

User Documentation

Calibrating the Rebel CT and LT Analog Inputs

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1 Introduction

The Rebel CT or LT Analog channels should be calibrated to perform with maximum accuracy, Influx supplies a utility with DiaLog that enables this to be done.

1 Calibrating the Rebel CT or LT Logger

Step 1

Insure DiaLog and the Rebel Drivers are installed

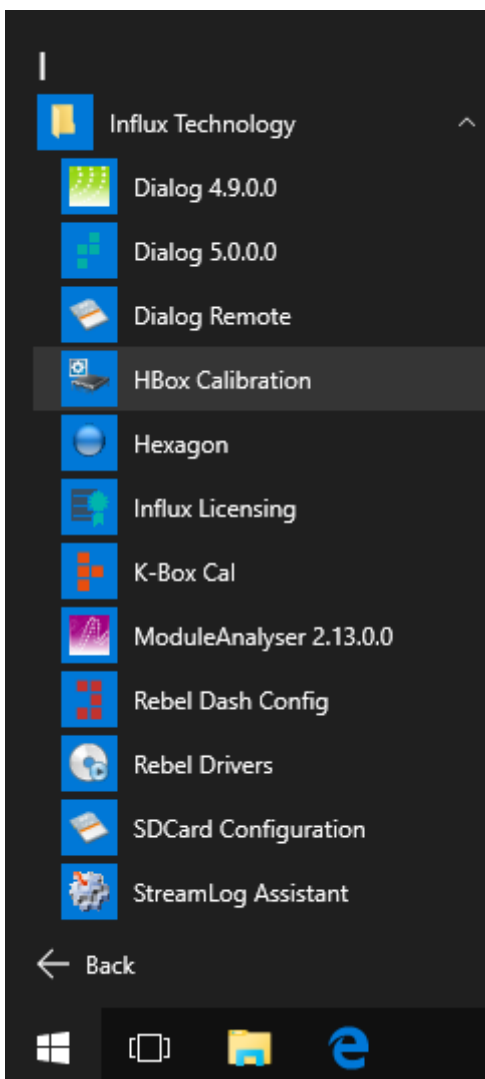
Step 2

Click the Windows Start Menu, and choose All apps



Step 3

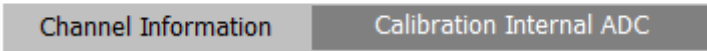
Locate HBox Calibration and click it to execute it



Step 4

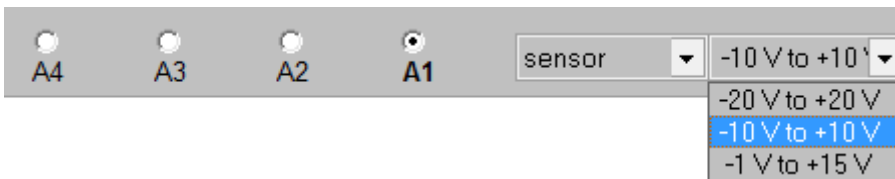
Click the Calibration Internal ADC Tab at the top of the Application

2 Points Calibration tool v. 3.01



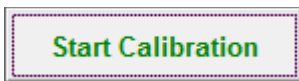
Step 5

Select the A1 Channel via Radio Button and use the Drop down box to select the -10 to +10V range, connect 0V to the Ain0 inst pin of the Logger.



Step 6

Then Press Start Calibration.



The Calibration Process will commence as follows:

2 Points Calibration tool v. 3.01

Channel Information
Calibration Internal ADC

Input value

0V
Stop Calibration

Samples: 2049

Average: 2048

Noise: 4 [0.2%]

Measuring

-5mV

	Low Point	High Point
TC0		
TC1		
TC2		
TC3		
TC4		
TC5		
TC6		
TC7		
A1	0V	+9V
A2	0V	+9V
A3	0V	+9V
A4	0V	+9V
A5		
A6		
A7		

A4

A3

A2

A1

sensor

-10 V to +10 V

After the Channel has been calibrated, that will be indicated by the channel changing colour, the colour the channel changes to represents the level of noise present:



Little Noise (Green): <0.2%



Moderate Noise >0.2%

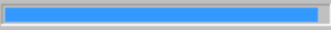


Unacceptable Noise In this case the Noise Level will Be shown and the process repeated until the noise Level is acceptable:

A1	0V	+9V
A2	0V	+9V
A3	0V	+9V
A4	0V	+9V

A1	0V	+9V
A2	0V	+9V
A3	0V	+9V
A4	0V	+9V

Samples	Average	Noise
2046	2045	12 [0.59%]



Step 7

Repeat Steps 5 and 6 (connecting 0V to the pin of the channel being calibrated) until all the Analog channels have point 1 calibrated.

A1	0V	+9V
A2	0V	+9V
A3	0V	+9V
A4	0V	+9V

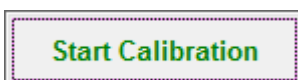
Step 8

Click on the +9V test point and connect the Ain0 inst pin of the Logger to a 9V reference voltage.

A1	0V	+9V
A2	0V	+9V
A3	0V	+9V
A4	0V	+9V

Step 9

Then Press Start Calibration.



The Calibration Process will commence as follows:

Channel Information

Input value: **+9V**

Stop Calibration

Go to next channel
 Go to next point

Samples: 3849 Average: 3849 Noise: 7 [0.18%]

Measuring

8912mV

Low Point High Point

TC0		
TC1		
TC2		
TC3		
TC4		
TC5		
TC6		
TC7		
A1	0V	+9V
A2	0V	+9V
A3	0V	+9V
A4	0V	+9V
A5		
A6		
A7		

RC 4-4, RC 4-5 LT 3-3, LT 3-4, RC 3-7

A4 A3 A2 A1 sensor -10V to +10V

Step 10

Repeat Step 10 (connecting 9V to the pin of the channel being calibrated) until all the Analog channels have point 2 calibrated.

A1	0V	+9V
A2	0V	+9V
A3	0V	+9V
A4	0V	+9V

Step 11

Click back to the Channel Information Tab:

2 Points Calibration tool v. 3.01

Channel Information

Calibration Internal ADC



Step 12

Click the Save button to commit the calibration to the Logger:



Channel Information
Calibration Internal ADC



Thermocouple Calibration Table

Channel	Point 1	Point 2	Coeff 1	Coeff 2	Dialog A	Dialog B	Range

Analog Inputs Calibration Table

Channel	Point 1	Point 2	Coeff 1	Coeff 2	Dialog A	Dialog B	Range
IN:A1	0V	+9V	1.011053	-23	4.950842	-10144.28	-10 V to +10 V
IN:A2	0V	+9V	1.011053	-24	4.950842	-10144.28	-10 V to +10 V
IN:A3	0V	+9V	1.011615	-24	4.950842	-10144.28	-10 V to +10 V
IN:A4	0V	+9V	1.010491	-21	4.950842	-10144.28	-10 V to +10 V

Save 
Reset 

Step 13 (Optional)

You may save the calibration data for future reference using the Save Calibration Button:



It may be reloaded using the Load Calibration Button:



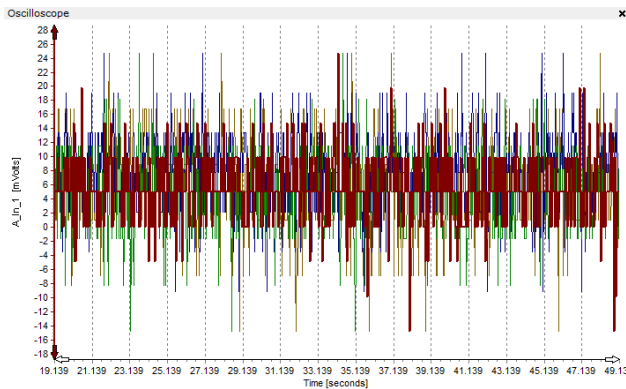
Results of calibrating the ADC in the CT or LT logger

The Result of calibrating the ADC in the CT or LT logger is shown in the example below.

Before Calibration 0V



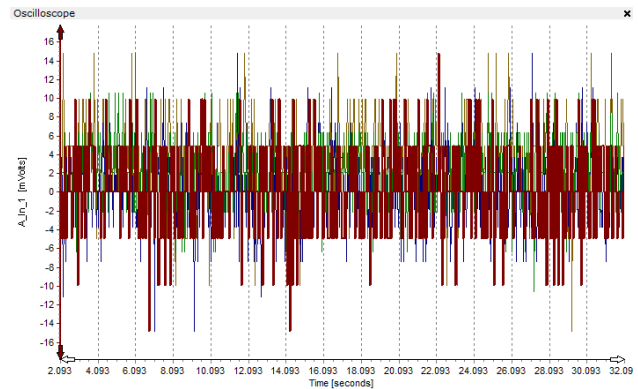
Centered : around 7mV
Noise : upto plus and minus 20mV



After Calibration 0V



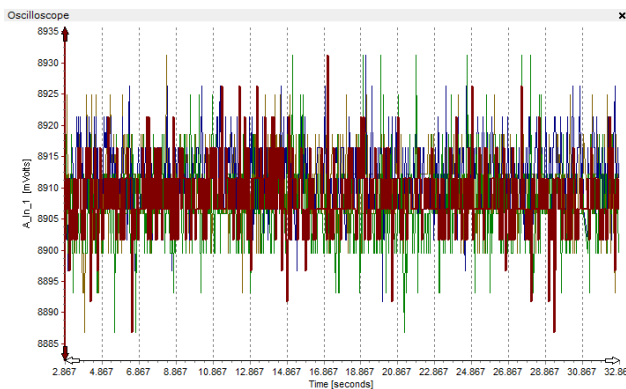
Centered : around 0 to 1mV
Noise : upto plus and minus 15mV



Before Calibration 9V



Centered : around 8909mV
Noise : upto plus and minus 30mV



After Calibration 9v



Centered : around 0 to 9003mV
Noise : upto plus and minus 20mV

