

DATASHEET P-602CV

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

Digital Electronic Forward Pressure Controller



Digital Electronic Forward Pressure Controllers

Bronkhorst® model P-602C Electronic Pressure Controllers (EPCs) are suited for precise measurement and control of downstream pressure ranges between 5... 100 mbar and 3,2...64 bar absolute or between 1,75...35 mbar and 3,2...64 bar gauge. The EPC 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 compact, fast acting 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: $\pm 0,5$ % FS
Repeatability	$< 0,1$ % RD
Pressure rangeability	measurement: 1 : 50 (2...100%) control: 1 : 20 (with flow range 1 : 50)
Control stability	$\leq \pm 0,05$ % FS (typical for 1 l _n /min N ₂ at specified process volume)
Operating temperature	-10 ... +70 °C
Temperature sensitivity	0,1% FS/°C
Max. Kv-value	$6,6 \times 10^{-2}$
Leak integrity, outboard	tested $< 2 \times 10^{-9}$ 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	0,7 kg
Ingress protection	IP40

Electrical properties

Power supply	+15 ... 24 Vdc			
Max. power consumption	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);

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

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

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-612CV (P2- CONTROL)

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



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



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 IQPD-600C EPC (P2-CONTROL)

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



BRONKHORST HIGH-TECH B.V.

Nijverheidsstraat 1A

NL-7261 AK Ruurlo (NL)

Tel. +31 573 45 88 00

info@bronkhorst.com

