
	CMF100	625	43	3299	227
	CMF200	550	37	2786	192
	CMF300	275	18	1568	108
	CMF400	250	17	1556	107

(1) For operating temperatures above 300 °F (148 °C), pressure needs to be derated as follows. Linear interpolation may be used between values.

	Flow tubes			*Housing*
	316L sensors	***304L sensors***	***Hastelloy C-22 sensors***	***All sensors***
up to 300 °F (up to 148 °C)	*None*	*None*	*None*	*None*
at 400 °F (at 204 °C)	*7.2% derating*	*5.4% derating*	*None*	*5.4% derating*
at 500 °F (at 260 °C)	*13.8% derating*	*11.4% derating*	*4.7% derating*	*11.4% derating*
at 600 °F (at 316 °C)	*19.2% derating*	*16.2% derating*	*9.7% derating*	*16.2% derating*
at 650 °F (at 343 °C)	*21.0% derating*	*18.0% derating*	*11.7% derating*	*18.0% derating*
at 700 °F (at 371 °C)	*22.8% derating*	*19.2% derating*	*13.7% derating*	*19.2% derating*
at 750 °F (at 399 °C)	*24.6% derating*	*20.4% derating*	*15.0% derating*	*20.4% derating*
at 800 °F (at 427 °C)	*25.7% derating*	*22.2% derating*	*16.3% derating*	*22.2% derating*

(2) Optional rupture disks for high-pressure CMF010P will burst if pressure inside sensor housing reaches 400 psi (27 bar).

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	density accuracy per °C[1]	
		g/cc	kg/m^3
CMF010	±0.0001875	±0.000015	±0.015
CMF025	±0.0001250	±0.000015	±0.015
CMF050	±0.0001250	±0.000015	±0.015
CMF100	±0.0001250	±0.000015	±0.015
CMF200	±0.0005000	±0.000015	±0.015
CMF300	±0.0005000	±0.000015	±0.015
CMF400	±0.0007500	±0.000015	±0.015

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. Pressure effect can be corrected.

	Pressure effect on flow accuracy	
	% of rate per psi	% of rate per bar
CMF010	None	None
CMF025	None	None
CMF050	None	None
CMF100	–0.0002	–0.003
CMF200	–0.0008	–0.012
CMF300	–0.0006	–0.009
CMF400	–0.001	–0.015

	Pressure effect on density accuracy	
	g/cc per psi	kg/m^3 per bar
CMF010	None	None
CMF025	0.000004	0.058
CMF050	–0.000002	–0.029
CMF100	–0.000006	–0.087
CMF200	0.000001	0.0145
CMF300	0.0000002	0.0029
CMF400	–0.00001	–0.145

(1) For –100 °C and above.

Hazardous area classifications

UL[1]

All models with core processor	Ambient temperature: –40 °F (–40 °C) to +104 °F (+40 °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
All models with junction box	Ambient temperature: +104 °F (+40 °C) maximum 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

CSA and CSA C-US[2]

All models (except CMF400) with Model 2400S transmitter	Ambient temperature: –40 °F (–40 °C) to +140 °F (+60 °C) Class I, Div 2, Groups A, B, C and D Class II, Div 2, Groups F and G
CMF400 with Model 2400S transmitter	Ambient temperature: –58 °F (–50 °C) to +140 °F (+60 °C) Class I, Div 2, Groups A, B, C and D Class II, Div 2, Groups F and G
All models with core processor or enhanced core processor	Ambient temperature: –40 °F (–40 °C) to +140 °F (+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
All models with junction box	Ambient temperature: +140 °F (+60 °C) maximum 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

(1) The following products are not available with UL approval: sensors with enhanced core processor or Model 2400S transmitter; high temperature sensors; extreme high-temperature sensors.

(2) The following products are available only with CSA C-US approval (i.e., not CSA): sensors with enhanced core processor or Model 2400S transmitter; high temperature sensors; extreme high-temperature sensors.

Hazardous area classifications *continued*

IECEx and NEPSI

All models (except CMF400) with Model 2400S transmitter	Ambient temperature: –40 to +131 °F (–40 to +55 °C) Ex nA II T1–T5
CMF400 with Model 2400S transmitter	Ambient temperature: –40 to +140 °F (–40 to +60 °C) Ex nA II T1–T5
CMF010, CMF025, CMF050, and CMF100 with core processor or enhanced core processor[1]	Ambient temperature: –40 to +131 °F (–40 to +55 °C) Ex ib IIC T1–T5
CMF010, CMF025, and CMF050 with junction box	Ambient temperature: –400 to +131 °F (–240 to +55 °C) Ex ib IIC T1–T6
CMF100 with junction box	Ambient temperature: –76 to +131 °F (–60 to +55 °C) Ex ib IIC T1–T6
CMF200 and CMF300 with core processor	Ambient temperature: –40 to +131 °F (–40 to +55 °C) Ex ib IIB T1–T5
CMF400 with core processor	Ambient temperature: –40 to +140 °F (–40 to +60 °C) Ex ib IIB T1–T5
CMF200 and CMF300 with junction box	Ambient temperature: –67 to +131 °F (–55 to +55 °C) Ex ib IIB T1–T6
CMF400 with junction box	Ambient temperature: –90 to +140 °F (–68 to +60 °C) Ex ib IIB T1–T6

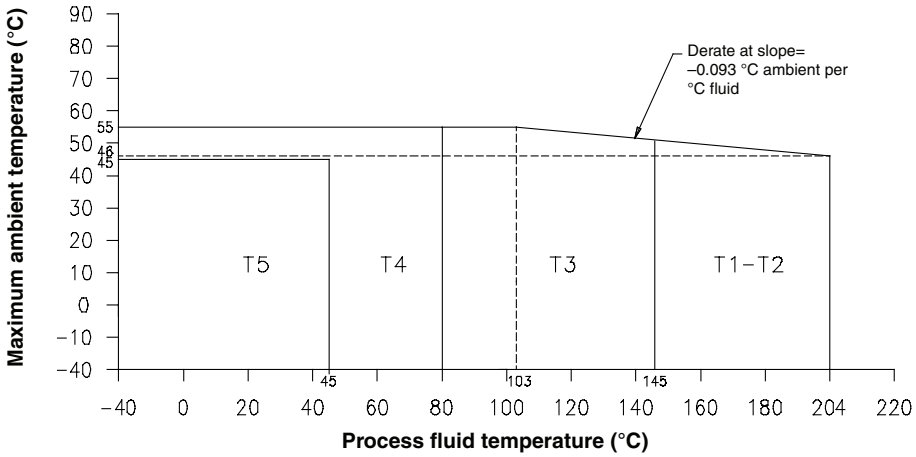
(1) Approvals pending for sensors with enhanced core processor and sensors with Model 2400S. Consult factory for availability.

Hazardous area classifications *continued*

ATEX[1] — Certificate Number BVS 05 E 125 X

CMF010, CMF025, CMF050, or CMF100 with Model 2400S transmitter;
CMF200(M, H, or L) and CMF300(M, H, or L) with Model 2400S transmitter

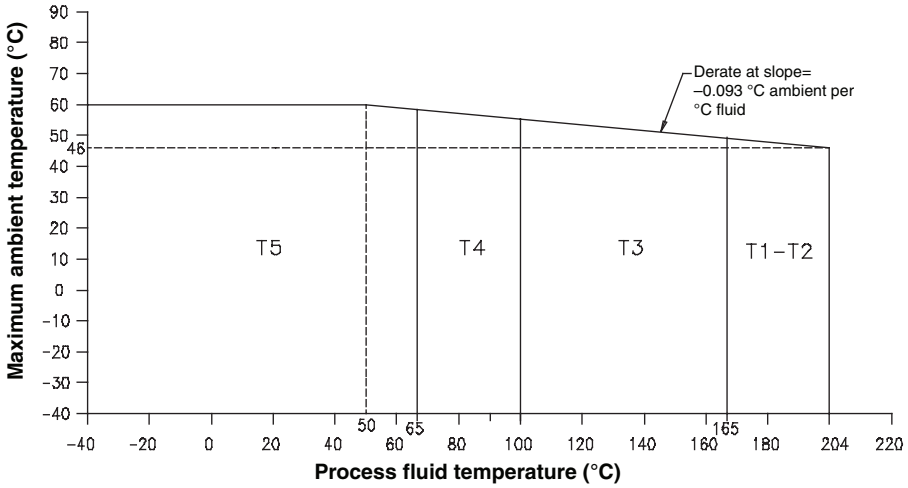
CE ⟨Ex⟩ II 3G EEx nA II T1–T5
II 3D T* °C



* 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 254°C.

CMF400M with Model 2400S transmitter

CE ⟨Ex⟩ II 3G EEx nA II T1–T5
II 3D 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 230°C.

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

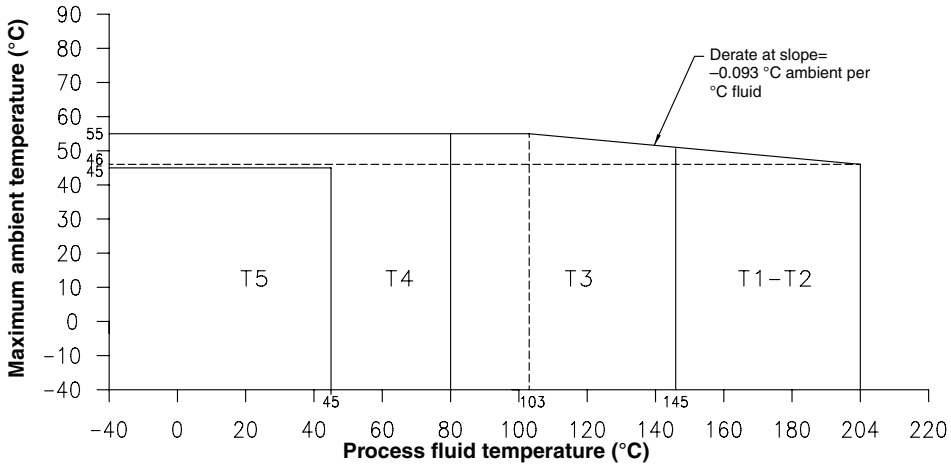
Hazardous area classifications *continued*

ATEX[1] — Certificate Number BVS 06 ATEX E 045 X

Models CMF010, CMF025, CMF050, CMF100, CMF200(M, H, or L), and CMF300(M, H, or L) with integral core processor

CE 0575 ⟨Ex⟩ II 2G EEx ib IIC T1–T5 CMF010, CMF025, CMF050, CMF100, CMF200
II 2D T* °C

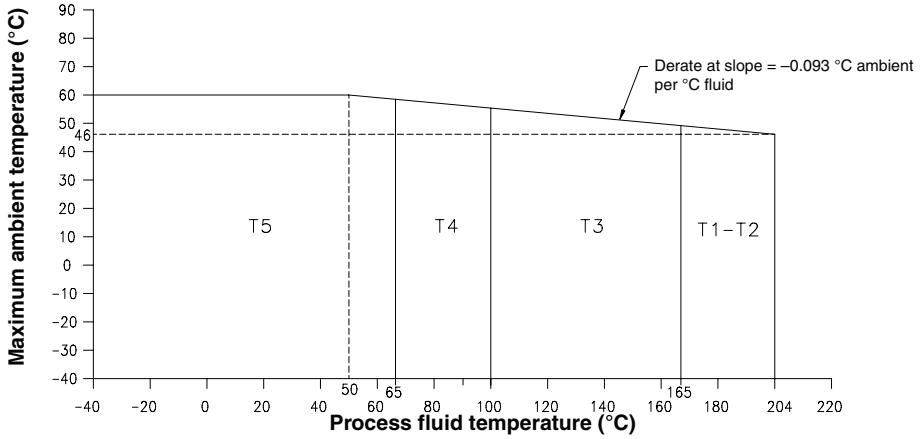
CE 0575 ⟨Ex⟩ II 2G EEx ib IIB T1–T5 CMF300
II 2D T* °C



* 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 254°C

Model CMF400M with core processor

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



* The maximum surface temperature for dust is as follows: T 95°C, T4:T 130°C, T3:T 195°C, T2 to T1:T 234°C.

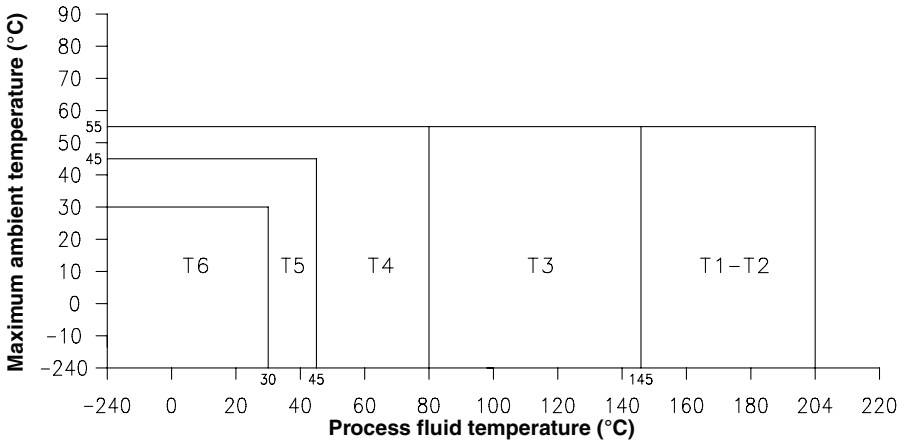
(1) ATEX "T" rating depends on the maximum temperature shown in the graphs.

Hazardous area classifications *continued*

ATEX[1] — Certificate Number BVS 06 ATEX E 045 X

Model CMF010, CMF025, and CMF050 with junction box

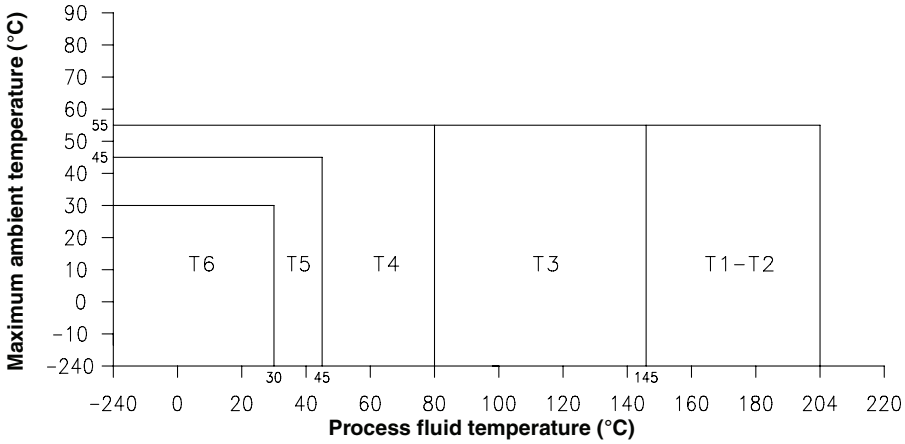
CE 0575 ⟨Ex⟩ II 2G EEx ib IIC T1–T6
II 2D T* °C



* 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 254°C. The minimum ambient and process fluid temperature allowed for dust is –40 °C.

Model CMF100, CMF200(M, H, or L) and CMF300(M, H, or L) with junction box
Construction Identification Code (C.I.C.) A4 (IIC)

CE 0575 ⟨Ex⟩ II 2G EEx ib IIC T1–T6
II 2D 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 254°C. The minimum ambient and process fluid temperature allowed for dust is –40°C.

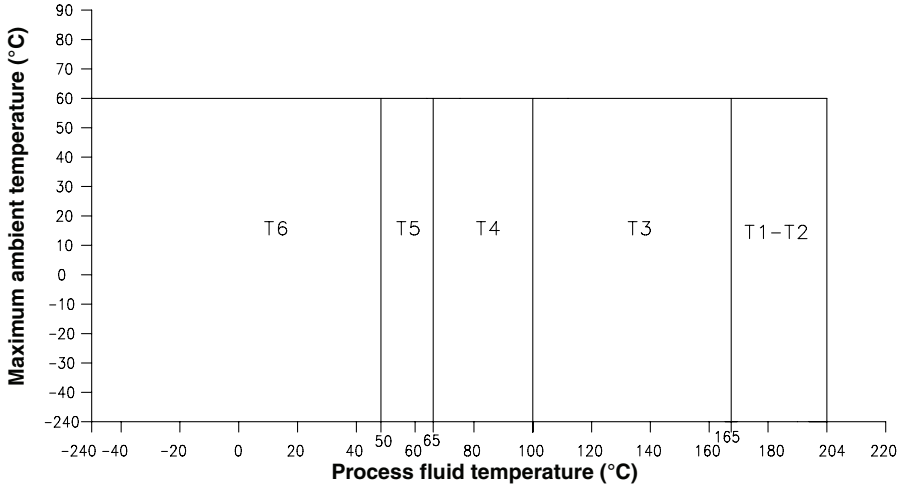
(1) ATEX "T" rating depends on the maximum temperature shown in the graphs.

Hazardous area classifications *continued*

ATEX[1] — Certificate Number BVS 06 ATEX E 045 X

CMF400M with junction box connected to MVD transmitter
Construction Identification Code (C.I.C.) A4 (IIC)

CE 0575 ⟨Ex⟩ II 2G EEx ib IIC T1–T6
II 2D 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 234°C. The minimum ambient and process fluid temperature allowed for dust is –40°C.

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

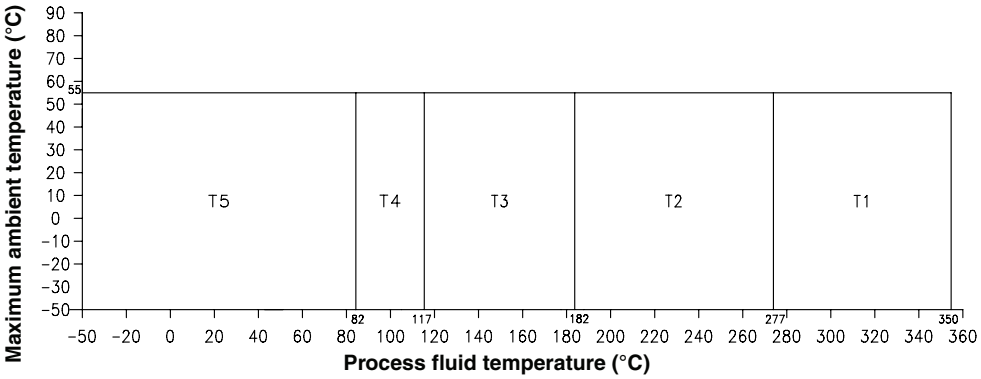
Hazardous area classifications *continued*

ATEX[1] — Certificate Numbers BVS 05 E 125 X and BVS 06 ATEX E 045 X

CMF200(A or B), CMF300(A or B), and CMF400A

CE ⟨Ex⟩ II 3G EEx nA II T1–T5 with Model 2400S transmitter
II 3D T* °C

CE 0575 ⟨Ex⟩ II 2G EEx ib IIB T1–T5 with core processor or Model 1700/2700 transmitter
II 2D T* °C

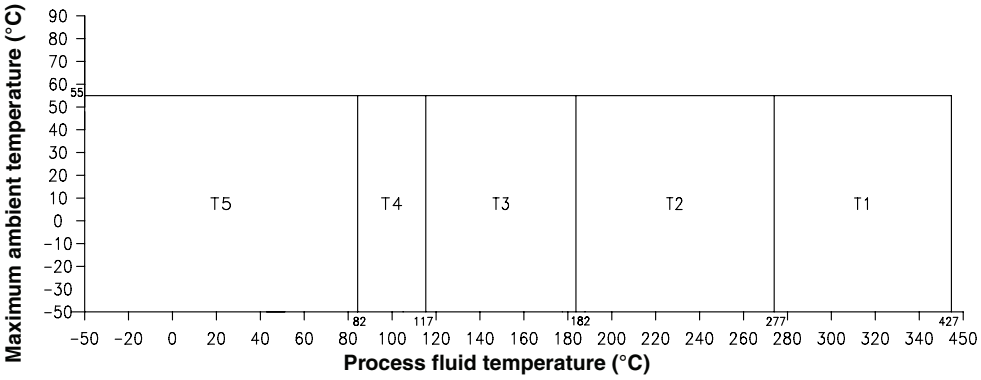


* The maximum surface temperature for dust is as follows: T5:T 95°C, T4:T 130°C, T3:T 195°C, T2: T 290°C, T1:T 363°C. The minimum ambient and process fluid temperature allowed for dust is –40°C.

CMF200(C or E), CMF300(C or E), and CMF400C

CE ⟨Ex⟩ II 3G EEx nA II T1–T5 with Model 2400S transmitter
II 3D T* °C

CE 0575 ⟨Ex⟩ II 2G EEx ib IIB T1–T5 with core processor or Model 1700/2700 transmitter
II 2D T* °C



* The maximum surface temperature for dust is as follows: T5:T 95°C, T4:T 130°C, T3:T 195°C, T2: T 290°C, T1:T 440°C. The minimum ambient and process fluid temperature allowed for dust is –40°C.

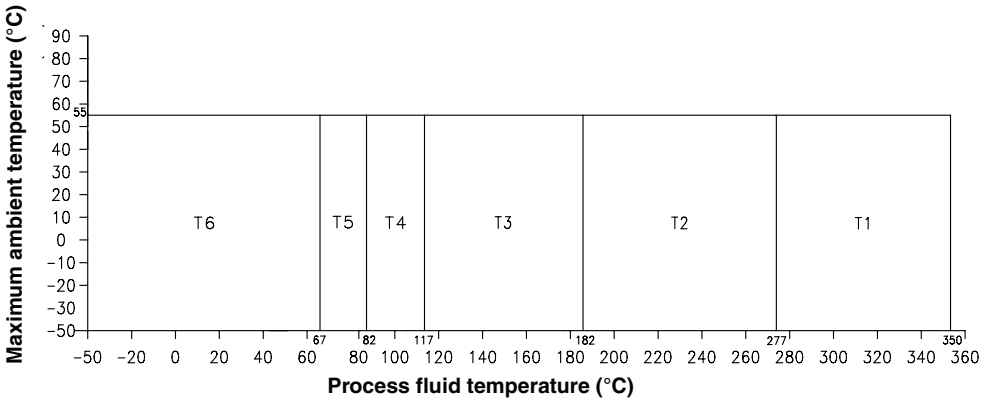
(1) ATEX "T" rating depends on the maximum temperature shown in the graphs.

Hazardous area classifications *continued*

ATEX[1] — Certificate Number BVS 06 ATEX E 045 X

Model CMF200(A or B), CMF300(A or B), and CMF400A with junction box[2]

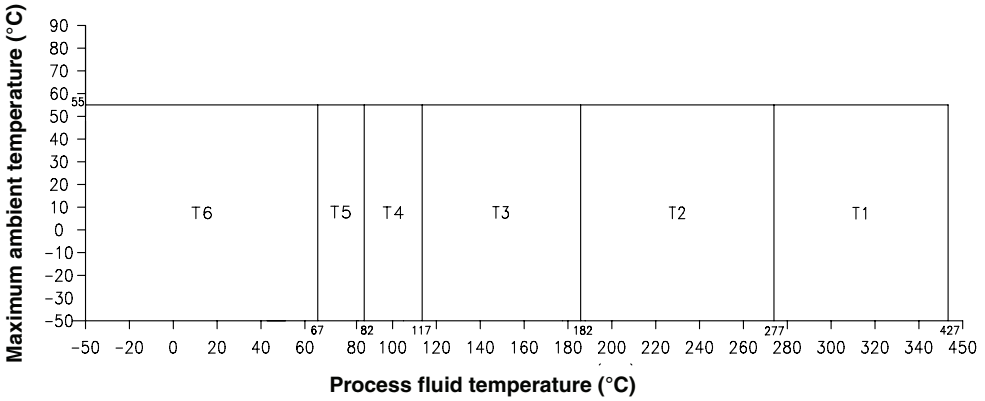
CE 0575 ⟨Ex⟩ II 2G EEx ib IIB T1–T6
II 2D T* °C



* 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:T 290°C, T1:T 363°C. The minimum ambient and process fluid temperature allowed for dust is –40°C.

Model CMF200(C or E) and CMF300(C or E), and CMF400C with junction box

CE 0575 ⟨Ex⟩ II 2G EEx ib IIB T1–T6
II 2D 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:T 290°C, T1:T 440°C. The minimum ambient and process fluid temperature allowed for dust is –40°C.

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

(2) Model CMF400(A or B) with junction box must be connected to an MVD transmitter.

Materials of construction

Wetted parts[1]		**Stainless steel**	**Nickel alloy**
	CMF010[2], CMF025, CMF050, CMF100, CMF200, and CMF300	316L or 304L	Hastelloy C-22
	CMF400	316L	Not available
Housing	304L stainless steel		
Junction box	300-series stainless steel or polyurethane-painted aluminum; NEMA 4X (IP65)		
Core processor	300-series stainless steel or polyurethane-painted aluminum; NEMA 4X (IP65)		
Model 2400S transmitter	Polyurethane-painted aluminum; NEMA 4X (IP65)		

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

(2) The Model CMF010P has nickel alloy tubes and SST fittings.

Weight

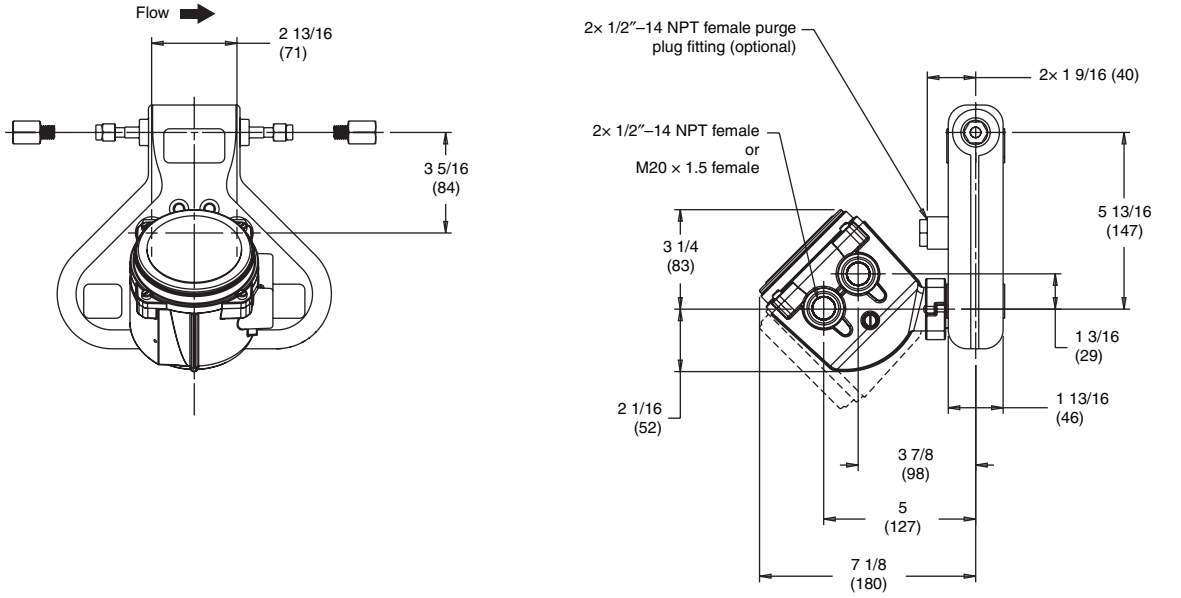
Weights provided are the weight of the flowmeter with 150 lb weld neck raised face flanges.

	With junction box		**With core processor or Model 2400S transmitter**	
	lb	**kg**	**lb**	**kg**
CMF010	14	7	19	9
CMF025	8	4	13	6
CMF050	12	6	17	8
CMF100	29	13	34	16
CMF200	63	29	68	31
CMF300	165	75	170	77
CMF400	441	200	446	202

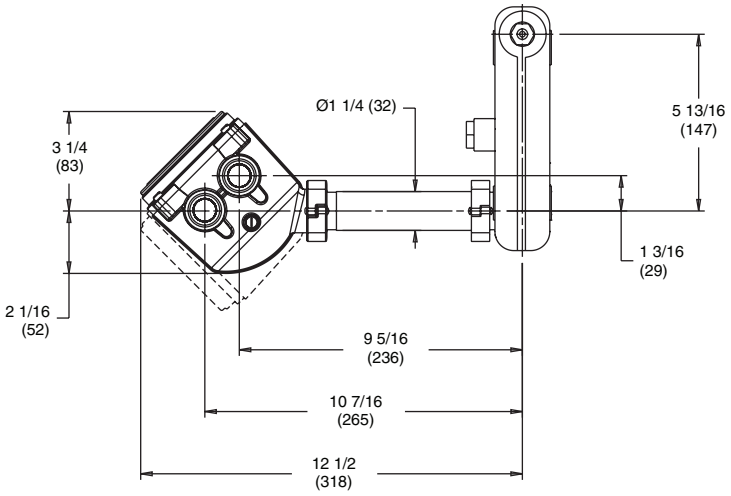
Dimensions

Dimensions in *inches (mm)*

CMF010 with enhanced core processor or Model 2400S transmitter



Refer to CMF010 drawings on page 23 for additional sensor dimensions. For CMF010 fitting options and dimensions, see page 40.

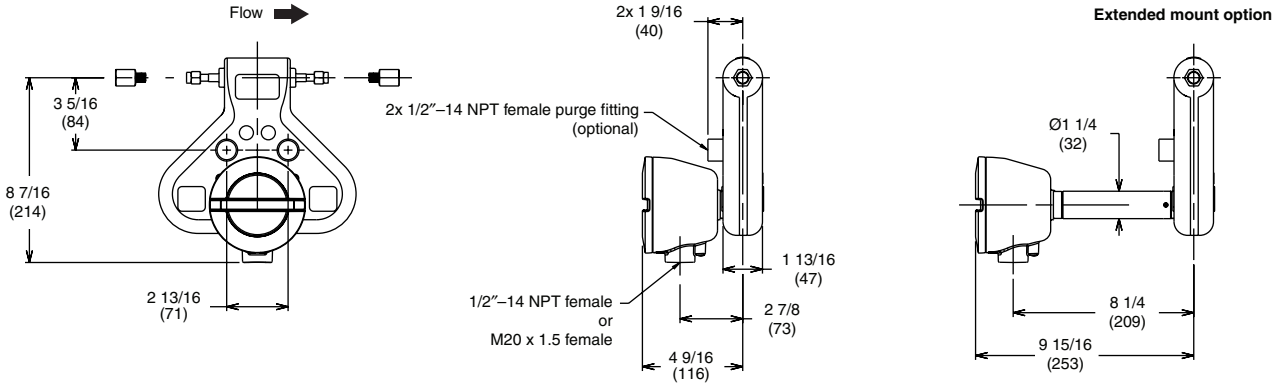


Extended mount option

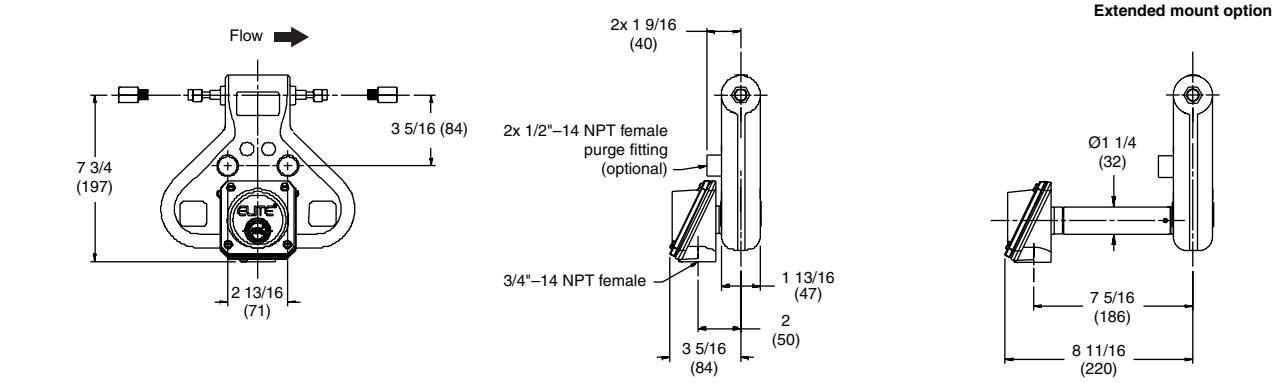
Dimensions *continued*

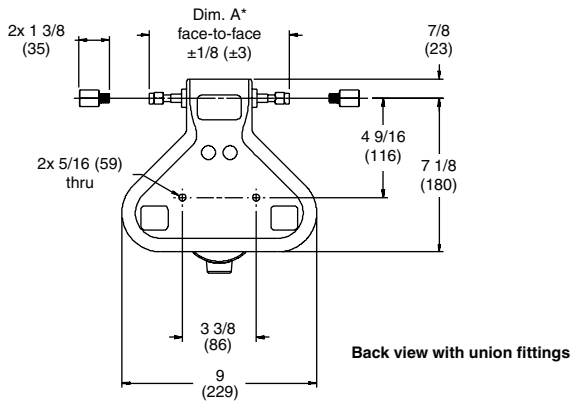
Dimensions in *inches (mm)*

CMF010 with core processor



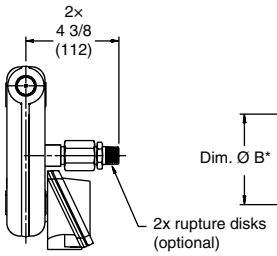
CMF010 with junction box



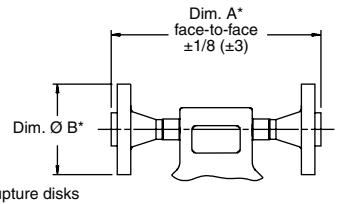


Back view with union fittings

Side view with rupture disk



Flange dimensions

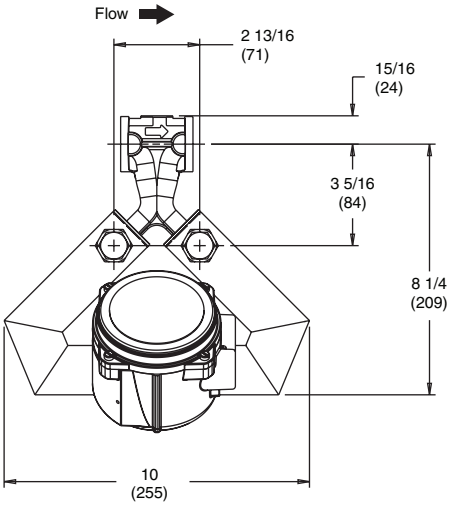


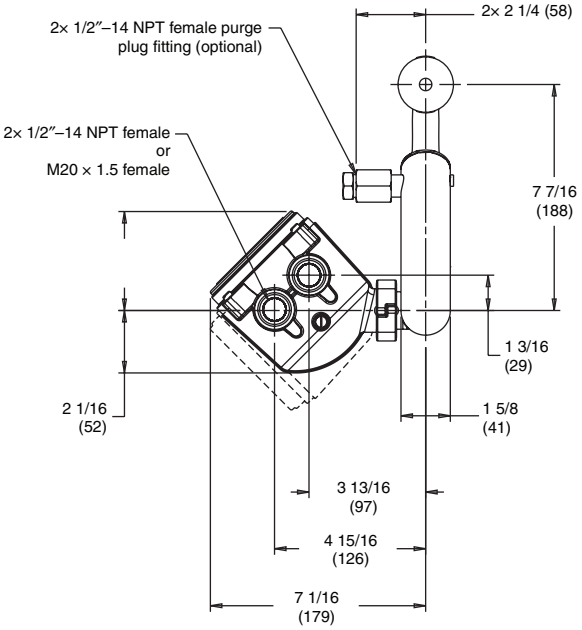
*For dimensions A and B, see page 40.

Dimensions *continued*

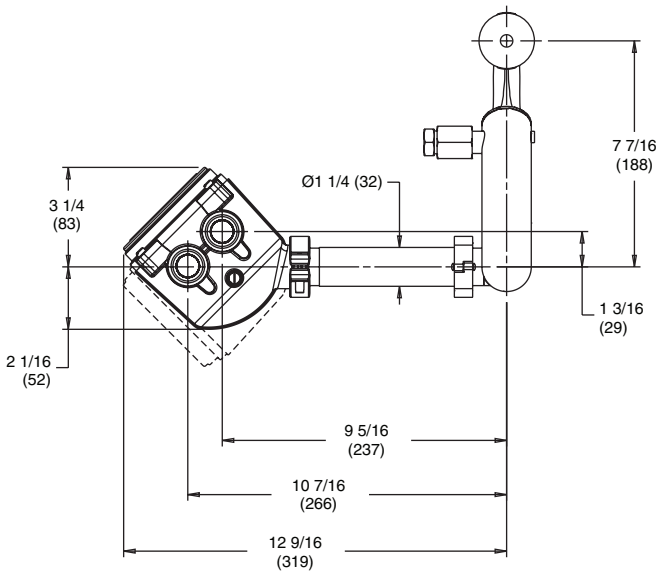
Dimensions in *inches (mm)*

CMF025 with enhanced core processor or Model 2400S transmitter





Refer to CMF025 drawings on page 25 for additional sensor dimensions. For CMF025 fitting options and dimensions, see page 41.

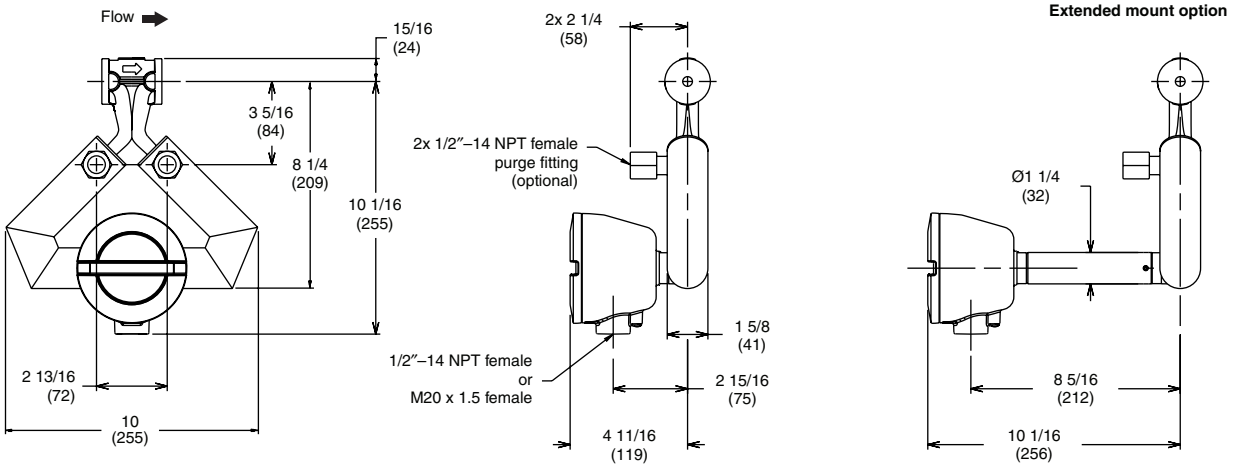


Extended mount option

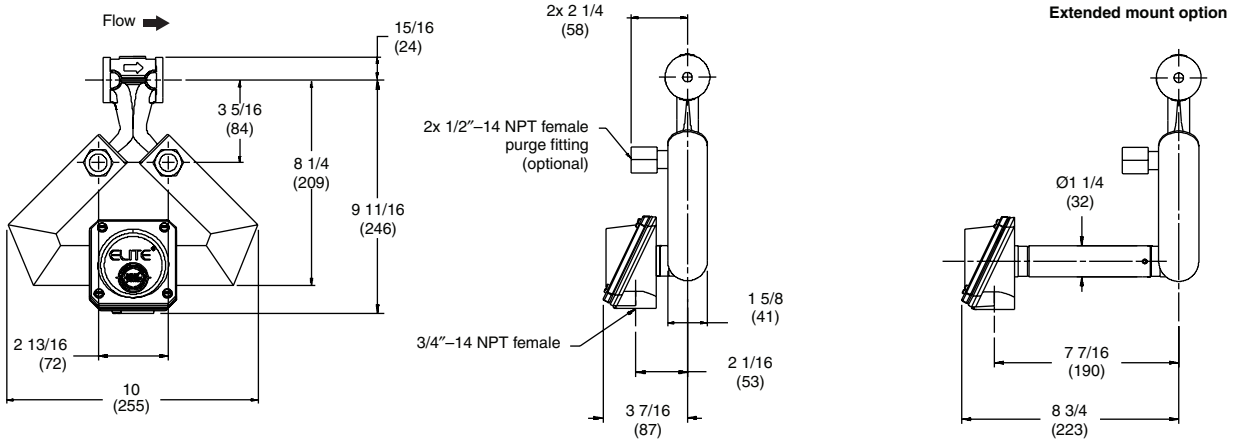
Dimensions *continued*

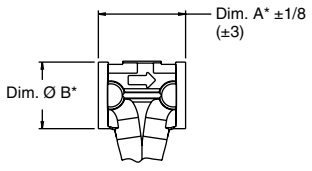
Dimensions in inches (mm)

CMF025 with core processor

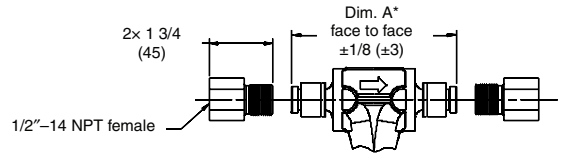


CMF025 with junction box

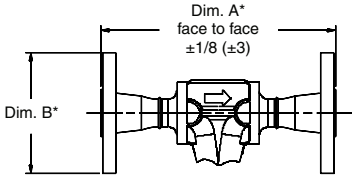




Wafer detail



Union detail



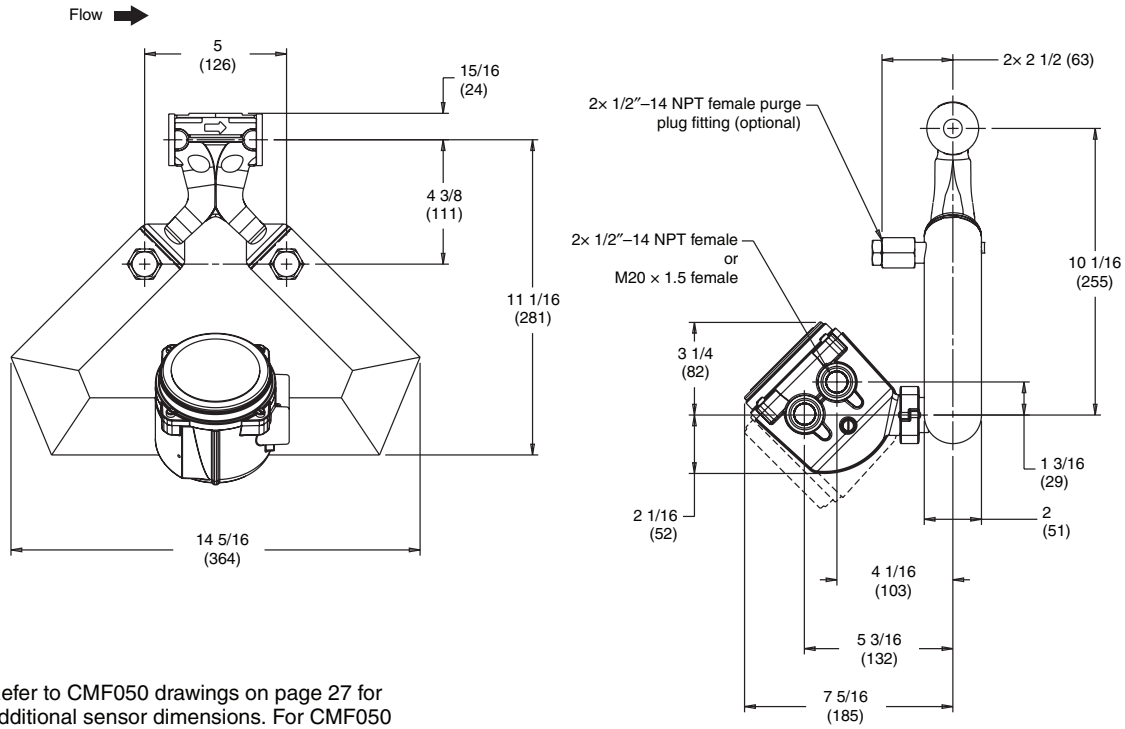
Flange detail

*For dimensions A and B, see page 41.

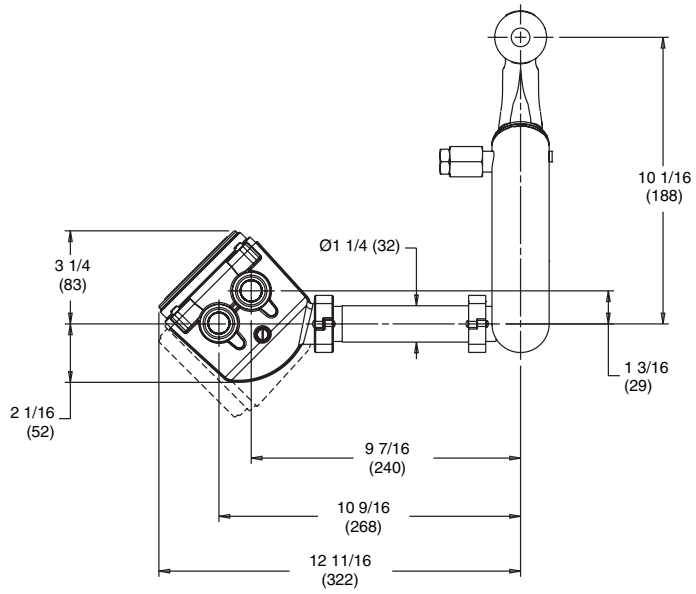
Dimensions *continued*

Dimensions in *inches (mm)*

CMF050 with enhanced core processor or Model 2400S transmitter



Refer to CMF050 drawings on page 27 for additional sensor dimensions. For CMF050 fitting options and dimensions, see page 42.

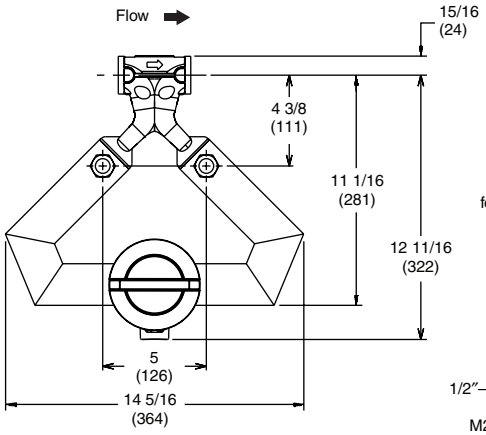


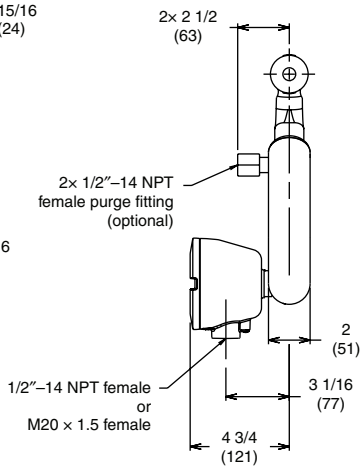
Extended mount option

Dimensions *continued*

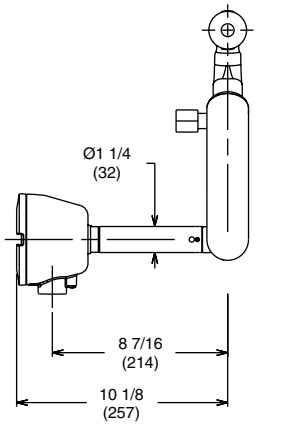
Dimensions in inches (mm)

CMF050 with core processor

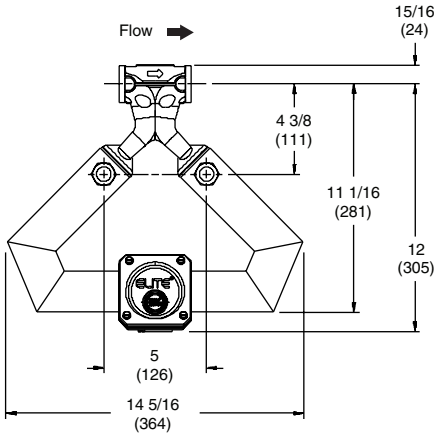


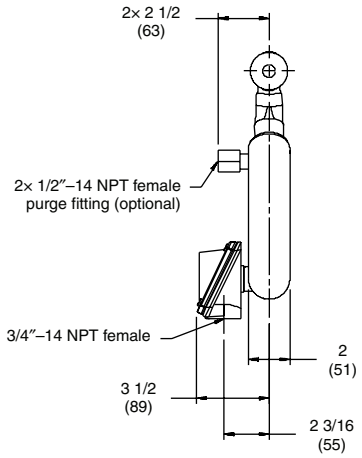


Extended mount option

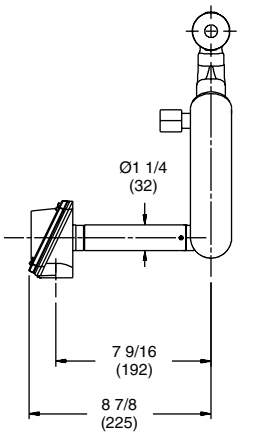


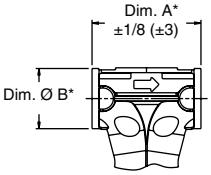
CMF050 with junction box



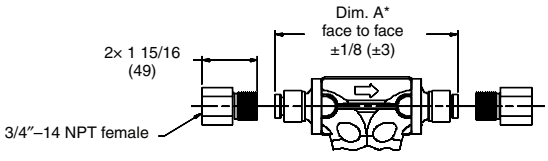


Extended mount option

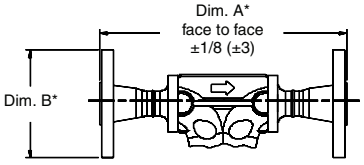




Wafer detail



Union detail



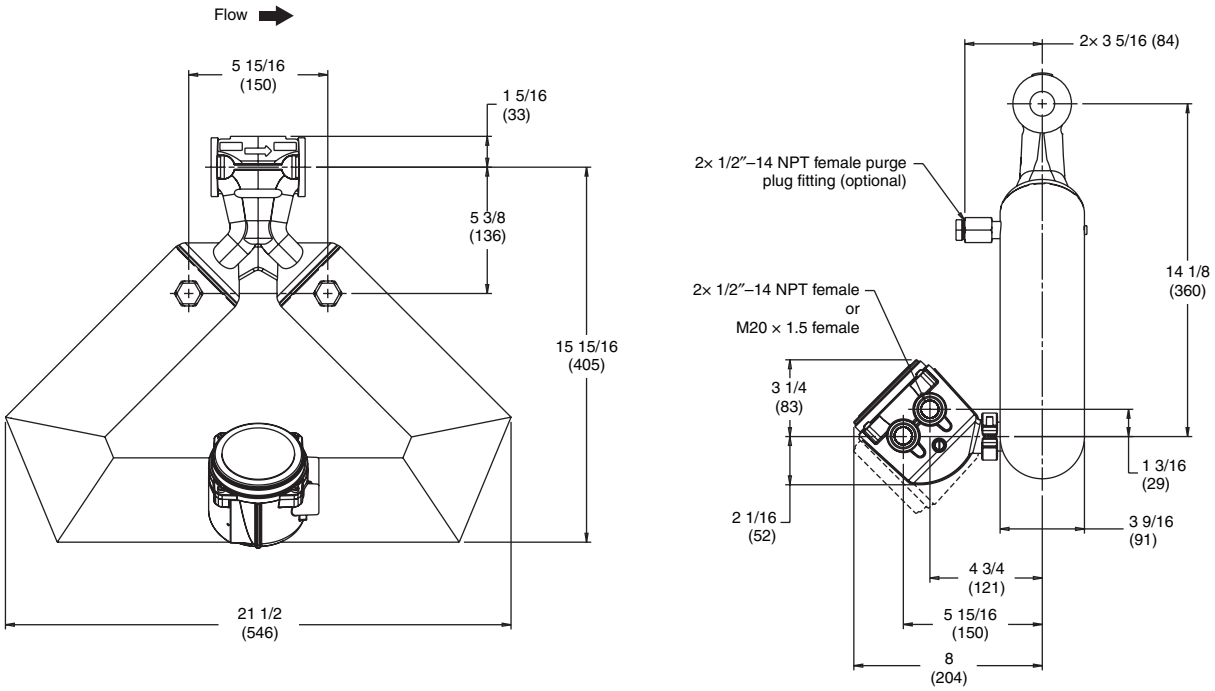
Flange detail

*For dimensions A and B, see page 42.

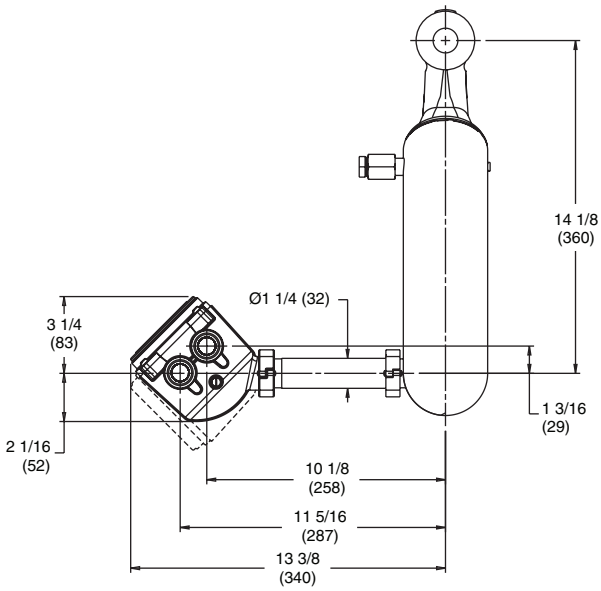
Dimensions *continued*

Dimensions in *inches (mm)*

CMF100 with enhanced core processor or Model 2400S transmitter



Refer to CMF100 drawings on page 29 for additional sensor dimensions. For CMF100 fitting options and dimensions, see page 43.

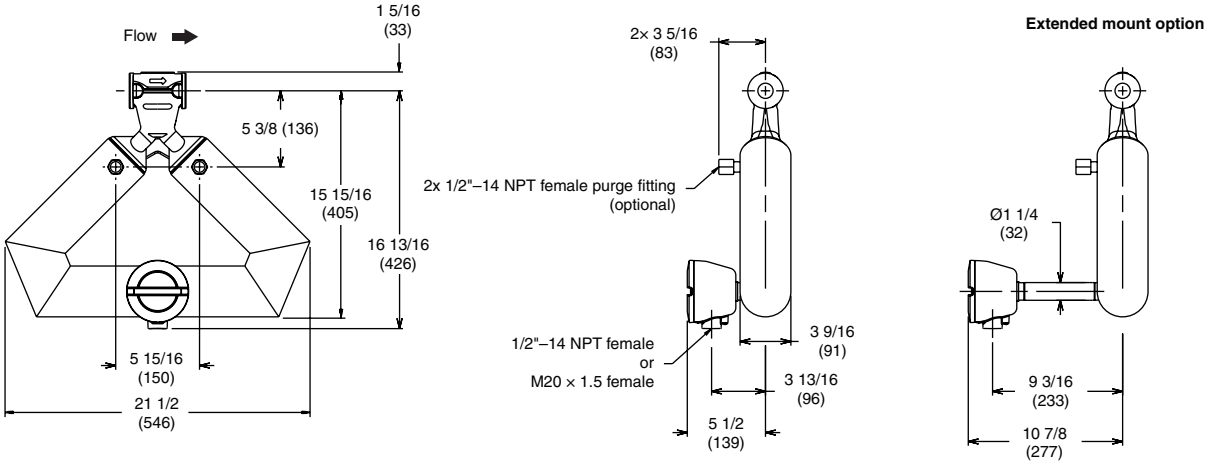


Extended mount option

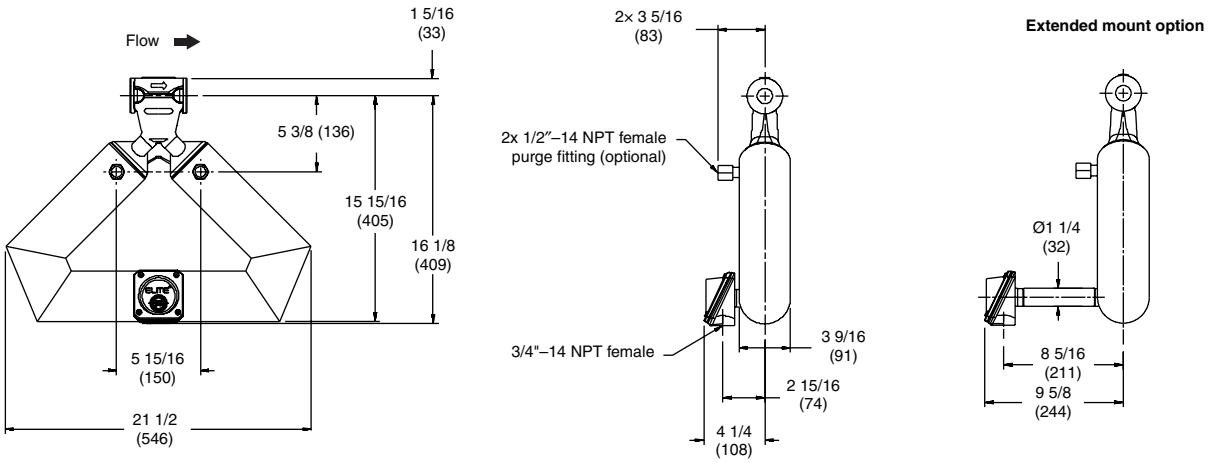
Dimensions *continued*

Dimensions in inches (mm)

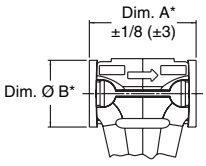
CMF100 with core processor



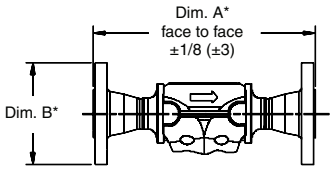
CMF100 with junction box



Wafer detail



Flange detail

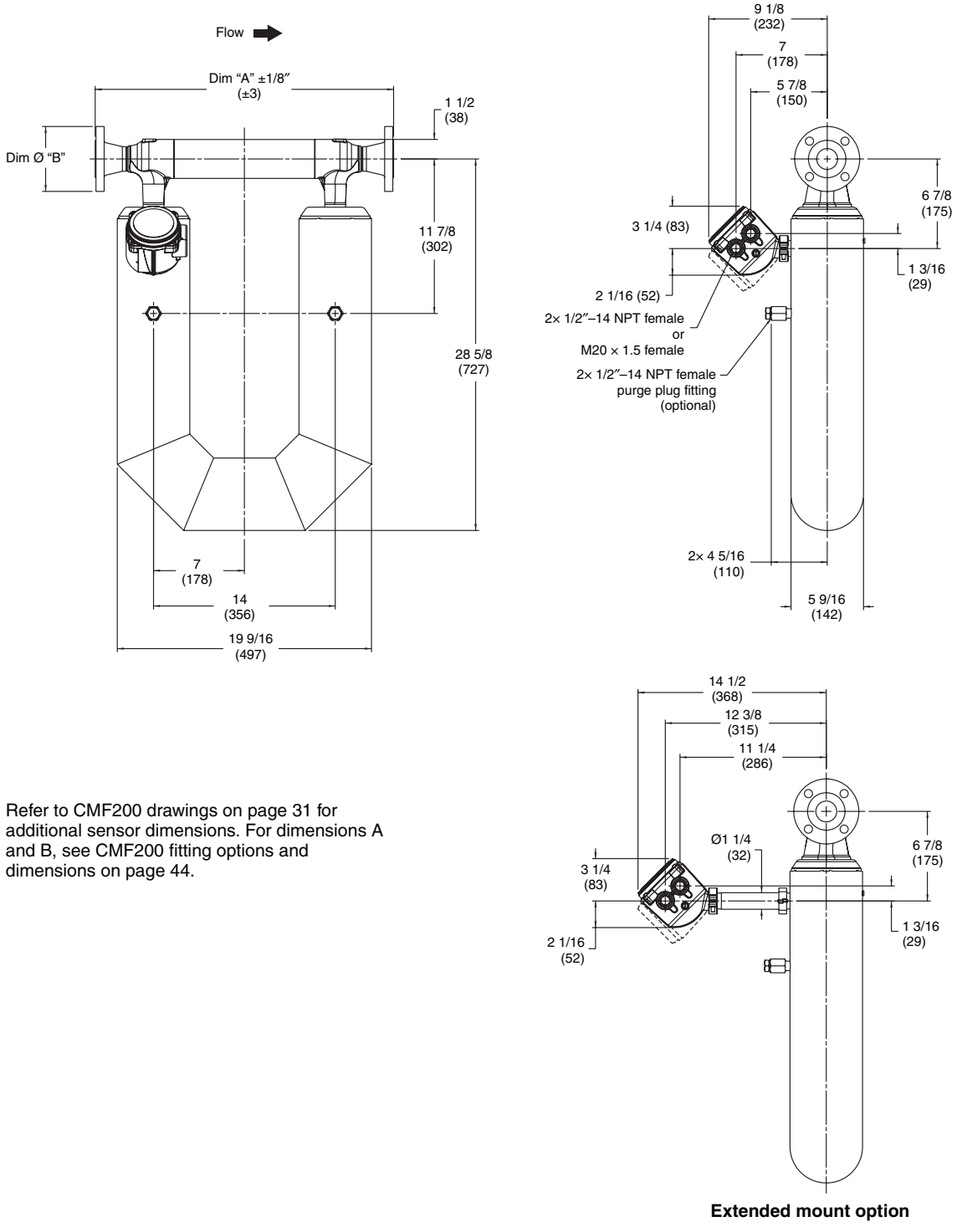


*For dimensions A and B, see page 43.

Dimensions *continued*

Dimensions in *inches (mm)*

CMF200 with enhanced core processor or Model 2400S transmitter



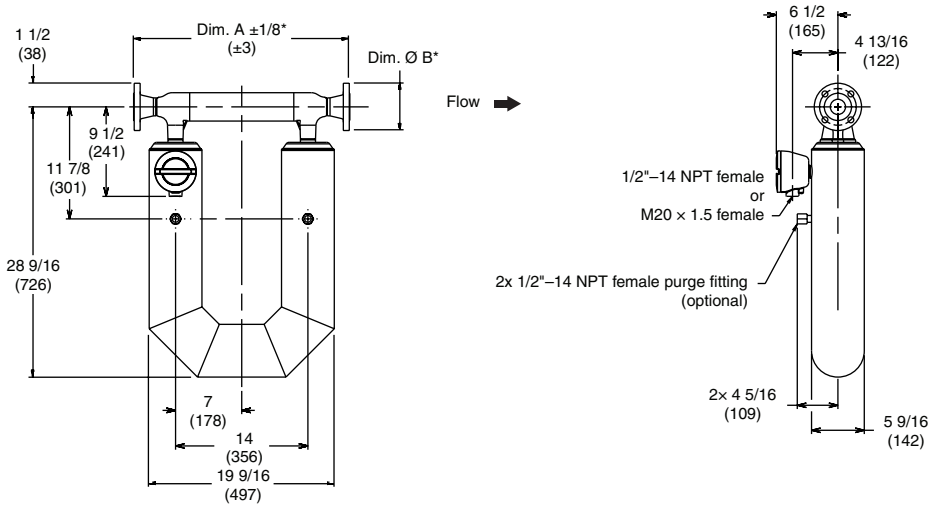
Extended mount option

Refer to CMF200 drawings on page 31 for additional sensor dimensions. For dimensions A and B, see CMF200 fitting options and dimensions on page 44.

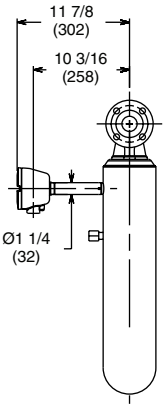
Dimensions *continued*

Dimensions in inches (mm)

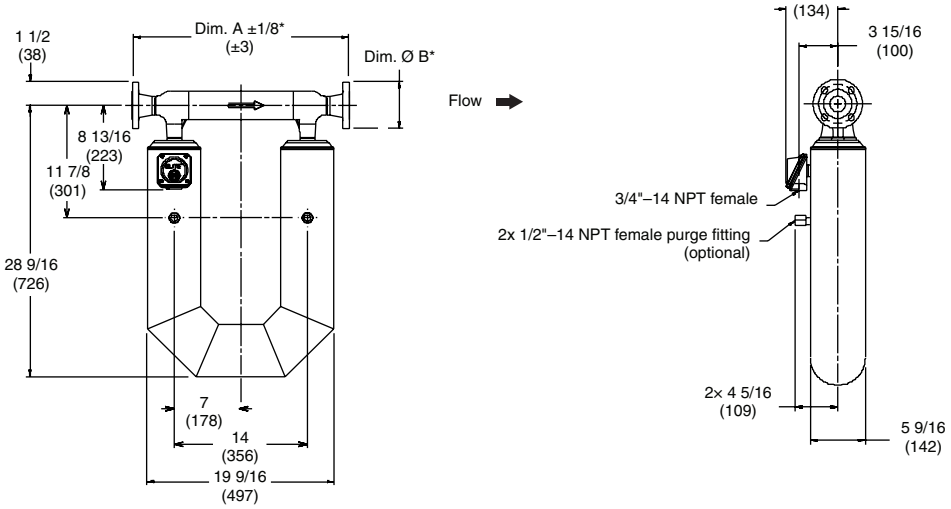
CMF200 with core processor



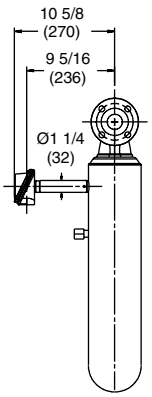
Extended mount option



CMF200 with junction box



Extended mount option

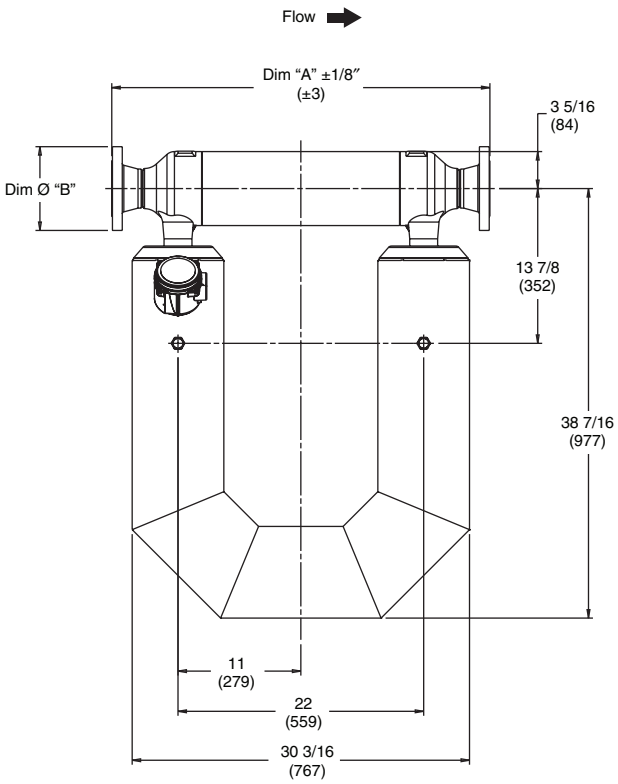


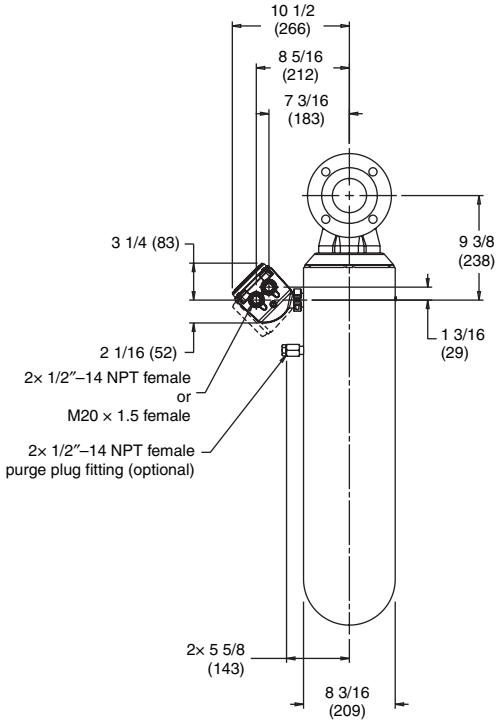
*For dimensions A and B, see page 44.

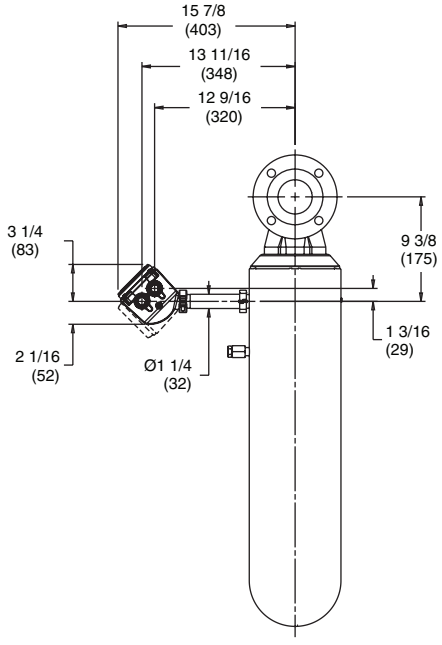
Dimensions *continued*

Dimensions in *inches (mm)*

CMF300 with enhanced core processor or Model 2400S transmitter







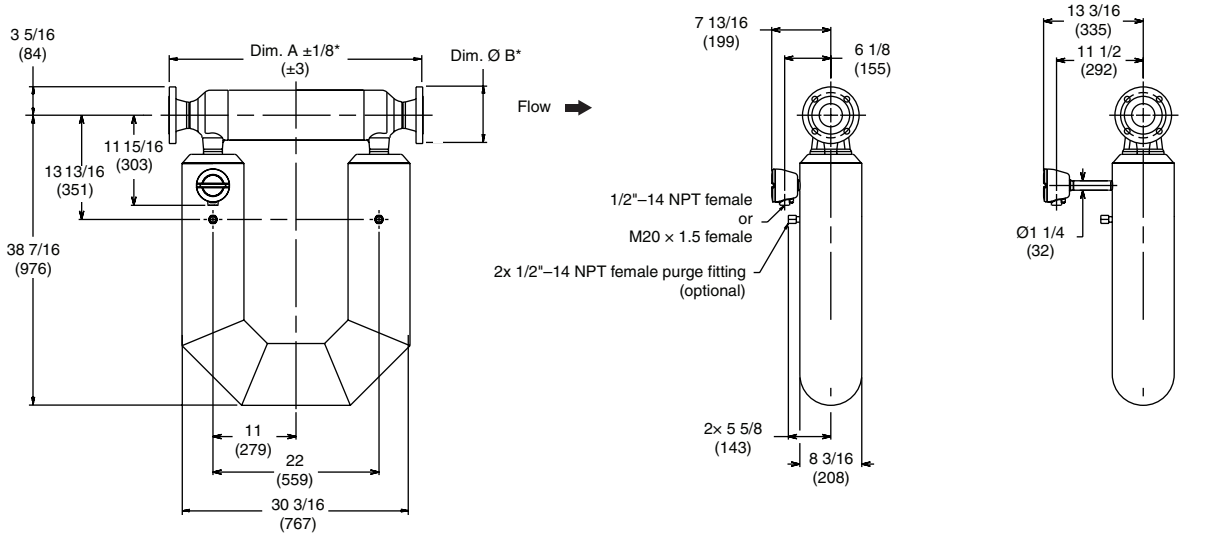
Extended mount option

Refer to CMF300 drawings on page 33 for additional sensor dimensions. For dimensions A and B, see CMF300 fitting options and dimensions on page 45.

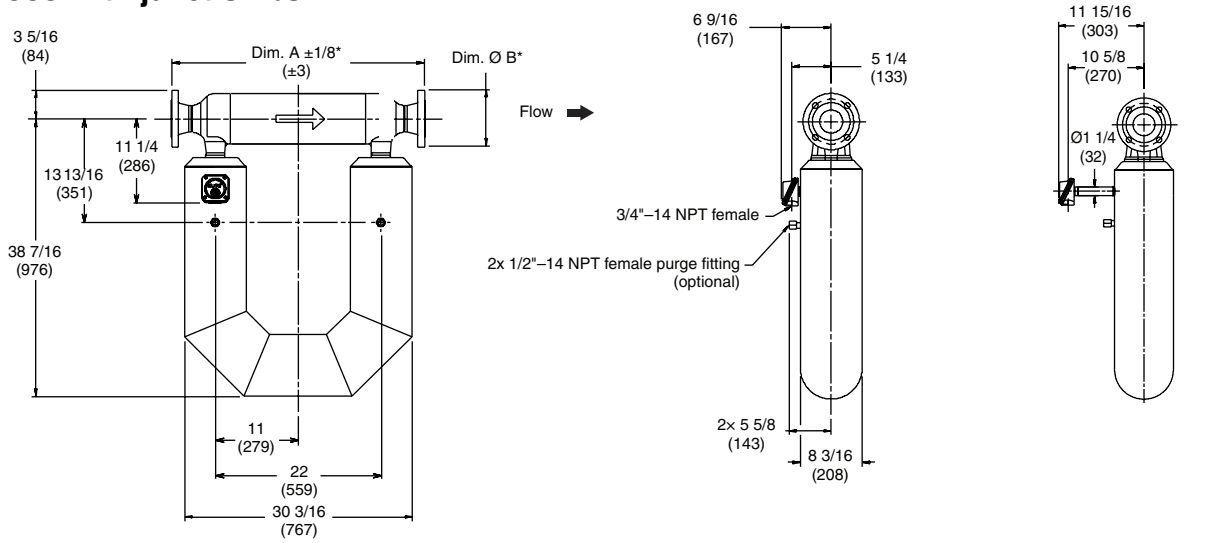
Dimensions *continued*

Dimensions in inches (mm)

CMF300 with core processor



CMF300 with junction box

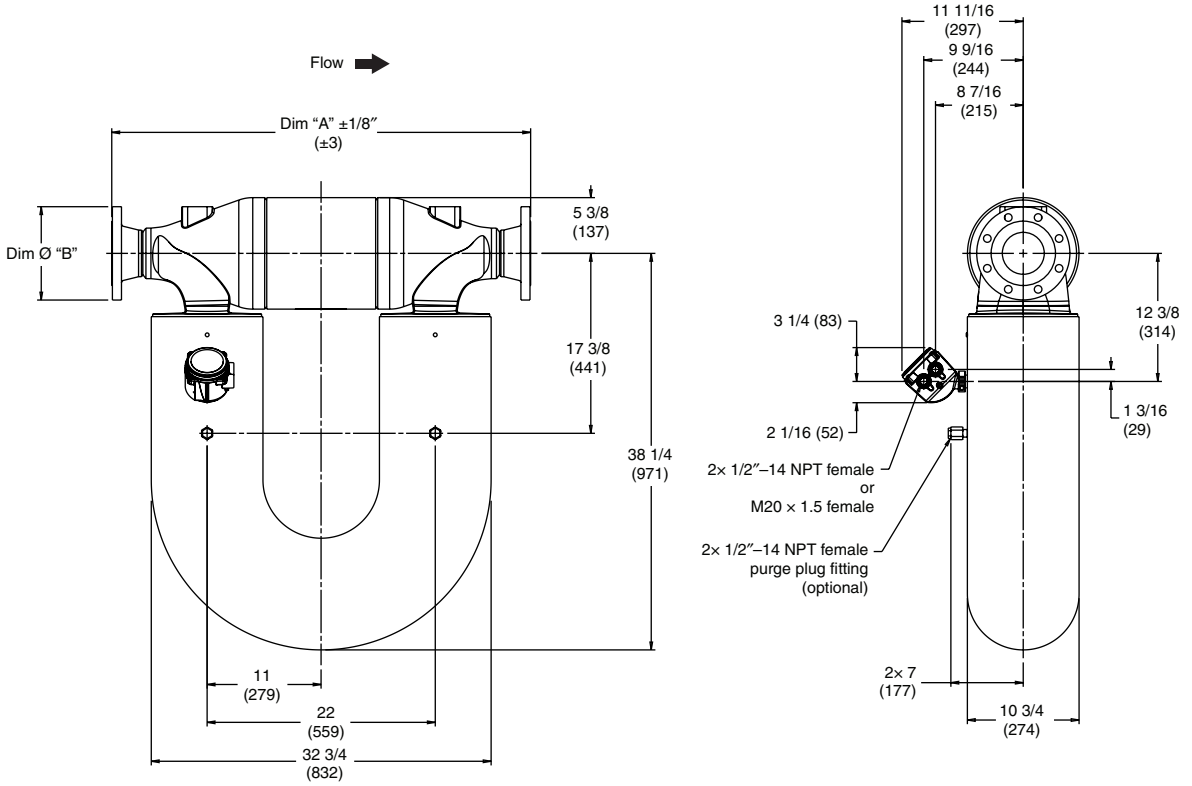


*For dimensions A and B, see page 45.

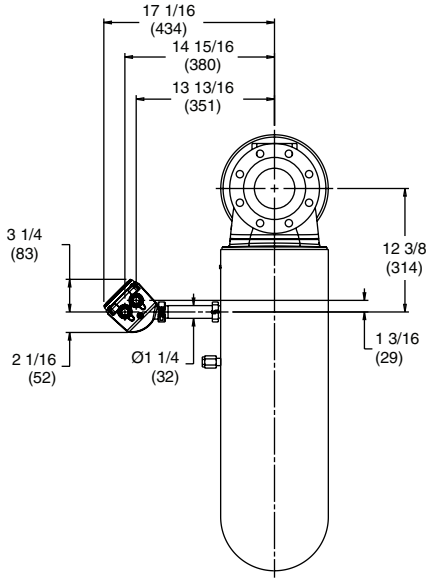
Dimensions *continued*

Dimensions in *inches (mm)*

CMF400 with enhanced core processor or Model 2400S transmitter



Refer to CMF400 drawings on page 35 for additional sensor dimensions. For dimensions A and B, see CMF400 fitting options and dimensions on page 46.

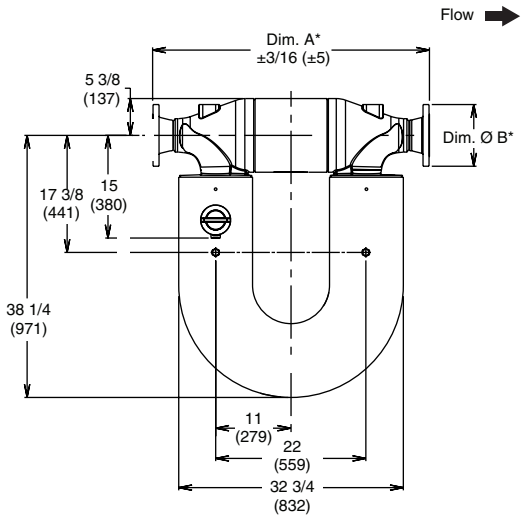


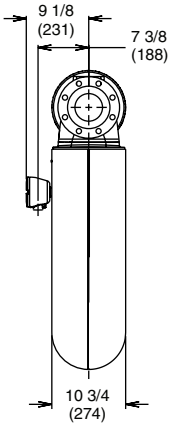
Extended mount option

Dimensions *continued*

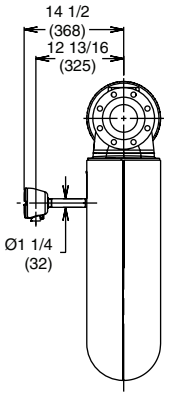
Dimensions in *inches (mm)*

CMF400 with core processor

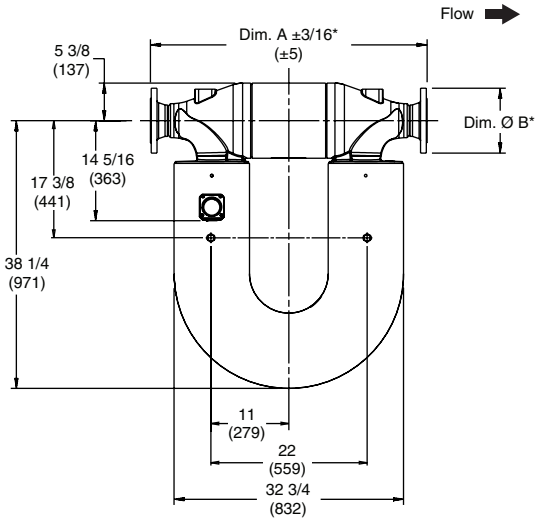


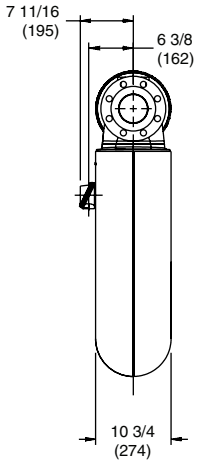


Extended mount option

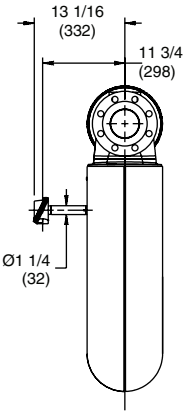


CMF400 with junction box





Extended mount option



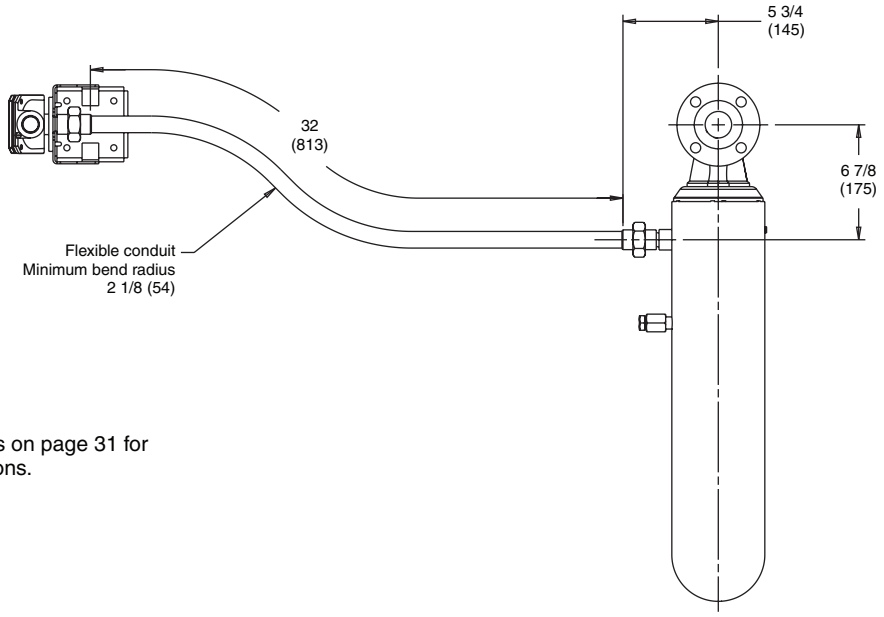
*For dimensions A and B, see page 46.

Dimensions *continued*

Dimensions in inches (mm)

High-temperature CMF200A, CMF200B, CMF200C, or CMF200E

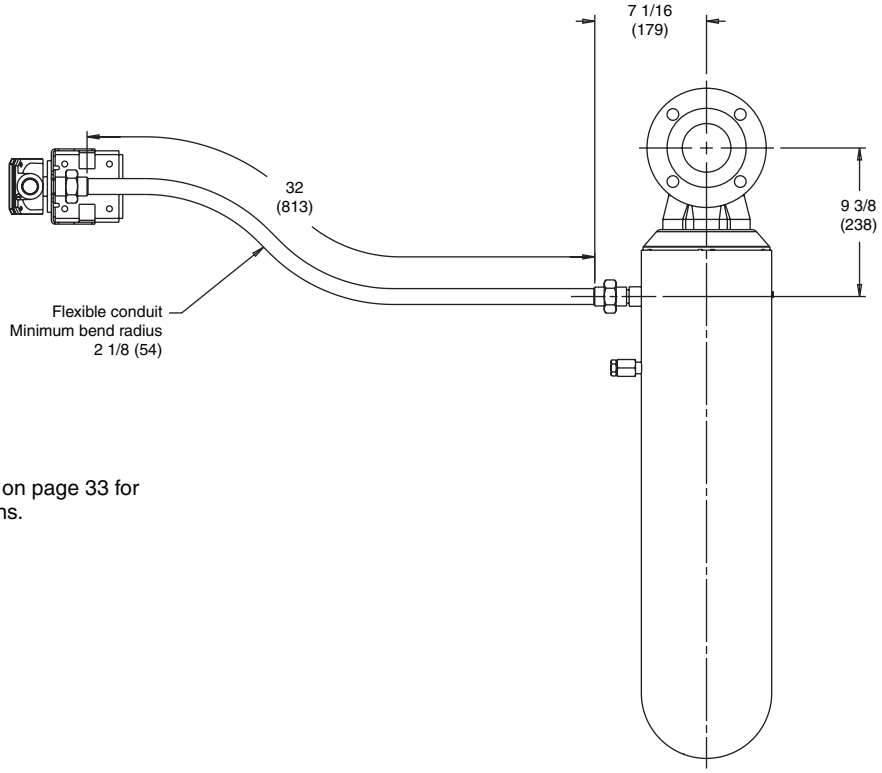
Transmitter, core processor, or junction box mounts on end of flexible conduit. Dimensions for electronics are shown on pages 38–39.



Refer to CMF200 drawings on page 31 for additional sensor dimensions.

High-temperature CMF300A, CMF300B, CMF300C, or CMF300E

Transmitter, core processor, or junction box mounts on end of flexible conduit. Dimensions for electronics are shown on pages 38–39.



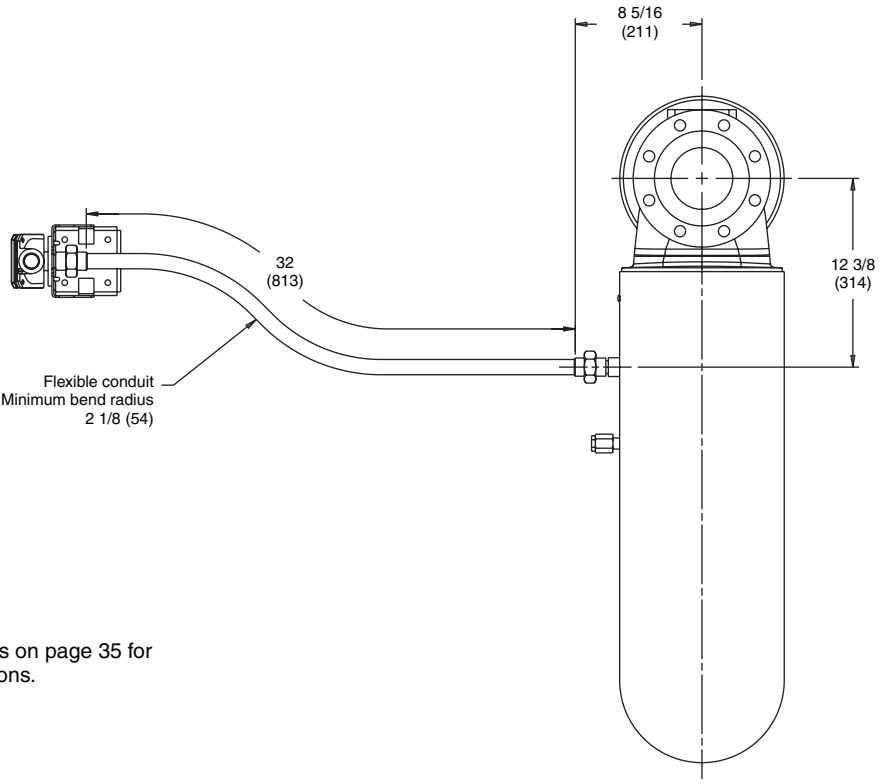
Refer to CMF300 drawings on page 33 for additional sensor dimensions.

Dimensions *continued*

Dimensions in inches (mm)

High-temperature CMF400A or CMF400C

Transmitter, core processor, or junction box mounts on end of flexible conduit. Dimensions for electronics are shown on pages 38–39.

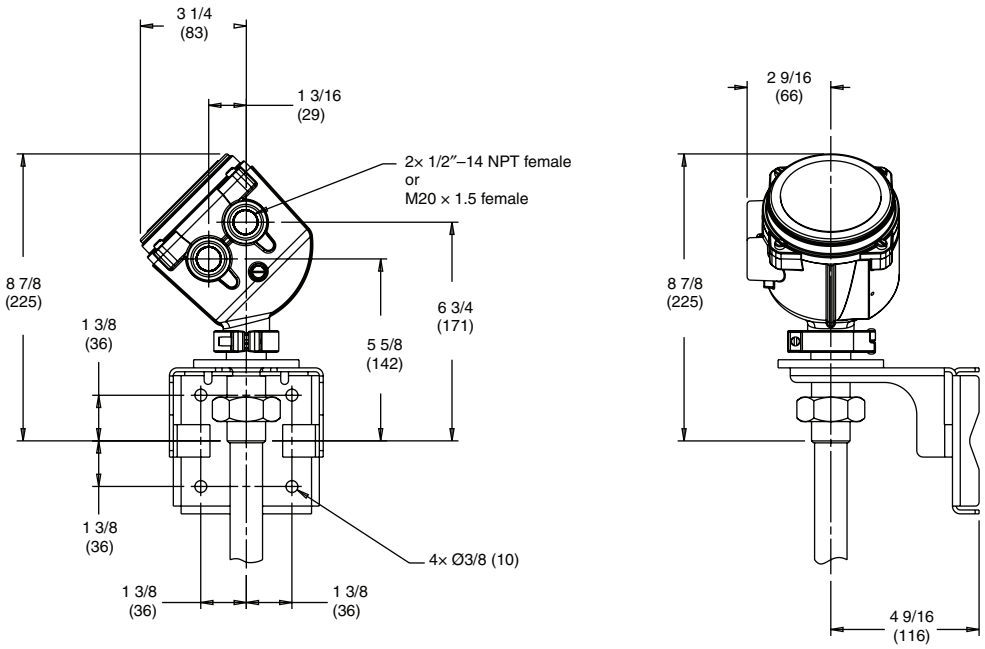


Refer to CMF400 drawings on page 35 for additional sensor dimensions.

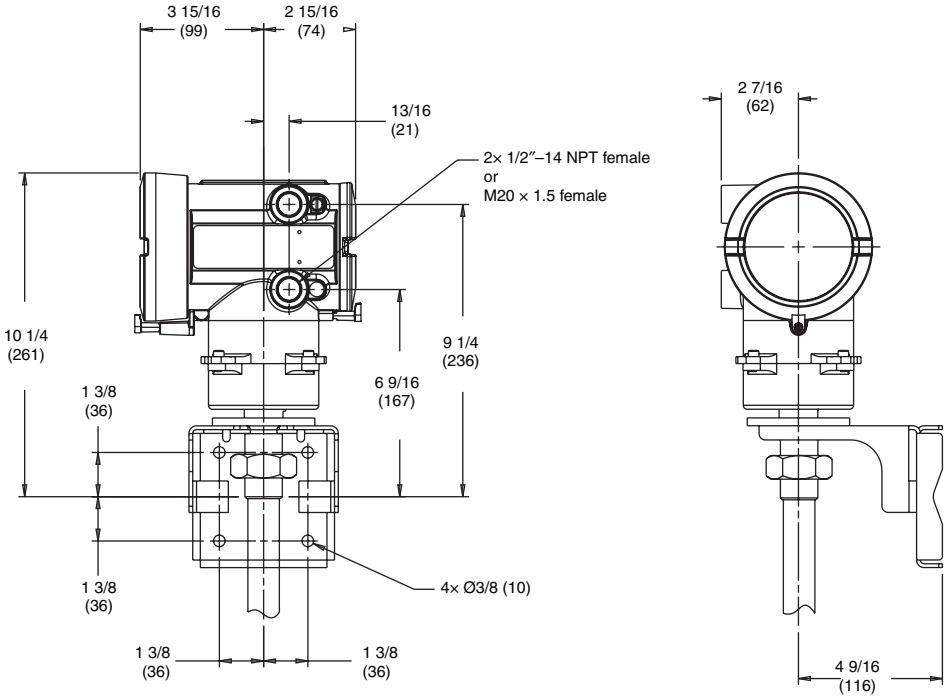
Dimensions *continued*

Dimensions in *inches (mm)*

Enhanced core processor or Model 2400S transmitter mounted on high-temperature sensor flexible conduit



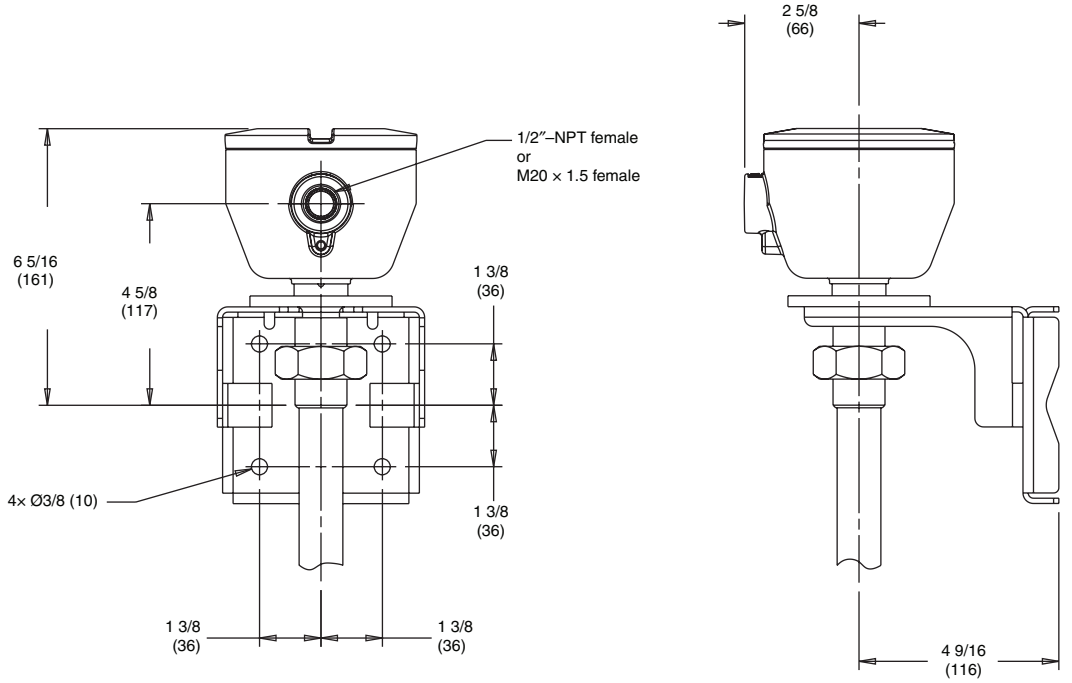
Model 1700/2700 transmitter mounted on high-temperature sensor flexible conduit



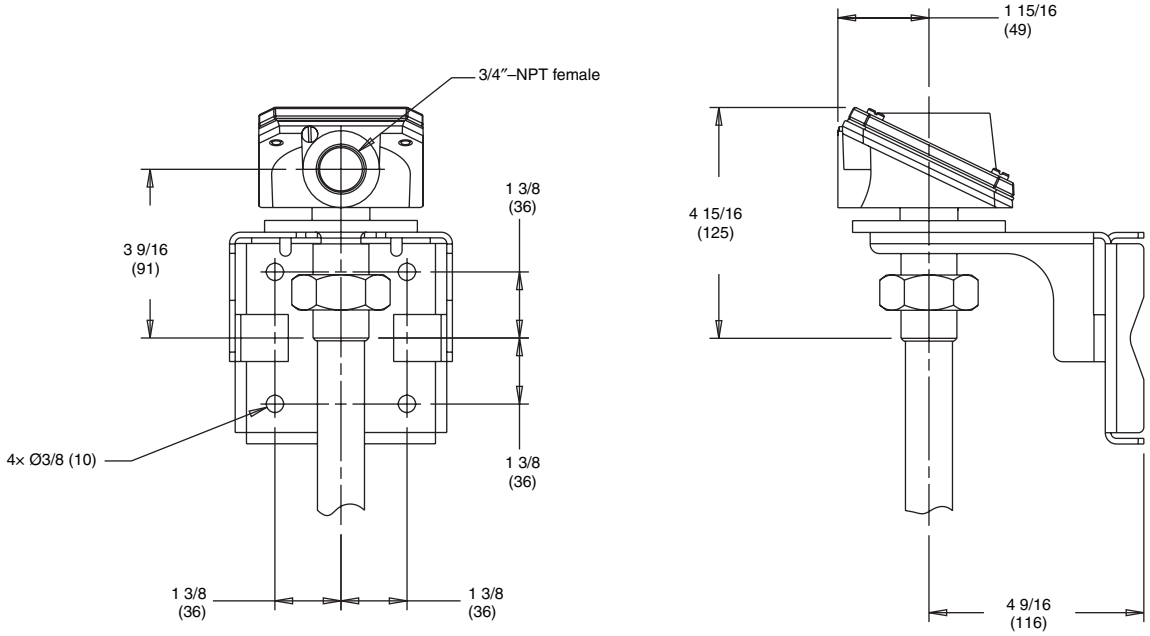
Dimensions *continued*

Dimensions in inches (mm)

Core processor mounted on high-temperature sensor flexible conduit



Junction box mounted on high-temperature sensor flexible conduit



Fitting options

	Fitting code	Dim. A face-to-face inches (mm)	Dim. B outside diameter inches (mm)
CMF010 fitting options[1]			
316L stainless steel sensors			
1/2-inch 150 lb ANSI weld neck raised face flange	313	7 7/8 (199)	3 1/2 (89)
1/2-inch 300 lb ANSI weld neck raised face flange	314	8 3/16 (209)	3 3/4 (95)
1/2-inch 600 lb ANSI weld neck raised face flange	315	8 11/16 (221)	3 3/4 (95)
1/2-inch sanitary fitting (Tri-Clamp compatible)	321	6 15/16 (177)	1 (25)
DN15 PN40 weld neck flange; DIN 2635 type C face	300	7 7/16 (189)	3 3/4 (95)
DN15 PN100 weld neck flange; DIN 2637 type E face	302	8 (203)	4 1/8 (105)
JIS 15mm 10K weld neck raised face flange	304	7 3/16 (183)	3 3/4 (95)
JIS 15mm 20K weld neck raised face flange	305	7 3/16 (183)	3 3/4 (95)
1/4-inch NPT female Swagelok size 4 VCO fitting	323	6 7/16 (164)	—
1/4-inch tube compression fitting	324	6 7/16 (164)	—
6 mm tube compression fitting	325	6 7/16 (164)	—
304L stainless steel sensors			
1/2-inch ANSI 150 lb weld neck raised face flange	413	7 7/8 (199)	3 1/2 (89)
1/2-inch ANSI 300 lb weld neck raised face flange	414	8 3/16 (209)	3 3/4 (95)
DN15 PN40 weld neck flange; DIN 2526 type C face	423	7 7/16 (189)	3 3/4 (95)
Nickel alloy sensors			
1/2-inch ANSI 150 lb lap joint flange	520	7 7/8 (199)	3 1/2 (89)
1/2-inch ANSI 300 lb lap joint flange	521	8 3/16 (209)	3 3/4 (95)
DN15 PN40 lap joint flange; DIN 2656 type C face	523	9 7/16 (240)	3 3/4 (95)
JIS 15mm 10K lap joint flange	522	8 3/16 (208)	3 3/4 (95)
1/4-inch NPT female Swagelok size 4 VCO fitting	323	6 7/16 (164)	—
High-pressure CMF010P fitting options[1]			
1/4-inch NPT female Swagelok size 4 VCO fitting	323	6 7/16 (164)	—
1/4-inch tube compression fitting	324	6 7/16 (164)	—
6 mm tube compression fitting	325	6 7/16 (164)	—

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

Fitting options *continued*

	Fitting code	Dim. A face-to-face inches (mm)	Dim. B outside diameter inches (mm)
CMF025 fitting options[1]			
316L stainless steel sensors			
Wafer style; 1/2-inch ANSI (150 lb; 300 lb; 600 lb bolt kit)	009	2 3/8 (60)	1 13/16 (46)
Wafer style, 15mm DIN 2526; type C face (PN40 bolt kit)	016	2 3/8 (60)	1 13/16 (46)
Wafer style; 15mm DIN 2512; type N grooved face (PN40 bolt kit)	017	2 3/8 (60)	1 13/16 (46)
Wafer style; 15mm DIN 2526; type E face (PN100 bolt kit)	018	2 3/8 (60)	1 13/16 (46)
Wafer style; 15mm DIN 2512; type N grooved face (PN100 bolt kit)	019	2 3/8 (60)	1 13/16 (46)
Wafer style; 15mm; standard JIS facing (10K; 20K bolt kit)	029	2 3/8 (60)	1 13/16 (46)
1/2-inch ANSI 150 lb weld neck raised face flange	313	6 3/4 (172)	3 1/2 (89)
1/2-inch ANSI 300 lb weld neck raised face flange	314	7 1/8 (181)	3 3/4 (95)
1/2-inch ANSI 600 lb weld neck raised face flange	315	7 5/8 (194)	3 3/4 (95)
1/2-inch NPT female Swagelok size 8 VCO fitting	319	4 11/16 (119)	—
1/2-inch sanitary fitting (Tri-Clamp compatible)	321	4 11/16 (119)	1 (25)
DN15 PN40 weld neck flange; DIN 2635 type C face	300	6 5/16 (160)	3 3/4 (95)
DN15 PN40 weld neck flange; DIN 2635 type N grooved face	301	6 5/16 (160)	3 3/4 (95)
DN15 PN100 weld neck flange; DIN 2637 type E face	302	6 15/16 (176)	4 1/8 (105)
DN15 PN100 weld neck flange; DIN 2637 type N grooved face	303	6 15/16 (176)	4 1/8 (105)
JIS 15mm 10K weld neck raised face flange	304	6 1/8 (156)	3 3/4 (95)
JIS 15mm 20K weld neck raised face flange	305	6 1/8 (156)	3 3/4 (95)
304L stainless steel sensors			
1/2″ ANSI 150 lb weld neck raised face flange	413	6 3/4 (172)	3 1/2 (89)
1/2″ ANSI 300 lb weld neck raised face flange	414	7 1/8 (181)	3 3/4 (95)
DN15 PN40 weld neck flange; DIN 2526 type C face	423	6 5/16 (160)	3 3/4 (95)
Nickel alloy sensors			
1/2″ ANSI 150 lb lap joint flange	520	6 3/4 (172)	3 1/2 (89)
1/2″ ANSI 300 lb lap joint flange	521	7 1/8 (181)	3 3/4 (95)
DN15 PN40 lap joint flange; DIN 2656 type C face	523	7 5/16 (186)	3 3/4 (95)
JIS 15mm 10K lap joint flange	522	7 1/8 (181)	3 3/4 (95)

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

Fitting options *continued*

	Fitting code	Dim. A face-to-face inches (mm)	Dim. B outside diameter inches (mm)
CMF050 fitting options[1]			
316L stainless steel sensors			
Wafer style; 1/2-inch ANSI (150 lb; 300 lb; 600 lb bolt kit)	009	3 1/2 (89)	1 13/16 (46)
Wafer style; 15mm DIN 2526; type C face (PN40 bolt kit)	016	3 1/2 (89)	1 13/16 (46)
Wafer style; 15mm DIN 2512; type N grooved face (PN40 bolt kit)	017	3 1/2 (89)	1 13/16 (46)
Wafer style; 15mm DIN 2526; type E face (PN100 bolt kit)	018	3 1/2 (89)	1 13/16 (46)
Wafer style; 15mm DIN 2512; type N grooved face (PN100 bolt kit)	019	3 1/2 (89)	1 13/16 (46)
Wafer style; 15mm; standard JIS facing (10K; 20K bolt kit)	029	3 1/2 (89)	1 13/16 (46)
1/2-inch ANSI 150 lb weld neck raised face flange	313	7 15/16 (202)	3 1/2 (89)
1/2-inch ANSI 300 lb weld neck raised face flange	314	8 5/16 (211)	3 3/4 (95)
1/2-inch ANSI 600 lb weld neck raised face flange	315	8 13/16 (224)	3 3/4 (95)
3/4-inch NPT female Swagelok size 12 VCO fitting	320	6 1/2 (165)	—
3/4-inch sanitary fitting (Tri-Clamp compatible)	322	6 1/2 (165)	1 (25)
DN15 PN40 weld neck flange; DIN 2635 type C face	300	7 1/2 (191)	3 3/4 (95)
DN15 PN40 weld neck flange; DIN 2635 type N grooved face	301	7 1/2 (191)	3 3/4 (95)
DN15 PN100 weld neck flange; DIN 2637 type E face	302	8 1/16 (205)	4 1/8 (105)
DN15 PN100 weld neck flange; DIN 2637 type N grooved face	303	8 1/16 (205)	4 1/8 (105)
JIS 15mm 10K weld neck raised face flange	304	7 1/4 (184)	3 3/4 (95)
JIS 15mm 20K weld neck raised face flange	305	7 1/4 (184)	3 3/4 (95)
304L stainless steel sensors			
1/2″ ANSI 150 lb weld neck raised face flange	413	7 15/16 (202)	3 1/2 (89)
1/2″ ANSI 300 lb weld neck raised face flange	414	8 5/16 (211)	3 3/4 (95)
DN15 PN40 weld neck flange; DIN 2526 type C face	423	7 1/2 (191)	3 3/4 (95)
Nickel alloy sensors			
1/2″ ANSI 150 lb lap joint flange	520	7 15/16 (202)	3 1/2 (89)
1/2″ ANSI 300 lb lap joint flange	521	8 5/16 (211)	3 3/4 (95)
DN15 PN40 lap joint flange; DIN 2656 type C face	523	8 1/2 (216)	3 3/4 (95)
JIS 15mm 10K lap joint flange	522	8 1/4 (210)	3 3/4 (95)

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

Fitting options *continued*

	Fitting code	Dim. A face-to-face inches (mm)	Dim. B outside diameter inches (mm)
CMF100 fitting options[1]			
316L stainless steel sensors			
Wafer style; 1-inch ANSI (150 lb bolt kit)	010	4 (102)	2 1/2 (64)
Wafer style; 1-inch ANSI (300 lb; 600 lb bolt kit)	011	4 (102)	2 1/2 (64)
Wafer style; 25mm type C face (PN40 bolt kit)	020	4 (102)	2 1/2 (64)
Wafer style; 25mm DIN 2512 type N grooved face (PN40 bolt kit)	021	4 (102)	2 1/2 (64)
Wafer style; 25mm type E face (PN100 bolt kit)	022	4 (102)	2 1/2 (64)
Wafer style; 25mm DIN 2512; type N grooved face (PN100 bolt kit)	023	4 (102)	2 1/2 (64)
Wafer style; 25mm; standard JIS face (10K; 20K; 30K bolt kit)	030	4 (102)	2 1/2 (64)
1″ ANSI 150 lb weld neck raised face flange	328	9 1/4 (235)	4 1/4 (108)
1″ ANSI 300 lb weld neck raised face flange	329	9 3/4 (248)	4 7/8 (124)
1″ ANSI 600 lb weld neck raised face flange	330	10 1/4 (260)	4 7/8 (124)
1 1/2″ ANSI 600 lb weld neck raised face flange	331	10 7/8 (276)	6 1/8 (156)
1″ sanitary fitting (Tri-Clamp compatible)	339	8 3/8 (213)	2 (50)
DN25 PN40 weld neck flange; DIN 2635 type C face	306	8 5/16 (211)	4 1/2 (115)
DN25 PN40 weld neck flange; DIN 2635 type N grooved face	307	8 5/16 (211)	4 1/2 (115)
DN25 PN100 weld neck flange; DIN 2637 type E face	308	9 11/16 (246)	5 1/2 (140)
DN25 PN100 weld neck flange; DIN 2637 type N grooved face	309	9 11/16 (246)	5 1/2 (140)
JIS 25mm 10K weld neck raised face flange	317	8 5/16 (211)	4 15/16 (125)
JIS 25mm 20K weld neck raised face flange	318	8 5/16 (211)	4 15/16 (125)
304L stainless steel sensors			
1″ ANSI 150 lb weld neck raised face flange	415	9 1/4 (235)	4 1/4 (108)
1″ ANSI 300 lb weld neck raised face flange	416	9 3/4 (248)	4 7/8 (124)
DN25 PN40 weld neck flange; DIN 2526 type C face	424	8 9/16 (217)	4 1/2 (115)
Nickel alloy sensors			
1″ ANSI 150 lb lap joint flange	530	9 1/4 (235)	4 1/4 (108)
1″ ANSI 300 lb lap joint flange	531	9 3/4 (248)	4 7/8 (124)
DN25 PN40 lap joint flange; DIN 2656 type C face	533	9 9/16 (243)	4 1/2 (115)
JIS 25mm 10K lap joint flange	532	9 5/16 (237)	4 15/16 (125)

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

Fitting options *continued*

	Fitting code	Dim. A face-to-face inches (mm)	Dim. B outside diameter inches (mm)
CMF200 fitting options[1]			
316L stainless steel sensors			
1 1/2″ ANSI 150 lb weld neck raised face flange	341	22 7/8 (581)	5 (127)
1 1/2″ ANSI 300 lb weld neck raised face flange	342	23 3/8 (594)	6 1/8 (156)
1 1/2″ ANSI 600 lb weld neck raised face flange	343	23 7/8 (606)	6 1/8 (156)
2″ ANSI 150 lb weld neck raised face flange	418	22 7/8 (581)	6 (152)
2″ ANSI 300 lb weld neck raised face flange	419	23 3/8 (594)	6 1/2 (165)
2″ ANSI 600 lb weld neck raised face flange	420	23 5/8 (600)	6 1/2 (165)
1 1/2″ sanitary fitting (Tri-Clamp compatible)[2]	351	21 3/8 (543)	2 (51)
2″ sanitary fitting (Tri-Clamp compatible)[2]	352	21 3/8 (543)	2 1/2 (64)
DN40 PN40 weld neck flange; DIN 2635 type C face	381	21 11/16 (551)	5 15/16 (150)
DN40 PN40 weld neck flange; DIN 2635 type N grooved face	383	21 11/16 (551)	5 15/16 (150)
DN40 PN100 weld neck flange; DIN 2637 type E face	377	23 1/8 (587)	6 11/16 (170)
DN40 PN100 weld neck flange; DIN 2637 type N grooved face	379	23 1/8 (587)	6 11/16 (170)
DN50 PN40 weld neck flange; DIN 2635 type C face	382	21 15/16 (557)	6 1/2 (165)
DN50 PN40 weld neck flange; DIN 2635 type N grooved face	384	21 15/16 (557)	6 1/2 (165)
DN50 PN100 weld neck flange; DIN 2637 type E face	378	23 9/16 (598)	7 11/16 (195)
DN50 PN100 weld neck flange; DIN 2637 type N grooved face	380	23 9/16 (598)	7 11/16 (195)
JIS 40mm 10K weld neck raised face flange	385	21 9/16 (548)	5 1/2 (140)
JIS 40mm 20K weld neck raised face flange	387	21 9/16 (548)	5 1/2 (140)
JIS 50mm 10K weld neck raised face flange	386	21 13/16 (554)	6 1/8 (156)
JIS 50mm 20K weld neck raised face flange	388	21 13/16 (554)	6 1/8 (156)
304L stainless steel sensors			
1 1/2″ ANSI 150 lb weld neck raised face flange	441	22 7/8 (581)	5 (127)
1 1/2″ ANSI 300 lb weld neck raised face flange	442	23 3/8 (594)	6 1/8 (156)
2″ ANSI 150 lb weld neck raised face flange	518	22 7/8 (581)	6 (152)
2″ ANSI 300 lb weld neck raised face flange	519	23 1/2 (597)	6 1/2 (165)
DN40 PN40 weld neck flange; DIN 2526 type C face	481	21 11/16 (551)	5 15/16 (150)
DN50 PN40 weld neck raised face flange; DIN 2526 type C face	482	21 15/16 (557)	6 1/2 (165)
Nickel alloy sensors			
1 1/2″ ANSI 150 lb lap joint flange	540	22 7/8 (581)	5 (127)
1 1/2″ ANSI 300 lb lap joint flange	541	23 3/8 (594)	6 1/8 (156)
2″ ANSI 150 lb lap joint flange	544	22 7/8 (581)	6 (152)
2″ ANSI 300 lb lap joint flange	545	23 3/8 (594)	6 1/2 (165)
DN40 PN40 lap joint flange; DIN 2656 type C face	543	21 11/16 (551)	5 15/16 (150)
DN50 PN40 lap joint flange; DIN 2656 type C face	547	21 15/16 (557)	6 1/2 (165)
JIS 40mm 10K lap joint flange	542	21 9/16 (548)	5 1/2 (140)
JIS 50mm 10K lap joint flange	546	21 13/16 (554)	6 1/8 (155)

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

(2) Not available with high-temperature models CMF200A, CMF200B, CMF200C, or CMF200E.

Fitting options *continued*

	Fitting code	Dim. A face-to-face inches (mm)	Dim. B outside diameter inches (mm)
CMF300 fitting options[1]			
316L stainless steel sensors			
3″ ANSI 150 lb weld neck raised face flange	355	33 11/16 (856)	7 1/2 (191)
3″ ANSI 300 lb weld neck raised face flange	356	34 7/16 (875)	8 1/4 (210)
3″ ANSI 600 lb weld neck raised face flange	357	35 3/16 (894)	8 1/4 (210)
4″ ANSI 150 lb weld neck raised face flange	425	34 1/16 (865)	9 (229)
4″ ANSI 300 lb weld neck raised face flange	426	35 (889)	10 (254)
4″ ANSI 600 lb weld neck raised face flange	427	36 11/16 (932)	10 3/4 (273)
3″ sanitary fitting (Tri-Clamp compatible)[2]	361	32 (813)	3 9/16 (90)
DN80 PN40 weld neck flange; DIN 2635 type C face	391	32 7/8 (835)	7 7/8 (200)
DN80 PN40 weld neck flange; DIN 2635 type N grooved face	393	32 7/8 (835)	7 7/8 (200)
DN80 PN100 weld neck flange; DIN 2637 type E face	395	34 9/16 (878)	9 1/16 (230)
DN80 PN100 weld neck flange; DIN 2637 type N grooved face	397	34 9/16 (878)	9 1/16 (230)
DN100 PN40 weld neck flange; DIN 2635 type C face	392	33 7/16 (849)	9 1/4 (235)
DN100 PN40 weld neck flange; DIN 2635 type N grooved face	394	33 7/16 (849)	9 1/4 (235)
DN100 PN100 weld neck flange; DIN 2637 type E face	396	35 9/16 (903)	10 7/16 (265)
DN100 PN100 weld neck flange; DIN 2637 type N grooved face	398	35 9/16 (903)	10 7/16 (265)
JIS 80mm 10K weld neck raised face flange	400	33 3/8 (848)	7 5/16 (186)
JIS 80mm 20K weld neck raised face flange	402	33 3/8 (848)	7 7/8 (200)
JIS 100mm 10K weld neck raised face flange	401	33 9/16 (853)	8 1/4 (210)
JIS 100mm 20K weld neck raised face flange	403	33 9/16 (853)	8 7/8 (225)
304L stainless steel sensors			
3″ ANSI 150 lb weld neck raised face flange	455	33 11/16 (856)	7 1/2 (191)
3″ ANSI 300 lb weld neck raised face flange	456	34 7/16 (875)	8 1/4 (210)
DN80 PN40 weld neck flange; DIN 2526 type C face	491	32 7/8 (835)	7 7/8 (200)
Nickel alloy sensors			
3″ ANSI 150 lb lap joint flange	550	33 11/16 (856)	7 1/2 (191)
3″ ANSI 300 lb lap joint flange	551	34 7/16 (875)	8 1/4 (210)
DN80 PN40 lap joint flange; DIN 2656 type C face	553	32 7/8 (835)	7 7/8 (200)
JIS 80mm 10K lap joint flange	552	33 3/8 (848)	7 5/16 (185)

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

(2) Not available with high-temperature models CMF300A, CMF300B, CMF300C, or CMF300E.

Fitting options *continued*

	Fitting code	Dim. A face-to-face inches (mm)	Dim. B outside diameter inches (mm)
CMF400 fitting options[1]			
4″ ANSI 150 lb weld neck raised face flange	435	40 3/16 (1021)	9 (229)
4″ ANSI 300 lb weld neck raised face flange	436	41 (1041)	10 (254)
4″ ANSI 600 lb weld neck raised face flange	437	42 11/16 (1084)	10 3/4 (273)
6″ ANSI 150 lb weld neck raised face flange	451	40 5/16 (1024)	11 (279)
6″ ANSI 300 lb weld neck raised face flange	452	41 5/16 (1049)	12 1/2 (318)
6″ ANSI 600 lb weld neck raised face flange	453	43 1/2 (1105)	14 (356)
DN100 PN40 weld neck flange; DIN 2635 type C face	460	39 5/16 (999)	9 1/4 (235)
DN100 PN40 weld neck flange; DIN 2635 type N grooved face	462	39 5/16 (999)	9 1/4 (235)
DN100 PN100 weld neck flange; DIN 2637 type E face	464	41 5/16 (1049)	10 7/16 (265)
DN100 PN100 weld neck flange; DIN 2637 type N grooved face	466	41 5/16 (1049)	10 7/16 (265)
DN150 PN40 weld neck flange; DIN 2635 type C face	461	39 5/8 (1006)	11 13/16 (300)
DN150 PN40 weld neck flange; DIN 2635 type N grooved face	463	39 5/8 (1006)	11 13/16 (300)
DN150 PN100 weld neck flange; DIN 2637 type E face	465	41 15/16 (1065)	14 (355)
DN150 PN100 weld neck flange; DIN 2637 type N grooved face	467	41 15/16 (1065)	14 (355)
JIS 100mm 10K weld neck raised face flange	470	39 5/16 (999)	8 1/4 (210)
JIS 100mm 20K weld neck raised face flange	472	39 13/16 (1011)	8 7/8 (225)
JIS 150mm 10K weld neck raised face flange	471	39 5/8 (1006)	11 (280)
JIS 150mm 20K weld neck raised face flange	473	40 1/8 (1018)	12 (305)

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

Ordering information

Model	Product Description
	Standard models
CMF010M	Micro Motion Coriolis ELITE sensor; 1/10-inch; 316L stainless steel
CMF010H	Micro Motion Coriolis ELITE sensor; 1/10-inch; Hastelloy C-22
CMF010L	Micro Motion Coriolis ELITE sensor; 1/10-inch; 304L stainless steel
CMF025M	Micro Motion Coriolis ELITE sensor; 1/4-inch; 316L stainless steel
CMF025H	Micro Motion Coriolis ELITE sensor; 1/4-inch; Hastelloy C-22
CMF025L	Micro Motion Coriolis ELITE sensor; 1/4-inch; 304L stainless steel
CMF050M	Micro Motion Coriolis ELITE sensor; 1/2-inch; 316L stainless steel
CMF050H	Micro Motion Coriolis ELITE sensor; 1/2-inch; Hastelloy C-22
CMF050L	Micro Motion Coriolis ELITE sensor; 1/2-inch; 304L stainless steel
CMF100M	Micro Motion Coriolis ELITE sensor; 1-inch; 316L stainless steel
CMF100H	Micro Motion Coriolis ELITE sensor; 1-inch; Hastelloy C-22
CMF100L	Micro Motion Coriolis ELITE sensor; 1-inch; 304L stainless steel
CMF200M	Micro Motion Coriolis ELITE sensor; 2-inch; 316L stainless steel
CMF200H	Micro Motion Coriolis ELITE sensor; 2-inch; Hastelloy C-22
CMF200L	Micro Motion Coriolis ELITE sensor; 2-inch; 304L stainless steel
CMF300M	Micro Motion Coriolis ELITE sensor; 3-inch; 316L stainless steel
CMF300H	Micro Motion Coriolis ELITE sensor; 3-inch; Hastelloy C-22
CMF300L	Micro Motion Coriolis ELITE sensor; 3-inch; 304L stainless steel
CMF400M	Micro Motion Coriolis ELITE sensor; 4-inch; 316L stainless steel
	High-pressure models
CMF010P	Micro Motion Coriolis ELITE sensor; 1/10-inch; high pressure; nickel alloy with stainless steel fittings
	High-temperature models
CMF200A	Micro Motion Coriolis ELITE sensor; 2-inch; high temperature; 316L stainless steel
CMF200B	Micro Motion Coriolis ELITE sensor; 2-inch; high temperature; Hastelloy C-22
CMF200C	Micro Motion Coriolis ELITE sensor; 2-inch; extreme high temperature; 316L stainless steel
CMF200E	Micro Motion Coriolis ELITE sensor; 2-inch; extreme high temperature; Hastelloy C-22
CMF300A	Micro Motion Coriolis ELITE sensor; 3-inch; high temperature; 316L stainless steel
CMF300B	Micro Motion Coriolis ELITE sensor; 3-inch; high temperature; Hastelloy C-22
CMF300C	Micro Motion Coriolis ELITE sensor; 3-inch; extreme high temperature; 316L stainless steel
CMF300E	Micro Motion Coriolis ELITE sensor; 3-inch; extreme high temperature; Hastelloy C-22
CMF400A	Micro Motion Coriolis ELITE sensor; 4-inch; high temperature; 316L stainless steel
CMF400C	Micro Motion Coriolis ELITE sensor; 4-inch; extreme high temperature; 316L stainless steel
Code	**Process Connections**
###	See process fitting options on pages 40–46.
Code	**Case Options**
N	Standard pressure containment
P	Purge fittings (two 1/2-inch NPT female)
D	Rupture disks (two 400-psi [28 bar] disks) — Model CMF010P only

Continued on next page

Ordering information *continued*

Code	Electronics Interface
	For all models *except* high-temperature models
0	Model 2400S transmitter
1	Extended mount Model 2400S transmitter
2	4-wire polyurethane-painted aluminum integral enhanced core processor for remote mount transmitters
4	4-wire polyurethane-painted aluminum integral extended mount enhanced core processor for remote mount transmitters
Q	4-wire polyurethane-painted aluminum integral core processor for remote mount transmitters
A	4-wire stainless steel integral core processor for remote mount transmitters
V	4-wire extended mount polyurethane-painted aluminum integral core processor for remote mount transmitters
B	4-wire extended mount stainless steel integral core processor for remote mount transmitters
W(1)	Polyurethane-painted aluminum integral core processor for MVD Direct Connect installation
D(1)	Stainless steel integral core processor for MVD Direct Connect installation
Y(1)	Polyurethane-painted aluminum extended core processor for MVD Direct Connect installation
E(1)	Stainless steel extended core processor for MVD Direct Connect installation
R	9-wire polyurethane-painted aluminum junction box
H	9-wire extended mount polyurethane-painted aluminum junction box
S	9-wire 316L stainless steel junction box
	For high-temperature models
0	Model 2400S transmitter
2	4-wire polyurethane-painted aluminum integral enhanced core processor for remote mount transmitters
Q	4-wire polyurethane-painted aluminum integral core processor for remote mount transmitters
A	4-wire stainless steel integral core processor for remote mount transmitters
C	Model 1700/2700 transmitter
W(1)	Polyurethane-painted aluminum integral core processor for MVD Direct Connect installation
D(1)	Stainless steel integral core processor for MVD Direct Connect installation
R	9-wire polyurethane-painted aluminum junction box
S	9-wire 316L stainless steel junction box

Continued on next page

(1) When electronics interface code W, D, Y, or E is ordered with approval U, 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*

Code	Conduit Connections
	Electronics interface codes 0, 1, and C
A	Not applicable
	Electronics Interface Codes 2, 4, Q, A, V, B, W, D, Y and E
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])
	Electronics Interface Codes R, H, and S (9-wire junction box)
A	3/4-inch NPT — no gland
H	Brass nickel cable gland
J	Stainless steel cable gland
Code	**Approvals**
	Electronics interface codes 0 and 1
M	Micro Motion Standard (no approval)
N	Micro Motion Standard / PED compliant
2	CSA C-US (US and Canada) Class I, Div. 2
V	ATEX — Equipment Category 3 (Zone 2) / PED compliant
	Electronics interface codes 2 and 4
M	Micro Motion Standard (no approval)
N	Micro Motion Standard / PED compliant
A	CSA C-US (US and Canada)
Z	ATEX — Equipment Category 2 (Zone 1) / PED compliant
	Electronics interface codes Q, A, C, V, B, R, H, and S
M	Micro Motion Standard (no approval)
N	Micro Motion Standard / PED compliant
U	UL — Not available with electronics interface code C
C	CSA (Canada only) — Not available with electronics interface code C
A	CSA C-US (US and Canada)
Z	ATEX — Equipment Category 2 (Zone 1) / PED compliant
P[1]	NEPSI
I	IECEx Zone 1
	Electronics interface codes W, D, Y, and E (MVD Direct Connect with I.S. Barrier)[2]
M	Micro Motion Standard (no approval, no barrier included)
N	Micro Motion Standard / PED compliant (no approval, no barrier included)
U	UL
C	CSA (Canada only)
A	CSA C-US (US and Canada)
Z	ATEX — Equipment Category 2 (Zone 1) / PED compliant

Continued on next page

(1) Available only with language option M (Chinese).

(2) When electronics interface code W, D, Y, or E is ordered with approval U, 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*

Code	Language
A	Danish 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 document and English installation manual
C	Czech installation manual
K	Slovak CE requirements document and English installation manual
T	Estonian CE requirements document and English installation manual
U	Greek CE requirements document and English installation manual
L	Latvian CE requirements document and English installation manual
V	Lithuanian CE requirements document and English installation manual
Y	Slovenian CE requirements document and English installation manual
Code(1)	**Calibration Options**
Z	0.10% mass flow and 0.0005 g/cm^3 (0.5 kg/m^3) density
D	0.10% mass flow and 0.0002 g/cm^3 (0.2 kg/m^3) density
2	0.05% mass flow and 0.0005 g/cm^3 (0.5 kg/m^3) density
3	0.05% mass flow and 0.0002 g/cm^3 (0.2 kg/m^3) density
Code	**Measurement Application Software**
Z	No measurement application software
A(2)	Petroleum measurement
Code	**Factory Options**
Z	Standard product
X	ETO product
R	Restocked product (if available)
Typical Model Number: CMF050M 313 N 2 B A E Z Z Z	

(1) Calibration options other than Z require electronics interface codes 0, 1, or 2. In addition, for high-temperature models, ***only*** *calibration option Z is available.*

(2) Available with electronics interface code W, D, Y, and E. For electronics interface codes 0, 1, 2, 4, Q, A, V, B, R, H, and S, select the transmitter's Petroleum Measurement software option.

For the latest Micro Motion product specifications, view the PRODUCTS section of our web site at www.servinstrumentation.fr

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