

# DATASHEET P-506C

## EL-PRESS P-506C

Differential Pressure Meter



### Differential Pressure Meters

Bronkhorst® model P-506C Differential Pressure Transducers (DPTs) are suited for precise measurement of differential pressure ranges between 2...100 mbar(d) and 0,4...20 bar(d). The DPT 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

Differential pressure sensors

Code: 300D - Ranges (FS): 100 ... 300 mbar(d) (negative and positive)  
Code: 1K0D - Ranges (FS): 0,3 ... 1 bar(d) (negative and positive)  
Code: 4K0D - Ranges (FS): 1 ... 3 bar(d)  
Code: 15KD - Ranges (FS): 3 ... 20 bar(d)

*Limits:*  
Max. line pressure (all sensors): 64 barg;  
Max. overpressure:  
Code: 300D - Positive: 5 bar(d) - Negative: -2,5 bar(d)  
Code: 1K0D - Positive: 15 bar(d) - Negative: -7,5 bar(d)  
Code: 4K0D - Positive: 15 bar(d) - Negative: -7,5 bar(d)  
Code: 15KD - Positive: 40 bar(d) - Negative: -10 bar(d)

|   |   |
|---|---|
| Accuracy (incl. linearity and hysteresis) | standard: ± 0,5 % FS  |
| Repeatability                             | < 0,1 % RD  |
| Pressure rangeability                     | 1:50 for pressure meter;<br>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  |

Measurement / control system

|                          |   |
|--------------------------|---|
| Leak integrity, outboard | tested < 2 x 10 <sup>-9</sup> mbar l/s He |
| Attitude sensitivity     | max. error at 90° off horizontal < 6 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®;<br>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;<br>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);<br>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 /<br>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

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



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