

Technical Data for **BASIS** Mass Flow Meters and Controllers

100 SCCM full scale through 50 SLPM full scale



Standard specifications. Consult Alicat for available options.

+1 (888) 290-6060
alicat.com/basis

| SENSOR AND CONTROL PERFORMANCE | |
|---|--|
| Accuracy at calibration conditions after tare | ±(1.5% reading + 0.5% of full scale) |
| Zero Shift and Span Shift | ±0.2% of full scale per °C |
| Repeatability | ±0.5% of reading |
| Long Term Drift | 0.05% of full scale per year |
| Totalizer Volume Uncertainty | ±2% of reading in additional uncertainty |
| Typical Response Time | 100 ms |
| Warm-up Time | 70 ms |

| MECHANICAL | |
|--------------------------------------|---|
| STP Reference Conditions | 25°C, 1 atm, user configurable |
| Operating Temperature Range | 0–50°C |
| Humidity Range (Non-Condensing) | <90% |
| Maximum Internal Pressure (Static) | Bx-C0100, Bx-C1000, Bx-L0050: 145 PSIG Bx-L0020: 60 PSIG |
| Proof Pressure | 175 PSIG |
| Vibration | 20g; MIL-STD-883E, method 2002.4 |
| Mounting Attitude Sensitivity | None |
| Valve Type | Normally closed |
| Ingress Protection | IP40 |
| Wetted Materials | 302, 303, 316, and 430FR stainless steel; silicon nitride, brass, FKM (Viton) |
| Leak Integrity, External | 1×10 ⁻⁹ atm-cc/sec of helium (He) |
| Leak Integrity, Through Closed Valve | 1×10 ⁻⁵ atm-cc/sec of helium (He) |

| COMMUNICATIONS | |
|-------------------------------|--|
| Digital I/O | RS-232 or RS-485 serial |
| Digital Protocols | Modbus RTU and ASCII text |
| Analog Input / Output Signal | 0–5 Vdc (contact Alicat for custom configurations) |
| Analog Update Rate | 400 Hz |
| Electrical Connection Options | DB9 (male) |
| Supply Voltage | 10–30 Vdc |
| Supply Current | 200 mA |

| FEATURES | |
|----------------|--|
| Gas Options | Can be calibrated for use with air, argon (Ar ₂), nitrogen (N ₂), oxygen (O ₂), helium (He), hydrogen (H ₂), or nitrous oxide (N ₂ O) ¹ . Other gases may be available upon request. |
| Certifications | CE, RoHS, and REACH |

¹ Units that are calibrated for carbon dioxide (CO₂) or nitrous oxide (N₂O) are limited to a maximum flow rate of 75% of nominal full scale.

| RANGE-SPECIFIC TECHNICAL DATA | | | |
|-------------------------------|------------------------|--|---|
| Full scale flow | Usable Operating Range | Pressure drop with air at full scale venting to atmosphere | Process connections |
| 100 SCCM | 1-100% of full scale | ≤10 mbar | 1/8" NPT female or 7/16"-20 SAE-4 thread (J1926 port) |
| 1000 SCCM | 0.5-100% of full scale | ≤10 mbar | 1/8" NPT female or 7/16"-20 SAE-4 thread (J1926 port) |
| 20 SLPM | 0.5-100% of full scale | ≤350 mbar | 3/8" NPT female or 9/16"-18 SAE-6 thread (J1926 port) |
| 50 SLPM | 0.5-100% of full scale | ≤400 mbar | 3/8" NPT female or 3/4"-16 SAE-8 thread (J1926 port) |

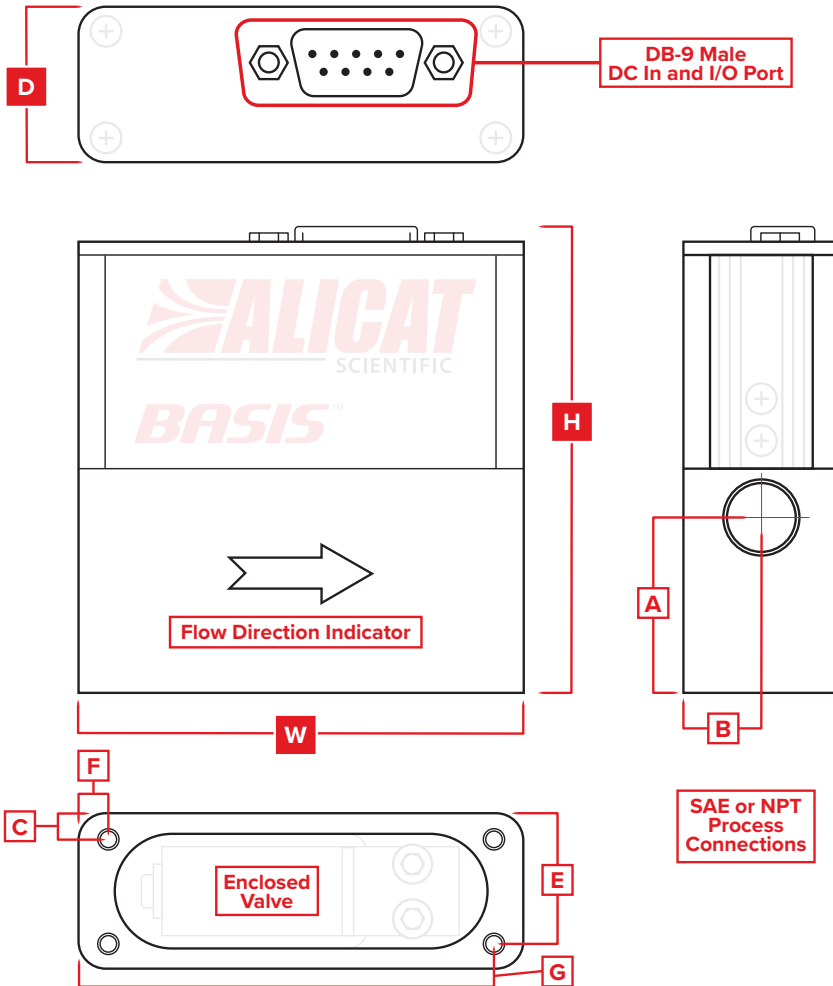
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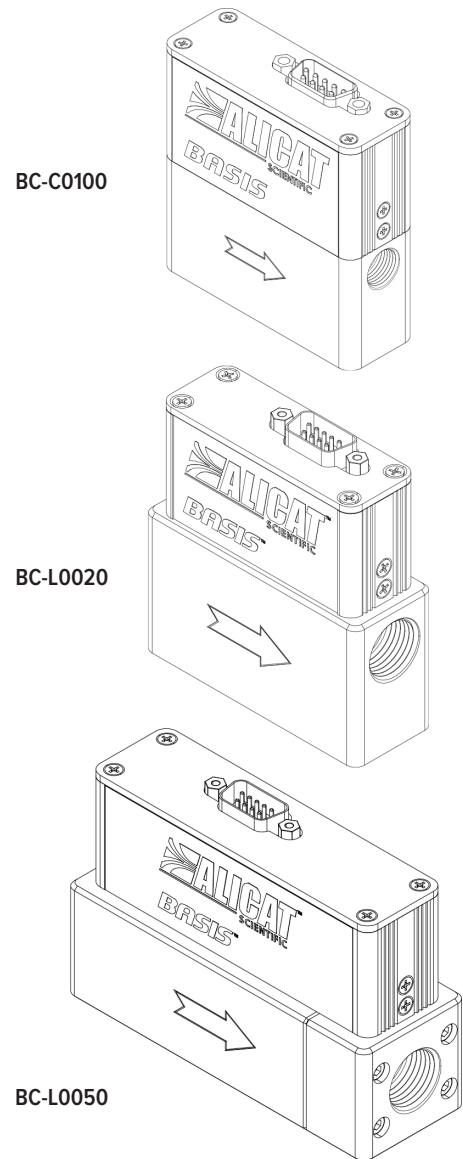
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Representative Examples



| Full-Scale Flow | DIMENSIONS | | | | | | | | | WEIGHT |
|-----------------|------------|-----------|----------|----------|----------|----------|----------|----------|----------|----------|
| | Height | Width | Depth | A | B | C | E | F | G | |
| 100–1000 sccm | 2.620 in | 2.500 in | 0.875 in | 0.986 in | 0.438 in | 0.142 in | 0.733 in | 0.167 in | 2.333 in | ≈ 0.6 lb |
| | 66.55 mm | 63.50 mm | 22.23 mm | 25.04 mm | 11.13 mm | 3.61 mm | 18.62 mm | 4.24 mm | 59.26 mm | ≈ 0.3 kg |
| 20 SLPM | 2.945 in | 2.776 in | 1.024 in | 1.102 in | 0.512 in | 0.157 in | 0.866 in | 0.207 in | 2.569 in | ≈ 1.1 lb |
| | 74.80 mm | 70.51 mm | 26.01 mm | 27.99 mm | 13.00 mm | 3.99 mm | 22.00 mm | 5.26 mm | 65.25 mm | ≈ 0.5 kg |
| 50 SLPM (-NPT) | 2.660 in | 3.996 in | 1.378 in | 0.650 in | 0.689 in | 0.217 in | 1.161 in | 0.640 in | 2.805 in | ≈ 2.0 lb |
| | 67.56 mm | 101.50 mm | 35.00 mm | 16.51 mm | 17.50 mm | 5.51 mm | 29.49 mm | 16.26 mm | 71.25 mm | ≈ 0.9 kg |
| 50 SLPM (-SAE) | 2.660 in | 4.547 in | 1.378 in | 0.650 in | 0.689 in | 0.217 in | 1.161 in | 0.915 in | 3.081 in | ≈ 2.2 lb |
| | 67.56 mm | 115.49 mm | 35.00 mm | 16.51 mm | 17.50 mm | 5.51 mm | 29.49 mm | 23.24 mm | 78.26 mm | ≈ 1.0 kg |