

All metal digital mass flow controller / mass flow meter

MODEL EX-550 SERIES

All metal MFC installed the own developed stable high speed thermal sensor. SEMI standard, 106mm (or 124mm) and RS485 communication. High accuracy product realized 1.0% S.P for corrosive gas.



A

Mass flow meters and Controllers

MODEL EX-550 SERIES

- Metal sealing design
- Lower cost but high accuracy measurement
- High speed response and zero stability
- 0-5VDC or 4-20mA Input/output signal and +/-15VDC or 24VDC power supply
- Mediocrity D-sub 9pin
- Gases registered in EX-550 are usable by rotary-switch
- *Calculate the flow rate with conversion factor based on N₂ gas
- RoHS compliance, CE marked

EX-550 Standard Specifications

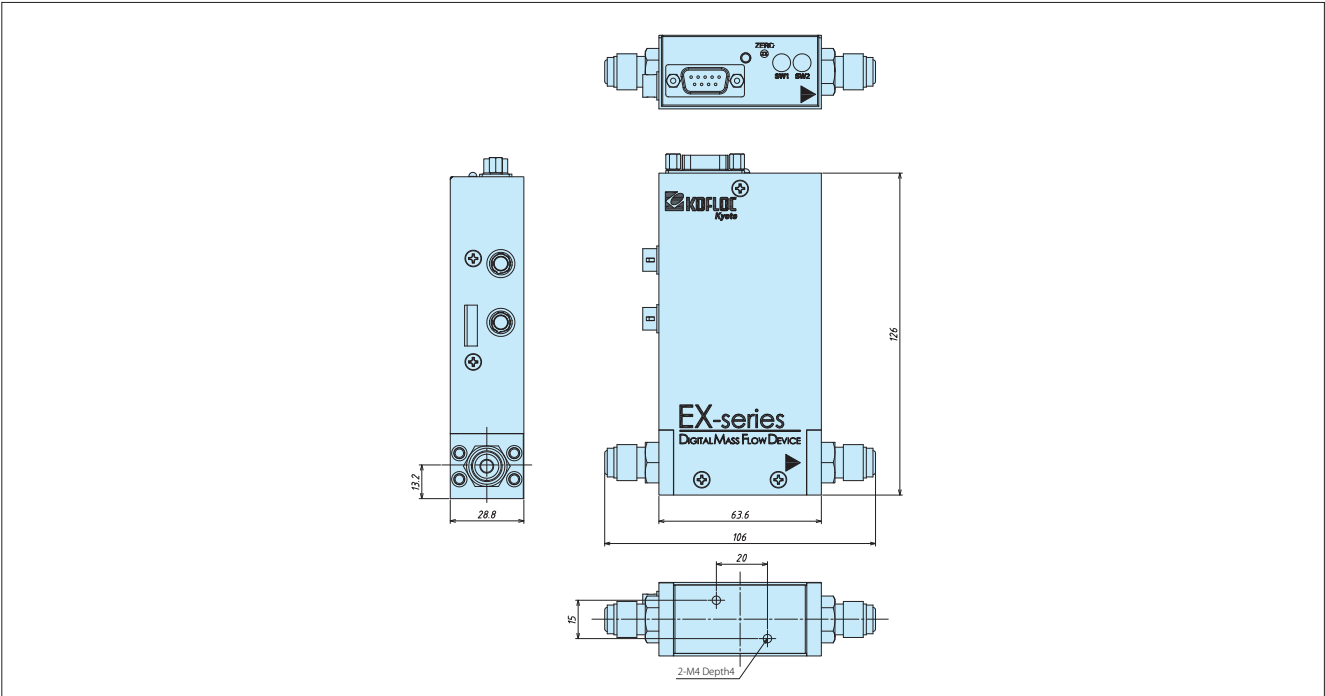
| Model | Mass flow controller EX-550C | Mass flow meter EX-550M |
|---|--|-------------------------|
| Sensor type | Thermal sensor | |
| Valve type | Proportional solenoid valve (normally closed) | — |
| Applicable gases ^{*1} | N ₂ , Air, H ₂ , He, Ar, O ₂ , CO ₂ (The other gases are N ₂ gas conversion) | |
| Flow range ^{*2} | 10SCCM-5SLM | |
| Control range | 2-100% (F.S.) | |
| Response | Total flow rate control range ±1 sec (within ±2% F.S.) | |
| Accuracy | L:50kPa-149kPa H:150kPa-300kPa | — |
| Repeatability | ±1.0%S.P. (25%F.S.-100%F.S.) , ±0.25%F.S. (-25%F.S.) | |
| Operating differential pressure ^{*3} | 50-300kPa (Ar, CO ₂ : 100kPa-300kPa) | — |
| Inlet maximum pressure | 350kPa (G) | |
| Proof pressure | 980kPa (G) | |
| External leak rate | ≤ 1×10 ⁻¹¹ Pa·m ³ /sec | |
| Temperature | Working temp. | 5-50°C |
| | Accuracy guaranteed temp. | 15-35°C |
| | Allowable storage temp. | -10-60°C |
| Allowable operating humidity | 10-90% RH (without dew condensation) | |
| Materials of gas contact part | SUS316L, Magnetic stainless steel, PTFE, Ni-Co | |
| Electrical connection | Dsub9 pin KFC Standard (SEMI standard) HR-10A×2 | |
| Flow rate setting signal | 0-5VDC (Input impedance approx.1MΩ) 4-20mA (Input impedance approx.250Ω) | — |
| Flow rate output signal | 0-5VDC or 4-20mA | |
| Digital communication | RS485 | |
| Required power supply (DC) | +15VDC (+/-5%) less than 100mA, -15VDC (+/-5%) less than 150mA Or +24VDC (+/-10%) less than 180mA (MFM: less than 100mA) | |
| Joint | 1/4VCR type (standard) | |
| Mounting posture | Not specified | |
| Weight | Approx. 800g | Approx. 550g |

(*1) Dry gas and clean gas not included the corrosive particles and dust/mist.

(*2) SCCM: cc/min at 0°C, 1atm SLM: L/min at 0°C, 1atm

(*3) Please tell us your supply and outlet pressure values before order.

Dimensions



Wiring connections

① Dsub connector (male)

| Pin # | ±15V specification | ±24V specification |
|-------|---------------------|--------------------|
| | | Signal Name |
| 1 | Valve open/close *1 | |
| 2 | Output signal | |
| 3 | Power+15V | Power+24V |
| 4 | Power COM | |
| 5 | Power-15V | N.C.*2 |
| 6 | Set point Hi *1 | |
| 7 | Signal COM | |
| 8 | Set point Lo *1 | |
| 9 | N.C.*2 | |

*1. Only EX-550C
*2. No Connection

② HR10A-7R-4S /HRS

| Pin # | Signal Name |
|-------|--------------|
| 1 | TR-(RS485) |
| 2 | TR+(RS485) |
| 3 | TRCOM(RS485) |
| 4 | TRCOM(RS485) |

Rotary switch(SW1) position

| No. | Gas |
|-----|--|
| 0 | Calibration gas |
| 1 | N ₂ |
| 2 | Air |
| 3 | H ₂ |
| 4 | He |
| 5 | Ar |
| 6 | O ₂ |
| 7 | CO ₂ |
| 8 | Converted value used by C.F (Unchangeable) |
| 9 | User custom mode (Changeable by software) |

Ordering

| | ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | |
|------------------------|--------|-------------------------|-------------------|-------------|------------------------|----------------|----------------------|----------------------------|--------------------------------------|--|--|
| MODEL | EX-550 | Controller /Meter | Power supply | Connection | Between the surfaces | Gas | Max.flow rate | Calibration temperature(C) | Input signal *Controller only | Output signal | Differential pressure *Controller only |
| | | C:Controller M:Meter | 15:±15V 24:24V | 1/4VCR type | 106:106mm 124:124mm | Gas | Full scale flow rate | 0°C 20°C 25°C | V: Voltage input I: Current input | V: Voltage output I: Current output | H:150-300kPa L:50-149kPa |
| Example of description | | | | | | | | | | | |
| MODEL | EX-550 | M | 24 | 1/4VCR | 106 | N ₂ | 5SLM | 0°C | ⊗ | I | ⊗ |