358 Series MB mass flow meters

Battery-powered portable laminar mass flow meters from 50 sL/min to 5000 sL/min full scale

The MB is the battery-powered, portable version of the 358 Series M mass flow meter. It measures gas mass flow and also shows volumetric flow, pressure and temperature on its display. It stores 98 gases and 20 user mixes, so one instrument can verify many processes in the field. Power and serial communication use a Micro-USB port.



5000 sL/min	18 h	0.01–100 %	98	11.0 bar a
Largest full scale; the smallest is 50 sL/min	Battery life with the monochrome display	Flow measurement range of full scale	Stored gases, plus 20 user-defined mixes	Maximum operating pressure (160 psia)

Performance

Reference conditions	Standard 21.11 °C, normal 0 °C, at 1013.25 mbar; configurable
Accuracy [1]	±(0.8 % rd + 0.2 % FS)
High-accuracy option [1]	50–500 sL/min: ±(0.4 % rd + 0.2 % FS)
Repeatability (2σ)	±(0.2 % rd + 0.02 % FS)
Flow measurement range	0.01–100 % FS
Turndown ratio	10 000:1
Indication response	Typically < 10 ms, flow rate dependent
Sensor response	< 1 ms
Warm-up time	Typically < 1 s
Temperature sensitivity	Zero and span ±0.02 % FS/°C from 25 °C
Pressure sensitivity	Zero and span ±(0.08 % rd + 0.02 % FS)/atm from calibration conditions
Pressure accuracy [1]	Above 1 atm: ±0.5 % rd Below 1 atm: ±4.8 mbar (±0.07 psia)
Temperature accuracy	±0.75 °C
Totaliser	±0.1 % rd additional uncertainty

Operating conditions

Operating pressure	0.79–11.0 bar a (11.5–160 psia)
Damage limits	Line: above 13.8 bar a (200 psia) Rapid change: above 5.17 bar (75 psid)
Temperature	−10 to 60 °C, ambient and gas
Humidity	0–95 % non-condensing

Mechanical

Wetted materials	Stainless steel 302, 303, 304, 316L; FKM, alumina ceramic, glass, gold, silicon, polyamide Heat-cured epoxy and silicone rubber
Ingress protection	IP40
Mounting holes	4× 8-32 UNC, 8.38 mm deep

Electrical and communication

Battery life	Monochrome display: 18 h Colour TFT display: 8 h User-configurable; depends on contrast
Supply and charging	5 V DC via USB, 1 A recommended, from a mains adapter
Charging temperature	0–45 °C
Interface	Serial communication and power over Micro-USB type B
Wireless	Optional: Bluetooth Low Energy, with a mobile app on a compatible Android or iOS device (ask Analyt-MTC)
Analogue and fieldbus	Not available on the MB; see the 358 Series M

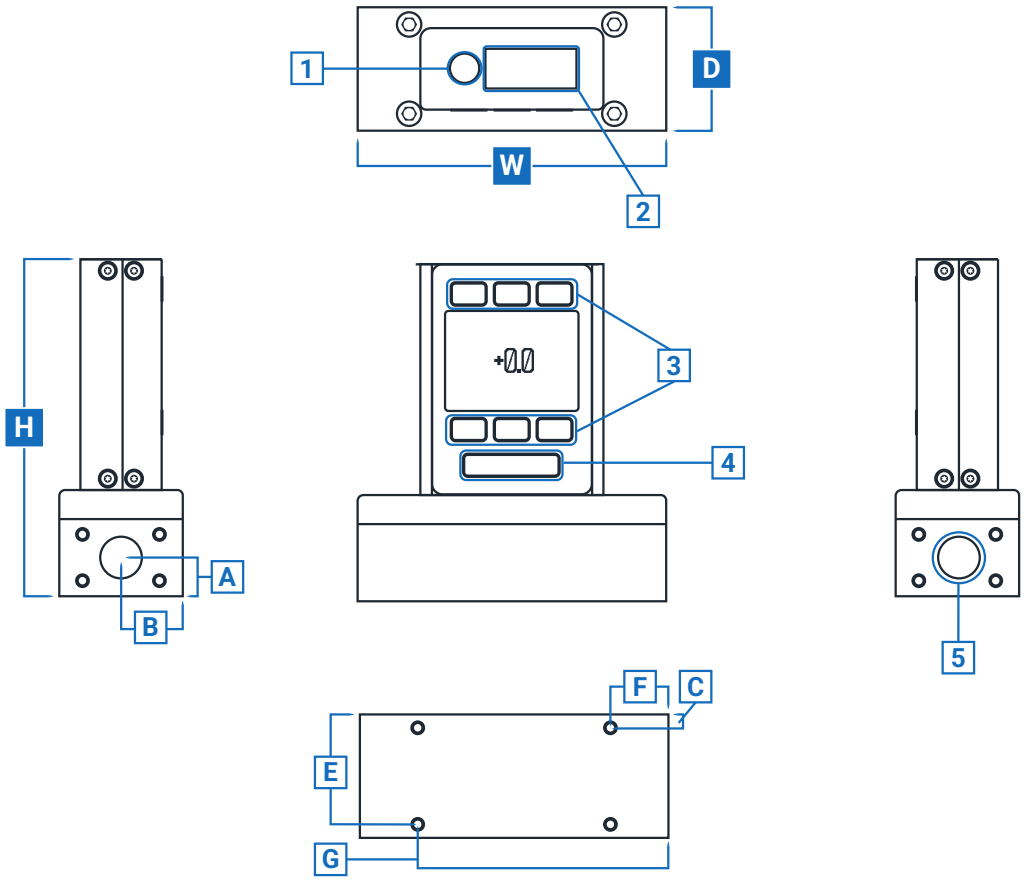
Display and gases

Display	Monochrome LCD or colour TFT, touchpad; shows mass and volumetric flow, pressure, temperature
Gas library	98 gases, properties matched to NIST REFPROP 10 across the operating range
Gas mixes	20 user mixes of up to 5 gases, 0.01 % resolution

Ranges, pressure drop, connections (21.11 °C, 1013.25 mbar)

Full scale	Δp, mbar	psid	Process connection
50 sL/min	138	2.0	1/4" NPT female
100 sL/min	172	2.5	1/4" NPT female
250 sL/min	145	2.1	1/2" NPT female
500 sL/min	276	4.0	3/4" NPT female
1000 sL/min	414	6.0	3/4" NPT female
2000 sL/min	345	5.0	3/4" NPT female
3000 sL/min	490	7.1	1 1/4" NPT female
5000 sL/min	234	3.4	2" NPT female

Δp at full scale, venting air to atmosphere; for a lower Δp, ask Analyt-MTC. For full-scale ranges above 5000 sL/min, ask Analyt-MTC.



1 DC power input
2 Input and output port
3 Controls
4 Backlight switch
5 Process connection

Top, side, front and bottom views of an M meter; the bottom view shows the mounting holes. The MB battery section adds 41.81 mm to H.

MB dimensions, mm, kg (21.11 °C, 1013.25 mbar)

Full scale	W	D	H	A	B	C	E	F	G	kg
50 sL/min	101.6	40.6	152.7	12.7	20.3	4.4	36.2	19.1	82.6	≈ 1.2
100 sL/min	101.6	40.6	152.7	12.7	20.3	4.4	36.2	19.1	82.6	≈ 1.2
250 sL/min	101.6	40.6	168.0	20.3	20.3	4.4	36.2	19.1	82.6	≈ 1.2
500–1000 sL/min	101.6	40.6	168.0	20.3	20.3	4.4	36.2	19.1	82.6	≈ 1.7
2000 sL/min	132.1	73.7	176.1	28.4	36.8	5.1	68.6	34.3	97.8	≈ 2.1
3000 sL/min	132.1	73.7	176.1	24.4	36.8	5.1	68.6	34.3	97.8	≈ 2.1
5000 sL/min	132.1	97.5	201.0	36.8	48.8	7.5	90.0	34.3	97.8	≈ 6.4

Standard versions, air (21.11 °C, 1013.25 mbar)

Full scale	Order code
50 sL/min	35815B
100 sL/min	35816B
250 sL/min	35817B
500 sL/min	35818B
1000 sL/min	35819B

Order from Analyt-MTC with the order codes. Calibrated for air; another gas or a gas mix is selected on the meter. For any other version, contact Analyt-MTC.

Options and accessories

High-accuracy calibration, 50–500 sL/min (see Accuracy)	
Colour TFT display (8 h battery life)	
Weatherproof housing	
Compression, face-seal, push-to-connect, BSPP or SAE connections	
Swagelok®-compatible tube, VCO® or VCR® connections	
Universal benchtop baseplate	35780
Inline filter, 1/4" NPT, 40 µm	ILF-1/4-40
Inline filter, 1/2" NPT, 40 µm	ILF-1/2-40
Inline filter, 3/4" NPT, 40 µm	ILF-3/4-40
Rugged transport case	1200-000-110E

Notes

1. rd = of reading, FS = of full scale. Accuracy holds after tare at equilibrium and includes repeatability and linearity. sL/min and smL/min at 21.11 °C, 1013.25 mbar.

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