



TOTALFLOW

Technical Bulletin 153

Analog Input Calibration Procedure for the XFC/XRC.

Totalflow Technical Bulletin

Version 1.0, Revision AA (10 September, 2007)

ABB Inc.

ABB Inc.
7051 Industrial Blvd
Bartlesville, Oklahoma
74006 USA

Telephone
Domestic 800 442-3097
International (918) 338-
4880
Telefax (918) 338-4607

Internet
www.abb.com/totalflow

1. Purpose

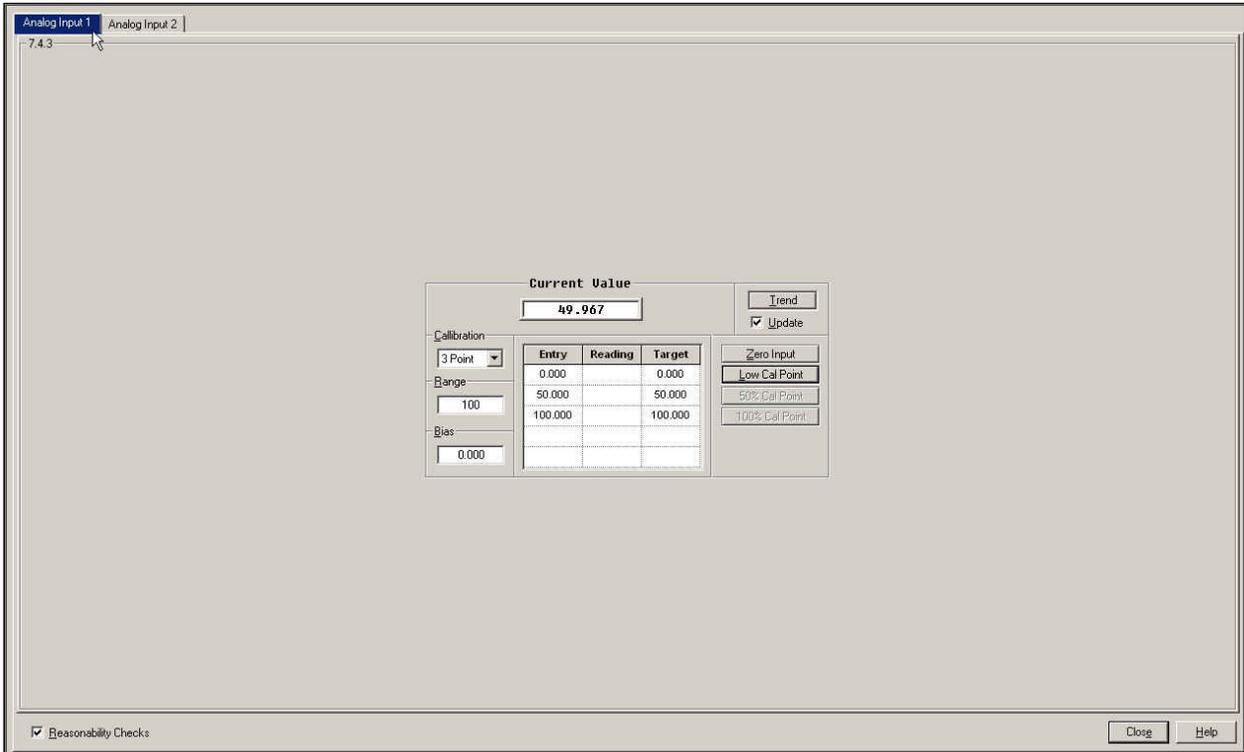
To describe analog input calibration procedures and possible problems that a user may encounter during the calibration process. The user should use the following steps to properly calibrate the analog inputs on an X-series device.

2. Description and Procedure

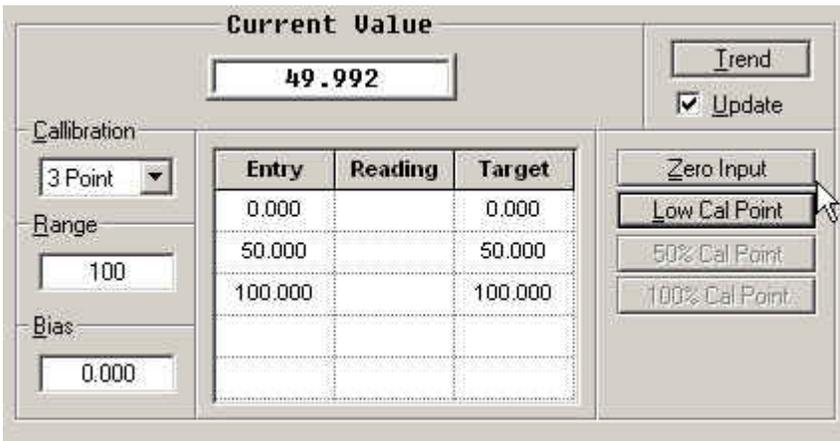
Calibrating the analog inputs is an easy and straightforward process. However, there is a potential issue that could corrupt the user's calibration of the XFC/XRC analog inputs. To calibrate the onboard AI's the first thing the user should do is go to calibrate mode. On the left hand side of the screen the user will see a tree that looks similar to the entry mode tree.



If you cannot see “Analog In’s” click the plus sign next to “Onboard I/O”. Then you will see Analog In’s. You will now see your analog inputs for this meter as tabs in the calibration screen.

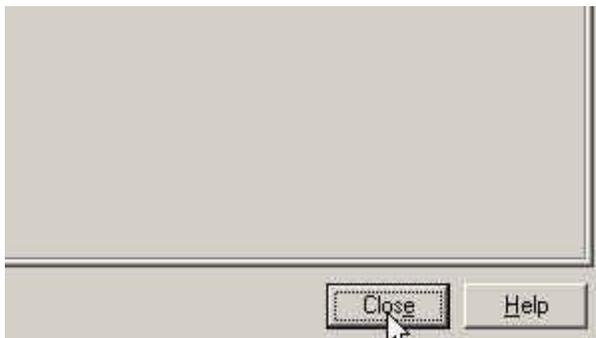


From here you can begin calibrating the on board AI's. Remember, the default AI range is 1 to 5 volt input. 1 volt is your zero and 5 volts is your span value. If your equipment is a 4 to 20 milliamp device you must use a 250 ohm resistor across the AI input on the XFC/XRC.

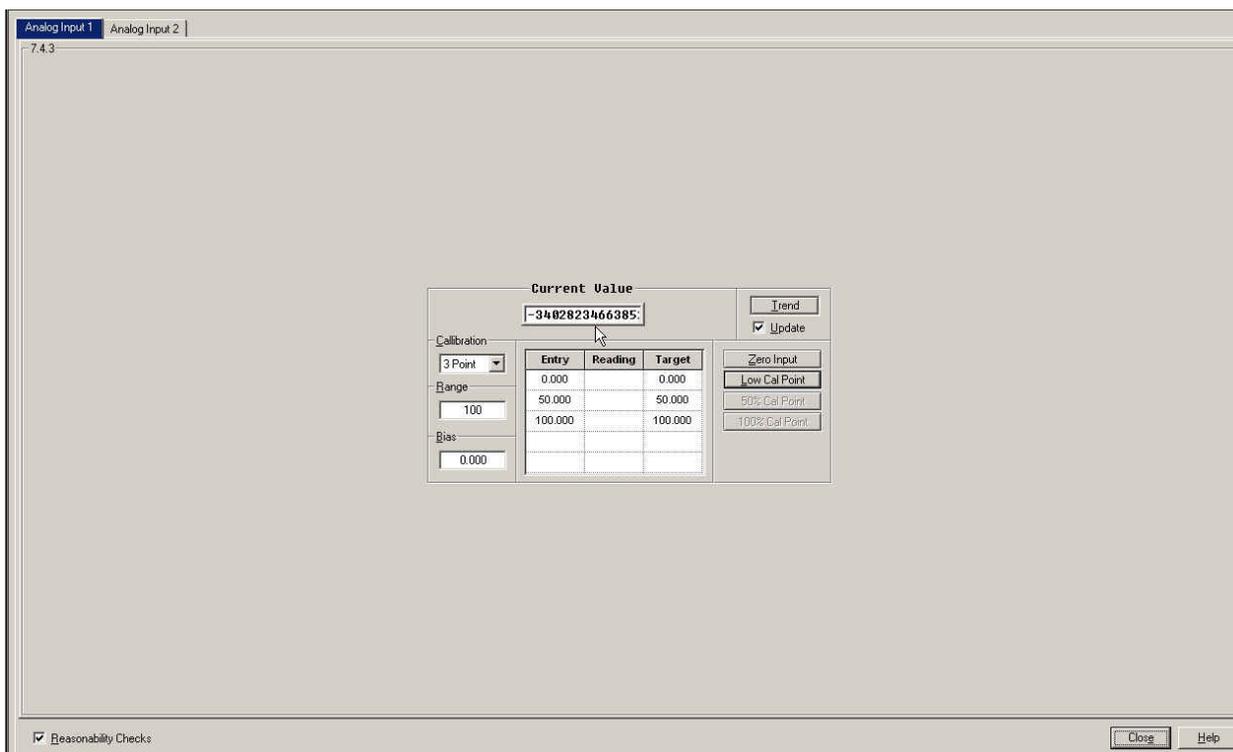


Click the “low cal point” button. This will be a 1 volt or 4 milliamp input. The next point is the “100% Cal Point”. Click that button and turn your calibration device up to 5 volts or 20ma and click the “ok” button. The final step is clicking the “50% Cal Point” button. This will be the midpoint mark, 3 volts or 12ma should be used here. Once this is done it is essential that the user click the “close” button in the bottom right corner of the screen. If the user wants to change the bias or go to AI 2 or a

different portion of calibrate, it is essential that the close button is selected before the user changes screens within calibration.



If the user does not select the close button before proceeding to a different portion of the calibration screen it could cause erratic AI readings similar to the following:



As you can see in the above picture the AI number has gone from the midpoint to an incorrect number. This happens when changing screens or inputting a bias prior to clicking the close button.

Once the close button is clicked the user can then move on to AI number two and it is important to follow the same procedure for AI2. If the user needs to enter a bias they still must select the close button at the conclusion of the calibration. Then the user can



re enter the calibration mode and enter the bias they choose. Once the bias has been entered select the “close” button once again to make the meter recognize and begin using the new bias. Once this is completed the AI’s are fully calibrated to the users specified engineering units.

3. **Conclusion**

In conclusion calibrating the AI’s is not difficult, however, if the user does not hit the “close” button upon completion of the calibration it will not successfully accept the users calibration. In the analog input screen think of the “close” button as a send button. Once you complete your three or five point calibration make sure that button gets clicked before a bias or the next input is calibrated. If this procedure is followed the user should have no issues with the Analog Inputs.