

# DATASHEET P-502CI

## IN-PRESS P-502CI

Digital Electronic Pressure Meter, Industrial Style



### Digital Electronic Pressure Meters, Industrial Style

Bronkhorst® model P-502CI Electronic Pressure Transducers (EPTs) are suited for precise measurement of pressure ranges between 2...100 mbar and 1,28...64 bar absolute or between 0,7...35 mbar and 1,28...64 bar 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. The IN-PRESS model is of rugged design (IP65) for use in industrial environments or even Zone 2 hazardous areas, with optional ATEX Cat. 3 approval.

IN-PRESS series are equipped with a digital pc-board, offering high accuracy, excellent temperature stability and fast response. The main digital pc-board contains all of the general functions needed for measurement and control. 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 CANopen®, DeviceNet™, EtherCAT®, PROFIBUS DP, PROFINET, Modbus RTU, ASCII or TCP/IP, EtherNet/IP, POWERLINK or FLOW-BUS protocols.

### Technical specifications

#### Measurement / control system

Absolute pressure sensors	Code: 350A - Ranges (FS): 100 ... 350 mbara - P-max: 1,0 bara Code: 1K1A - Ranges (FS): 0,35 ... 1,1 bara - P-max: 3,1 bara Code: 6K0A - Ranges (FS): 1,1 ... 6 bara - P-max: 10,5 bara Code: 21KA - Ranges (FS): 6 ... 21 bara - P-max: 62 bara Code: M10A - Ranges (FS): 20 ... 100 bara - P-max: 200 bara
Relative pressure sensors	Code: 100R - Ranges (FS): 35 ... 100 mbarg - P-max: 0,7 barg Code: 350R - Ranges (FS): 100 ... 350 mbarg - P-max: 1,0 barg Code: 1k1R - Ranges (FS): 0,35 ... 1,1 barg - P-max: 3,1 barg Code: 6K0R - Ranges (FS): 1,1 ... 6 barg - P-max: 10,5 barg Code: 21KR - Ranges (FS): 6 ... 21 barg - P-max: 62 barg
Accuracy (incl. linearity and hysteresis)	± 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 ... +70 °C for ATEX cat. 3 0...50°C
Temperature sensitivity	0,1% FS/°C
Leak integrity, outboard	tested < 2 x 10 <sup>-9</sup> mbar l/s He
Attitude sensitivity	max. error at 90° off horizontal < 0,3 mbar

## Measurement / control system

Warm-up time	negligible
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## Mechanical parts

Material (wetted parts)	stainless steel 316L or comparable
Process connections	compression type or face seal (VCR/VCO) couplings
Seals	standard: FKM/Viton®; options: EPDM, FFKM/Kalrez®, FDA and USP Class VI approved compounds
Ingress protection	IP65

## 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
	24 V	65 mA	85 mA	<50 mA
Max. Power consumption controller	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: CANopen®, DeviceNet™, EtherCAT®, PROFIBUS DP, PROFINET, Modbus RTU, ASCII or TCP/IP, EtherNet/IP, POWERLINK or FLOW-BUS			

## Electrical connection

Analog/RS232	8 DIN (male);
PROFIBUS DP	bus: 5-pin M12 (female); power: 8 DIN (male);
CANopen® / DeviceNet™	5-pin M12 (male);
FLOW-BUS/Modbus-RTU/ASCII	5-pin M12 (male)
Modbus TCP / EtherNet/IP / POWERLINK	bus: 2 x 5-pin M12 (female) (in/out); power: 8 DIN (male);
EtherCAT®/ PROFINET	bus: 2 x 5-pin M12 (female) (in/out); power: 8 DIN (male)

## Control valve options

## External actuator options to be connected to the controller

## Ex-proof specifications

## Approvals / certificates

Technical specifications subject to change without notice.

**Note:** The measuring cell of the pressure sensor 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.

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



### IN-PRESS P-512CI

Min. pressure 1,28...64 bar  
Max. pressure 2...100 bar  
Absolute or gauge pressure  
Compact IP65 design



### IN-PRESS F-0XXAI+P-5X2CI (P2-CONTROL)

Min. pressure 2...100 mbar  
Max. pressure 8...400 bar  
Absolute or gauge pressure  
Compact IP65 design



### IN-PRESS P-5X2CI+F-0XXAI (P1-CONTROL)

Min. pressure 2...100 mbar  
Max. pressure 8...400 bar  
Absolute or gauge pressure  
Compact IP65 design



### EL-PRESS P-502C

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

