DevCom2000-Lite SOFTWARE

DEVCOM2000-LITE SOFTWARE MANUAL

FOR USE WITH

Model 511/521/522 Pressure Transmitters

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Software Installation

The DevCom2000-Lite software was developed specifically for the Viatran model 511/521/522 Pressure Transmitters. DevCom2000-Lite is based on DevCom2000 software and is intended to provide a more intuitive graphical interface with which to access full functionality of the Viatran model 511/521/522. The DevCom2000-Lite software can be used to trim, read data from and store data to the Viatran 511/521/522 Pressure Transmitter. This software can only be installed and activated on one computer. If you need to transfer it to another computer, see the DevCom2000 User's Manual that will be downloaded when you install the software. You must have internet access to download the software.

Follow the steps to download and install the DevCom2000-Lite HART software:

1. Open the link in the email that you received from Viatran, or click on the following link and input the license and password you received from Viatran when you ordered your DevCom2000-Lite HART software:

   https://procomsol.com/download/DevCom2000LiteSetup-Viatran.zip

2. Unzip the files and run "DevCom2000LiteSetup.exe"
3. Click Activate DevCom2000 Lite Online (See Figure 1)

Figure 1 Initial Download Screen

4. The license ID and Password will be included in the email with the link to download the software. Enter this information in the Activation Screen (See Figure 2) and click "Continue".

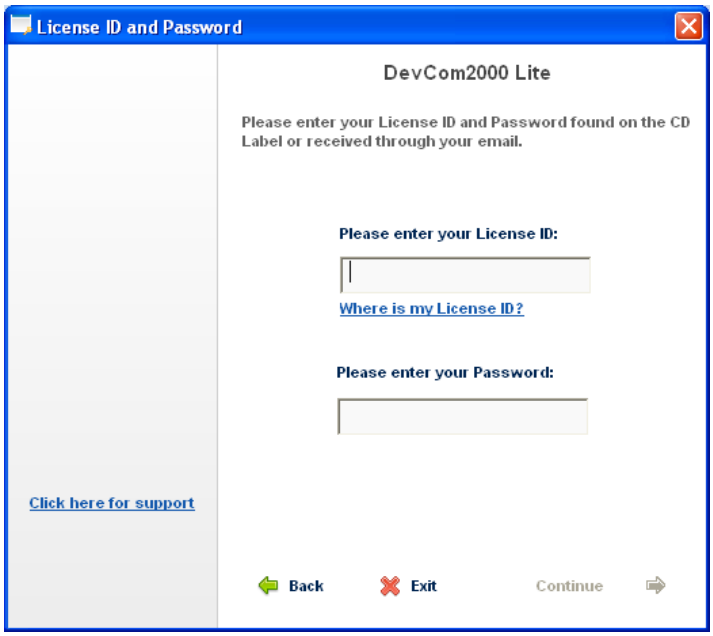

Figure 2 Activation Screen

5. By default, the DevCom2000 Lite software is set up for COM99. You will need to change this after the software is started. You will identify the appropriate port after installing the hardware.

The DevCom2000-Lite icon should be installed on your Desktop. (See below)

Hardware Set-up

The 511/521/522 Pressure Transmitter makes use of the HART® protocol to trim zero and span, monitor pressure spikes, reset to factory settings and store data in the device.

The 511/521/522 Pressure Transmitter is registered with the HART foundation and can communicate with any handheld device or PC software that is also registered with the HART Foundation. To access the functions specific to the model 511/521/522 on any handheld device or PC, the Viatran specific device description (DD) must be

downloaded. The DD is similar to a device driver and is available from the HART Foundation at website www.fieldcommgroup.org.

The DevCom2000-Lite software is written specifically for the models 511/521/522 and, although it uses HART commands to communicate, is not registered with the HART Foundation. It does not require the DD to be downloaded from the HART Foundation website. This manual is intended to instruct on use of the DevCom2000-Lite software exclusively.

Viatran offers all of the components required to take advantage of the 511/521/522 Pressure Transmitter external calibration features. All the user needs to supply is a meter which can measure 4-20mA. For a block diagram of a typical set up to communicate with the Viatran 511/521/522 Pressure Transmitter with a PC and HART Modem, see Figure 3.

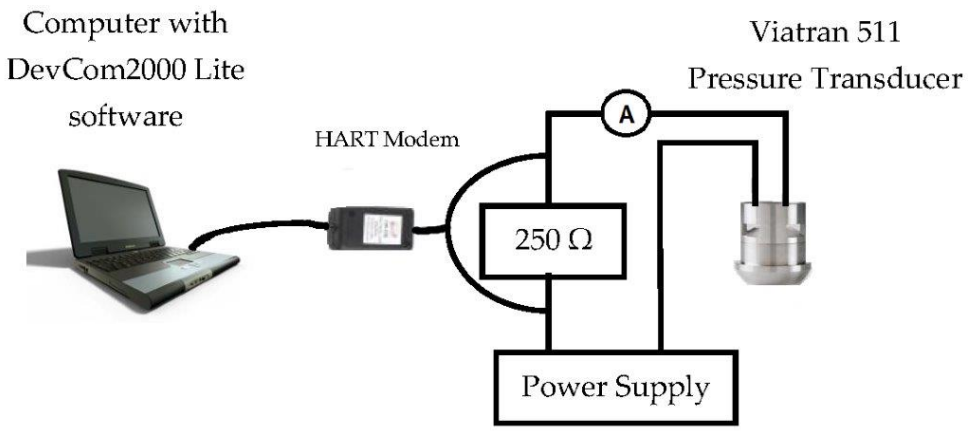

Figure 3 Hart Setup for Communicating with 511 Pressure Transmitter

The system in Figure 3 is made up of the following essential components:

1. Computer, loaded with the DevCom2000-Lite software (Viatran P/N 51DEVC0M20 Revision B or higher)
2. Power Supply (Viatran P/N 5100PS-24V)(due to the 250 Ω resistors, the minimum voltage is the minimum excitation voltage, as specified in the Product Data Sheet, plus 5 V)
3. Viatran 511/521/522 Pressure Transmitter
4. HART® Modem (Viatran P/N 51HMUSB04A)
5. 250 Ω Resistor (Viatran P/N 51HMF-L00P)
6. Multimeter which can measure 4 to 20 mA

HART® is a registered trademark of the HART® Communications Foundation.

Navigating the Software

Starting the Software for the First Time

The DevCom2000-Lite icon was installed on your Desktop during the installation process. (See below) Double click the icon to launch the software.

The first time you start the DevCom2000-Lite software after installation you will be prompted to create a password. The prompt box will look as shown in Figure 4. The password must be between 4 and 8 characters and may contain any combination of upper and/or lower case letters, numbers and/or symbols. It is recommended that you record the password in a safe place.

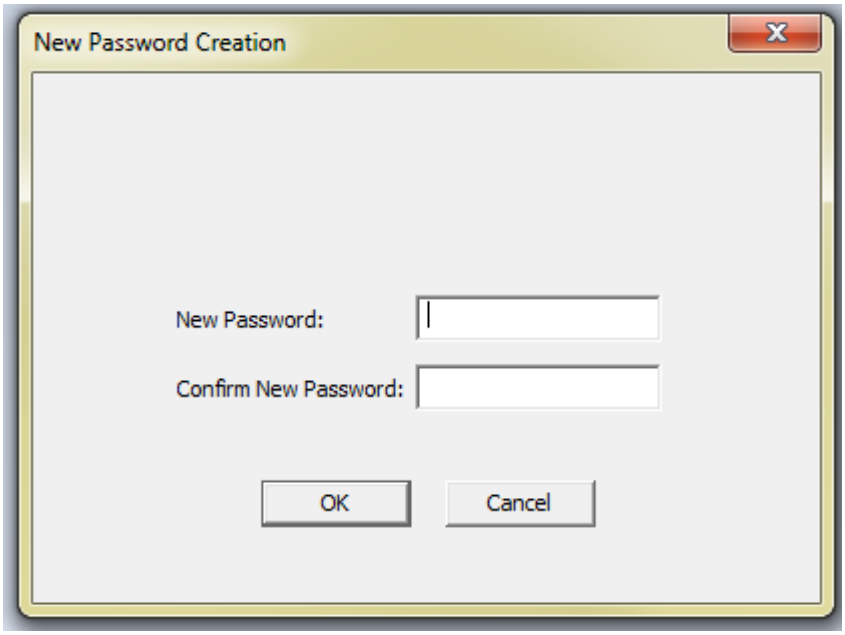

Figure 4 Create Password

Enter the password in the top box and reenter the password in the bottom box to confirm. Press "OK" if you want to save the password or "Cancel" if you want to cancel the new password creation routine.

Starting the Software After the Password is Created

The prompt box in Figure 5 will be displayed when the DevCom2000-Lite software is started and a password has already been created.

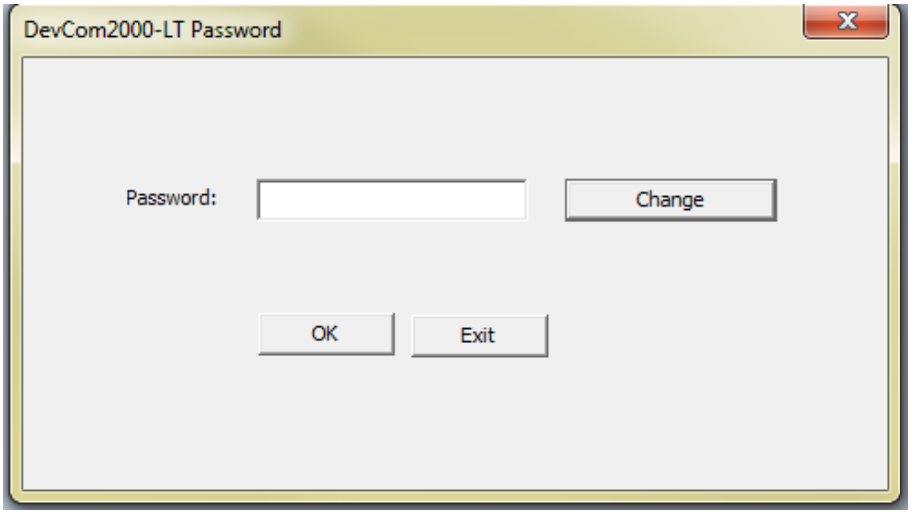

Figure 5 Enter Password

Press the "Exit" button if you do not want to start the DevCom2000-Lite software.

If you want to start the software and do not want to change the password, enter the password in the box and press the "OK" button.

If you want to change the password, press the "Change" button. A prompt box similar to that shown in Figure 6 will appear.

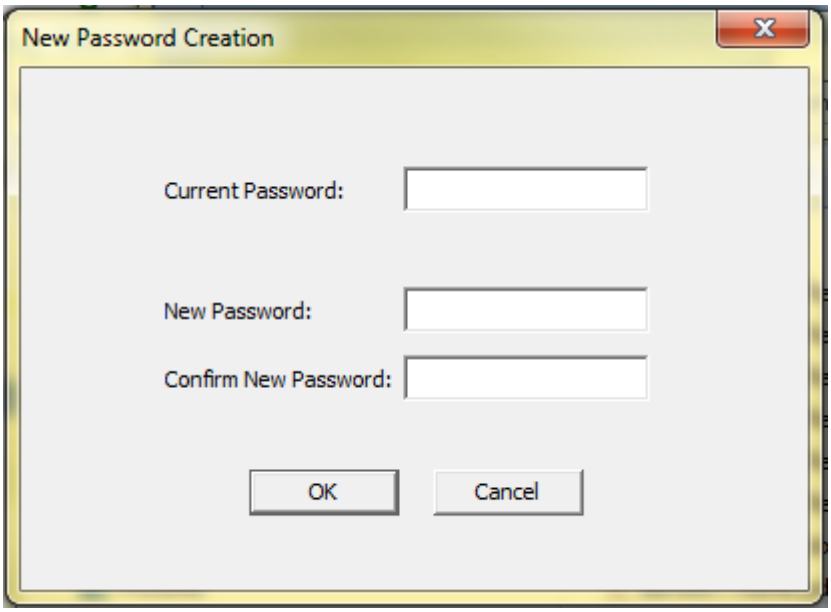

Figure 6 Create Password

Enter the current password in the top box. Enter the new password in the middle box and reenter the new password in the bottom box to confirm. Press "OK" if you want to save the new password and "Cancel" if you want to cancel the new password creation routine.

You will be taken back to the screen shown in Figure 4. Proceed as described above for this display.

Error on Software Start

The error box shown in Figure 7 may appear on start of the DevCom2000-Lite software indicating that the software is not able to detect the device. This may indicate that the computer port used for communicating with the device is not set properly. By default, the DevCom2000 Lite software is set up for COM99.

Figure 7 Troubleshooter

If you know which port the modem is connected to, you may press the "OK" button to exit the "Troubleshooter". The communications port may be selected in the software by navigating to the "Options→Basic" menu option from the top of the interface. The other settings on the "Options" tabs typically do not need to be changed.

Once the new port is set, proceed with the "New Device" section below.

If you do not know which port the modem is connected to or you still receive the error after changing the communications port, you may press the "Troubleshooter" to assist in resolving the issue. The "Troubleshooter" will walk you through a series of questions and suggestions to help narrow down and fix the problem. This process is described in the Devcom2000 User Manual provided by ProComSol. If you still cannot communicate with the 511, please see the Questions/Help section at the end of the manual.

Menus at the Top of the Screen

Only menus specific to the DevCom2000-Lite software are described in this menu. For further information on the "Device", "Options", "View", "Trending", "DD" or "License" drop down menus, refer to the ProComSol DevCom2000 User Manual.

Configuration Changed Message Box

Writing information to or changing the output of the model 511 may cause the device to set a flag which indicates that the configuration of the device has changed. The flag may cause a pop up box to notify the user that the configuration of the device has changed. The box will look similar to Figure 8.

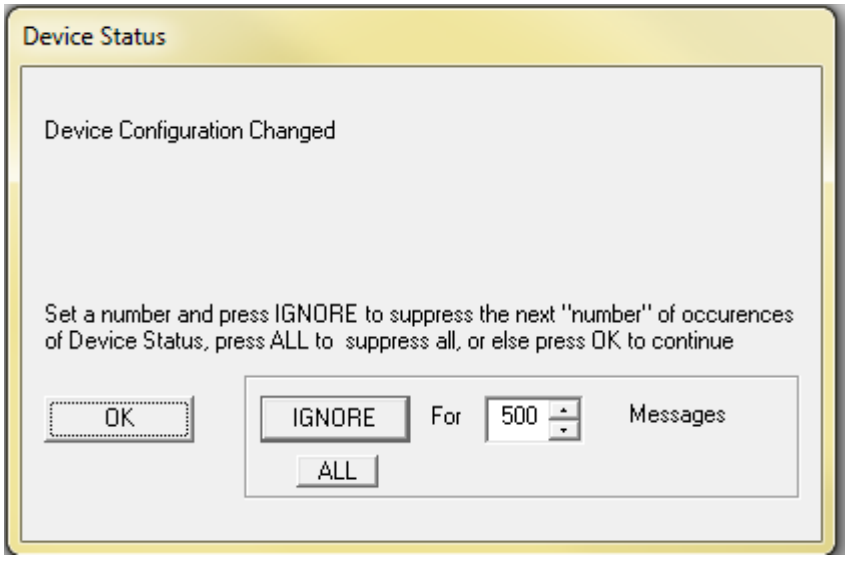

Figure 8 Configuration Changed Pop-up

The device will continue to send back the configuration changed flag until the flag is cleared. Clearing the configuration changed flag is described in the Device Status section.

Pressing "OK" will acknowledge this occurrence of the flag. The box will be displayed again on the next communication with device unless the flag is cleared.

Pressing "IGNORE" will ignore the flag sent back for a number of messages. The number of messages is set in the box and defaults to 500

Pressing "ALL" will ignore the flag indefinitely.

New Device

If you need to change the device or if you attached the device after bringing up the software, you can direct the software to recognize the device by clicking the "New Device" Icon indicated at the right or from the top menu select Device → New Device. See Figure 9. The software will automatically load your new device and take you to the initial screen.

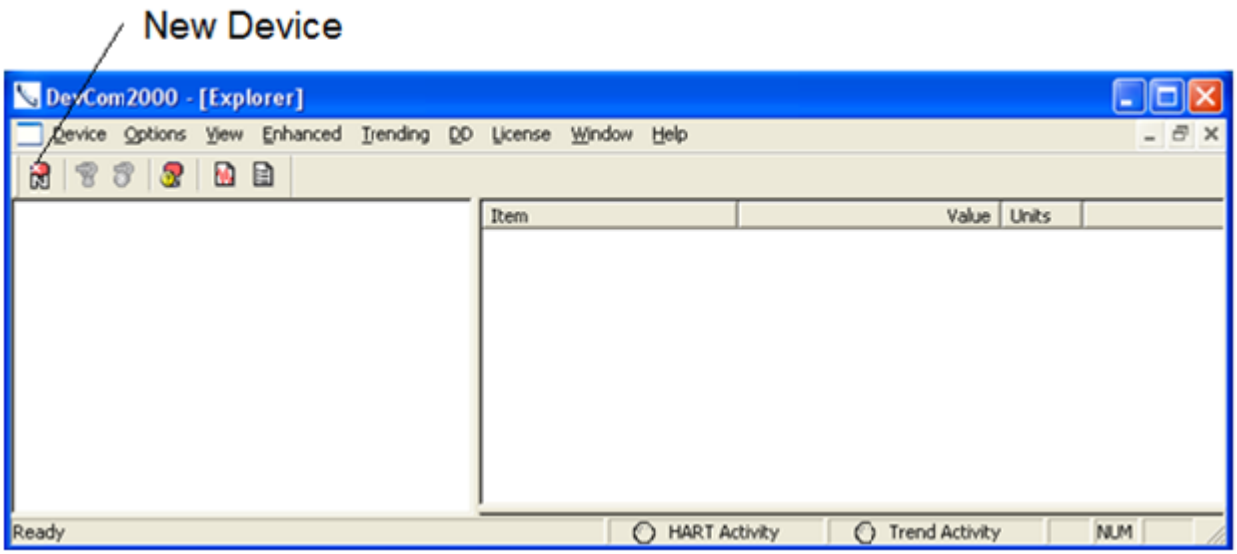

Figure 9 New Device Icon and Menu

Initial Screen

Figure 10 shows what the initial screen will look like when the software connects to the Viatran 511/521/522. The "tabbed" interface offers quick access to features and information supported by the model 511/521/522.

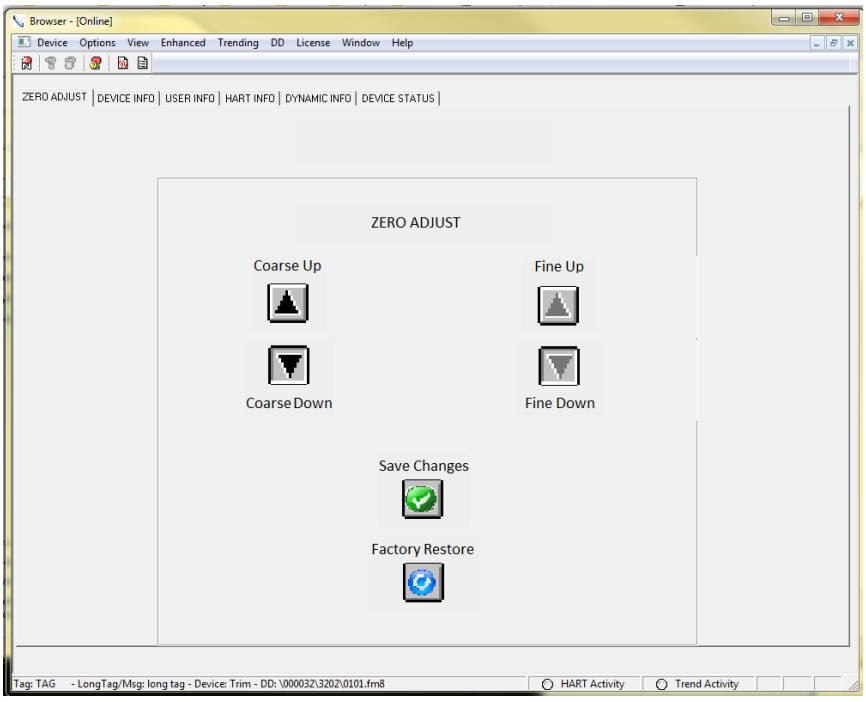

Figure 10 Initial Screen

The "ZERO ADJUST" tab is displayed initially.

Trim Procedure

The Trim function provides the ability to make adjustments to the zero and span outputs. Span trim is not available from the tabbed interface. This will be discussed in the Span Trim section.

Zero Adjust

A zero adjust should be performed before the span is adjusted. Follow the steps below to trim the **zero** output:

1. Vent any pressure applied to the sensor.
2. To adjust the zero reading click on either the coarse or fine zero up or down menu button to increase or decrease the milliamp output of the unit. Continue until your device is as close as possible to the desired output.
3. The zero setting must be stored in the 511/521/522 by clicking the "Save Changes" button. The "Save Zero Changes" option box will prompt you to confirm whether or not you wish to save the zero setting to the device. (see Figure 11) If the settings are not saved when the unit is powered down, it will go back to the last saved setting when it is powered back up.

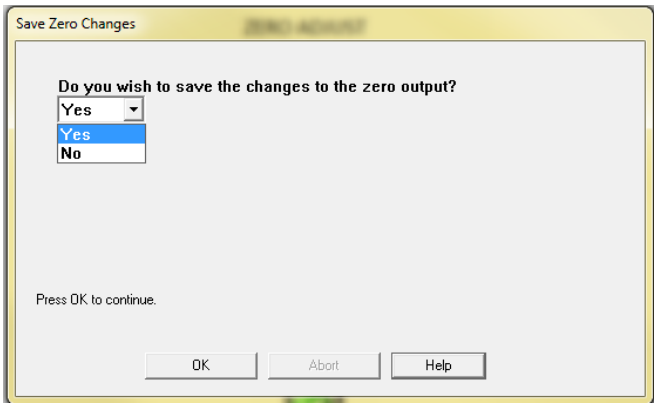

Figure 11 Save Zero Changes Option Box

NOTE: The "Factory Restore" button is provided to return the device to the factory trimmed zero and span settings. (see section "Factory Restore")

Span Adjust

The calibration circuit of the Model 511/521/522 may be used to determine if a calibration of the unit is required. Please reference the 511/521/522 manual to activate the calibration feature. The milliamp output of the unit should be close to the current that is indicated on the Performance Certificate for the 511/521/522. If it is not, this indicates the product should be calibrated. Performance Certifications are available

online via Viatran's password protected customer portal. Contact customer service for information on this capability or go to www.viatran.com and register for portal access.

> **Tip: You may want to record the calibration output and pressure from the Performance Certificate into one of the user fields. These fields are described in the Device Section.**

If the current measurement is not within tolerance it indicates, the unit is out of calibration and must be connected to a calibrated pressure source to adjust the span. **Do not adjust the Span without a calibrated pressure source.**

Span trim is accessed from the "Enhanced" menu item at the top of the screen. (See Figure 12) The span trim interface will appear as shown in Figure 13.

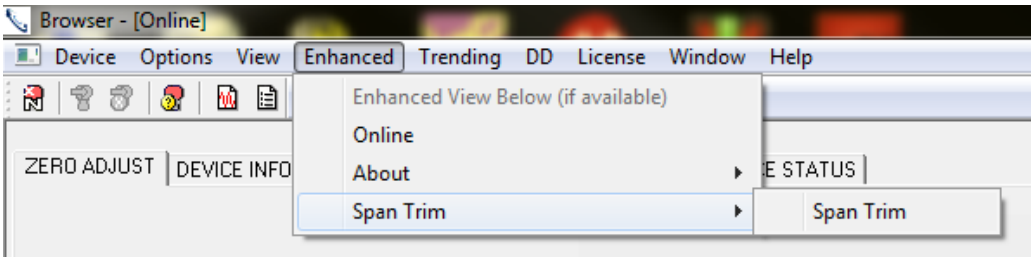

Figure 12 Menu Tree for Span Trim Interface

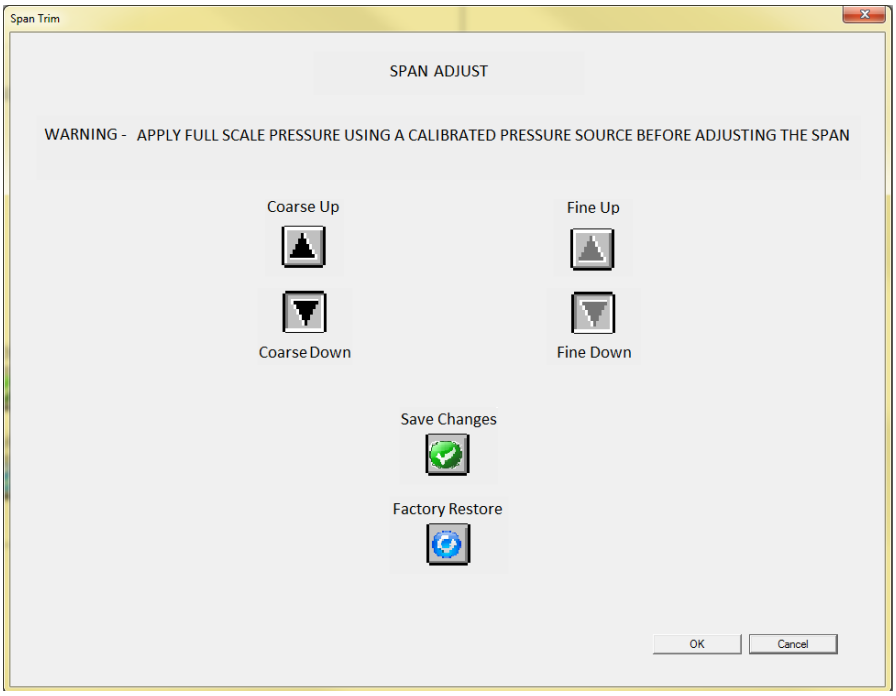

Figure 13 Span Trim Interface

Follow the steps below to trim the **span output**:

1. Apply full scale pressure to the sensor.
2. To adjust the span reading click on either the coarse or fine zero up or down menu button to increase or decrease the milliamp output of the unit. Continue until your device is as close as possible to the desired output.
3. The span setting must be stored in the 511/521/522 by clicking the "Save Changes" button. The "Save Span Changes" option box will prompt you to confirm whether or not you wish to save the span setting to the device. (see Figure 14) If the settings are not saved when the unit is powered down, it will go back to the last saved setting when it is powered back up.

Once you have made necessary adjustments to the span setting, you should vent the pressure applied to the sensor and recheck the zero output.

NOTE: The "Factory Restore" button is provided to return the device to the factory trimmed zero and span settings. (see section "Factory Restore")

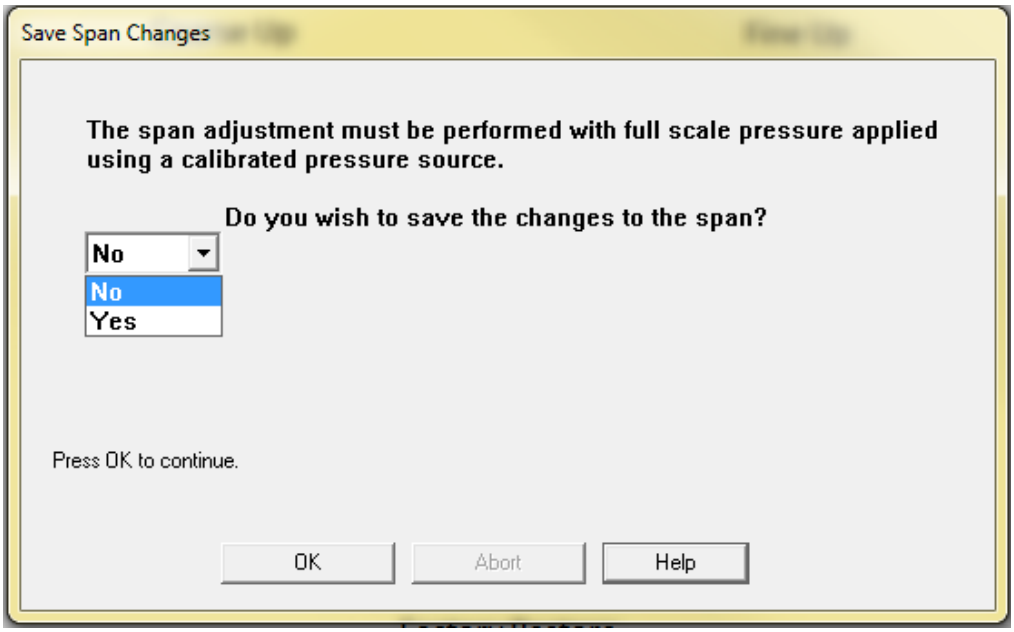

Figure 14 Save Span Changes Dialogue Box

After performing the calibration, it is recommended that you make note of the calibration date and settings in the User fields of the 511/521/522.

Factory Restore

The factory set zero and span may be restored by clicking the "Factory Restore". This button is available on both the "ZERO ADJUST" tab and the "Span Trim" interface. You will be asked to confirm that you wish to perform this operation. (Figure 15) If it has been more than 12 months since the unit has been calibrated by Viatran or an authorized Viatran Repair Center, you may not want to restore factory settings as they may not accurately reflect the pressure being applied to the sensor. These calibration fields are only updated when the product is calibrated by Viatran or an authorized Viatran Repair Center. If a unit is returned to Viatran for repair or calibration and a trim is performed on the unit, the unit will reflect the factory settings from that last trim event from the factory.

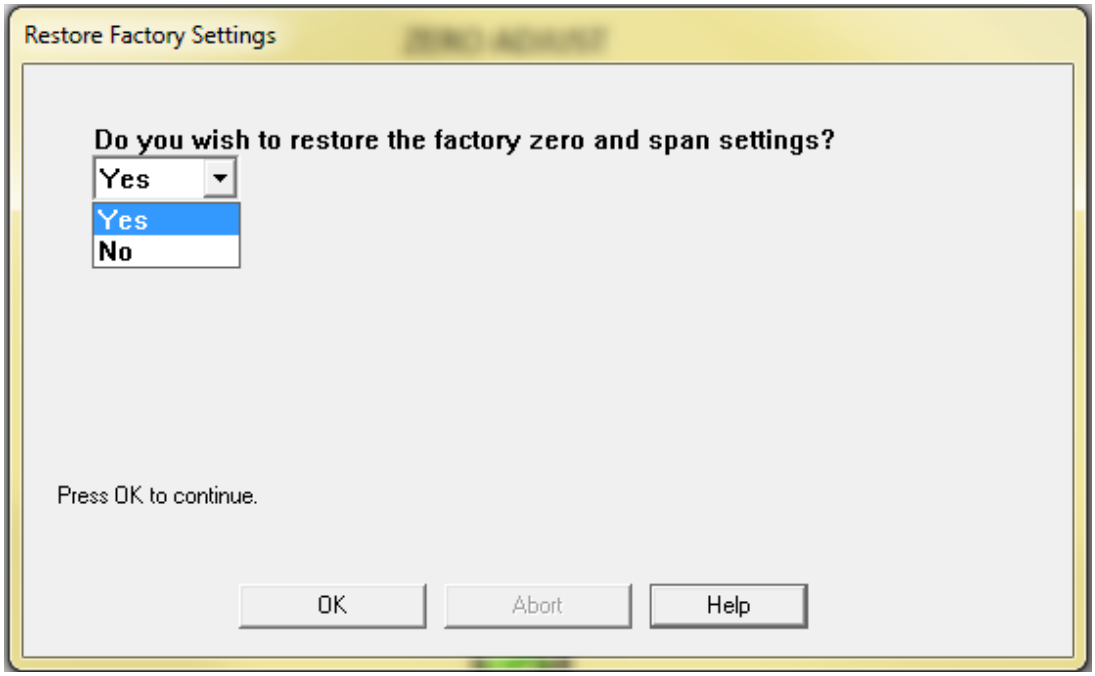

Figure 15 Factory Restore

Device

Device Information

Factory set device information is presented when the "DEVICE INFO" tab is selected. This information is set at the factory and the user can not change it. (See Figure 16) Further explanation of some of the information provided on this screen is as follows:

Lower RangeValue – The lowest rated pressure for the device. This is the pressure which generates an output of 4 milliamps

Upper Range Value – The highest rated pressure for the device. This is the pressure which generates an output of 20 milliamps

Upper Sensor Limit – The maximum pressure that can be applied to the device without damaging the unit (aka Proof Pressure).

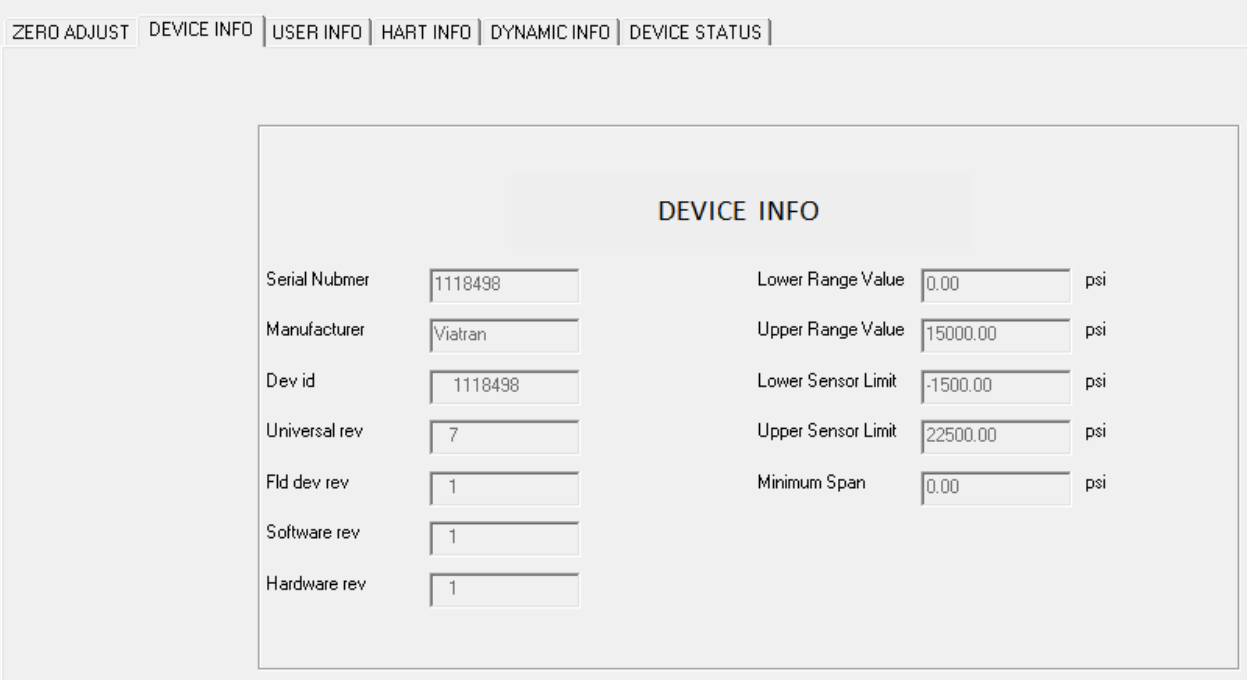

Figure 16 Device Information

User Information

User information is information that is saved in the device and the user can change. This information is presented when the "USER INFO" tab is selected. (See Figure 17)

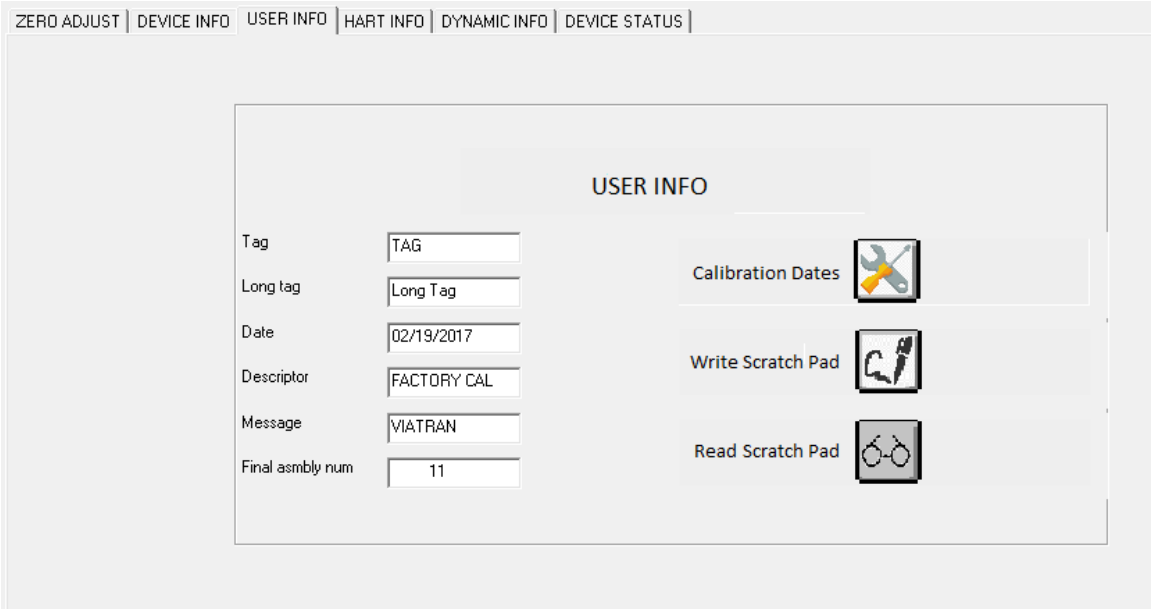

Figure 17 User Information

The field sizes are as follows:

FIELD NAME	SIZE
Tag	8 Characters
Long Tag	32 Characters
Date	10 Characters
Descriptor	16 Characters
Message	32 Characters
Final Assembly Number	0 to 16777215

Figure 18 User Information Field Sizes

To change the information, click in the box that you want to edit, or double click to select the whole field. Make the edits you want and then hit enter or click in another block. The field that has been changed will turn yellow as shown in Figure 19. The yellow indicates which fields contain information that is different than what is in the unit. By clicking the Send to Device icon in the top menu (shown below) the information will be transferred to the device.

You can cancel your edits by clicking the cancel edits icon in the top menu (also shown below).

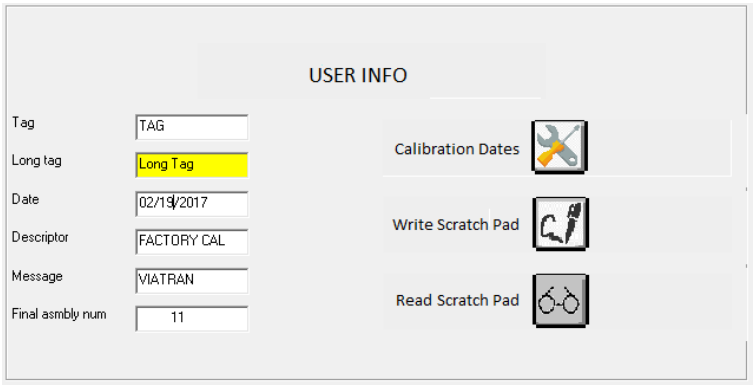

Figure 19 User Information with Edit

Clicking on the "Calibration Dates" button will pop up the selection box shown in Figure 20. These may be used to record up to five calibration dates.

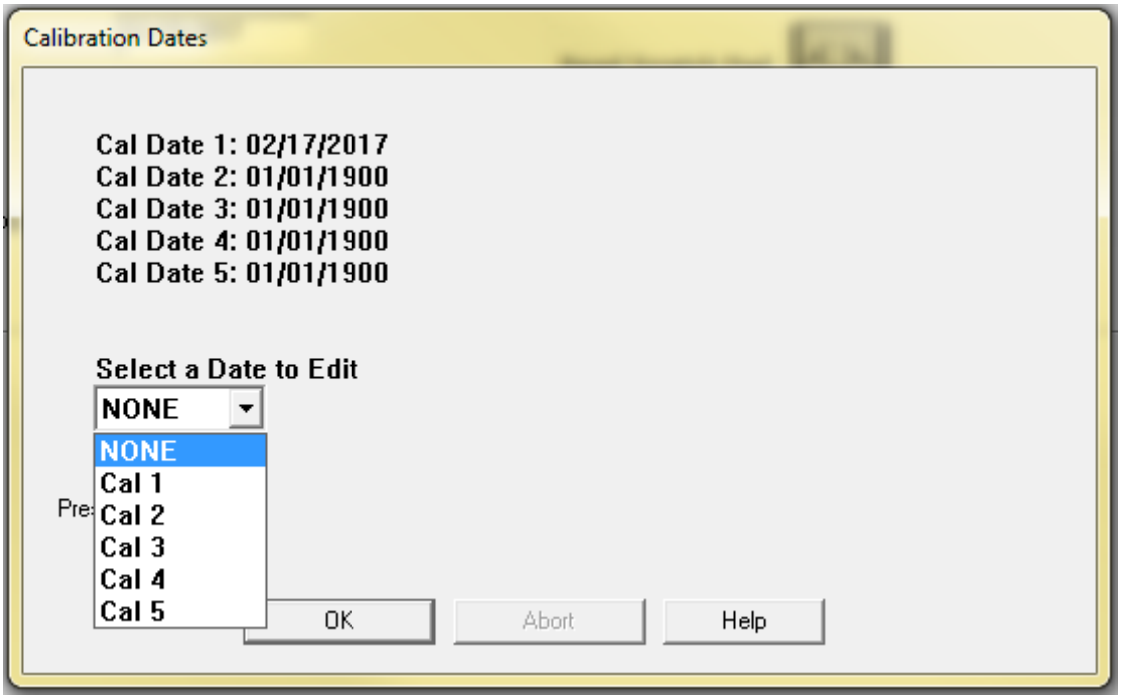

Figure 20 Calibration Date Selection

Select a date to edit and press the "OK" button. A message box similar to Figure 21 will appear. Edit the calibration date in the box and press "OK" to continue. It may take several seconds for the information to be recorded in the device.

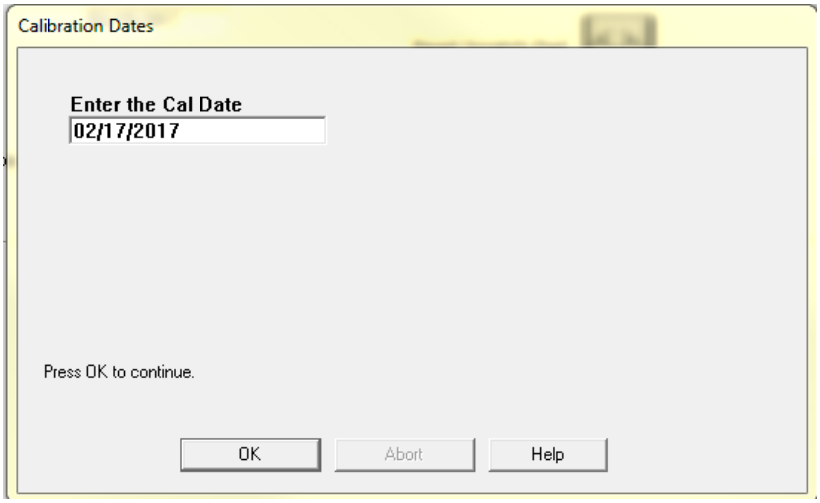

Figure 21 Edit Calibration Date

The scratch pad is a ninety-six character storage area inside the device which may be used to store and read back information. To write data to the scratch pad area, click the "Write Scratch Pad" button. A message box similar to Figure 22 will pop up. Enter the information you wish to store in the box. The text will scroll if you exceed the length of the box. Up to ninety-six characters may be entered. Click the "OK" button to send the information to the device. This may take several seconds.

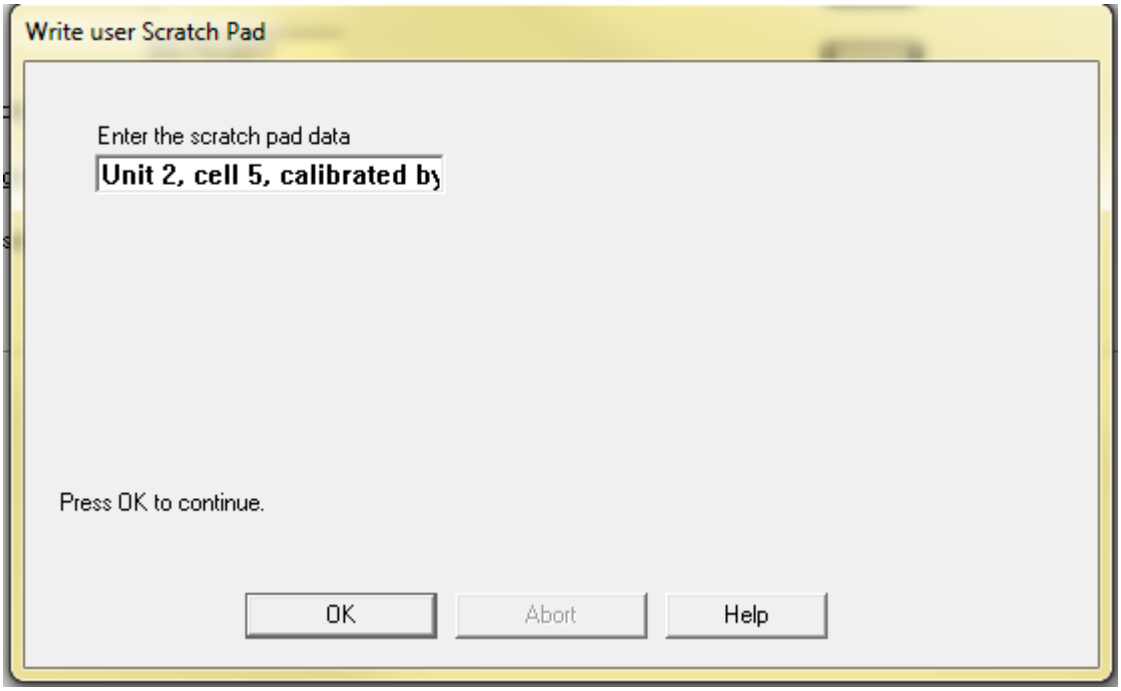

Figure 22 Write User Scratch Pad

To read data from the scratch pad area, click the "Read Scratch Pad" button. A dialogue box similar to Figure 23 will pop up. This may take several seconds.

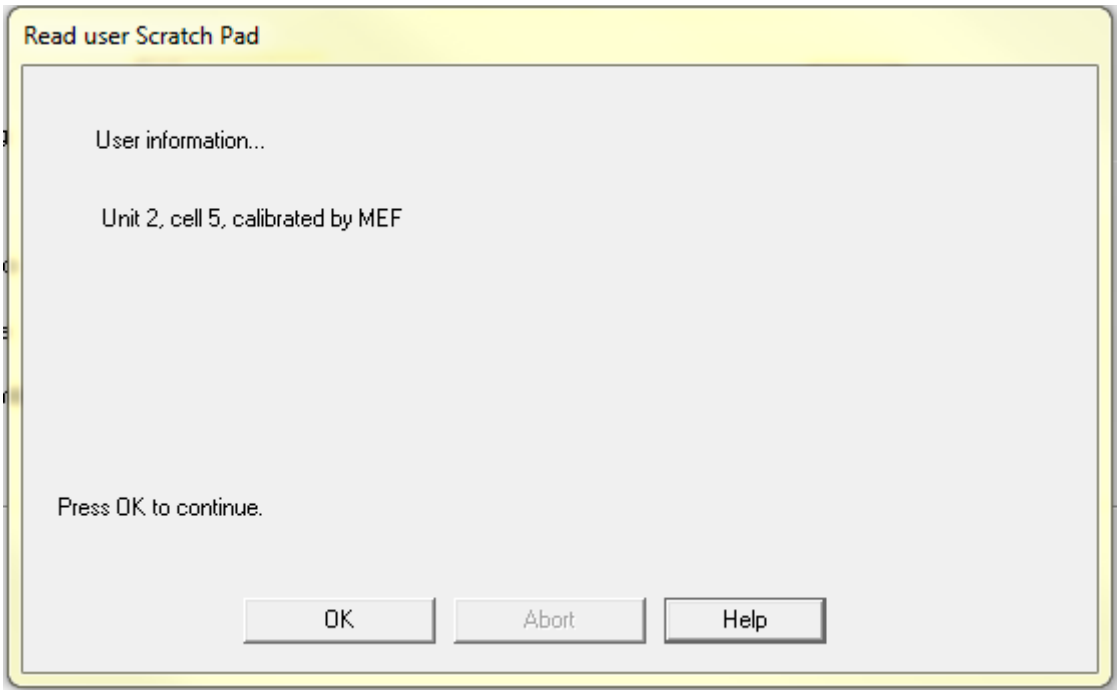

Figure 23 Read User Scratch Pad

HART Information

The model 511/521/522 communicates using the HART protocol. The "HART INFO" tab displays information relevant to the HART specifications. The number of request and response preambles as shown in Figure 24 may not be changed. They are used to synchronize communications.

The polling address may be changed by the user. It is useful if several devices are connected to the same bus and the digital pressure reading is being used. Each unit connected to the bus must have a unique address between 0 and 15. The digital reading from a model 511/521/522 is not as accurate as the standard milliamp output.

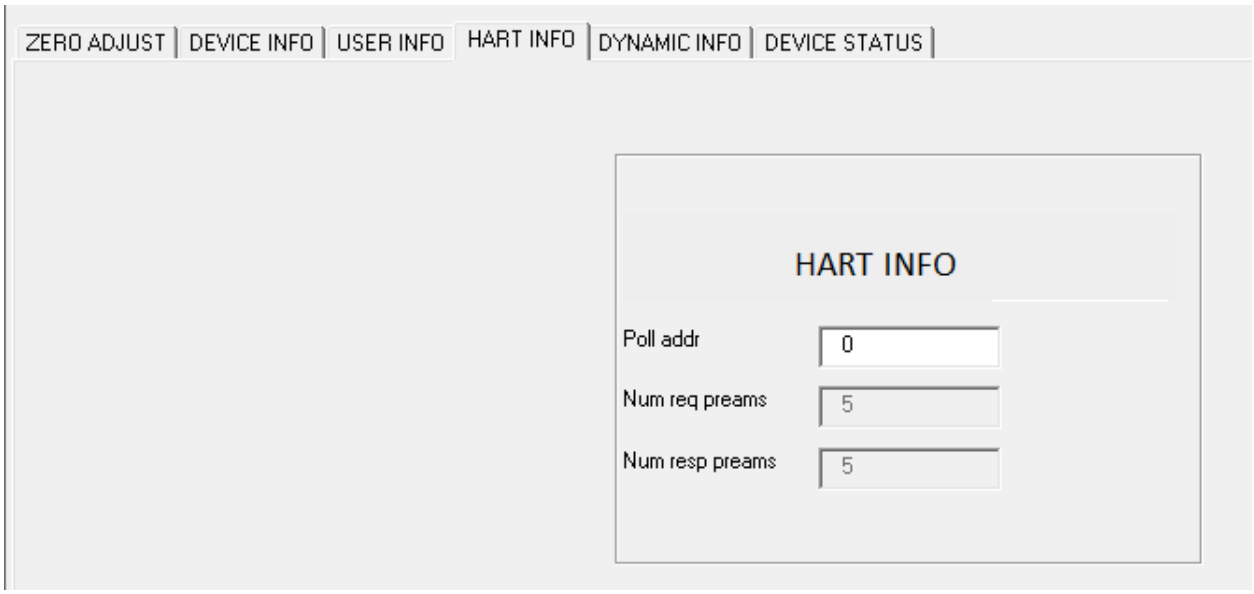

Figure 24 HART Information

Dynamic Information

The "DYNAMIC INFO" tab displays information which is changing. (See Figure 25) The box at the top displays and updates the pressure as it is read back from the device. This is a digital pressure represented by the milliamp output generated by the device.

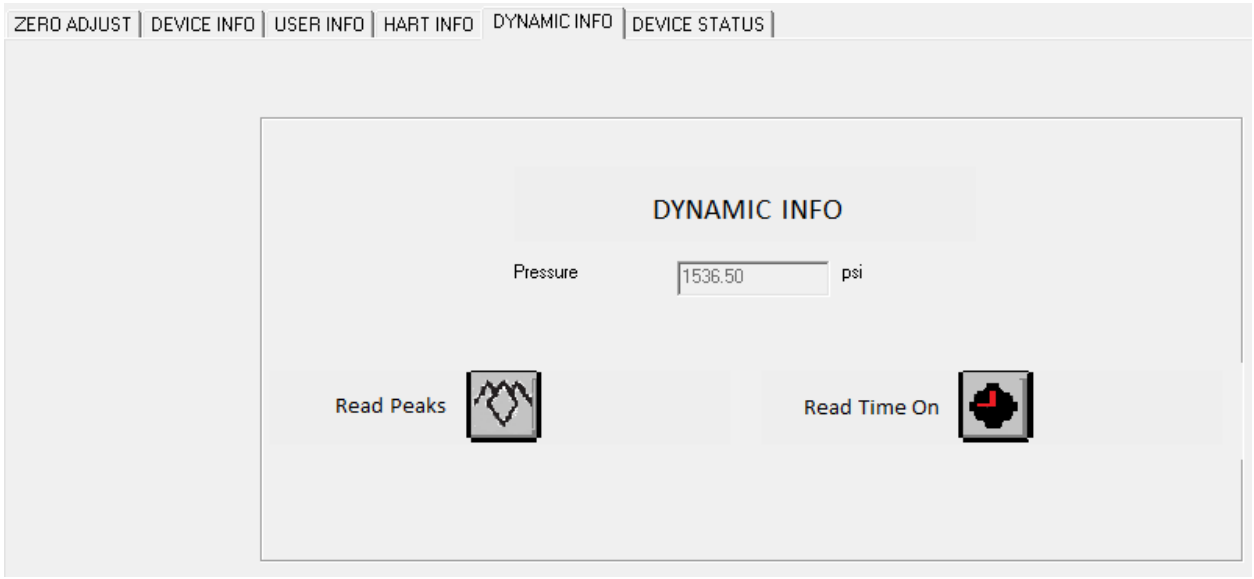

Figure 25 Dynamic Information

The "Time On" and "Read Peaks" Screens

If you click on the "Time On" button, you get a screen that provides you with the total number of hours the unit has been on since it left the factory as a new unit. This number will read as zero when it leaves the factory for the first time. The time on and read peaks number will be reset when the unit is returned for repair. (See Figure 26)

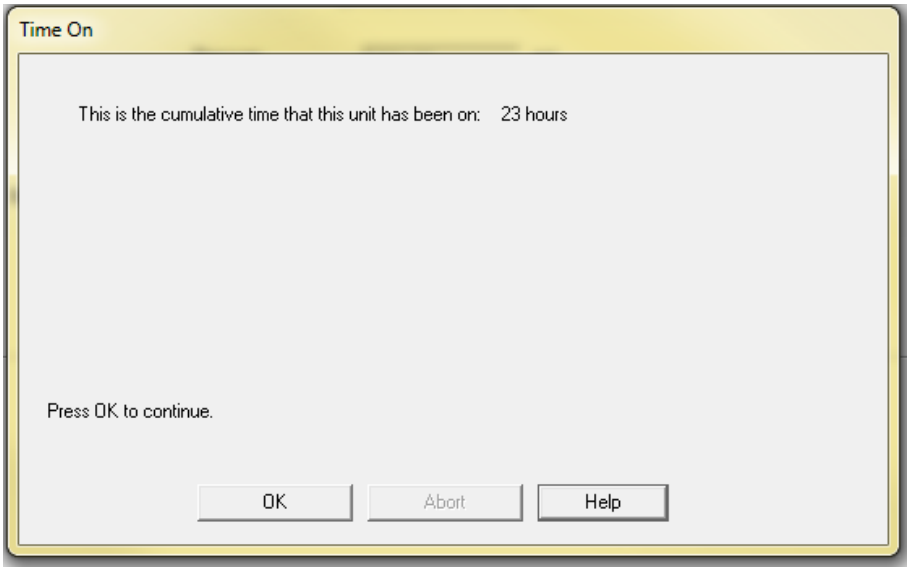

Figure 26 Time On

If you click the "Read Peaks" button, you get a tally of the 4 peak pressures that occurred since Time On and the hour in which the peak occurred. The software will only record the largest peak within each hour in order to prevent catching peaks that extend over a few minutes and filling all four slots with what is actually only one event. There are four time slots available to record peaks, so if all four slots are filled, and higher peaks are recorded, the higher peak will replace the lowest peak from a prior event. (See Figure 27)

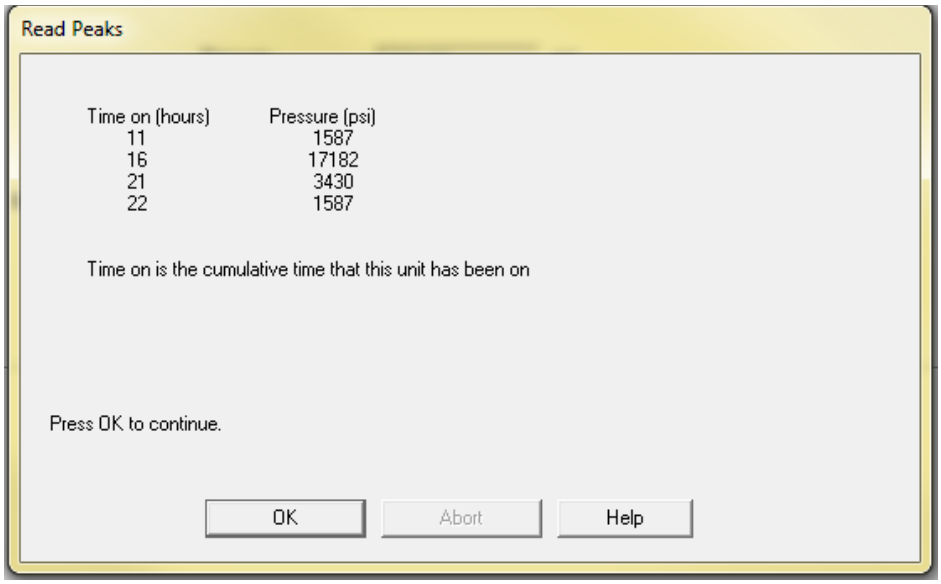

Figure 27 Read Peaks and Time On Occurrence

There is no feature in the 511/521/522 device that provides the date and time of the peaks. If you want to determine when peaks actually occurred, you can create a manual log in one of the user fields whereby you type in the dates and times that the 511/521/522 device has been turned on and off and cross reference those dates and times to the values in the Time on column of the "Read Peaks" screen. More information on user fields is provided in the "Device" section.

The maximum peak reading that can be detected is approximately 140% of the rated pressure or pressure range of the unit.

Device Status

The status of the model 511/521/522 is displayed on the "DEVICE STATUS" tab. (See Figure 28) The device is capable of communicating various warnings, information or errors and these are indicated on this screen. A graphical LED is displayed next to each description. A red LED indicates that this status message has been sent back from the device and the warning or error has been detected. (See Figure 31) A green LED means this warning or error has not been sent back from the device and has not been detected.

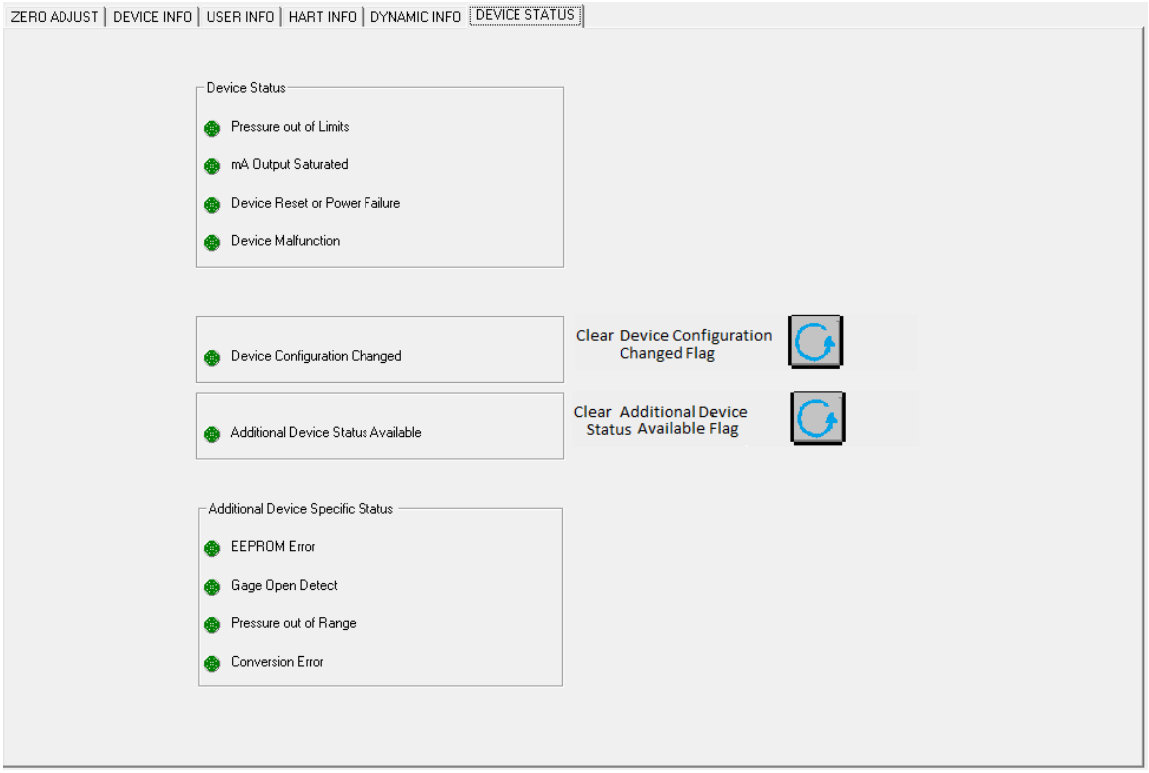

Figure 28 Device Status

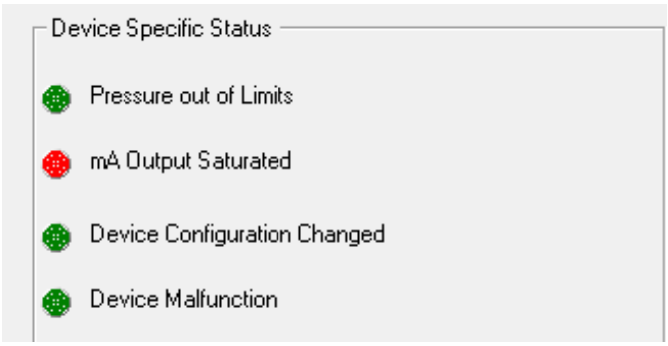

Figure 29 Red LED Warning

Most of the indicators will clear when the condition is removed. Some of these indicators are automatically cleared by the software.

The "Device Configuration Changed" status indicates a change has been made to the device. The "Device Configuration Changed" status is informational. It occurs when the zero or span settings have been changed and saved to the device or when information on the "USER INFO" tab is changed and sent to the device. The software will automatically clear the flag if the zero or span settings are changed. The flag will

not be cleared automatically if any other information is saved to the device. If the flag is not cleared, it will be sent with every message from the unit. The "Device Configuration Changed" LED will be red. If this happens, the "Clear Device Configuration Changed Flag" button can be pressed to clear the flag. The "Device Configuration Changed" LED will turn green when the flag is cleared.

A red "Additional Device Status Available" LED indicates more information is available. The additional information is presented in the box labeled "Additional Device Specific Status". The "Clear Additional Device Status Available Flag" button may be pressed to clear the "Additional Device Status Available" warning.

Additional Device Information

Additional device information may be viewed by navigating to the "Enhanced → About" menu options at the top of the screen. The "Device Info" and "Manufacturer Calibrations" submenus may become available.

The "Manufacturer Calibrations" option presents dates of up to four factory calibrations.

The "Device Info" menu will look similar to Figure 30.

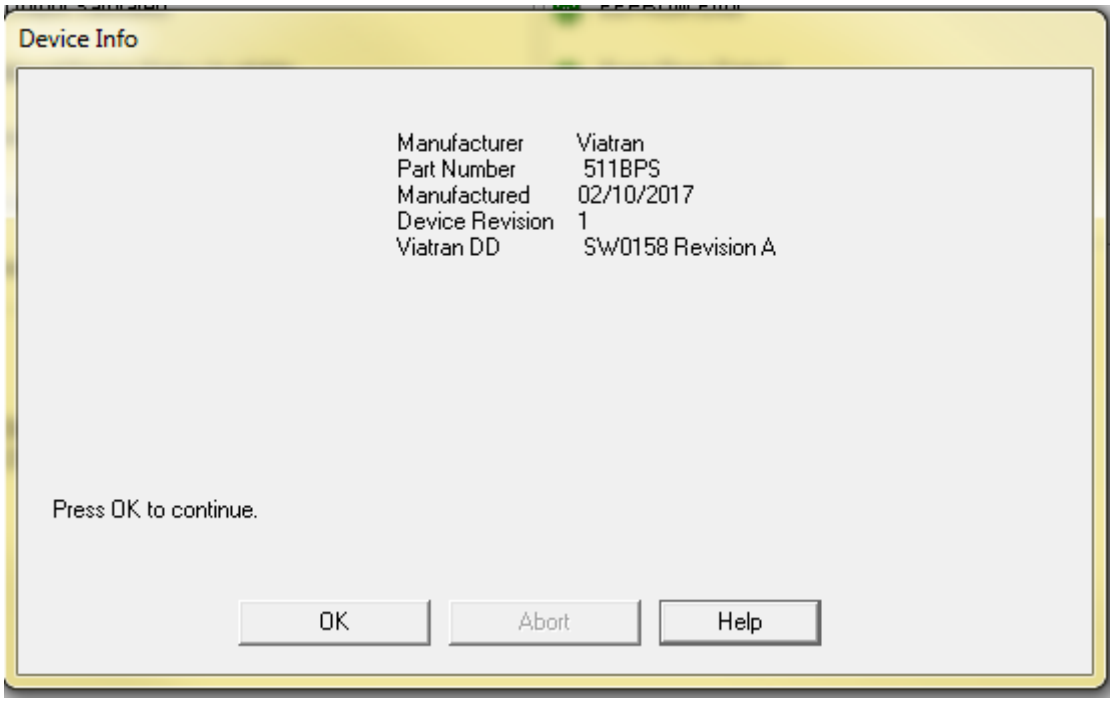

Figure 30 Read Additional Device Information

Questions/Help

If you have questions concerning the installation of ProComSol software or its features, refer to the DevCom2000 User manual or contact ProComSol using the information provided below:

ProComSol, Ltd

Process Communications Solutions

13001 Athens Ave
Suite 220
Lakewood, OH 44107
USA

Phone: 216.221.1550
Toll Free: 877.221.1551
Fax: 216.221.1554
E-mail: sales@procomsol.com

If you have questions concerning the Trim function or the 511/521/522 Pressure Transmitter device, contact Viatran using the information provided below:

199 Fire Tower Drive

Tonawanda, NY 14150

International: 1-716-629-3800

Toll Free: 1-800-688-0030

Fax: 1-716-693-9162

Email: solutions@viatran.com

APPENDIX A: Hardware Set-up using the PowerXpress module (Optional)

Viatran offers an optional integrated solution called "PowerXpress" (Viatran P/N 51PS-EXPRS) which combines some of the components into a kit or module to speed up the setup process. Please note, the PowerXpress module does not include the HART Modem. If using the PowerXpress module, the following essential components are required in order to communicate with the 511/521/522 Pressure Transmitter:

1. PowerXpress
    a. Power supply, which can operate from a PC USB port or 120 Vac
    b. Built in HART Network load resistor
    c. Connections for multimeter probes
    d. Banana plugs for the HART modem
    e. 110Vac adapter
2. HM-USB-ISO-BP, USB HART Modem, Isolated, Banana Plug Option
3. Multimeter, which can measure 4 to 20 mA

Follow these steps in order to communicate with the 511/521/522 Pressure Transmitter from your PC (see Figure 31 for a photo of the correct setup)

1. Install the USB Virtual Serial Port Driver onto the computer
2. Plug the HART modem into the computer
3. Plug the PowerXpress module into the computer
4. Plug the HART modem into modem plugs labeled "Modem Handheld" on the PowerXpress Box.
5. Plug mA meter probes into the PowerXpress module labeled "mAdc" on the PowerXpress Box observing proper polarity.
6. Attach the power clips of the PowerXpress to the power pins of the 511/521/522. The pin out information is indicated on the side of the 511/521/522 as well as in the performance certification included with every 511/521/522. If you are unable to locate the performance certificate, you can download a copy from our website.

Figure 31 Example of a set up using the PowerXpress

After you set up your hardware, run the HM Test Software by clicking the HM Test icon on your pc desktop (see example of icon below), which was installed with the HART modem software. Do this to determine which port is connected to the HART modem.

The HM Test Software will guide you through a process of trial and error in order to identify the correct port to select for proper operation of the software. Once you have identified the correct port, change the port number in the DevCom2000-Lite software to the correct port by clicking the Options from the top menu, then Basic, and then select the appropriate com port number. (See Figure 32)

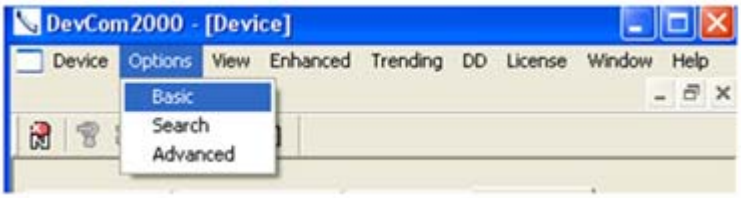

Figure 32 Basic Menu