

MODEL 5400 SERIES

Model 5400 Series Mass Flow Controller/Meter features weldless structure, metal seals, accuracy of $\leq \pm 1\%$, response of $\leq \pm 1$ second and other basic performance conditions required for semiconductor process control, and additionally, has achieved a significant price reduction. Model 5410 Series of the same body design are also lined up.

Features

- Equipped with a temperature follow-up type current difference detection flow sensor (patent applied for) to ensure high accuracy and high-speed response
- Use of a normally closed solenoid valve
- Weldless construction and metal seals provides low leakage.
- Reduced dead volume thanks to the diaphragm seat valve
- Spacing, body dimensions and harness layout are designed so that the product is compatible with other manufacturers' controllers.

Standard Specifications

Flow range (at N ₂ calibration conditions)	10SCCM-20SLM
Valve type*	Normally closed, Solenoid, Diaphragm seat valve
Control range*	2%-100%F.S.
Response*	1 sec. or less to within $\pm 2\%$ of the set point typical for 0-100% response QS option provides 1 sec. or less for 0-100% to 0-20% responses.
Accuracy	Within $\pm 1.0\%$ F.S. (@20°C)
Linearity	Within $\pm 0.5\%$ F.S. (@20°C)
Repeatability	Within $\pm 0.2\%$ F.S. (@20°C)
Operating differential pressure*	F.S. ≤ 5 SLM 49kPa-294kPa * Low differential pressure specification depends on types of gas and flow rates to be used. 5 < F.S. ≤ 20 SLM 98-294kPa
Proof pressure	980kPa
Leak rate	1×10^{-11} Pa·m ³ /s or less
Working temperature range	0-50°C (Accuracy guarantee: 15-35°C)
Materials of parts in contact with gases	Body: SUS 316L Diaphragm: Ni-Co Valve seat: PTFE Seals: Ni, SUS 316L
Joint	Equivalent to 1/4VCR®
Electrical connections*	Dsub 9-pin male connector per KFC standard (SEMI standard)
Flow rate input signals*	0-5VDC
Flow rate output signals	0-5VDC
Power supply requirement	5400: +15VDC ($\pm 5\%$) 100mA, -15VDC ($\pm 5\%$) 200mA 5410: +15VDC ($\pm 5\%$) 100mA, -15VDC ($\pm 5\%$) 100mA
Weight	Approx. 1000 g

* Items marked with an asterisk (*) are those applicable to Model 5400 only.

Harness Layout

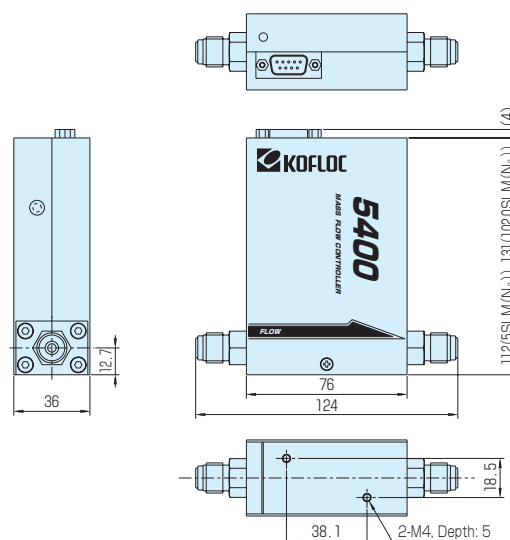
Pin Assignment of Dsub 9-pin Connector per KFC Standard

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		

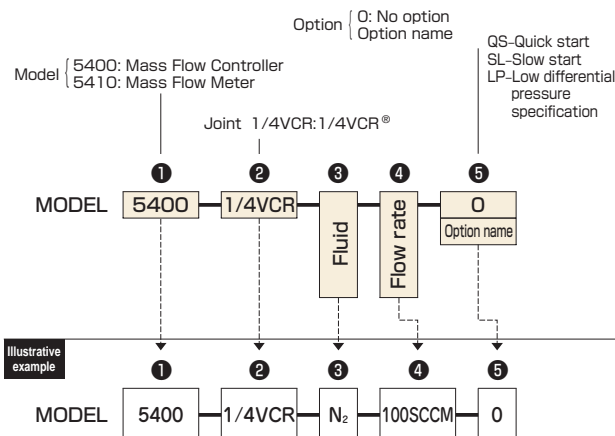
* Because a differential input system is used for the product, pin 4 (Power source COM) and pin 7 (Flow output COM) are connected inside the mass flow controller while pin 8 (Flow input Lo) is isolated. In case of a single-ended connection, connect pin 8 to pin 4.
* Pins 2, 3, 4, 5, 7 only for Mass Flow 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.