

# Brooks® Digital Elastomer Sealed Pressure Controllers Models SLA5810 and SLA5820

## General Features:

- Digital software can store 10 selectable calibration and pressure ranges. Spares inventories are reduced by limiting the number of individual PCs required, lowering inventory holding costs.
- Accuracy:  $\pm 0.5\%$  F.S., including linearity and hysteresis for precision control.
- MTBF of approx. 500,000 hours - drives preventive maintenance cost down and increases through-put, reducing the long term cost of ownership.\*
- Eliminates droop, hysteresis, and boost.

## Analog I/O Option:

- 15-pin D-Connector
- 0(1)-5 Volt or 0(4)-20 mA setpoint and flow signals
- Single sided +15 or +24 Volt DC power supply
- Separate Valve-Override signal
- Precision 5 Volt Reference Output signal
- Compatible with Brooks' Model 0254 series secondary electronics

## Digital Communication Options:

- DeviceNet™, ODVA™ certified
- FOUNDATION™ Fieldbus, H1 Certified

## DESCRIPTION

Brooks Instrument's pressure measurement and control product line offers unparalleled flexibility and performance. The SLA5800 Series of elastomer seal pressure measurement and control products are the most accurate, repeatable, and responsive on the market today!

Brooks® offers traditional 0-5 volt or 4-20 mA analog options as well as a control interface via digital network protocols like DeviceNet, a high-speed (up to 500k baud) digital communication network, or FOUNDATION® Fieldbus. Brooks' communication capabilities and device-profiles have been certified by the ODVA (Open DeviceNet Vendor's Association) and the ITK Interoperability Test Kit. Talk to your Brooks representative about your specific needs.

The process and command data may be 'wired' either using traditional analog connections or digital communications networks; The measurement and control performance is the same!



The SLA5800 Series microprocessor uses a multipoint calibration to deal with any residual integral sensor non-linearity, yielding a highly accurate process signal.

The SLA5800 Series family of products utilizes a modular system in both its mechanical and electrical construction. This modularity allows for simplified customer ordering and factory configuration, enabling Brooks to easily meet the ever changing needs of our global customers.

This flexibility yields products for pressure measurement and control, using either traditional analog connections or leading edge network-communication protocols.

\* Based on data collected determining MTBF for Model 5964.

## Brooks® Models SLA5810 and SLA5820

### SPECIFICATIONS

#### PERFORMANCE CHARACTERISTICS:

##### Flow Ranges

Models SLA5810 and SLA5820 any range from 0-3 sccm to 0-30 slpm (N<sub>2</sub> eq.)

##### Accuracy

Integral Pressure products: ±0.5% of F.S. including linearity and hysteresis

##### Repeatability

Integral Pressure products: ±0.1% of F.S.

##### Temperature Sensitivity

Integral Pressure products: ±0.1% of F.S. per °C

##### Zero Stability

Integral Pressure products: ±0.001% of FS per 30 days

##### Pressure Ratings:

Maximum Pressure: 1450 psia

(Optional) Maximum Pressure: 4350 psia

All devices pressure tested without fittings to a minimum of 1.5 times the transducer pressure rating.

##### Transducer Pressure Ratings:

21.75 psia for 0 - 14.5 psia full scale

108.5 psia for 14.5 - 72.5 psia full scale

435 psia for 72.5 - 290 psia full scale

1450 psia for 290 - 1450 psia full scale

4350 psia for 1450 - 4350 psia full scale

##### Pressure Equipment Directive (PED) 97/23/EC:

Equipment falls under Sound Engineering Practice (SEP)

##### Leak Integrity

Inboard to Outboard: 1x10<sup>-9</sup> atm scc/sec Helium max.  
Helium leak test performed without fittings.

##### Maximum Fluid Operating Temperature

0°C to 65°C (32°F to 149°F)

##### Ambient Temperature Limits

Operating: 0°C to 60°C (32°F to 140°F)

Non-operating: -25°C to 100°C (-13°F to 212°F)

### PHYSICAL:

#### Materials of Construction

Wetted parts: 316L Vacuum Arc Remelt (VAR), 316L, and high-alloy ferritic stainless steel with external/internal seals: Viton® fluoroelastomers; Optional; Buna-N, Kalrez® and TFE  
Valve seat: Viton® fluoroelastomers, Optional; Buna-N, Kalrez and TFE

#### Outline Dimensions

Refer to Figures 2 and 4.

#### Process Connections

Refer to Figures 2 and 4 for all connection options

#### Control Action

Upstream or Downstream pressure control (See Figure 1)

### ELECTRICAL CHARACTERISTICS:

#### Electrical Connections

Analog I/O option: 15-pin, male

Digital I/O DeviceNet option: 5-pin Micro-Connector, male

FOUNDATION Fieldbus option: one 4-Pin M8 connector for power and one 4-Pin M12 connector for communications

#### Power Supply Voltage

Analog option: +15 Vdc, ±5% (traditional -15 Vdc pin is ignored) or +24 Vdc, ±5%

Digital I/O:

DeviceNet I/O: 11-25 Vdc

FOUNDATION Fieldbus I/O: 14-27 Vdc

Power Requirements:	Watts, typical	Watts, max.
Analog I/O option, with valve:	3.6	4.0
Digital I/O option, w/valve:	6.9	7.6

#### Command-Setpoint Input (Analog I/O option only)

#### Current Setpoint Input Specifications

Nominal Range: 4-20 mA or 0-20 mA

Full Range: 0-22 mA

Input Impedance: 125 Ω

#### Voltage Setpoint Input Specifications

Nominal Range: 0-5 Vdc

Full Range: 0-5.5 Vdc

Input Impedance: >990 kΩ

#### Pressure Output (Analog I/O option only)

#### Pressure Output (Voltage) Specifications

Nominal Range: 0-5 Vdc, 1-5 Vdc

Calibrated Accuracy: +0.1% of F.S.

Full Range: -0.5-5.5 Vdc (@0-5 Vdc);  
0.6-5.5 Vdc (@1-5 Vdc)

Minimum Load Resistance: 2 kW

#### Pressure Output (Current) Specifications

Nominal Range: 4-20 mA or 0-20 mA

Calibrated Accuracy: ±0.1% of F.S.

Full Range: 0-22 mA (@ 0-20 mA);  
3.8-22 mA (@ 4-20 mA)

Maximum Load: 380 Ω (for supply voltage < 16 Vdc)

580 Ω (for supply voltage ≥ 16 Vdc)

#### PC-based Support Tools See Instruction Manual

X-PR-SLA5800-PC-eng for more information.

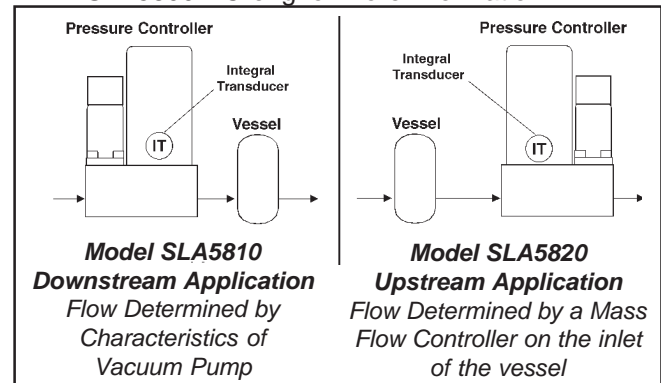


Figure 1 Typical Configurations



# Brooks® Models SLA5810 and SLA5820

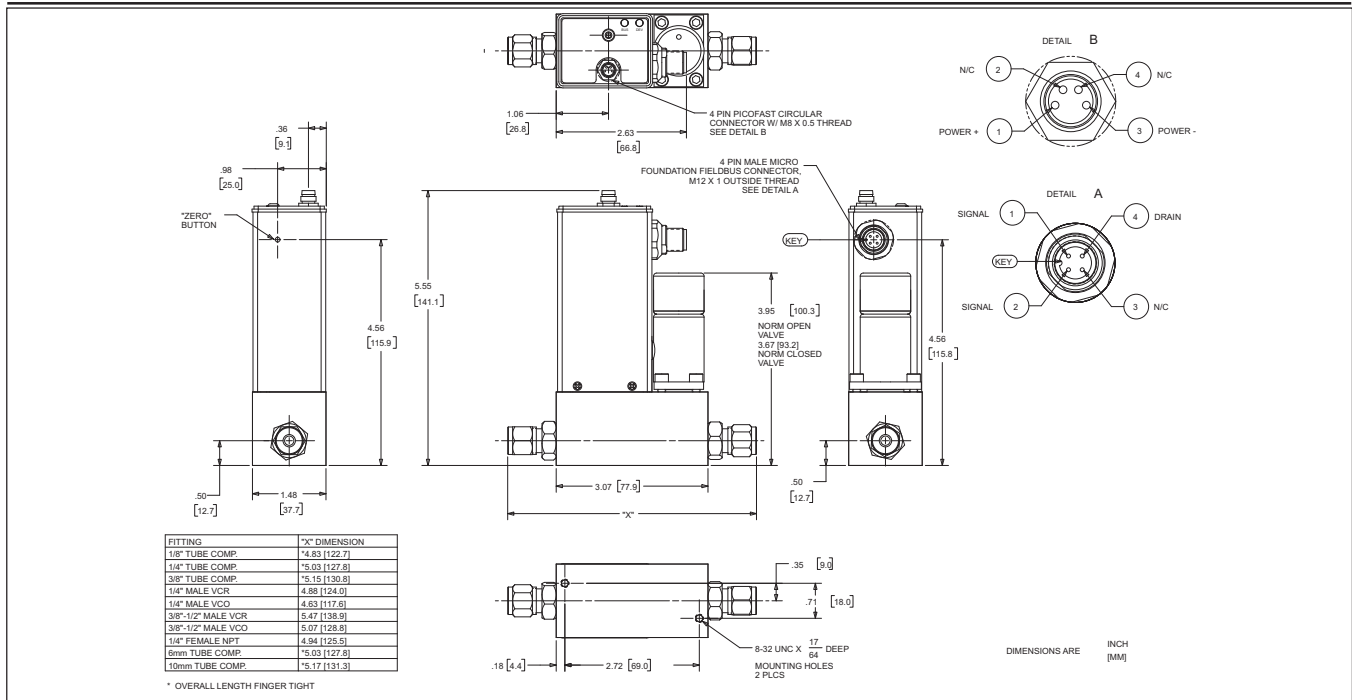


Figure 4 Models SLA5810F and SLA5820F Digital I/O FOUNDATION Fieldbus Pressure Controller

## BROOKS SERVICE AND SUPPORT

Brooks is committed to assuring all of our customers receive the ideal flow solution for their application, along with outstanding service and support to back it up. We operate first class repair facilities located around the world to provide rapid response and support. Each location utilizes primary standard calibration equipment to ensure accuracy and reliability for repairs and recalibration. The primary standard calibration equipment to calibrate our flow products is certified by our local Weights and Measures Authorities and traceable to the relevant International Standards.

Visit [www.BrooksInstrument.com](http://www.BrooksInstrument.com) to locate the service location nearest to you.

## START-UP SERVICE AND IN-SITU CALIBRATION

- Brooks Instrument can provide start-up service prior to operation when required, if necessary under in-situ conditions, and the results will be traceable to the relevant international quality standards.

## CUSTOMER SEMINARS AND TRAINING

- Brooks can provide customer seminars and dedicated training to engineers, end users and maintenance persons.

## HELP DESK

In case you need technical assistance:

Americas ☎ 1 888 554 FLOW  
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Asia ☎ +81 (0) 3 5633 7100



Due to Brooks Instrument's commitment to continuous improvement of our products, all specifications are subject to change without notice.

## TRADEMARKS

Brooks ..... Brooks Instrument, LLC  
DeviceNet ..... Open DeviceNet Vendors Association, Inc.  
FOUNDATION Fieldbus ..... Fieldbus FOUNDATION  
ITK ..... Fieldbus FOUNDATION  
Kalrez ..... DuPont Dow Elastomers  
ODVA ..... Open DeviceNet Vendors Association, Inc.  
VCO ..... Cajon Co.  
VCR ..... Cajon Co.  
Viton ..... DuPont Performance Elastomers

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