358 Series MB mass flow meters

Battery-powered portable laminar mass flow meters from 10 smL/min to 20 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.



20 sL/min	18 h	0.01–100 %	98	11.0 bar a
Largest full scale; the smallest is 10 smL/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]	±0.6 % rd or ±0.1 % FS, whichever is greater
High-accuracy option [1]	±0.5 % rd or ±0.1 % FS, whichever is greater
Repeatability (2σ)	±(0.1 % 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: ±0.01 % FS/°C from tare temperature Span: ±0.01 % rd/°C from 25 °C
Pressure sensitivity	Zero: ±0.01 % FS/atm from tare pressure Span: ±0.1 % rd/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	10–50 smL/min: 2× 8-32 UNC, 4.45 mm deep 100 smL/min–20 sL/min: 2× 8-32 UNC, 8.89 mm deep
Orientation sensitivity	None

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	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
10–50 smL/min	69	1.0	M5 female
100 smL/min–20 sL/min	69	1.0	1/8" NPT female

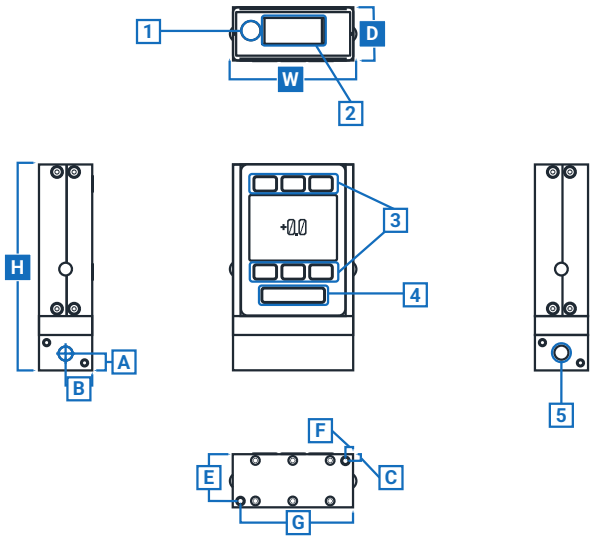
Δp at full scale, outlet venting to atmosphere; for a lower Δp, ask Analyt-MTC. M5 ports: 10-32 compatible, shipped with Buna-N O-ring face-seal adapters to 1/8" female NPT.

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

Full scale	Order code
10 smL/min	35804B
20 smL/min	35805B
50 smL/min	35806B
100 smL/min	35807B
200 smL/min	35808B
500 smL/min	35809B

Full scale	Order code
1 sL/min	35810B
2 sL/min	35811B
5 sL/min	35812B
10 sL/min	35813B
20 sL/min	35814B

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.



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.

Options and accessories

High-accuracy calibration (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, 1/8" NPT, 20 µm	ILF-1/8-20
Rugged transport case	1200-000-110E

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

Full scale	W	D	H	A	B	C	E	F	G	kg
10–50 smL/min	60.3	26.7	140.8	8.5	13.3	3.2	23.5	3.8	56.5	≈ 0.5
100 smL/min–20 sL/min	60.3	26.7	145.1	8.9	13.3	3.2	23.5	3.8	56.5	≈ 0.6

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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