



Morehouse
THE FORCE IN CALIBRATION SINCE 1925

ISO/IEC 17025 / ANSI/NCSLI Z540.3 Accredited

GUIDE

MOREHOUSE SOFTWARE INSTALLATION INSTRUCTIONS FOR 4215 OR DSC OR HADI INDICATORS



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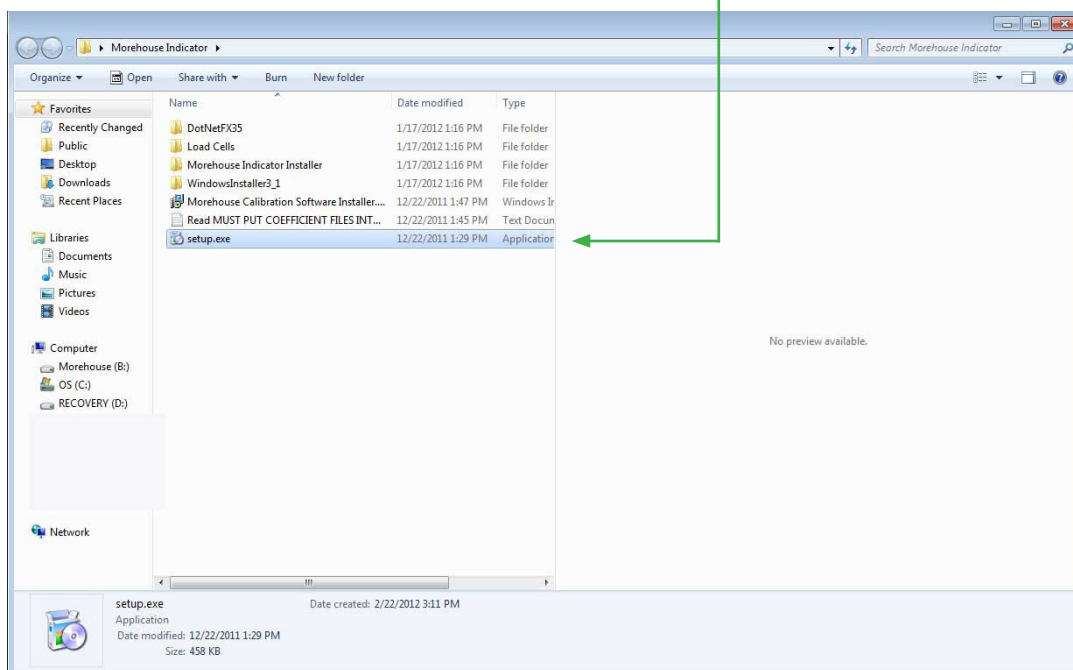
1. Installation for Morehouse 4215 or DSC or HADI Indicators

New versions of the software will be available for download here:

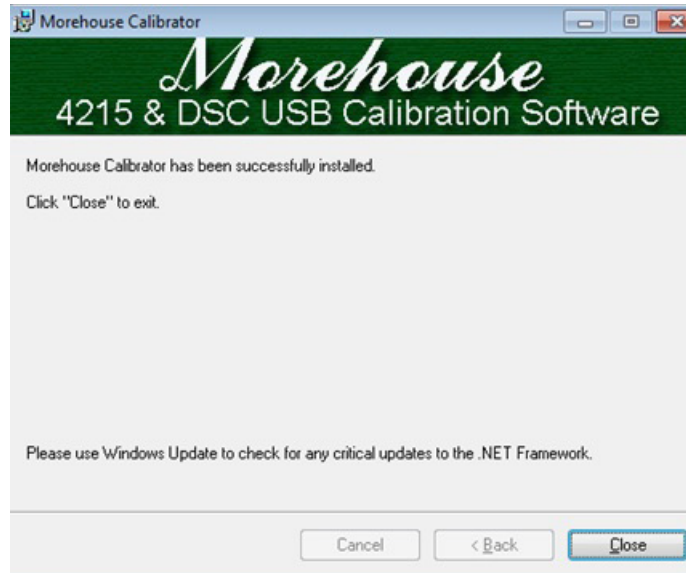
www.mhforce.com/MorehouseIndicatorInstaller.zip

Step 1. Either install from CD or Download form the website. If downloaded the file will need to unzipped first using winzip or another program.

After the file has been unzipped locate the folder and click the **Setup.exe** button



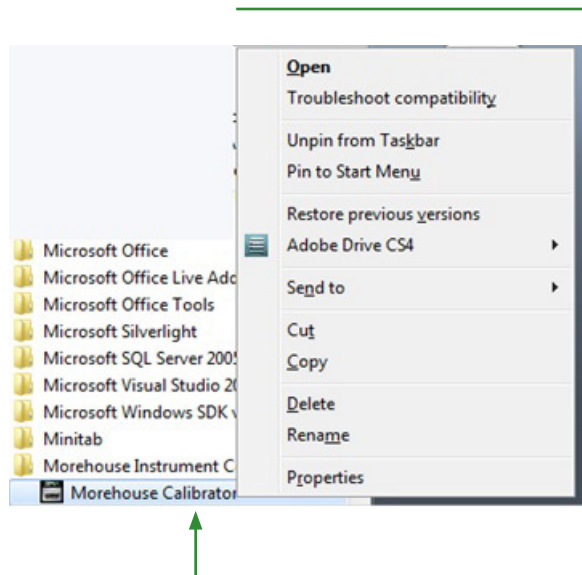
Step 2. Follow the onscreen instructions. If successful the last screen should like this



Step 3. Install the drivers for your device

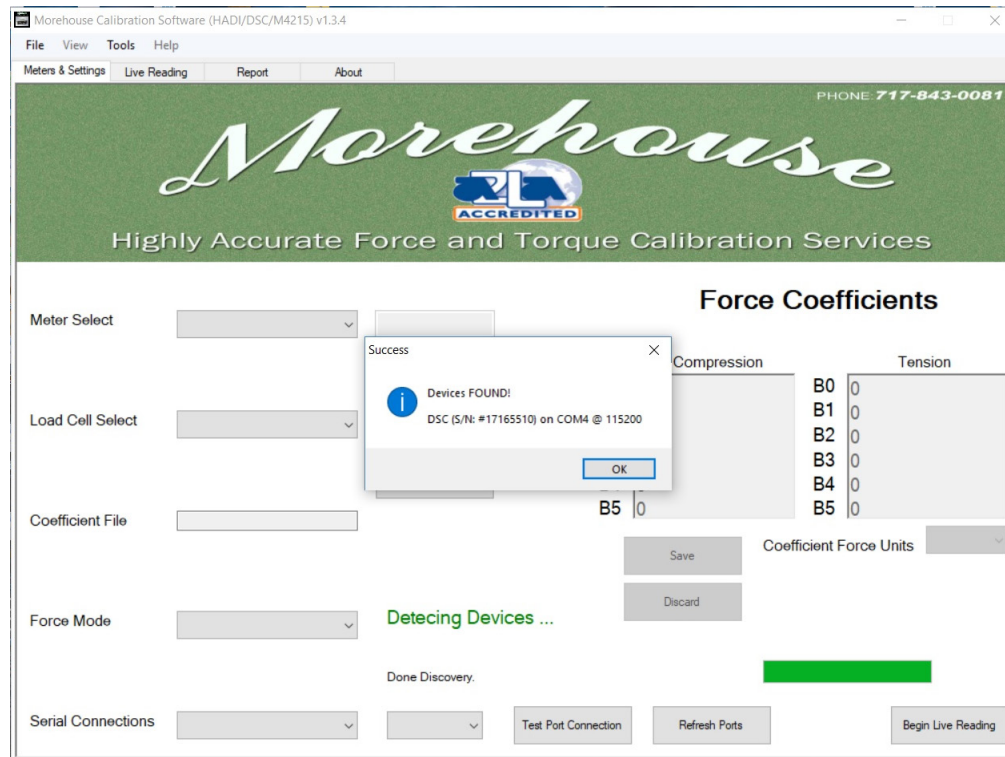
For a 4215 you will need to click on a file called in the directory **CDM_Setup.exe** (if successful a window will display FTDI CDM drivers have been successfully installed). For a Morehouse DSC unit you will need to click on a file called **DSC USB Driver Setup.exe**. (follow the instructions on the screen to complete installation)

Step 4. Launch the Program. I would recommend creating a desktop short cut or pinning to the taskbar. The program will be under **all programs** and is labeled **Morehouse Calibrator**





if you have a 4215 or DSC unit the program will find the comport



You are now finished with the installation and ready to set up the coefficient files.

2. Morehouse Indicator Entering coefficient from the calibration report

The coefficients will be found on page 2 and page 3 (if the load cell is tension and compression) of the calibration report. The coefficients that need to be entered are the B coefficients on the lower right hand side of the **report**

**This Calibration Data is Certified Traceable
to the
United States National Institute of Standards & Technology**

MODEL: ULTRA PRECISION
MOREHOUSE Load Cell, SERIAL NO. U-7660
100000.0 LBF Compression Calibrated to 100000.0 LBF
MOREHOUSE 4215, SERIAL NO. 61120

**Calibration is in Accordance with ASTM E74-06
Compression DATA**

Applied Load	Instrument Readings During Calibration			Deviation From Fitted Curve			Values From Fitted Curve
	Run 1	Run 2	Run 3	Run 1	Run 2	Run 3	
LBF	mV/V	mV/V	mV/V	mV/V	mV/V	mV/V	mV/V
1000	-0.04060	-0.04059	-0.04060	0.00000	0.00001	0.00000	-0.04060
5000	-0.20296	-0.20295	-0.20295	0.00000	0.00001	0.00001	-0.20296
10000	-0.40595	-0.40593	-0.40593	-0.00002	0.00000	0.00000	-0.40593
20000	-0.81195	-0.81195	-0.81196	-0.00001	-0.00001	-0.00002	-0.81194
30000	-1.21803	-1.21800	-1.21801	-0.00001	0.00002	0.00001	-1.21802
40000	-1.62415	-1.62416	-1.62416	0.00001	0.00000	0.00000	-1.62416
50000	-2.03035	-2.03032	-2.03030	-0.00001	0.00002	0.00004	-2.03034
60000	-2.43656	-2.43654	-2.43655	-0.00004	-0.00002	-0.00003	-2.43652
70000	-2.84270	-2.84269	-2.84270	0.00000	0.00001	0.00000	-2.84270
80000	-3.24881	-3.24879	-3.24887	0.00003	0.00005	-0.00003	-3.24884
90000	-3.65492	-3.65497	-3.65494	0.00001	-0.00004	-0.00001	-3.65493
100000	-4.06091	-4.06096	-4.06093	0.00003	-0.00002	0.00001	-4.06094

The following polynomial equation, described in ASTM E74-06 has been fitted to the force and deflection values obtained in the calibration using the method of least squares.

$$\text{response} = A0 + A1(\text{load}) + A2(\text{load})^2 + A3(\text{load})^3$$

$$\text{load} = B0 + B1(\text{response}) + B2(\text{response})^2 + B3(\text{response})^3$$

Where: A0 -1.59284448E-5
A1 -4.05855138E-5
A2 -6.0045920E-13
A3 3.6327959E-18

Where: B0 -3.90390270E-1
B1 -2.46393220E+4
B2 -8.96488242E+0
B3 -1.33563431E+0

The following values as defined in ASTM E74-06 were determined from the calibration data.
Uncertainty 1.266 LBF

Class A Loading Range 1000.00 TO 100000.00 LBF

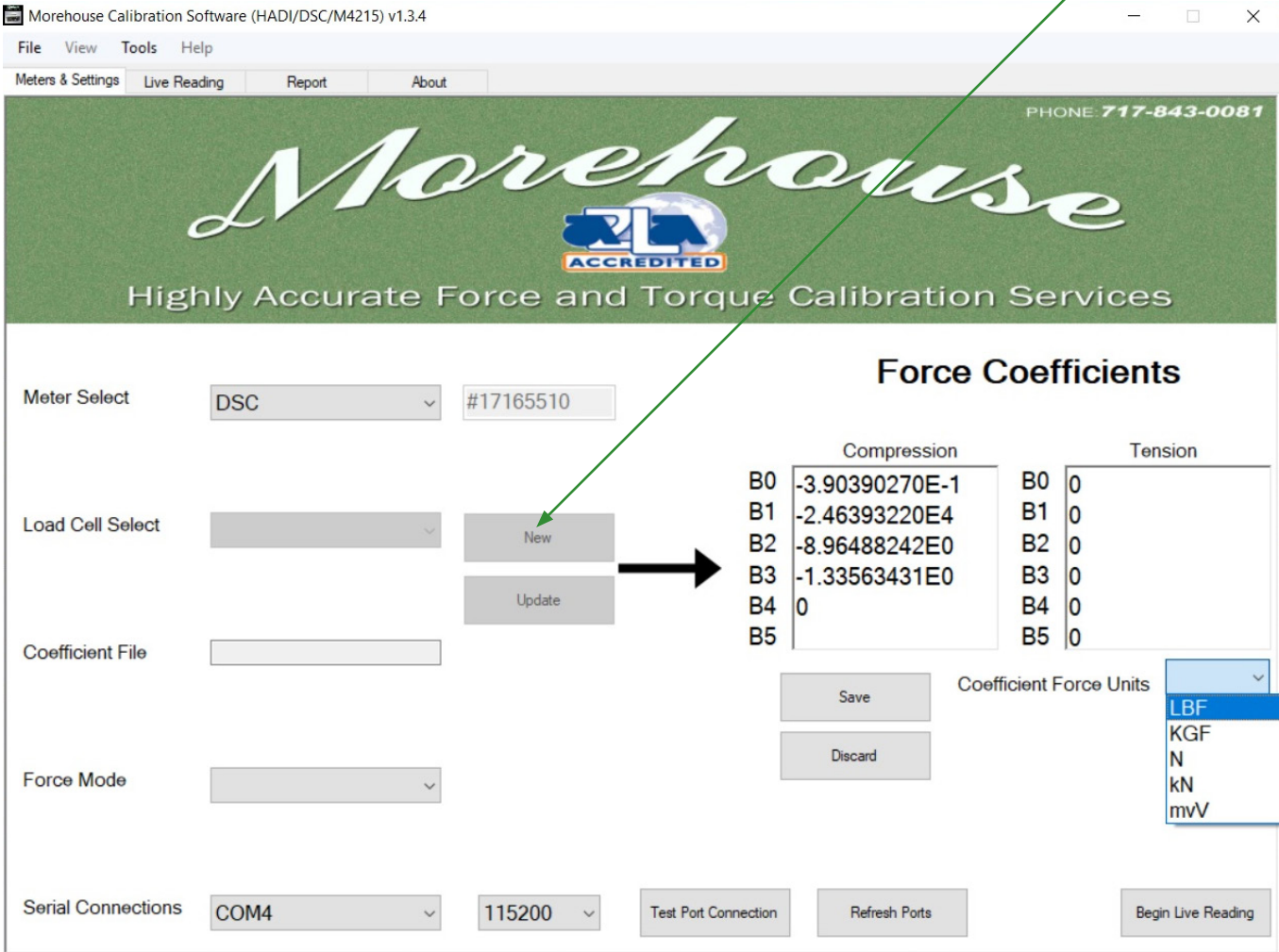
Class AA Loading Range 2532.17 TO 100000.00 LBF

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Step 1. launch the program if the program is not already running then run the program and click **New** and enter the values from the calibration report. If the unit is compression and tension enter B values from each sheet. **After these are entered you must set the Coefficient force units from the report**



Morehouse Calibration Software (HADI/DSC/M4215) v1.3.4

PHONE 717-843-0081

Morehouse
ACCREDITED
Highly Accurate Force and Torque Calibration Services

Meter Select: DSC #17165510

Load Cell Select: [Empty] **New** Update

Coefficient File: [Empty]

Force Mode: [Empty]

Serial Connections: COM4 115200 Test Port Connection Refresh Ports Begin Live Reading

Force Coefficients

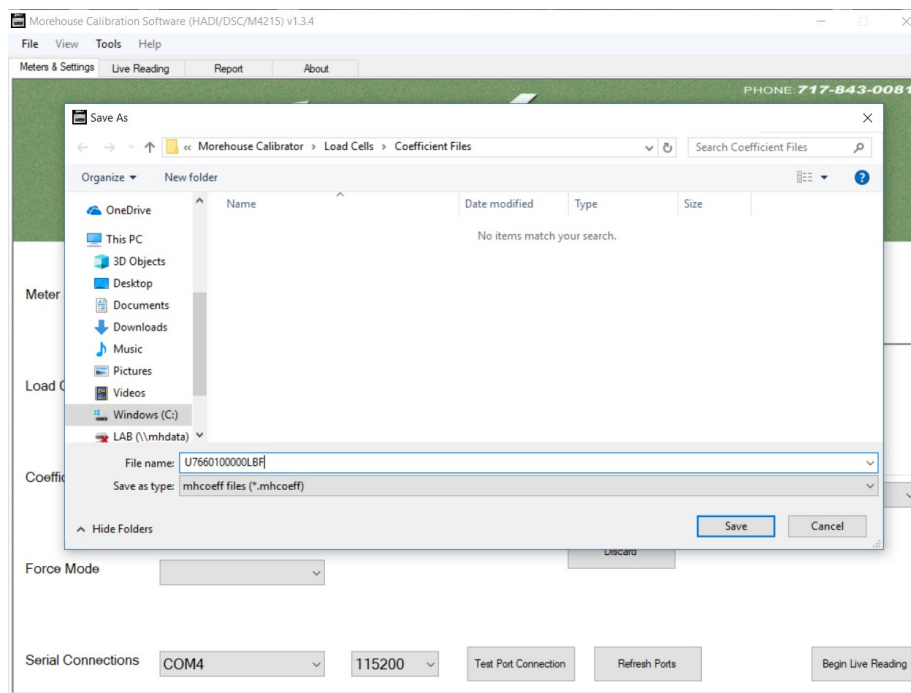
	Compression	Tension
B0	-3.90390270E-1	0
B1	-2.46393220E4	0
B2	-8.96488242E0	0
B3	-1.33563431E0	0
B4	0	0
B5		0

Save Discard

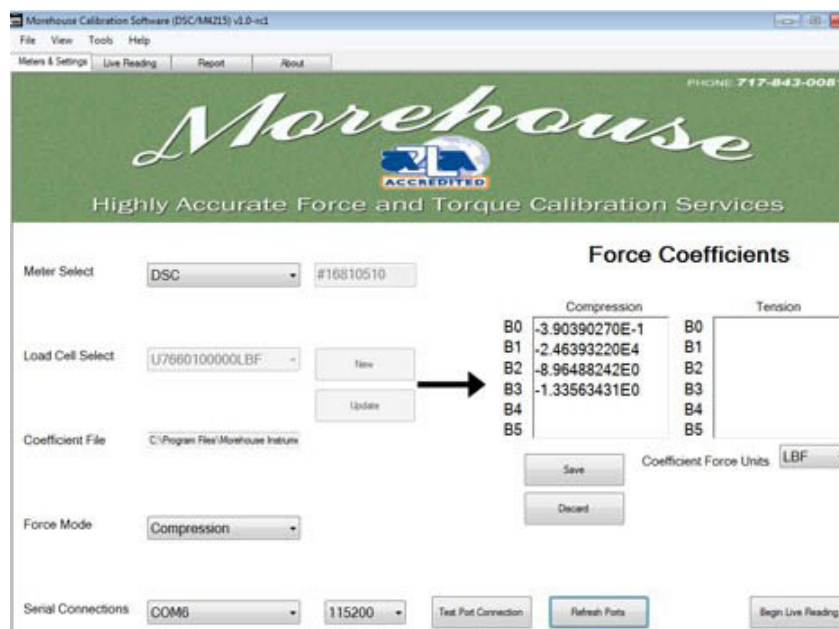
Coefficient Force Units: LBF, KGF, N, kN, mvV

You should now be ready to save the file.

Step 2. Save the file. When saving the file do not use any spaces. The file must be entered without any spaces. **Please note that every time the unit is recalibrated these files will have to be updated manually by the end user of the device or the readings will not be accurate!!!**



Step 3. Click Save. (This will take you back to the program). If you have multiple load cells repeat steps 1-3. When finished you will now have multiple load cells that can be selected by using the drop down next to Load Cell Select.



Additional Notes.

The program is setup to put these saved files in a directory called.

[C:\Program Files\Morehouse Instrument Company\Morehouse Calibrator\Load Cells\Coefficient Files.](C:\Program Files\Morehouse Instrument Company\Morehouse Calibrator\Load Cells\Coefficient Files)

The program should work on all 32 bit windows systems

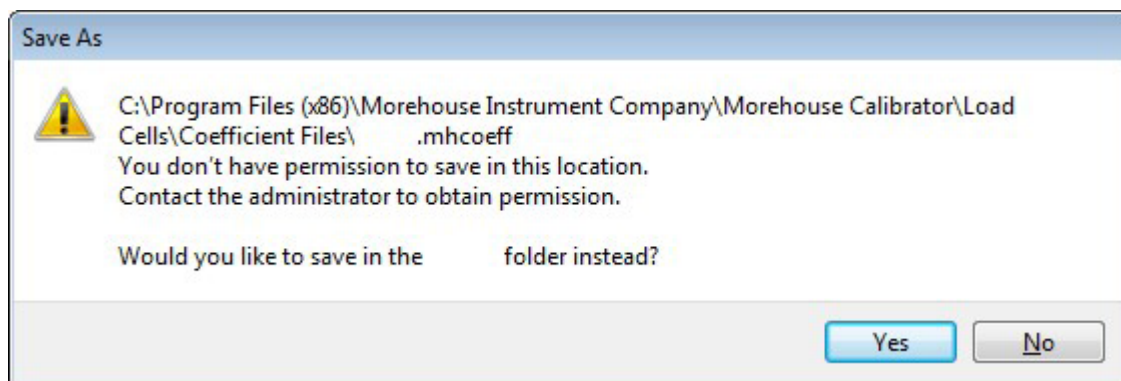
If you are running Windows 64 bit you may have to manually save the coefficient files to another directory and copy and paste them into a directory called

C:\Program Files (86) \Morehouse Instrument Company\Morehouse Calibrator\Load Cells\Coefficient Files

The major difference is that windows 64 bit may not give you permission to directly save into the directory.

3. Software Frequently Asked Questions (FAQs)

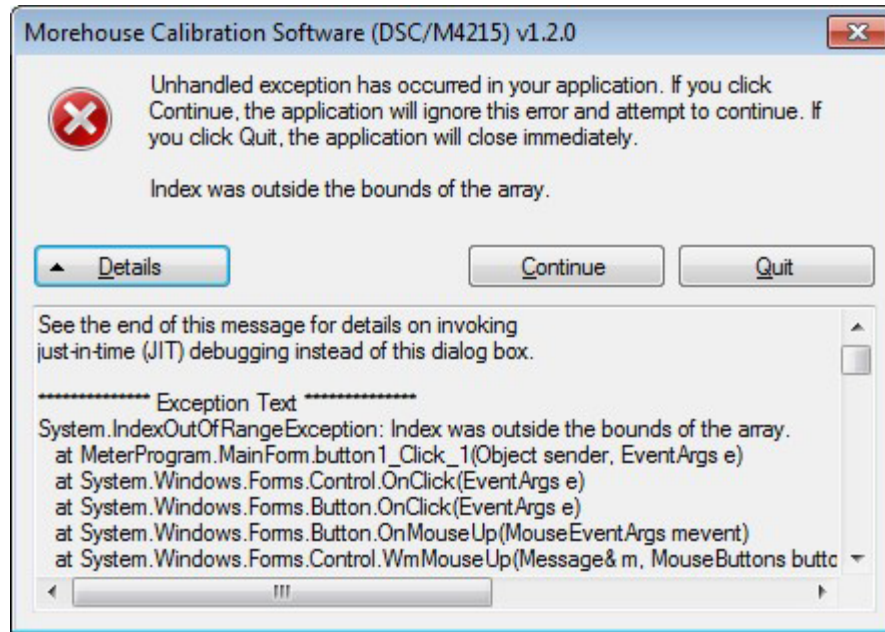
- **Q:** I'm receiving an error when trying to save a new or existing Load Cell coefficient profile. The error states:



- **A:** Your Windows User Account doesn't have permission to save in the target directory where Load Cell coefficient profiles need to be saved. In order to rectify this, navigate to the target directory and right click the folder, select Properties -> Security -> Edit and click the user in the list box that corresponds to your User Account. Click the checkbox that says "Full Control" for your User Account and hit apply. More info here:

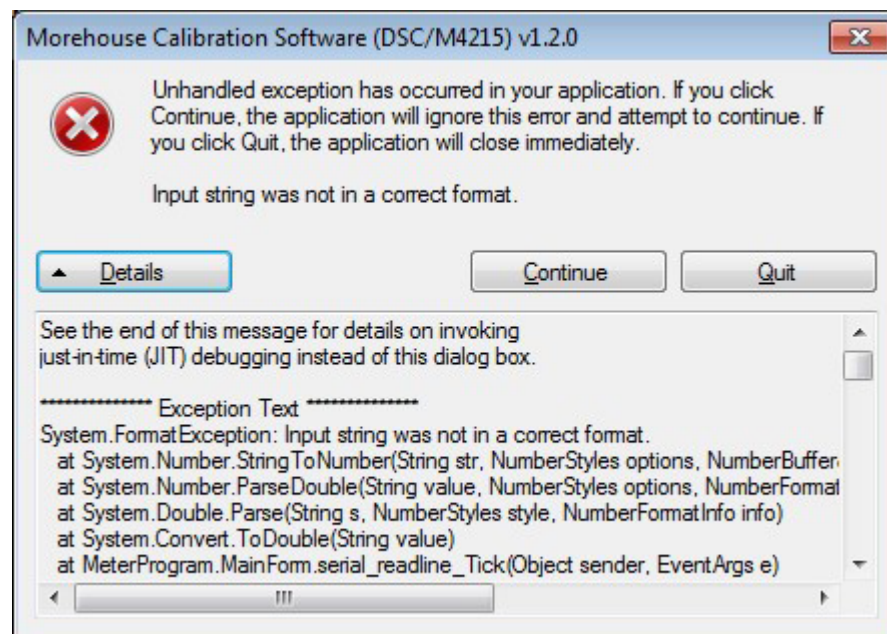
<https://technet.microsoft.com/en-us/library/cc754344.aspx>

- **Q:** I'm receiving an error when trying to save a new or existing Load Cell coefficient profile. The error states:



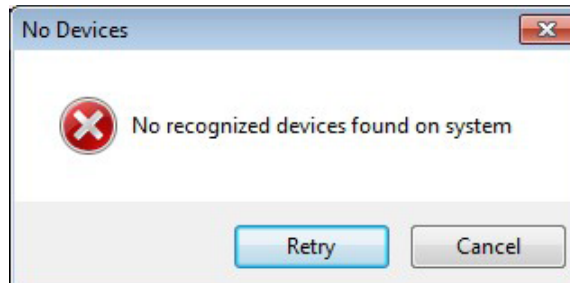
- **A:** There are too many lines and/or coefficients entered that are capable for this program. When entering coefficients, make sure that you navigate between fields using the arrow keys or via clicking each "B" coefficient field and entering the number. Pressing the ENTER key adds a new line, so while on screen nothing appears to be wrong, there are additional fields being read into the program that are invalid. **ANY UNUSED COEFFICIENT FIELD MUST HAVE A 0 NEXT TO IT!**

- **Q:** I've entered the Load Cell coefficient file, selected my indicator and force mode, and switched to the Live Reading tab. When pressing the "Enable Read" button, I see the error:



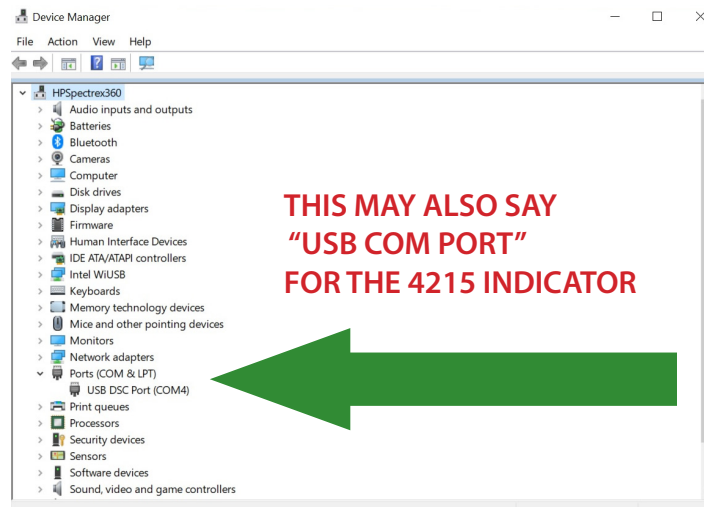
- **A:** In this case, there are too FEW coefficients or lines entered in the Load Cell profile. Please check that you have entered them appropriately and that ANY UNUSED COEFFICIENT FIELD MUST HAVE A 0 NEXT TO IT!

- **Q:** I have my Morehouse 4215/DSC USB/HADI indicator connected to my computer via USB and powered on. I load the Morehouse Calibration Software and I see the following error:



- **A:** Ensure that you install (or have installed) the appropriate driver that was included in your software download, or provided to you via disc, in the “Drivers” folder of the installation media. The driver for each device is located in the folder with the same name.

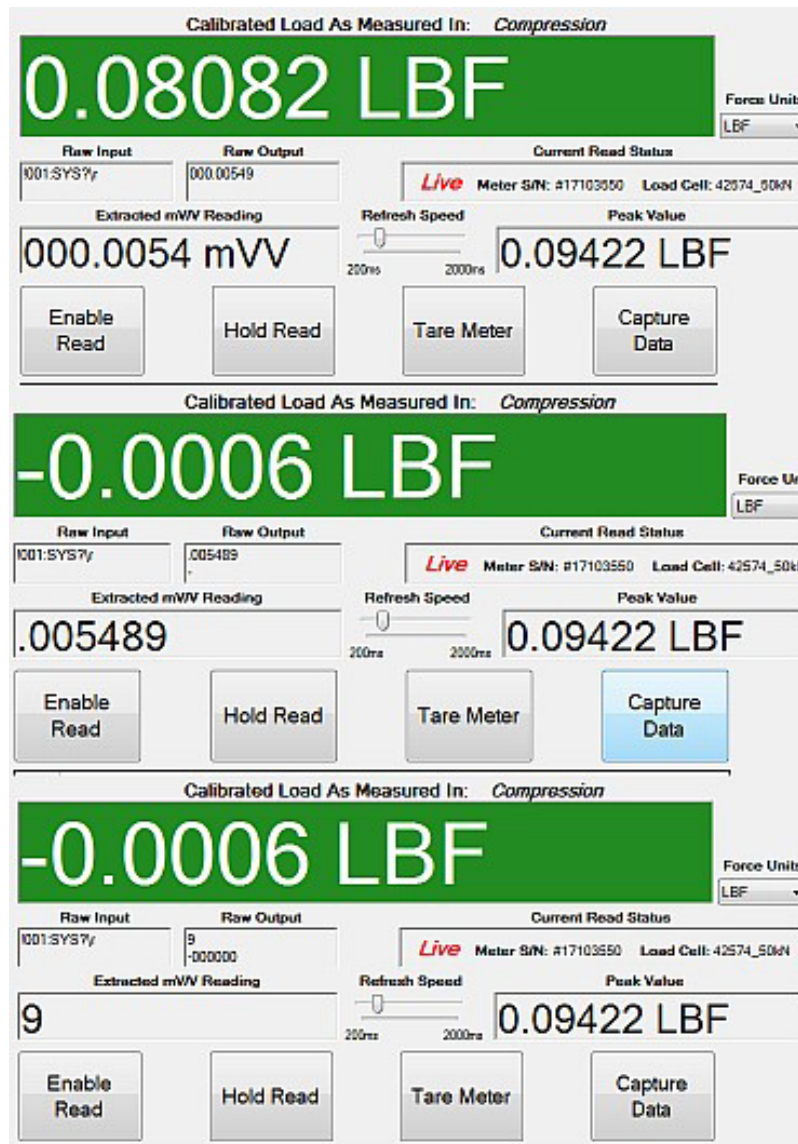
After the driver is installed, verify that the indicator you have is being recognized by Windows. Navigate to the system Device Manager via the Control Panel, and click the “Ports” tree:



In the event this still doesn’t fix the issue, ensure that the device is not being currently occupied by another program or resource lock. An easy way to guarantee this is by rebooting the computer. In the rare event your device still won’t communicate with the Morehouse Calibration software, please isolate your indicator and remove all other “Ports” type devices from your computer and try again.

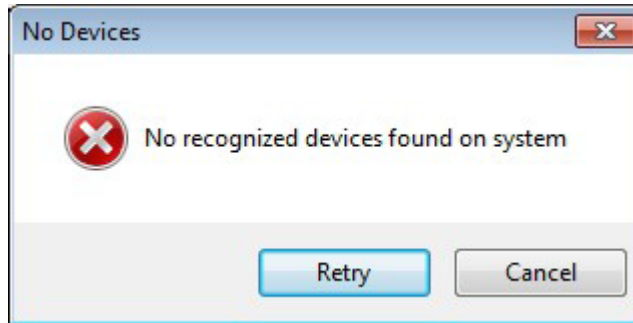
IF YOUR INDICATOR IS A MOREHOUSE 4215, CONFIRM THAT THE “ADD LINE FEEDS” OPTION IS SELECTED IN THE SYSTEM OPTIONS VIA THE FRONT PANEL PUSH BUTTON CONTROLS

- **Q:** I have a DSC USB, and my extracted mV/V readings are scrolling across the screen scrambled and seemingly arbitrary, and no force measurement is being displayed in the green box. The following image depicts the pattern you may be seeing:



- **A:** The DSC USB unit decimal precision is set incorrectly. In order to set it to a proper value for the software to read from, hit "Hold Read" and then the combination of the keys CONTROL + SHIFT + R (CTRL + SHIFT + R). A screen should appear and the program will run through a sequence of procedures to soft reset values on the DSC.

- **Q:** I have my Morehouse HADI indicator connected to my computer via USB and powered on, and have verified the driver for my device is installed via the Device Manager. I load the Morehouse Calibration Software and I see the following error:



- **A:** Recent versions of Windows, especially Windows 10, are loading the driver for the device but not enabling the required VCP option by default. In order to fix or check this, navigate to the Device Manager and under Universal Serial Bus Controllers, find the entry in the tree that says "USB Serial Converter". Right click, Properties, Advanced and ensure the "Load VCP" checkbox is enabled.



The screenshot shows the Windows Device Manager window for a 'torque-PC'. The 'Universal Serial Bus controllers' category is expanded, and the 'USB Serial Converter' device is selected. A context menu is open, and the 'Properties' option is chosen, opening the 'USB Serial Converter Properties' dialog box. The 'Advanced' tab is active, showing the 'Configuration' section with the 'Load VCP' checkbox checked. Other options include 'Enable Selective Suspend' (unchecked) and a 'Selective Suspend Idle Timeout (secs)' dropdown set to '5'. A red arrow points from the 'USB Serial Converter' device in the Device Manager tree to the 'Advanced' tab of the properties dialog.

**RIGHT CLICK, PROPERTIES, ADVANCED
LOAD VCP**