

Mass Flow Meter and Controller for gases



Flow
Pressure
Level
Temperature
measurement
monitoring
control



- Direct indication
- Digital indication
- Bypass measuring for generating laminar flow

Model:
MAS
MFC



Fields of application:

In addition to accurately measuring the gas flow rate, it is also necessary to maintain a constant flow rate with varying inlet or outlet pressures in many processes.

This has been achieved heretofore by connecting a controlling system with electronic controller and control valve at the outlet side.

The new model MFC mass flow controller is a compact device composed of mass flow meter, controller and valve. The user is thus provided with a controlling system that maintains a constant flow rate over a wide range, independent of variations in pressure and temperature.

Theory of operation:

The medium flows through the MAS mass flow meter, which measures the actual flow rate.

The control electronics compares the measured value with the setpoint value. When deviations occur, the control electronics outputs an altered actuating signal to the built-in proportional valve which changes the passage opening, thereby maintaining a constant flow rate.

The desired flow rate (setpoint value) may be adjusted with a built-in potentiometer or via an external 0-5 VDC (4-20 mA optional) signal.

Technical details:

Field of application: suited only for dry, oil-free gases

Measuring accuracy: ± 1,5 % f.s.
(with 10-100 % of flow rate range)

Reproducibility: ± 0,25 % f.s.

Temperature coefficient: 0,8 % f.s. / °C

Pressure coefficient: 0,07 % f.s. / bar

Response time (within 20-100 % of measuring range):
1 s until 63 % of actual flow rate is indicated

Max., medium, and ambient temperature: 50°C

Max. medium pressure: nylon: 10 bar

Gas density: ambient: 1 x 10⁻⁴ cm³ / s
valve: not suitable as shut-off valve

Material: case: 10 % glass-fibre-reinforced nylon
Swagelok: stainless steel
seal: FPM

Control range: 2-100 % of measuring range
(valve closes below 2 %)

Supply voltage: 24 VDC

Output: 0-5 VDC (load min. 2000 Ω)
option: 4-20 mA (burden max. 1000 Ω)

Control signal: 0-5 VDC or 4-20 mA, adjustable

Order numbers

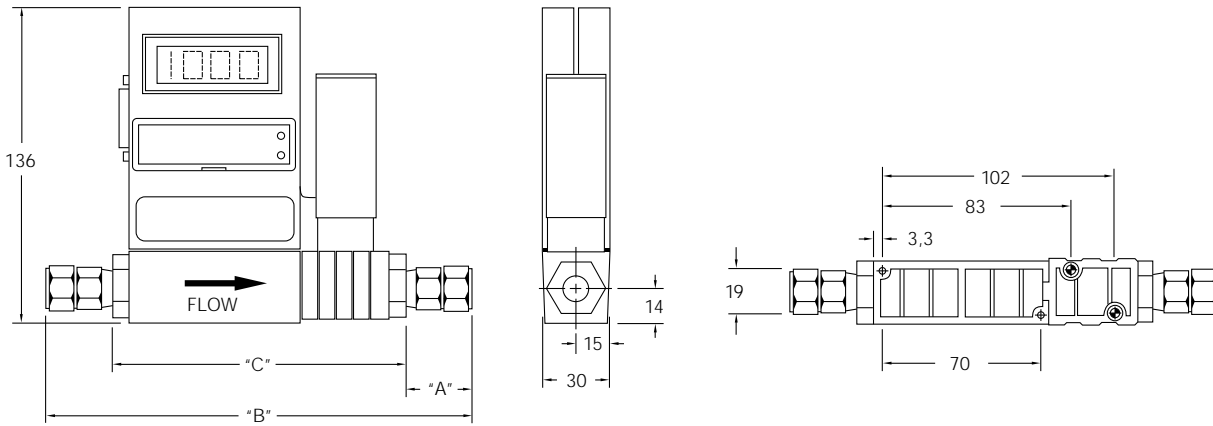
Nylon version				
Meas. range Ncm ³ /min N ₂	Min. required diff. pressure	Connection internal thread	with digital indication	without dig. indication
0-10	0,35 bar	1/4" NPT	MFC-5101	MFC-5201
0-20	0,35 bar	1/4" NPT	MFC-5102	MFC-5202
0-50	0,35 bar	1/4" NPT	MFC-5103	MFC-5203
0-100	0,35 bar	1/4" NPT	MFC-5104	MFC-5204
0-200	0,35 bar	1/4" NPT	MFC-5105	MFC-5205
0-500	0,35 bar	1/4" NPT	MFC-5106	MFC-5206
NI / min N ₂				
0-1	0,55 bar	1/4" NPT	MFC-5107	MFC-5207
0-2	0,55 bar	1/4" NPT	MFC-5108	MFC-5208
0-5	0,55 bar	1/4" NPT	MFC-5109	MFC-5209
0-10	1,00 bar	1/4" NPT	MFC-5110	MFC-5210
0-20	1,38 bar	1/4" NPT	MFC-5111	MFC-5211
0-30	1,38 bar	1/4" NPT	MFC-5112	MFC-5212
0-40	1,38 bar	1/4" NPT	MFC-5113	MFC-5213
0-50	1,38 bar	1/4" NPT	MFC-5114	MFC-5214

Accessoires

MAS-8100	Connector power supply, 230 VAC, output 24 VDC
Options (append letter to order no.)	
Option "C1"	Swagelok 1/8"
Option "C2"	Swagelok 1/4"



MFC dimensions (mm)



Connection	"A"	"B"	"C"
1/8" Swagelok	29	186	128
1/4" Swagelok	28	184	128
1/4" NPT	-	-	128