



**Bray LINE** CONTROLS

**SERIES 6A**

FOR DOUBLE & SINGLE ACTING  
PNEUMATIC ACTUATORS

**POSITIONERS**  
ELECTRO-PNEUMATIC INTELLIGENCE

**Bray** CONTROLS  
PART NO. 92-0920-11305-532  
SERIAL NO. 267344  
CONTROL FUNCTION  
MAX. PRESSURE 140 PSI  
DESIGNED TO MEET ISO 9100  
CAUTION: BEFORE CHANGING, REFER TO SAFETY NOTICE  
INSTRUCTIONS WITH SUPPLY REFERENCE TO SAFETY NOTICE

## Series 6A Intelligent Electro-Pneumatic Positioners

### Precision digital control with proven reliability

Bray's Series 6A Intelligent Electro-Pneumatic Positioners offer precise flow control, advanced communication and enhanced diagnostics. Utilizing proven technology, the Series 6A features rugged reliability, high quality components and outstanding performance.

Series 6A positioners are microprocessor controlled, delivering all the benefits of digital electronics. The microprocessor constantly compares the command signal to the

actual valve position and makes precise, on-line adjustments until the two measurements match.

These positioners can accept an analog 4-20 mA, HART, Foundation Fieldbus or Profibus PA input.

Series 6A positioners were designed with ease of installation, simple calibration, efficiency and economy in mind. The modular product line is easily customized for specific applications. Additional positioner functions may be obtained by installing optional circuit boards.

Units for rotary Single Acting and Double Acting actuators are offered as standard. Intrinsically safe versions are available, as well as FM, CSA, CE and ATEX approved units.

### Minimal Air Consumption

The Series 6A positioner offers the lowest air consumption on the market today. Air supply within the unit is controlled by Piezo valve technology, resulting in reduced air consumption during operation and zero bleed during steady state. The energy savings alone can pay for the unit cost within a year. In addition, the power conservation and decreased noise are beneficial to the environment.

### Enclosures

Series 6A Waterproof enclosures meet NEMA 4, 4x and IP 66 specifications. The standard waterproof enclosure is constructed of a durable, lightweight polymer, providing excellent chemical and corrosion resistance.

Waterproof / Explosion Proof enclosures meet NEMA 4, 4x, 7 & 9 specifications. These enclosures are constructed of die cast aluminum with an epoxy coating for chemical and corrosion protection.

A waterproof stainless steel enclosure is available upon request.



### LCD Display & Keypad

Bray's Series 6A LCD Display provides visual confirmation of valve position, operating status and keypad entries.

With the housing cover on, the Display clearly shows actual valve position in precise one degree increments. The positioner operating mode (automatic or manual) and alarm messages are also shown.

With the housing cover removed, the keypad push buttons are accessible to perform a variety of functions, including automatic calibration, confirmation of the setpoint and progress to the setpoint, potentiometer alignment, diagnostic checks, and error messages. Additional parameters are available, please consult the factory for more information. The LCD Display shows the information entered in the keypad.



# FEATURES

## Auto Calibration

Series 6A calibration push buttons are accessible under the housing cover. Calibration is easily performed by entering only three parameters into keypad push buttons. The LCD Display provides visual confirmation of parameter values. The calibration process automatically determines the position of the travel limit stops, then measures and records the parameters for both

the open and close positions. The settings are stored in nonvolatile memory to prevent loss in the event of power failure. After performing the calibration procedure, which normally takes less than 5 minutes, the Series 6A is ready for operation.

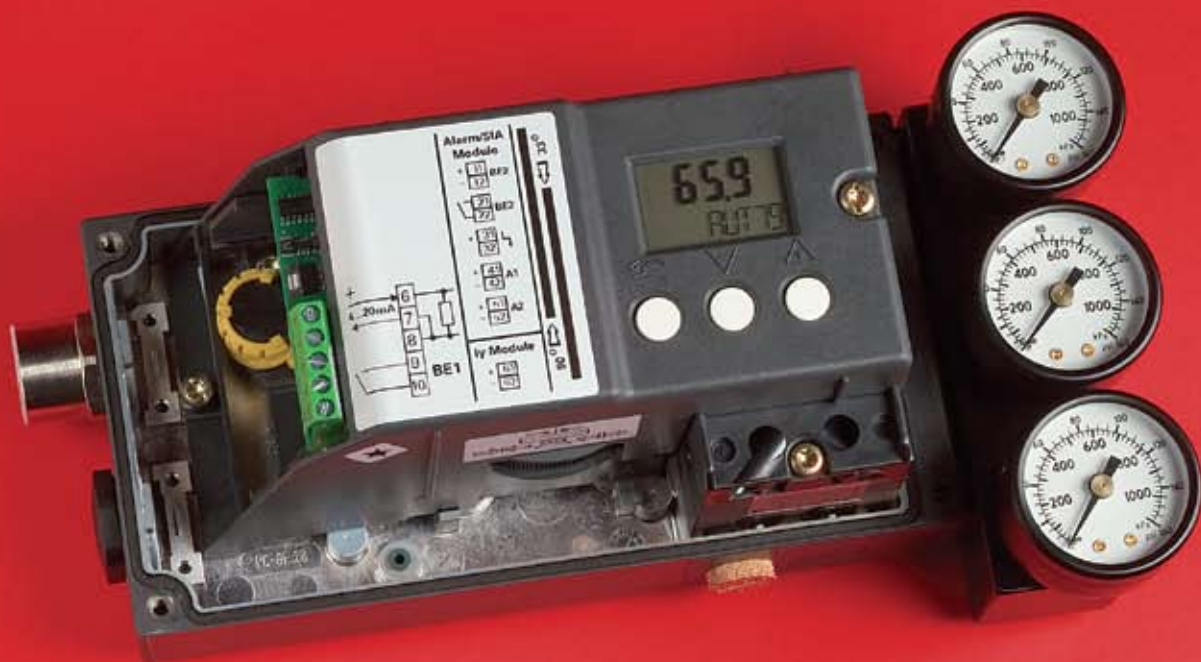
## Adaptive Control

Unique to the industry, the Series 6A delivers on-line adaptive control. During the calibration process, the positioner characterizes the profile of the valve load and automatically adjusts the output air volume to an appropriate value. During operation, the unit continually optimizes control behaviors and travel times in response to changes in line media pressure. The benefits are product efficiency, reduced maintenance, increased service life and lower operational costs. This unique on-line adaptation continually optimizes field performance and sets the Series 6A apart from any competitor.



## Position Indicator

In addition to the LCD display, valve position is clearly shown over a distance by a yellow indicator. Made of ABS plastic material, the pointer is installed between Bray pneumatic actuators and the Series 6A housing.



## Diagnostics

Bray's Series 6A positioners feature corrective and preventative maintenance self-diagnostic checks. Corrective maintenance diagnostics aid in finding the cause of a problem. Preventative maintenance diagnostic checks reduce operating costs by identifying potential problems as they occur. Diagnostic results are indicated both via a PC connection and the local LCD. All diagnostics run constantly. The data may be continually monitored and recorded via a PC.

## Air Supply Monitor

An additional feature of the Series 6A is an internal monitor that transmits a fault signal alarm if the air supply fails. The alarm is shown locally on the LCD and may be sent to the remote control panel.

## Local Position Adjustment

As a standard feature, valve position can be manually adjusted locally by removing the housing cover, then using the push buttons to override the remote command signal.

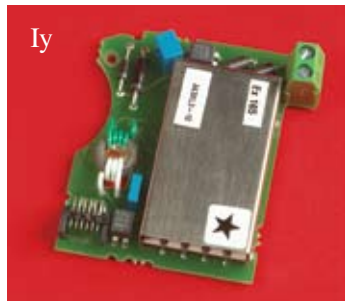
## Flow Restrictors

Series 6A positioners offer, as standard, precise control of even the smallest pneumatic actuators through internal Flow Restrictors. The travel speed can be adjusted as required. One restrictor is used for single acting actuators and two for double acting.



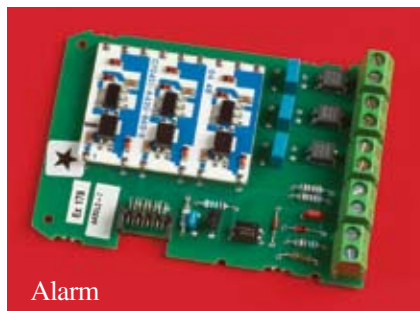
## Optional Boards

These options provide additional information and features directly to remote control panels.



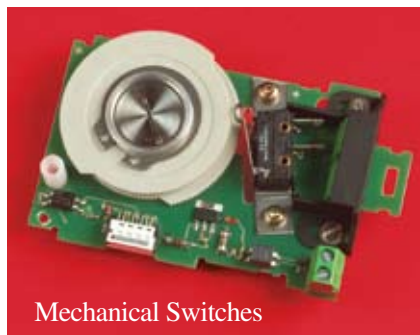
### Retransmission Module (Iy)

This 4-20 mA DC output board indicates valve position to the control room.



### Programmable Electronic Switches (Alarm)

Two semiconductor switch outputs and one alarm output may be programmed to activate at various travel positions. One digital input is also included.



**Limit Switches** For cam activated indication of actuator travel limits, two output formats are offered: Mechanical Switches or intrinsically safe Inductive Proximity Switches (SIA) [not shown].

All Series 6A optional boards can be easily installed in the field. The simple process only requires removing the housing cover, inserting the optional boards into built-in slots, then connecting the additional wiring.



## Locking Device

For high vibration applications, the Series 6A features, as standard, a friction clutch locking device. A common screw driver can be used to engage the clutch. Extreme line vibrations will not affect the adjustments of the unit when the clutch is locked.



## Modular Accessories



### Gauge Manifold

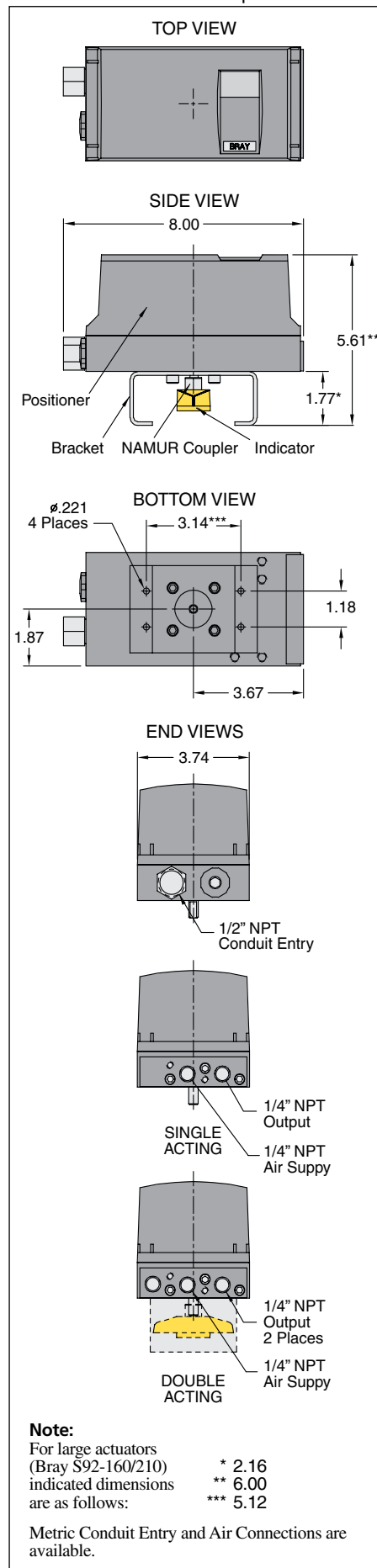
An externally mounted gauge manifold is offered with up to three gauges to measure air supply and the actuator input and output pressures.

### Volume Boosters

These modules increase air volume output and decrease response time.

Other modular mechanical accessories offered include Bray recommended Filters/Regulators to condition the incoming air supply.

## Dimensions Waterproof Units



# FEATURES

## Bus Intelligence

Bray offers Series 6A Intelligent Electro-Pneumatic Positioners with serial bus network flexibility. HART, Foundation Fieldbus and Profibus PA protocols are available. Bray's bus intelligent positioners offer all Series 6A features plus increased network communication and remote access to positioner parameters and diagnostics.

Bus networks greatly reduce plant engineering and installation costs and allow for future flexibility. Adding units is easily done by just connecting the appropriate bus cable. Series 6A bus intelligent positioners can be configured from Windows based HMI and a bus modem. These units may provide a variety of detailed information on the history and operating state of the actuators, such as number of cycles, ambient temperature limits, and any air leakage. They also log every alarm message.



## Explosion Proof Units

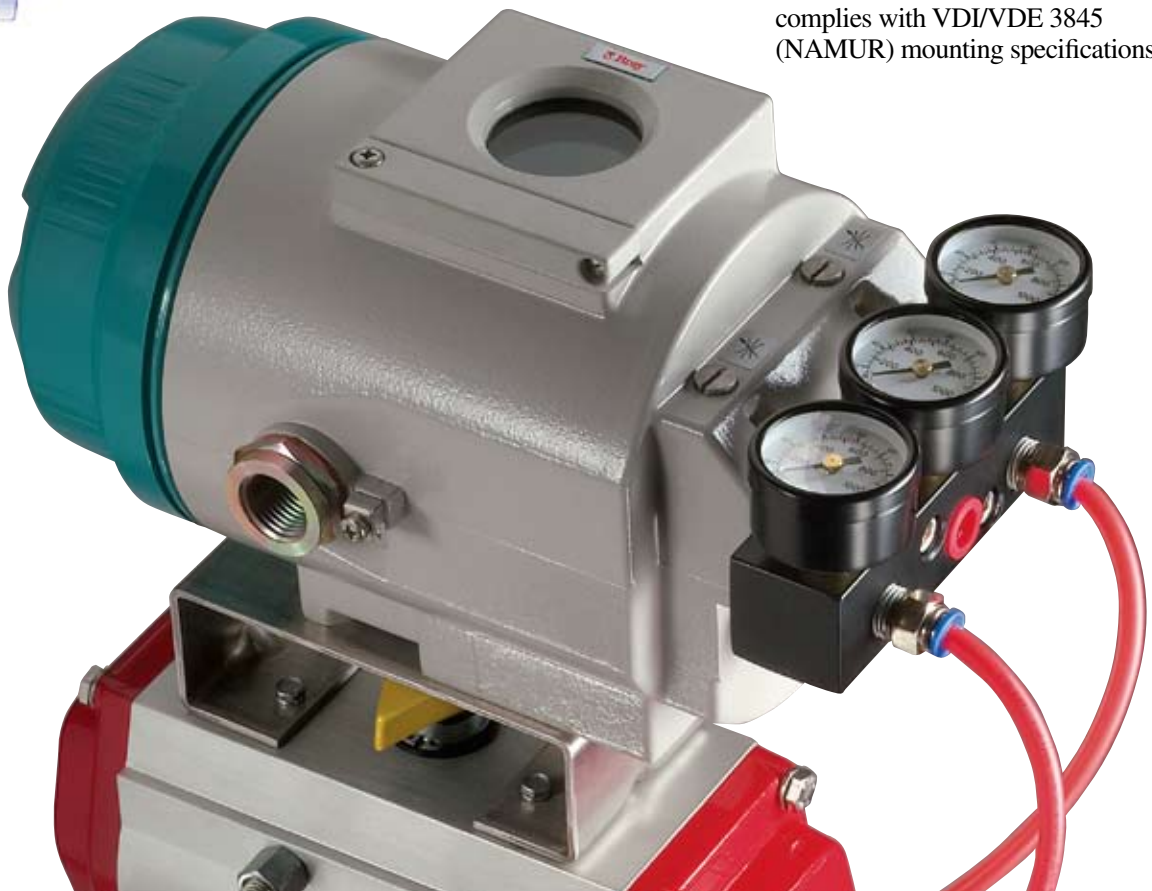
Designed for hazardous and severe applications, Series 6A explosion proof positioners offer all the features of the waterproof units in a flameproof enclosure. Non-intrinsically safe boards may be placed inside. These rugged, heavy duty units meet EExd IIC T4/T5/T6 specifications.

The Automatic Calibration keypad push buttons in the explosion proof units are externally mounted and easily accessible behind a flap. The units can be controlled locally, even during operation, without removing the housing cover. The LCD display is viewed from behind a sodium glass explosion proof window.



## Control Valves

The Series 6A delivers precise control of Bray's pneumatic Control Valve Line, combining flow control and flow shut off into one unit. Series 6A positioners control the pneumatic actuators that actively drive the butterfly valves. Bray's entire control line features fast response time, bubble-tight shut-off, high flow capacity, reduced weight and ease of maintenance. The Series 6A complies with VDI/VDE 3845 (NAMUR) mounting specifications.



## Specifications Series 6A Waterproof Units

Supply Pressure [Max]	20 - 102psi (1.4 - 7 Bar)	<b>EMC Requirements</b>	EN 61326/A1 Appendix A.1 NAMUR NE21 August 98
Air Consumption (80psi)	<0.00035 scfm		
Input Signal Analog Bus	4 - 20 mA DC HART, Foundation Fieldbus, Profibus PA	<b>Protection Class</b>	NEMA 4, 4x and IP 66
Connections Supply Signal (2 conduit entries)	1/4" NPT (G 1/4") 1/2" NPT (M20x 1.5)	<b>Materials</b> Housing	Fiberglass Reinforced Polymer with Metalized Coated interior for EMC protection
Resolution	<0.05%	Housing Fasteners	Stainless Steel
Repeatability	0.32%	Position Indicator	ABS polymer
Hysteresis	<0.2%	<b>Positioner Mounting</b>	VDI/VDE 3845 (NAMUR)
Temperature Range	-22°F(-30°C) to +176°F(+80°C)	<b>Available Approvals</b>	FM, CSA, CE, ATEX
Weight	2.0 lbs. (0.9 kg)		
Control Element Type	Piezoelectric		

## Bray International Worldwide Sales and Services Network

### Division Locations



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Australia



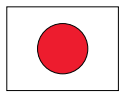
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### Distribution Locations



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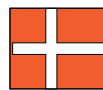
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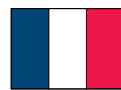
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Series 6A Electro-Pneumatic Positioners are manufactured under ISO 9001 conditions.

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# Bray CONTROLS

A Division of BRAY INTERNATIONAL, Inc.  
13333 Westland East Blvd. Houston, Texas 77041  
281.894.5454 FAX 281.894.9499 [www.bray.com](http://www.bray.com)

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