Compact Digital Mass Flow Controller / Mass Flow Meter

MODEL EX-250S SERIES

Gas Liquid MFC Controller MFM Meter

Applicable fluids	Gas	N_2, Air, H_2, He, Ar, O_2, CO_2, etc.
Max. flow rate	Gas	5SCCM to 10SLM
Accuracy		±1%F.S.

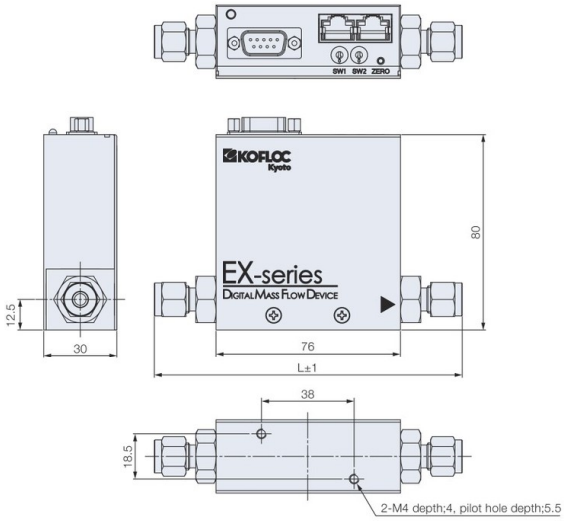
CE

- Compact design
- Within 1sec. response at the entire flow rate control range
- Gas type switchable with rotary switch
- RS485 communication function

  Analog input / output selectable from 0 to 5VDC or 4 to 20mA

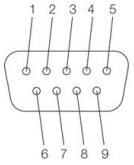
  Power supply selectable from ±15VDC or 24VDC

Dimensions



Fittings	Dimension L (mm)
Rc1/4	102.0
1/8SWL	122.8
1/4SWL	127.4
1/4VCR	123.8

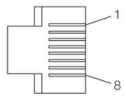
Wiring connection



D-sub connector (male)

Pin no.	±15V specification	+24V specification
	Signal name	
1	Valve open / close input*1	
2	Flow rate output	
3	Power +15V	Power +24V
4	Power COM	
5	Power −15V	N.C.*2
6	Flow rate setting signal Hi*1	
7	Flow rate output COM	Flow rate output COM Event output COM
8	Flow rate setting signal Lo*1	
9	N.C.*2	Event output

*1. Only EX-250SC
*2. Do not connect.



RJ-45 connector (female)

Pin no.	Signal name
1	TR_COM
2	TR_COM
3	N.C.
4	TR (−)
5	TR (+)
6	N.C.
7	N.C.
8	N.C.

SW1 rotary switch position table

No.	Gas type
0*1*2	User-specified gas
1	N_2
2	Air
3	H_2
4	He
5	Ar
6	O_2
7	CO_2
8	Unusable
9	User custom C.F. mode (changeable by user)

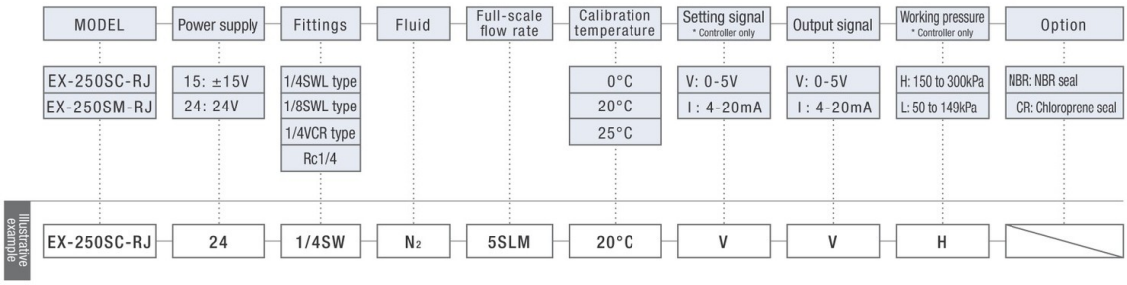
*1. The C.F. conversion value at ordering time is set.
*2. Factory default position.

Standard Specifications

MODEL	EX-250SC-RJ (MFC)	EX-250SM-RJ (MFM)
Sensor type	Thermal sensor	
Valve type	Proportional solenoid valve (normally closed)	—
Applicable gas	N_2, Air, H_2, He, Ar, O_2, CO_2, etc.	
Full-scale flow rate (N_2 equivalent)	5SCCM to 10SLM	
Control range	2 to 100%F.S.	—
Response	Within 1sec. (within ±2% F.S.) (Within 2sec. for F.S. 5SCCM specification) (L: 50 to 149kPa H: 150 to 300kPa)	—
Accuracy	±1%F.S.	
Repeatability	±0.2%F.S.	
Operating differential pressure	F.S. < 10SLM 50 to 300kPa (Ar CO_2: 100 to 300kPa) F.S.10SLM 100 to 350kPa (Ar CO_2: 150 to 300kPa)	—
Max. inlet pressure	500kPa(G)	
Proof pressure	1MPa(G)	
He Leak rate	≤ 1×10^{-8}Pa·m³/s	
Allowable ambient temperature	5 to 50°C	
Accuracy guarantee temperature	15 to 35°C	
Allowable storage temperature	–10 to 60°C	
Allowable ambient humidity	10%RH to 90%RH (no dew condensation)	
Materials of parts in contact with gases	SUS316L, SUS316, Magnetic stainless steel, PTFE, FKM (option: NBR or CR)	SUS316L, SUS316, PTFE, FKM (option: NBR or CR)
Electrical connection	D-sub 9 pins RJ45 connector, 2 pcs	
Flow rate setting signal	0 to 5VDC (Input impedance: Approx. 1MΩ) or 4 to 20mA (Input impedance: Approx. 250Ω)	—
Flow rate output signal	0 to 5VDC (Load resistance: 10kΩ or more) or 4 to 20mA (Load resistance: 500Ω or less)	
Event output	1 point NPN open collector (Max. rating: 30VDC, 50mA) (24VDC power specification only)	
Digital communication	RS485	
Power supply	+15VDC (±5%) 100mA or less –15VDC (±5%) 150mA or less or 24VDC (±10%) 300mA or less	+15VDC (±5%) 100mA or less –15VDC (±5%) 100mA or less or 24VDC (±10%) 100mA or less
Fittings	Standard: 1/4SWL type Option: 1/8SWL type, 1/4VCR type, Rc1/4	
Weight	Approx. 500g	Approx. 440g

* Use with a dry and clean gas containing no corrosive components, dust or mist.
* Accuracy assurance with calibration gas.
* He leak rate does not include permeation.
  Leakage (reference value) by long-time permeation is 1 x 10^{-6}Pa·m³/sec. or less.

Ordering



* 'SWL type' and 'VCR type' are shortened to SW and VCR in Ordering code.