

Metal-sealed Digital Mass Flow Controller / Mass Flow Meter

MODEL EX-550 SERIES



Applicable fluids Gas N₂, Air, H₂, He, Ar, O₂, CO₂, etc.

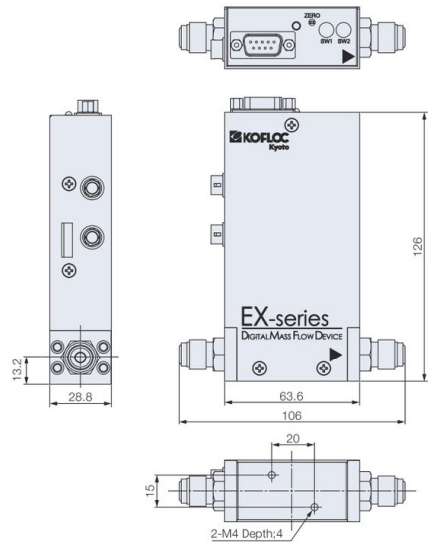
Max. flow rate Gas 10SCCM to 5SLM

Accuracy ±1%S.P. (25 to 100%F.S.)
±0.25%F.S. (under 25%F.S.)

- Metal sealing design
- Set-point High-accuracy
Response within 1 sec. 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



Wiring connection

(1) D-sub connector (male)

Pin no.	±15V specification	+24V specification
1	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	
8	Flow rate setting signal Lo ^{*1}	
9	N.C. ^{*2}	

^{*1} Only EX-550C
^{*2} Do not connect.

(2) HR10A-7R-4S / HRS

Pin no.	Signal name
1	TR- (RS485)
2	TR+ (RS485)
3	TRCOM (RS485)
4	TRCOM (RS485)

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.

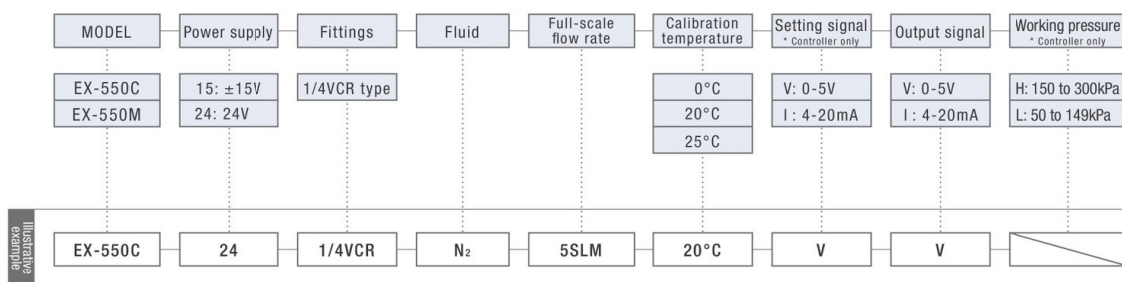
Standard Specifications

MODEL	EX-550C (MFC)	EX-550M (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)	10SCCM to 5SLM	
Control range	2 to 100%F.S.	—
Response	Within 1 sec. (within ±2% F.S.) (L: 50 to 149kPa H: 150 to 300kPa)	—
Accuracy	±1%S.P. (25 to 100%F.S.) ±0.25%F.S. (under 25%F.S.)	
Repeatability	±0.2%F.S.	
Operating differential pressure	50 to 300kPa (Ar CO ₂ : 100 to 300kPa)	—
Max. inlet pressure	350kPa(G)	
Proof pressure	1MPa(G)	
He Leak rate	≤ 1 × 10 ⁻¹¹ Pa·m ³ /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, Magnetic stainless steel, PTFE	SUS316L, PTFE
Electrical connection	D-sub 9 pins HR-10A × 2	
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)	
Digital communication	RS485	
Power supply	+15VDC (±5%) 100mA or less -15VDC (±5%) 150mA or less or 24VDC (±10%) 180mA or less	+15VDC (±5%) 100mA or less -15VDC (±5%) 100mA or less or 24VDC (±10%) 100mA or less
Fittings	1/4VCR type	
Weight	Approx. 800g	Approx. 550g

* Use with a dry and clean gas containing no corrosive components, dust or mist.

* Accuracy assurance with calibration gas.

Ordering



* 'VCR type' is shortened to VCR in Ordering code.