



## Technical specifications

## Measurement & control

| Type of media                       | Gases                                                                              |
|-------------------------------------|------------------------------------------------------------------------------------|
| Flow range                          | min. 0.014...0.7 mlIn/min<br>max. 0.18...9 mlIn/min                                |
| Accuracy                            | ±0.8% Rd plus ±0.2% FS for F-200CV-005<br>±2% FS for F-200CV-002                   |
| Repeatability                       | <±0.2% Rd (or <±0.04% FS whichever is greater), <±0.5% Rd for models -002- & -005- |
| Turndown ratio                      | up to 1:187.5 (1:50 in analog mode)                                                |
| Multi fluid capability              | storage of max. 8 calibration curves                                               |
| Settling time (in control, typical) | 2 ... 4 sec.                                                                       |
| Control stability                   | ≤ ± 0.1 % FS (typical for 1 lIn/min N2)                                            |
| Operating temperature               | -10...+70°C                                                                        |
| Temperature sensitivity             | zero: < 0.05% FS/°C; span: < 0.05% Rd/°C                                           |
| Leak integrity, outboard            | tested < 2 x 10 <sup>-9</sup> 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 <sup>-2</sup>                                                             |
| 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

## Mechanical specs

|                                |                                                                                                                                                     |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Pressure rating (PN) - in barg | 64                                                                                                                                                  |
| Ingress protection             | IP40                                                                                                                                                |
| 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 (polyimide) foil; options: EPDM with PI foil, FDA and USP Class VI approved EPDM, FDA and USP Class VI approved FFKM/Kalrez® |
| Process connections            | compression type or face seal (VCR/VCO) couplings                                                                                                   |
| Weight                         | 0.6 kg                                                                                                                                              |

## Electrical properties

|                       |                                                                                                                                                          |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| Power supply          | +15...24 Vdc                                                                                                                                             |
| Power consumption     | 3.5 W typical at 24 V<br>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: PROFIBUS DP,<br>CANopen®, DeviceNet™, PROFINET, EtherCAT®,<br>Modbus RTU, ASCII or TCP/IP, EtherNet/IP,<br>POWERLINK, FLOW-BUS |

## Electrical interfaces

|                                                               |                      |
|---------------------------------------------------------------|----------------------|
| Power (main connector)                                        | 9-pin D-sub (male)   |
| Function (instrument connector)                               | Analog, RS232, RS485 |
| PROFIBUS DP                                                   | 9-pin D-sub (female) |
| CANopen / DeviceNet                                           | 5-pin M12A (male)    |
| Modbus RTU/ASCII/FLOW-BUS                                     | RJ45                 |
| Modbus TCP / EtherNet/IP / EtherCAT®/<br>PROFINET / POWERLINK | 2x RJ45              |