

Measures liquids,
gases, and slurries

Product Data Sheet
PS-00374
February 2000

Micro Motion ELITE®

Mass Flow and Density Meters



Micro Motion

FISHER-ROSEMOUNT™ Managing The Process Better.™



Micro Motion® ELITE® Meters

Experience the most accurate Coriolis meters available today.

Micro Motion® ELITE® meters are the leading flowmeter for precision flow measurement. And with good reason. ELITE meters offer the most accurate measurement available for virtually any process fluid, while exhibiting exceptionally low pressure drop.

Seven sizes of ELITE meters offer direct mass flow, volume flow, density, and temperature measurement of liquids, gases, and slurries — without the need for additional equipment, manual calculations or estimations.

Micro Motion ELITE meters are designed for unsurpassed performance in even the most harsh operating environments. They have no moving parts, and no special mounting or flow conditioning requirements. 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. And, they require no maintenance — saving you money over the course of their lifetime by helping you make the most of your time, people, and materials.

ELITE meters carry hazardous area approvals for the U.S.A. and Canada, Europe, Australia, Japan and other areas in the Asia-Pacific region.

Special Applications

Several ELITE meters have been designed for special applications. The CMF010 is our smallest meter, designed for remarkably high performance in low-flow applications. It features a single, continuous flow tube, and is also available in a high-pressure model, for applications up to 6000 psi (413 bar).

Much larger in size is our CMF400. This 4-inch meter offers the most accurate measurement available in a high-capacity meter.

The 3-inch CMF300A is a high-temperature meter. It provides the same accuracy and measurement capabilities as our other ELITE meters, at temperatures up to 650°F (343°C).

Our CMF025, CMF050, and CMF100 meters are available with optional, flangeless, wafer-style process connections.

System Integration

Micro Motion offers a variety of microprocessor-based transmitters, any of which can be connected to our ELITE sensors. Depending on the transmitter model, features include milliampere and frequency/pulse outputs, transmitter and process control functions in a single device, and API outputs for crude oil and other hydrocarbon fluids.

Other options include transmitters that can be installed in instrument racks or panels, or housed in NEMA or explosion-proof enclosures. Sensors and explosion-proof transmitters can be installed in the same hazardous area.

Micro Motion ELITE meters can be installed as part of a Bell 202 multidrop network, an RS-485 digital communications network, or a FOUNDATION™ fieldbus system.

Transmitters feature HART®, Modbus®, FOUNDATION™ fieldbus, and other communication protocols. And all our transmitters support Fisher-Rosemount™ PlantWeb® field-based architecture, which uses the power of intelligent, interoperable field devices to improve plant performance.

Micro Motion is known worldwide for increasing plant efficiency, production, and profitability. More than 250,000 Micro Motion meters are installed and working in processes just like yours. Contact us, and discover the best precision flowmeters available today — Micro Motion ELITE meters.

Performance specifications

Flow		Mass		Volume	
Nominal flow range⁽¹⁾		lb/min	kg/h	gal/min	l/h
	CMF010	0 to 3	0 to 82	0 to 0.4	0 to 82
	CMF025	0 to 40	0 to 1090	0 to 5	0 to 1090
	CMF050	0 to 125	0 to 3400	0 to 15	0 to 3400
	CMF100	0 to 500	0 to 13,600	0 to 60	0 to 13,600
	CMF200	0 to 1600	0 to 43,550	0 to 192	0 to 43,550
	CMF300	0 to 5000	0 to 136,080	0 to 600	0 to 136,080
	CMF400	0 to 15,000	0 to 409,000	0 to 1800	0 to 409,000
Maximum flow rate		lb/min	kg/h	gal/min	l/h
	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
	CMF300	10,000	272,160	1200	272,160
	CMF400	20,000	545,500	2400	545,500
Accuracy⁽²⁾	All models	liquid/slurry	$\pm 0.10\% \pm [(zero\ stability / flow\ rate) \times 100]\%$ of rate		
		gas	$\pm 0.50\% \pm [(zero\ stability / flow\ rate) \times 100]\%$ of rate		
Repeatability⁽²⁾	All models	liquid/slurry	$\pm 0.05\% \pm [1/2(zero\ stability / flow\ rate) \times 100]\%$ of rate		
		gas	$\pm 0.25\% \pm [(zero\ stability / flow\ rate) \times 100]\%$ of rate		
Zero stability		lb/min	kg/h	gal/min	l/h
	CMF010	0.000075	0.002	0.000009	0.002
	High-pressure CMF010P	0.00015	0.004	0.000018	0.004
	CMF025	0.001	0.027	0.00012	0.027
	CMF050	0.006	0.163	0.00072	0.163
	CMF100	0.025	0.680	0.00300	0.680
	CMF200	0.08	2.18	0.00959	2.18
	CMF300	0.25	6.80	0.02998	6.80
	CMF400	1.50	40.91	0.17985	40.91

⁽¹⁾ Micro Motion has adopted the terminology "nominal flow range." The upper limit of this range is the flow rate at which water at reference conditions causes approximately 15 psid (1 bar) of pressure drop for ELITE sensors.

⁽²⁾ 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.

Performance specifications *continued*

Density			with Model 3500, 3700, RFT9739, Model 5300, or RFT9709 transmitter		with IFT9701 transmitter	
			<i>g/cc</i>	<i>kg/m³</i>	<i>g/cc</i>	<i>kg/m³</i>
Accuracy	High-pressure CMF010P	liquid/slurry	±0.002	±2.0	±0.008	±8.0
	All other models	liquid/slurry	±0.0005	±0.5	±0.002	±2.0
Repeatability	High-pressure CMF010P	liquid/slurry	±0.001	±1.0	±0.004	±4.0
	All other models	liquid/slurry	±0.0002	±0.2	±0.001	±1.0
Range	All models		0 to 5	0 to 5000	0 to 5	0 to 5000

Temperature				
Accuracy	All models	±1 °C ± 0.5% of reading in °C		
Repeatability	All models	±0.2 °C		
Range⁽¹⁾	High-temperature CMF300A ⁽²⁾	sensor	°F	°C
		junction box	32 to 650	0 to 343
	CMF400 ⁽³⁾		–40 to 248	–40 to 120
			–40 to 140	–40 to 60
All other models ⁽²⁾⁽⁴⁾		–400 to 400	–240 to 204	

⁽¹⁾ For CENELEC-compliant sensors, the CENELEC "T" rating and hazardous area classification depend on the maximum process fluid and ambient temperature. See page 8.

⁽²⁾ For CENELEC-compliant sensors, the maximum ambient temperature is 55°C. Use of the sensor above 55°C is acceptable, provided the ambient temperature does not exceed the CENELEC "T" rating listed on page 8.

⁽³⁾ Ambient temperature limits for CMF400 booster amplifier are –40 and 140°F (–40 and 60°C). If ambient temperature and radiant heat will cause the booster amplifier to exceed these limits, a remotely mounted booster amplifier assembly is necessary. Consult the factory for remote-mount booster amplifier information.

⁽⁴⁾ For CENELEC-compliant sensors, the minimum process fluid and ambient temperature is –20°C. If the process fluid remains at or above 0°C, ambient temperature below –20°C is acceptable.

Performance specifications *continued*

Pressure ratings

Flow tube rating⁽¹⁾		psi	bar
	Stainless steel sensors ⁽²⁾	1450	100
	Nickel alloy sensors	2160	148
	High-pressure CMF010P	6000	413
Housing rating⁽¹⁾		psi	bar
	CMF010 ⁽³⁾	425	29
	CMF025	850	58
	CMF050	850	58
	CMF100	625	43
	CMF200	550	38
	CMF300 ⁽²⁾	275	19
	CMF400	250	17
Short-term housing rating⁽¹⁾⁽⁴⁾		psi	bar
	CMF010 ⁽³⁾	565	38
	CMF025	1130	78
	CMF050	1130	78
	CMF100	830	57
	CMF200	730	50
	CMF300 ⁽²⁾	365	25
	CMF400	325	22

⁽¹⁾ Pressure ratings at 77°F (25°C), according to ASME B31.3. For higher operating temperatures, pressure needs to be derated as follows:

		Flow tubes 316L sensors	Flow tubes nickel alloy sensors	Housing all sensors
<i>All sensors</i>	201 to 300°F (94 to 148°C)	none	2% derating	none
	301 to 400°F (149 to 204°C)	7.2% derating	9.2% derating	7.2% derating
<i>High-temperature CMF300A</i>	401 to 500°F (205 to 260°C)	13.8% derating	not applicable	11.4% derating
	501 to 600°F (261 to 316°C)	19.2% derating	not applicable	16.2% derating
	601 to 650°F (317 to 343°C)	20.1% derating	not applicable	18.0% derating

⁽²⁾ For high-temperature CMF300A only, pressure ratings at maximum temperature limit of 650°F (343°C) are as follows, per ASME B31.3 (appropriate derating already applied):

<i>Flowtube</i>	1145 psi (78 bar)
<i>Housing</i>	225 psi (15 bar)
<i>Housing, for 10 hours or less</i>	299 psi (20 bar)

⁽³⁾ Optional rupture disks for high-pressure CMF010 will burst if pressure inside sensor housing reaches 400 psi (27 bar).

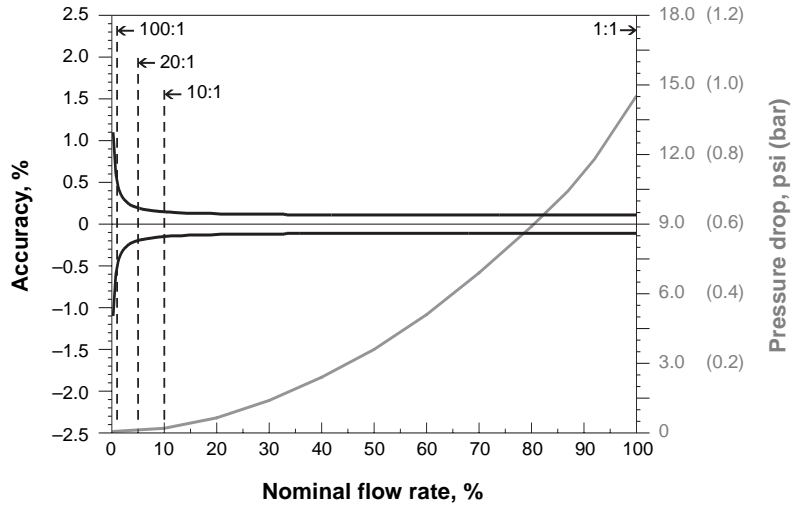
⁽⁴⁾ Housing pressure rating for 10 hours or less, according to ASME B31.3.

Performance specifications *continued*

Typical accuracy, turndown, and pressure drop⁽¹⁾

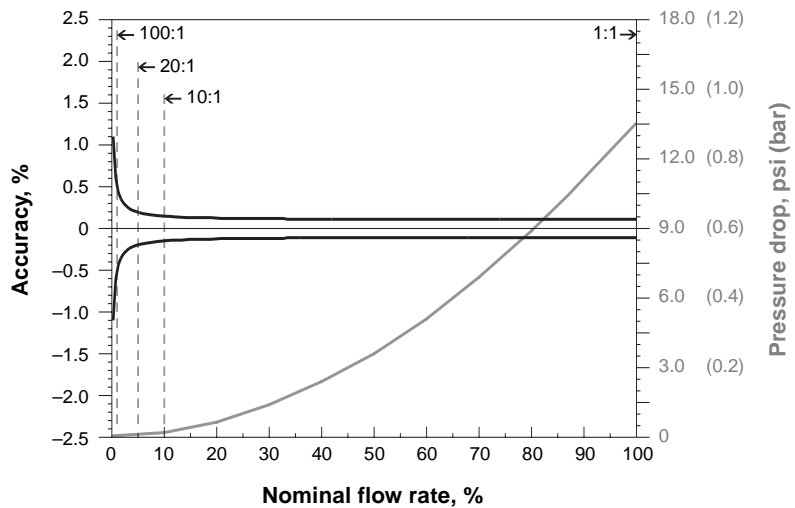
CMF010

Turndown	500:1	100:1	20:1	10:1	1:1
Accuracy (±%)	1.35	0.35	0.15	0.13	0.10
Pressure drop					
(psi)	~0	~0	0.1	0.2	14.5
(bar)	~0	~0	0.01	0.01	1.0



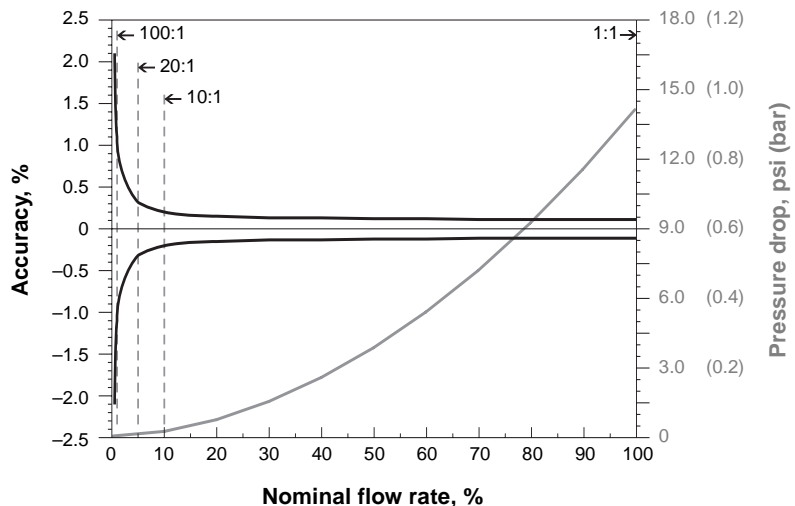
CMF025 CMF050 CMF100 CMF200 CMF300

Turndown	500:1	100:1	20:1	10:1	1:1
Accuracy (±%)					
CMF025	1.35	0.35	0.15	0.13	0.10
all others	2.60	0.60	0.20	0.15	0.11
Pressure drop					
(psi)	~0	~0	0.1	0.2	13.5
(bar)	~0	~0	0.01	0.01	0.93



CMF400

Turndown	200:1	100:1	20:1	10:1	1:1
Accuracy (±%)	2.10	1.10	0.30	0.20	0.11
Pressure drop					
(psi)	~0	~0	0.1	0.2	14.2
(bar)	~0	~0	0.01	0.01	0.98



⁽¹⁾ To determine accuracy, turndown, and pressure drop using your process variables, use the Micro Motion flowmeter selection guide. Download a free copy from our Web site at www.micromotion.com, or contact your local Micro Motion representative.

Functional specifications

Environmental effects

Process temperature effect Process temperature effect is defined as the worst-case zero offset for flow rate due to process fluid temperature change away from the zeroing temperature.

	Process temperature effect⁽¹⁾ % of nominal flow rate per °C
CMF010	±0.00025
CMF025	±0.00025
CMF050	±0.00025
CMF100	±0.00025
CMF200	±0.001
CMF300	±0.004
CMF400	±0.001

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	-0.002	-0.029

	Pressure effect on density accuracy	
	g/cc per psi	kg/m³ per bar
CMF010	none	none
CMF025	0.000004	0.058
CMF050	-0.000002	-0.029
CMF100	-0.000006	-0.087
CMF200	-0.000001	-0.015
CMF300	0.0000002	0.003
CMF400	0.000007	0.101

⁽¹⁾Nominal flow rate is the upper limit of the nominal flow range.

Functional specifications *continued*

Power supply options

A power supply is required for the CMF400 booster amplifier.

CMF400 only	115 VAC, 0.4 A, 50/60 Hz
	230 VAC, 0.2 A, 50/60 Hz

Hazardous area classifications

UL is a U.S.A. approvals agency, CSA is a Canadian approvals agency, CENELEC is a European standards organization, and SAA is an Australian approvals agency.

UL and CSA

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

CENELEC⁽¹⁾

		Maximum fluid/ambient temperature, °C					
		<i>T1</i>	<i>T2</i>	<i>T3</i>	<i>T4</i>	<i>T5</i>	<i>T6</i>
CMF010	EEx ib IIC T1...T6	204	204	150	85	45	35
CMF025	EEx ib IIC T1...T6	204	204	150	85	45	35
CMF050	EEx ib IIC T1...T6	204	204	150	85	45	35
CMF100	EEx ib IIC T1...T6	204	204	160	95	55	45
CMF200	EEx ib IIB T1...T6	204	204	170	105	65	55
CMF300	EEx ib IIB T1...T6	204	204	178	113	73	63
High-temperature CMF300A	EEx ib IIB T1...T6	343	268	173	108	73	58
CMF400 ⁽²⁾	EEx de [ib] ib IIB T6	—	—	—	—	—	60

SAA

CMF025	Ex ib IIC T5
CMF050	Ex ib IIC T5
CMF100	Ex ib IIC T6
CMF200	Ex ib IIB T6
CMF300 ⁽³⁾	Ex ib IIB T6

⁽¹⁾ CENELEC "T" rating depends on the maximum temperature listed above. Ambient temperature limits are -20°C and 55°C for all sensors except CMF400.

⁽²⁾ Temperature limits for CENELEC-compliant CMF400 booster amplifier are -40 and 60°C. If ambient temperature and radiant heat will cause the booster amplifier to exceed these limits, a remotely mounted booster amplifier assembly is necessary. Consult the factory for remote-mount booster amplifier information.

⁽³⁾ Standard-temperature model only. CMF300A high-temperature model is not SAA approved.

Physical specifications

Materials of construction

Wetted parts⁽¹⁾		Stainless steel	Nickel alloy
	CMF010	316L	Incone [®] alloy 686
	CMF025	316L	Hastelloy [®] C-22
	CMF050	316L	Hastelloy C-22
	CMF100	316L	Hastelloy C-22
	CMF200	316L	Hastelloy C-22
	CMF300	316L	Hastelloy C-22
	High-temperature CMF300A	316L	not available
	CMF400	316L	not available
Housing	304L stainless steel		
Junction box	Epoxy-coated aluminum		

Weight⁽²⁾

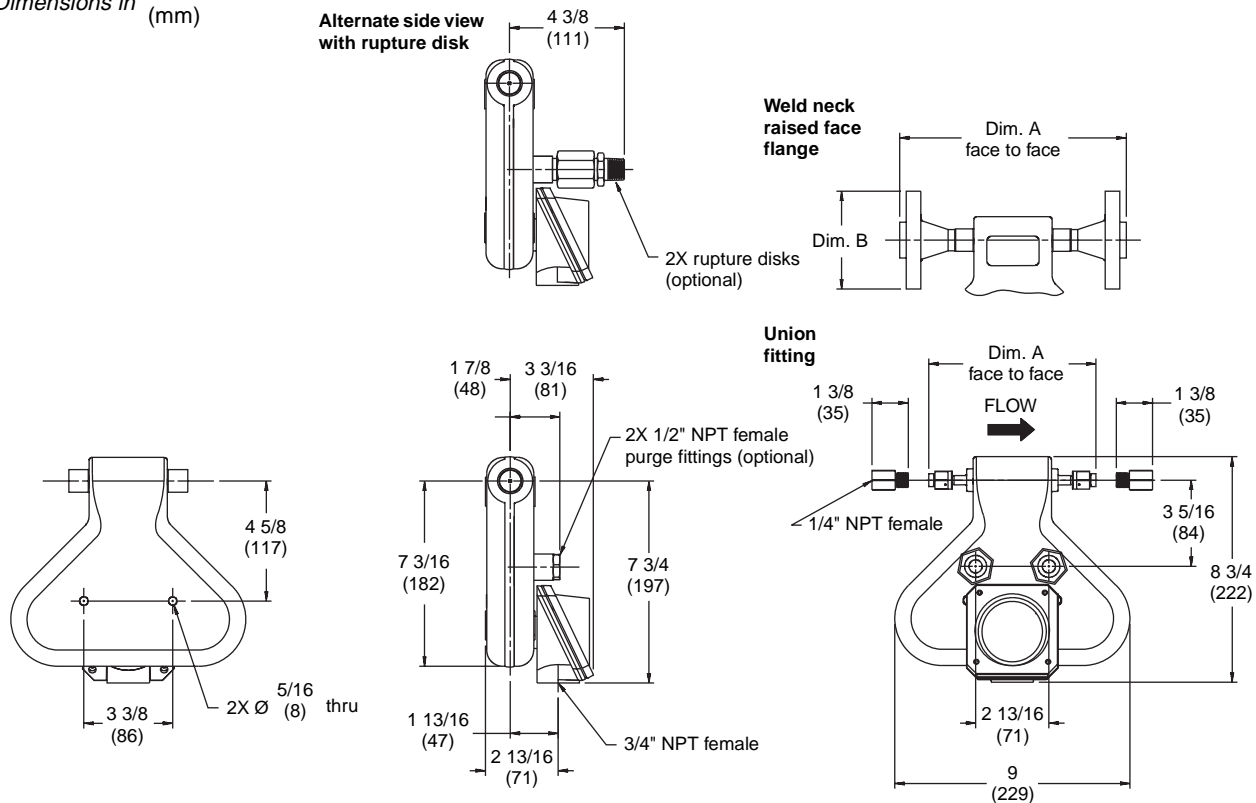
	lb	kg
CMF010	13	5.9
CMF025	8	3.6
CMF050	12	5.5
CMF100	29	13.2
CMF200	60	27.2
CMF300	162	73.5
CMF400	550	250

⁽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⁾ Weight of sensor with ANSI 150 lb weld neck raised face flanges.

CMF010 dimensions and process fittings

Dimensions in inches (mm)

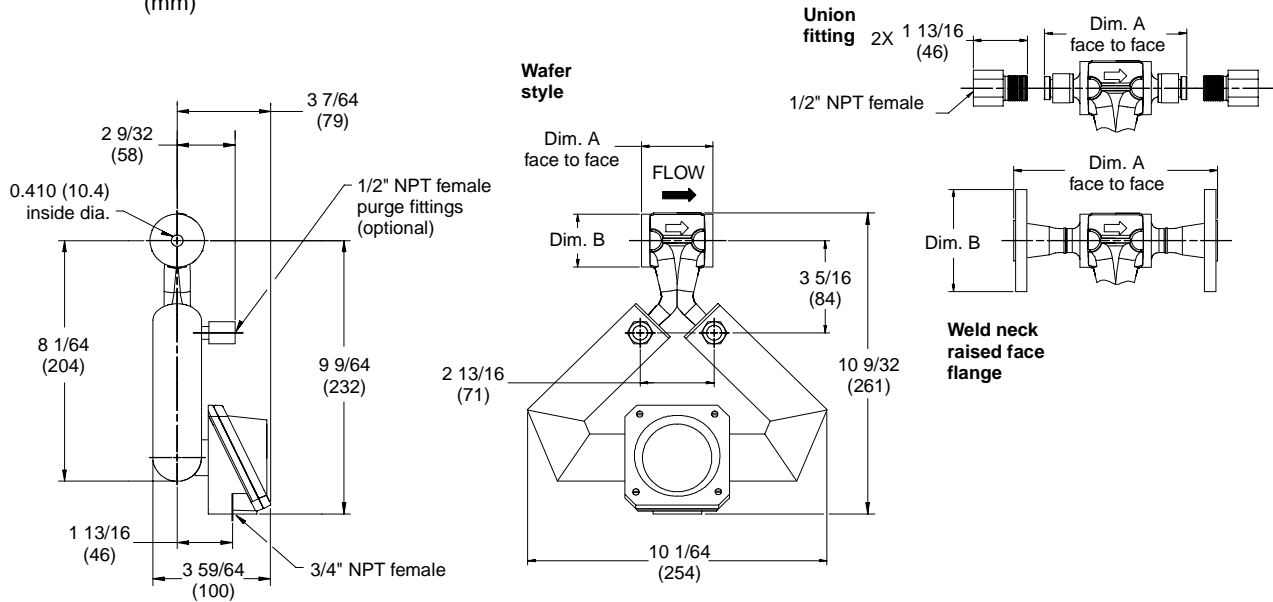


Fittings for stainless steel sensors ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
1/2-inch 150 lb ANSI weld neck raised face flange	313	$7 \frac{27}{32}$ (199)	$3 \frac{1}{2}$ (89)
1/2-inch 300 lb ANSI weld neck raised face flange	314	$8 \frac{7}{32}$ (209)	$3 \frac{3}{4}$ (95)
1/2-inch 600 lb ANSI weld neck raised face flange	315	$8 \frac{23}{32}$ (221)	$3 \frac{3}{4}$ (95)
1/2-inch sanitary fitting	321	$6 \frac{31}{32}$ (177)	1 (25)
15 mm DIN PN40 weld neck, DIN 2635, type C face	300	$7 \frac{13}{32}$ (188)	$3 \frac{3}{4}$ (95)
15 mm DIN PN100 weld neck, DIN 2637, type E face	302	$7 \frac{31}{32}$ (202)	$4 \frac{1}{8}$ (105)
15mm JIS 10K weld neck	304	$7 \frac{3}{16}$ (183)	$3 \frac{3}{4}$ (95)
15 mm JIS 20K weld neck	305	$7 \frac{3}{16}$ (183)	$3 \frac{3}{4}$ (95)
1/4-inch NPT female union fitting	323	$6 \frac{15}{32}$ (164)	---
1/4-inch tube compression fitting	324	$6 \frac{15}{32}$ (164)	---
6 mm tube compression fitting	325	$6 \frac{15}{32}$ (164)	---
Fittings for nickel alloy sensors⁽¹⁾			
1/2-inch 150 lb ANSI lap joint flange	520	$7 \frac{27}{32}$ (199)	$3 \frac{1}{2}$ (89)
1/2-inch 300 lb ANSI lap joint flange	521	$8 \frac{7}{32}$ (209)	$3 \frac{3}{4}$ (95)
15 mm DIN PN40 lap joint, DIN 2626	523	$7 \frac{13}{32}$ (188)	$3 \frac{3}{4}$ (95)
15 mm JIS 10K lap joint flange	522	$8 \frac{3}{16}$ (208)	$3 \frac{3}{4}$ (95)
1/4-inch NPT female union fitting	323	$6 \frac{15}{32}$ (164)	---
Fittings for high-pressure sensors⁽¹⁾			
1/4-inch NPT female union fitting	323	$6 \frac{15}{32}$ (164)	---
1/4-inch tube compression fitting	324	$6 \frac{15}{32}$ (164)	---
6 mm tube compression fitting	325	$6 \frac{15}{32}$ (164)	---

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

CMF025 dimensions and process fittings

Dimensions in inches
(mm)

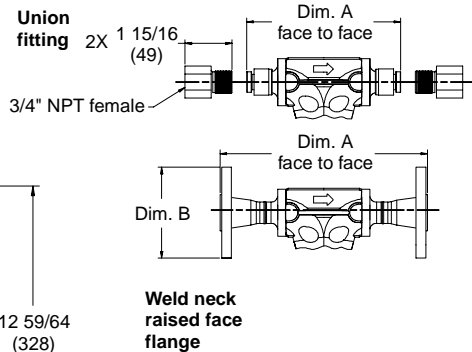
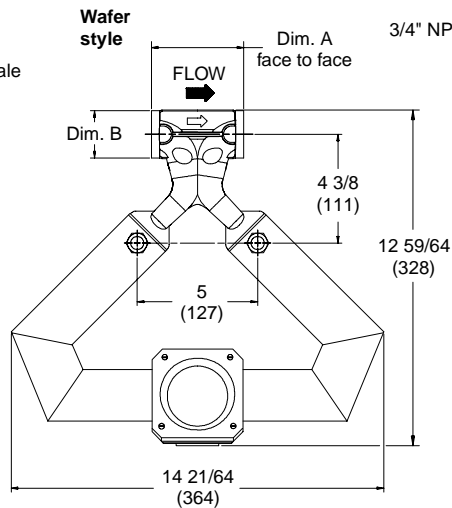
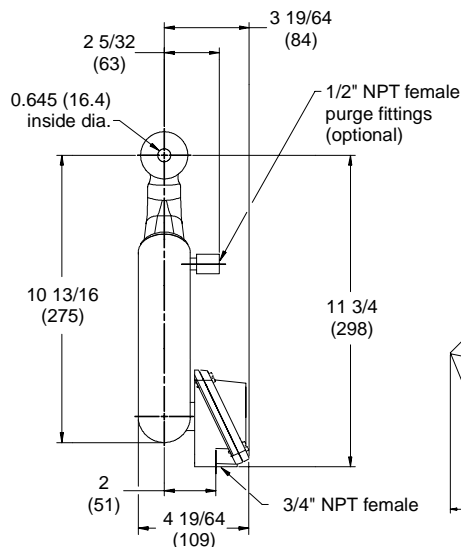


Fittings for stainless steel sensors ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
Wafer style, 1/2" ANSI (150 lb, 300 lb, 600 lb bolt kit)	009	2 3/8 (60)	1 13/16 (46)
Wafer style, 15 mm DIN 2635, type C facing (PN40 bolt kit)	016	2 3/8 (60)	1 13/16 (46)
Wafer style, 15 mm DIN 2635, type N grooved facing (PN40 bolt kit)	017	2 3/8 (60)	1 13/16 (46)
Wafer style, 15 mm DIN 2637, type E facing (PN100 bolt kit)	018	2 3/8 (60)	1 13/16 (46)
Wafer style, 15 mm DIN 2637, type N grooved facing (PN100 bolt kit)	019	2 3/8 (60)	1 13/16 (46)
Wafer style, 15 mm, standard JIS facing (10K, 20K bolt kit)	029	2 3/8 (60)	1 13/16 (46)
1/2" ANSI 150 lb weld neck raised face flange	313	6 3/4 (171)	3 1/2 (89)
1/2" ANSI 300 lb weld neck raised face flange	314	7 1/8 (181)	3 3/4 (95)
1/2" ANSI 600 lb weld neck raised face flange	315	7 5/8 (194)	3 3/4 (95)
1/2" NPT female union fitting	319	4 11/16 (119)	----
1/2" sanitary fitting	321	4 11/16 (119)	1 (25)
15 mm DIN PN40 weld neck, DIN 2635, type C facing	300	6 5/16 (160)	3 3/4 (95)
15 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	301	6 5/16 (160)	3 3/4 (95)
15 mm DIN PN100 weld neck, DIN 2637, type E facing	302	6 15/16 (176)	4 1/8 (105)
15 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	303	6 15/16 (176)	4 1/8 (105)
15 mm JIS 10K weld neck	304	6 1/8 (156)	3 3/4 (95)
15 mm JIS 20K weld neck	305	6 1/8 (156)	3 3/4 (95)
Fittings for nickel alloy sensors⁽¹⁾			
1/2" ANSI 150 lb lap joint flange	520	6 3/4 (171)	3 1/2 (89)
1/2" ANSI 300 lb lap joint flange	521	7 1/8 (181)	3 3/4 (95)
15 mm DIN PN40 lap joint flange, DIN 2626	523	7 5/16 (186)	3 3/4 (95)
15 mm JIS 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.

CMF050 dimensions and process fittings

Dimensions in *inches*
(mm)

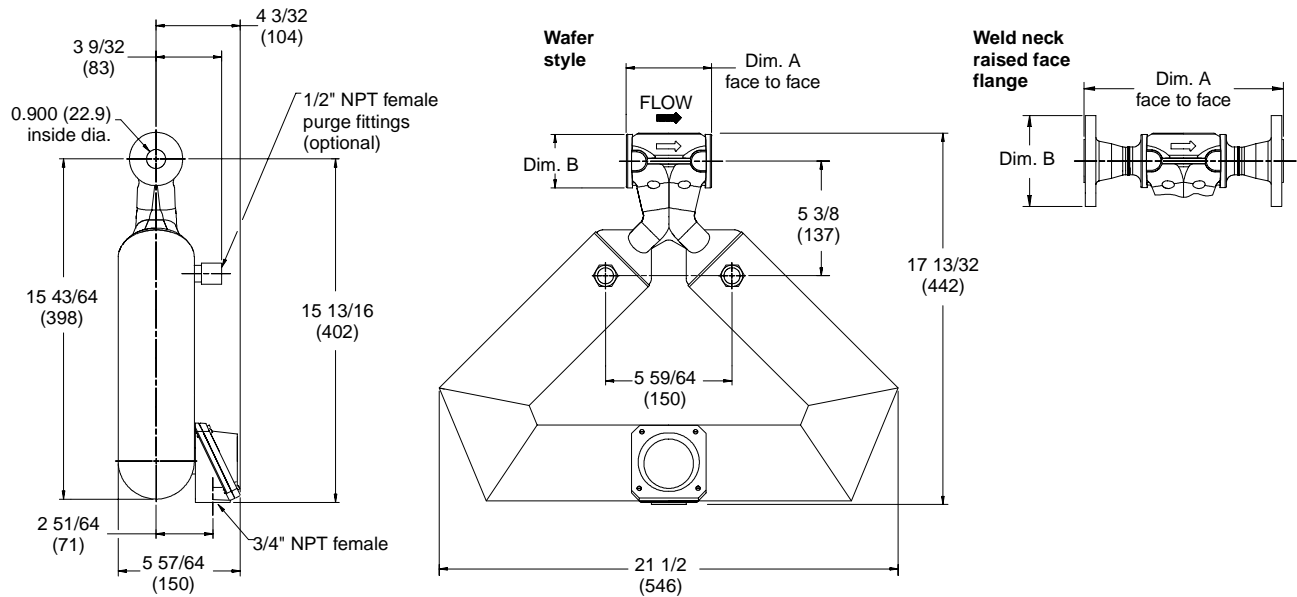


Fittings for stainless steel sensors ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
Wafer style, 1/2" ANSI (150 lb, 300 lb, 600 lb bolt kit)	009	3 1/2 (89)	1 13/16 (46)
Wafer style, 15 mm DIN 2635, type C facing (PN40 bolt kit)	016	3 1/2 (89)	1 13/16 (46)
Wafer style, 15 mm DIN 2635, type N grooved facing (PN40 bolt kit)	017	3 1/2 (89)	1 13/16 (46)
Wafer style, 15 mm DIN 2637, type E facing (PN100 bolt kit)	018	3 1/2 (89)	1 13/16 (46)
Wafer style, 15 mm DIN 2637, type N grooved facing (PN100 bolt kit)	019	3 1/2 (89)	1 13/16 (46)
Wafer style, 15 mm (10K, 20K bolt kit)	029	3 1/2 (89)	1 13/16 (46)
1/2" ANSI 150 lb weld neck raised face flange	313	7 15/16 (202)	3 1/2 (89)
1/2" ANSI 300 lb weld neck raised face flange	314	8 5/16 (211)	3 3/4 (95)
1/2" ANSI 600 lb weld neck raised face flange	315	8 13/16 (224)	3 3/4 (95)
3/4" NPT female union fitting	320	6 1/2 (165)	----
3/4" sanitary fitting	322	6 1/2 (165)	1 (25)
15 mm DIN PN40 weld neck, DIN 2635, type C facing	300	7 1/2 (191)	3 3/4 (95)
15 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	301	7 1/2 (191)	3 3/4 (95)
15 mm DIN PN100 weld neck, DIN 2637, type E facing	302	8 1/16 (205)	4 1/8 (105)
15 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	303	8 1/16 (205)	4 1/8 (105)
15 mm JIS 10K weld neck	304	7 1/4 (184)	3 3/4 (95)
15 mm JIS 20K weld neck	305	7 1/4 (184)	3 3/4 (95)
Fittings for nickel alloy sensors⁽¹⁾			
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)
15 mm DIN PN40 lap joint flange, DIN 2626	523	8 1/2 (216)	3 3/4 (95)
15 mm JIS 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.

CMF100 dimensions and process fittings

Dimensions in inches
(mm)

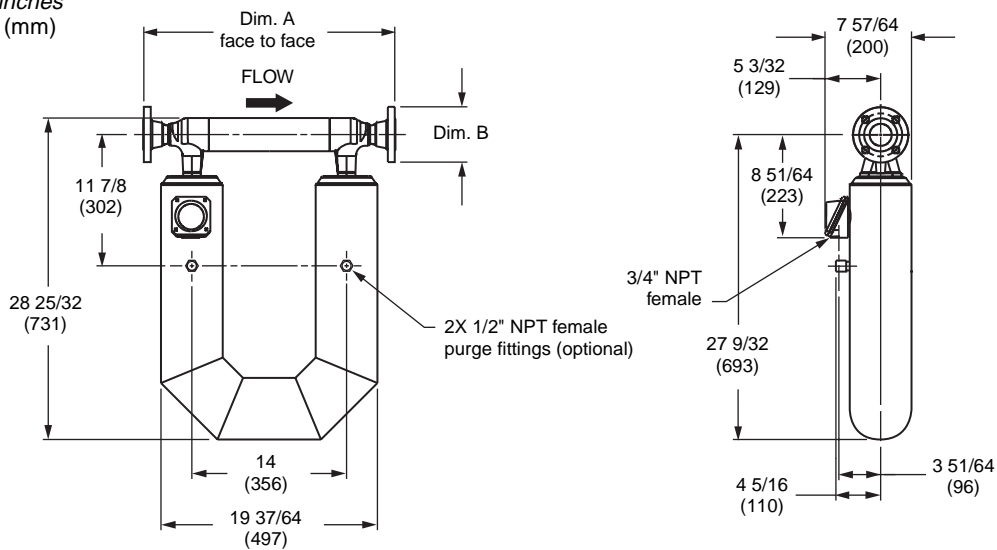


Fittings for stainless steel sensors ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
Wafer style, 1" ANSI (150 lb bolt kit)	010	4 (102)	2 1/2 (64)
Wafer style, 1" ANSI (300 lb, 600 lb bolt kit)	011	4 (102)	2 1/2 (64)
Wafer style, 25 mm DIN 2635, type C facing (PN40 bolt kit)	020	4 (102)	2 1/2 (64)
Wafer style, 25 mm DIN 2635, type N grooved facing (PN40 bolt kit)	021	4 (102)	2 1/2 (64)
Wafer style, 25 mm DIN 2637, type E facing (PN100 bolt kit)	022	4 (102)	2 1/2 (64)
Wafer style, 25 mm DIN 2637, type N grooved facing (PN100 bolt kit)	023	4 (102)	2 1/2 (64)
Wafer style, 25 mm (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 (155)
1" sanitary fitting	339	8 3/8 (213)	2 (51)
25 mm DIN PN40 weld neck, DIN 2635, type C facing	306	8 5/16 (211)	4 1/2 (114)
25 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	307	8 5/16 (211)	4 1/2 (114)
25 mm DIN PN100 weld neck, DIN 2637, type E facing	308	9 11/16 (246)	5 1/2 (140)
25 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	309	9 11/16 (246)	5 1/2 (140)
25 mm JIS 10K weld neck	317	8 5/16 (211)	4 15/16 (125)
25 mm JIS 20K weld neck	318	8 5/16 (211)	4 15/16 (125)
Fittings for nickel alloy sensors⁽¹⁾			
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)
25 mm DIN PN40 lap joint flange, DIN 2626	533	9 9/16 (243)	4 1/2 (114)
25 mm JIS 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.

CMF200 dimensions and process fittings

Dimensions in inches (mm)

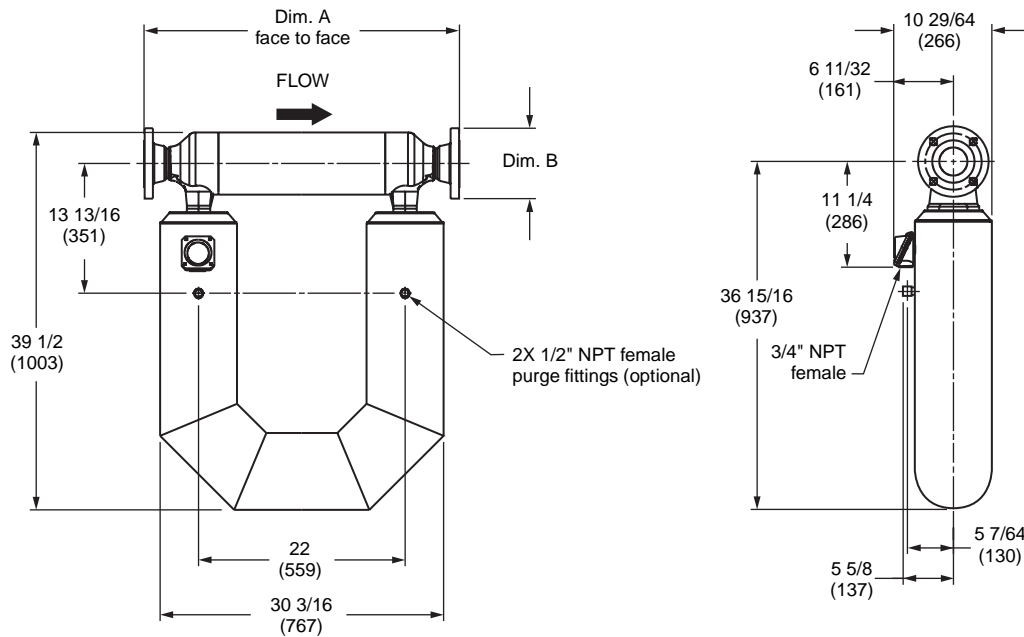


Fittings for stainless steel sensors ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
1 1/2" ANSI 150 lb weld neck raised face flange	341	22 7/8 (581)	5 (127)
1 1/2" ANSI 300 lb weld neck raised face flange	342	23 3/8 (594)	6 1/8 (156)
1 1/2" ANSI 600 lb weld neck raised face flange	343	23 7/8 (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	351	21 3/8 (543)	2 (51)
2" sanitary fitting	352	21 3/8 (543)	2 17/32 (64)
40 mm DIN PN40 weld neck, DIN 2635, type C facing	381	21 11/16 (551)	5 15/16 (151)
40 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	383	21 11/16 (551)	5 15/16 (151)
40 mm DIN PN100 weld neck, DIN 2637, type E facing	377	23 1/8 (587)	6 11/16 (170)
40 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	379	23 1/8 (587)	6 11/16 (170)
50 mm DIN PN40 weld neck, DIN 2635, type C facing	382	21 15/16 (557)	6 1/2 (165)
50 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	384	21 15/16 (557)	6 1/2 (165)
50 mm DIN PN100 weld neck, DIN 2637, type E facing	378	23 9/16 (598)	7 11/16 (195)
50 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	380	23 9/16 (598)	7 11/16 (195)
40 mm JIS 10K weld neck	385	21 9/16 (548)	5 1/2 (140)
40 mm JIS 20K weld neck	387	21 9/16 (548)	5 1/2 (140)
50 mm JIS 10K weld neck	386	21 13/16 (554)	6 1/8 (156)
50 mm JIS 20K weld neck	388	21 13/16 (554)	6 1/8 (156)
Fittings for nickel alloy sensors⁽¹⁾			
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)
40 mm DIN PN40 lap joint flange, DIN 2626	543	21 11/16 (551)	5 15/16 (151)
50 mm DIN PN40 lap joint flange, DIN 2626	547	21 15/16 (557)	6 1/2 (165)
40 mm JIS 10K lap joint flange	542	21 9/16 (548)	5 1/2 (140)
50 mm JIS 10K lap joint flange	546	21 13/16 (554)	6 1/8 (156)

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

CMF300 dimensions and process fittings

Dimensions in inches
(mm)

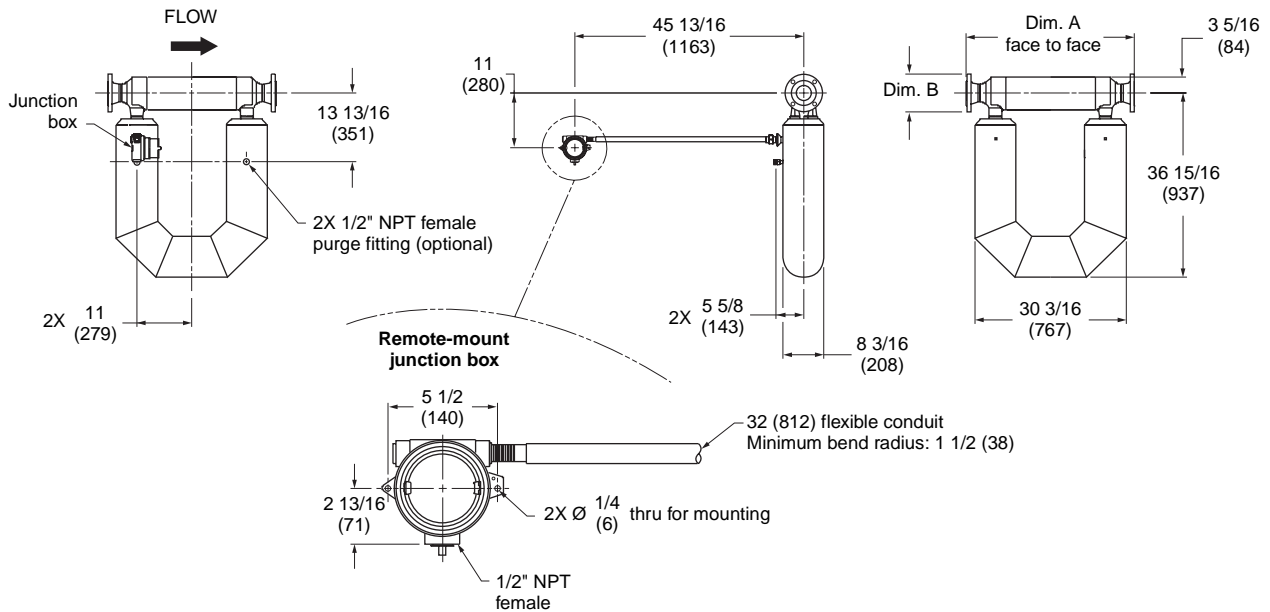


Fittings for stainless steel sensors ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
3" ANSI 150 lb weld neck raised face flange	355	33 11/16 (856)	7 1/2 (191)
3" ANSI 300 lb weld neck raised face flange	356	34 7/16 (875)	8 1/4 (210)
3" ANSI 600 lb weld neck raised face flange	357	35 3/16 (894)	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	361	32 (813)	3 9/16 (90)
80 mm DIN PN40 weld neck, DIN 2635, type C facing	391	32 7/8 (835)	7 7/8 (200)
80 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	393	32 7/8 (835)	7 7/8 (200)
80 mm DIN PN100 weld neck, DIN 2637, type E facing	395	34 9/16 (878)	9 1/16 (230)
80 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	397	34 9/16 (878)	9 1/16 (230)
100 mm DIN PN40 weld neck, DIN 2635, type C facing	392	33 7/16 (849)	9 1/4 (235)
100 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	394	33 7/16 (849)	9 1/4 (235)
100 mm DIN PN100 weld neck, DIN 2637, type E facing	396	35 9/16 (903)	10 7/16 (265)
100 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	398	35 9/16 (903)	10 7/16 (265)
80 mm JIS 10K weld neck	400	33 3/8 (848)	7 5/16 (186)
80 mm JIS 20K weld neck	402	33 3/8 (848)	7 7/8 (200)
100 mm JIS 10K weld neck	401	33 9/16 (852)	8 1/4 (210)
100 mm JIS 20K weld neck	403	33 9/16 (852)	8 7/8 (225)
Fittings for nickel alloy sensors⁽¹⁾			
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)
80 mm DIN PN40 lap joint flange, DIN 2626	553	32 7/8 (835)	7 7/8 (200)
80 mm JIS 10K lap joint flange	552	33 3/8 (848)	7 5/16 (186)

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

High-temperature CMF300A dimensions and process fittings

Dimensions in inches
(mm)

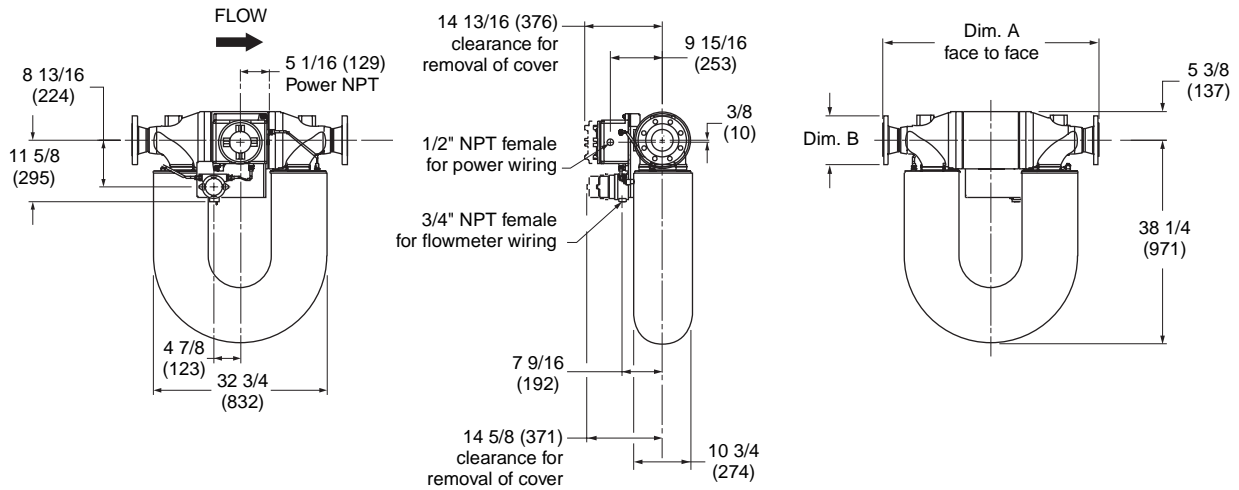


Fittings ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
3" ANSI 150 lb weld neck raised face flange	355	33 11/16 (856)	7 1/2 (190)
3" ANSI 300 lb weld neck raised face flange	356	34 7/16 (875)	8 1/4 (210)
3" ANSI 600 lb weld neck raised face flange	357	35 3/16 (894)	8 1/4 (210)
3" ANSI 900 lb weld neck raised face flange	358	36 11/16 (932)	9 1/2 (241)
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)
4" ANSI 900 lb weld neck raised face flange	428	37 3/16 (945)	11 1/2 (292)
80 mm DIN PN40 weld neck, DIN 2635, type C facing	391	32 7/8 (835)	7 7/8 (200)
80 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	393	32 7/8 (835)	7 7/8 (200)
80 mm DIN PN100 weld neck, DIN 2637, type E facing	395	34 9/16 (878)	9 1/16 (230)
80 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	397	34 9/16 (878)	9 1/16 (230)
100 mm DIN PN40 weld neck, DIN 2635, type C facing	392	33 7/16 (849)	9 1/4 (235)
100 mm DIN PN40 weld neck, DIN 2635, type N grooved facing	394	33 7/16 (849)	9 1/4 (235)
100 mm DIN PN100 weld neck, DIN 2637, type E facing	396	35 9/16 (903)	10 7/16 (265)
100 mm DIN PN100 weld neck, DIN 2637, type N grooved facing	398	35 9/16 (903)	10 7/16 (265)
80 mm JIS 10K weld neck	400	33 3/8 (848)	7 5/16 (185)
80 mm JIS 20K weld neck	402	33 3/8 (848)	7 7/8 (200)
100 mm JIS 10K weld neck	401	33 9/16 (852)	8 1/4 (210)
100 mm JIS 20K weld neck	403	33 9/16 (852)	8 7/8 (225)

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

CMF400 dimensions and process fittings

Dimensions in inches
(mm)



Fittings ⁽¹⁾	Fitting code	Dim. A Face-to-face	Dim. B Outside diam.
4" ANSI 150 lb weld neck raised face flange	435	40 5/16 (1025)	9 (229)
4" ANSI 300 lb weld neck raised face flange	436	41 1/8 (1044)	10 (254)
4" ANSI 600 lb weld neck raised face flange	437	42 13/16 (1088)	10 3/4 (273)
6" ANSI 150 lb weld neck raised face flange	451	40 7/16 (1028)	11 (279)
6" ANSI 300 lb weld neck raised face flange	452	41 7/16 (1053)	12 1/2 (318)
6" ANSI 600 lb weld neck raised face flange	453	43 5/8 (1107)	14 (356)
100 mm DIN PN40 weld neck, DIN 2635, type C facing	460	39 7/16 (1002)	9 1/4 (235)
100 mm DIN PN40 weld neck, DIN 2635, type N facing	462	39 7/16 (1002)	9 1/4 (235)
100 mm DIN PN100 weld neck, DIN 2637, type E facing	464	41 7/16 (1052)	10 7/16 (265)
100 mm DIN PN100 weld neck, DIN 2637, type N facing	466	41 7/16 (1052)	10 7/16 (265)
150 mm DIN PN40 weld neck, DIN 2635, type C facing	461	39 3/4 (1010)	11 13/16 (300)
150 mm DIN PN40 weld neck, DIN 2635, type N facing	463	39 3/4 (1010)	11 13/16 (300)
150 mm DIN PN100 weld neck, DIN 2637, type E facing	465	42 1/16 (1068)	14 (355)
150 mm DIN PN100 weld neck, DIN 2637, type N facing	467	42 1/16 (1068)	14 (355)
100 mm JIS 10K weld neck	470	39 7/16 (1002)	8 1/4 (210)
100 mm JIS 20K weld neck	472	39 15/16 (1014)	8 7/8 (225)
150 mm JIS 10K weld neck	471	39 3/4 (1010)	11 (280)
150 mm JIS 20K weld neck	473	40 1/4 (1022)	12 (305)

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

Ordering information

ELITE® sensor model number matrix

Code	Sensor model
CMF010	ELITE® 1/8-inch sensor
CMF025	ELITE 1/4-inch sensor
CMF050	ELITE 1/2-inch sensor
CMF100	ELITE 1-inch sensor
CMF200	ELITE 2-inch sensor
CMF300	ELITE 3-inch sensor
CMF400	ELITE 4-inch sensor

Code	Pressure, temperature, and wetted material
M	Standard pressure, standard temperature, 316L stainless steel
H	Standard pressure, standard temperature, Hastelloy® C-22 nickel alloy — Not available with CMF010 or CMF400
N	Standard pressure, standard temperature, Inconel® 686 nickel alloy — CMF010 only
A	Standard pressure, high temperature, 316L stainless steel — CMF300 only
P	High pressure, standard temperature, Inconel® 686 nickel alloy and 316L stainless steel — CMF010 only

Code	Process connections
###	See fittings tables on pages 10-17

Code	Case option
N	Standard pressure containment
P	Purge fittings — 1/2" NPT female, not available with CMF400
D	Rupture disks — CMF010 with pressure/material code P only

Code	Approvals
M	Micro Motion standard — no approvals
U	UL intrinsically safe — U.S.A. approvals agency
C	CSA — Canadian approvals agency
B	CENELEC — European standards organization
S	SAA — Australian approvals agency, not available with CMF400 or temperature code A

Code	Booster amplifier power voltage — CMF400 only
1	110/115 VAC
2	220/230 VAC

Example*					
CMF300	M	355	N	U	

*Example: CMF300 M 355 N U = ELITE CMF300 3-inch sensor; standard pressure, 316L stainless steel; 3-inch ANSI 150 lb weld neck raised face flanges; standard pressure containment; UL approved for intrinsically safe installations

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