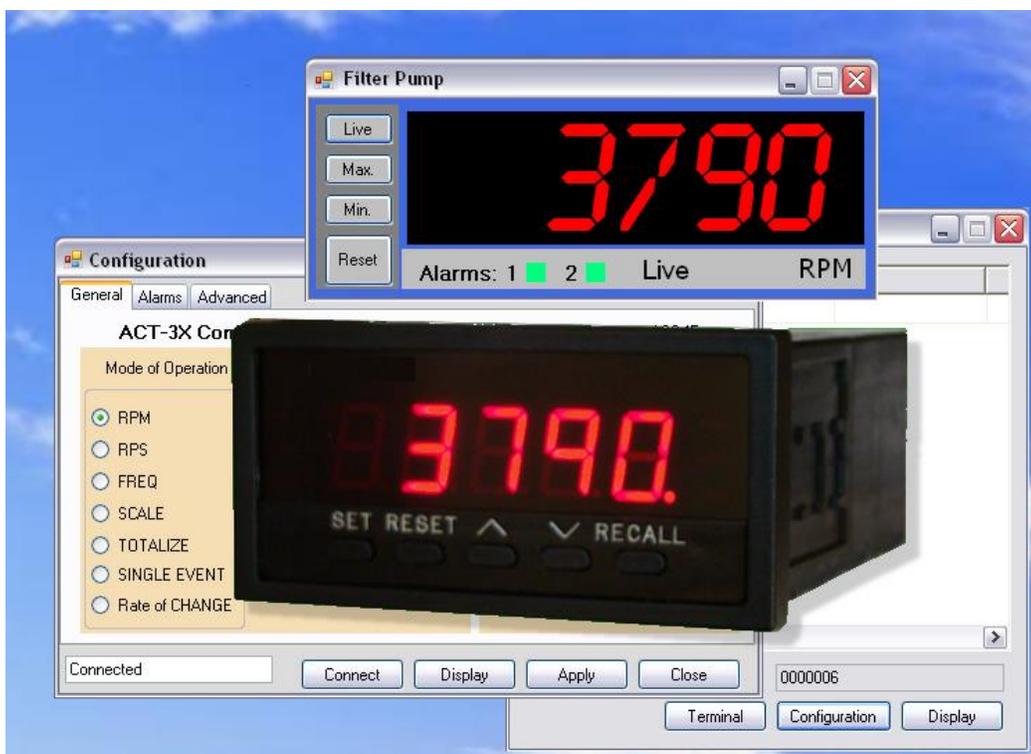


PM-Remote User's Guide



PM-Remote is a Windows PC based program to enable a user to communicate remotely with a range of panel meters in the ACT series and Frequency to Voltage Transmitters in the F2Ax series. The program allows the instruments to be configured (set up) and for data to be viewed in real time on the PC. There is also a method to incorporate the live data into an Excel spreadsheet. This manual applies to Software Rev 1.0.35 or later.

Table of Contents

Table of Contents	1
1.0 Installation.....	2
1.1 Software Installation	2
1.2 Installation of USB Drivers.....	3
1.3 Insert USB Cable (if applicable)	3
2.0 PM-Remote Software	4
2.1 Connection Options	4
2.1.1 Serial Port	4
2.1.2 Ethernet	4
2.2 Terminal Mode.....	5
2.2.1 Display Area	5
2.2.2 Command List.....	5
2.2.3 Command Line	5
2.3 Configuration Mode	5
2.3.1 General	6
2.3.2 Alarms.....	6
2.3.3 Advanced.....	7
2.4 Display Mode	7
2.4.1 Display Configuration.....	8
2.5 Enable Excel™	8
2.6 Record	9

1.0 Installation

1.1 Software Installation

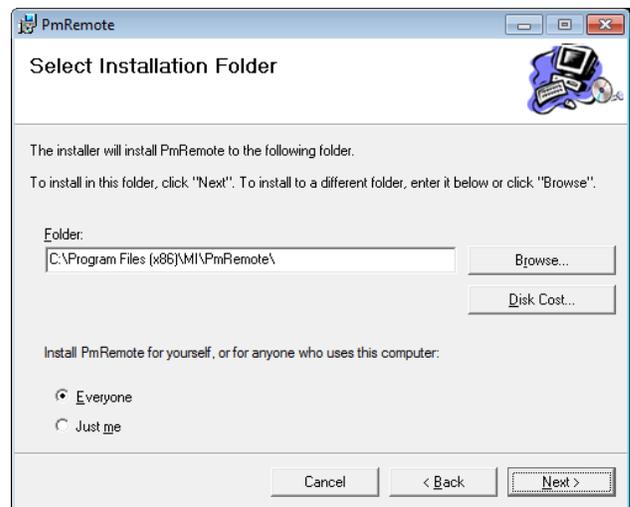
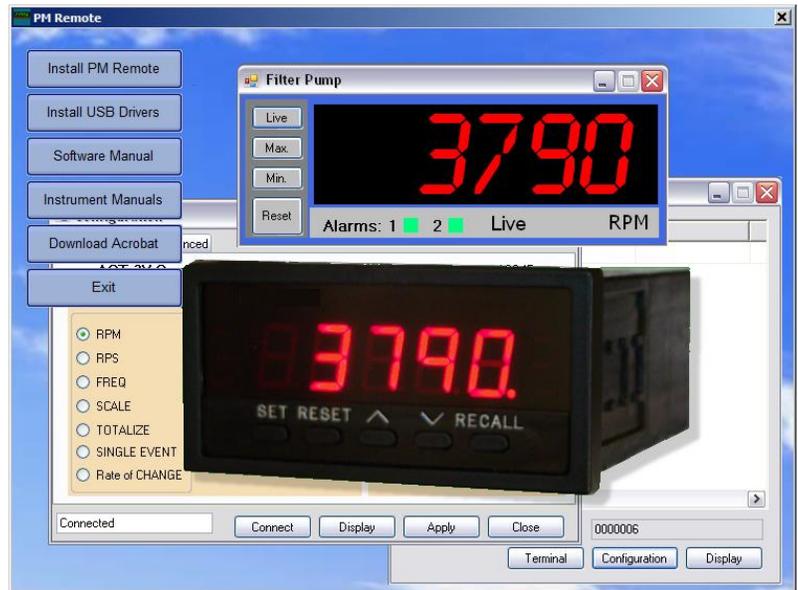
This installation is detailed for a Windows 7 system – It is similar for other Windows operating systems.

Note: Before reinstalling or upgrading the software, remove existing versions using the Control Panel: Programs and Features or Add/Remove Programs.

The PM Remote Software can be downloaded from the monarchinstrument.com website. Once the .ZIP file has been downloaded, double-click the file and it will open a folder called 'PMRemote_Software file resources' on your system. Run CD_Start.exe. The installation program will launch and display the menu as shown right.

The help files are in PDF format. If necessary, click on the "Download Acrobat" button to install the latest version of Acrobat Reader.

To install the main application, click the "Install PM Remote" button. This will launch the PM-Remote setup wizard shown below left. Click the "Next >" button to continue to the license agreement. Accept the license agreement – "I Agree" (or quit the installation) and click the "Next >" button to continue. You will then be asked to enter your information – name and business. Enter the information if you wish and click the "Next >" button to continue. Now select the installation folder – shown below right. If you wish to change the default for any reason, enter the new install location. If you want the software to be available for any user on this computer, make sure to select "Everyone". Click the "Next >" button.



On the "Confirm Installation" screen, click the "Next >" button. The software will be installed.

Note: This program requires the DotNet component. If it is not found on the system it will be installed. When completed click the "Close" button. A shortcut icon (shown right) will be placed on the desktop.

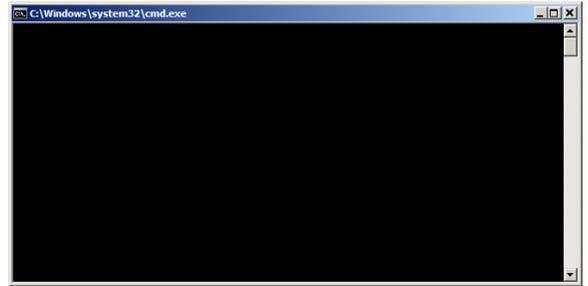


It is now necessary to install the USB drivers.

1.2 Installation of USB Drivers

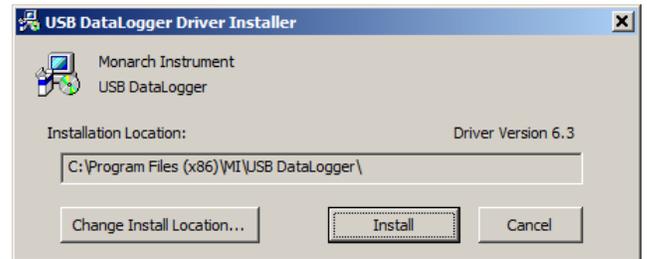
Note: Ensure the USB programming cable is NOT plugged in during this installation.

From the Install menu select "Install USB Drivers". Because PM Remote Software is used for multiple products that use different USB components, two different USB Drivers will be installed. A batch file will run and a DOS window (shown right) will remain on the screen until both USB drivers have been installed.



The first USB driver is for products using the FTDI USB component. This driver will automatically install without any user interaction. Note: Files for this driver are stored in the 'PMRemote_Software file resources' folder in the FTDI VCP Driver directory.

The second USB driver is for products using the SiliconLab USB component. This driver will bring up the Installer window shown right. Note: This installer is stored in the 'PMRemote_Software file resources' folder in the SiliconLab VCP Driver directory.



The default installation location will be shown, if you wish to change it for any reason, click on Change Install Location... and enter the new install location. Click the "Install" button. The system will be scanned and then the driver software will be installed. Follow any instructions.

You may get the Window's Security or Unsigned Driver warning message – click "Install this driver software anyway" or "Continue Anyway" and the driver software will be installed. Click "OK" once installation is complete.

The DOS window from the batch file will close once both USB drivers have been installed.

1.3 Insert USB Cable (if applicable)

For units that will be connected to the PC via USB, insert the USB cable into the USB slot on the computer.

If this is the **first time** use of the USB connected product, your computer will notify you "Found New Hardware".

For products that use the FTDI USB component, the Found New Hardware message will pop up in the bottom right area of your screen. No further action is necessary.

For products that use the SiliconLabs USB component, you will get the Found New Hardware Wizard as shown right. Select the "Install the software automatically" option and click the "Next >" button. Your system should find the USB drivers installed from section 1.2. **Note:** The file needed by the wizard is "PanelMeterVCP.inf" which should be found automatically.



You may get the Window's Logo testing or Unsigned Driver warning message – click "Install this driver software anyway" or "Continue Anyway". The wizard will copy the necessary files and indicate that it is done. Click the "Finish" button. The product is now ready for use.

2.0 PM-Remote Software

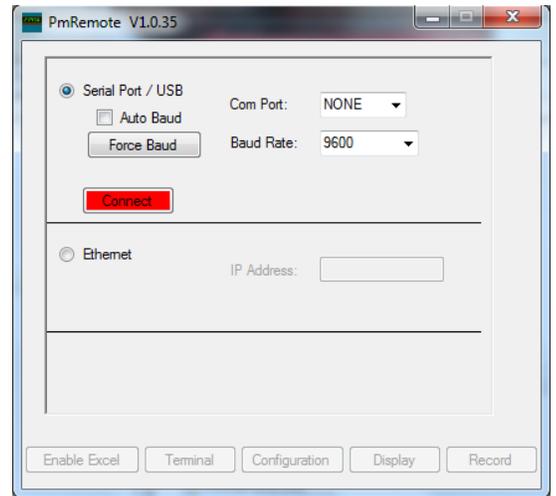


To start the PM-Remote software, double click the icon shown right.

In order for the software to function a remote panel meter *must* be plugged into the PC either via:

- 1) A USB port on the PC:
 - a. ACT-1X or F2A1X using the USB Programming Cable
 - b. ACT-3X with Serial Communication option using the USB Programming Cable
 - c. ACT-3X or F2A3X with USB option
- 2) An RS-232 DB9 Cable (ACT-3X with RS-232 option)
- 3) An Ethernet cable (ACT-3X or F2A3X with Ethernet option)

Within PM-Remote there are two options to connect - via Serial Port/USB or Ethernet. Choose the option that matches the interface on the device you have. **Note: The ACT-3X/F2A3X USB interface emulates a Virtual Com Port (VCP) and should be selected as a Serial Port.**

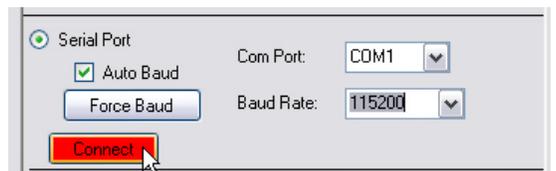


2.1 Connection Options

There are two possible methods of connecting to remote units:

2.1.1 Serial Port

The Serial Port option is for the RS-232 connection or the USB Virtual Com Port whereby the USB port looks like a Serial Com Port to the PC. Select the "Serial Port" radio button. The User needs to select the correct Com Port from the drop down menu. You can check the correct port using the PC Device Manager. For Windows 7: Click Start, Control Panel, Device Manager, Ports (COM & LPT). For XP: Click Start, Control Panel, System, Hardware tab, Device Manager, Ports (COM & LPT). The correct port will be listed as Panel Meter USB Driver.



If you know the Baud Rate select it from the drop down menu otherwise check "Auto Baud" which will automatically determine the baud rate. You can also select a Baud rate and click the "Force Baud" button which will set the remote unit baud rate to that selected. Finally click the "Connect" button to make the connection. It will turn green when the connection is made.

2.1.2 Ethernet

The Ethernet connection requires that the remote unit be connected to the Ethernet. Select the "Ethernet" radio button. You need to set the remote unit IP Address – this is what you set on the remote unit front panel – refer to the device user manual.



There are four modes of operation of the program: ASCII [Terminal mode](#), [Configuration mode](#), Real Time [Display mode](#), and [Excel export](#). Select the operation mode to work with by clicking the button at the bottom of the window.

Note: Only one mode can be used at a time – except for Enable Excel which requires Display be active.

As long as the program is active a small icon will appear at the right of the task bar.

2.2 Terminal Mode

Selecting “Terminal” from the start up window will launch the Terminal Mode Program, a serial ASCII communication program that allows the user to send and receive ASCII strings to/from the remote unit. The list of commands is available in the User Manual for the product. This window can be sized by dragging the edges.

The Terminal mode window is shown right with the following areas highlighted:

2.2.1 Display Area

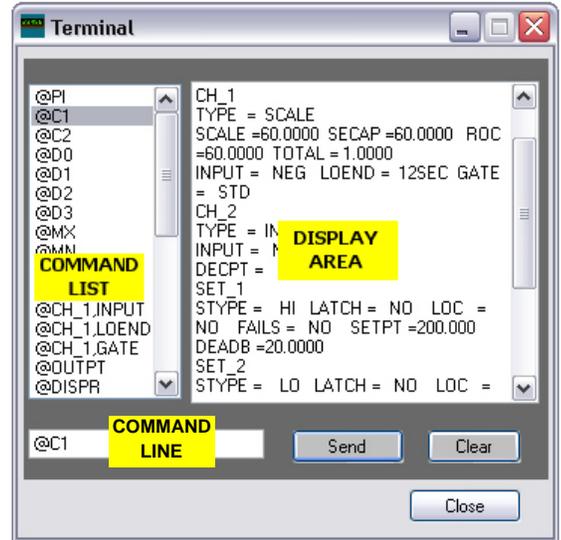
This area is used to display results sent from the remote unit. When the area fills the window scrolls. The scroll bars can be used to scroll back through data. The “Clear” button is used to clear the display area.

2.2.2 Command List

This is a list of commands (not complete) that can be sent to the remote unit. Double click the command to send it to the remote unit or click it once to enter it into the command line where it can be modified if needed and sent by clicking the “Send” button.

2.2.3 Command Line

Commands entered here are sent to the remote unit when the “Send” button is clicked (or the enter key is pressed).



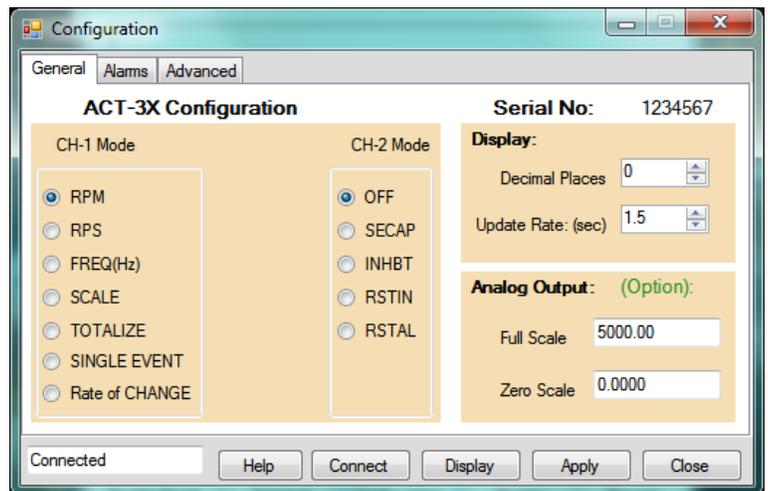
2.3 Configuration Mode

The configuration mode is a Graphical User Interface (GUI) that allows easy set up of the remote unit. The configuration is device dependent. After selecting a [communication option](#) click the “Configuration” button on the startup window.

When the Configuration window opens it will attempt to connect with the remote unit automatically. To connect manually click the “Connect” button.

The window will display the type of device connected, its serial number and current configuration depending on which device is attached and its options (an example is shown right). There are three tabs – [General](#), [Alarms](#) and [Advanced](#). (Not all tabs apply to all devices.)

To save the configuration data to the remote unit click the “Apply” button. To view the live display, click the “Display” button. To exit the application, click the “Close” button. The “Help” button will bring up this file.



2.3.1 General

These are the most frequently used options that can be set by the user. Refer to the device User manual for a full definition of the options available.

Mode of Operation – select how the unit is configured to operate. Choices are dependent on the unit type attached. The ACT-1X, F2A1X and F2A3X will have limited CH-1 (Channel 1) Mode Selections. The ACT-3X has both CH-1 and CH-2 modes.

To set the mode – RPM in the above example, select the radio button to the left of the desired mode as shown.

The Scale mode has the option to enter a scale factor. The scale factor can be used to program the display in any units the user wants. It takes an input in Hz (cycles per second) and multiplies it by the scale factor and this is what is displayed. The scale factor can be fractional.

Note: To change the PPR (Pulses Per Revolution) used by the ACT or F2A Series, you must select the Scale mode. Then enter the Scale Factor as determined by: $\text{Scale} = 60 / \text{PPR}$

Check the device user manual for a description of the operating modes.

Display – Allows the user to set the number of decimal points shown on the instrument display and the display update rate (in seconds).

Analog Output – Allows the user to set the value for Full Scale and Zero output of the analog option installed in the unit. If the option is not installed then the entry area will be grayed out and values cannot be entered. The data is entered in display units. (eg – if the unit is displaying RPM the analog output is set in RPM). The Zero Scale can in fact be non zero for greater resolution. For example if you have a 4 to 20mA output, the unit can be set for a zero of 1000 and a full scale value of 2000 giving a span of 1000 over the 16mA change in output.

2.3.2 Alarms

Device dependent, this tab allows the user to set up the alarm options of the remote unit. There is a sub tab for each alarm. Not all devices have alarm capability.

Setpoint – The value at which the alarm is activated (in displayed units)

Deadband – The value added (low alarm) or subtracted (high alarm) to the setpoint to create a reset point. As shown right, the alarm setpoint is 200, so the reset point will be 180.

The screenshot shows a 'Configuration' window with three tabs: 'General', 'Alarms', and 'Advanced'. The 'Alarms' tab is active, showing 'ACT-3X Configuration' and 'Serial No: 1234567'. Under 'Alarm 2', there are two input fields: 'Setpoint' with the value '200.000' and 'DeadBand' with the value '20.0000'. Below these is an 'Alarm Type' section with three radio buttons: 'High' (selected), 'Low', and 'Off'. At the bottom, there are three unchecked checkboxes: 'Latching', 'Lock Out', and 'Fail Safe'. The window has a status bar at the bottom with 'Connected' and buttons for 'Help', 'Connect', 'Display', 'Apply', and 'Close'.

Alarm Type – Check High, Low or Off

Latching – If checked, the alarm will set but will not reset until a physical reset signal is received from the front button or rear input.

Lock Out – If checked, the alarm will not activate until the setpoint has been reached. (For example if the alarm is a low alarm at 1000, the alarm will not activate on start up until the alarm setpoint has been reached, then it will activate.)

Fail Safe – If checked, the sense of the output relays will be reversed. The relays will activate when NOT in alarm. In the event of a power fail, the relays will drop out as if the alarm had been set.

2.3.3 Advanced

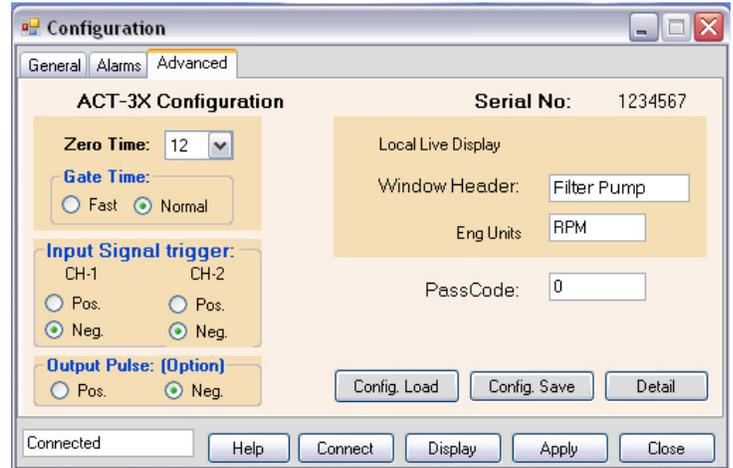
This tab is for the more advanced features. Options are device dependent. Refer to device User Manual.

Zero Time – The gate time that the unit will use to determine an input of zero (in seconds – 12 seconds is a low of 5 RPM).

Gate Time – The rate at which the unit will measure input at higher speed. The Fast time will update serial data faster at reduced accuracy.

Input Signal Trigger – Select the sense of the input pulse trigger.

Output Pulse - Select the sense of the optional pulse output.



Local Live Display: - Allows the user to customize the local display (see below):

Window Header – the text string displayed on the top of the local digital display

Eng Units - Engineering Units or any text string displayed on the bottom right of the display

Note: To save these settings for future recall – press the “Apply” button

PassCode – The five number code used to prevent unauthorized setting of the remote unit via its front panel. No code means the remote input will be unlocked.

The “**Config Load**” and “**Config Save**” buttons allow the user to load saved configurations or save the current configuration to the local PC media.

The “**Detail**” button pops up a window and shows an overview of the current settings of the connected unit. Clicking “Detail” again will close it.

2.4 Display Mode

The display mode pops up a real time display of the remote unit readings. The user can view live data, the maximum or minimum (at the time the button is clicked) and alarm status – also shown in real time.

Note that the Windows Header – “Filter Pump” and engineering units – “RPM” in the example shown right is set in the configuration [Advanced](#) tab – Section 2.3.3 above.



There are four buttons on the left of the display:

- Live** Click to show live data.
- Max.** Click to show Maximum value.
- Min.** Click to show Minimum value.
- Clear** Click to clear maximum, minimum.
- Alarm Reset** Click to clear alarm.
- Total Reset** Click to clear totals. Only available if the channel is configured as totalize.

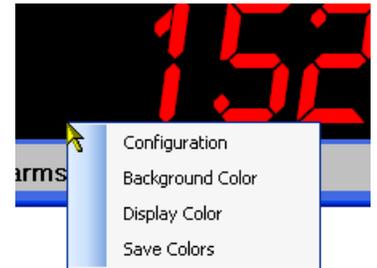
Along the bottom of the display are boxes that indicate status:

- Alarms:** A green box means the alarm is not set. A red box means the alarm is active.
- Live Toggle:** A green box to the left of the word "LIVE" will toggle on and off as data is updated

2.4.1 Display Configuration

The display colors can be set by the user. Right click anywhere on the display area. This will pop up the configuration option. Select the following:

- Configuration** Go to the [Configuration](#) menu – Section 2.3
- Background Color** Choose a background color
- Display Color** Choose a display (segment) color
- Save Colors** Save Colors to PC configuration file



Click the "X" in the top right corner of the Display Window to exit.

2.5 Enable Excel™

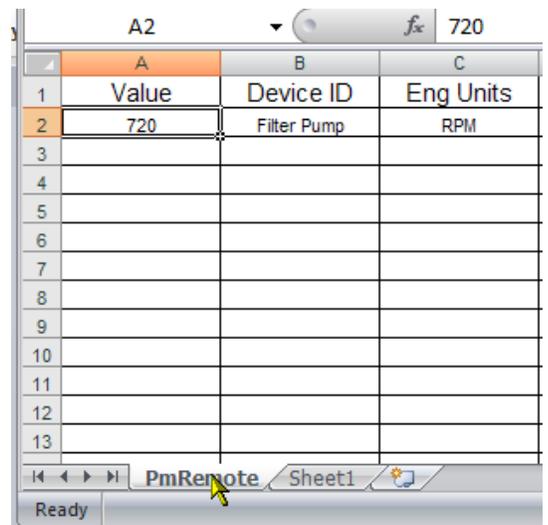
Note: The Display **must be running** in order for the "Enable Excel" option to work. If it is not, it can be launched by clicking the "Display" button at the startup window.

Note: You need to have Microsoft Excel™ version 2003 or later on your system.

Clicking the "Enable Excel" button will open up an Excel spreadsheet and will export the "live" data to cells on the spreadsheet in real time. The value will update as long as the remote unit is attached and the PC [display mode](#) is active. You can open new worksheets and use this data as you wish.

In Excel the PmRemote tab is where the data source is. It will show "Value" - the live data, "Device ID" - the [window header](#) and "Eng Units" – the engineering units. A live example is given in the spreadsheet on the "Sheet1" tab. Use this data by referring to it in cells on your own tab (eg. "="+PmRemote!A2").

The live example can be deleted.



If you do not wish to see the digital displays you can right click the "Display" button and select "Hide All". This will hide all displays. To see them again right click the "Display" button and select "Show All".



Note: When done, make sure to click the "Disable Excel" button to remove the driver from memory.

2.6 Record

The record mode pops up a record window to allow the user to record data.

Click the Setup button to allow the user choose the recording rate/interval and where to record the data. After recording is stopped, the recorded data can be viewed by opening the saved file.

If the connected device is THProbe, the data can be saved as Track-It format and can be viewed by our Track-It Software.

