

MODEL 5400 SERIES

The Model 5400 Series is a successor to the Model 3440, with enhanced basic capabilities. The appearance is similar to the conventional MFC. The sensor drive system is improved: the zero-drift is further reduced and the response in the lower range is improved. The Model 5410 Series is a mass flow meter with the same body design as that of the 5400 Series.

Features

- Control and response in each setting range are improved.
- The following capability to the set voltage is improved (supporting ramping specifications).
- As the valve is improved, the control resolution in each range is improved.

Standard Specifications

Model	5400	5410
Flow range (N ₂ equivalent, 20°C/1 atm)	10 SCCM–20 SLM (freely selectable)	10 SCCM–20 SLM (freely selectable)
Sensor	Thermal mass flow sensor	
Valve type	Proportional solenoid valve (closed when not energized)	–
Control range	2–100% (F.S.)	–
Response	1 sec. or less (0–100% within ±2% typical)	–
Accuracy	±1% F.S. (20°C)	
Repeatability	Within ±0.2% F.S. (20°C)	
Operating differential pressure	F.S. ≤ 5 SLM: 50–300 kPa	–
	F.S. > 5 SLM: 100–300 kPa	–
Allowable operating pressure	300 kPa (G) or less	
Proof pressure	980 kPa (G)	
Leak rate	1 × 10 ⁻¹¹ Pa·m ³ /s or less	
Allowable ambient temperature	0–50°C (Accuracy guaranteed at 15–35°C, ±0.1% F.S./°C)	
Allowable ambient humidity	10–90% (No condensation allowed)	
Materials of parts in contact with gases	Body: SUS316L	
	Diaphragm: Ni-Co	
	Valve seat: PTFE	
	Sealing: SUS316L, Ni	
Electric connection	Dsub 9-pin connector as per KFC Standard (Compliant with SEMI Standard)	
Flow rate input signals	0–5 VDC (Input impedance: 1 MΩ or more)	–
Flow rate output signals	0–5 VDC (Minimum load resistance: 250 kΩ or more)	
Required power supply	+15 VDC (±5%) 100 mA, –15VDC (±5%) 200mA	+15 VDC (±5%) 100 mA, –15VDC (±5%) 100mA
Joint (Main unit bore)	Standard: 1/4 VCR equivalent Option: 1/4 SWL	
Weight	Approx. 1000 g	Approx. 800 g

Note

Specifications relating to the flow range (e.g., flow range, accuracy and response) are expressed in N₂ or air equivalent. The product will be built with the primary pressure of 300 kPa or less and the secondary side open to the atmosphere. For details on the pressure requirements, please contact us.

Harness Layout

Pin Assignment of Dsub 9-pin Connector per KFC Standard

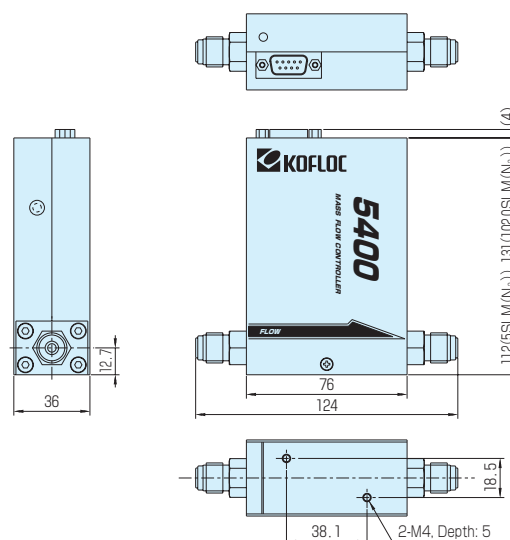
Pin No.	Signal	Pin No.	Signal
1	Input valve open/close operation	6	Flow input Hi
2	Flow output 0–5 V	7	Flow output COM
3	+15 VDC Power source	8	Flow input Lo
4	Power source COM	9	Output valve voltage
5	–15 VDC Power source		

* Because a differential input system is used for the product, pin 4 (Power source COM) and pin 7 (Flow output COM) are connected inside the mass flow controller while pin 8 (Flow input Lo) is isolated. In case of a single-ended connection, connect pin 8 to pin 4.

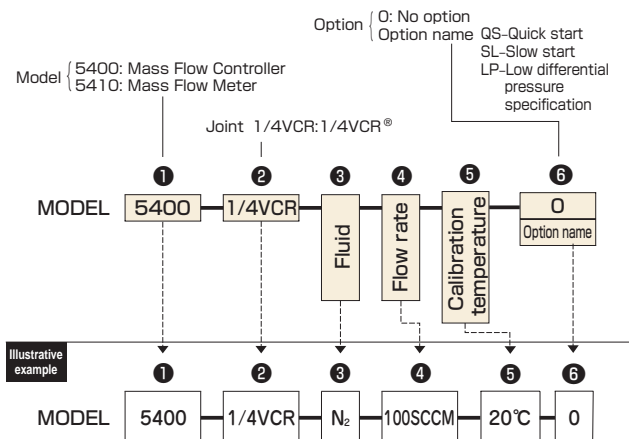
* Pins 2, 3, 4, 5, 7 only for Mass Flow Meter



Dimensions



Ordering



* Refer to "Ordering" and "Illustrative example" when placing an order or requesting a quotation. Fill in the blanks in the "Order/Quotation Request Card" at the end of the catalog, and send the card by fax.