358 Series MCS mass flow controllers

Corrosion-resistant laminar mass flow controllers from 0.5 smL/min to 12 000 sL/min full scale

The MCS controller sets and measures the mass flow of corrosive gases and also reports volumetric flow, pressure and temperature. Its wetted parts are stainless steel with FFKM seals. It stores 128 gases and 20 user mixes.



0.5 smL/min	1–100 %	from 30 ms	128	11.0 bar a
Smallest full scale; largest 12 000 sL/min	Steady-state control range of full scale	Typical control response (T63)	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]	5 smL/min–500 sL/min: ±(0.4 % rd + 0.2 % FS)
Repeatability (2σ)	±0.2 % FS
Control range	1–100 % FS, steady state
Turndown ratio	100:1
Control response (T63), adjustable	0.5–5 smL/min: 100–4000 ms 10 smL/min–20 sL/min: 30–4000 ms 50–12 000 sL/min: 30–150 ms
Indication response, typical	0.5–5 smL/min: 100–4000 ms 10 smL/min–20 sL/min: < 10 ms 50–12 000 sL/min: 65–255 ms
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 tare pressure
Pressure accuracy [1]	±0.5 % FS
Temperature accuracy	±0.75 °C

Operating conditions

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

Mechanical

Wetted materials	Stainless steel 316L, 303, 430FR; FFKM standard, FKM or EPDM for some gases 50–12 000 sL/min: also stainless steel 410 and PTFE
Ingress protection	IP40
Orientation sensitivity	0.5 smL/min–20 sL/min: none after tare 50–12 000 sL/min: valve cylinders vertical and upright
Valve	Normally closed
Mounting taps	0.5 smL/min–20 sL/min: 2× 8-32 UNC, 4.45 mm deep 50–12 000 sL/min: 4–8× 8-32 UNC, 8.38 mm deep

Electrical and communication

Analogue I/O	4–20 mA, 0–5 V DC, 1–5 V DC or 0–10 V DC; adds ±0.1 % FS uncertainty
Digital I/O	Standard: RS-232 and Modbus RTU Options: RS-485, Modbus TCP/IP, DeviceNet, EtherCAT, EtherNet/IP, PROFIBUS, PROFINET, IO-Link
Connector	6-pin locking, 8-pin mini-DIN, 8-pin M12, DB-9 or DB-15; custom pinouts: ask Analyt-MTC
Supply [2]	0.5 smL/min–20 sL/min: 12–30 V DC, 250 mA 50–3000 sL/min: 24 V DC, 1 A; 5000 sL/min, two valves: 24–30 V DC, 2 A 10 000–12 000 sL/min: 24–30 V DC, 2.1 A 4–20 mA output: add 40 mA
Update rates [2]	Digital: 40 Hz at 19 200 baud Analogue: 1 kHz; display: 10 Hz

Display and gases

Display	Monochrome LCD or colour TFT, touchpad; shows mass and volumetric flow, pressure, temperature, set point
Gas library	128 gases, properties matched to NIST REFPROP 10 across the operating range
Gas mixes	20 user mixes of up to 5 gases, 0.01 % resolution
Totaliser	±0.1 % rd additional uncertainty

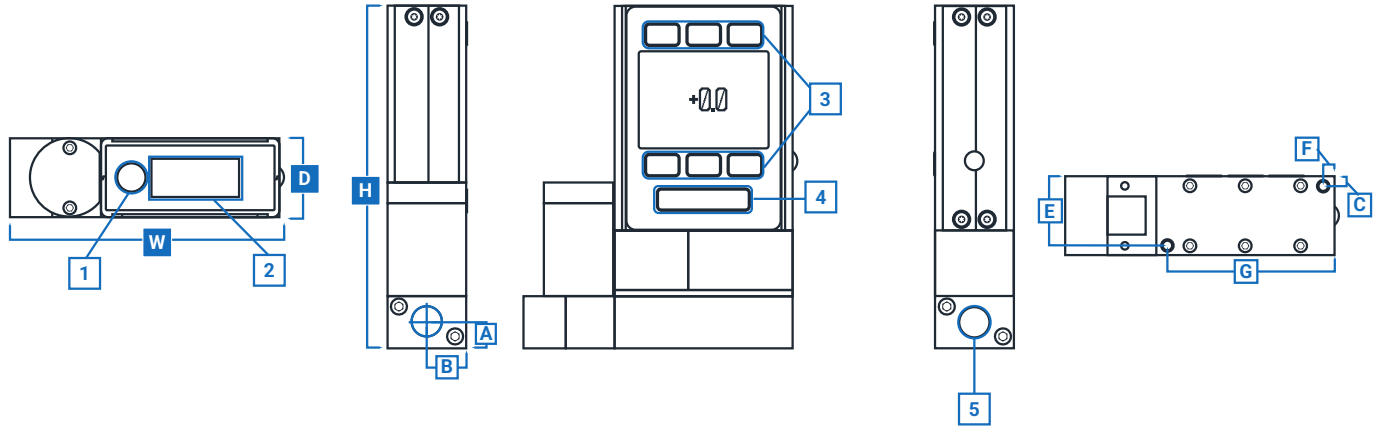
Ranges, pressure drop, connections (21.11 °C, 1013.25 mbar)

Full scale	Δp, mbar	psid	Process connection
0.5 smL/min	69	1.0	M5 female
1–5 smL/min	138	2.0	M5 female
10 smL/min	193	2.8	M5 female
50 smL/min	69	1.0	M5 female
100–500 smL/min	69	1.0	1/8" NPT female
1 sL/min	103	1.5	1/8" NPT female
2 sL/min	207	3.0	1/8" NPT female
5 sL/min	138	2.0	1/8" NPT female
10 sL/min	379	5.5	1/8" NPT female
20 sL/min	1379	20.0	1/8" NPT female

Full scale	Δp, mbar	psid	Process connection
50–100 sL/min	172	2.5	1/4" NPT female
250 sL/min	165	2.4	1/2" NPT female
500 sL/min	448	6.5	3/4" NPT female
1000 sL/min	965	14.0	3/4" NPT female
2000 sL/min	1972	28.6	3/4" NPT female *
3000 sL/min	1158	16.8	1 1/4" NPT female
5000 sL/min	972	14.1	1 1/2" NPT female
10 000 sL/min	2068	30.0	2" NPT female
11 000 sL/min	2758	40.0	2" NPT female
12 000 sL/min	4964	72.0	2" NPT female

Δp at full scale, venting air to atmosphere. * 1 1/4" NPT available. M5: 10-32 compatible; face-seal adapters (stainless steel 316, FFKM O-ring) to 1/8" female NPT supplied.

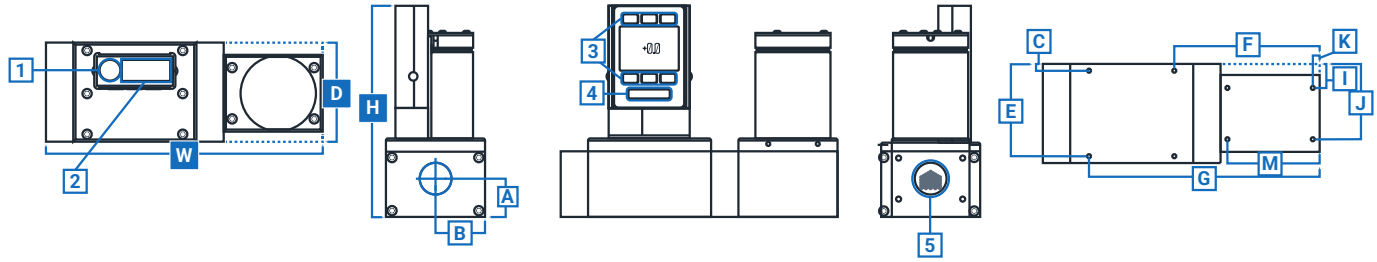
0.5 smL/min–20 sL/min



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

Top, side, front and bottom views of the 0.5 smL/min to 20 sL/min controllers, with the dimension letters of the first table. Dimensions in mm.

50–12 000 sL/min



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

Top, side, front and bottom views, shown on a 250 to 3000 sL/min controller. A dash in the second table: the letter does not apply. Dimensions in mm.

Dimensions to 20 sL/min (21.11 °C, 1013.25 mbar)

Full scale	H	W	D	A	B	C	E	F	G	kg
0.5–50 smL/min	111.7	84.8	26.7	8.5	13.3	3.2	23.5	3.8	56.5	≈ 0.5
100 smL/min–20 sL/min	116.0	91.1	26.7	8.9	13.3	3.2	23.5	3.8	56.5	≈ 0.5

Dimensions from 50 sL/min (21.11 °C, 1013.25 mbar)

Full scale	H	W	D	A	B	C	E	F	G	I	J	K	M	kg
50–100 sL/min	139.7	204.0	57.2	28.4	28.6	–	–	–	–	9.5	47.6	125.7	189.2	≈ 4.1
250 sL/min	139.6	194.3	57.2	28.4	28.6	4.4	36.2	111.8	175.3	9.5	47.6	14.6	78.1	≈ 4.1
500–1000 sL/min	139.6	184.8	57.2	28.4	28.6	4.4	36.2	102.2	165.7	9.5	47.6	5.1	68.6	≈ 4.1
2000 sL/min	139.6	205.7	73.7	28.4	36.8	5.1	68.6	108.0	171.5	17.8	55.9	5.1	68.6	≈ 5.4
3000 sL/min	139.6	226.1	73.7	24.4	36.8	5.1	68.6	128.3	191.8	17.8	55.9	25.4	88.9	≈ 5.4
5000 sL/min	160.8	254.0	114.3	36.8	57.2	16.0	98.6	151.3	214.8	–	–	–	–	≈ 12.7
10 000–12 000 sL/min	202.3	304.8	97.5	43.2	48.8	7.5	90.0	163.8	227.3	13.2	84.3	40.6	91.4	≈ 14.5

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

Full scale	Order code
0.5 smL/min	35820S
1 smL/min	35821S
2 smL/min	35822S
5 smL/min	35823S
10 smL/min	35824S
20 smL/min	35825S
50 smL/min	35826S
100 smL/min	35827S

Full scale	Order code
200 smL/min	35828S
500 smL/min	35829S
1 sL/min	35830S
2 sL/min	35831S
5 sL/min	35832s
10 sL/min	35833S
20 sL/min	35834S

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

Full scale	Order code
50 sL/min	Ask Analyt-MTC
100 sL/min	Ask Analyt-MTC
250 sL/min	Ask Analyt-MTC
500 sL/min	Ask Analyt-MTC
1000 sL/min	Ask Analyt-MTC
2000 sL/min	Ask Analyt-MTC

Full scale	Order code
3000 sL/min	Ask Analyt-MTC
5000 sL/min	Ask Analyt-MTC
10 000 sL/min	Ask Analyt-MTC
11 000 sL/min	Ask Analyt-MTC
12 000 sL/min	Ask Analyt-MTC

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

Options

High-accuracy calibration, 5 smL/min–500 sL/min (see Accuracy)
Weatherproof housing
Compression, face-seal, push-to-connect, BSPP or SAE connections
Swagelok®-compatible tube, VCO® or VCR® connections

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.
2. Fieldbus versions differ in supply and data rates; ask Analyt-MTC for their documentation.

ANALYT-MTC Messtechnik GmbH
Sales, service and calibration

www.analyt-mtc.com

German Headquarters
Klosterrunsstraße 18, 79379 Müllheim
+49 7631 5545
info@analyt-mtc.de

French Subsidiary
175 Avenue d'Alsace, 68000 Colmar
+33 3 89 41 47 78
info@analyt-mtc.fr

© 2026 ANALYT-MTC Messtechnik GmbH. All rights reserved. Subject to technical changes without notice.