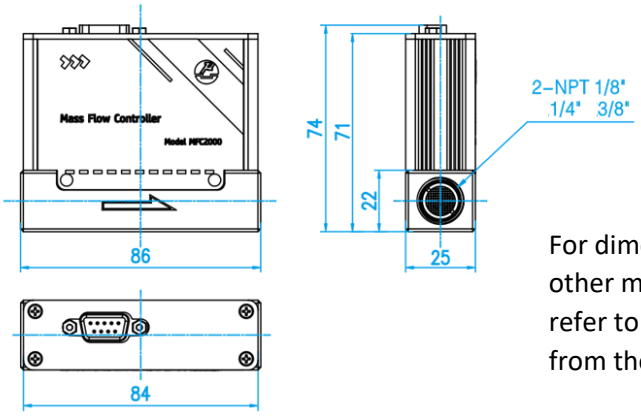

# MEMS mass flow controllers

## With Thermal-D sensing technology

MFC2000 Series

**MFC2000 series mass flow controllers** are manufactured with Siargo's proprietary MEMS (micro-electro-mechanical systems) calorimetry with diffusivity sensing technologies (***Thermal-D*** ®) that measures the calorimetry and diffusivity of the flowing medium. This technology compared to conventional calorimetric sensing offers much better linearity in the full dynamic range, removes gas sensitivities for gases that have similar thermal diffusivities, and increases the measurement and control accuracy when used with a gas conversion factor. It also simultaneously outputs the instant flow medium temperature data and improves the temperature performance of the thermal sensing approach.

## Dimensions




For dimensions of the other models, please refer to the user manual, from the manufacturer.

**Siargo Ltd.**
Santa Clara, California
www.Siargo.com
408.969.0368
info@Siargo.com

## Specifications

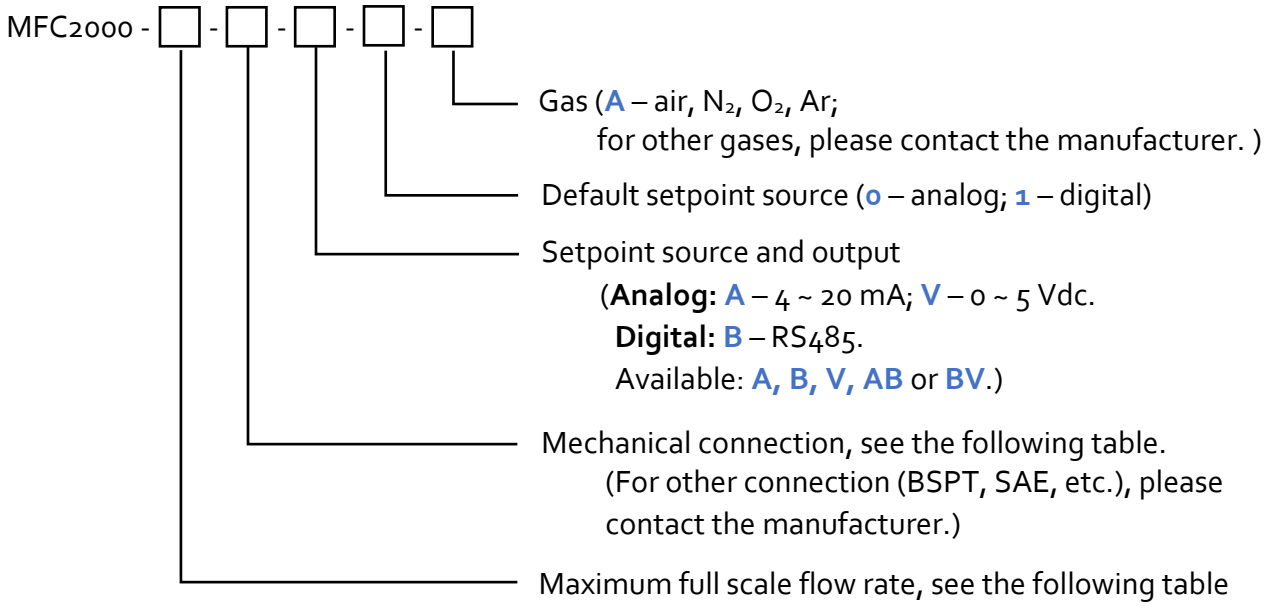
All specifications listed in the following table unless otherwise noted apply for calibration conditions at 0 °C and 101.325 kPa absolute pressure with air. The product is horizontally mounted at the time of calibration.

| | Value | Unit |
|---|---|---|
| Full-scale range | 0 ~ 50 mLn/min ... 0 ~ 1000 mLn/min<br>0 ~ 2 ... 0 ~ 200 Ln/min | |
| Accuracy | ± 1.5% r.d. (20 ~100% of full scale)<br>±0.3% f.s. (<20% of full scale) | |
| Repeatability | ± 0.5% r.d. (20 ~ 100% of full scale)<br>±0.1% f.s. (<20% of full scale) | |
| Turn-down ratio | 100:1 | |
| Max control range | 120 | %FS |
| Control pressure range | 0.1 ~ 0.8 | MPa |
| Maximum operating differential pressure | 0.4 | MPa |
| Setpoint voltage | 0 ~ 5.0 | Vdc |
| Settling time | 100 | msec |
| Working temperature | 0 ~ 55 | °C |
| Humidity | <95, no condensation | %RH |
| Burst pressure | 1.5 | MPa |
| Max pressure loss | 80 (100 Ln/min models) | kPa |
| Power supply | 8 ~ 24 | Vdc |
| Analog output | 0 ~ 5.0 | Vdc |
| Max null shift (analog) | ±30 | mVdc |
| Control valve | Normally Closed (NC) | |
| Digital output* | RS485 Modbus | |
| Electrical connector | DB9 | |
| Mechanical connection | 1/8"... 1/2" FNPT | |
| 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 | |

*For the other digital interface, please contact the manufacturer.

## Product selection

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




For models with flow range in mLn/min or Ln/min (**MFC2000** is the model number):

| Maximum full-scale flow rate | | Mechanical connection |
|---|---|---|
| **0050** | 0…50 mLn/min | **N1F** - NPT 1/8"-female<br>**N2F** - NPT 1/4"-female |
| **0100** | 0…100 mLn/min | |
| **0200** | 0…200 mLn/min | |
| **0500** | 0…500 mLn/min | |
| **0750** | 0…750 mLn/min | |
| **001** | 0…1000 mLn/min / 0…1 Ln/min | |
| **002** | 0…2 Ln/min | |
| **005** | 0…5 Ln/min | |
| **010** | 0…10 Ln/min | **N2F** - NPT 1/4"-female<br>**N3F** - NPT 3/8"-female |
| **020** | 0…20 Ln/min | |
| **050** | 0…50 Ln/min | **N3F** - NPT 3/8"-female<br>**N4F** - NPT 1/2"-female |
| **100** | 0…100 Ln/min | |
| **200*** | 0…200 Ln/min | |