

Morehouse

INSTRUMENT COMPANY, INC.



**MODEL 4325A
CellMite® Digital Signal Conditioners**

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INTRODUCTION

The Model 4325A is a versatile precision instrument intended for the digital readout of strain gage sensors such as load cells.

Morehouse has developed software to support the 4325A and continues to improve and release new software updates occasionally through the World Wide Web. These updates can be found at <http://www.mhforce.com/download.htm> under the downloads section on the web link above.

Key features and benefits of the software and indicator include:

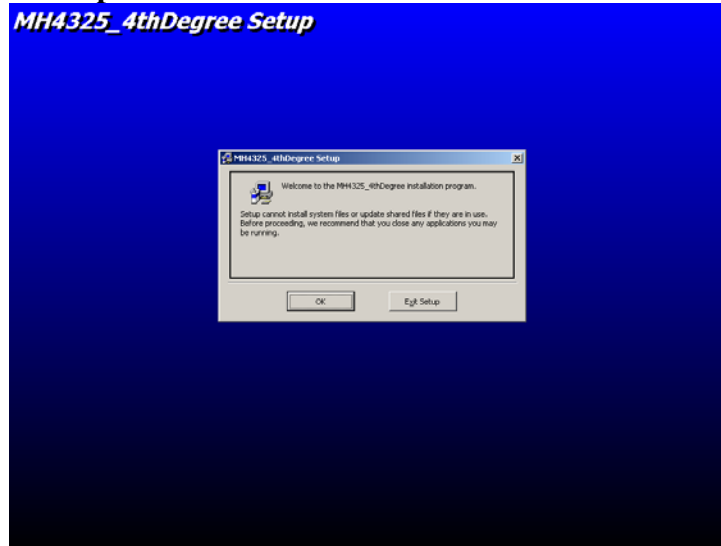
- **Simple setup using a USB to RS232 Cable**
- **Measuring load in engineering units in accordance with ASTM-E74 (this is done using the coefficients or the inverse coefficients from the calibration report to generate load in engineering units.**
- **Display that shows both the mV/V reading as well as the converted readings in pounds, kilograms and Newton's**
- **Since the calibration report is issued in mV/V the "as received" calibration is the same as the "as returned" calibration. The user only has to enter the new coefficients from the calibration report into the software.**
- **Coefficient files and software can be stored on any computer and loaded from CD, DVD, Flash drives or the Computers Hard Disk.**
- **The software allows for data capture. This allows the user to copy/paste the numbers taken during calibration to custom reports or excel spreadsheets etc.,**
- **User selectable Comm port selection**
- **Setting the display to read up to 5 decimals.**
- **Selectable filters**
- **Tare and Hold shortcut keyboard buttons using function keys.**

INSTALLATION

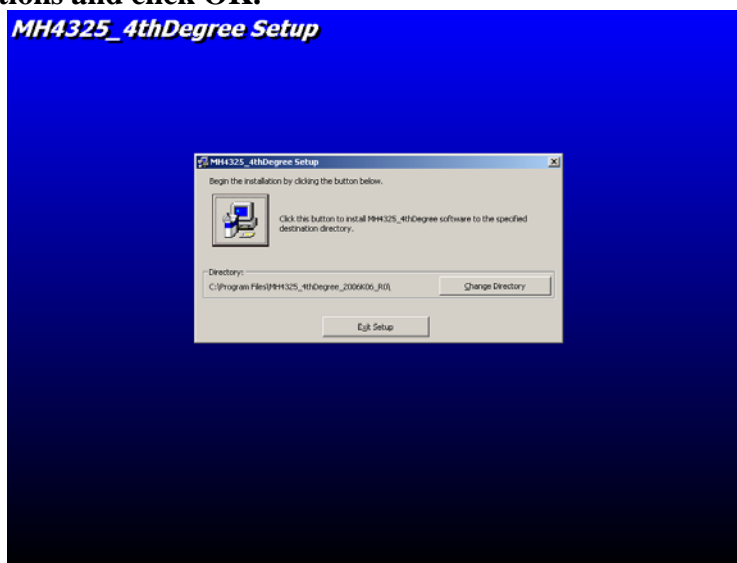
FROM THE INTERNET OR FROM A CD SUPPLIED BY MOREHOUSE.

STEPS:

- Either download from the link <http://www.mhforce.com/download.htm> or insert the CD with the appropriate files
- Click on the setup.exe file



- The screen above should be what you see. Please close other open applications and click OK.



- The next step is to choose the directory you want to install the software. By default it will be installed to C:\ProgramFiles\MH4325**** you can change the directory by clicking on Change Directory to install the software on whichever drive or directory you wish. This will be followed by another screen asking you to choose program group. You may click OK or change the name of the program if you wish and then click OK. The next message will be that setup was successful.

CONNECTING THE CELLMITE TO A COMPUTER

STEPS:

#1 MAKE SURE YOU HAVE ALL OF THE CABLES YOU WILL NEED. YOUR HOOKUP SHOULD CONSIST OF A CELLMITE, A LOAD CELL CABLE, A POWER CABLE AND A RS232 CABLE. (NOTE: LOAD CELL CABLE NOT SHOWN IN PICTURE)



#2 INSTALL THE USB TO RS232 SERIAL CONVERTER (IF THE COMPUTER DOES NOT HAVE A COMM PORT YOU WILL NEED TO USE A CONVERTER BE SURE TO SET POWER SETTINGS P. 12) ON THE COMPUTER AND LOAD THE APPROPRIATE DRIVERS

#3 PLUG THE POWER CABLE INTO THE CELLMITE 5V PLUG. THE LED SHOULD LIGHT UP RED AND THEN TURN GREEN.

#4 PLUG THE LOAD CELL CABLE INTO THE SENSOR END OF THE CELLMITE

#5 PLUG THE RS232 CABLE INTO THE SERIAL END OF THE CELLMITE UNIT

YOUR NEXT STEP WILL BE TO CONFIGURE A COMM PORT. THE MOREHOUSE SOFTWARE IS DESIGNED TO USE ANY OF THE FIRST 4 COMM PORTS. THE USB TO RS232 COMM PORT MAY NEED TO BE CHANGED TO COMM PORT 1, 2, 3, 4, 9 OR 10.

CONFIGURING A COMM PORT

STEPS:

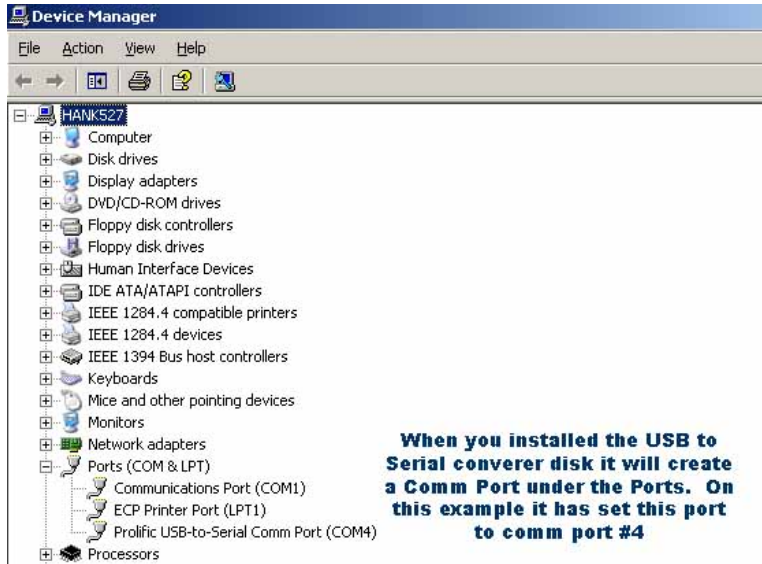
PLEASE NOTE: DIFFERENT OPERATING SYSTEMS MAY HAVE DIFFERENT WAYS TO CHANGE OR CONFIGURE THE COMM PORT ON THE SYSTEM. PLEASE CONSULT THE MANUALS OR HELP FILES PROVIDED BY THE PARTICULAR SOFTWARE MANUFACTURER IF THESE STEPS DO NOT WORK.

FOR MICROSOFT WINDOWS SYSTEMS:

#1 Find the My Computer Icon and Right Click on it and select Properties




#2 Click on the Hardware tab and then Click on Device Manager



#3 If the USB-to-Serial Comm Port is COM1, COM2, COM3, COM4, COM9 or COM10 proceed to the next step. If the Comm Port is not one of these 6 it will need to be changed. In some instances it can be changed by clicking on USB-to-Serial Comm Port, Then Going to the **Port Settings Tab** clicking on **Advanced** and changing the Comm port to a Comm port between 1-4. If the software did not install on any of the 1st 4 ports and cannot be changed please contact the operating software's manufacturer.

LOCATING THE SOFTWARE

Make sure everything is connected and setup per previous instructions.

The program can be found manually or by going to  then selecting

 From here locate this and left click on the highlighted

Area  Note: if you want to create a desktop shortcut **right click** on the highlighted file and select “Send to” then **Desktop (create shortcut)**



This is the screen that should now be seen. Before selecting Enabled the correct Comm Port should be selected and Coefficient files should be loaded from the File Menu. In this example the Comm Port will be set to ‘4’ and an inverse coefficient file will be loaded.

USING THE SOFTWARE

Before using the software click on **File Menu**, Coefficients then New or Open. If you have a Disc and have had calibrations performed by Morehouse Instrument Company the disk should contain a folder with your current calibration coefficients click Open and locate the file you wish to load (When the unit is recalibrated in 1-2 years you will need to enter your new coefficient values B coefficients from your new calibration report). If you already have the software and wish to enter your new coefficients you should click New and proceed to enter the appropriate numbers.



After the coefficients file has been loaded the screen should look like the one pictured left above. This example uses second degree inverse coefficients and is a universal load cell (both compression and tension) the calibration report issued will show what degree fit yields the lowest uncertainty.

To begin using the program under **Port Settings** click the **Enabled radio button** (pictured top right). This will set the unit in live mode from here you should tare the unit and then proceed to apply weight. It is recommended that you exercise the unit a few times and then tare the unit before starting you calibration

A few quick pointers:

Mouse clicking on a button will enable that button to be controlled using the spacebar. If you mouse click on Capture Data the data will be captured and hitting the spacebar will toggle the button press. If you then press Enable Hold the spacebar will control this function.

SHORTCUT KEYS

LISTED BELOW IS A QUICK LIST OF FUNCTION AND SHORTCUT KEYS

SPACE BAR - Mouse clicking on a button will enable that button to be controlled using the spacebar.

Function Keys:

F1 - Hold Value - freezes the live values

F2 - Tare "A" - tares the display

F3 - Data Capture - copies the force value into the Copy/Paste force units box

F4 - Data Clear - clears all force values in the Copy/Paste force units box

Shortcuts:

Coefficients Menu

Ctrl+N - "New Coefficients" Clears all of the entered coefficients

Ctrl+O - "Opens" Opens the file browser

Ctrl+S - "Save" Saves the current coefficients to the last opened file

Ctrl+A - "Save As" opens the file browser to allow creation of new file

Data Capture Menu

Ctrl+X - "Save" saves the force units in the Copy/Paste force units box to a .txt file

Ctrl+Z - "Save As" opens the file browser to allow creation of new file for the force units to be saved

Ctrl+E - Exits the program

Note: These are shortcut keys for Version 1.2 and higher. Older versions may not have all of these functions. Also since the program is upgraded regularly with new features. There might be additional shortcut keys not included above.

TROUBLESHOOTING TIPS AND TRICKS

PROBLEM:

THE READINGS ARE NOT STABLE OR UPDATING FREQUENTLY ENOUGH.

SUGGESTION:

GO TO THE “SETTINGS” MENU AND CHANGE THE FILTER SETTING UNTIL ONE IS FOUND THAT CORRESPONDS TO THE USERS LIKENESS

PROBLEM:

THE SYSTEM WILL NOT COMMUNICATE OR LIVE READING HAS BEEN LOST

SUGGESTION:

DOUBLE CHECK ALL CONNECTIONS. IF THIS DOES NOT SOLVE THE PROBLEM DISCONNECT THE POWER TO THE CELLMITE ONLY WITH THE UNIT ENABLED AND RECONNECT THE POWER TO THE CELLMITE BOX. THIS SHOULD RESYNC THE UNIT. TRY THIS 2-3 TIMES IF THE FIRST TRY DOES NOT SUCCEED.

PROBLEM:

THE BOX IS NOT RESPONDING TO ANYTHING ABOVE

SUGGESTION:

DISABLE THE PORT. GO TO “SETTINGS” SELECT SET ADDRESS SELECT ADDRESS CHECK. THIS MIGHT NEED TO BE CLICKED ON A FEW TIMES. IF THE ADDRESS COMES BACK WITH A VALUE THAT IS NOT 1, THEN DELETE THE CURRENT ADDRESS AND SET THE ADDRESS TO 1. FOR THE PROGRAM TO WORK THE UNIT MUST BE CONFIGURED TO HAVE AN ADDRESS =1.

PROBLEM:

THE LED LIGHT WILL NOT TURN TO GREEN

SUGGESTION:

MAKE SURE THE UNIT LED IS TURNING ON AND IF IT WILL NOT CHANGE TO GREEN TRY THE STEP ABOVE AND IF THAT DOES NOT WORK THE UNIT IS DAMAGED AND NEEDS TO BE SENT BACK FOR REPAIR (THIS IS QUITE UNCOMMON AS THE MOREHOUSE PROGRAM DOES NOT WRITE TO THE FIRMWARE OF THE UNIT) THIS IS DONE INTENTIONALLY TO AVOID REPAIR ISSUES.

PROBLEM:

THE UNIT IS NOT COMMUNICATING OR DISPLAYS “non” IN THE COMMUNICATION BOX.

SUGGESTION:

THE UNIT HAS LOST ITS MEMORY. MOST LIKEY TO POWER SETTINGS NOT BEING CONFIGURED PROPERLY AS EXPLAINED ON P 12. THE UNIT WILL NEED TO BE RECALIBRATED USING A SIMULATOR. YOU MAY CONTACT MOREHOUSE WHO WILL RESET THE CELLMITE USING A SIMULATOR.

LAPTOP USB POWER SETTINGS

THE CELLMITE UNIT CAN BE USED WITH A LAPTOP. WE RECOMMEND USING THE CELLMITE WITHOUT A USB TO RS232 CONNECTOR. IF YOUR LAPTOP DOES NOT HAVE A RS232 PORT AND YOU HAVE TO USE A USB ADAPTOR WE RECOMMEND KEYSpan ADAPTORS. ALSO POWER SETTINGS MUST BE CHANGED IN WINDOWS TO ENSURE PROPER OPERATION.

In Power Management, you can reduce the power consumption of any number of your computer devices or of your entire system. There is the Power Management that will turn off your monitor and your hard drive and even make your system hibernate. Of course you would want to change these settings to NEVER if you do realtime.

There is also Power Management that governs individual components used on your computer. One of the components that has this feature is your USB to Serial cable. IF this is selected and you leave the computer for a break, for instance, it will turn off the USB port making it inoperable for realtime. Below we have listed the steps you can take to disable the Power Management.

This is for Windows _{XP} and Vista computers only.

1. Click on **START**.
2. Now right-click on **MY COMPUTER** and left-click on **PROPERTIES**.
3. Click on the hardware tab and then the Device Manager button.
4. In the list there will be a list of plus signs. Click on the plus next to **UNIVERSAL SERIAL BUS CONTROLLERS**.
5. When you click on the plus next to **SERIAL BUS CONTROLLERS**, you should see an entry that says **...ROOT HUB**. There may be other text preceding the words **..ROOT HUB**. If you have more than one, you will have to repeat the following steps for each one in the list.
6. Double-click the **ROOT HUB**. This will bring up a **PROPERTIES** window. In this window, click on the **POWER MANAGEMENT** tab.
7. In this window you will have to uncheck any check boxes. If there are some that are grayed out, That's OK.

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