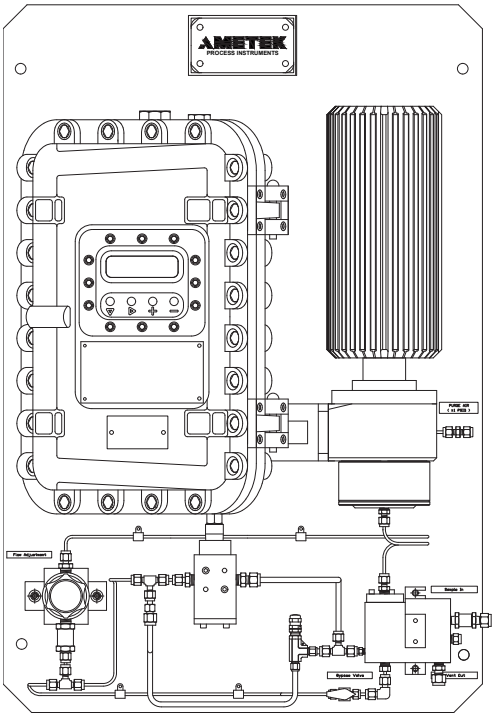
AMETEK®
PROCESS INSTRUMENTS

USER MANUAL

241CE II Hydrocarbon Dewpoint Analyzer System 200 Configurator Software



PN 903-8599, Rev D

To obtain a PDF of this manual, visit our Products page at www.AMETEKpi.com.

Contents

Personnel and Equipment Safety Information

This section describes important safety information to avoid personal injury and damage to the equipment while establishing communication with the analyzer. The following Warnings also describe safety measures to follow while communicating with the analyzer to review or modify Calibration and/or Configuration parameters, or while performing maintenance on or troubleshooting the analyzer. All safety regulations, standards, and procedures at the analyzer location must be followed.

All personnel involved with the installation, start-up, operation, maintenance, service, or troubleshooting of the analyzer must review and follow these Warnings and Cautions (below and in the analyzer manual).

Refer also to the analyzer manual for complete safety details on working with the analyzer, particularly in hazardous locations.

Warnings

Review and follow these Warnings to avoid personal injury or environmental contamination.

Always disconnect main AC power and/or external power sources to the analyzer before opening any covers or doors on the analyzer and before removing any components from the analyzer.

If it is necessary to open the analyzer's covers or doors while the circuits are live, test the area for flammable gases (and proceed only when the area is safe).

When the Electronics Enclosure door is open, take appropriate precautions to avoid electrical shock. Hazardous voltages are present inside.

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About the System 200 Configurator Software

The System 200 Configurator Software provides a user interface to allow you to set up the 241CE II Hydrocarbon Analyzer and customize how data is viewed. While working from the Configurator Software, you can view real-time and historical data, and you can record and save data.

IMPORTANT

Do not set up the Configurator Software to display internal water dewpoint or internal water content unless it is strictly for diagnostic purposes only.

The internal water dewpoint and internal water content readings generated by the 241CE II Analyzer are not reliable alternatives to external outputs from devices such as the 3050-OLV Moisture Analyzer.

AMETEK DOES NOT IN ANY WAY GUARANTEE THE INTERNAL WATER DEWPOINT AND INTERNAL WATER CONTENT READINGS GENERATED BY THE 241CE II ANALYZER.

Hazardous Locations

Before working with the software, test the area around the analyzer for explosive gases and proceed only when the area is found to be safe.

Do not connect the computer to the analyzer's serial communication port and do not power up the computer if there is an explosive gas atmosphere present.

Configurator Software Installation

The Configurator Software provides powerful features and flexible operating modes. Installing the Configurator Software consists of only a few steps and takes just a few minutes.

Minimum PC Requirements for Configurator Software

The Configurator Software requires the following:

- DVD drive (for installation).
- Pentium 166 or faster.
- 16 MB RAM.
- 3 MB of available hard disk space.
- Sound Card (for alarms) recommended, not required.
- Windows 7 Professional Edition and later. The System 200 Configurator Software is not certified to operate with Windows Home Editions.
- 800 x 600 resolution or higher recommended.
- 256-color display, 32767 colors (HiColor, 16-bit) recommended.

Installing the Configurator Software

To install the Configurator Software on your computer:

AMETEK recommends having Admin Rights when installing this software (preferred but not required). Consult with your IT Administrator before installing the software.

AMETEK recommends installing the software and program icons in the default directory.

1. Insert the Configurator Software DVD in the DVD drive. Navigate to the DVD drive, open the DVD, and double-click the **System200M241CEInstall.exe** file. The software will begin the installation by displaying the **Setup Wizard** screen.

   Click **Next** to continue. The **Select Installation Folder** screen will appear. By default, the software will be installed in **C:\Program Files (x86)\AMETEK\AMETEK M241CE Configurator**. To install the software in a different folder, click **Browse** to view the **Change current destination folder** screen and navigate to the alternate folder. Select the folder and click **OK**.

   Click **Next** to continue with the setup. The **Ready to Install** screen will appear.

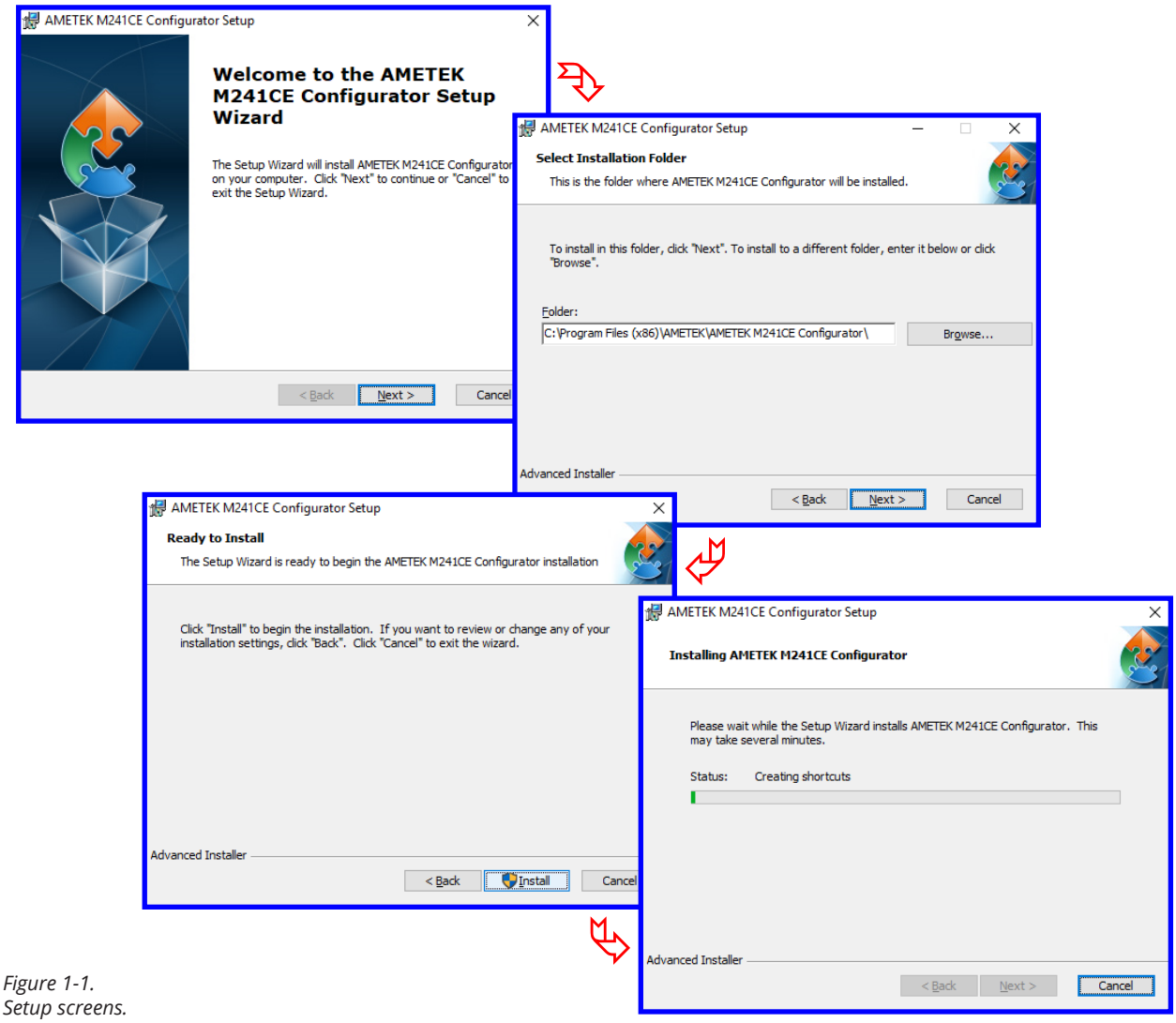

Figure 1-1.
Setup screens.

2. Click **Install** to initiate the setup. The software will install and the **Setup Wizard "Finish"** screen will appear. Click **Finish** and then remove the DVD from the DVD drive.

NOTE

*The software will create a shortcut icon on the desktop to start the software (called **AMETEK M241CE Configurator**).*

To start the software, navigate to **C:\Program Files (x86)\AMETEK\ AMETEK M241CE Configurator** and double-click "**M241**." Or, from the computer's desktop, double-click the **AMETEK M241CE Configurator** icon.

For details about using System 200 Configurator Software to communicate with the analyzer, see "Starting the Configurator Software and Establishing Communication Between the Analyzer and Computer" in this chapter.

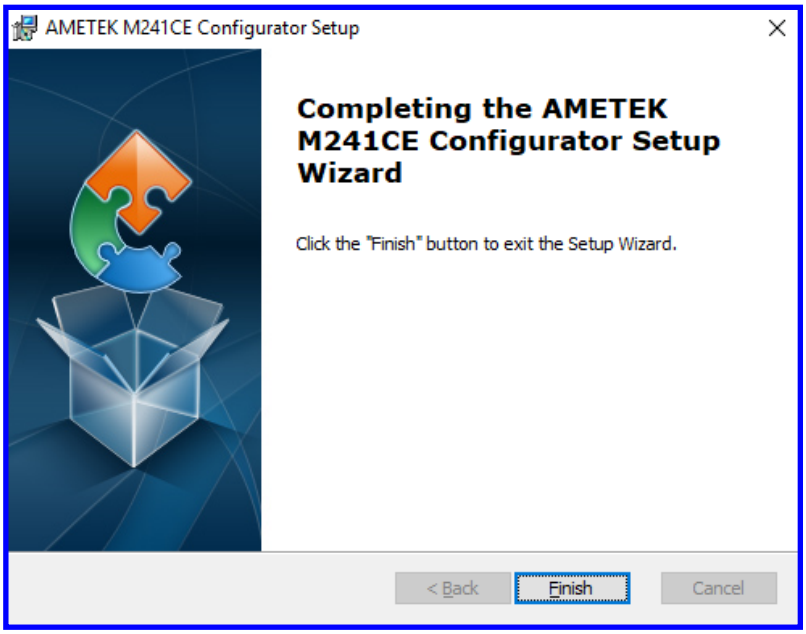

Figure 1-2.
Setup Wizard Finish screen.

Removing the Configurator Software

To remove the Configurator Software from your computer:

1. From the Windows **Start** menu, select **Settings** (⚙) and then **Apps**.
2. Click **Apps & features**.
3. From the **Apps & features** list select **AMETEK M241CE Configurator** and click **Uninstall** to automatically remove it.

*If any System 200 Software files remain in the **C:\Program Files (x86)\AMETEK\AMETEK M241CE Configurator** folder, delete all remaining folders and files.*

Configurator Software Overview

This section reviews the Configurator Software setup that is required to begin working with the software. Before beginning, you should have already installed and commissioned the analyzer as explained in the analyzer manual.

The general system configurations and calibration changes can be made after establishing communications with the analyzer and working from one main dialog box (**M241 Properties**, Figure 1-3). This dialog box contains numerous screens (tabs) that allow you to set up the analyzer and view live data.

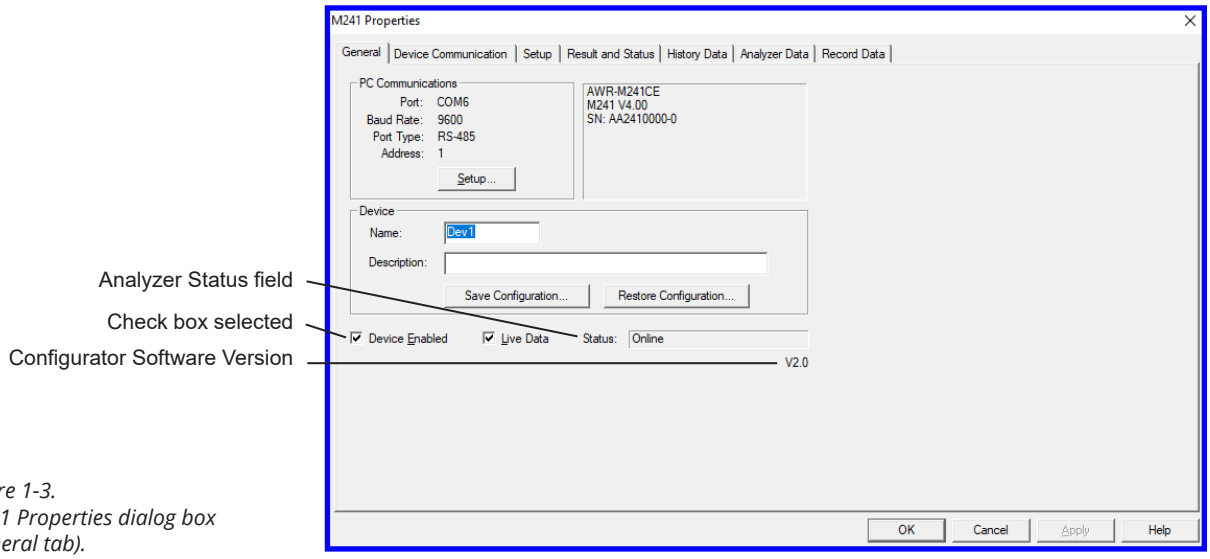

Figure 1-3.
M241 Properties dialog box (General tab).

Navigating in the Software and This Guide

While working with the software, the following rules apply:

- From the **Setup** tab (Figure 1-4) navigate to the various configuration and calibration screens by pressing the corresponding **Setup Procedure** button. For information about saving changes to these screens, see "Working From the Setup Tab" in Chapter 2.

  If a button is greyed out, the function is not available. If all buttons are greyed out, the software is not communicating with the analyzer.

- To view live concentration values or information about the Optical Bench or analyzer, choose the **Results and Status**, **History Data**, **Analyzer Data**, or **Record Data** tab from the **M241 Properties** dialog box.

- To return to the **Setup** tab from any screen, click **OK** or **Cancel**.

- Live values on the screens are updated at one-second intervals. When switching to a different screen, it may take up to one second for a new set of values to be displayed.
- While working with the software, use the following navigation buttons:

	Press this button to view or close the **Devices & Log** window.
	Press this button to start a new Custom Configuration mode.
	Press this button to navigate to the computer's hard drive to locate files, such as the Configurator file ("241 Datalog.dyc").
	Press this button to save the configuration data.
	Press this button to print scanned data or save as a PDF file (such as **Hydrocarbon Dewpoint Temperature** values) from the analyzer.

While working with this guide, the following rules apply:

Example:
AMETEK recommends installing the software and program icons in the default directory.

Reminder icon:
The reminder icons in this guide indicate related information about the topic, certain actions that are necessary before continuing with the current procedure, or information that is recommended by AMETEK. See example at left.

Example:
AMETEK Configurator window→Dev1 (Devices & Log window)→Setup tab→ Command/Calibration dialog box <<ZeroCal button>>

Configurator Software navigation icon:
The navigation icons in this guide indicate the menu structure to follow to view a menu, sub-menu, or analyzer information while working from the software.

In the example at left, after the Configurator Software is first started, the **AMETEK Configurator** main window will appear (**Devices & Log** window is active in this window). To initiate a Zero Calibration on the V-I Outputs, double-click **Dev1 (<<Device Name>>)** on the **Devices & Log** window to view the **M241 Properties** dialog box. From here, view the **Setup** tab and click the **Command/Calibration** button to view the **Command and Calibration** dialog box. Finally, if all requirements have been met to initiate the Zero, click the **ZeroCal** button.

- While working in this guide, the descriptions for all parameters in the Configurator Software that correspond with parameters seen while viewing the analyzer's User Interface Panel (UIP) are included – along with the menu you can find it in – following the description, in brackets. For example, **Baud Rate** [ApplicCFG : Baud]. In this example, **Baud Rate** is the description seen in the Configurator Software, while "ApplicCFG : Baud" is the description seen on the UIP (where "**ApplicCFG**" is the menu in which the parameter – in this case, "**Baud**" – can be viewed or set up).

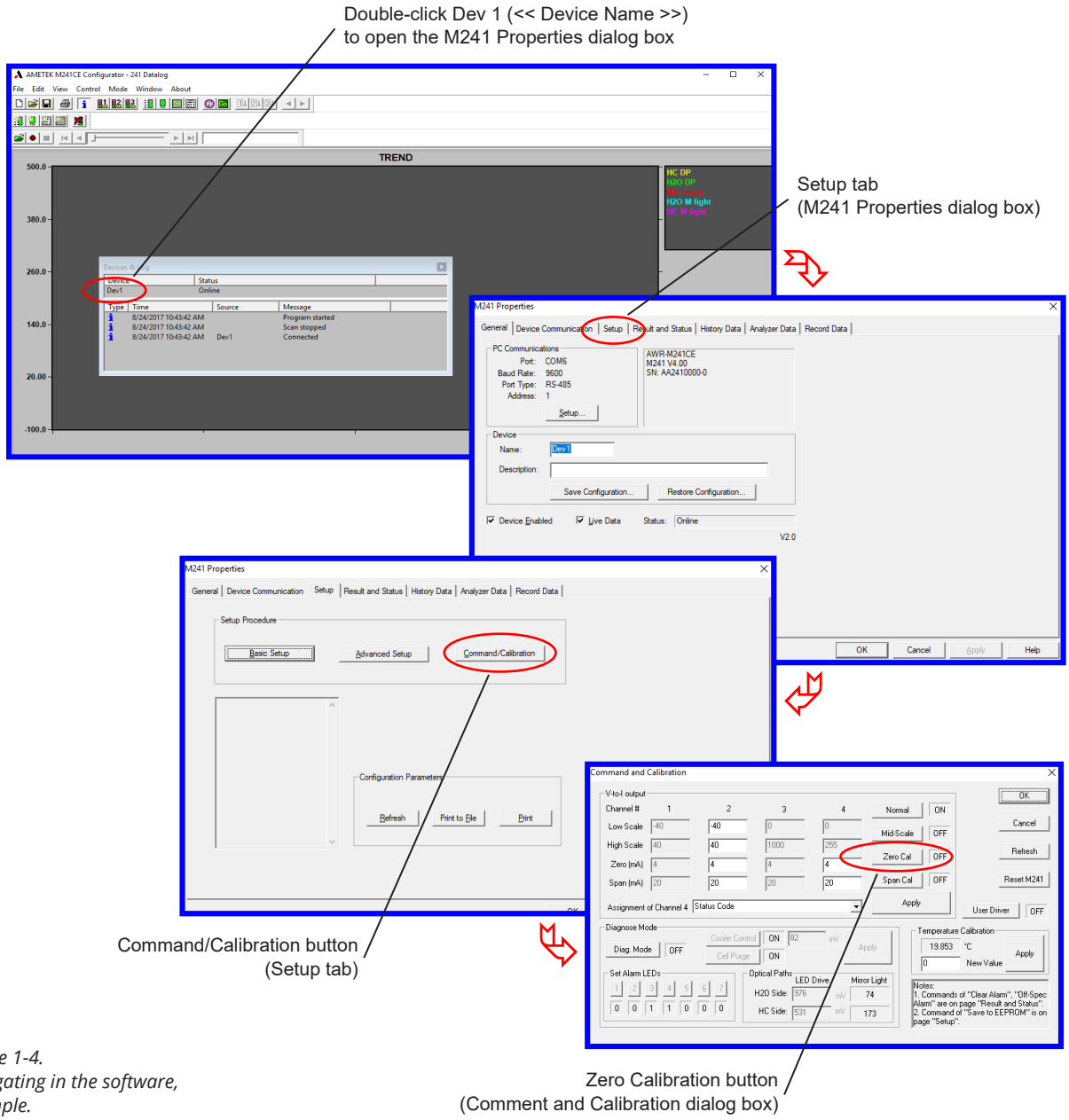

Figure 1-4.
Navigating in the software, example.

Starting the Configurator Software and Establishing Communication Between the Analyzer and Computer

You establish communication with the analyzer by using a computer running AMETEK's Configurator Software.

Hazardous Locations
Before connecting the serial cable between the analyzer and the computer, take all necessary safety precautions and test the area around the analyzer for explosive gases and proceed only when the area is found to be safe.

Do not open the analyzer enclosures and do not power up/down the analyzer or computer if there is an explosive gas atmosphere present.

To establish communication with the analyzer:

1. Connect the supplied serial communication cable between the computer and the RS-232 serial communication port (or Local Service Port, located at **J106** on the **Termination (Customer Connections)** board inside the analyzer Electronics Enclosure).

2. An alternate (permanent) connection is via the RS-485 port (Remote Service Port), located at **J102** on the **Termination (Customer Connections)** board. See "Working From the Device Communication Tab" in Chapter 2 and the analyzer manual for more information.

3. Power up the computer and start the Configurator Software using one of two methods:

   - Navigate to **C:\Program Files (x86)\AMETEK\AMETEK M241CE Configurator** and double-click "**M241**."
   - Click the **AMETEK M241CE Configurator** icon on the computer's desktop.

   The software will start and the **Devices & Log** window will appear in the **AMETEK M241CE Configurator** window (Figure 1-4). From the **Edit** menu, click **Device Properties**. The **M241 Properties** dialog box (**General** tab) will appear (Figures 1-3 and 1-4).

*The **M241 Properties** dialog box is your main interface with the analyzer when viewing live data, or when modifying or viewing the analyzer's configuration or calibration parameters.*

By default, **Device Enabled** and **Live Data** are enabled. When **Live Data** is enabled, the software automatically attempts to establish communication with the analyzer. If the communication attempt fails, the communication settings may be incorrect and/or the serial cable may not be connected properly (or it may be damaged), or you may be attempting to communicate with the wrong of analyzer. Check the **Status** message and see "Configurator Software Troubleshooting" for information about how to resolve communication problems.

4. Before continuing, you must set up the **PC Communications** parameters on the **General** tab of the **M241 Properties** dialog box to initialize communications between the analyzer and the computer. To do this, click **Setup** to view the **Communication Settings** dialog box and select the appropriate communication parameters (see "Working From the General Tab" in Chapter 2).

   Click **OK** to initiate communication with the analyzer. The software will revert to the **M241 Properties** dialog box (**General** tab, Figure 1-3) and the analyzer will be "**Online**" (view the analyzer **Status** field).

*If at any time you close the **M241 Properties** dialog box (by clicking **OK** or **Cancel**), the software will revert to the **AMETEK M241CE Configurator** window. Return to the **Setup Properties** dialog box by clicking **Edit** and then **Device Properties**.*

Closing the Configurator Software

Hazardous Locations
Before proceeding, test the area around the analyzer for explosive gases and proceed only when the area is found to be safe.

After you are finished communicating with the analyzer, close the Configurator Software and disconnect the computer from the analyzer:

1. From the **M241 Properties** dialog box, click **OK** or **Cancel**.

2. From the **AMETEK M241CE Configurator** window, select **File/Exit**. Click **Yes** to exit the software.

3. Power down the computer and disconnect the serial cable from the analyzer's RS-232 serial communication port.

Configurator Software Troubleshooting

This section describes problems (alarms or "errors") that may be encountered while attempting to establish communication between the analyzer and the computer, or when starting the software. Communication error messages can be displayed in the **Status** field on the **General** tab (Figure 1-3) and in the **Devices & Log** window (Figure 1-4; see also "Working From the Device Communication Tab" in Chapter 2). If this window is not displayed in the **M241CE Configurator** main window, select **View\Devices & Log** or click  to display it.

If communication problems occur, review this section and perform the corresponding corrective action to fix any problems.

Problem Encountered	Corrective Action
The "**Device Not Found**" message is displayed if the system's Communication Settings do not match the computer's.	The **Communication Protocol** or **Settings** may be incorrect. Review the settings in the **Communication Settings** dialog box and verify or change them to the proper settings. See also "Working From the General Tab" in Chapter 2.
"**Connected**" is displayed on the **Devices & Log** window, but the software is not communicating with the analyzer.	Select **Live Data** (**General** tab) to establish communication.
"**DEMO Online**" is displayed in the **Status** field on the **General** tab if the PC is not connected to the analyzer or if **Live Data** is not selected (but **Device Enabled** is).	Select **Live Data** to establish communication.
"**OFFLINE**" is displayed in the **Status** field on the **General** tab.	Ensure both **Device Enabled** and Li**ve Data** (**General** tab) are selected to establish communication. Check the serial cable for proper connections and for damage such as cuts, nicks, or burn marks. Also, check it to ensure the internal wiring is terminated at the connectors.
"**DISABLED**" is displayed in the **Status** field on the **General** tab. This message indicates the computer is connected to the analyzer but not communicating with it.	Select **Device Enabled** and/or **Live Data**, if necessary, to establish communication.
Device Properties under the **Edit** menu is greyed out (access to the **M241 Properties** dialog box is not available). If this occurs, the analyzer configuration and calibration parameters cannot be viewed or modified. This problem suggests that the "241 Datalog.dyc" file has become corrupt.	Delete the "241 Datalog.dyc" file from the **C:\Program Files (x86)\AMETEK\AMETEK M241CE Configurator** folder. The software will restore this file (and correct the problem) the next time it is started.

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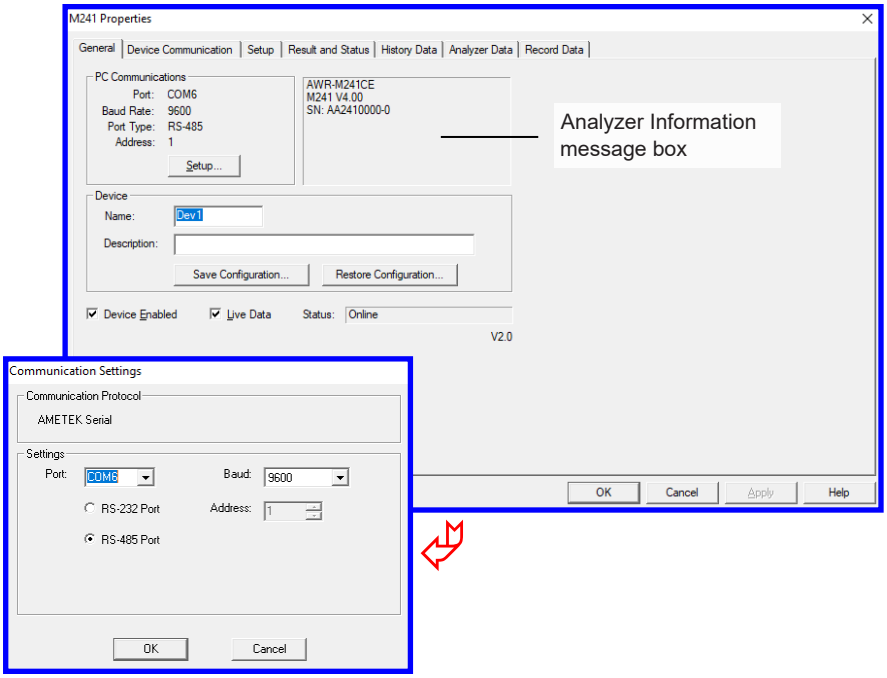
Working From the General Tab

When the analyzer is connected to the PC, the current **Host Controller Firmware Version Number** and analyzer **Serial Number** are displayed in the *analyzer information message box* to the right of **PC Communications** under the **General** tab. From this tab you can also set up communication parameters and device setup configuration that can be saved as a reference or restored to their original settings. The real-time communication **Status** is also displayed in this dialog box.



Select Setup to view the Communication Settings tab

Figure 2-1. General tab (M241 Properties dialog box), and Communication Settings dialog box.

Information and parameters on this screen include:

PC Communications

Displays information that has been configured from the **Communication Settings** dialog box (accessed by clicking the **Setup** button):

Setup

Allows you to select the communication settings required to establish communication with the analyzer.

Port is the COM port on the computer that will be used to communicate with the analyzer. Default (typical) = COM1.

Baud [ApplicCFG : Baud] (system default) is the rate at which data will be transferred. The baud rate is fixed at 9600, and must be the same as the setting in the analyzer.

Port Type [ApplicCFG : Comm] **RS-232** or **RS-485**, and must be the same as the setting in the analyzer:

- Select **RS-232** if using the analyzer's Local Service Port (used with most applications).
- Select **RS-485** if using the analyzer's Remote Service Port. This is used for remote monitoring (i.e., such as through a control room) or if multiple analyzers are wired together on the same line (called a Multi-Drop system). Configure the RS-485 port from the **Device Communication** tab before selecting RS-485 here. (See "Working From the Device Communication Tab" for more information.)

For more information about these service port connections, see the section titled "Configuring the Hardware for Digital Communication" in Chapter 2 of the 241CE II Hydrocarbon Dewpoint Analyzer User Manual.

Address [ApplicCFG : MB Addr] (system default) is the communications address of the analyzer. If the RS-232 port is selected, the address setting is not applicable (it is greyed out). If the RS-485 port is selected, be sure to enter a unique address for the analyzer.

Device

Name

Enter a tag number or tag name.

Description

Enter a description to further define the analyzer, such as a location or area where it is installed in the plant.

This can be useful if using a Multi-Drop system, where multiple analyzers are wired together on the same line. In this case, you can assign different names and descriptions for each analyzer.

This information can be useful if using a Multi-Drop system, where multiple analyzers are wired together on the same line. In this case, you can assign different names and descriptions for each one.

Save Configuration button

Saves the current analyzer configuration (operating) parameters to a file on the PC that can be used later to restore the settings. When you choose this button, the **Save As** dialog box will appear for you to name the file and select a path in which to save it. See "Saving Analyzer Configuration Parameters" for details about how to save configuration settings to a file.

Restore Configuration button

Retrieves previously saved analyzer configuration (operating) parameters from a ".dev" file on the computer. When you choose this button, the **Open** dialog box will appear. This function can be used for configuration recovery or after the EEPROM has been replaced. See "Restoring Analyzer Configuration Parameters" for details about how to restore configuration data to an analyzer.

Device Enabled

Checked (default)	Allows communication with the analyzer, and allows the user to set up system configurations. If this parameter is not checked, device communications are disabled.
Not Checked	Device communication is disabled.

Live Data

Checked (default)	Software uses live data from the analyzer. If this check box is not checked, the software will use demonstration data.
Not Checked	Software uses demonstration data.

Analyzer **Status** field

Displays the status of the analyzer (device) you are communicating with. See "Configurator Software Troubleshooting" in Chapter 1 for information about how to correct the problem.

- "**OFFLINE**" is displayed if the PC is not communicating with the system (one or both of the **Device Enabled** and **Live Data** check boxes are not selected).
- "**Online**" is displayed if the PC is communicating with the system (**Device Enabled** and **Live Data** check boxes are selected).
- "**DISABLED**" is displayed if the PC is connected to the system but is not communicating with it (both the **Device Enabled** and **Live Data** check boxes are not selected).
- "**Device Not Found**" is displayed if the system's Communication Settings do not match the computer's.
- "**DEMO Online**" is displayed if the PC is not connected to the system (or the **Live Data** check box is not selected and the **Device Enabled** check box is selected).

Configurator Software version

Displays the version of Configurator Software running (located below the analyzer **Status** field.

User Interface

The software allows you to customize how data is viewed and to set up your display. This is done from the **Main Window**.

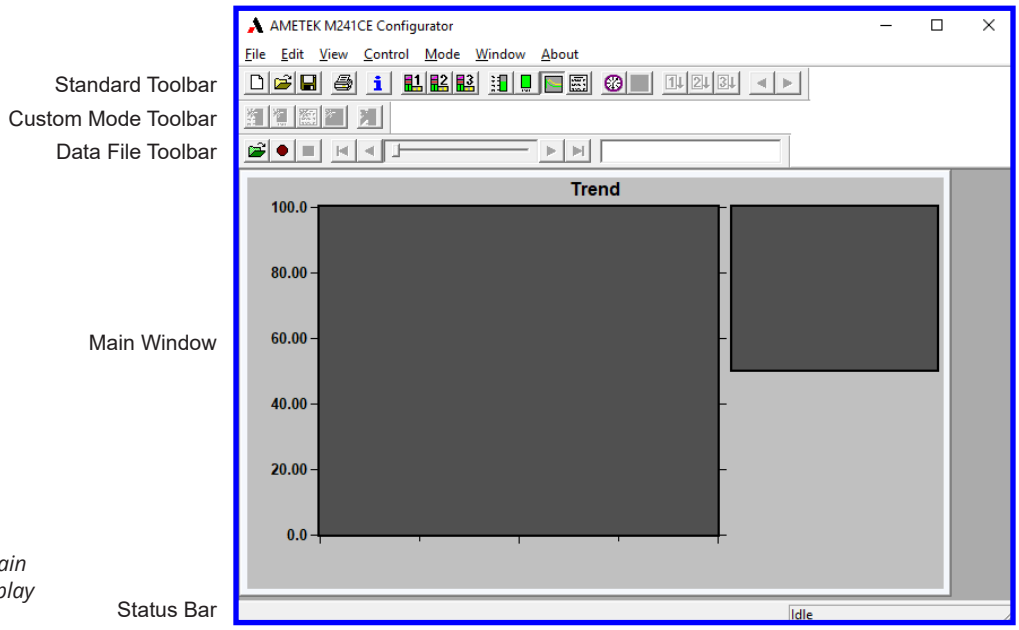


Figure 2-2. Configurator Software main window (Trend mode display active).

Setting Up Your Screen

Using the **View** menu items, set up your software by selecting the toolbars you want displayed. If the option has a check mark beside it, the toolbar is active. To toggle these functions on/off, select the menu option again. The areas that make up the **Main Window** include:

- **Standard Toolbar**
  Contains icons that are used most often including the main display modes.
- **Custom Mode Toolbar**
  Contains icons that are used to create Custom mode displays. See Chapter 3 – Advanced Software Features.
- **Data File Toolbar**
  Contains icons that are used to save data files.
- **Status Bar**
  Located at the bottom of the window, the Status Bar displays system messages, including information such as if the system is currently scanning. For information on scanning, see Chapter 3 – Advanced Software Features.

Viewing Device Activities

The **Devices & Log** window displays the status of all analyzers (devices), plus a system event log of all analyzer operations. This window, which is displayed within the **M241CE Configurator** main window (Figures 1-4 and 2-3), can help you diagnose problems with the analyzer.

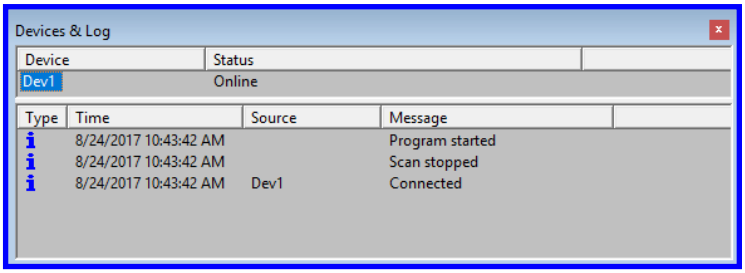


Figure 2-3.
Devices & Log window.

To display the **Devices & Log** window:

1. From the **View** menu, select **Devices & Log** or click  . A log is displayed showing all active devices and their status.

The system log is saved in a text file in the "Log" folder.

2. From here you can view a log of all related activity for active devices such as when scans were started or completed as well as any alarm conditions. It also provides information on the data source for the reading under the **Source** field (e.g., Dev1, or Device 1). The **Status** field indicates the current status of the analyzer (e.g., "**Online**").

3. To remove the display, select **View** and then **Devices & Log** again or click  .

Saving Analyzer Configuration Parameters

The software allows you to save current analyzer (device) setup configuration parameters to a file that can be used later as a reference or to restore the parameters to their original settings (if they are changed). This is useful to create a backup copy of the analyzer configuration parameters, or if you will be replacing the analyzer's EEPROM.

If major changes are made to the analyzer configuration parameters, it is important to make a backup copy of these settings. This file can then be used to restore all parameters to their original (or latest) settings in the event of an EEPROM failure or it being damaged physically or electrically.

To save configuration parameters:

1. View and record the following information to use as a reference after the software upgrade is complete:

   a. Record the current version of the analyzer's firmware from the User Interface Panel and from the Configurator Panel.

User Interface Panel: ***Status\History*** *(menu)→Right arrow→* ***M241 Vx.xx*** *(where '****x.xx****' is the firmware version)*

Configurator Software: ***General*** *tab (****M241 Properties*** *window)→view analyzer* ***Status*** *field (Vx.x)*

Record the version number from both locations and ensure they are an older version than that being replaced.

   b. Record the current analyzer and software Modbus address settings from the User Interface Panel and from the Configurator Software.

User Interface Panel: ***ApplicCFG*** *(menu)→Right arrow→* ***MB Addr x*** *(where '****x****' is the Modbus address value)*

Configurator Software: ***General*** *tab (****M241 Properties*** *window)→* ***Setup*** *button→* ***Address x*** *(where '****x****' is the Address value)*

Record the address settings from both locations as these settings must be restored later to allow communication between the analyzer and the Configurator Software or remote work station.

While working from the UIP, also record the ***Comm*** *type and* ***Baud*** *rate settings. While working from the Configurator Software, also record the* ***Port****,* ***Baud*** *rate, and* ***Port*** *type settings.*

General (tab)→ <<Save Configuration>>

2. From the **General** tab, click **Save Configuration** to view the **Save As** dialog box. To store the file, navigate to **C:\ProgramData\AMETEK Configurator\M241\data** on the computer's hard drive.

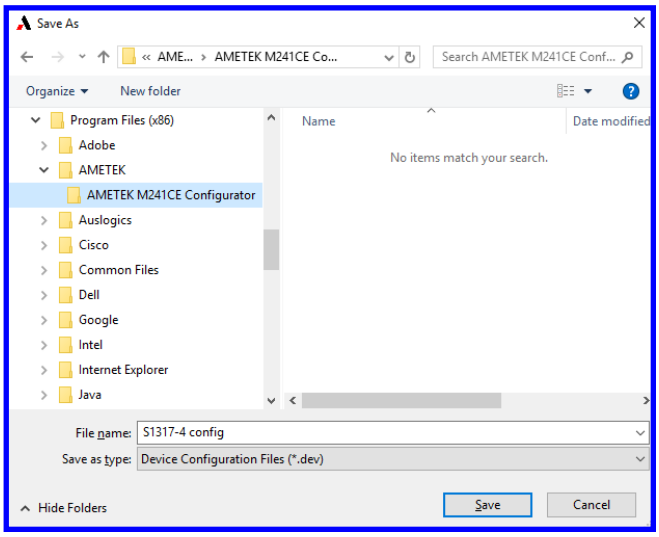


Figure 2-4.
Save As dialog box (Save Configuration).

3. Name the file and click **Save**. The file will be saved with a ".dev" extension. This file can be used only by the Configurator Software.

The procedure is complete.

Restoring Analyzer Configuration Parameters

The Configurator Software allows you to retrieve previously saved analyzer configuration parameters to restore the parameters to their original settings. This function is useful if you wish to recover analyzer configuration parameters if changes have been made that you do not wish to keep, or to restore the settings after replacing the analyzer's EEPROM in the event of an EEPROM failure. The configuration parameters are stored in a ".dev" file on the computer.

General (tab)→ <<Restore Configuration>>

To restore configuration parameters:

1. From the **General** tab click **Restore Configuration** to view the **Open** dialog box.

2. Navigate to the file (e.g., **C:\ProgramData\AMETEK Configurator\M241\data**), select it, and click **OK** to restore configuration parameters to the analyzer you are communicating with.

   During the parameters restoration, the analyzer will temporarily go "**OFFLINE**." After the restoration is complete, the **Name** and **Description** will change to reflect those of the saved parameters.

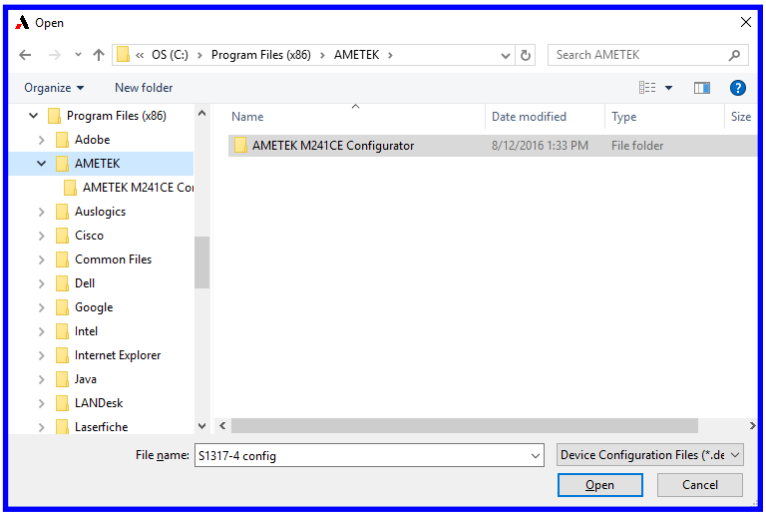


Figure 2-5. Open dialog box (Restore Configuration).

3. View the **Devices & Log** window. If the file restoration is successful, the message "**This new CFG has been restored successfully!**" will be displayed.

   If the file that is being restored contains identical information as that already saved to the analyzer's EEPROM, the message "**The restored CFG is not new!**" will be displayed in the **Devices & Log** window.

The procedure is complete.

Working From the Device Communication Tab

The **Device Communication** tab contains the setup parameters specifically for the RS-485 Remote Service Port for the analyzer. These settings are necessary when the system is set up in a Multi-Drop configuration.

NOTE

IMPORTANT

*If you need to set up the analyzer to communicate via the Remote Service Port, configure the settings on this tab first, then return to the **Communication Settings** dialog box (select the **Setup** button on the **General** tab) and select RS-485 Port.*

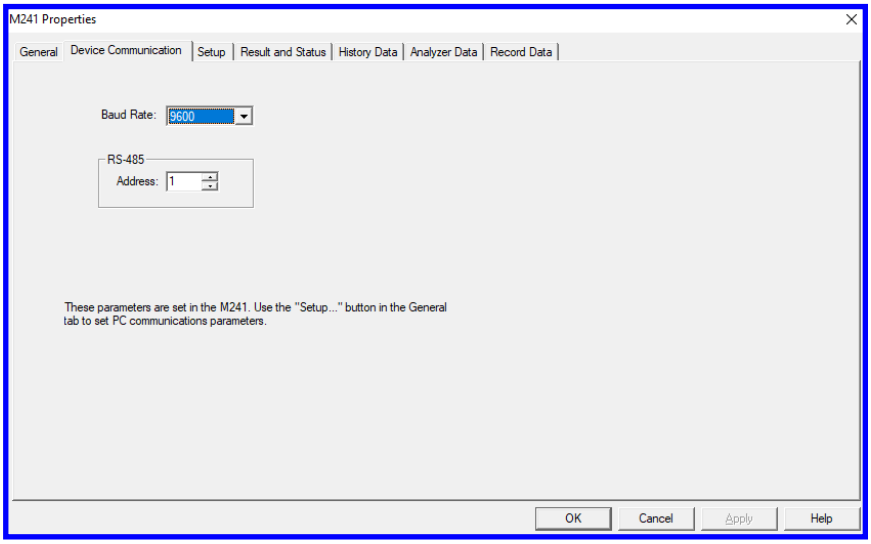


Figure 2-6.
Device Communication tab.

Baud Rate is the baud rate at which data will be transferred. The baud is fixed at 9600 (system default).

RS-485 Address is the communications address of the analyzer. If using multiple 241CE II Analyzers, be sure to enter a different address for each unit. After selecting an address for each additional analyzer, return to the **Communication Settings** dialog box and select RS-485 Port and the corresponding address.

To set up the Remote Service Port (RS-485) communication parameters:

*To check this, view the status of the system from the **General** tab.*

1. Ensure the device **Status** is "**Online**." The **Status** message box should read "**Online**" (the **Device Enabled** and **Live Data** check boxes must be enabled).

2. From the **Device Communication** tab enter or select an address (a number between **0** and **239**) for the analyzer in the **RS-485 Address** text field. You can either type a number in this box or use the arrows to select one.

3. The baud rate defaults to the fixed rate of **9600**. There are no other options.

4. Click **Apply** and return to the **General** tab and select the **Setup** button to display the **Communication Settings** dialog box again.

   Note that the address you entered in the **Address** text field in the **Device Communication** tab matches the **Address** setting in this dialog box.

5. Click **RS-485 Port** to enable the Remote Service Port. Click **OK** to save this change.

NOTE

*Check the **Status** of the system from the **General** tab again. It should now read "**Online**" if the communication port settings for both the analyzer and the PC are correct.*

6. If the error message "**Communication Failure. Do you want to start auto-detect?**" appears, click **No**, then repeat Steps 2–5 and ensure the proper settings are made.

Working From the Setup Tab

The **Setup** tab contains all functional parameters that control the operation of the analyzer. Many of the parameters have been pre-configured at the factory, based on customer requirements and specifications. However, you will have to configure the communications settings to allow the analyzer to communicate with a PC via the Configurator Software.

The **Setup** screens and Configuration Parameters on this tab cannot be accessed if the system is "**OFFLINE**." If the functions in this tab are greyed out, check the **Status** of the system from the **General** tab. You will have to establish communications with the analyzer before you can view or configure its parameters.

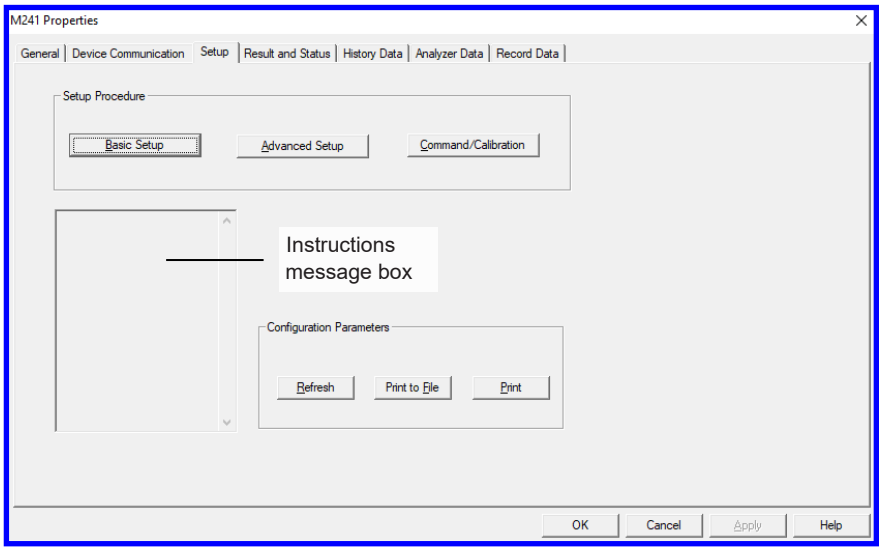


Figure 2-7. Setup tab.

The setup procedures are grouped into the following categories, each with its own screen accessed by pressing one of the following buttons:

- **Basic Setup**
- **Advanced Setup**
- **Command/Calibration** setup

NOTE

IMPORTANT

For all first-time analyzer setups, the setup sequence of Basic Setup, Advanced Setup, and then Command/Calibration must be followed.

While changing parameters from any of the setup screens, observe the following functions and rules:

- After changing any of the parameters or their values from any setup screen, you must click the **OK** or **Apply** button on that screen (or within that group) to activate the new settings. These new settings will be sent to the analyzer.

  If you click **OK**, the software will return to the **Setup** tab and will prompt with "**Config parameters has been changed. Click the *Save to Analyzer's EEPROM* button to save them (permanently) into the analyzer's EEPROM**" (displayed in the **Instructions** message box).

*Parameters in groups that have their own **Apply** button cannot be reverted to their original state by clicking the **Refresh** button if the changes have already been applied.*

- Any number of parameter values can be changed on a given screen before clicking the **OK** or **Apply** button.
- When you change parameters from the analyzer's User Interface Panel, the new values will automatically be sent to the Configurator Software and the **Refresh** button on the **Setup** tab will flash to indicate a change has been made. To stop the **Refresh** button from flashing, click the **Refresh** button.
- On individual setup screens, click the **Refresh** button to change the values back to their original settings. When you click this button, any values that you have changed but do not wish to set permanently will revert to the settings that were last saved to the system's EEPROM. Changes can only be refreshed if they haven't already been applied (before you click the **Apply** button) or saved (before you click the **Save to Analyzer's EEPROM** button).
- To permanently save the new value(s) to the analyzer's on-board EEPROM, click the **Save to Analyzer's EEPROM** button to the right of the message box.
- If you want the parameter changes to be valid only for the current session, do not click the **Save to Analyzer's EEPROM** button. The changes will revert to the previously saved changes after the system is powered down and power is restored, or if the analyzer is reset.
- You can make changes to the **Basic Setup**, **Advanced Setup**, or **Command/Calibration** dialog boxes before clicking the **Save to Analyzer's EEPROM** button.

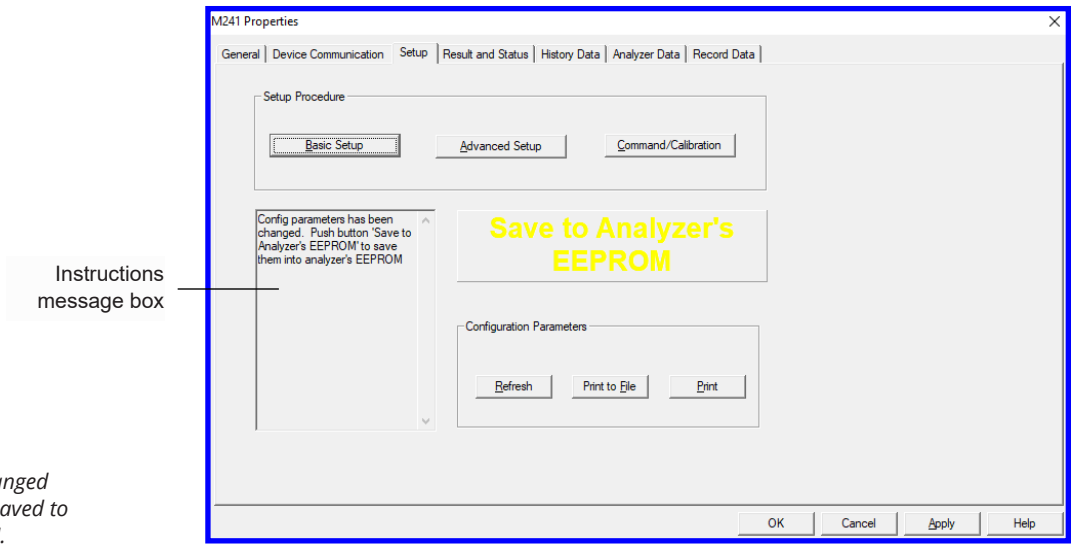


Figure 2-8.
Setup tab, with changed parameters to be saved to analyzer's EEPROM.

Setup Procedures consists of three buttons that provide different levels of setting up the analyzer. These buttons and their setup screens are discussed in detail in the following pages.

The **Instructions Message box** displays information to inform you if changes have been made to the system configuration, and how to permanently save them to the analyzer's EEPROM.

The **Save to Analyzer's EEPROM** button allows you to permanently save the new value(s) to the analyzer's on-board EEPROM. This button is only displayed if changes to the configuration have been made. To save the changes, click this button.

Configuration Parameters allows you to perform general software operations.

- Click the **Refresh** button to change the values back to their original settings. When you click this button, any values that you have changed but do not wish to set permanently will revert to the settings that were last saved to the system's EEPROM. Changes can only be refreshed if they haven't already been applied (before you click the **Apply** button) or saved (before you click the **Save to Analyzer's EEPROM** button).

- To print the 241CE II Analyzer configuration parameters that have been set up from the **Setup** tab to an ASCII file, click the **Print to File** button to view the **Save As** dialog box. Select the path you wish to save the file to, give the file a name, and then click Save to save the file. Note that the file will be saved with a ".dmp" extension.

- To print a hard copy of the existing analyzer configurations, click the **Print** button to view the **Print** dialog box. Make sure a printer is connected to the PC or available through a network before printing the settings.

Setting Basic System Configurations

Setup (tab)→Basic Setup

The **Basic Setup** dialog box allows you to set up general system requirements, according to the options and functions for your application.

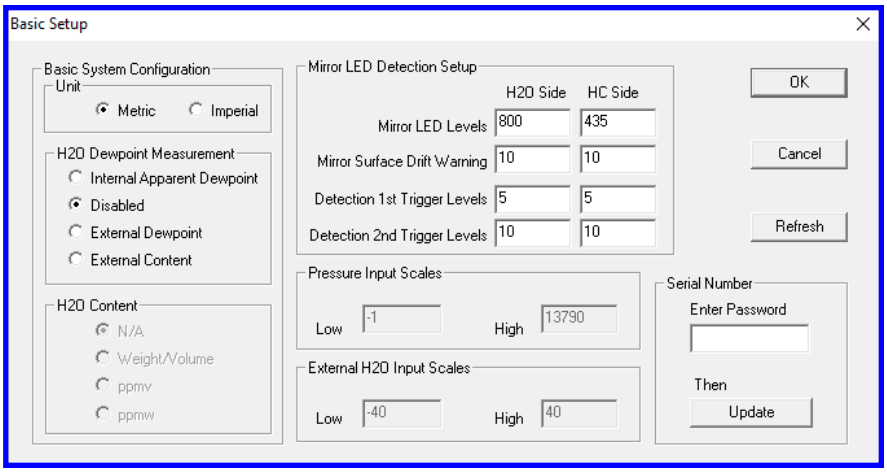


Figure 2-9.
Basic Setup dialog box.

Basic System Configuration defines the basic setup of the analyzer and the parameters that will be displayed throughout the software.

- **Units** [MonitorCFG : Options – numerous selections for various parameters] allows you to select the measurement values in which you want your system data to be displayed (either Metric or Imperial).

- **H2O Dewpoint Measurement** allows you to select whether you want to display internal or external water dewpoint information, disable the water dewpoint function, or whether to display external water content information.

  - **Internal Dewpoint** [H2O DP:INT – MonitorCFG menu] is available if you wish to view information about the 241CE II Analyzer's internal water dewpoint measurements. **Do not enable this parameter except for diagnostic purposes.**

  - Select **Disabled** [H2O DP:DISAB – MonitorCFG menu] (system default) if you wish to disable all 241CE II Analyzer's water dewpoint measurements. Typically, this option should be selected for normal operation unless the system is configured to receive an external water dewpoint signal.

    When this option is selected, all options under **H2O Content** are disabled.

- Select **External Dewpoint** [H2O DP:EXT – MonitorCFG menu] if you wish to view information about the external water dewpoint measurement, which is calculated from the external water content measurement. An optional, external water signal is required for this function to be enabled.

  When this option is selected, all options under **H2O Content** are inactive and the options under **Pressure Input Scales** and **External H2O Input Scales** become enabled.

- Select **External Content** [H2O CT:EXT – MonitorCFG menu] if you wish to view information about the external water content measurement.

  When this option is selected, all options except **N/A** under **H2O Content** are enabled. The options under **Pressure Input Scales** are disabled, while the options under **External H2O Input Scales** are enabled when this option is selected.

- **H2O Content** allows you to further define the setting you have selected from the **H2O Dewpoint Measurement** options. If the option is greyed out, it is not available for the **H2O Dewpoint Measurement** option you selected.

  - **N/A** is available if you do not want to further define the internal water dewpoint measurements. This option is active only if **Internal Dewpoint** is selected. **Do not enable this parameter except for diagnostic purposes.**

  - Select **Weight/Volume** if you want to further define the water content measurements. When this option is selected, the **External H2O Input Scales** options become active, allowing you to define the low and high settings measured by the external water input signal. This option is enabled only if **External Content** is selected.

  - Select **ppmv** [PMV – MonitorCFG : Options] if you want to display the water content in parts per million, by volume. This option is enabled only if **External Content** is selected.

  - Select **ppmw** [PMW – MonitorCFG : Options] if you want to display the water content in parts per million, by weight. This option is enabled only if **External Content** is selected.

Mirror LED Detection Setup allows you to define parameter thresholds for conditions that will trigger warnings caused by mirror-related problems. The parameters can be set separately for the hydrocarbon side and the water side of the measuring mirror. Note that the water side is the **internal water dewpoint measurement**. Based on these thresholds being exceeded, the appropriate LED on the analyzer's User Interface Panel will turn on, or warning messages will be displayed on the **Result and Status** tab.

- **Mirror LED Levels** is the parameter that sets the LED brightness in the water [MonitorCFG : WLED] and/or hydrocarbon [MonitorCFG : HCLED] optics circuit. It can be any value between 0 and 4095, which represents a drive-current range of 0 to 50 mA. This is a factory-set parameter. **Do not adjust this setting unless instructed to do so by an AMETEK Service Representative**.
- **Mirror Surface Drift Warning** is the maximum change in the water [MonitorCFG : WMWarn] and/or hydrocarbon [MonitorCFG : HCMWarn] phototransistor signal at the end of two consecutive purge stages that can occur before the Dirty Cell primary status code alarm is output. This value is displayed as a percentage (%).
- **Detection 1st Trigger Levels** is the variable specifying the low threshold of the increasing water [MonitorCFG : WTrg1] and/or hydrocarbon [MonitorCFG : HCTrg1] phototransistor signal. This is a factory-set parameter. **Do not adjust this setting unless instructed to do so by an AMETEK Service Representative.**
- **Detection 2nd Trigger Levels** is the variable specifying the high threshold of the increasing water [MonitorCFG : WTrg2] and/or hydrocarbon [MonitorCFG : HCTrg2] phototransistor signal. This is a factory-set parameter. **Do not adjust this setting unless instructed to do so by an AMETEK Service Representative.**

Pressure Input Scales allows you to define the absolute pressure corresponding to the zero output (4 mA, **Low** [MonitorCFG : PLo]) or the full-scale output (20 mA, **High** [MonitorCFG : PHi]) of the pressure transmitter feeding into the 241CE II Analyzer. This function is enabled when you select **External Dewpoint** from the **H2O Dewpoint Measurement** group. This value is displayed in kPa or PSI. (System default = -1.0. This value disables this function.) **These inputs are currently not used.**

V/I #4 pressure output scales are used only if the user-selectable V/I type is set to Continuous Cell Pressure or Track-and-Hold Cell Pressure used in water content calculations.

To disable the pressure measurements, enter a negative value – such as 1.0 – to the Low scales when you select **External Dewpoint** from the **H2O Dewpoint Measurement** group.

External H2O Input Scales allows you to define the **Low** and **High** input ranges for water dewpoint measurements. This function is enabled only when you select **External Dewpoint** or **External Content** from the **H2O Dewpoint Measurement** group.

- **Low** [MonitorCFG : ExLo] is the minimum water dewpoint temperature or content corresponding to the 4 mA output from the low-scale of the external water dewpoint device. This input is assigned to the first analog output.

- **High** [MonitorCFG : ExHi] is the full-scale water dewpoint temperature or content corresponding to the 20 mA output from the low-scale of the external water dewpoint device. This input is assigned to the first analog output.

Serial Number is for AMETEK factory use only. Do not attempt to change the Serial Number. The **Update** button is also for factory use only.

Click the **OK** button to send the changes you made to the parameters on this tab to the analyzer. The changes will take effect upon normal system operation.

Click the **Cancel** button to discard any changes you made to the parameters on this tab. The original settings will remain upon normal system operation.

Click the **Refresh** button to change the values back to their original settings. When you click this button, any values that you have changed on the active tab will revert to the original settings (that were last saved to the system's EEPROM).

The **Refresh** button will flash to indicate a change has been made from the analyzer's User Interface Panel. To update the new changes in the Configurator Software (and stop the **Refresh** button from flashing), click the **Refresh** button.

Setting Advanced System Configurations

Setup (tab)→Advanced Setup

The **Advanced Setup** dialog box allows you to configure additional parameters for the 241CE II Analyzer.

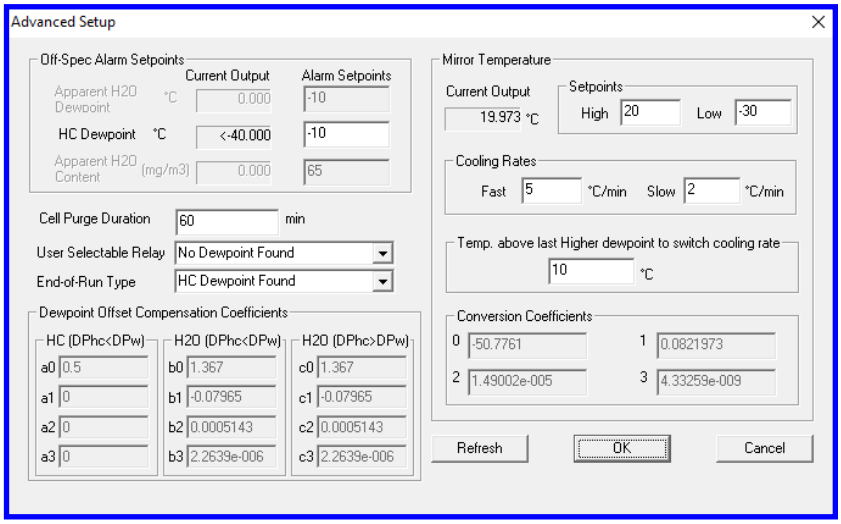


Figure 2-10.
Advanced Setup dialog box.

Off-Spec Alarm Setpoints allows you to enter a value (under **Alarm Setpoints**) at which the Off-Spec alarm will be triggered when the system determines that the existing output is greater than the alarm set point. Depending on the selections in the **Basic Setup** tab (**H2O Dewpoint Measurement** group), some of these options may not be enabled. The **Current Output** is a real-time display of the temperatures for *H2O Dewpoint* (if used) [ApplicCFG : WDPA], *HC Dewpoint* [ApplicCFG : HCDPA], and *H2O Content* (if used) [ApplicCFG : WCA].

Cell Purge Duration [ApplicCFG : Purge] allows you to set the length of time for the system's Cell Purge, in minutes (0–255).

User Selectable Relay [ApplicCFG : UsrRelay] allows you to select the condition that energizes alarm relay four (4).

- Select **No Dewpoint Found** to energize the alarm relay when one or both dewpoints are not found [NoD].
- Select **Purge in Progress** to energize the alarm relay when the analyzer is in the Purging/Hold Stage [Pur].

End-of Run Type [ApplicCFG : RunType] allows you to select the condition which will determine when the Cooling Stage will be terminated.

- Select **Low Temperature** to terminate the Cooling Stage when the mirror temperature reaches the **Low** set point temperature [LowT] or, if after two minutes, the Thermoelectric Cooler has been unable to reduce the mirror temperature any further.
- **H2O Dewpoint Found** is available if you wish to terminate the Cooling Stage when the internal water dewpoint temperature has been found. **Do not enable this parameter except for diagnostic purposes.**
- Select **HC Dewpoint Found** [HCDP] (system default) to terminate the Cooling Stage when the hydrocarbon dewpoint temperature has been found.
- **Both Dewpoints Found** is available if you wish to terminate the Cooling Stage when both the internal water dewpoint and the hydrocarbon dewpoint temperatures have been determined. **Do not enable this parameter except for diagnostic purposes.**

Dewpoint Offset Compensation Coefficients are system-dependent, factory-configured parameters and cannot be changed. These values are greyed out to ensure they cannot be changed.

Mirror Temperature allows you to set up the analyzer to control operations based on various mirror parameters.

- The **Current Output** is a real-time display of the mirror temperature. This value cannot be modified.
- The **Setpoints *High*** [ApplicCFG : MTHi] and ***Low*** [ApplicCFG : MTLo] text fields allow you to enter a value for the maximum and minimum mirror temperatures of which the analyzer will warm up and cool down to. Operating temperatures that exceed the maximum or fall below the minimum will cause a system alarm.
- The **Cooling Rates Fast** [ApplicCFG : FRate] and **Slow** [ApplicCFG : SRate] text fields allows you to enter a value in which the Cooling Stage will cool the mirror, measured in degrees/minute (°C/min or °F/min). **Fast** is the Fast per minute cooling rate and **Slow** is the Slow per minute cooling rate.
- **Temp. above last Higher dewpoint to switch cooling rate** [ApplicCFG : Above] allows you to enter a value in which the analyzer will switch the Cooling rate from the **Fast** rate to the **Slow** rate.
- **Conversion Coefficients** are system-dependent, factory-configured parameters and cannot be changed. These values are greyed out to ensure they cannot be changed.

Click the **OK** button to send the changes you made to the parameters on this tab to the analyzer. The changes will take effect upon normal system operation.

Click the **Cancel** button to discard any changes you made to the parameters on this tab. The original settings will remain upon normal system operation.

Click the **Refresh** button to change the values back to their original settings. When you click this button, any values that you have changed on the active tab will revert to the original settings (that were last saved to the system's EEPROM).

The **Refresh** button will flash to indicate a change has been made from the analyzer's User Interface Panel. To update the new changes in the Configurator Software (and stop the **Refresh** button from flashing), click the **Refresh** button.

Setting System Command and Calibration Configurations

Setup (tab)→ Command/Calibration

The **Command and Calibration Setup** dialog box allows you to set up parameters for V-I outputs and to initiate a manual purge. This dialog box also includes a button to reset the 241CE II Analyzer. Additionally, this dialog box includes system diagnostic controls and parameters (typically reserved for trained AMETEK personnel only).

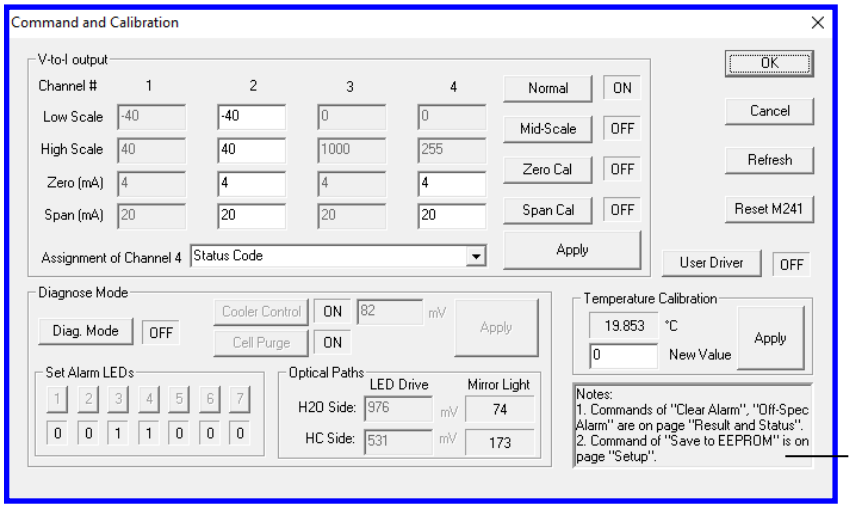


Figure 2-11. Command and Calibration dialog box.

V-to-I output allows you to define and calibrate up to four V/I outputs, labeled Channel # 1–4.

Channel # (1–4) parameters may be enabled (and some may vary), depending on your system's configuration. Channel # 1 is reserved for Water Dewpoint, # 2 is for Hydrocarbon Dewpoint, # 3 is for Water Content, and # 4 is for Continuous Cell Pressure (or SCode).

Enter a value in the appropriate channel for the associated parameter.

- Enter a value in the **Low Scale** text field [ApplicCFG : I1L,I2L,I3L,I4L] to define the low scale of the corresponding output range.
- Enter a value in the **High Scale** text field [ApplicCFG : I1H,I2H,I3H,I4H] to define the high scale of the corresponding output range.

- Enter a value in the **Zero (mA)** text field [MonitorCFG : I1Z,I2Z,I3Z,I4Z] to define the real-time output value corresponding to the low scale (4.00 mA). This value will be calibrated using the **Zero Cal** button, described below.

- Enter a value in the **Span (mA)** text field [MonitorCFG : I1S,I2S,I3S,I4S] to define the real-time output value corresponding to the high scale (20.00 mA). This value will be calibrated using the **Span Cal** button, described below.

- **Assignment of Channel 4** [ApplicCFG : UsrVI] allows you to select a User V/I type.

    - Select **Status Code** (system default) [SCode] to configure Channel 4 to output SCode. Its Low/High rates are fixed at 0/255.

    - Select **Pressure Output** [Prs] to configure Channel 4 to output a continuous pressure value from the pressure transmitter. **This input is currently not used.**

    - Select **Track-and-Hold Pressure Output** [T&HPrs] to configure Channel 4 to output the Track-and-Hold pressure value. The Track-and-Hold function holds the pressure during the Purging/Hold Stage of the measuring cycle. **This input is currently not used.**

- After the analog V-I outputs have been set up, click the **Normal** button to turn on the V-to-I outputs to their normal operating mode.

- Click the **Mid-Scale** button to verify the mid-scale value for each channel.

- Click the **Zero Cal** button to calibrate the Zero output current against the zero value you entered for each channel. For example, if the Zero current output is higher than 4.00 mA, decrease the zero value in the **Zero (mA)** text field until the Zero output current moves to precisely 4.00 mA.

- Click the **Span Cal** button to calibrate the Span output current against the zero value you entered for each channel. For example, if the Span current output is higher than 20.00 mA, decrease the zero value in the **Span (mA)** text field until the Span output current moves to precisely 20.00 mA.

- Click the **Apply** button to save the changes you made to the parameters in this group and send them to the analyzer.

Diagnose Mode

- Click the **Diag. Mode** button to switch the analyzer's diagnostics function On/Off. Typically this should be On only when you wish to initiate a manual purge. Before resuming normal analyzer operations, be sure to switch this function Off.

- **Set Alarm LEDs** allows you to set the status of the seven alarm LEDs on the User Interface Panel in binary code (0 = LED Off, 1 = LED On). To set each one, click each of the numbered buttons 1–7 to switch them between '0' and '1'. View the LEDs on the User Interface Panel to verify they turn On and Off. **Typically reserved for factory diagnostics or trained AMETEK personnel only.**

- Click the **Cooler Control** button to switch the analyzer's cooler control function On/Off. The cooler control voltage is displayed in the **mV** text field during normal operation. This value can be changed during system diagnostics. **Typically reserved for factory diagnostics or trained AMETEK personnel only.**

- Click the **Cell Purge** button to initiate a manual purge. The cell purge will continue until you click this button again to turn it Off. **Typically reserved for diagnostic testing of the solenoid circuit.**

- The **Optical Paths** settings allow you to change the **LED Drive** values (in mV) for the water and hydrocarbon LEDs in the Measuring Cell. The **Mirror Light** message boxes indicate the real-time values from each phototransistor. **Typically reserved for factory diagnostics or trained AMETEK personnel only.**

- Click the **Apply** button to save the changes you made to the parameters in this group and send them to the analyzer. **Typically reserved for factory diagnostics or trained AMETEK personnel only.**

Temperature Calibration displays the real-time temperature of the mirror, as measured by a RTD within the analyzer's Measuring Cell Assembly. This parameter is reserved for trained AMETEK service personnel only. **Do not change this parameter without authorization and instructions from authorized AMETEK personnel.**

- To set this parameter, enter a value in the **New Value** text field. The real-time temperature of the mirrors is displayed directly above the **New Value** text field.

- Click the **Apply** button to update the existing temperature to the new value. Changing the Temperature Calibration value is not recommended. If you click this button, the message "**Don't click on OK unless you have entered a correct new value.**" will appear. Click **Cancel** to avoid saving any changes (including the '**0**' value that is the default).

The **message box** below the **Temperature Calibration** settings provides instructions on command buttons used in the software program, including "**Clear Alarm**", "**Off-Spec**", and "**Save to EEPROM**."

Click the **OK** button to send the changes you made to the parameters on this tab to the analyzer. The changes will take effect upon normal system operation.

Click the **Cancel** button to discard any changes you made to the parameters on this tab. The original settings will remain upon normal system operation.

Click the **Refresh** button to change the values back to their original settings. When you click this button, any values that you have changed on the active tab will revert to the original settings (that were last saved to the system's EEPROM).

The **Refresh** button will flash to indicate a change has been made from the analyzer's User Interface Panel. To update the new changes in the Configurator Software (and stop the **Refresh** button from flashing), click the **Refresh** button.

Click the **Reset M241** button to reset the analyzer without turning off the main power breaker to the system. When you click this button, a confirmation dialog box appears to prompt you to continue with the system reset. Click **OK** to reset the analyzer or click **Cancel** to abort the reset.

Click the **User Driver** button when you wish to turn on the analyzer's spare relay output. This function is only available if a spare relay out is used with your application.

Working From the Result and Status Tab

The **Result and Status** tab allows you to view live data results of the selected outputs, plus the Fault and Warning conditions associated with the Status Code (SCode) and Extended Status Code (XSCode). You can also enable or disable the Off-Spec alarms and clear all alarms from this tab. This dialog box is particularly useful when performing diagnostics on the analyzer.

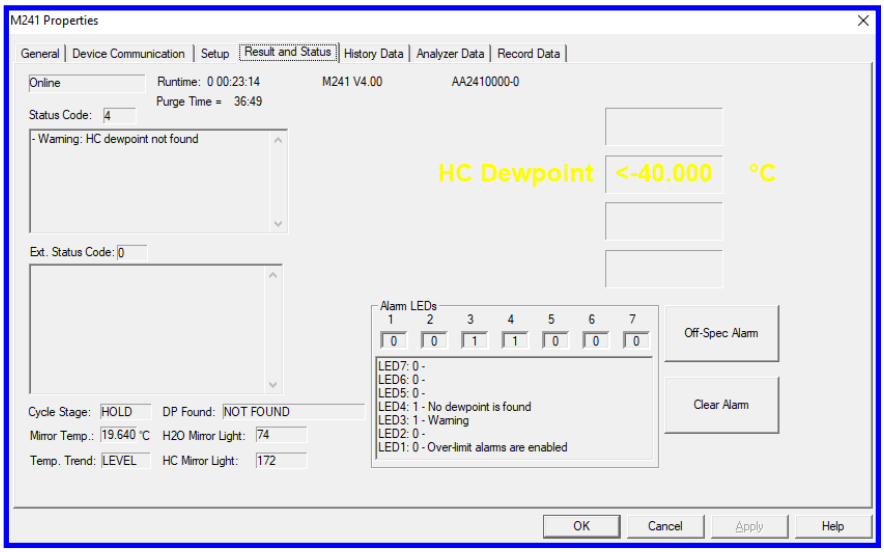


Figure 2-12.
Result and Status tab.

System Status Messages along the top portion of this screen display information about the Configurator Software and the analyzer.

- The **Status** message box displays the communication status between the Configurator Software and the analyzer. Messages that can appear here include: **OFFLINE**, **Online**, **DISABLED**, **Device Not Found**, or **DEMO Online**. Their descriptions are listed under "Working From the General Tab."

- **Runtime** [Run menu : RT or Stat\History menu : T] is displayed next to the **Status** message box. The Runtime is the amount of time the Configurator Software has been running since it was last powered up or reset.

- The 241CE II Analyzer **Firmware version** [Run and Stat\History menu] is displayed next to the **Runtime** message (for example, M241 R3.40). This information will be displayed only if the Configurator Software is communicating with the analyzer.

- The 241CE II Analyzer **Serial Number** [Run and Stat\History menu] is displayed next to the Configurator Software version. This information will be displayed only if the Configurator Software is communicating with the analyzer.

- The **Purge (Countdown) Time** [Run menu : PTime or ApplicCFG : Purge] is displayed below the **Runtime**, indicating the amount of time remaining in the current Purging/Hold Stage. This parameter will only be displayed while a Purging/Hold Stage is in progress.

Status Code [Stat\History menu : SCode] conditions box displays the various Status Code alarm conditions (either Fault or Warning), their descriptions and/or suggestions of all active alarms. The sum of their respective primary codes is listed in the message box next to **Status Code**. The alarm types, their descriptions, and their primary codes are listed in Figure 2-13. A Warning indicates that the analyzer may require servicing. A Fault, however, indicates that a fault has occurred and the analyzer data are not valid – the analyzer requires immediate attention.

Primary Code	Type	Condition / Suggestion
0	—	No Warnings or Faults.
1	Warning	w TimeOut [Stage-Time-Out]. Review XSCode for more information.
2	—	Not Used
4	Warning	w No HC DP [Hydrocarbon-Dewpoint-Temperature-Not-Found]
8	Warning	w Check XSCode [Advice – Review-Extended-Status-Code]
16	Warning	w Dirty Cell [Possible-Cell-Contamination]
32	Fault	f H2O Optics [Problem-In-Water-Side-Optical-Path] – **This is an internal alarm; it is not related to the external water dewpoint signal (if used).** Review XSCode for more information.
64	Fault	f HC Optics [Problem-In-Hydrocarbon-Side-Optical-Path] Review XSCode for more information.
128	Fault	f Cool Cct [Problem-In-Cooling-Circuit]

Figure 2-13. Operating Status Code (SCode).

Ext. Status Code [Stat\History menu : XSCode] conditions box displays the various Extended Status Code alarm conditions (either Fault or Warning) and their descriptions and/or suggestions of all active alarms. The sum of their respective primary codes is listed in the message box next to **Ext. Status Code**. The alarm types, their descriptions, and their primary codes are listed in Figure 2-14.

Primary Code	Type	Condition / Suggestion
0	—	No Warnings or Faults.
1	Warning	w EEP Warn [End-Of-EEPROM-Life]
2	Warning	w Hold TimeOut [Purging/Hold-Stage-Time-Out]
4	Warning	w Cool TimeOut [Cooling-Stage-Time-Out]
8	Warning	w Warm TimeOut [Warming-Stage-Time-Out]
16	Warning	w Cross Talk [Excessive-Mirror-Cross-Talk]
32	Warning	w High DP [Hydrocarbon-Dewpoint-Temperature-Too-High] – HCDP temperature is within 5 °C (9 °F) of the measuring cycle start temperature.
64	Fault	f High Temp [Mirror-RTD-Temperature-Is-Too-High]
128	Fault	f Low Temp [Mirror RTD-Temperature-Is-Too-Low]
256	Fault	f H2O Dim [Light-Intensity-On-Water-Side-Is-Too-Low] – **This is an internal alarm; it is not related to the external water dewpoint signal (if used).**
512	Fault	f HC Dim [Light-Intensity-On-Hydrocarbon-Side-Is-Too-Low]

Figure 2-14. Extended Status Code (XSCode).

The **Cycle Stage** message box [Run menu : Stage] displays the operating stage of the analyzer:
COOL = Cooling Stage
WARM = Warming Stage
HOLD = Purging/Hold Stage

The **Mirror Temp.** message box [Run menu : MTemp] displays the real-time temperature of the mirror.

The **Temp Trend** message box displays the real-time trend of the mirror temperature, either rising (UP), falling (DOWN), or static (LEVEL). The Temp Trend message will change according to the trend of the mirror temperature.

The **DP Found** message box displays the status of the dewpoint temperature measurement, which depends on the analyzer settings, HC FOUND or NOT FOUND either (H2O FOUND and BOTH FOUND are not used).

The **H2O Mirror Lite** message box [Run menu : WMir] displays the real-time level of light being reflected from the water side of the mirror within the Measuring Cell Assembly. **This is an internal parameter; it is not related to the external water dewpoint signal (if used).**

The **HC Mirror Lite** message box [Run menu : HCMir] displays the real-time level of light being reflected from the hydrocarbon side of the mirror within the Measuring Cell Assembly.

The **Calculated Results** – located to the right of the **Status Code** and **Ext. Status Code** conditions boxes – displays the existing results and values. The value for each result will be displayed and updated at one-second intervals.

If there are no alarms present, its name, result (value), and unit type will be displayed in *Black* text. If there is a *Warning* alarm present, it will be displayed in *Yellow* text. If there is a *Fault* alarm present, it will be displayed in *Red* text.

If you press the **Clear Alarm** button to clear the existing alarms, the parameter will change back to *Black* (to indicate no related alarms are present).

Depending on the **H2O Dewpoint Measurement** selection from the **Basic Setup** dialog box, certain parameters will be displayed here:

- **H2O Dewpoint** [Run menu : WDP] and its real-time value is displayed if ***External Dewpoint*** is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box.
- **HC Dewpoint** [Run menu : HCDP] and its real-time value is displayed at all times, regardless of which **H2O Dewpoint Measurement** option is selected from the **Basic Setup** dialog box.
- **H2O Content** [Run menu : WCT] and its real-time value is displayed if ***External Content*** is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box.
- **Pressure** [Run menu : Prs] and its real-time value is displayed if **External Dewpoint** is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box.

Alarm LEDs displays the results of the seven Alarm LEDs that were set under the **Diagnose Mode** group in the **Command and Calibration Setup** dialog box. These LEDs, located on the User Interface Panel, switch On/Off to indicate alarm status in binary code (0 = LED Off, 1 = LED On).

Click the **Off-Spec Alarm** button [Stat\History menu : En\Dis Alrm?] to enable or disable the Off-Spec Alarm function. When you click this button, the message beside LED 1 in the Alarm LEDs group will change to read "**1 - Over-limit alarms are disabled**" or "**0 - Over-limit alarms are enabled**." The Off-Spec alarm conditions and descriptions are displayed to the left of the **Off-Spec Alarm Enabled** button. The Off-Spec alarms that are detected by the analyzer will be indicated by corresponding alarm LEDs on the analyzer's User Interface Panel.

When the Off-Spec alarms are enabled, the relay output of the Off-Spec alarms will be enabled; otherwise, they will be disabled.

Click the **Clear Alarm** [Stat\History menu : Clear Alarm?] button to clear all existing alarms in the Status Code or Extended Status Code, plus all Off-Spec alarms, too. Any alarms that have been detected by the analyzer and displayed in the Status Code and/or Ext. Status Code conditions boxes will be reset and removed from these boxes.

Working From the History Data Tab

The **History Data** tab provides a history of results/data and SCode/XSCode alarms recorded by the 241CE II Analyzer, up to a maximum of nine for each result/data and SCode/XSCode. The real-time values for all data are also listed on this screen. No changes can be made to this screen.

This dialog box is useful when performing diagnostics on the analyzer. As the message in the **message box** at the bottom of the screen indicates when you first enter this screen, you can click on any of the Basic Status Code or Extended Status Code numbers as they scroll by to view the associated Warning or Fault alarm associated with that code.

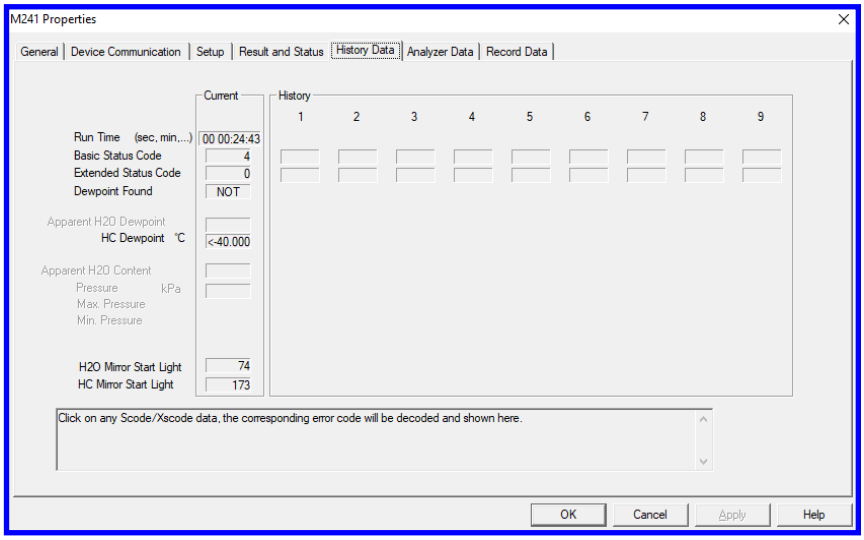


Figure 2-15.
History Data tab.

NOTE

*The message "**Click on any Scode/Xscode data, the corresponding error code will be decoded and shown here**." is only displayed the first time you visit this screen.*

The **information** that is displayed on the screen depends on the option selected from the **H2O Dewpoint Measurement** group in the **Basic Setup** dialog box.

The **Current** status of the enabled parameters and their historical data are displayed to the right of the parameters. Depending on the **H2O Dewpoint Measurement** selection from the **Basic Setup** dialog box, certain parameters and their real-time status and history will be enabled or disabled here:

- **Run Time (sec, min,…)** displays the total amount of time the Configurator Software has been running since it was last powered up or reset. This parameter is always displayed. The real-time values indicate days, hours, minutes, and seconds (for example, 01 04:27:33, indicates 1 day, 4 hours, 27 minutes, and 33 seconds).

- **Basic Status Code** [Stat\History menu : ^SC] displays the sum total of all Status Codes. This parameter is always displayed.

- **Extended Status Code** [Stat\History menu : ^XSC] displays the sum total of all Extended Status Codes). This parameter is always displayed.

- **Dewpoint Found** displays the status of the dewpoint temperature, either H2O (not used), HC, BOTH (not used), or NOT. This reading depends on the analyzer settings. This parameter is always displayed.

- **H2O Dewpoint** [Stat\History menu : ^WD] displays the temperature at which the water dewpoint was found. This display is enabled and will indicate water dewpoint if **External Dewpoint** is selected from the **Basic Setup** dialog box.

- **HC Dewpoint** [Stat\History menu : ^HCD] displays the temperature at which the hydrocarbon dewpoint was found. This parameter is always displayed.

- **H2O Content** [^WC (Stat\History menu)] displays the water content readings. This parameter is enabled and will display water content if **External Content** is selected from the **Basic Setup** dialog box.

- **Pressure** [Stat\History menu : Pw] displays the pressure reading from the pressure transmitter (if used). **This input is currently not used.**

- **Max. Pressure** [Stat\History menu : Px] displays the maximum pressure reading found from the pressure transmitter (if used) during the last nine cooling stages. **This input is currently not used.**

- **Min. Pressure** [Stat\History menu : Pn] displays the minimum pressure reading found from the pressure transmitter (if used) during the last nine cooling stages. **This input is currently not used.**

- **H2O Mirror Start Light** [Stat\History menu : ^WMir] displays a light signal from the water-side phototransistor at the start of the Cooling Stage. This parameter is always displayed. **This is an internal parameter; it is not related to the external water dewpoint signal (if used).**

- **HC Mirror Start** Light [Stat\History menu : ^HCMir] displays a light signal from the hydrocarbon-side phototransistor at the start of the Cooling Stage. This parameter is always displayed.

The **History** readings display the recorded values for each of the parameters during the last nine Cooling Stages. Depending on the **H2O Dewpoint Measurement** selection from the **Basic Setup** dialog box, certain parameters and their real-time status and history will be enabled or disabled here.

*To back out of this screen or to view or set up other system information, choose another tab. Clicking **OK** or **Cancel** will take you back to the **Initial Start-Up** screen. You will have to re-establish computer-analyzer communications.*

Working From the Analyzer Data Tab

The **Analyzer Data** tab allows you to view the real-time status of all settings made to the 241CE II Analyzer. No changes can be made to this screen. The parameters included on this tab are described below.

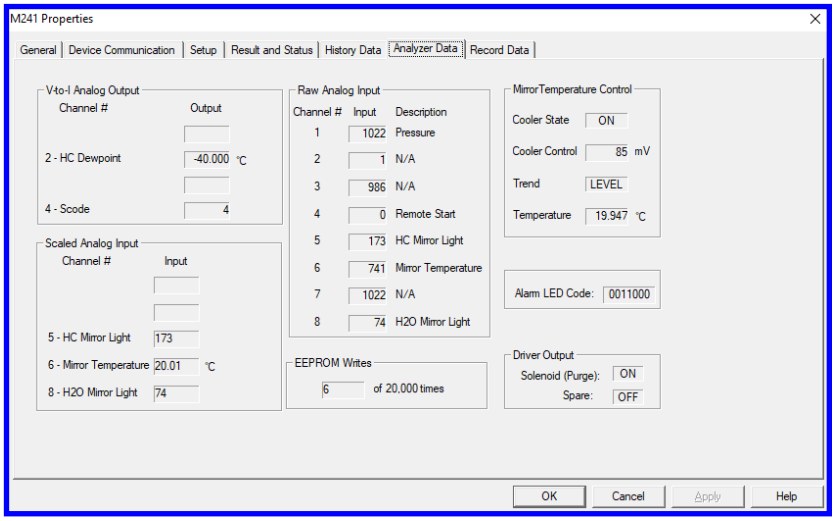


Figure 2-16.
Analyzer Data tab.

V-I Analog Output displays the output values for each of the analog output parameters. Depending on the **H2O Dewpoint Measurement** selection from the **Basic Setup** dialog box, certain parameters will be displayed here:

- **H2O Dewpoint** and its real-time value is displayed if the ***External Dewpoint*** option is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box.
- **HC Dewpoint** and its real-time value is displayed at all times.
- **H2O Content** and its real-time value is displayed if ***External Content*** is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box.
- **Scode** or **Pressure** is displayed at all times, depending on which ***H2O Dewpoint Measurement*** option is selected from the **Basic Setup** dialog box.

Scaled Analog Input displays the input information for the analog inputs associated with the analog channels used by this system. Depending on the **H2O Dewpoint Measurement** selection from the **Basic Setup** dialog box, certain parameters will be displayed here:

- **Channel # 0** will display **AIN** (Analog Input) **Pressure** and its real-time value if the ***External Dewpoint*** option is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box (and if an external water signal is supplied).

- **Channel # 4** will display the External Water Dewpoint (**Ext H2O DP**) and its real-time value if ***External Dewpoint*** is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box. If **External Content** is selected, this channel will display the External Water Content (**Ext H2O CT**) and its real-time value.

- **Channel # 5** displays the real-time reading for the Hydrocarbon Mirror Light (**HC Mirror Light**).

- **Channel # 6** displays the real-time reading for the **Mirror Temperature**.

- **Channel # 8** displays the real-time reading for the Water Mirror Light (**H2O Mirror Light**). **This is an internal parameter; it is not related to the external water dewpoint signal (if used).**

Raw Analog Input displays the input information for the raw analog inputs for each of the analog channels used by this system. Some of the displayed parameters are dependant on the ***H2O Dewpoint Measurement*** selection from the **Basic Setup** dialog box. **N/A** indicates the analog channel is not available (not used).

- **Channel # 1** displays the input signal from the Pressure Transmitter (**Pressure**). Optional, if used.

- C**hannel # 2** is not used. The description for this raw analog input will read **N/A** (not available).

- **Channel # 3** is not used. The description for this raw analog input will read **N/A** (not available).

- **Channel # 4** will display the External Water Dewpoint (**Ext H2O DP**) and its real-time value if ***External Dewpoint*** is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box.

  If ***External Dewpoint*** is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box, this channel will display the External Water Content (**Ext H2O CT**) and its real-time value.

  If the optional Remote Start function is used, this channel will display the **Remote Start** and its real-time value.

- **Channel # 5** displays the real-time reading for the hydrocarbon mirror light (**HC Mirror Light**).

- **Channel # 6** displays the real-time reading of the **Mirror Temperature**.

- **Channel # 7** is not used. The description for this raw analog input will read **N/A** (not available).

- **Channel # 8** displays the real-time reading for the water mirror light (**H2O Mirror Light**), regardless of which option is selected from the **H2O Dewpoint Measurement** group from the **Basic Setup** dialog box. **This is an internal parameter; it is not related to the external water dewpoint signal (if used).**

EEPROM Writes [Stat\History menu : EEP WR] displays the number of times configuration changes have been made and saved to the analyzer's EEPROM. Each time a change is made and saved, the number in this display box will increase by one. A maximum of 20,000 changes are required before a the EEPROM will need to be replaced.

Mirror Temperature Control displays a variety of information about the analyzer's mirror cooling.

- **Cooler State** displays the On/Off status of the analyzer's Thermoelectric Cooler during the Cooling Stage.
- **Cooler Control** displays the real-time reading (in mV) of the Thermoelectric Cooler during the Cooling Stage.
- **Trend** displays the real-time trend of the mirror temperature, either rising (UP), falling (DOWN), or static (LEVEL).
- **Temperature** displays the real-time reading of the mirror during the Cooling Stage.

Alarm LED Code displays the On/Off status of the seven alarm LEDs on the User Interface Panel in binary code (0 = LED Off, 1 = LED On).

Driver Output displays On/Off status of the purge.

*To back out of this screen or to view or set up other system information, choose another tab. Clicking **OK** or **Cancel** will take you back to the **Initial Start-Up** screen. You will have to re-establish computer-analyzer communications.*

Working From the Record Data Tab

The **Record Data** tab allows you to receive live record data from the analyzer. To use this function, communications between the computer and the analyzer must already be established. If communications have already been established, the record data collected during the last Cooling Stage will be displayed in the main data area. At this point, it can be saved to a file. Or, you can enable the Auto-Save feature to allow continuous saves of subsequent record data following each Cooling Stage.

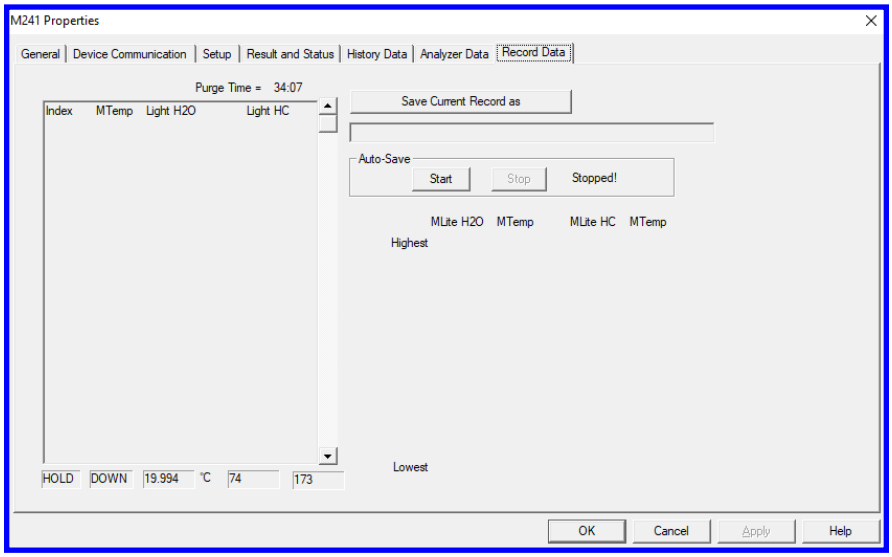


Figure 2-17.
Record Data tab.

To save existing record data:

1. If the record data has already been updated on the screen, the **Save Current Record** as button will be enabled. Click this button to save the record data that you see on the screen. A standard **Save As** dialog box will appear.

   If the record data is still being collected, the **Save Current Record as** button will be greyed out (disabled) until the record data has been saved, at the end of the current Cooling Stage.

2. In the **Save As** dialog box, enter a name for the file and select the path where you will save the record data. The default file name and extension is **RData.csv**. You can change this name to something more descriptive.

To enable the software to auto-save the record data:

1. Click the **Start** button to begin saving the record data in a series of files that correspond to subsequent Cooling Stages. A standard **Save As** dialog box will appear.

2. Enter a name for the file and select the path where you will save the record data. The default file name and extension is RData.csv. You can change this name to something more descriptive. The software will attach a serial number to the filename automatically when saving the record data (for example, RData1.csv, RData2.csv, RData3.csv, etc.).

3. Click **OK** to start the recording. The **Start** button will become greyed out and the Stop button will become enabled, to allow you to stop the recording. The message "**Starting …**" will be displayed.

4. The record data file will save to the path you selected. It is a good idea to save the files to the DATA folder so you will be able to easily locate them.

5. The Auto-Save function will run in the background, during normal analyzer operations. The automatic recording will continue until you click the **Stop** button.

6. You can now view the files using Microsoft Excel.

Advanced Software Features

The software also provides advanced software features, such as graphing and scanning data, and saving the data to files that can be viewed at a later date. Details of how to set up and view analyzer information in this format is described in the following pages.

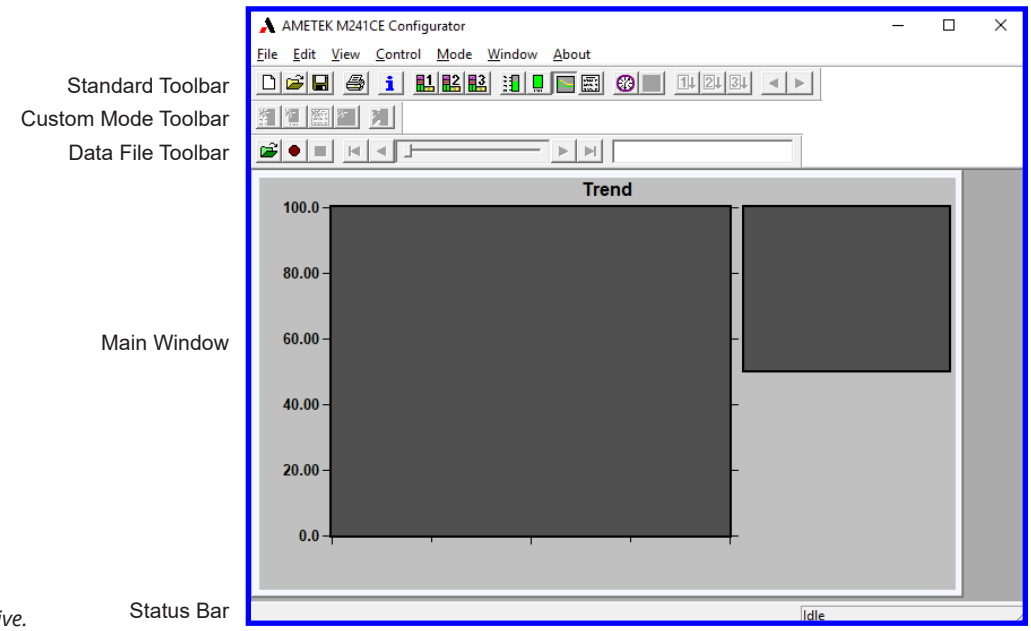


Figure 3-1.
Trend mode display active.

While working with scanned data, you can use the **Mode** menu or the toolbars to select different modes and their configuration parameters. The different modes allow you to set up your preference on how to view the analyzer data.

- While working with the advanced software features, use the following toolbar icons:

	Press this button on the **Standard Toolbar** to create an array of Meter mode windows, or on the **Custom Mode Toolbar** to add a Meter mode display to a Custom mode window.
	Press this button on the **Standard Toolbar** to create an array of Annunciator mode windows, or on the **Custom Mode Toolbar** to add an Annunciator mode display to a Custom mode window.
	Press this button on the **Standard Toolbar** to create an array of Trend mode windows, or on the **Custom Mode Toolbar** to add a Trend mode display to a Custom mode window.
	Press this button on the **Standard Toolbar** to create an array of Tabular mode windows, or on the **Custom Mode Toolbar** to add a Tabular mode display to a Custom mode window.
	Press this button on the **Standard Toolbar** to create a Custom mode display window.

Other toolbar icons used with the advanced software features are discussed in the following pages for the specific software function.

- While working with advanced software functions, use the following tools:

Standard Toolbar

Includes various tools (icons) that can be used while working with modes and scanning data. This toolbar includes *standard* mode display tools.

Custom Mode Toolbar

This toolbar includes *custom* mode display tools.

Data File Toolbar

This toolbar includes tools that are used while scanning and working with files and mode displays.

Main Window

Displays the *standard* mode and *custom* mode display mode windows with live data, as configured by the user.

Status Bar

Displays system messages, including information such as if the system is currently scanning.

More information about these tools is included in the descriptions for the various mode displays in the following pages.

Introduction to the Modes of Operation

Any settings you define for a mode will be retained by the system when you change to a different mode or exit the program.

Any display or scan parameters that you define for a mode will not be transferred to a new mode when you switch modes. However, the system will continue to scan when you change modes.

The available modes are listed in the following pages.

Creating a Meter Mode Display

Meter mode allows you to view information in a meter-type format. Alarms can be set up and displayed on the meter to view the current reading in relation to the **High** and **Low** alarm ***Limits*** defined. You can also define unique **Scan**, **Display**, and **Alarm** output settings.

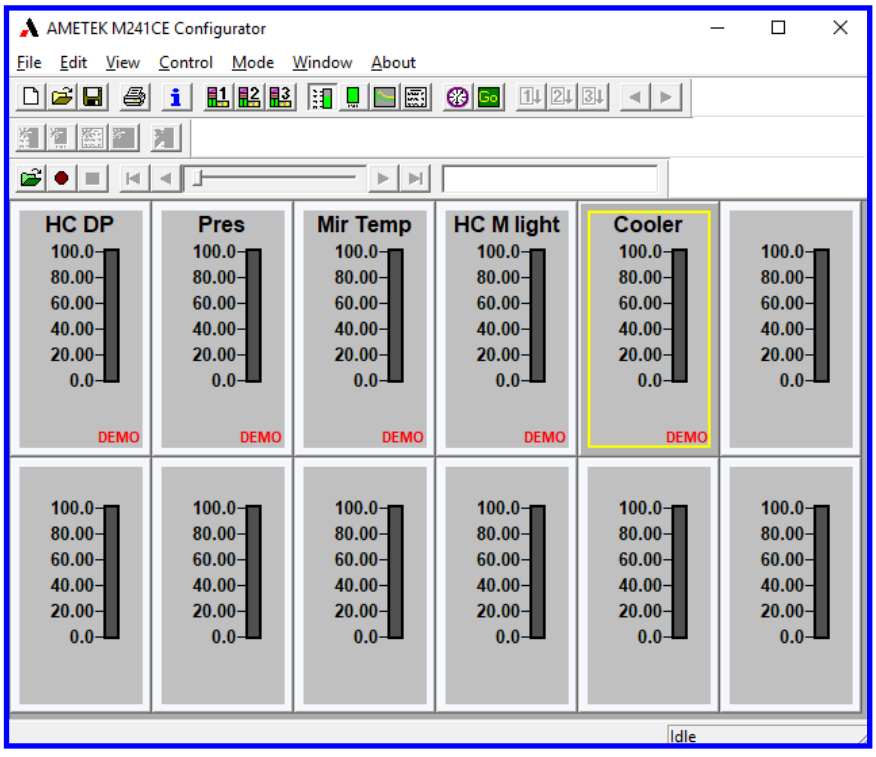


Figure 3-2.
Meter mode display.

While working in Meter mode:

- Each meter has a bar representing a measured value. Text under the meter displays the numeric value of the measured parameter.

- Each meter can be set to display alarm limits. As long as the measured value is within the **High** and **Low** alarm ***Limits***, the meter bar appears in GREEN.

  A YELLOW meter bar indicates an alarm **Warning** condition.

  A RED meter bar indicates an alarm **Fault** condition.

- Any other actions associated with alarms are activated if the limit is exceeded (e.g., running an information file, or setting off a digital or analog output).

- Before changing meter properties, you must select the meter by clicking on it. The meter will be highlighted with a YELLOW border when selected (active).

To set up a Meter mode display:

1. Select **Meter** from the **Mode** menu or click  from the **Standard Toolbar.**

2. Click a meter to select it.

3. Right-click the active meter and define the **Scan**, **Display**, and/or **Alarm** settings for the meter.

4. Repeat Steps 2 and 3 to add more meters.

Creating a Annunciator Mode Display

Annunciator mode allows you to track whether a measured parameter is within acceptable user-defined limits using a simple color/text indication.

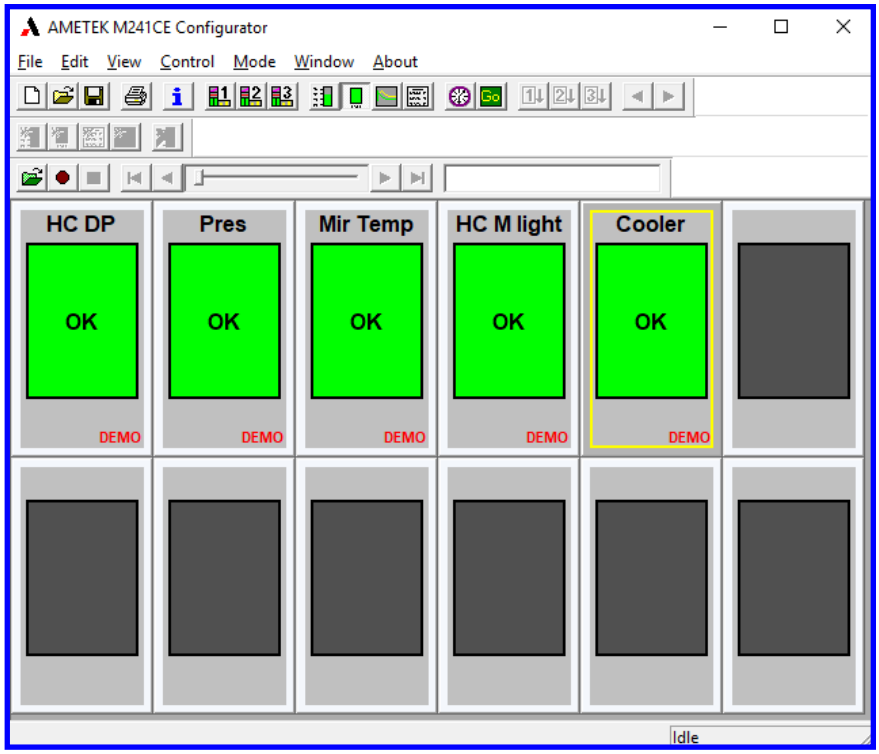


Figure 3-3.
Annunciator mode display.

If the level is:

WITHIN the alarm limits defined	=	GREEN	=	OK
ABOVE the High alarm warning level	=	YELLOW	=	HIGH
ABOVE the High alarm limit	=	RED	=	HIGH
BELOW the Low alarm warning level	=	YELLOW	=	LOW
BELOW the Low alarm limit	=	RED	=	LOW

You can set up multiple indicators, each corresponding to a different gas species. You can also define unique **Scan**, **Display**, and **Alarm** output settings.

While working in Annunciator mode:

- Annunciator mode is normally used to define alarm limits so that you can view – using visual indicators – whether the selected value is within the alarm limits.

- For each channel, a GREEN display indicates the value is within acceptable limits.

  A YELLOW display indicates an alarm **Warning**.

  A RED display indicates an alarm **Fault** condition.

- Before changing the display properties, you must select the display by clicking on it. The display will be highlighted with a YELLOW border when selected (active).

To set up an Annunciator mode display:

1. Select **Annunciator** from the **Mode** menu or click  from the **Standard Toolbar.**

2. Select a display by clicking on one.

3. Right-click the active display and define the **Scan**, **Display**, and/or **Alarm** settings for the display.

4. Repeat Steps 2 and 3 to add more displays.

Creating a Trend Mode Display

Trend mode allows you to view trends of measured parameters in a graphical format. You can also define unique **Scan**, **Display**, and **Alarm** output settings.

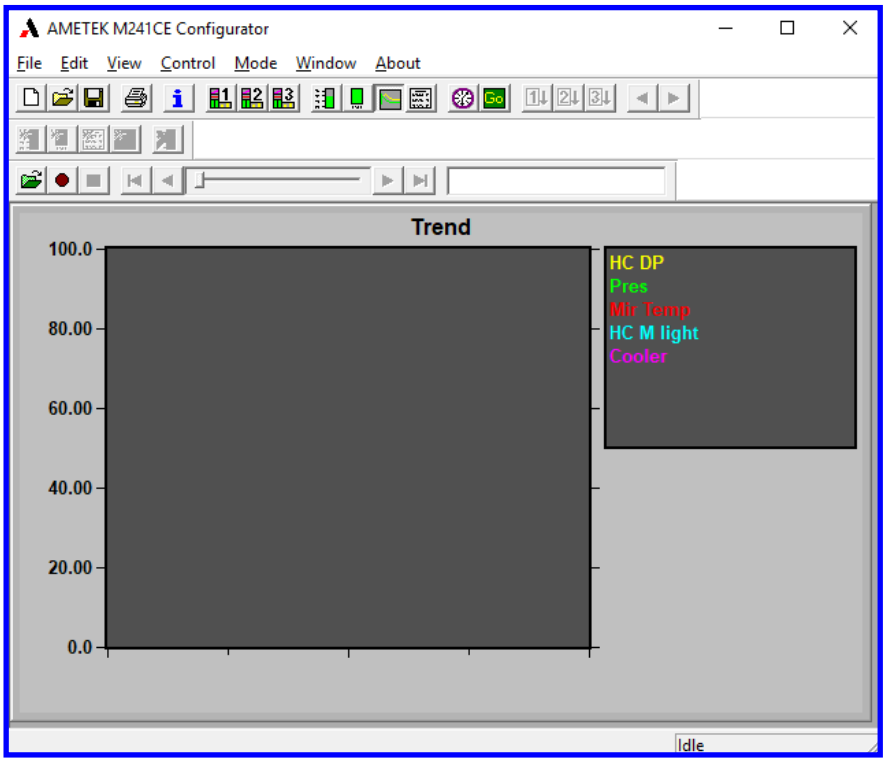


Figure 3-4.
Trend mode (graph) display.

While working in Trend mode:

- The main Trend mode window displays each channel as a colored line. The Y-axis displays partial pressure or measured value; the X-axis displays time.
- You can view the exact value of a trend line by holding down the left mouse button in the trend graphical display area. Display the **Data File Toolbar** to view the time of each data point.
- Before changing the display properties, you must select the display by clicking on it. The display will be highlighted with a YELLOW border when selected (active).

To set up a Trend mode graph:

1. Select **Trend** from the **Mode** menu or click  from the **Standard Toolbar.**

2. Select a display by clicking on one.

3. Right-click the graph and define the **Scan**, **Display**, and/or **Alarm** settings for the graph.

Creating a Tabular Mode Display

Tabular mode allows you to view information in a textual, table-type format. You can also define unique **Scan**, **Display**, and **Alarm** output settings. Finally, you can perform Dynamic Data Exchange (DDE) functions with Tabular mode display data.

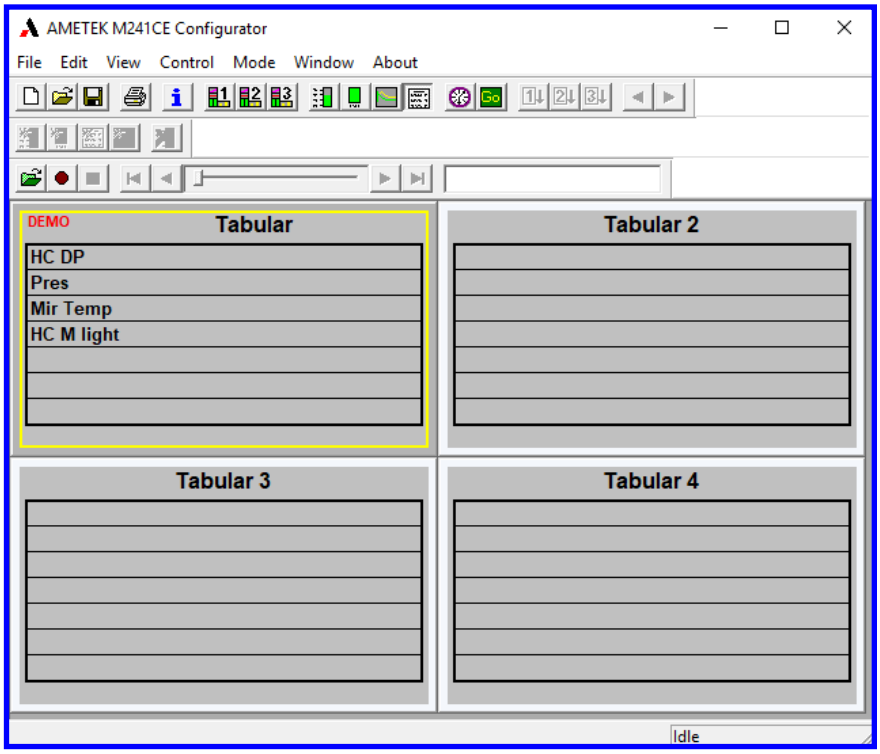


Figure 3-5.
Tabular mode display.

While working in Tabular mode:

- If an alarm was defined and the alarm has been exceeded, an alarm indicator will appear to the right of the main table.
- You can copy any of the columns from a **Tabular** display window to the clipboard. See also "Copying Magnitudes" and "Copying Channels" below for more information.
- Before changing the display properties, you must select the display by clicking on it. The display will be highlighted with a YELLOW border when selected (active).

To set up a Tabular mode display:

1. Select **Tabular** from the **Mode** menu or click  from the **Standard Toolbar.**

2. Select a display by clicking on one.

3. Right-click the active display and define the **Scan**, **Display**, and/or **Alarm** settings for the display.

4. Repeat Steps 2 and 3 to add more displays.

Copying Magnitudes

You can copy any of the columns from a **Tabular mode** display window to the computer's clipboard.

1. Right-click on the **Tabular** mode display and select **Copy Magnitudes**. This places the Dynamic Data Exchange (DDE) data onto the clipboard.

2. Select **Paste Special** from the **Edit** menu to create the DDE link and continuously update the data in real time.

Copying Channels

1. Right-click on the **Tabular** mode display and select **Copy Channels**. This places the name of the channel onto the clipboard.

2. Select **Paste Special** from the **Edit** menu to create the DDE link and continuously update the channel names in real time.

*If you are importing data into Microsoft Excel, select **Preference** from the **Edit** menu. See "Setting Preferences" for more information.*

Setting Preferences

The **Preferences** dialog box allows you to set up parameters that define how Tabular mode files will be saved.

Edit menu→ Preferences

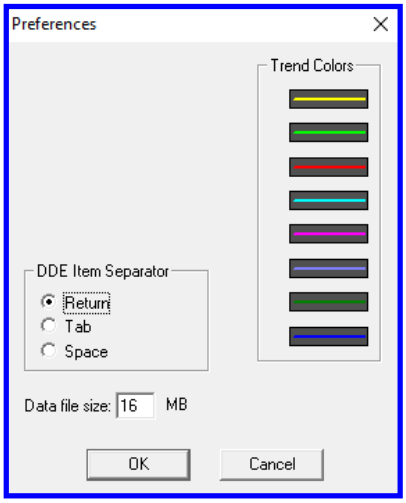


Figure 3-6. Preferences dialog box.

To set preferences, select **Preferences** from the **Edit** menu.

- **DDE Item Separator**
  Select the character that will separate multiple data items in a Dynamic Data Exchange (DDE) message:

  Return
  Select this to place the numbers into separate columns.

  Tab
  Select this to place the numbers into separate rows.

  Space
  Select this to place the numbers on the same line but separated by spaces.

- **Trend Colors**
  Set the default trend channel colors.

- **Data file size**
  Set the maximum size for a data file. This can be an integer between '1' and '16'. The normal value is '1' megabyte. Setting the data file size to a higher value will increase the size of your data files as well as the size of the trend graph buffer. As a result of this increase, it will require more disk space and memory.

Creating a Custom Mode Display

Custom mode allows you to create custom setups that can include all Scanning, Display, and Alarm output options. This is done from the **Set Custom Mode Menu** dialog box. Custom mode setups can include either a single mode display window or multiple mode display windows. Using Custom mode, you can create a unique display by mixing and matching the best features of various modes.

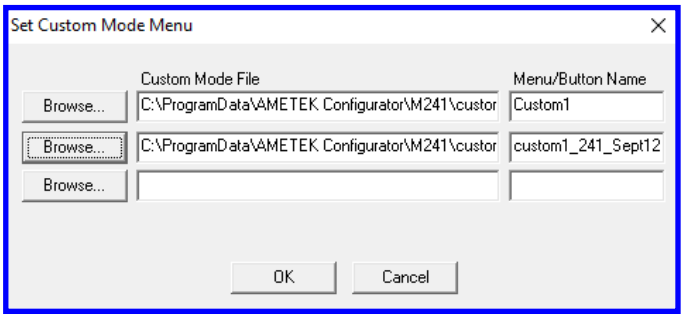


Figure 3-7.
Set Custom Mode Menu dialog box.

For example, you can customize the window to show one Meter mode display window, one Trend mode display window, and two Annunciator display windows. Or, you could set up two Trend mode display windows, or two Tabular mode display windows.

Three default custom mode setups are included with the Configurator Software and more can be added as needed. For each display window added in Custom mode, the **Scan**, **Display**, and **Alarm** output options are set as if in that specific mode.

For example, if adding a Meter mode window within the Custom mode, all settings for that window are defined as if in Meter mode.

To create a Custom mode:

1. Select **New** from the **File** menu or click  on the **Standard Toolbar.**

2. Select **Add Display** from the **Edit** menu and select the type of display you want to add from the list of standard mode types. Or, use the Custom mode icons on the **Custom Mode Toolbar** to add different displays.

3. Specify the data source. Select the applicable source of data from the **Data Source** group by clicking **Device** and then selecting the device you want to enable.

4. Repeat Steps 2 and 3 to add others displays, if desired.

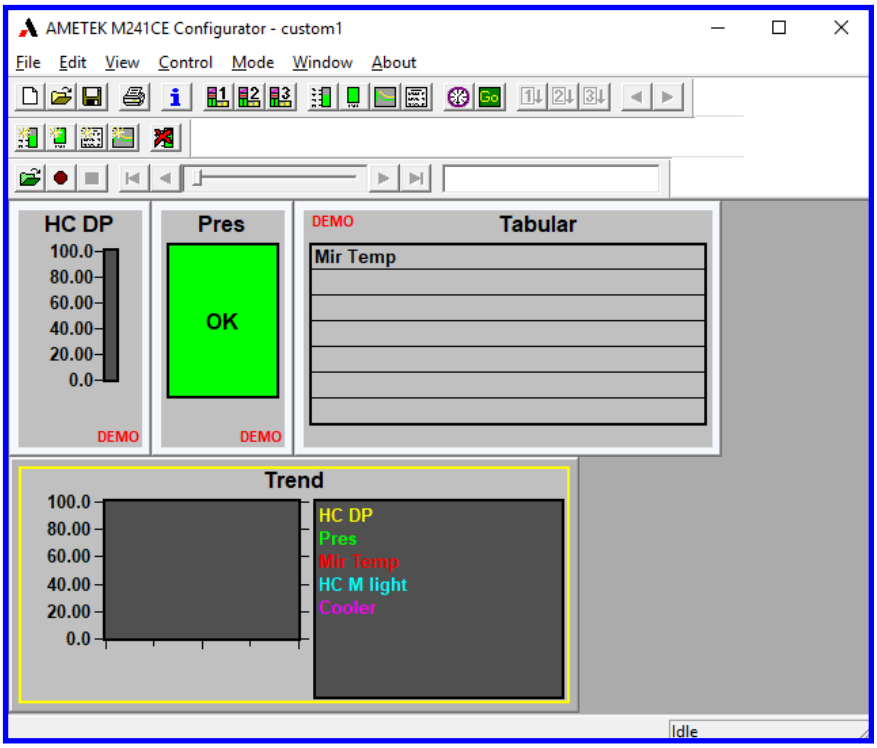


Figure 3-8.
Custom mode display, with Meter, Annunciator, Tabular, and Trend modes all in one display.

5. Select **Save As** from the **File** menu to save the Custom mode. Or click one of the  icons on the **Standard Toolbar** to save the Custom mode to one of the predefined Custom mode file names (custom1.dyc, custom2.dyc, or custom3.dyc). Custom mode files are given a **.dyc** file extension.

6. To retrieve the Custom mode file at a later time, select **Open Configuration** from the **File** menu. If you used one of the predefined icons, double-click one of the files to retrieve it.

Moving or Resizing a Window in Custom Mode

Select the mode display window to move or resize. The window is highlighted with a YELLOW border.

- To move the window click, hold, and drag it to its new location then release the mouse button.

- To resize the window, use standard Windows methods.

Adding a Display Window in Custom Mode

1. From the **Edit** menu, select **Add Display**. Choose the type of display window to add.

2. Select the data source for the display window.

3. The system adds a display window to the **Custom** mode window.

Deleting a Window in Custom Mode

1. Click on the window to be deleted. The window is highlighted with a YELLOW border.

2. Select **Delete Display** from the **Edit** menu, press the **Del** key on the keyboard, or click  from the **Custom Mode Toolbar** to delete the display window.

Saving Custom Mode Files

1. Select **Save As** from the **File** menu . You can save the Custom mode setup under a new name or use one of the predefined icons.

2. Select the **Save** button to save the file.

3. By default, the system places these files in the folder where the Configurator Software is installed and gives the file a **.dyc** extension.

If you save a **Custom** mode file in the install folder with the name "startup.dyc" it will automatically be opened when the program starts.

Opening Custom Mode Files

1. Select **Open Configuration** from the **File** menu or click  from the **Standard Toolbar.**

2. Navigate to the location of the **Custom** mode file to open.

3. Select the **Custom** mode file and click **Open**.

Adding Custom Mode Files to the Mode Menu

1. Select **Set Menu** from the **Mode** menu to view the **Set Custom Mode Menu** dialog box (Figure 3-7). From this window you can associate a Custom mode file to a menu selection on the **Mode** menu, which will allow you to quickly access the file at any time. You can also customize the **Menu/Button Name** of the Custom mode file that will appear on the **Mode** menu. Default names are "Custom1", "Custom2", "Custom3."

2. To do this, click the **Browse** button and navigate to the location of the Custom mode file(s).

   If desired, enter a customized name in the **Menu/Button Name** text field. This name will appear on the **Mode** menu for quick access.

   To remove a Custom mode file from the **Mode** menu, leave the **Menu/Button Name** text field blank. The file will still remain in the folder but will not be displayed on the menu.

3. To recall any of these files, click one of the  icons on the **Standard Toolbar**, or select the corresponding menu from the **Mode** menu.

Defining Scan, Display, and Alarm Parameters for the Different Modes

This section describes how to set up data to scan, configure how it will be displayed, and how to set up alarm limits and actions for certain parameters.

Scanning Data

You can use the Configurator Software to scan analyzer data or link data from a different display. Data that is scanned can be displayed on the screen in any of five formats (or modes) based on your application. See "Introduction to the Modes of Operation" and "Setting Up the Display Parameters" for information about setting up modes and defining their parameters.

A configuration file has been included with the Configuration Software.

From the **File** menu, select **Open Configuration** to open the **241 DataLog.dyc** file. This should be in the same directory in which the Configurator Software has been installed. This configuration file sets up the software to display data of:

- Trend graph of Hydrocarbon Dewpoint.
- Hydrocarbon Mirror phototransistor signal.
- Mirror Temperature.
- Cooler Temperature.

Once the file is open, click 

on the **Standard Toolbar** to start scanning data.

Defining Scan Settings

You can define the type of information to gather from the selected *device*. To do this, right-click on the desired display window and click **Scan** to display the <<**Mode**>> **Properties** dialog box (**Scan** tab active).

NOTE

*For **Trend** and **Tabular** modes you must first select a channel before you can define scan settings. To do this, select a **Channels** button.*

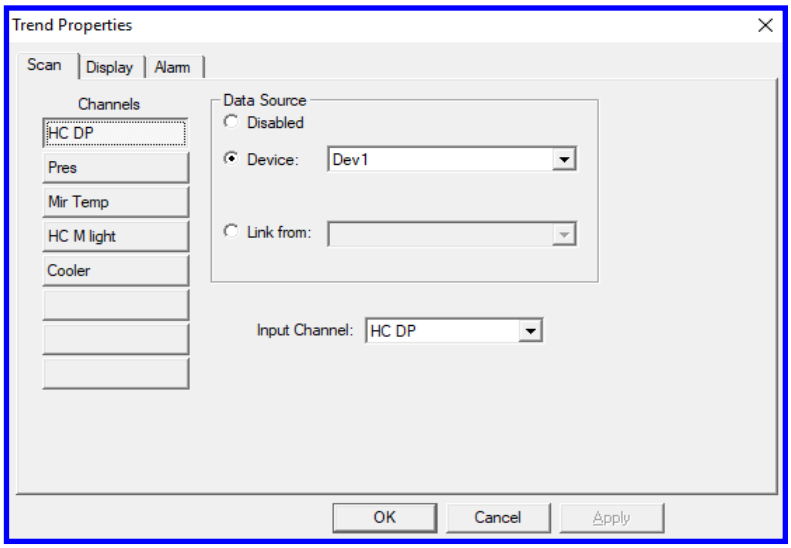


Figure 3-9.
Scan properties setup screen.

Data Source

Select the **Device** (analyzer name) from which to scan or temporarily disable the scanning device.

- **Disabled**
  Select this to disable the output of the signal assigned to the selected channel from being displayed.

- **Device**
  Select this and use its list box to select the **Device** from which data will be scanned.

- **Link from**
  Data can be linked from one window into another. This can save scanning time since the system only needs to scan the data one time. To do this:

  1. Select the display window that will receive the linked data from another data source.

  2. Right-click over the display window and click **Scan**.

  3. From the **Data Source** group, select the **Link from** button.

  4. Under the **Link from** list box select the data source to link from.

Starting a Scan

To start a scan, click  or select **Scan** from the **Control** menu. The message "**Scanning**" and the scanning progress will appear in the **Status Bar** at the bottom of the window (if it has been enabled).

If you have scheduled scans at timed intervals and the system has finished a scan and is waiting to start the next scan, the time remaining (seconds or minutes) before the start of the next scan is displayed (e.g., "**Idle - Next scan in 00:10**."

"**Idle**" is displayed in the **Status Bar** when the system is not scanning.

Stopping a Scan

Click  or select **Scan** from the **Control** menu to toggle off the scan.

Scheduling Scans

Scheduling scans allows you to choose the type of scan to be performed and the scan interval.

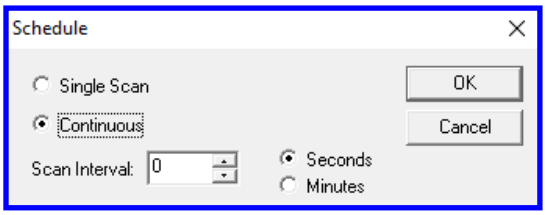


Figure 3-10.
Schedule Scan dialog box.

To schedule the scan, select **Schedule** from the **Control** menu or click on the **Standard Toolbar** to view the **Schedule** dialog box.

Single Scan radio button

Select this to command the software to run a single scan when you click Go. The system will stop scanning after one scan.

Continuous radio button

Select this to command the software to run scans at timed intervals when you click Go.

Scan Interval text field

Type a number to specify the time delay between successive scans. This value is further defined by the selection of **Seconds** or **Minutes**.

Setting Up the Display Parameters

Setting **Display** parameters allows you define information about how the selected signals will be displayed in the various modes.

NOTE

This section applies to all modes, except where noted.

To set up the Display parameters for a mode, right-click on a display window and click **Display** to view the **Properties** dialog box (**Display** tab active). For modes using channels – Trend and Tabular modes – you must first select a channel before you can define the scan settings.

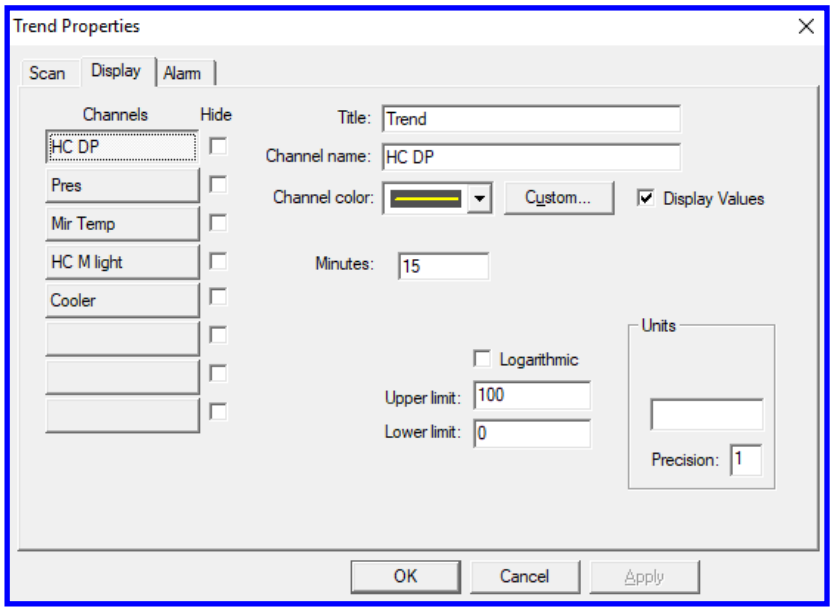


Figure 3-11.
Display Properties dialog box.

Title

Type the title for the display window. The name will appear in the title bar for that mode display window and in other areas of the software to identify the display window.

Autoscale check box (**Meter** mode only)

When selected, the system automatically sets the Y-axis based on the highest value from the previous scan. This will also override the Y-axis. As the highest peak increases or decreases, the display scale is changed to accommodate the changing highest peak.

Logarithmic check box (**Trend** and **Meter** modes only)

Checked	The software uses a logarithmic scale to display readings.
Not Checked	The software uses a linear scale to display readings.

Upper limit (**Trend** and **Meter** modes only)

This value is used only when the **Autoscale** check box is not checked. Enter the upper limit to display on the Y-axis.

Lower limit (**Trend** and **Meter** modes only)

This value is used only when the **Autoscale** check box is not checked. If **Logarithmic** is selected, use this text field to enter the number of logarithmic decades to display on the Y-axis using the upper limit as the top of the display range. If **Logarithmic** is not selected, enter a value into this text box for the **Lower limit**.

Units

This is the value in which your results will be displayed.

- In the **Units** text field, type in the units of which you want the scanned information displayed.

- **Precision**
  Defines the number of digits after the decimal point to be shown. For example, if the precision is set to '**2**', a reading might be 5.22.

Channel name (**Trend** and **Meter** modes only)

Names the displayed channel. Select one of the **Channels** buttons and enter a name for it in the **Channel name** text field.

Channel color (**Trend** mode only)

Defines a different color for the displayed channel. A custom color can also be chosen by clicking on the **Custom** button and selecting a color.

Minutes (**Trend** mode only)

Applies to **Trend** mode only. Defines the time interval to include on the display.

Display Values (**Trend** mode only)

If checked, displays channel values in **Trend** mode.

Hide check boxes (**Trend** mode only)

If checked, the data channel will not be displayed but will continue to track the data. This is useful when viewing a scan that overlaps another scan.

Setting Alarm Parameters

Setting **Alarm** parameters allows you define information about how the selected signals will be displayed in the various modes.

To set up the Alarm parameters for a mode, right-click on a display window and click **Alarm** to view the **Properties** dialog box (**Alarm** tab active).

NOTE

The alarms discussed in this section are used by the Configurator Software only. They are not the same as the concentration alarms on the analyzer. The analyzer concentration alarms operate independently of the Configurator Software.

NOTE

This section applies to all modes, except where noted.

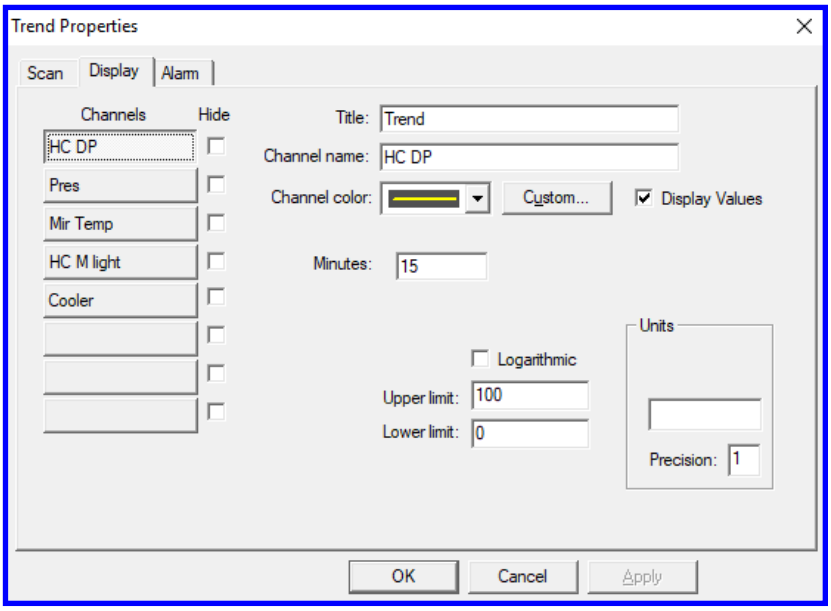


Figure 3-12.
Display Properties dialog box.

For Trend and Tabular modes, first select the channel as the source of the alarms before you define the **Alarm** values. Setting alarms includes defining alarm limits and defining the actions that should be taken when an alarm limit is reached. Alarm limits also appear on the main display for the current mode. **High** and **Low *Limit*** alarms appear in RED; **High** and **Low *Warning*** alarms appear in YELLOW.

Enable all alarms

Checked	Enables all **High** and **Low** alarms.
Not Checked	Deactivated – alarms can be deactivated when, for example, your system is not operating.

High Limit

When checked, enables the **High *Limit*** alarm.

Name	Enter a name for the alarm that will be used to identify the alarm to the system.
Value	Enter the high (upper) limit value for the alarm.
Count	Defines the number of consecutive readings that must be above the **High** alarm ***Limit*** before the alarm is triggered. Higher count values decrease the possibility that a transient or noise signal will trigger a false alarm.

High Warning

When checked, enables the High Warning alarm.

Name	Enter a name for the alarm that will be used to identify the alarm to the system.
Value	Enter the high (upper) limit value for the alarm. Must be lower than the **High** alarm ***Warning*** value.
Count	Defines the number of consecutive readings that must be above the **High** alarm ***Warning*** limit before the alarm is triggered. Higher **Count** values decrease the possibility that a transient or noise signal will trigger a false alarm.

Low Limit

When checked, enables the Low Limit alarm.

Name	Enter a name for the alarm that will be used to identify the alarm to the system.
Value	Enter the low limit value for the alarm.
Count	Defines the number of consecutive readings that must be below the **Low** alarm ***Limit*** before the alarm is triggered. Higher count values decrease the possibility that a transient or noise signal will trigger a false alarm.

Low Warning

When checked, enables the Low Warning alarm.

Name Enter a name for the alarm that will be used to identify the alarm to the system.

Value Enter the low limit value for the alarm. Must be higher than the **Low** alarm ***Warning*** value.

Count Defines the number of consecutive readings that must be below the **Low** alarm ***Warning*** before the alarm is triggered. Higher **Count** values decrease the possibility that a transient or noise signal will trigger a false alarm.

Auto Set button

When selected, this button automatically sets the alarm levels:

High Limit 10 times the current scan value.

High Warning 5 times the current scan value.

Low Warning 5 times less than the current scan value.

Low Limit 10 times less than the current scan value.

Action button

Choose the **Action** button to view the **Alarm Action** dialog box, where you can specify what action the system should take when the specified alarm is set.

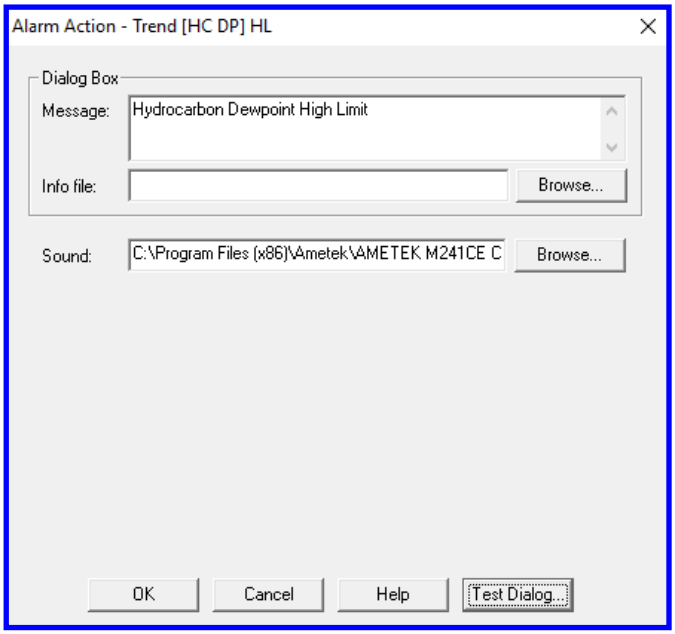


Figure 3-13.
Alarm Action dialog box.

Dialog Box

Specify a message to display when the alarm is set.

Message — Enter a message that will be displayed in the **Alarm** dialog box when the alarm is triggered.

Info File — Enter the name and path of a help file or use the **Browse** button to navigate to the location of a help file (if available) and select the file.

This file will be launched when the user clicks the **Information** button in the **Alarm** message box that appears when an alarm is triggered. For example, the file could suggest troubleshooting action to take to correct the alarm.

Sound

Enter the name and path of a sound file or use the **Browse** button to navigate to the location of the sound files (included during the software install) and select a file. This allows you to include a warning sound (in addition to text instructions) to alert the operator when the alarm is triggered.

Test Dialog button

Click this button to test the alarm. The **Alarm** message box will appear. Click **Acknowledge** or **Disable** to close this dialog box. **The Information button is not currently available.**

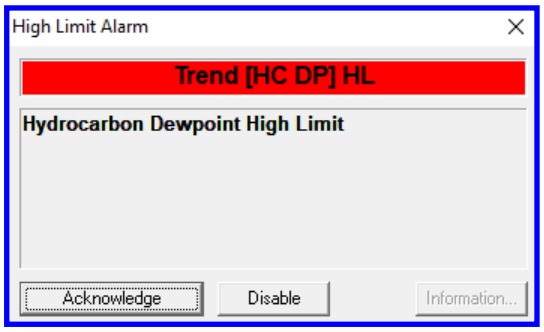


Figure 3-14.
Alarm Action dialog box.

Working with Data Files

Saving Data Files

Displayed information can be saved for later viewing or printing. Each data record within a data file contains scan data from the mode display window(s). Data records are created in serial format, as the data becomes available from the system. A Custom mode, for example, will save each display as a data record.

To save a data file:

1. Select the display window(s) for which data will be saved.
    - When selecting multiple display windows, hold down the **Shift** key and click on each window you wish to include.
    - Click in the header area of a highlighted display window to deselect it.
    - If no display windows are selected, the software saves data for all display windows in the mode.
2. Select **Save Data** from the **File** menu or click  on the **Data File Toolbar** to view the **Save As** dialog box.

    Enter a name for the data file in the **File name** text field and save it in a folder using standard Windows techniques.
3. To stop saving data click  on the **Data File Toolbar**.

File menu→Saving

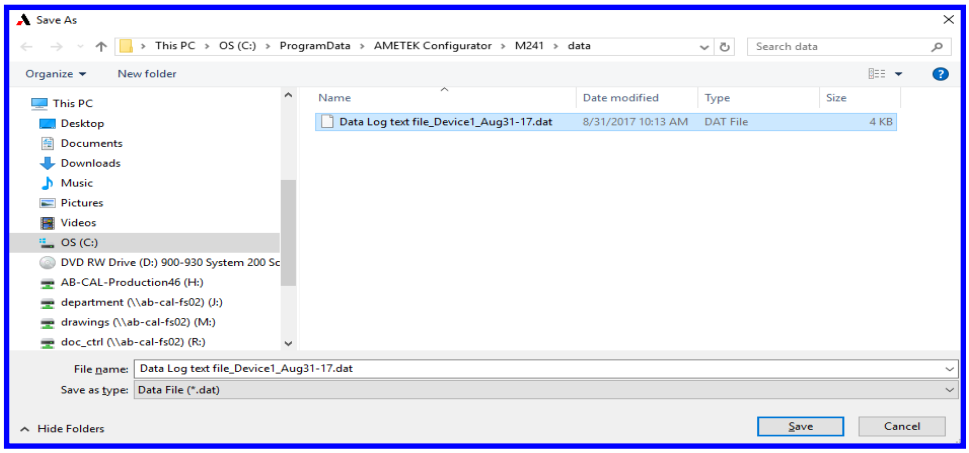


Figure 3-15. Save Data (Save As) dialog box.

Opening Data Files

To open a data file:

File menu→Open

1. Click  on the **Data File Toolbar**.
2. Navigate to the location of the data file and select it.
3. Select **Open**. The data file appears on the screen. From here it can either be viewed or printed.

Scrolling Through Data Records

Select either **Data File Position** from the **File** menu or use the **Data File Toolbar** to scroll forward and backward through the data file using the standard recording symbols such as rewind or fast forward.

Converting Data Files

Use this utility to convert the analyzer Configurator Software data files into ASCII text.

1. Select **Convert Data File** from the **File** menu and select one or more data files.
2. Click **Convert** to convert and save the file with a CSV extension.

Printing Data

The Configurator Software will print scanning information in a format similar to how it is displayed on the screen using the display parameters created for that mode. You can view a preview of what will be printed by selecting **Print Preview** from the **File** menu.

In Custom mode, the system prints the currently selected display window. If you do not select a display window, the system prints information for each display window using the required number of pages.

To print data:

1. Select the display window(s) to be printed. If a window is not selected, the entire screen will be printed. To select multiple windows, hold down the **Shift** key while selecting each window.

2. Select **Print** from the **File** menu or click  .

3. Type a print-header comment in the **Display Print** dialog box. This information appears in the title of the printed pages. Click **OK**.

4. If you select **Print** from the **File** menu, a standard Windows **Print** dialog box appears. Set the additional print information.

5. Click **OK** to print the scanning information.

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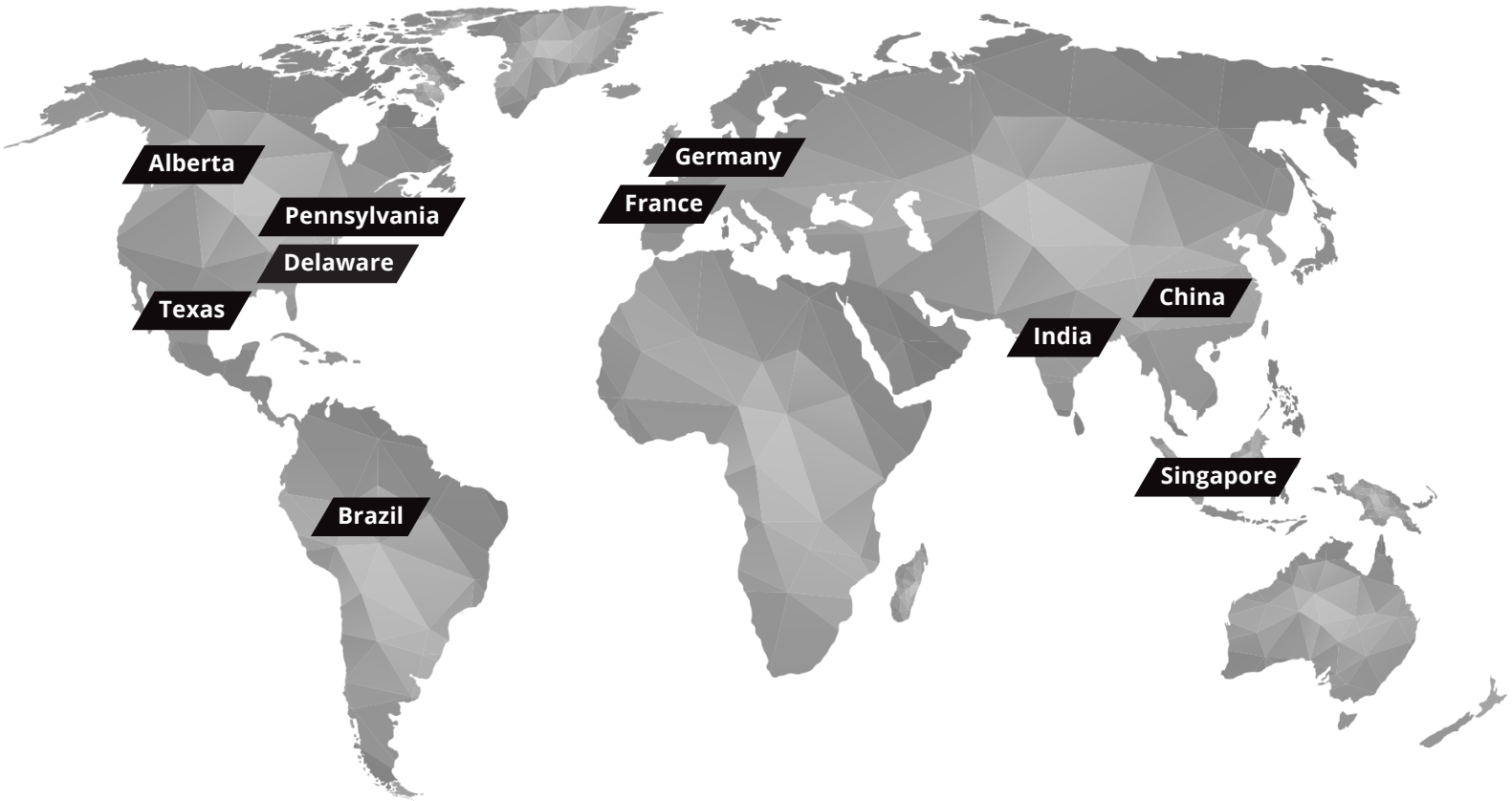

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