

CALIBRATION

If the recorder display accuracy is significantly outside specified tolerances, it may be due to a faulty analog to digital converter board. Refer to section 7 "SERVICE" for the procedure to replace this component. It is possible to trim the display reading after completion of configuration for example, to compensate for a known offset in a sensor signal, or to make the recorder display agree with a controller connected to the same process. Such trimming is effected by making small changes to the configured low value and/or high value in the analog inputs sub-matrix. Refer to section 3 "CONFIGURATION" for the procedure.

Caution : Do not make large changes to configured low and high values for temperature actuations as this would adversely affect the applied linearization.

In situations where small changes to calibration are necessary, the following procedure may be applied :

Calibration Procedure

- The calibration must be performed after a warm up time of 30 minutes.
 - The unit must first be configured according to the application. (Refer to Section 3 "CONFIGURATION".)
 - The display has to be placed in manual on the applicable channel.
1. Set input generator to deliver a signal corresponding to low scale (0%).
 2. Allow generator to stabilize for 1 minute, then read displayed value. Gradually increase the generator's signal until the least significant digit increases by 1 unit. Try to adjust generator signal to the switching point so the last digit is instable between these two values. i.e. if low point equals -456.0, adjust the generator to get -456.0. After generator stabilizes (1 minute) increase its signal until reading is -455.9. Adjust generator output as close as possible to the switching point. Ideally the displayed value will oscillate up and down between -455.9 and -456.0.
Calculate the error :
 $\Delta T_{LOW} = \text{Midpoint between display values} - \text{Generator Low value.}$
In the example, the midpoint value = -455.95.
 3. Set input generator to deliver a signal corresponding to full scale (100%).
 4. Record the display value after 1 minute stabilization proceed as indicated in point 2.
Calculate the error :
 $\Delta T_{HIGH} = \text{Midpoint between display values} - \text{Generator High value.}$
 5. Place your recorder in configuration mode. Select Read/Write with Submatrix analogue inputs (Refer Section 3 page 3-62 "Reading and Writing Configuration Data).
 6. Display the configuration parameter "Zero Adj.". Read the configured value.
 7. Press Enter. Low display is flashing.
Modify Display value = to old value minus ΔT_{LOW} .
Then press Enter.
 8. If High Display value has to be modified, set the configuration parameter "High value".
Read the configured High value.
 9. Modify this value by subtracting ΔT_{HIGH}
New PV High value = High displayed Range value - ΔT_{HIGH}