# DATASHEET IQP-700C

## IQ+FLOW IQP-700C EPC (P1-control)

Microfluidic Back Pressure Controller




### Microfluidic Back Pressure Controllers

Bronkhorst® model IQP-700C Back Pressure Controllers are miniature devices which are ideal for use in cramped environments or in systems requiring minimum internal volume e.g. desktop equipment. The Pressure Controller has a chip-based (MEMS) sensor and is suited for pressure ranges between 0,1…0,5 bar and 2…10 bar absolute or gauge. Communication with the devices can be either in analog mode or digital over RS232 or RS485.

The ultra compact IQ+FLOW instruments are typically recommended for integration in analytical, bioprocessing and medical equipment.

### Technical specifications

**Measurement / control system**

| | |
|---|---|
| Absolute pressure sensors | Code: 1K5AC (chip sensor) - Ranges (FS): 0,5 ... 1,5 bara - P-max: 3,0 bara<br>Code: 3K0AC (chip sensor) - Ranges (FS): 1,0 ... 3,0 bara - P-max: 6,0 bara<br>Code: 10KAC (chip sensor) - Ranges (FS): 3,0 ... 10 bara - P-max: 10 bara<br>Code: 2K0AS (media-isolated) - Ranges (FS): 0,5 ... 2,0 bara - P-max: 3 bara<br>Code: 6K0AS (media-isolated) - Ranges (FS): 2,0 ... 6,0 bara - P-max: 10 bara<br>Code: 10KAS (media-isolated) - Ranges (FS): 3,0 ... 10 bara - P-max: 10 bara |
| Relative pressure sensors | Code: 1K5GC (chip sensor) - Ranges (FS): 0,5 ... 1,5 barg - P-max: 3,0 barg<br>Code: 3K0GC (chip sensor) - Ranges (FS): 1,0 ... 3,0 barg - P-max: 6,0 barg<br>Code: 10KGC (chip sensor) - Ranges (FS): 3,0 ... 10 barg - P-max: 10 barg<br>Code: 0K6GS (media-isolated) - Ranges (FS): 0,2 ... 0,6 barg - P-max: 1 barg<br>Code: 2K0GS (media-isolated) - Ranges (FS): 0,5 ... 2,0 barg - P-max: 3 barg<br>Code: 6K0GS (media-isolated) - Ranges (FS): 2,0 ... 6,0 barg - P-max: 10 barg<br>Code: 10KGS (media-isolated) - Ranges (FS): 3,0 ... 10 barg - P-max: 10 barg |
| Accuracy (incl. linearity and hysteresis) | ≤ ± 0,5 % FS<br>(Based on calibration at ambient temperature) |
| Repeatability | ≤ ± 0,2 % FS |
| Pressure rangeability | measurement: 1 : 50 (2…100%)<br>control: 1 : 5 (with flow range 1 : 50) |
| Fluids | Chip-sensor : dry, clean, non-flammable and non-corrosive gases. Absolute pressure sensors not suitable for Helium.<br>Media-isolated sensor : Gases compatible with aluminium or stainless steel SS316L and Viton. |
| Operating temperature | 5 … 50 °C |
| Temperature sensitivity | span: 0,1% RD/°C; zero: 0,05% FS/°C |
| Max. Kv-value | $2{,}37 \times 10^{-3}$ |
| Leak integrity, outboard | $1 \times 10^{-6}$ mbar·l/s He |
| Attitude sensitivity | negligible |

**Mechanical parts**

| | |
|---|---|
| Material (wetted parts) | body : aluminium (default) or stainless steel SS316L (option);<br>chip sensor (default) : Si, SiOx, epoxy, aluminium;<br>media-isolated sensor (option) : stainless steel SS316L |
| Process connections | optional: 10-32 UNF threaded internal nut with 1/16" ferrule (SS316 or Peek),<br>1/16" or 1/8" OD compression type |
| Seals | FKM/Viton® seals and plunger (default);<br>FKM/Viton® seals and FFKM/Kalrez® plunger (option) |
| Weight | 120 g (Aluminium) / 180 g (SS316L) |
| Ingress protection | IP40 |

**Electrical properties**

| | |
|---|---|
| Readout sample time | 2 msec |
| Power supply | +15 … 24 Vdc |
| Max. power consumption | 100 mA |
| Analog output | 0…5 (10) Vdc or 0 (4)…20 mA (sourcing output) |
| Digital communication | RS232, RS485 (Modbus-RTU/ASCII or FLOW-BUS) |

**Electrical connection**

| | |
|---|---|
| Power/Analog/RS232/RS485 | RJ45 modular jack |

**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*

## Recommended accessories



**E-8000 SERIES**

**Digital Readout / Control Systems**

- Bright, wide angle, 1.8" display (TFT technology)
- User friendly operation, menu driven with 4 push buttons



**PIPS SERIES**

**Plug-in Power Supply**

- For lab-style or industrial devices
- Interchangeable plugs (Euro, UK, USA, Australian, IEC) for mains connection

## Related products



**IQ+FLOW IQPD-700C EPC (P1-CONTROL)**

- Min. pressure 0,1...0,5 bar
  Max. pressure 2...10 bar
- Ultra compact; downported
- MEMS technology



**IQ+FLOW IQP-600C EPC (P2-CONTROL)**

- Min. pressure 0,025...0,5 bar
  Max. pressure 0,5...10 bar
- Ultra compact
- MEMS technology



**IQ+FLOW IQP-500C**

- Min. pressure 0,01...0,5 bar
  Max. pressure 0,2...10 bar
- Ultra compact
- MEMS technology



**IQ+FLOW IQF-200C MFC**

- Min. flow 0...10 mln/min
  Max. flow 0...5 ln/min
- Pressure rating 10 bar
- Ultra compact
- MEMS technology

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