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Find the *Brooks Instrument SLA7820D1EGG1A2A1* at our website: *Click HERE*

Data Sheet
DS-PR-SLA7800-PC-eng
November, 2008

Brooks® Metal-Sealed Pressure Controllers

General Features:

- 1-1/8" (28.58 mm) Mechanical Platform
- High Performance Co-Planar valve
- All wetted surfaces are 32 Ra maximum to maintain particle, moisture and contamination free process conditions.
- All-Metal seals, High leak integrity (less than $1x10^{-10}$ atm-cc/sec He)
- Accuracy: ±0.5% F.S., including linearity and hysteresis to assure device is controlling precisely at the desired level.
- Digital Communication options offer easy commissioning and reduced system wiring.
- Device can store 10 selectable pressure applications
- CE Compliant

DeviceNet™ Communication Option:

- Easy Commissioning and Reduced System-Wiring
- Accessibility of sensor, valve, calibration, tuning and diagnostic data
- MAC-ID, Baudrate rotary switches, and two bi-color status LEDs
- Vendor Specific Device-Profile, ODVA™ certified
- Capable of: Polled, Bit-Strobe, Cyclic, & Change-of-State messaging, plus UCMM

Analog I/O:

- 15-pin
- 0-5 Volt command-setpoint and pressure signals
- Single sided 15 Volt DC power supply
- Separate 'valve-override' signal
- Compatible with Brooks' Model 0150 Series secondary electronics

Model SLA7810A/SLA7820A
Analog I/O
Pressure Controller Upstream



Model SLA7810D/SLA7820D
Digital I/O DeviceNet
Pressure Controller Upstream

Analog I/O Pin Connections:

Signal:	15-pin D-conn
Setpoint/Command Common	**1**
Pressure Signal Out	**2**
15V Power Supply	**5**
15V(unused)	**6**
Setpoint/Command Input	**8**
Power Supply Common	**9**
Output Signal Common	**10**
+5V Reference	**11**
Valve Override	**12**
Application Select Pin	**13**
Not Connected	**3, 4, 7,14,15**

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Model SLA7810 & SLA7820

Description

Brooks Instrument's Model SLA7810/SLA7820 Pressure Controllers are 1-1/8" wide profile metal sealed instruments that accurately measure and control upstream or downstream pressure. The heart of these devices is a solid-state pressure transducer, which produces an electrical output proportional to pressure. This output signal is conditioned and then used for control valve operation. The SLA7800 Series family of pressure measurement and control products offers unparalleled flexibility and performance and is designed for use in advanced gas handling systems. The result is the most accurate, repeatable, and responsive controllers on the market today!

Superior Valve Technology

The co-planar valve offers unmatched performance. Due to its simplified construction, the valve exhibits superior repeatability, stability, and response time. Instruments are less sensitive to pressure variations in the process because of the larger valve control range. The co-planar valve also offers lower leak-by rates compared to other metal sealed controllers. These advancements ensure a more stable process over time.

Highly Adaptable Configurations

The 1-1/8" body offers a compact, space saving footprint. The SLA7800 Series family of pressure controllers is easily retrofitable to existing gas box designs that utilize the traditional 1-1/2" body platform. Likewise, the all-digital electronics is adaptable and allows the SLA7800 Series to serve as a direct replacement for existing analog products bringing with them greatly improved accuracy and reliability.

Broad Array of Communication Options

Brooks offers the SLA7800 Series pressure controllers with a traditional 0-5 volt analog option. Brooks also offers control interface with DeviceNet™, a high-speed (up to 500k baud) digital communication network. Brooks' communication capabilities and device-profiles have been certified by the ODVA (Open DeviceNet Vendor's Association). Other network protocols are in development. Talk to your Brooks representative about your specific needs.

Reduced Cost of Ownership

The Models SLA7810 and SLA7820 allow multi-gas and multi-range capabilities to reduce customer inventory. Storage and pre-programming of up to 10 pressure applications easily permits users to switch between different pressure ranges on a single device.

Specifications

Performance Characteristics:

Flow Ranges
Models SLA7810 & SLA7820
Any range from 0-3 sccm to 0-30 slpm N_2 equivalent

Control Range
20:1 (can be application dependent)

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: ±0.1% of FS per 30 days

Pressure Ratings:
Maximum Pressure: 500 psig
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

Fluid Temperature Limits
0°C to 65°C (32°F to 149°F)

Leak Integrity
Inboard to Outboard: $1x10^{-10}$ atm scc/sec Helium max.

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 Characteristics:

Materials of Construction
316L VAR, 316L, and high-alloy
ferritic stainless steel.
External/internal seals: nickel
Valve seat: 316L stainless steel
Internal wetted Surface Finish 32Ra maximum.

Outline Dimensions
Refer to Figures 2 and 3.

Process Connections
1/4" male VCR™ (standard)
C Seal (SEMI 2787.1)
CS Seal (SEMI 2787.5)
W Seal (SEMI 2787.3)

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Electrical Characteristics:

Electrical Connections
Analog I/O option: 15-pin, male
Digital I/O DeviceNet option: 5-pin Micro-Connector, male

Power Supply Voltage
Analog I/O option: +15 Vdc, ±5%
(traditional -15 Vdc pin is ignored)
Digital I/O DeviceNet option: 11-25 Vdc nominal = +24 Vdc

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

Command-Setpoint Input (Analog option only)
0-5 Vdc: Input will accept signals to 5.5 Vdc (110% F.S.).
Input resistance: 0.5 Mohm min.

Flow or Pressure Output (Analog I/O option only)
0-5 Vdc into 2 Kohm-minimum load.
Output will indicate process-variable up to
5.5 Vdc (110% F.S.).

Valve Override Signal (Analog I/O option only)
Left floating,unconnected or grounded
– instrument controls valve to command-setpoint
Connected to signal at or above 5.0 Volts
(+16 Vdc maximum)
– valve is forced open
Connected to signal at or below 0.0 Volts
(-1 Vdc minimum)
– valve is forced closed

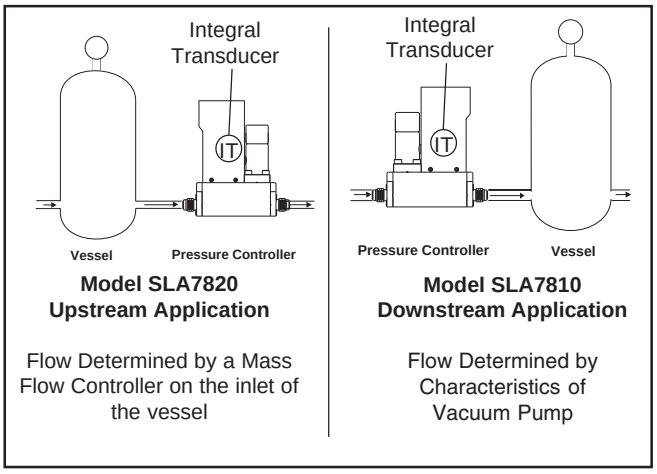


Figure 1 Typical Configurations

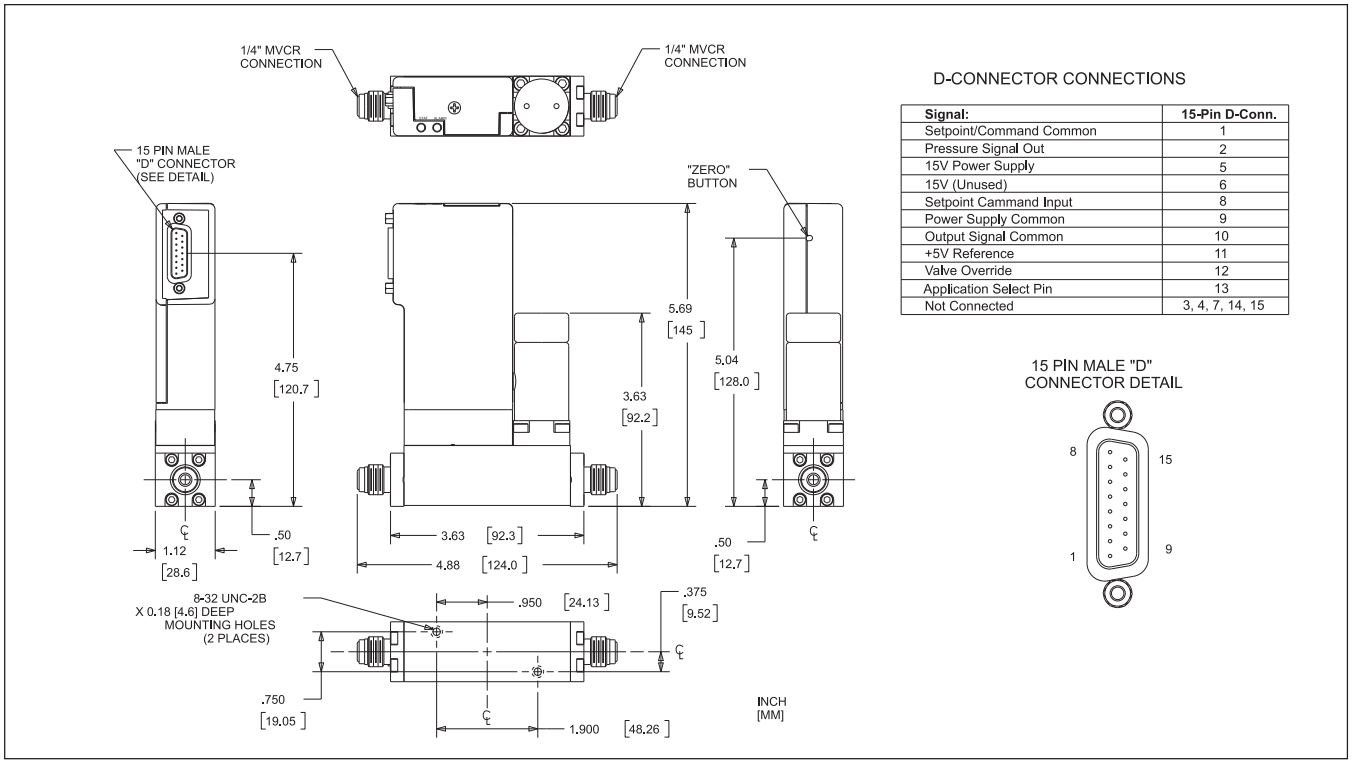


Figure 2 Model SLA7810A/SLA7820A Analog I/O Controller with 1/4" VCR Connections

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Model SLA7810 & SLA7820

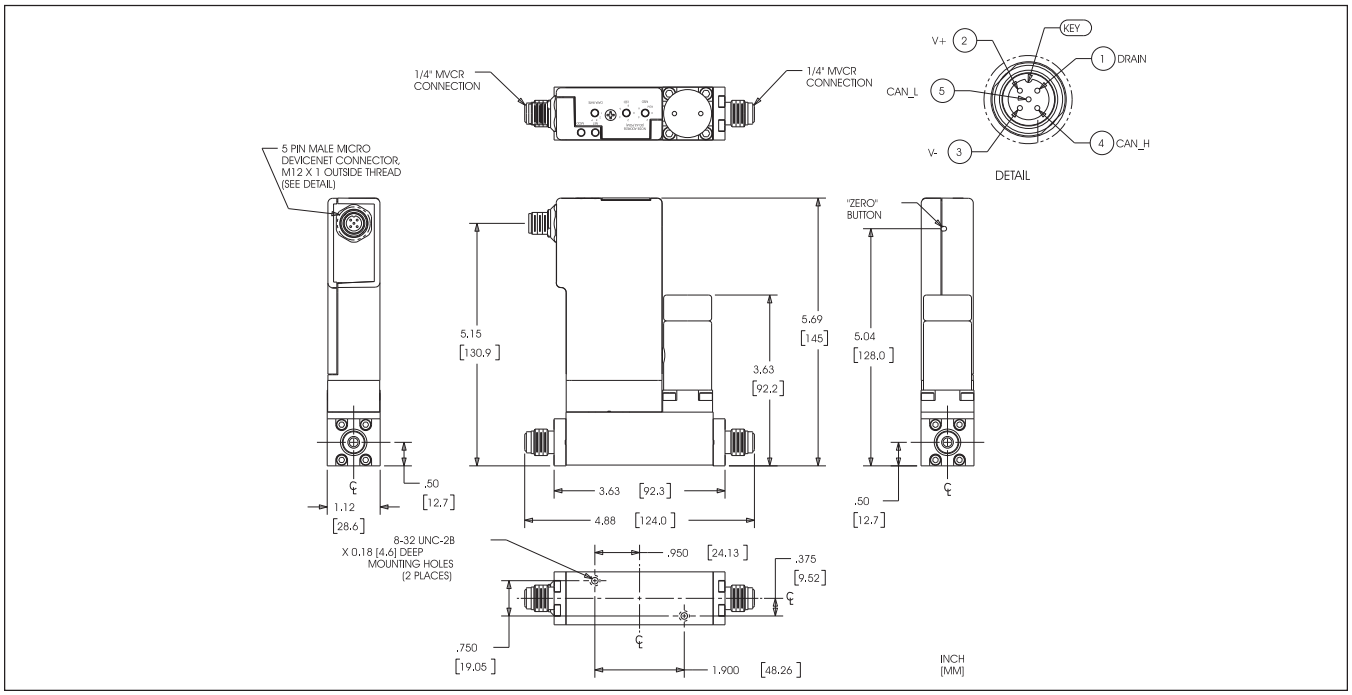


Figure 3 Model SLA7810D/SLA7820D Digital I/O DeviceNet Controller with 1-1/4" VCR Connections

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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 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:

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Europe	☎ +(31)-318-549-290	Within Netherlands ☎ 0318-549-290
Asia	☎ +011-81-3-5633-7100	

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.
ODVA ..... Open DeviceNet Vendors Association, Inc.
VCR ..... Cajon Co.

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