



Mass Flow Controllers for Gases

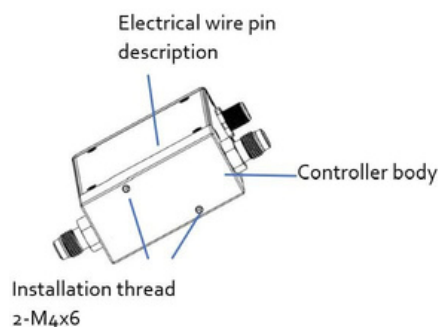
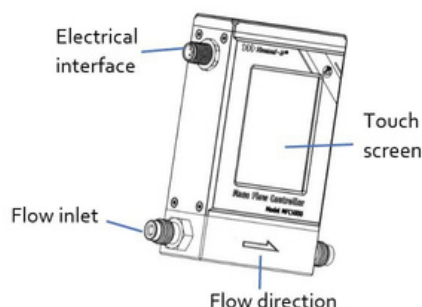
Model MFC5100M



Thermal - D®

This product is designed for stand-alone applications, such as laboratory or online gas process control without a remote interface or program. The touch screen offers easy access to control parameters and allows selection of multiple gases. A plug-in power option is also offered for easy use.

- Laboratory
- Stand-alone MFC
- Plug-in power
- Bus interfaces
- Touch screen program
- Multi-gas selection



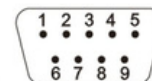
MFC5100M M12 pin/wire assignments.

Wire	Color	Definition
1	Brown	Power (12~24 Vdc), 1A
2	White	RS485B (-)
3	Blue	Common
4	Black	RS485A (+)
5	Gray	n/c



MFC5100M DB9 pin/wire assignments

Wire	Color	Definition
1	Purple	n/c
2	Red	n/c
3	White	RS485B (-)
4	Yellow	Setpoint, analog 0 ~ 5 Vdc or 4 ~ 20 mA
5	Black	RS485A (+)
6	Gray	Flow rate output, 0 ~ 5 Vdc or 4 ~ 20 mA
7	Brown	Power supply, (12 ~ 24) Vdc, 1A
8	Blue	Common
9	Green	Common





Specifications

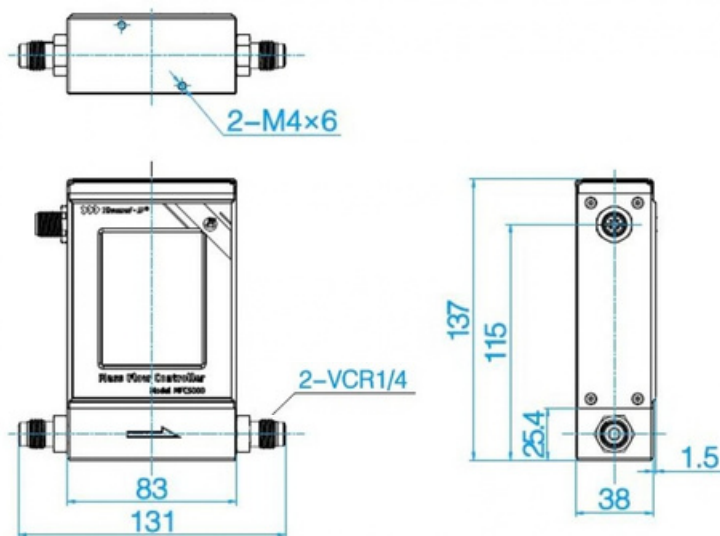
	Value	Unit
Full-scale range	0 ~ 50 mLn/min ... 0 ~ 5000 mLn/min 0 ~ 1 ... 0 ~ 20... 0~100 Ln/min	
Accuracy	± 1.0% r.d. (20 ~ 100% of full scale) ±0.2% f.s. (<20% of full scale)	
Repeatability	± 0.5% r.d. (20 ~ 100% of full scale) ±0.1% f.s. (<20% of full scale)	
Turn-down ratio	100:1	
Max control range	102	%FS
Control pressure range	0.1 ~ 0.8	MPa
Maximum operating differential pressure	0.4	MPa
Setpoint source (input signal)	Analog: 0 ~ 5 Vdc or 4 ~ 20 mA Digital: RS485	
Settling time (typical)	200	msec
Working temperature	0 ~ 55	°C
Humidity	<95, no condensation	%RH
Burst pressure	1.5	MPa
External leakage rate	≤1 x 10 ⁻⁹ (He)	Pa·m ³ /s
Power supply	(12 ~ 24) Vdc, 1A	
Output signal	Analog: 0 ~ 5 Vdc or 4 ~ 20 mA Digital: RS485	
Max null shift (analog)	±30	mVdc
Control valve	Normally Closed (NC)	
Electrical connector	M12 or DB9	
Mechanical connection	VCR 1/4"~ 1/2"; compressed 1/8" ~ 1/2" or BSPT 1/8" to 1/2"-female	
Protection	IP40	
Storage temperature	-20 ~ +70	°C
Reference conditions	0 °C, 101.325 kPa, air	
Fluid compatibility	Non-corrosive	
CE	EN61000-2; -3; -4	
Environmental	RoHS, REACH	

*All specifications listed in the following table, unless otherwise noted, apply for calibration conditions at 0 °C and 101.325 kPa absolute pressure with air. The product is horizontally mounted during calibration.

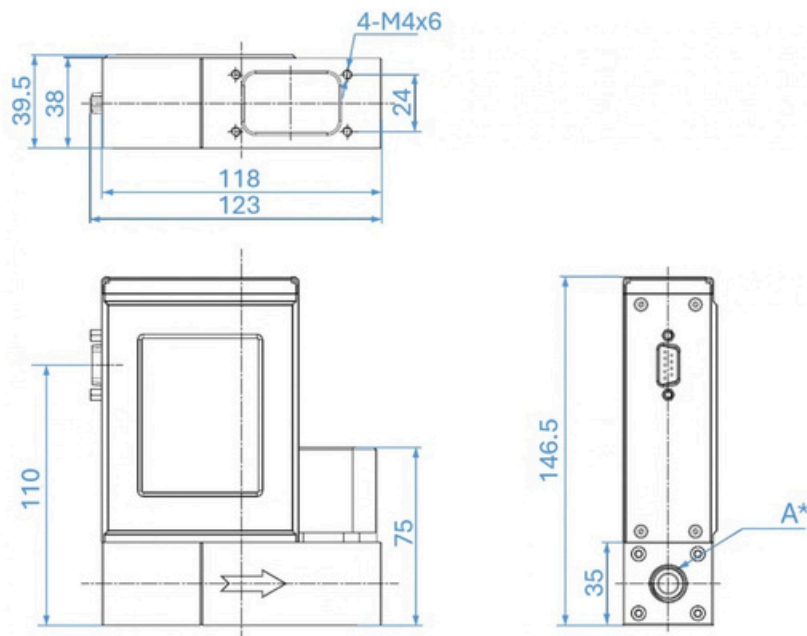
**For other options, please contact the manufacturer.



Mechanical dimensions



MFC5100M 20 or less SLPM dimensions



MFC5100M 50/100 SLPM model dimensions

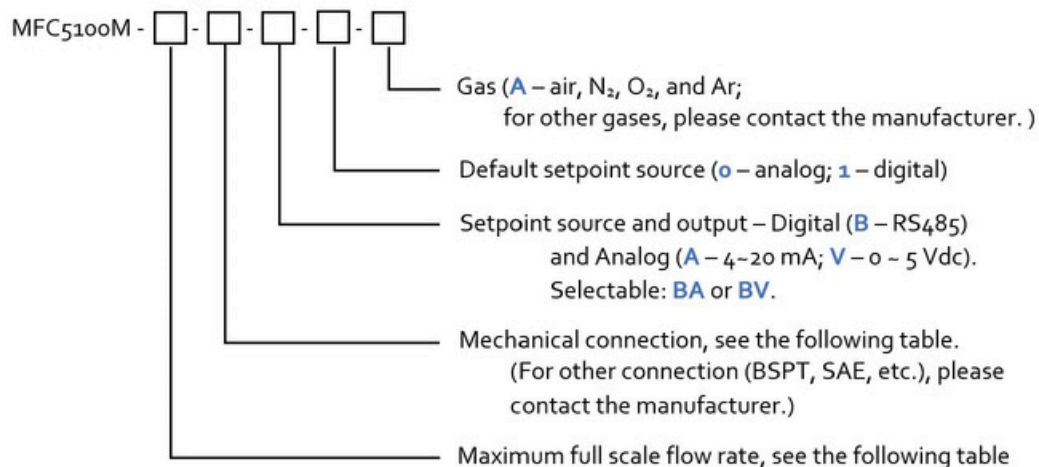
A* - the thread can be customized.

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Product selection and order

The product part number consists of the product model number and suffixes indicating the full-scale flow rate, as well as other parameters. Refer to the following for details.



For models with flow range in mLn/min or Ln/min (**MFC5100M** is the model number):

A four-digit number is for mLn/min, while a three-digit number is for Ln/min.

Maximum full-scale flow rate		Mechanical connection
0050	0...50 mLn/min	N1F - NPT 1/8"-female N2F - NPT 1/4"-female R1F - BSPT 1/8"-female R2F - BSPT 1/4"-female
0100	0...100 mLn/min	
0200	0...200 mLn/min	
0500	0...500 mLn/min	
0750	0...750 mLn/min	
1000 / 001	0...1000 mLn/min / 0...1 Ln/min	N2F - NPT 1/4"-female R2F - BSPT 1/4"-female
2000 / 002	0...2000 mLn/min / 0...2 Ln/min	
5000 / 005	0...5000 mLn/min / 0...5 Ln/min	
010	0...10 Ln/min	N3F - NPT 3/8"-female
020	0...20 Ln/min	R3F - BSPT 3/8"-female
050	0...50 Ln/min	N4F - NPT 1/2"-female
100	0...100 Ln/min	R4F - BSPT 1/2"-female

* For other ranges, please specify, for example, 0...50 mLn/min; the full-scale will be 0050; others, contact the manufacturer.

For example, **MFC5100M-0100-N1F-BV-0-A** is a model for 0...100 mLn/min, with NPT 1/8" female connector, setpoint source, and output analog 0 – 5 Vdc and digital RS485 Modbus, default setpoint source analog (0 – 5 Vdc), and applicable for air, nitrogen, oxygen, or argon.

MFC5100M-020-N3F-BV-1-A is a model for 0...20 Ln/min, with NPT 3/8" female connector, setpoint source, and output analog 0 – 5 Vdc and digital RS485 Modbus, default setpoint source digital (RS485 Modbus), and applicable for air, nitrogen, oxygen, or argon.

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