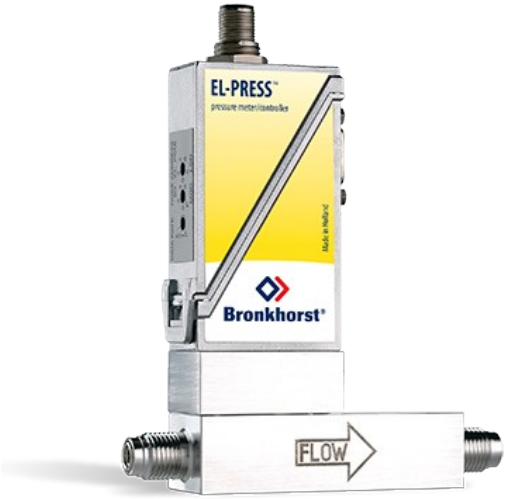
P-502CM

EL-PRESS METAL SEALED P-502CM

Metal-Sealed Digital Electronic Pressure Meter

- Patented metal-to-metal seal construction ensures long-term leak tightness (to atmosphere)
- Electropolished wetted parts
- Cleanroom assembled
- High accuracy, excellent repeatability
- Well proven, compact thru-flow design
- On-board PID controller for pressure control
- Analog, RS232 and fieldbus communication



Metal-Sealed Digital Electronic Pressure Meters

Bronkhorst® model P-502CM Electonic Pressure Transducers (EPTs) are designed especially to meet the requirements of the semicon market as well as other high purity gas applications. The instruments feature high surface quality and are of modular construction with metal-to-metal seals that ensure long-term leak tightness. The P-502CM is suited for precise measurement of pressure ranges between 2…100 mbar and 1,28…64 bar absolute or gauge. The EPT has a well-proven compact thru-flow design and includes a diaphragm type piezo-resistive pressure sensor, a microprocessor based pc-board with signal and fieldbus conversion and a PID controller for optional pressure control by means of a separately mounted control valve.

In addition to the standard RS232 output the instruments also offer analog I/O. As an option, an on-board interface can be mounted to provide DeviceNet™, PROFIBUS DP, Modbus, EtherCAT®, PROFINET or FLOW-BUS protocols.

Technical specifications

Measurement / control system

Absolute pressure sensors	Code: 350A - Ranges (FS): 100 ... 350 mbara - P-max: 1,0 barg - Burst pressure: 1,4 barg Code: 1K1A - Ranges (FS): 0,35 ... 1,1 bara - P-max: 3,1 barg - Burst pressure: 4,2 barg Code: 6K0A - Ranges (FS): 1,1 ... 6 bara - P-max: 10,5 barg - Burst pressure: 14 barg Code: 21KA - Ranges (FS): 6 ... 21 bara - P-max: 62 barg - Burst pressure: 84 barg Code: 64KA - Ranges (FS): 21 ... 64 bara - P-max: 100 barg - Burst pressure: n.a.
Relative pressure sensors	Code: 350R - Ranges (FS): 100 ... 350 mbarg - P-max: 1,0 barg - Burst pressure: 1,4 barg Code: 1k1R - Ranges (FS): 0,35 ... 1,1 barg - P-max: 3,1 barg - Burst pressure: 4,2 barg Code: 6K0R - Ranges (FS): 1,1 ... 6 barg - P-max: 10,5 barg - Burst pressure: 14 barg Code: 21KR - Ranges (FS): 6 ... 21 barg - P-max: 62 barg - Burst pressure: 84 barg
Accuracy (incl. linearity and hysteresis)	standard: ±0,5% FS
Repeatability	< 0,1% Rd
Pressure rangeability	1:50 for pressure meter; 1 : 20 for P2-control; 1 : 5 for P1-control
Response time (sensor)	2 msec
Operating temperature	-10…+50°C; up to +70°C on request
Temperature sensitivity	0,1% FS/°C
Leak integrity, outboard	< 2 x 10^{-11} Pa.m^3/s He
Attitude sensitivity	may be mounted in any position
Warm-up time	negligible

Mechanical parts

Material (wetted parts)	stainless steel 316L or comparable
Process connections	1/4" face seal couplings
Seals	metal-to-metal (no rings)
Weight	0,6 kg
Ingress protection (housing)	IP40

Electrical properties

Power supply	+15…24 Vdc		
Max. power consumption meter	Supply 15 V 24 V	at voltage I/O 67 mA 49 mA	at current I/O 90 mA 67 mA
Max. power consumption controller	Supply 15 V 24 V	at voltage I/O 223 mA 150 mA	at current I/O 223 mA 150 mA
PROFIBUS DP	add 53 mA (15 V supply) or 30 mA (24 V supply)		
PROFINET	add 77 mA (15 V supply) or 48 mA (24 V supply)		
EtherCAT®	add 66 mA (15 V supply) or 41 mA (24 V supply)		
DeviceNet™	add 48 mA (24 V supply)		
Analog output/command	0...5 (10) Vdc or 0 (4)…20 mA (sourcing output)		
Digital communication	standard: RS232; options: PROFIBUS DP, DeviceNet™, PROFINET, EtherCAT®, Modbus RTU or ASCII, FLOW-BUS		

Electrical connection

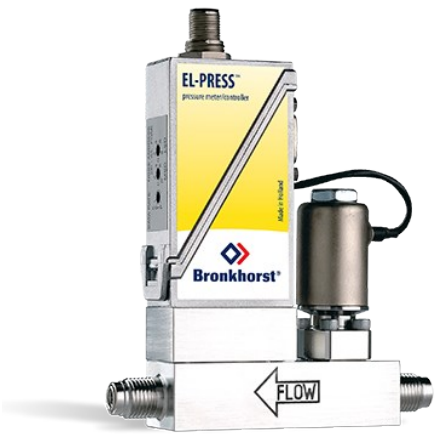
Analog/RS232	9-pin D-connector (male);
PROFIBUS DP	bus: 9-pin D-connector (female); power: 9-pin D-connector (male);
Devicenet™	5-pin M12-connector (male);
EtherCAT® / PROFINET	2 x RJ45 modular jack (in/out)
FLOW-BUS/Modbus-RTU/ASCII	RJ45 modular jack

Note: The measuring cell of the pressure sensore is separated from the external pressure by a thin, sensitive stainless steel diaphragm, and the sealed off cavity between diaphragm and cell is filled with oil. Since the standard oil filling is flammable, Bronkhorst advises to take precautions when oxygen or any other explosive fluid is used.

Technical specifications subject to change without notice.

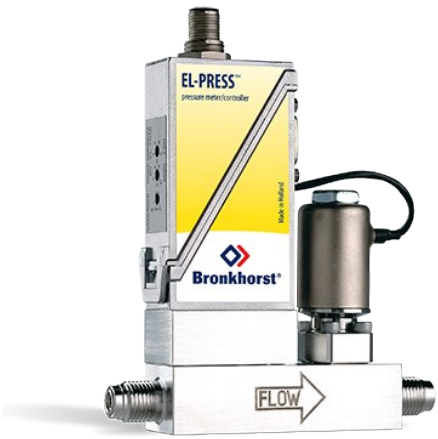
For dimensional drawings and hook-up diagrams please visit the productpage on our website

Related products



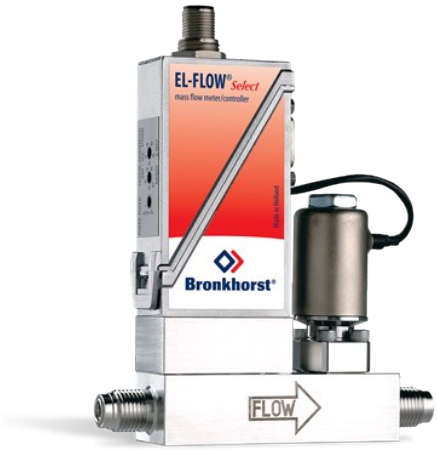
EL-PRESS METAL SEALED P-602CM (P2-CONTROL)

Min. pressure 2...100 mbar
Max. pressure 1,28...64 bar
Metal-to-metal outer seals
Cleanroom assembled



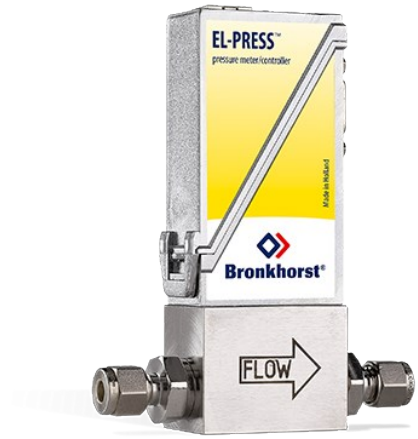
EL-PRESS METAL SEALED P-702CM (P1-CONTROL)

Min. pressure 2...100 mbar
Max. pressure 1,28...64 bar
Metal-to-metal outer seals
Cleanroom assembled



EL-FLOW METAL SEALED F-201CM

Min. flow 0,12...6 mln/min
Max. flow 1... 50 ln/min
Pressure rating 64 bar
Metal-to-metal outer seals
Cleanroom assembled



EL-PRESS P-502C

Min. pressure 2...100 mbar
Max. pressure 1,28...64 bar
Absolute or gauge pressure
High accuracy

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