Technical Data for CODA KC-Series Mass Flow Controllers

40 grams per hour full scale to **300 kilograms** per hour full scale

Standard specifications. Consult Alicat for available options.

ALICAT SCIENTIFIC
+1 (888) 290-6060
alicat.com/coda

SENSOR AND CONTROL PERFORMANCE	
Mass flow accuracy[1]	**Liquid:** ± 0.6% of reading or ± 0.2% of full scale, whichever is greater **Gas:** ± 1% of reading or ± 0.2% of full scale, whichever is greater **Liquid with high-accuracy option:** ± 0.2% of reading or ± 0.05% of full scale, whichever is greater **Gas with high-accuracy option:** ± 0.5% of reading or ± 0.05% of full scale, whichever is greater
Flow repeatability (2σ)	± 0.1% of full scale **High-accuracy option:** ± 0.05% of reading or ± 0.025% of full scale, whichever is greater
Steady state control range	5 – 100% of full scale **High-accuracy option:** 2 – 100% of full scale
Temperature sensitivity	**Mass flow zero shift:** ± 0.02% of full scale per °C from tare temperature[2] **Mass flow span shift:** ± 0.01% of reading per °C from 25 °C **High-accuracy option mass flow zero shift:** ± 0.01% of full scale per °C from tare temperature[2] **High-accuracy option mass flow span shift:** ± 0.005% of reading per °C from 25 °C
Operating temperature range	−35 – 70 °C
Ambient temperature range	0 – 60 °C
Valve function	Normally closed
Typical control response time	**40 – 10,000 g/h:** < 140 ms (T63) **30,000 – 300,000 g/h:** < 200 ms (T63)
Typical indication response time	**40 – 10,000 g/h:** < 40 ms (T63) **30,000 – 300,000 g/h:** < 60 ms (T63)
Typical warm-up time	15 minutes
Density accuracy[3]	± 5 kg/m³
Density range	100 – 2,000 kg/m³ measurable
Viscosity range	0 – 200 cP
Zero stability	± 0.2% of full scale (included in mass flow accuracy) **High-accuracy option:** ± 0.05% of full scale (included in mass flow accuracy)

1 Stated accuracy is after tare, under equilibrium conditions, includes repeatability and linearity.

2 Mass flow zero shift for 40 g/h is ±0.025% of full scale per °C from tare temperature.

3 Density reading and density accuracy are independent of the mass flow reading and mass flow accuracy.

MECHANICAL	
Wetted materials	"316L stainless steel, FKM, and PCTFE standard; nickel alloy, EPDM, and FFKM optional Consult Alicat for additional wetted materials options
Ingress protection	IP40 or IP67
Mounting orientation sensitivity	None
Mounting holes	2× M5-0.8 threaded, ↧ 0.39″ [10 mm]

POWER AND COMMUNICATION	
Digital input and output options	ASCII and Modbus RTU, over RS-232 or RS-485, EtherCAT, EtherNet/IP, PROFINET
Digital update rate	50 Hz at 19200 baud
Analog input and output options	0 – 5 Vdc, 0 – 10 Vdc, 4 – 20 mA
Analog update rate	50 Hz
Interactive display	Monochrome LCD or color TFT display with integrated touchpad; simultaneously displays mass flow, volumetric flow, temperature, and setpoint.
Display update rate	10 Hz
Electrical connection options	USB-C and DB-15, M12, RJ45 (industrial protocol models)
Power requirements[4]	Powered through DB-15, M12, or power jack (industrial protocol models) **40 – 10,000 g/h:** 18 – 30 Vdc, 9.7 W **30,000 – 300,000 g/h:** 18 – 30 Vdc, 11.7 W

4 Subtract 1.7W for devices with no integrated display.

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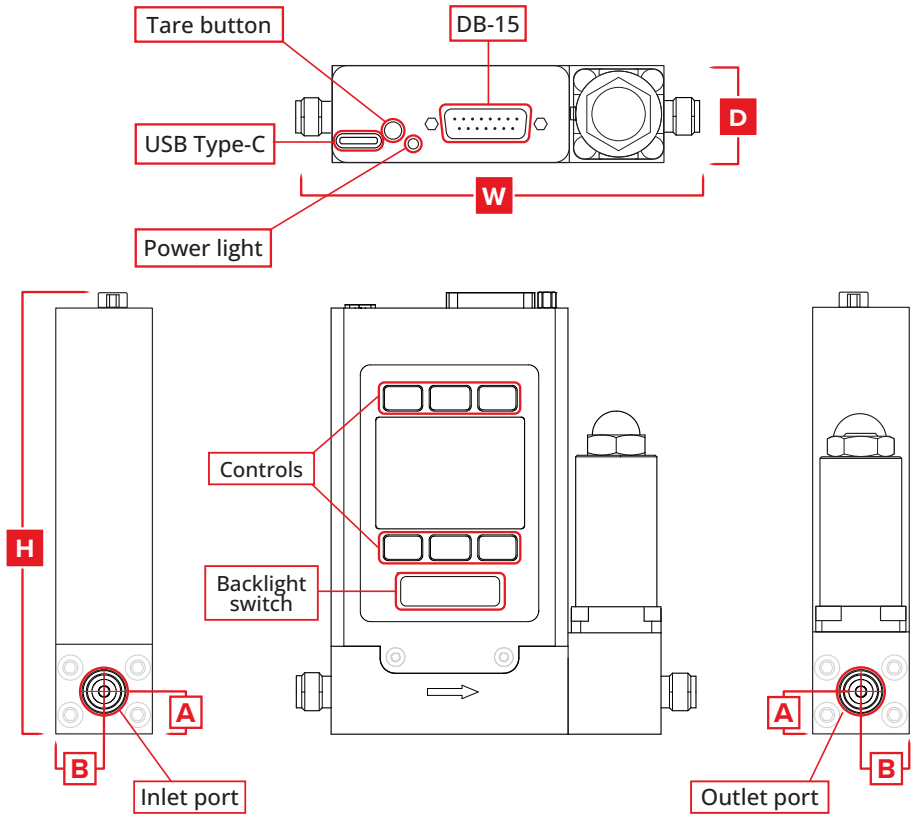
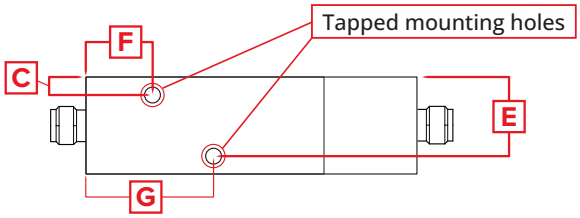
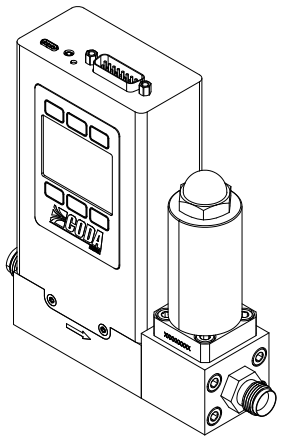
RANGE-SPECIFIC TECHNICAL DATA			
Full scale flow (g/h)	Recommended inlet filter	Nominal pressure drop (H_2O)	Proof pressure (PSIA)[5]
40	2 µm	≥ 6 PSID	1500
100 – 1000	20 µm	≥ 15 PSID	1500
3000 – 10,000	40 µm	≥ 15 PSID	1500
30,000 – 100,000	120 µm	≥ 15 PSID	1500
300,000	120 µm	≥ 110 PSID	1500

5 4000 PSIA proof option available.





Representative Example



30,000 – 300,000 g/h

DIMENSIONS										WEIGHT
Full scale flow	Width	Depth	Height	A	B	C	E	F	G	
40 – 10,000 g/h	4.65″	1.49″	5.15″	0.49″	0.75″	0.39″	1.10″	1.02″	1.73″	≈ 3.5 lb
	118.2 mm	37.9 mm	130.8 mm	12.5 mm	18.9 mm	10.0 mm	27.9 mm	26.0 mm	44.0 mm	≈ 1.6 kg
30,000 – 300,000 g/h	6.12″	1.58″	6.19″	0.63″	0.79″	0.43″	1.14″	1.21″	1.92″	≈ 4.7 lb
	155.4 mm	40.0 mm	157.3 mm	16.0 mm	20.0 mm	11.0 mm	29.0 mm	30.8 mm	48.7 mm	≈ 2.1 kg