

8.3 Position Proportional and Three Position Step Output Calibration

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|---|--|
| Position proportional control | When the DR4500A Recorder has a position proportional control output, calibrate the recorder so that the increase and decrease relays operate properly with respect to the position of the external feedback slidewire. |
| 3 Position Step control | This model only requires that the "Motor Time" be entered as shown in the calibration procedure. FULL CALIBRATION IS NOT REQUIRED: |
| Equipment needed | None |
| Connections | Apply power and allow the recorder to warm up 15 minutes before you calibrate. Leave all field wiring connected to the plugs in connectors J2 and J5 on the appropriate control output printed circuit board. |
| Auto mode vs manual mode | There are two ways in which to calibrate Position Proportional control: AUTO mode or MANUAL mode. |
| Rules for auto mode vs manual mode | The auto-mode selection must be done at least once before the manual mode will operate properly. Failure to use the auto-mode procedure will prevent the recorder from going into automatic control mode. |
| Displayed values | During the auto-mode calibration procedure, the values being displayed are used only to indicate if the motor is still traveling. To view the actual calibration value, use the manual mode after the auto-mode is completed. These values can be changed for purposes of tweaking the calibration. |

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8.3 Position Proportional and Three Position Step Output Calibration, Continued

Procedure

The procedure for calibrating the position proportional output and 3 Position Step control output is listed in Table 8-3.

- Make sure "LOCKOUT" in the Set Up group is set to "NONE." See *Section 3 – Configuration*.
- For "Three Position Step Control Output models", do steps 1 and 2 only.
- For "Position Proportional Output", follow the entire calibration procedure.

Table 8-3 Position Proportional and 3 Position Step Output Calibration Procedure


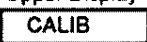
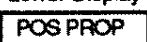





| Step | Description | Press | Action |
|------|--|--|---|
| 1 | Enter Calibration Mode |  until you see | Upper Display  Lower Display  |
| 2 | Set Motor Traverse Time Note: This is the time it takes the motor to travel from 0 to 100%. |  | Until you see: Upper Display  a value Lower Display  |
| | |  or  | Until the proper motor stroke time is reached (see the motor specs or measure the time). • Range of setting = 5 to 255 Seconds |

Table 8-3 is continued on next page

Procedure, continued

Table 8-3 Position Proportional Output Calibration Procedure, continued



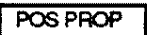







| Step | Description | Press | Action |
|------|--|--|---|
| 3 | Select Automatic or Manual Calibration |  | <p>until you see:</p> <p>Upper Display </p> <p>Lower Display </p> <ul style="list-style-type: none"> You can calibrate the control output manually or let the recorder calibrate the control output automatically. In the "Automatic Calibration Mode" (DO AUTO), the control relays automatically move the motor in the proper direction. If desired, however, the motor may be manually positioned to 0% and 100% positions. Disconnect the relay wires. "DO MAN". In the "Manual Calibration Mode" (DO MAN) the motor does not move. Instead, the existing 0% and 100% values may be changed with the ▲ or ▼ keys. |
| | | <p>  or  </p> | <p>Select automatic or manual calibration.</p> <p>Upper Display  ← DO AUTO</p> <p>Lower Display  ← DO MAN</p> <ul style="list-style-type: none"> If you select DO AUTO, go to step 4 If you select DO MAN, go to step 6 <p>ATTENTION When calibration is terminated, this selection reverts to DISABL.</p> |
| 4 | DO AUTO Set 0% value |  | <p>The decrement relay is turned on to move the motor to 0% position.</p> <p>Upper Display  ← counts of feedback slidewire (0 to 2047)</p> <p>Lower Display </p> <ul style="list-style-type: none"> When the motor stops, the display should stop counting; go to the next step. |

Table 8-3 is continued on next page

Procedure, continued

Table 8-3 Position Proportional Output Calibration Procedure, continued










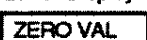






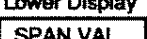
| Step | Description | Press | Action/Result |
|------|------------------------|---|---|
| 5 | Set 100% value |  | <p>The increment relay is turned on to move the motor to 100% position.</p> <p>Upper Display  counts of feedback slidewire (0 to 2047)</p> <p>Lower Display </p> <ul style="list-style-type: none"> When the motor stops, the display should stop counting, then, go on to step 8. |
| 6 | DO MAN Set 0% value |  | <p>You will see:</p> <p>Upper Display  The existing zero calibration value in counts.</p> <p>Lower Display </p> <p>(approx. 100)</p> |
| | | <p></p> <p>or</p> <p></p> | <p>Until the desired zero value is reached in the upper display.</p> <p>Upper Display  The desired zero value</p> <p>Lower Display </p> |
| 7 | Set 100% value |  | <p>The recorder stores the 0% value and you will see:</p> <p>Upper Display  The existing span calibration value in counts</p> <p>Lower Display </p> <p>(approx. 1500)</p> |
| | | <p></p> <p>or</p> <p></p> | <p>Until the desired span value is reached in the upper display.</p> <p>Upper Display  The desired span value</p> <p>Lower Display </p> <p>For manual calibration, the motor does not move from its position prior to the start of position proportional calibration.</p> |

Table 8-3 is continued on next page

8.3 Position Proportional and Three Position Step Output Calibration, Continued

Procedure, continued

Table 8-3 Position Proportional Output Calibration Procedure, continued

| Step | Description | Press | Action/Result |
|------|---------------------------|---------------------------------|-------------------------------------|
| 8 | Exit the Calibration Mode | FUNC | The recorder stores the 100% value. |
| | | LOWR DISP or SET UP | To exit the calibration mode. |