

V200 Fine Tuning Positioner Feedback

If the positioner and the feedback have been accurately calibrated but the feedback is not linear the steps below will help improve feedback linearity.

Important Note: A full gauge set is very helpful when trying to fine tune a positioner and feedback. Being able to see the pressure movement, and their reaction to signal changes helps you know the positioner is responding.

Check list.

- Make sure air is turned on.
- Will need to make sure you have 2 good loop calibrators.
 - One for generating a 4 to 20mA signal
 - One for reading a 4 to 20mA signal (BOTH UNITS MUST BE SET TO HAVE A 24V LOOP SOURCE) IF YOU DO NOT SET THE CALIBRATOR IN THE 24V source SETTING, YOU WILL NOT READ ANYTHING ON THE FEEDBACK.
- Normal flat head screwdriver
- Tweaker (small screwdriver) for adjusting span and zero trim pots settings on the feedback.
- Check 4mA and 20mA. On the feedback, this will be done by mechanically moving the valve/actuator as stated below:
- At 4mA make sure that the valve is not open/closed by manually pushing up on the balance arm that is connected to the spool valve. There should be no movement; this can be seen/read in the feedback. If you see movement in the feedback, make adjustments to the zero on the positioner. NOT THE ZERO ON FEEDBACK.
- At 20mA feedback make sure the valve is open/closed by manually pushing down on the balance arm that is connected to the spool valve. There should be no movement; this can be seen in the feedback. If you see movement in the feedback, make adjustments to the span on the positioner, outer silver wheel. NOT THE SPAN ON FEEDBACK.
- Once these adjustments have been made:
- Give positioner a 4mA control signal. Make adjustments to the zero on FEEDBACK as necessary to get the output close to the 4mA input.
- Give positioner a 20mA control signal. Make adjustments to the span on FEEDBACK as necessary, to get the positioner input close to the 20mA output.

V200 Fine Tuning Positioner Feedback (continued)

- To assure that the positioner is as linear as possible.
- Start at 4mA control signal.
- Give positioner a 4.5mA signal.
- If the positioner moves close to the input signal (as read on the feedback module) then the zero on positioner is correct. If not then give the positioner a 4mA signal and adjust the zero on the positioner so that the positioner is about to move-gauges are very helpful here.
- Adjusting the zeros so there is movement at 4mA and then, turning the zero back half a turn.
- PLEASE NOTE THAT ON HEAVIER SET SPRINGS IN THE ACTUATOR IT MAY TAKE SOME TIME FOR MOVEMENT TO OCCUR-if the gauges are reacting the positioner is responding.
- Give positioner a 20mA signal.
- Give positioner a 19.5mA signal.
- If the positioner moves close to the input signal (as read on the feedback module) then the span of the positioner is correct. If not then give the positioner a 20mA signal and adjust the span on the positioner so that the positioner is about to move.
- Adjust the span so there is movement at 20mA then, turning the zero back half a turn.
- PLEASE NOTE THAT ON SPRING RETURN AND HEAVY SET SPRINGS CAN CAUSE THE MOVEMENT IN THE VALVE TO BE DELAYED SLIGHTLY. BE PATIENT.
- Once these steps have been completed your positioner and feedback should be very close to linear in both positioner and feedback.

NOTES:

- Typically if the feedback is way off at 8mA, after the zero and span have been set on the feedback it means that the zero on the positioner is off.
- Typically if the feedback is way off at 16mA, after the zero and span have been set on the feedback it means that the span on the positioner is off.
- Cam setting-as shown in our manual, it is best to have the small 1/16" gap between the roller and the tip of the cam-this helps the unit react more quickly to beginning signal change.
- On spring return actuators, if "air assist" can be utilized this will generally improve overall control and response.
- Valves with relatively high breakaway torques such as butterfly valves and plug valves can certainly affect the 4 mA and 20mA calibration and feedback. If these types of valves are being used, a judgment by the customer has to be made to "balance" feedback accuracy during stroke and control vs. shutoff or full open position.