P-502C

EL-PRESS P-502C

Digital Electronic Pressure Meter

- For absolute or gauge pressure
- High accuracy and repeatability
- Well proven, compact thru-flow design
- On-board PID controller for pressure control
- Analog, RS232 and fieldbus communication

Digital Electronic Pressure Meters

Bronkhorst® model P-502C Electonic 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.

EL-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	Burst pressure: 1,4 bara
	Code: 1K1A	Ranges (FS): 0,35 ... 1,1 bara	P-max: 3,1 bara	Burst pressure: 4,2 bara
	Code: 6K0A	Ranges (FS): 1,1 ... 6 bara	P-max: 10,5 bara	Burst pressure: 14 bara
	Code: 21KA	Ranges (FS): 6 ... 21 bara	P-max: 62 bara	Burst pressure: 84 bara
	Code: M10A	Ranges (FS): 20 ... 100 bara	P-max: 200 bara	Burst pressure: n.a.
Relative pressure sensors	**Code: 100R**	Ranges (FS): 35 ... 100 mbarg	P-max: 0,7 barg	Burst pressure: 0,8 barg
	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 … +70 °C
Temperature sensitivity	0,1% FS/°C
Leak integrity, outboard	tested < 2 x 10^{-9} mbar l/s He
Attitude sensitivity	max. error at 90° off horizontal < 0,3 mbar
Warm-up time	negligible

Mechanical parts

Material (wetted parts)	stainless steel 316L or comparable
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
	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	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);
FLOW-BUS/Modbus-RTU/ASCII	RJ45 modular jack
Modbus TCP / EtherNet/IP / POWERLINK	2 x RJ45 modular jack (in/out);
EtherCAT®/ PROFINET	2 x RJ45 modular jack (in/out);

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

BRIGHT SERIES

Compact Local R/C Module

- Bright, wide angle, 1.8" display
- User friendly operation
- Indication/operation/configuration

PIPS SERIES

Plug-in Power Supply

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

Related products

EL-PRESS P-602CV (P2-CONTROL)

Min. pressure 5...100 mbar
Max. pressure 3,2...64 bar
Absolute or gauge pressure
High accuracy

EL-PRESS P-702CV (P1-CONTROL)

Min. pressure 20...100 mbar
Max. pressure 12,8...64 bar
Absolute or gauge pressure
High accuracy

EL-PRESS METAL SEALED P-502CM

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

IN-PRESS P-502CI

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

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