

Bray CONTROLS



Series 6A Quick Start Guide

This document is not comprehensive, it is intended to help first time users become familiar with the Bray S6A Electropneumatic Positioner. For more detailed information, please contact your local Bray representative for a copy of the Operations and Maintenance Manual.

Mounting and Set-up

Step 1: Place the mounting bracket on the rear side of the positioner. Tighten the mounting bolts and lock washers.



Step 2: Position the output shaft of the positioner so that the flat portion is facing upwards.



Step 3: Insert the coupler over the output shaft. Be sure to align the coupler's setscrew with the flat of the shaft, tighten the set screw.



Step 4: Place the indicator on the base of the coupler.



Mounting and Set-up

Step 5: Mount the positioner on the actuator and tighten the mounting screws.



Step 6: Insert the pneumatic fittings on the positioner and actuator, run tubing from the outputs of the positioner to the inputs of the actuator.

NOTE: The supply air will output to Y1 in the event of a signal loss (fail condition), in double acting actuators - connect Y1 so that the desired fail position will result. Single acting units de-actuate Y1 upon loss of signal.



Step 7: Position the 'Transmission Ratio Selector' yellow tab, to the 90° position - by pushing it away from the labeled side of the device.




Step 8: Adjust the yellow wheel underneath the terminals using a 4 mm wide screwdriver to the neutral position (Midway between 33° and 90°)



Calibration

Step 1: Power on the unit with a 4 to 20 mA signal.





Step 2: Press the button below the '  ' symbol for >5 seconds to enter into the configuration mode.



Step 3: Once the configuration mode has been initialized, parameter 1 is displayed on the positioner window. Parameter 1 allows the user to select the type of actuator being used with the device.




Step 4: Using the '  ' and '  ' buttons, scroll through the available options until you reach 'turn'. This option is for quarter turn actuators.




Calibration

Step 5: Press the '' to parameter 2. Select '90°'.



Step 6: Scroll to parameter 4 by pressing the '' button.



Step 7: Hold down the '' button until the calibration begins (>5 seconds), then release. The device will now progress through 5 'RUNS', completing a series of checks. For more information on the calibration, please refer to the product manual.

*The calibration routine takes ~ 3-5 minutes.



Note: *If the error shown is displayed on your positioner during Run 1, the lower tolerance (down tolerance) of the adjustment wheel has been exceeded. (If you don't see any error during calibration, proceed to step 8, otherwise continue reading)*



Calibration

Adjust the wheel so that the numeric value in the top right hand corner of the display is below 6.

If it is difficult to turn the wheel, confirm the following:

- The yellow locking wheel under the friction clutch adjustment wheel is not locked (rotate left)
- Ensure the friction clutch adjustment wheel is not near the end of travel at either the high or low end (if so rotate in the opposite direction to allow enough rotation to complete a successful calibration)



Once the down tolerance error has been corrected, the middle character of the message line will change to an 'O'.



Continue with the calibration by pressing the




'+' button once and releasing.




Step 8: Upon completion of a successful calibration, the status line will display "FINSH".



Calibration



Step 9: Acknowledge that the calibration was successful by pressing the '  ' button

once and returning to the configuration mode. Exit the configuration mode by holding down the '  ' button >5 seconds.




Step 10: The device will now be in 'MANUAL' mode. The display should resemble the above screen.



Step 11: Using the '  ' and '  ' buttons, manually open and close the valve to ensure that the desired travel limits are being attained.



Step 12: Toggle between 'MAN' mode and 'AUTO' mode by pressing the '  ' button.



Calibration

Step 13: With the device in 'AUTO' mode, test the responsiveness of the device by varying the command signal from 4 mA to 20 mA.



Step 14: Upon completion of calibration, insert an ordinary 4mm wide screwdriver into a slot located under the adjustment wheel, and move the wheel to the left until you can feel that it clicks in. This helps prevent the clutch wheel from slipping during actuation.



To optimize performance, the following measures can be applied if the positioner is too responsive and does not reach end of travel smoothly.

Step 15: While in configuration mode, scroll to parameter 34 (DEBA).



Step 16: Increase the deadband to yield the desired responsiveness (recommended value: 1 to 2%) by pressing the '+' button (factory default is .1%).



Positioner Optimization

Step 17: Continued



Step 18: Scroll to the 'Tight Closing with Manipulated Variable' parameter – YCLS, #39 and select 'uP do' by pressing the '+' button.



Step 19: Scroll to the Tight Close parameter (#40).



Step 20: Increase tight close value to 10.



Positioner Optimization

Step 21: Scroll to the Tight Open parameter (#41)



Step 22: Decrease value to 90.

Exit configuration mode by holding down the left button for >5 seconds, the device will be in 'MAN' mode (manual) once you exit the configuration menu, put the device in 'AUTO' mode by pressing the left button and releasing immediately. Confirm responsiveness of device.



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