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LOW- Δ P-FLOW F-100D

Massendurchflussmesser für Anwendungen mit geringem Druckabfall oder korrosiven Gasen

- Kapillare mit großem Durchmesser (thermischer Bypass-Sensor)
- Sehr geringer Druckabfall
- Geringere Empfindlichkeit gegenüber Feuchtigkeit und Schmutz
- Geeignet für korrosive Gase
- Leicht zu reinigen

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Thermische Massendurchflussmesser für geringen Druckabfall oder Anwendungen mit korrosiven Gasen

Bronkhorst® F-100D Massendurchflussmesser sind für die genaue Messung von Durchflussbereichen zwischen 0,2...10 ml_n/min und 0,4...20 ml_n/min (N₂-Äquivalent) geeignet. Diese Geräte eignen sich insbesondere für korrosive Gase oder Anwendungen mit sehr niedrigem Differenzdruck (Δ P). Im Vergleich zu herkömmlichen Instrumenten verfügen LOW- Δ P-FLOW Massendurchflussmesser über größere Fließkanäle. So wird die Verstopfungsgefahr reduziert, die Reinigung und Spülung erleichtert und ein geringerer Druckabfall gewährleistet (der Sensor benötigt nur 0,5 bis 5 mbar).

Die integrierte Digitalplatine bietet Signal- und Feldbusumwandlung sowie eine PID-Regler-Funktion für die optionale Massendurchflussregelung mithilfe eines separat angebrachten Regelventils. Neben dem Standard-RS232-Ausgang bieten die Instrumente auch analoge Signale. Optional kann eine On-Board-Schnittstelle für CANopen®, DeviceNet™, EtherCAT®, PROFIBUS DP, PROFINET, Modbus RTU, ASCII or TCP/IP, EtherNet/IP or FLOW-BUS Protokolle integriert werden.

Technical specifications

Measurement / control system

Measurement / control system

| | |
|---|--|
| Flow range (intermediate ranges available) | min. 0,2...10 ml _n /min |
| | max. 0,4...20 ml _n /min (based on N ₂) |
| Accuracy (incl. linearity) (based on actual calibration) | ± 1 % FS |
| Repeatability | < 0,2 % RD |
| Turndown ratio | 1:50 (2...100%) |
| Max. operating pressure | 10 bar g |
| Multi fluid capability | storage of max. 8 calibration curves |
| Response time (sensor) | 1 ... 2 sec. |
| Operating temperature | -10 ... +70 °C |
| Mounting | horizontal |
| Temperature sensitivity | < 0,1% FS/°C |
| Pressure sensitivity | 0,1% Rd/bar typical N ₂ ; 0,01% Rd/bar typical H ₂ |
| Leak integrity, outboard | tested < 2 x 10 ⁻⁹ mbar l/s He |
| Warm-up time | 30 min. for optimum accuracy 2 min for accuracy ± 2% FS |

Mechanical parts

| | |
|--------------------------------|---|
| Material (wetted parts) | stainless steel 316L or comparable; other on request |
| Process connections | compression type or face seal (VCR/VCO) couplings |
| Seals | standard: Viton®; options: EPDM, Kalrez® (FFKM), FDA and USP Class VI approved compounds |
| Weight | 0,4 kg |
| Ingress protection | IP40 |

Electrical properties

| | | | | |
|--|---|----------------|----------------|--------------------|
| Power supply | +15 ... 24 Vdc | | | |
| Max. power consumption meter | Supply | at voltage I/O | at current I/O | extra for fieldbus |
| | 15 V | 95 mA | 125 mA | <75 mA |
| Max. Power consumption controller | 24 V | 65 mA | 85 mA | <50 mA |
| | Supply | at voltage I/O | at current I/O | extra for fieldbus |
| 15 V | 290 mA | 320 mA | <75 mA | |
| 24 V | 200 mA | 215 mA | <50 mA | |
| Analog output | 0...5 (10) Vdc or 0 (4)...20 mA (sourcing output) | | | |

| | |
|------------------------------|---|
| Digital communication | standard: RS232; |
| | options: PROFIBUS DP, CANopen®, DeviceNet™, PROFINET, EtherCAT®, Modbus RTU, ASCII or TCP/IP, EtherNet/IP, FLOW-BUS |

Electrical connection

| | |
|------------------------------|--|
| Analog/RS232 | 9-pin D-connector (male); |
| PROFIBUS DP | bus: 9-pin D-connector (female); power: 9-pin D-connector (male); |
| CANopen® / DeviceNet™ | 5-pin M12-connector (male); |

Electrical connection

| | |
|----------------------------------|---------------------------------|
| FLOW-BUS/Modbus-RTU/ASCII | RJ45 modular jack |
| Modbus TCP / EtherNet/IP | 2 x RJ45 modular jack (in/out); |
| EtherCAT®/ PROFINET | 2 x RJ45 modular jack (in/out) |

Control valve options

External actuator options to be connected to the controller

Ex-proof specifications

Approvals / certificates

Technical specifications subject to change without notice.

For dimensional drawings and hook-up diagrams please visit the [product page](#) on our [website](#)

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Prospekte

LOW- Δ P-FLOW Prospekt



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Bedienungsanleitungen

LOW- Δ P-FLOW Bedienungsanleitung

LOW- Δ P-FLOW Kurzanleitung



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Anschlussdiagramme

Analog IO - RS232

DeviceNet

EtherCAT

FLOW-BUS

Modbus RTU/ASCII

PROFIBUS DP

PROFINET

Anschlussdiagramme


CANopen

EtherNet/IP

Modbus-TCP

Optional Bus and IO Configurations



Select a language 

Dimensionszeichnungen

Dimensional Drawing F-100D

Recommended accessories

Related products