## **Bristol**

## Bristol® Series 9110-00A

## Remote Set Regulator

### **Features**

- Compact size
- Integrally mounted
- · Discrete and analog inputs
- Guard feature\*
- Analog feedback
- Adjustable speed control
- Incremental step change
- Explosion proof actuator case

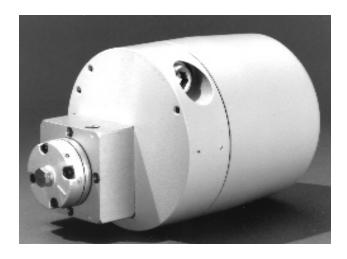
\*In the guard position, the drive mechanism will be active only if the guard input signal is true.

### General

The Bristol® 9110-RSR, from Emerson Process Management, is a bi-directional microprocessor based rotary actuator that sets the output of a pneumatic regulator. The output can be adjusted electrically by either discrete (raise/Lower) or analog inputs. These input signals to the "RSR" can be received from remote or local locations either by manual switches or automatic devices.

### **Description**

Series 9110-00A, Remote Set Regulators are transducer devices that use an electrical input signal to set the level of a pneumatic output signal. Depending on the actual models, the output can be config-



ured for a 1-5 Vdc or 4-20 mA dc signal. For the Raise/Lower models, the input can be configured to accept a continuous or pulse incremental dc signal. The pneumatic output of a Remote Set Regulator may be specified with a 3-15, 3-27 or 6-30 psi output. All models can operate from pressure supplies up to 100 psi maximum.

The Remote Set Regulator is contained in a weatherproof, explosion-proof enclosure having a detachable threaded cover. Removal of the cover provides access to the field wiring terminals and the programmable option switches.

Regulators are factory-furnished for 12 or 24 Vdc supply operation. These voltage ratings are fixed and cannot be changed in the field.

In-line or pipe mounting are offered as for installations. The former uses a ¼ inch rigid pressure line for support, while the latter includes a special bracket for two-inch pipe mounting.



## **Product Data Document**

118DS-16b July 24, 2007 - Page 2

# Bristol® Series 9110-00A Remote Set Regulator

## **Performance Specifications**

#### **Accuracy**

- Electrical input to pressure output: ±5% of span
  Pressure output to feedback: ±5% of span
- Feedback volts to pressure output: ±5% of span
  Pulse input to pressure output: ±20% of span

#### Sensitivity

.04% of span (Min. input for readable output)

#### Repeatability

±0.5% of span

#### **Environmental Effect**

±1% max. full scale per 50°F (28°C) change

## **Supply Voltage Effects**

• ±0.15% max. full scale per 1 volt change

## **Hysteresis Effect**

(Output to Gage) ½% of span

#### **Supply Pressure Effect**

 0.1 Max. PSI change in output for 10 PSI change in supply pressure (within supply limits)

#### **Gas/Air Consumption**

 0.007 SCFM at 40 psig supply pressure, at steady state and increasing supply pressures.

## **Environmental Specifications**

#### **Primary Location**

 Suitable for field or housed-in unheated buildings

#### **Temperature Limits**

- -20 to 150° F (-29 to 66°C) operating
- -40 to 185° F (-40 to 85°C) storage

#### **Humidity Limits**

- 10 to 95% RH, -20 to 130° F, (-29 to 55° C) operating
- 10 to 50% RH, 130 to 150°F (55 to 66°C) operating

#### **Vibration Limits**

• 0.1 g max., 10 – 500 Hz

#### Interference

R.F.I. rejection of the actuator depends on the shielding of the input and output since the aluminum housing (with cover in place) greatly attenuates RF field strength.

Effect with wiring enclosed in conduit SAMA STD PMC 33.1, Class 1 and 2, 20 MHz to 500 MHz: <0.5% FS error

### **Case Classification**

Designed to NEMA type 4 hazardous

#### Safety

Designed to meet ANSI Standard C39.5 Explosion-proof for Class 1, Division 1, Groups B, C and D; Dust-ignition-proof for Class II, Division 1, Groups E, F and G; Suitable for Class III, Division 1; Nonincendive for Class 1, Division 2, Groups A, B, C and D.



## **Product Data Document**

118DS-16b July 24, 2007 - Page 3

## Bristol® Series 9110-00A Remote Set Regulator

## **Supply Specifications**

#### **Electrical**

- Models Requiring 12 volts: 11 to 14 Vdc, 0.35 A max.
- Models Requiring 24 Volts: 22 to 28 Vdc, 0.25 A max.
- Fusing: One 1 A, 250 V 3 AG normal blow chip mounted on terminal board
- Power Failure: In the event that the supply voltage drops below rated value or goes to zero, mechanical memory will retain the last given setting.

#### **Pneumatic Supply**

- Models with 3 15 PSI range: 20 PSI min., 100 PSI max.
- Models with 3 27 PSI range: 30 PSI min., 100 PSI max.
- Models with 6 30 PSI range: 35 PSI min., 100 PSI max.

## **Physical Specifications**

#### General

Actuator Case:
 Weatherproof, explosion proof
 Cast aluminum housing with
 gasketed screw-on cover
 Light gray epoxy finish

#### **Overall Dimensions**

Actuator Case:
 6" (152.4 mm) dia. By 7-1/8" (181 mm) long
 Model 9110 complete:
 10" (254 mm) long by 6" (152.4 mm) dia.

#### Mounting

 Model 9110 complete: Line or 2" dia. Pipe mount

#### Weight

Approx. 12 lbs.



## Remote Set Pneumatic Regulator 9110-rsr Series 9110-00a ABC-DEF

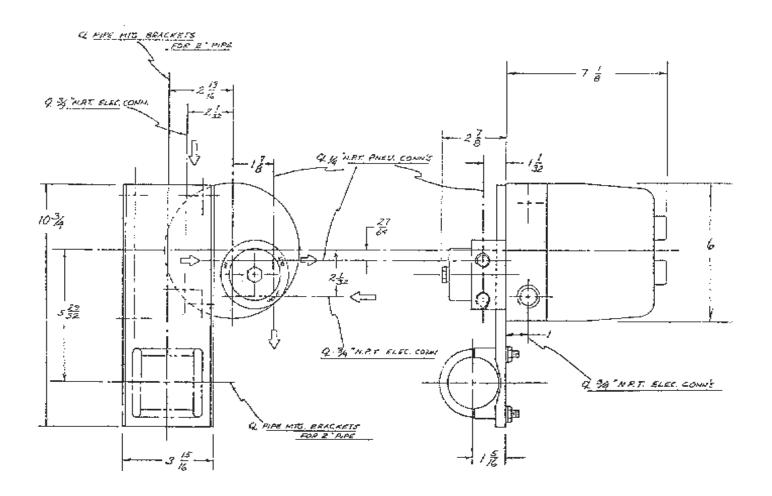
Model Number: 9110-00A - \_\_\_ \_ \_ 0

9110-00A

SELECT	DESCRIPTION	CODE
Α	ELECTRICAL INPUT X9110BASE	
10	Discrete	1
	Analog	2
В	POWER	
20	12 Vdc	1
	24 Vdc	2
С	PNEUMATIC OUTPUT	
30	3-15 PSI	1
	3-27 PSI	2
	6-30 PSI	3
D	MOUNTING X9110MOUNT	
40	Pipe	1
	Line	2
E	APPROVAL	
50	None	1
	FM-EXP . proof CL I, Div. 1, Groups B, C & D	2
	Dust-ignition proof CL II, Div. 1, Groups E, F & G	
	Suitable for CL III, Div. 1	
	Non-incentive CL I, Div. 2, Groups A, B, C & D	
	NEMA 4	



July 24, 2007 - Page 5



© 2007 Remote Automation Solutions, division of Emerson Process Management. All rights reserved.

Bristol, Inc., Bristol Babcock Ltd, Bristol Canada, BBI SA de CV and the Flow Computer Division, are wholly owned subsidiaries of Emerson Electric Co. doing business as Remote Automation Solutions ("RAS"), a division of Emerson Process Management. FloBoss, ROCLINK, Bristol, Bristol Babcock, ControlWave, TeleFlow and Helicoid are trademarks of RAS. AMS, PlantWeb and the PlantWeb logo are marks of Emerson Electric Co. The Emerson logo is a trademark and service mark of the Emerson Electric Co. All other marks are property of their

The contents of this publication are presented for informational purposes only. While every effort has been made to ensure informational accuracy, they are not to be construed as warranties or guarantees, express or implied, regarding the products or services described herein or their use or applicability. RAS reserves the right to modify or improve the designs or specifications of such products at any time without notice. All sales are governed by RAS' terms and conditions which are available upon request. RAS does not assume responsibility for the selection, use or maintenance of any product. Responsibility for proper selection, use and maintenance of any RAS product remains solely with the purchaser and end-user.

#### **Emerson Process Management Remote Automation Solutions**

Watertown, CT 06795 USA Mississauga, ON 06795 Canada Worcester WR3 8YB UK

T 1 (860) 945-2200 T 1 (905) 362-0880 T 44 (1) 905-856950

