

F-202EI

Mass Flow Controller for low pressure drop or corrosive gas service



Technical specifications

Measurement & control

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| Type of media | Gases |
| Flow range | min. 0.17...8.5 l _n /min max. 1...50 l _n /min |
| Accuracy | ±1% FS |
| Repeatability | <±0.2% Rd (or <±0.04% FS whichever is greater) |
| Turndown ratio | 1:50 (2...100%) |
| Multi fluid capability | Storage of max. 8 calibration curves |
| Settling time (in control, typical) | 2 ... 3 sec. |
| Control stability | < ± 0.1 % FS (typical) |
| Operating temperature | -10...+70°C; 0...+50°C for ATEX CAT3, KCs, Class1 Div 2 |
| Temperature sensitivity | < 0.1% FS/°C |
| Leak integrity, outboard | tested < 2 x 10 ⁻⁹ mbar l/s He |
| Pressure sensitivity | 0.1% Rd/bar typical N2; 0.01% Rd/bar typical H2 |
| Max. Kv-value | 6.6 x 10 ⁻² |
| Mounting | max. error at 90° off horizontal 0.2% at 1 bar, typical N2 |
| Warm-up time | 30 minutes |
| Storage/transport conditions | 0...+50°C, max. 95% RH (non-condensing) |

Approvals

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|-------------------|---|
| Electrical safety | IEC 61010-1 |
| Marking | CE, UKCA |
| Ex-Protection | ATEX Zone 2, KCs, Class I Div 2, ATEX Zone 22 |

Mechanical specs

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|-----------------------|---|
| Pressure rating (PN) | 10 |
| Ingress protection | IP65 |
| Material wetted parts | stainless steel 316L or comparable |
| Sealing material | standard: FKM/Viton®; options: EPDM, FFKM/Kalrez®, FDA and USP Class VI approved compounds |
| Plunger material | standard: FFKM with PI foil; options: EPDM with PI foil, FDA and USP Class VI approved FFKM/Kalrez® |
| Process connections | compression type or face seal (VCR/VCO) couplings |
| Weight | 1.5 kg |

Electrical properties

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|-----------------------|--|
| Power supply | +15...24 Vdc |
| Power consumption | 3.5 W typical at 24 V for fieldbus: add 0.9 W |
| Analog output | 0...5 (10) Vdc or 0 (4)...20 mA (sourcing) |
| Analog setpoint | 0...5 (10) Vdc or 0 (4)...20 mA (sinking) |
| Digital communication | standard: RS232 options: CANopen®, DeviceNet™, EtherCAT®, PROFIBUS DP, PROFINET, Modbus RTU, ASCII or TCP/IP, EtherNet/IP, POWERLINK or FLOW-BUS |

Electrical interfaces

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|---|------------------------|
| Power (main connector) | 8-pin DIN (male) |
| Function (main connector) | Analog, RS232, RS485 |
| PROFIBUS DP | 8-pin M12B (female) |
| CANopen / DeviceNet | 5-pin M12A (male) |
| Modbus RTU/ASCII/FLOW-BUS | 5-pin M12A (male) |
| Modbus TCP / EtherNet/IP / EtherCAT® / PROFINET / POWERLINK | 2x 4 pin M12D (female) |