

# MCEGOld®

## GETTING STARTED GUIDE

# PdMA<sub>EYE</sub>®



Revolutionizing Electrical Reliability



# MCEGold PdMAEYE®

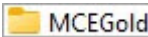
This document is a quick overview of the MCEGold® PdMAEYE® Version 3 software. Detailed information will be found in Chapter 3 of the Product Support Manual upon completion of the manual update which will begin following the completion of this document. The Product Support Manual is available within the MCEGold software by selecting Help, Product Support Manual from the toolbar.

The PdMAEYE allows facilities to test energized AC electric motors and generators, without opening the MCC or switchgear doors. The PdMAEYE uses Signal Conditioning Modules (SCMs) to condition the signal for input into the Data Acquisition system in the PdMAEYE base module. See SCM Configuration Introduction on page 20 for more information or for an in-depth discussion see the Product Support Manual.

PdMAEYE powered by MCEGold has several versions, therefore your version may not have some of the functions described in this document.

Note: To assist you in locating a specific area of interest in this document, an index is provided on page 24.

## STARTING MCEGOLD

1. To start MCEGold locate the MCEGold executable  on the blue USB.
2. In the MCEGold Login window (Figure 1), select Language (English is the default), and enter your name and password. The Server and Authentication Mode windows are pre-configured. If not please contact PdMA Technical Support at 813-774-9982.
3. Click **OK**.



The MCEGold Login window features a yellow background and the MCEGold logo at the top. It contains several input fields and dropdown menus. On the left, there are fields for 'Name', 'Password' (masked with asterisks), and 'Server'. On the right, there are dropdown menus for 'Login Mode' (set to 'Network Desktop'), 'Language' (set to 'English'), and 'Authentication Mode'. At the bottom left, it displays 'Licensed To: Beta Tech Writing', 'Application Mode: Network Desktop', 'Model: 0', and 'Version: 3.2.7.4'. At the bottom right, there are 'OK' and 'Cancel' buttons.

Figure 1: Login Window

## Home Window

The MCEGold Home window (Figure 2) opens displaying the Site Navigator, Site Condition, WatchList, and Message Center windows. If you have assets connected to a PdMAEYE, there will be a folder labeled PdMAEYE in the Location area of the window. The Home window operates like a standard window and multiple windows may be open at the same time.

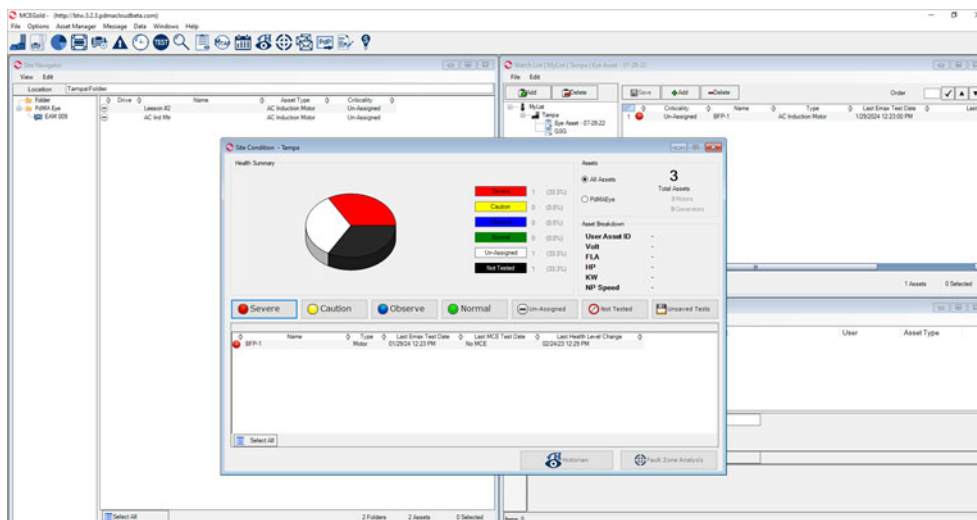
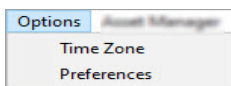


Figure 2: MCEGold Home Window

## Menu Items

**File** - Close, closes MCEGold.

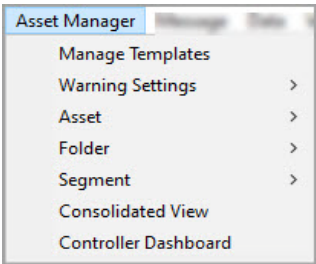


**Options** - In this window there are two choices, Time Zone and Preferences. Selecting Time Zone opens the Regional Settings window which has tabs for Time Zone and Date/Time.

In the *Time Zone* tab you can change the Time Zone by choosing the desired time zone from the drop down list and clicking **Apply**.

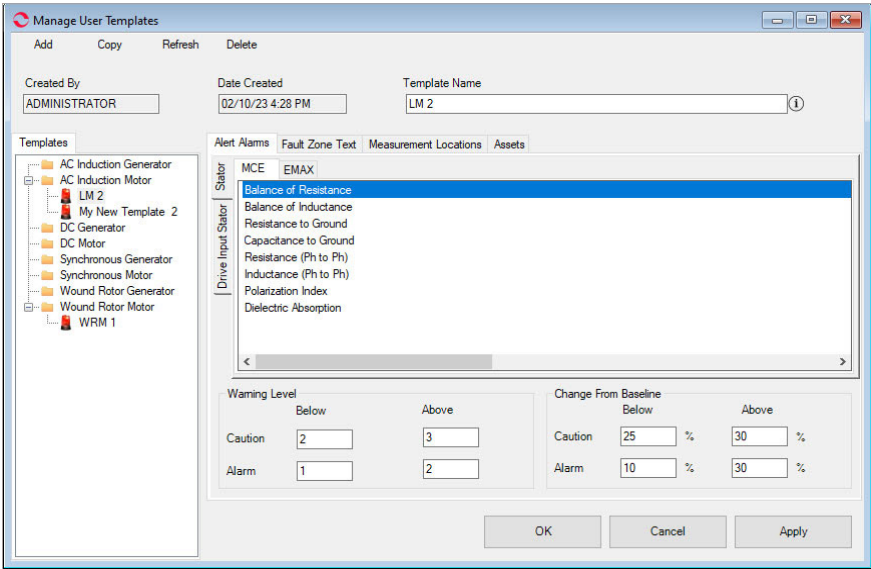
In the *Date/Time* tab you can change from the predefined settings found in the System Date Time Format option to the User Defined option by clicking the appropriate radio button. If the User Defined option is selected, choose the desired date and time formats from the drop down lists. Click **Apply** when the correct selections have been made. Click **OK** to close the Regional Settings window.

*Preferences* opens the Asset Management Preferences window. In the *Search Results* tab you can set a search limit. In the *General Tab* you can change the default save location, control create message prompt, control display sites on startup, and control temperature display.

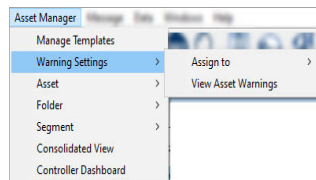


**Asset Manager** - Use Asset Manager to setup the assets (motors), folders, and segments that are found in Site Navigator. Items displayed in the drop down list are dependent on the folder, asset, or segment selected in Site Navigator. The possible Asset Manager functions are Manage Templates, Warning Settings, Asset, Folder, Segment, Consolidated View, and Controller Dashboard.

*Manage Templates*, opens the Manage User Templates window (Figure 3). This allows you to develop templates for specific kinds of assets. By assigning a unique template to an asset the test results, alarm, and caution values are more meaningful.

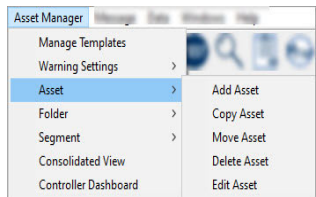


**Figure 3: Manage User Templates**

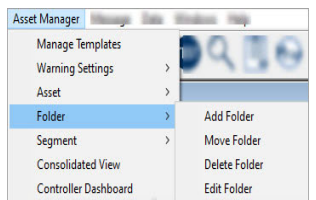


*Warning Settings* (displays only when an asset is selected), **Assign to** allows you to choose either a template (Global) or keep the asset specific warning (Asset).

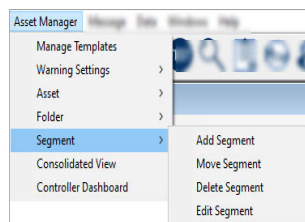
*Warning Settings*, *View Asset Warning* opens the Warning Settings window for the selected asset. Changes may be made in this window and saved.



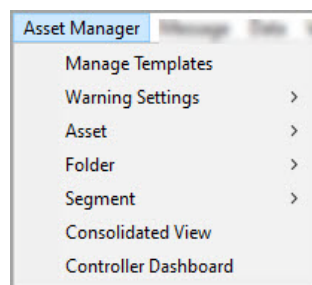
*Asset* allows you to Add, Copy, Move, Delete, and Edit an asset. You may also access these functions plus Test History, and Warning Settings by right clicking on an asset in the Site Navigator window.



*Folder* allows you to Add, Move, Delete, and Edit a folder. You may also access these functions plus Add Asset and PdMAEYE Live Status by right clicking on a folder in the Site Navigator.

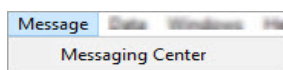


*Segment* allows you to Add, Move, Delete, and Edit a Segment. You may also access these functions plus Add Asset, Add Asset From Model, and PdMAEYE Live Status by right clicking on a segment in the Site Navigator window.

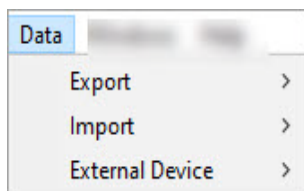


*Consolidated View* opens the Asset Assignment Summary window. Highlight an asset/s in the Site Navigator and select the Consolidated View. A list of the asset/s with their Model/Template Name, Warning Assignment, Warning Status, and Asset Type displays.

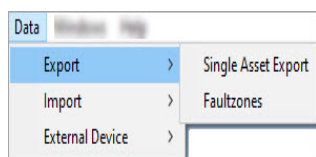
*Controller Dashboard* displays a window showing information regarding the PdMAEYE segments. Click on a segment listed in the left panel to display information about that segment. The only change that can be made in this window is to select or unselect Enable Auto Refresh.



**Message** – Message opens the Message Center window if it has been closed. It automatically opens when MCEGold is first started. *See the Message Center section in the More Details section.*



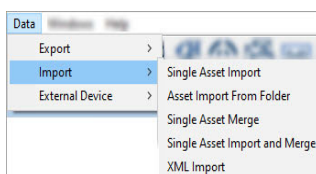
**Data** – The Data submenus allow a data file to be created so that it can be exported or facilitates importing a file from another computer or merging two data files for the same asset or importing data from an external device.



*Export, Single Asset Export* exports a single asset to a selected location.

**NOTE:** Data exported from 3.2 cannot be imported into older MCEGold versions.

*Export, Fault Zones* exports the fault zone analysis into an XML interface file, to be used by other maintenance software such as SAP<sup>®</sup>, Maximo<sup>®</sup>, or Indus.



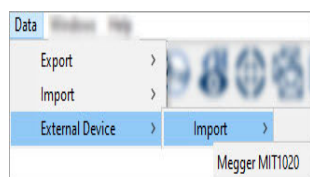
*Single Asset Import* is used to retrieve an asset data file that has been sent to you electronically.

*Asset Import From Folder* allows you to locate a folder containing data to be imported.

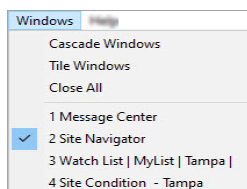
*Single Asset Merge* function is used to combine two assets into one. Note: Assets must be of the same type in order to be merged.

*Single Asset Import and Merge* imports the data from a pdp file and directly merges it with the selected asset. A new asset will not appear on the database, the data is directly merged into an existing asset. Note: Assets must be of the same type in order to be merged.

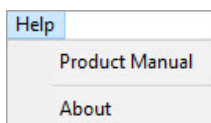
*XML Import* imports the nameplate information only of an asset via XML format. No data is imported. The nameplate information is automatically imported into MCEGold as a new asset.



*External Device, Import, Megger* is used to import PI data collected using an external device, the Megger MIT1020 insulation tester.



**Windows** - Cascade Windows and Tile Windows are the two options on how the open windows are displayed. Close All closes all open windows. The open windows are listed. A check mark indicates which window is active.



**Help** - The Help menu provides access to the Product Support Manual and About information.

*Product Manual* displays the chapters of the Product Support manual and Appendixes in PDF form.

*About* displays the version number, licensing and technology information, shipping address, and how to reach technical support.

## Tool Bar Icons

The Tool Bar icons are designed to quickly access the common MCEGold functions with one click.



**Site Navigator** provides a graphical view of the sites, folders, and assets/motors. Use this icon to restore Site Navigator to the Home window.



**Asset Summary** provides Last Test Dates, Asset Health (located above the Nameplate information), Nameplate Summary, and the Fault Zone information for the selected asset.



**Site Condition** displays health information about all of the assets within the selected site. The data automatically updates when a different site is chosen. Buttons are provided to allow access to the Historian and Fault Zone Analysis. Use this icon to restore Site Condition to the Home window.



**Nameplate** displays the nameplate data for the selected asset so you can view or modify the data. Some fields are automatically entered by the software and cannot be modified. An area to assign a criticality code to the motor is provided. The code is limited to four characters, any combination of alpha and numeric.



**Add Asset** is used to add an asset. You can also reach it from the Asset Manager, Asset, Add Asset menu.

Note: Throughout MCEGold, the term asset is used to denote a motor or generator.



**Warning Settings** displays the warning settings for the selected asset. If the asset hasn't been assigned a template (using the Asset Manager, Warning Setting from the menu) the default settings are displayed. Changes to the settings can be made here.



**Test History** displays MCE, EMAX, and PdMAEYE test data, nameplate information, and Asset Health for the selected asset. The All Tests (not available for PdMAEYE) has the option to segregate the tests based on location.



**Test Selection** opens the Test Selection window that is used to select individual MCE and EMAX tests for the selected asset. If an automatic combination of tests are preferred the MCE Auto or EMAX Auto icons can be chosen from the toolbar. *See the Testing section for additional information.*



**Search** opens the Asset Search window to the simple search. For a more detailed search click the **Advanced** button (lower right) to open the Advanced Search window. You may return to the simple search by clicking the **Simple Search** button.



**WatchList** automatically displays when MCEGold starts. It allows you to set up lists of assets. The list may be of assets to watch for criticality purposes or to set up a service route for a technician. Use this icon to restore WatchList to the Home window if it has been closed. *See WatchList in the More Details section for additional information.*



**MTAP** opens the MTAP configuration window. You must first highlight an asset in the Site Navigator. The window provides information if the asset is linked to an MTAP or allows you to manually link the asset to an MTAP.



**Scheduler** opens the Schedule Configuration window which is used to set up the PdMAEYE for surveillance or scheduled testing. The segment must be selected before clicking on the Scheduler icon. A detailed description of the Scheduler is found in Chapter 3 of the Product Support Manual.



**MCE Auto** icon only appears on a field tester. It automatically starts the Standard Test followed by the Polarization Index. At the end of the tests, after the results are saved, the Fault Zone Report is displayed. Before selecting the MCE Auto icon an asset must be selected in the Site Navigator.



**Emax Auto** icon only appears on a field tester. It automatically starts the Rotor Evaluation, Eccentricity, Power and Demod tests. At the end of the tests, after the results are saved, the Fault Zone Analysis window displays. Before selecting the EMAX Auto icon an asset must be selected in the Site Navigator.



**Historian** allows you to search for and view key performance indicator (KPI) results. You must first select an asset or segment. *See the More Details section for additional information.*



**Fault Zones** displays the Fault Zone Report for the selected asset.



**Message** window automatically displays when MCEGold starts. In the Message Center you can enter messages, view messages, and delete messages for one or a list of assets. Use this icon to restore the Message Center to the Home window if it has been closed. *See the More Details section for additional information.*



**Export File** opens the Create Export File window, which is used to create an export file (.pdp) for the selected asset. The export file is used to send data electronically.



**Report** opens the Report Selection window. *See the More Details section for additional information.*



**Energy Analysis** opens the Energy Cost Analysis window which analyzes operating and replacement cost for AC Induction Design B motors only. A detailed description of the Energy Cost Analysis module is found in Chapter 3 of the Product Support Manual.

## MORE DETAILS

### Site Navigator

The Site Navigator window displays the site (1), folder (2), segment (3), and asset(4).

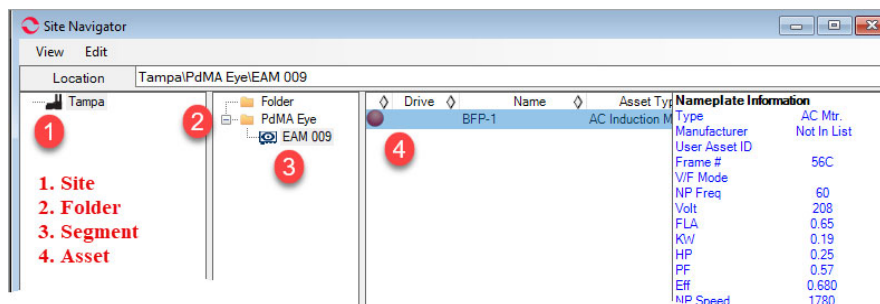


Figure 4: Site Navigator

### Link Asset to Segment

The first step in setting up the PdMAEYE is to link the asset (4) to the segment (3). See Figure 4.

1. Right click on the segment (3).
2. From the drop-down list select Edit Segment.

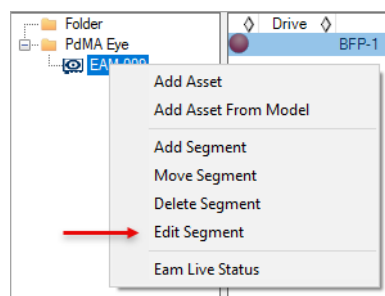


Figure 5: Edit Segment

3. In the Edit Segment window click the check box Link Segment to PdMAEYE (1).

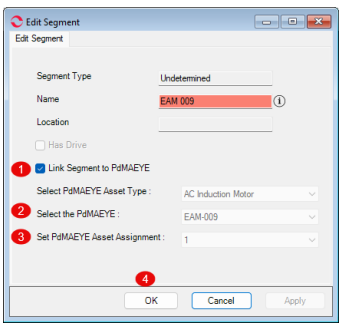


Figure 6: Edit Segment Window

4. From the Select the PdMAEYE drop-down list highlight the correct PdMAEYE ID (2).
5. Verify the number 1 appears in the Set PdMAEYE Asset Assignment (3).
6. Click **OK** (4).

## Site Condition

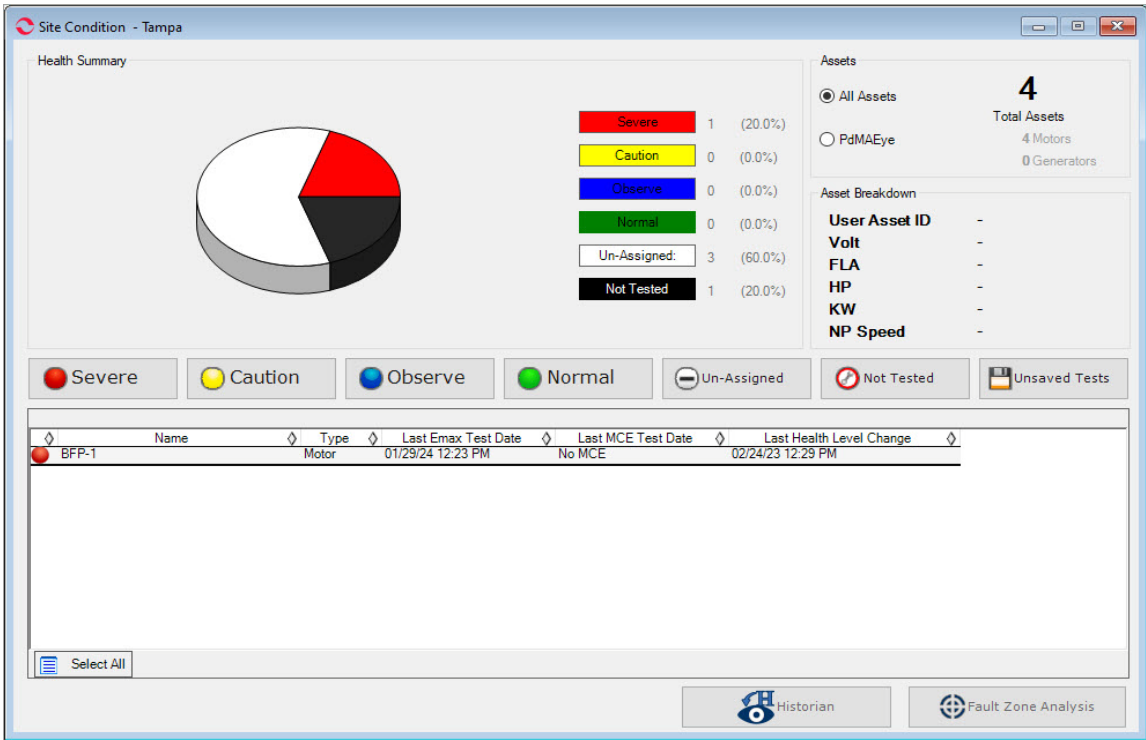


Figure 7: Site Condition Window

The Site Condition window automatically opens when MCEGold is started or when the Site Condition icon  is selected from the toolbar.

The window opens displaying All Assets. Select PdMAEYE in the Assets section to view results for only PdMAEYE assets.

The Site Condition window, Figure 7 provides an overview of the assets in the site including total number and percent in each asset health condition. Clicking on an asset health condition code button located above the list of assets creates a list of assets in that condition and displays it in the lower section of the window. The assets are listed alphabetically by name. The columns may be sorted by clicking on the diamond to the right of the column title. The diamond changes to a triangle, indicating the column has been sorted. When the triangle is clicked the column reverse sorts. Clicking on an asset name causes it to be located and highlighted on the Site Navigator and brings up any associated messages in the Message Center.

Clicking the diamond to the right of the *Last EMAX Test Date* or the *Last MCE Test Date* sorts the assets by earliest to most recent test date. Click again and it reverse sorts.

Clicking the diamond to the right of *Type* or *Last Health Level Change* causes the asset types to be grouped together. Click again and it reverse sorts.

Clicking the Historian button in the lower right corner opens the PdMAEYE Historian for the selected asset.

Clicking the Fault Zone Analysis button in the lower right corner opens the Fault Zone Report for the selected asset.

## Historian

The Historian window (Figure 8) opens when the Historian icon  is selected from the toolbar or the Historian button is selected in the Site Condition window. Historian allows you to search for and view key performance indicator (KPI) time series results. This is useful for trending and troubleshooting. Currently it displays test values, for twenty KPIs. To access Historian an asset or segment must be selected.

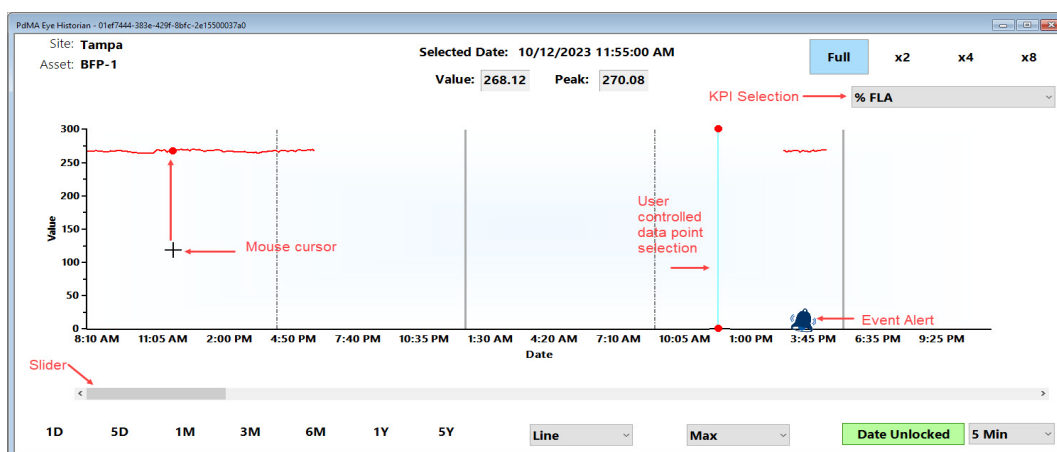


Figure 8: Historian Window

The Selected Date and Value (top center) change according to the location of the cursor on the graph.

To Zoom in or out of the graph without changing the graph resolution select Full, x2, x4, and x8 in the top right corner. When zoomed, a slider bar is available so that you may access values not visible in the window.

KPIs are selected from the drop down list in the upper right corner.

The graph displays data according to the time selection (1D, 5D, 1M, etc.) made using the options in the lower left corner. Changing the time may be necessary in order to locate and display the test values.

Using the mouse cursor to hover over the window causes an indicator to move on the graph and changes the Selected Date information.

Clicking on the graph causes a line to be inserted at that spot. This is shown in Figure 8 as a light blue line with red dots at the top and bottom. The date and time at the top of the window will change according to the placement of the line.

Note: To change the line or cursor line color, press the Ctrl key. Click on the item you want to change (Line Color or Cursor Line Color) and the color pallet window appears. Select a color and click OK.

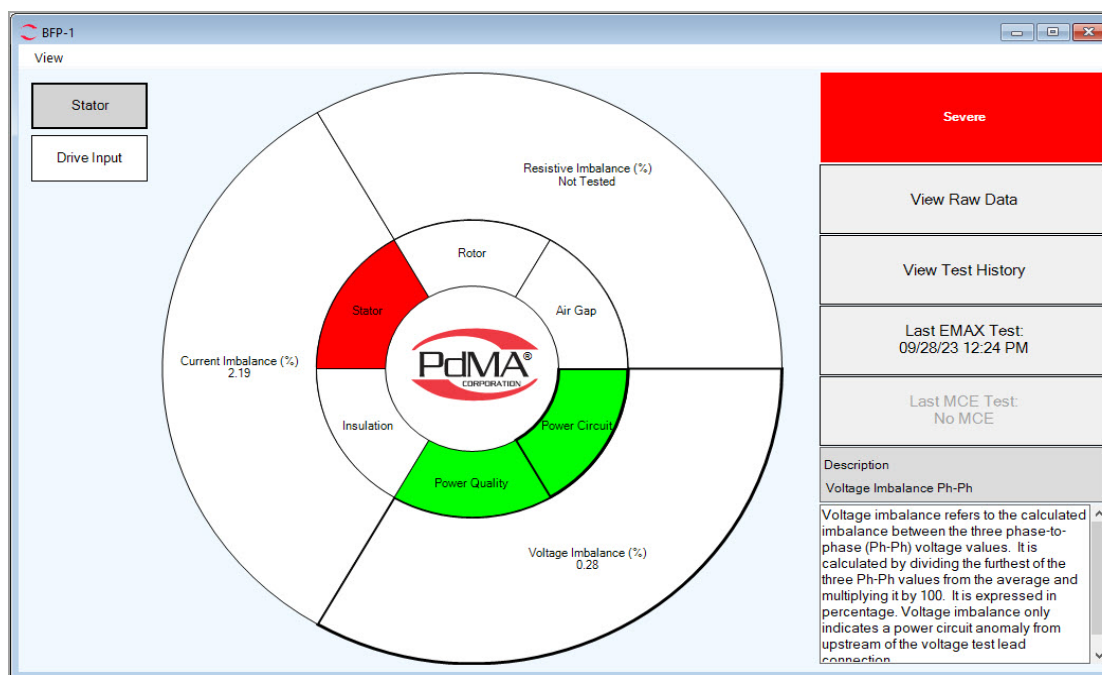
Not currently available, but coming in a future release is the Event Alert. Whenever a KPI enters an alert status based on fault zone analysis an event indicator  will be placed at the bottom of the graph to indicate an issue. There may be multiple indicators.

The test data graph may be displayed in an Area, Bar, Line, or Step format by making your selection from the drop down list located at the bottom of the window.

Each aggregate point on the Historian could consist of a couple of tests if looking at 1D or dozens of tests if looking at 1M. To view the aggregate KPI history from a Max, Min, and Avg perspective select the appropriate option in the drop down list located at the bottom of the window.

An additional method to view more details or a higher resolution on past data when you have selected a large data range (i.e., 1M, 3M, etc.) is to change the data resolution using the drop down list in the lower right corner. 5 Minute aggregate resolution is the highest resolution. Once you have locked the date by clicking on the Historian, then select a different resolution to center and zoom in on the selected locked date. For reference, the locked in date and time appear at the top of the window in the Selected Date location.

## Fault Zone Analysis



**Figure 9: Fault Zone Analysis**

The Fault Zone Analysis window, Figure 9, displays an ocular graph of the six fault zones color coded to their asset health condition and the asset's test values. Clicking on each fault zone at the center of the graph displays the values for that fault zone in the outer ring. A description of the test value appears on the lower right side of the window. Clicking on the Asset Health Condition Code (top section of the right hand column) opens the Asset Health Level Update window allowing you to change the asset health condition code of that asset. Clicking on the other buttons in the column opens the appropriate window to display the selected asset's test values.

From the View menu, Refresh returns to the original ocular graph/view and Fault Zone List View displays the Fault Zone Analysis in a table format in a new window.

For a full description of the Fault Zone Analysis window see Chapter 3 of the Product Support Manual.

## WatchList

The WatchList window opens when MCEGold is started or when the WatchList icon  is selected from the toolbar.

The WatchList window (Figure 10) can be used for multiple purposes. For example, it can be a list of critical motors or a service route for the technician or both. The WatchList can contain lists developed by multiple users.

The window consists of three sections, the upper left section displays the various lists created by the user, the lower left section gives the details of the active list, and the large section to the right displays the assets in the active list. Due to computer screen

size limitations the complete WatchList window is not visible. To view the complete window it is necessary to maximize the window using the square maximize button in the upper right or scroll left and right using the scroll bar across the bottom.

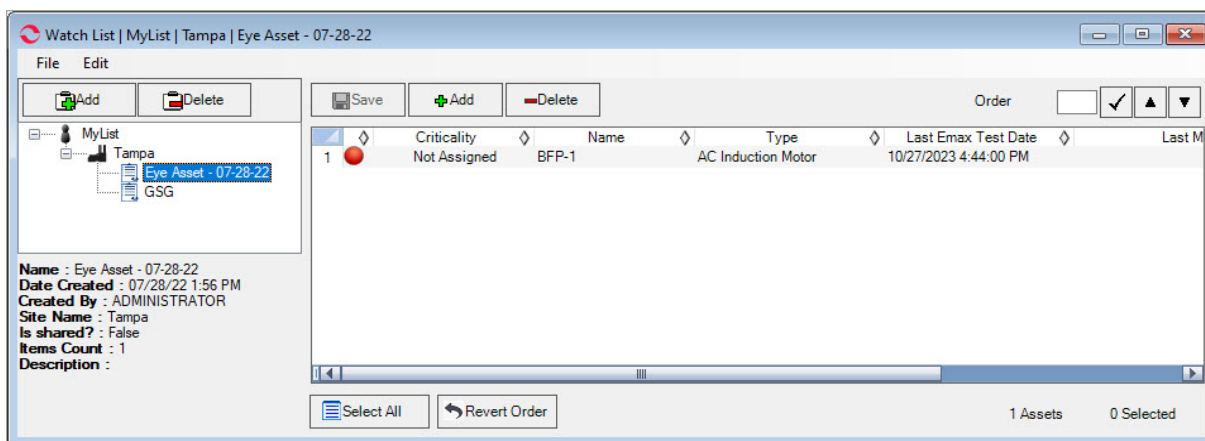


Figure 10: WatchList Window

## Create a WatchList

1. In the WatchList window (upper left section), click  .
2. In the WatchList Create window (Figure 8 on page 12) fill in the name for your list, check the Shared box if you wish others to be able to view or make changes to this list. Enter a description. All other information is automatically entered for you. Click **Create**. The  icon and list name will appear on the layout displayed in the upper left section of the WatchList window. The lower left section gives the details of the WatchList.

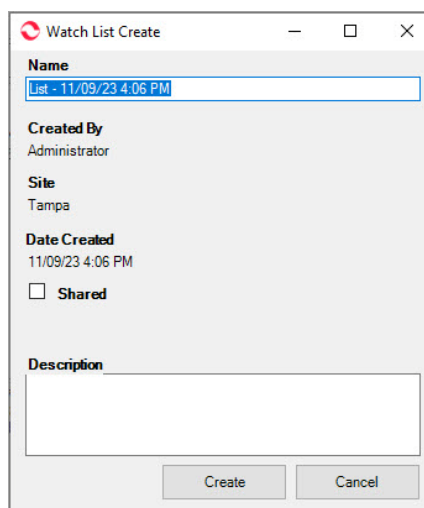
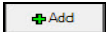


Figure 11: WatchList Create Window

## Add Asset to WatchList

1. Highlight the asset in the Site Navigator window.
2. Highlight the WatchList name in the upper left section.
3. In the section above the asset list on the right, click . The asset information is added to the WatchList.

## Delete WatchList or Asset

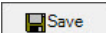
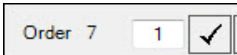
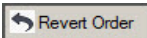


, found in the upper left section, deletes the selected WatchList and



, found above the asset list section on the right, deletes the selected asset from the WatchList.

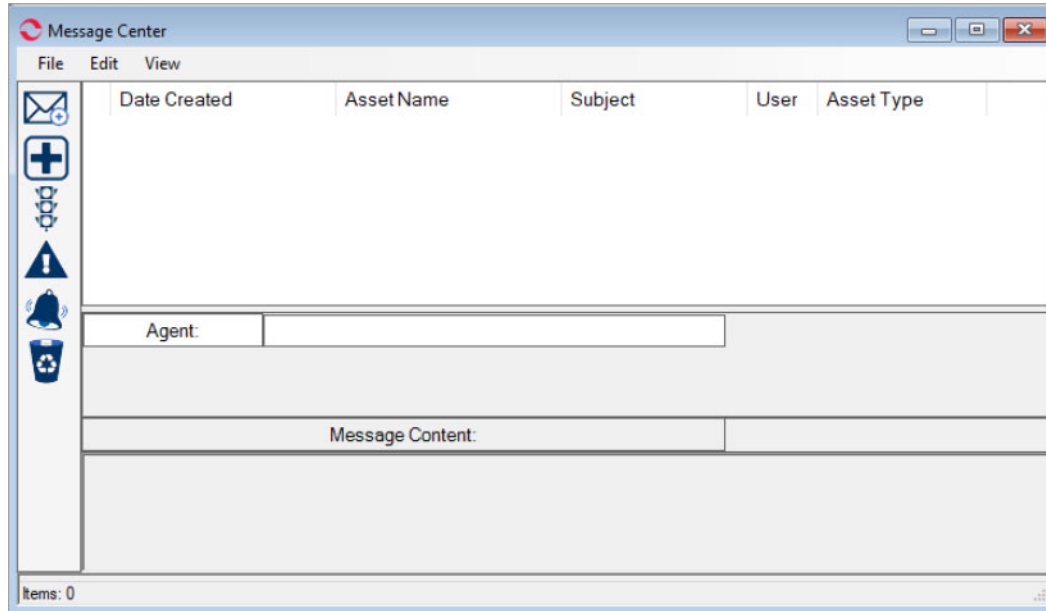
## Other Useful WatchList Information

- Save icon  saves the WatchList. If you do not save your changes, you will be prompted to save upon closing the WatchList or closing MCEGold.
- To move one asset to a different row/order, highlight the asset, enter the desired row/order number in the text box, and click the check button.  In this example the asset on line 7 will be moved to line 1.
- The Up and Down icons  move the selected asset up or down one level.
- You may change the order of the asset list by highlighting the number to the left of the asset and dragging it to a new location in the list.
- To return the asset list to its default order click the Revert Order button  located at the bottom of the window.
- Clicking on an asset name causes it to be located and highlighted on the Site Navigator.

## Message Center

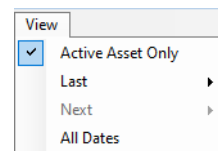
In Message Center you can enter, view, and delete messages for one asset or a list of assets.

The Message Center window (Figure 12) opens when MCEGold is started or when the Message icon  is selected on the toolbar.



**Figure 12: Message Center**

1. When Message Center initially opens, the Asset Diagnostic  option is the default setting.
2. Select View and verify that Active Asset Only (default) is in the checked or unchecked position (which ever is desired).



If Active Asset Only is checked, then the asset selected in Site Navigator is displayed, but only if it has messages associated with it.

If Active Asset Only is not checked in the View drop down list, a list of all the assets with messages will display. Highlight the asset to view its associated messages.

3. Proceed with the desired action for the message using the File, Edit, View menu or the icons in the left pane.

## Messages

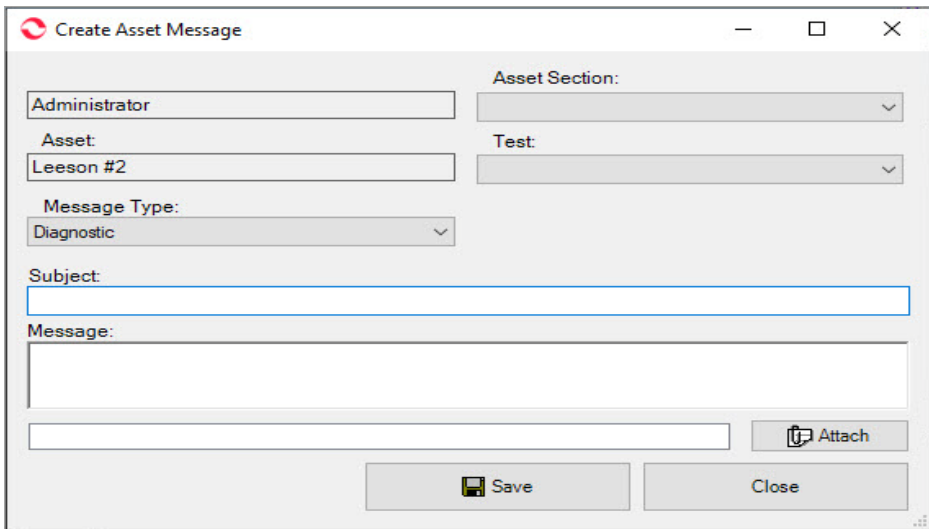
Note: Once a message is created it can be deleted, but no edits/changes can be made to it.

To view the message content, highlight the line that corresponds to the desired asset/message. The information is displayed in the Message Content section below the list.

## Compose

Note: Once a message is created it cannot be edited. It can be deleted, but no edits/changes can be made to it.

Using Compose allows you to add a message or attach files to an asset's record. Compose can be reached by selecting File, Create Message on the menu or clicking the Compose icon. The Create Asset Message window appears (Figure 13).

The image shows a software window titled "Create Asset Message". It contains several input fields and buttons. On the left, there are fields for "Administrator" (containing "Administrator"), "Asset:" (containing "Leeson #2"), and "Message Type:" (a dropdown menu showing "Diagnostic"). To the right of these is an "Asset Section:" dropdown menu. Below the "Asset Section:" is a "Test:" dropdown menu. Further down is a "Subject:" text field and a larger "Message:" text area. At the bottom right, there is an "Attach" button with a paperclip icon. At the bottom center, there is a "Save" button with a floppy disk icon. To the right of the "Save" button is a "Close" button. The window has standard minimize, maximize, and close window controls in the top right corner.

**Figure 13: Create Asset Message Window**

Subject and message are required fields. After composing the message you may attach a file or graphic by using the Attach button. When you are finished, click the Save button.

For more detailed information see Chapter 3 of the Product Support Manual.

## Condition Code

Messages are automatically generated when a condition is assigned or changed. Click the Condition Code icon to view assets that have condition code message associated this them.

## Warning Levels

Messages are automatically generated when a warning level is changed. Click the Asset Warning Levels icon to view assets that have an associated warning level.

## Event Alerts

Messages are automatically generated when an alarming condition is reached. Click the Event Alerts icon to view assets that have an associated warning level.

## Trash



Clicking the Trash icon displays a list of deleted messages. You can restore them to their original location by highlighting the message and selecting Edit, Restore Message from the menu. To permanently delete the message, select Edit, Delete Message from the menu.

To refresh the Message Center window, close the window and reopen it.

# Testing

## Segment vs. Asset

In the Site Navigator you can visually see your PdMAEYE hierarchy. At the top is the Site, under the site are the Folders. The PdMAEYE folder contains a Segment, which is the name of the PdMAEYE location. The segment has an asset associated with it. The asset is the motor or generator the PdMAEYE is attached to. The PdMAEYE folder can have multiple segments, but a segment can only have one asset.

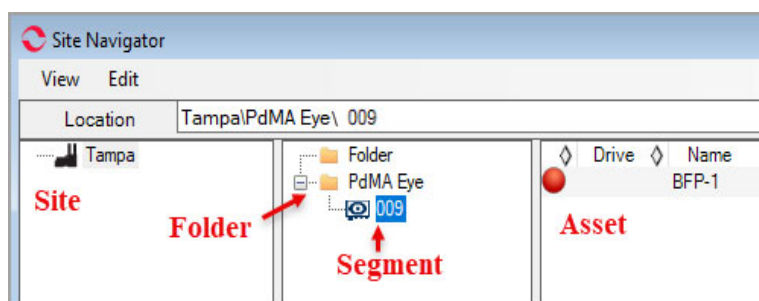


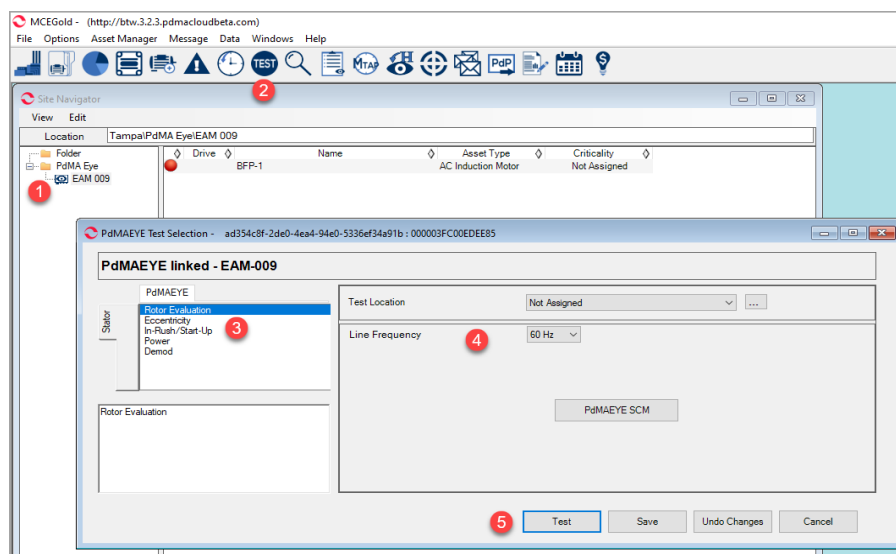
Figure 14: Site Navigator

## On-Demand Testing

It may be necessary to run just one test or you may desire an immediate test. To do that you can manually perform On-Demand testing. See Figure 15.

1. From the Site Navigator window, locate and highlight the PdMAEYE segment, not the associated asset.
2. Click the Test icon on the toolbar.
3. In the Test Selection window highlight the desired test.
4. Make any changes to the test setup.

- Click the **Test** button to start the test.

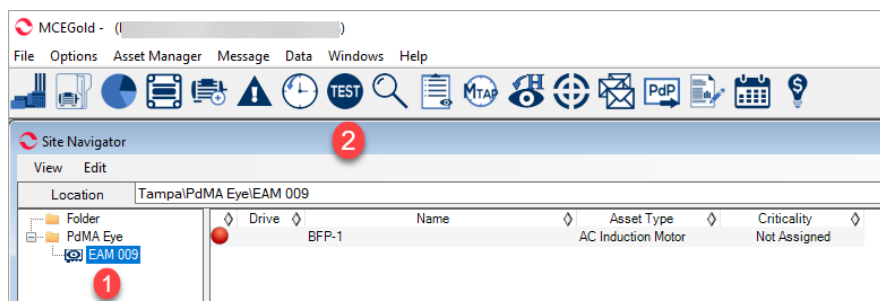


**Figure 15: On-Demand Testing Sequence**

## SCM Configuration Introduction

Prior to using the PdMAEYE you must configure the Signal Conditioning Modules (SCMs). SCMs are configured using either the Basic Configuration window or the Advanced SCM Configuration. This is a brief overview of the process. For detailed information see the Product Support Manual.

- Highlight the PdMAEYE segment (1).



**Figure 16: Signature Configuration**

- Click the Test icon on the tool bar (2).

3. In the PdMAEYE test selection window click the **PdMAEYE SCM** button.

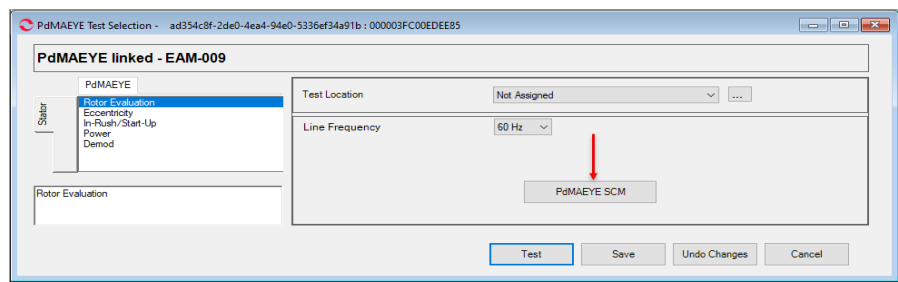


Figure 17: PdMAEYE Test Selection

4. The SCM Configuration window opens. Only cells with a white background are editable. To access the Advanced SCM Configuration window click the **Show Adv Config Info** button in the upper right. When you are in the Advanced SCM Configuration window the button changes to read Show Basic Config Info.

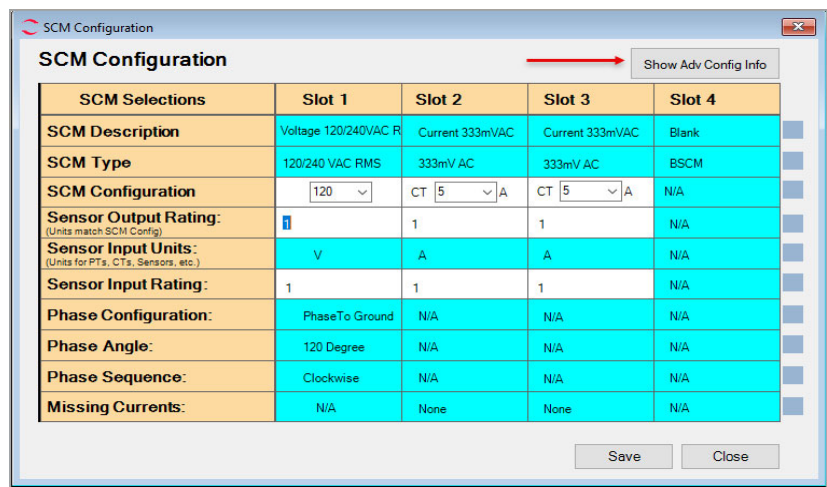


Figure 18: SCM Configuration

5. After making adjustments click **Save**.

### Toolbar Testing Icons

There are a possibility of three icons on the toolbar associated with testing. Which testing icons are available depends on your tester version.



**Test Selection** opens the Test Selection window so that you may setup the asset for testing if needed. There are different options depending on if you have selected an asset or segment in the Site Navigator. To test from a tester, select any one of the MCE or EMAX tests and click **Test**. From the Cloud desktop you can only modify and save a test setup.



**MCE Auto** icon only appears on a field tester, not the Cloud desktop. It automatically starts the Standard Test followed by the Polarization Index. At the end of the tests, after the results are saved, the Fault Zone Report is displayed. Before selecting the MCE Auto icon an asset must be selected in the Site Navigator.



**EMAX Auto** icon only appears on a field tester, not the Cloud desktop. It automatically starts the Rotor Evaluation, Eccentricity, Power and Demod tests. At the end of the tests, after the results are saved, the Fault Zone Analysis window displays. Before selecting the EMAX Auto icon an asset must be selected in the Site Navigator.

See the Product Support Manual for more information on testing.

## Reports

The Report Selection window (Figure 19) is reached by selecting the Report

icon  on the tool bar.

**Figure 19: Report Selection Window**

There are eight reports available: AC EMAX Summary, Asset Health Level, Asset Inventory, MCE Summary, Message History, PI DA Summary, Detailed, and Word Report Templates.

Depending on the Report selected the appearance and options in on the right section of the window will change.

Detailed instructions on using the reports are found in Chapter 3 of the Product Support Manual.

## Search and Advanced Search

Search is reached through the Search icon  on the toolbar. Use this to search by Asset/Segment Name or User Asset ID. To search using more in depth criteria use advanced search. To reach Advanced Search (Figure 20), click the Advanced button

on the lower right side of the Asset Search window. To return to the Asset Search window click the Simple Search button in the lower right corner.

Search and Advanced Search are discussed in detail in Chapter 3 of the Product Support Manual.

Figure 20: Advanced Search Window

## Multi Asset Setup Guide

### General Description

#### 3 in 1 Asset Management

Beginning with V3.2.11 MCEGold enables a single PdMAEYE to capture power test data from up to three AC induction motors. The Multi-Asset Mode only works with AC Induction Motors. When more than one AC Induction Motor is monitored by a single PdMAEYE, we will refer to this new feature as Multi-Asset Mode or 3 in 1 and in some instances Trio. When a PdMAEYE is set up to capture data for a single asset we will refer to this as Single Asset Mode.

To support the new Multi-Asset Mode feature, there have been a few modifications to initially setting up the PdMAEYE. This guide will aid the user in setting up the PdMAEYE hardware and setting up MCEGold for Multi-Asset Mode. This guide will cover several areas of change including setting

up segments in Site Navigator, setting up the PdMAEYE using Controller Dashboard, linking segments to the PdMAEYE, SCM Configuration, setting up Test Scheduler, and review of test data using the History Chart.

### Setting up PdMAEYE Hardware for Multi-Asset Mode

In Multi-Asset Mode, the Voltage is monitored using only Slot 1 voltage SCM for all three assets so it must be from the same point (such as a common bus). The current from up to three assets must be connected to the appropriate slots of the PdMAEYE as follows. Asset 1 current will be monitored on Slot 2, Asset 2 current will be monitored on Slot 3, and Asset 3 current will be monitored on Slot 4. For details on installation see the PdMAEYE Installation Manual.

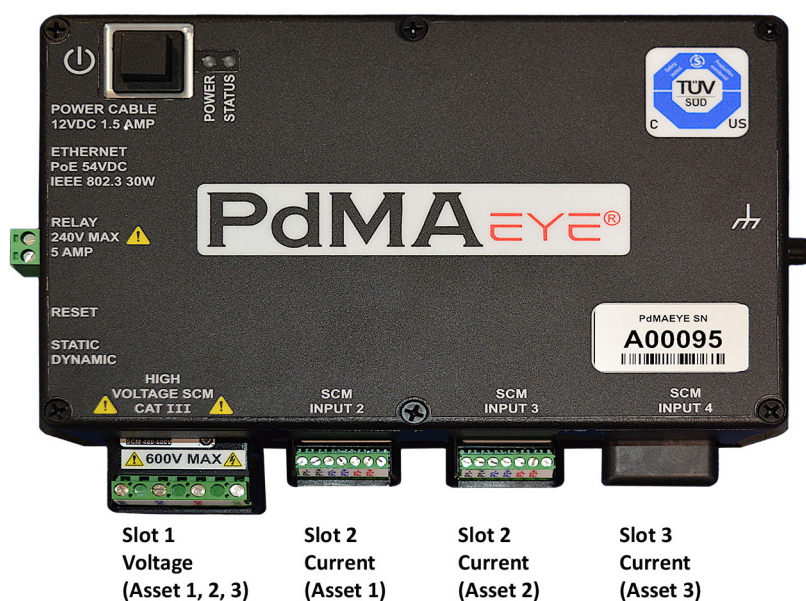


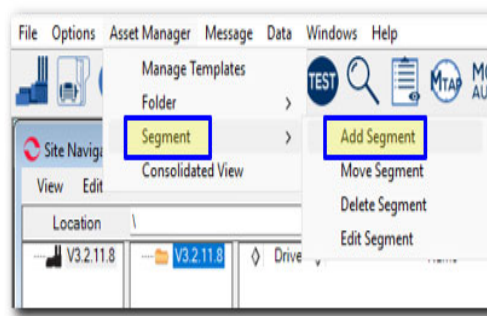
Figure 21: Connection of Multi-Assets to PdMAEYE

### Setting Up MCEGold for Multi-Asset Mode

#### Add Segments in Site Navigator

First up to three segments need to be created for each PdMAEYE that will monitor multiple assets. For the purposes of this guide, only one PdMAEYE monitoring three assets will be used. For more detailed instructions on using Site Navigator, adding folders, or adding Segments, see the PdMAEYE Getting Starting Guide.

To add Segments, go to the desired site using Site Navigator, highlight the desired folder for the segments. Select Asset Manager, Segment, Add Segment (Figure 2). Add up to three segments (one for each asset) for each PdMAEYE.

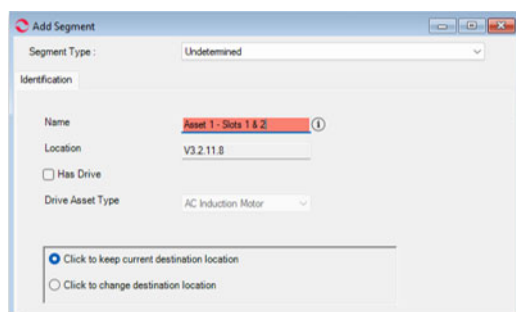


**Figure 22: Add Segment**

**NOTE:** Ensure that you highlight the folder before adding each segment.

### **Add Segment # 1**

1. Fill in the segment name in the Name text box. In our example we name the segment Asset 1 - Slots 1 & 2.



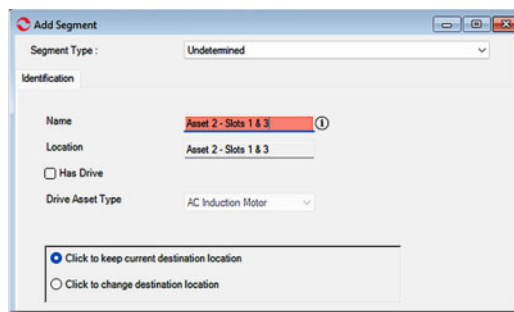
**Figure 23: Add Segment #1**

2. Click **OK** or **Apply**.
3. Proceed to Add Segment #2.

### **Add Segment #2**

1. Highlight the folder again and select Asset Manager, Segment, Add Segment.

2. Fill in the segment name in the Name text box. For our example, we will name it “Asset 2 - Slots 1 & 3” (Figure 24).



**Figure 24: Add Segment #2**

**NOTE:** If you did not highlight the folder prior to adding a segment in the above step, you may receive an Add Segment error message shown in Figure 25. Click **OK**. Go to Step 1 to add Segment #2.



**Figure 25: Add Segment Error Message**

3. Click **OK** or **Apply**.
4. Proceed to add Segment # 3.

### **Add Segment #3**

1. Highlight the folder again and select Asset Manager, Segment, Add Segment.

2. Fill in the segment name in the Name text box. For our example, we will name it Asset 3 - Slots 1 & 4 (Figure 26).

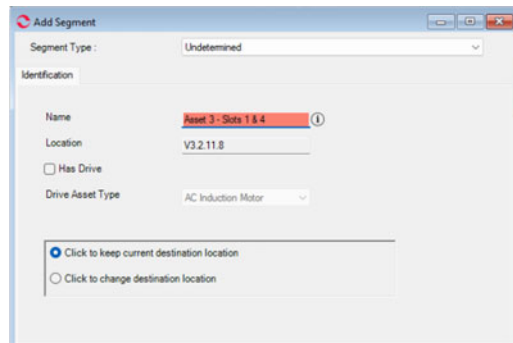


Figure 26: Add Segment #3

3. Click **OK** or **Apply**.

Once all three segments have been added your folder it should look like that shown in Figure 27.

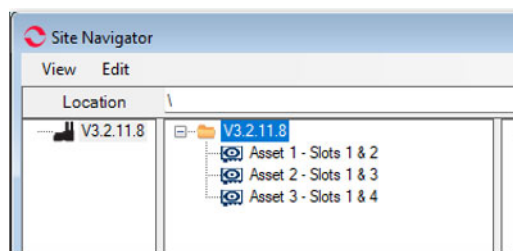


Figure 27: All Three Segments Added to the Folder

## Controller Dashboard

### Open Controller Dashboard

1. Using Asset Manager, open the Controller Dashboard (Figure 28).

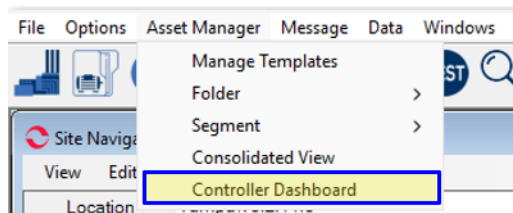


Figure 28: Open Controller Dashboard

4. The Controller Dashboard window should open as shown in Figure 29.

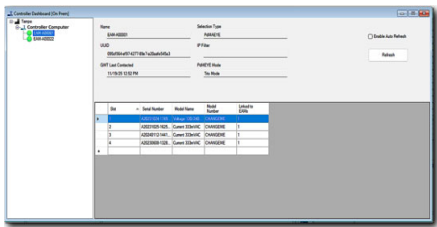


Figure 29: Controller Dashboard

**Edit PdMAEYE**

1. Right click on the PdMAEYE and from the pop-up menu select edit PdMAEYE as shown in Figure 30.

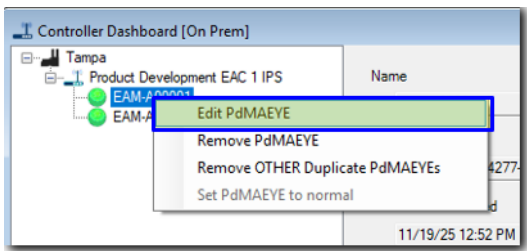


Figure 30: Edit PdMAEYE

2. The Edit PdMAEYE Window opens. The PdMAEYE Serial Number, PdMAEYE Name, IP Address, and Multi Mode is populated as shown in Figure 31.

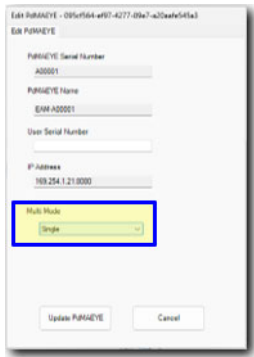


Figure 31: Edit PdMAEYE Window

3. Using the Multi Mode drop-down selection, select Trio as shown in Figure 32.

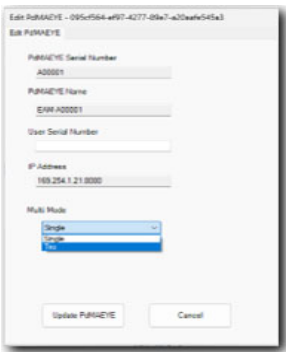


Figure 32: Multi Mode Drop-Down Select Trio

4. Click **Update PdMAEYE** (Figure 33).



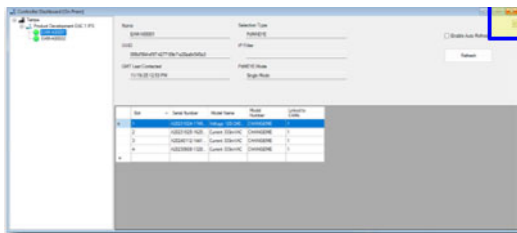
Figure 33: Update PdMAEYE

NOTE: If Multi Mode says Trio, click **Cancel** (Figure34).



Figure 34: Click Cancel

- Close the Controller Dashboard using the Red “X” in the upper right corner (Figure 35).



**Figure 35: Close Controller Dashboard**

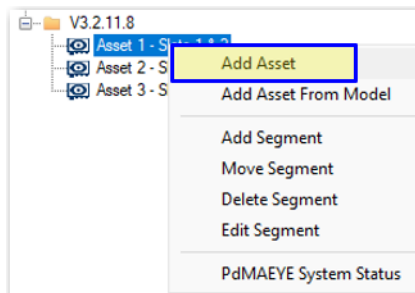
### Add Assets Under Each Segment

The Multi-Asset Mode only works with AC Induction Motors so all references to assets refers to an AC Induction Motor asset type.

NOTE: If you already have existing assets proceed to the section Move Assets Under Each Segment on page 10.

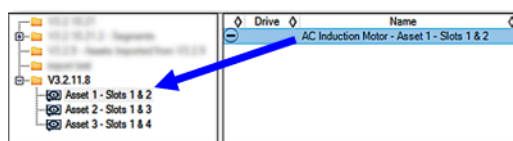
In the following steps, if an asset does not exist it will be added to each of the segments that were created.

- Right click the segment for Asset 1 and click Add Asset (Figure 36).



**Figure 36: Add Asset**

- Add an AC Induction Motor asset underneath the segment (Figure 37).



**Figure 37: Add or Move a Desired Asset Underneath the Segment**

- Repeat this procedure until you have an asset under each of the three segments.

NOTE: If you try to add an asset below a segment that already contains an asset you will see the Segment Info error message below (Figure 38).



Figure 38: Segment Info Error Message

Each segment should have an asset under it and should appear similar to those shown in Figures 39 to 41.

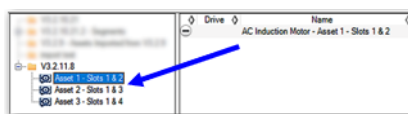


Figure 39: Asset 1 Under Segment 1



Figure 40: Asset 2 Under Segment 2

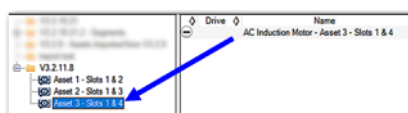


Figure 41: Asset 3 Under Segment 3

## Move Assets Under Each Segment

If you already have assets underneath each segment, proceed to the section *Link PdMAEYE to Segments* on page 31. Otherwise, if you have existing assets to move, follow the procedure in this section to move them into the appropriate segments created earlier. In our example, there are three assets underneath the V3.2.11.8 – Move Assets folder. They need to be moved to the appropriate Segment for each asset.

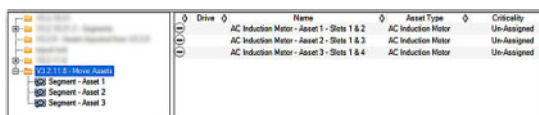
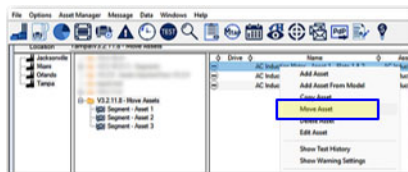


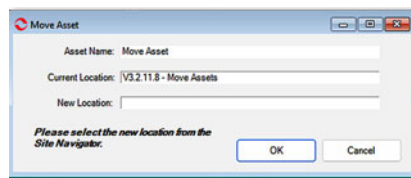
Figure 42: Existing Asset to Move

1. Right click on the first asset (Asset 1 for our example) to be moved and select Move Asset (Figure 43).



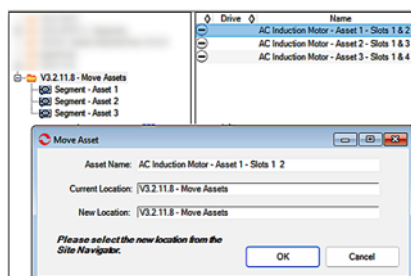
**Figure 43: Select Move Asset**

2. The Move Asset window appears (Figure 44).



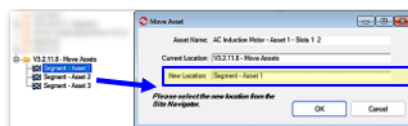
**Figure 44: Move Asset Window**

3. From the Site Navigator select the segment you wish to move the asset underneath. In our example, we are moving Asset 1 underneath Segment 1 (Figure 45).



**Figure 45: Click the Segment You Wish to Move the Asset Underneath**

4. If the location that appears in the New Location text box is correct click **OK** (Figure 46).

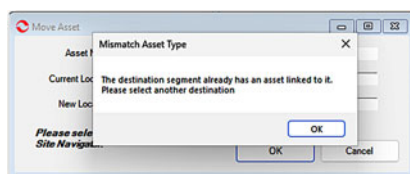


**Figure 46: New Location is Correct, Click OK**



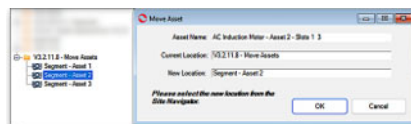
**Figure 47: Asset Moved Successfully**

5. If the segment already contains an asset, you may see the Mismatch Asset Type error message shown in Figure 48.



**Figure 48: Mismatch Asset Type Error Message**

6. Click **OK**, then select the appropriate segment which is Segment 2 – Asset 2 in our example. Click **OK**.



**Figure 49: Click OK**

7. The Asset Moved Successfully message appears indicating the asset was moved into the segment. Click **OK**.



**Figure 50: Move Asset Successful Message**

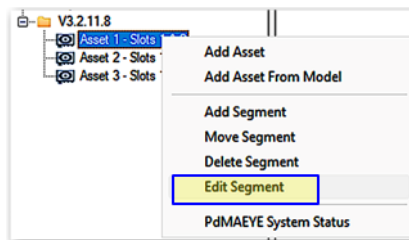
Each segment should have an asset under it and should appear similar to those shown in Figures 39 to 41.

## Link PdMAEYE to Segments

Next the PdMAEYE needs to be linked with each segment

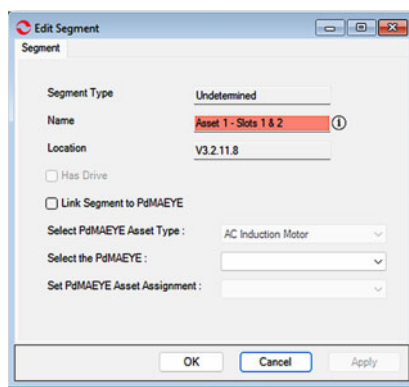
1. Highlight the segment with the asset that is physically connected to Slots 1 & 2. In our example that is Asset 1.

2. Right click on the Segment.
3. Click Edit Segment (Figure 51).



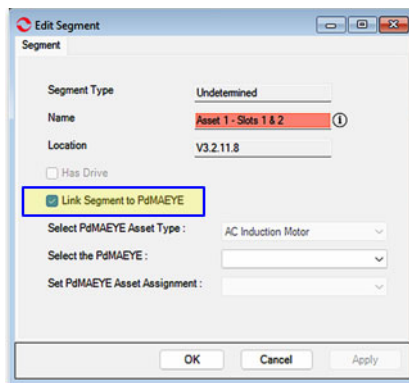
**Figure 51: Edit Segment**

4. The Edit Segment window appears (Figure 52).



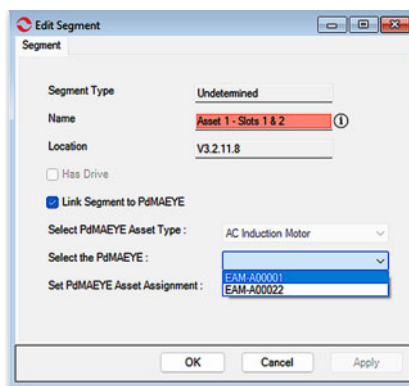
**Figure 52: Edit Segment Window**

5. Click the check box Link Segment to PdMAEYE (Figure 53).



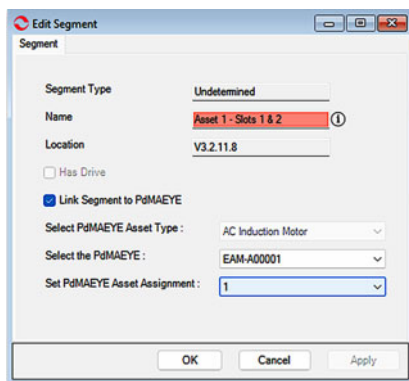
**Figure 53: Edit Segment Window**

- From the Select the PdMAEYE drop-down list select the appropriate PdMAEYE associated with that segment. In our example the PdMAEYE is labeled EAM-A00001 (Figure 54). If you do not see the correct PdMAEYE listed, go to *Reset the PdMAEYE* on page 34.



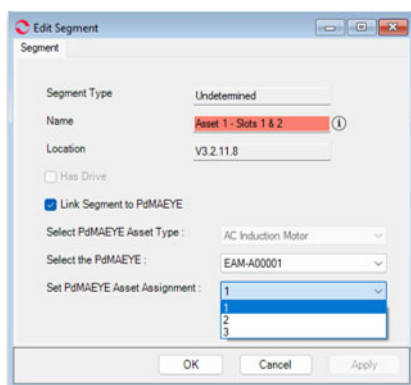
**Figure 54: Select the Appropriate PdMAEYE for the Segment**

- The number one (1) should appear in the Set PdMAEYE Asset Assignment text box (Figure 55).



**Figure 55: Assignment Mode 1**

- Click on the Set PdMAEYE Asset Assignment. You should see a list (1, 2, 3) (Figure 56).

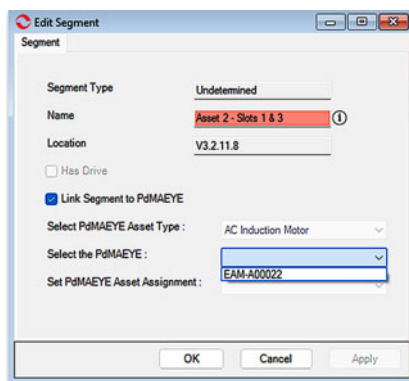


**Figure 56: Set PdMAEYE Asset Assignment**

9. If you see the list, ensure Asset Assignment 1 is selected.
10. Repeat the above procedure for linking the two remaining segments and assets. Once all three have been linked proceed to the section SCM Configuration on page XXX.

### Reset PdMAEYE

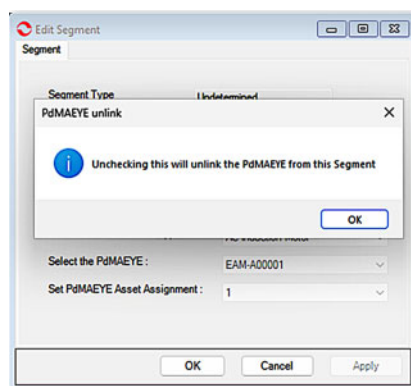
If you do not see the PdMAEYE (EAM-A00001 in our example) in the list shown (Figure 57) the PdMAEYE was not configured properly in the Controller Dashboard section. Continue with the following procedure to reset the PdMAEYE for proper configuration.



**Figure 57: Missing PdMAEYE EAM-A00001**

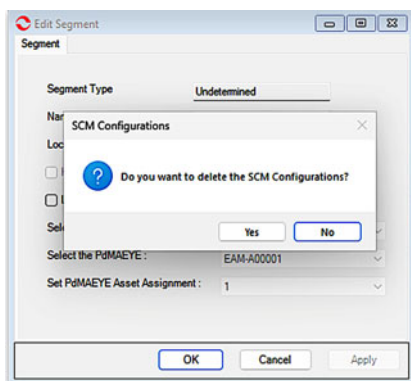
1. Since the PdMAEYE was not listed, the PdMAEYE will need to be unlinked from the segment. To unlink it, uncheck the Link Segment to PdMAEYE shown in Figure 57.

2. The PdMAEYE unlink message appears (Figure 58). Click OK.



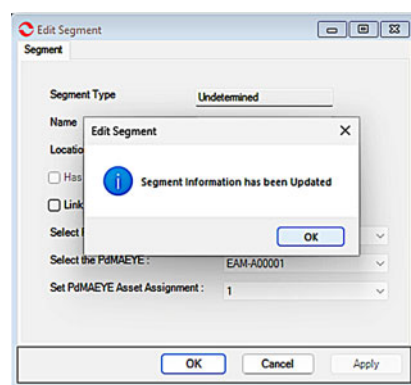
**Figure 58: Uncheck the Link Segment to PdMAEYE**

3. The SCM Configurations message appears. Click **Yes** to delete the SCM Configuration (Figure 59).



**Figure 59: Delete SCM Configurations message**

4. The Edit Segment window appears. Click **OK** (Figure 60).



**Figure 60: Edit Segment Information Has Been Updated.**

5. Return to the *Controller Dashboard* section on page 24 and follow the procedure again.

## Setup SCM Configuration

All three segments should now have assets and be linked to the PdMAEYE. Next, the SCMs need to be configured for each of the four slots. For questions on appropriate numbers and entries, refer to the PdMAEYE SCM Configuration Guide.

## Test Setup

1. Highlight any of the three segments added earlier. In our example, we will select the Asset 1 segment. Click the **Test** button on the toolbar (Figure 61).



Figure 61: Test Button on Toolbar

2. The Test setup window appears.

NOTE: If the segment was properly selected the PdMAEYE Test Selection window should look like that shown below (Figure 62). If it does not have the PdMAEYE tab shown and has the MCE and EMAX tabs, the asset was selected instead of the segment. In that case, click **Cancel**, select the appropriate segment, and begin the Test Setup section again.

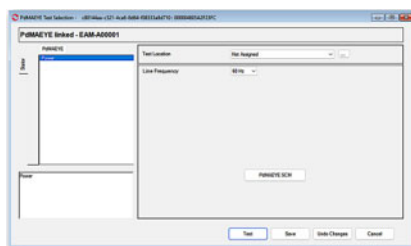
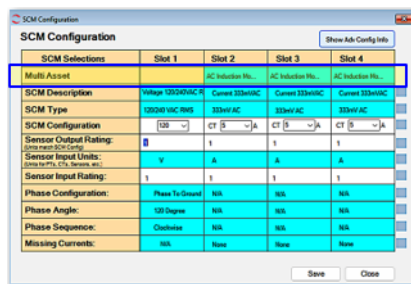


Figure 62: PdMAEYE Test Selection Window

3. The SCM Configuration window should look like Figure 63. The row named “Multi Asset” lists the names of the asset associated with Slot 2 through Slot 4. Slot 1 is used to capture voltage for all three assets.



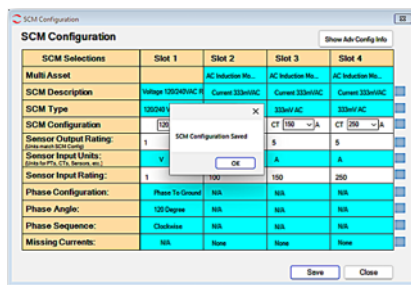
**Figure 63: SCM Configuration window**

4. Enter the appropriate information for the corresponding slot for each asset. In our example, Slot 2 is used with a secondary CT (100:5), and Slot 3 is used with a standard 150A:333mV CT (supplied by PdMA) and Slot 4 is used with a standard 250A:333mV CT (supplied by PdMA) (Figure 64). See the PdMAEYE SCM Configuration Guide for more information on SCM Configuration.



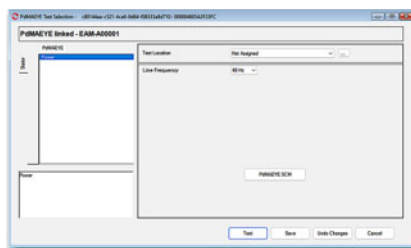
**Figure 64: Enter SCM Configuration Information for Slots 1 - 4**

5. When you finish entering the information, click **Save**.
6. When the SCM Configuration Saved message appears, click **OK** (Figure 65).



**Figure 65: SCM Configuration Saved**

7. The PdMAEYE Test Selection window should look like that shown in Figure 66.



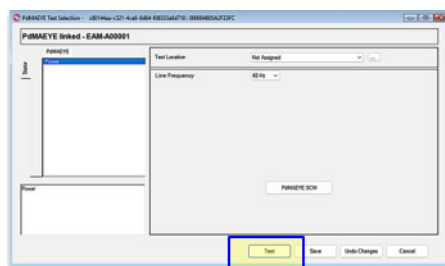
**Figure 66: PdMAEYE Test Selection Window**

8. SCM Configuration is complete for all 3 assets. Close the Test Setup window. Proceed to the next section *Run Power Test*.

### Run Power Test

For this portion, the motor should be running. If the motor is not running, wait until the motor is started.

1. Highlight the Asset 1 segment.
2. With the motor running, click the **Test** button on the PdMAEYE Test Selection window (Figure 67) to run an On-Demand Power test..



**Figure 67: With the Motor Running, Click the Test Button**

3. The Power Phasor diagram appears with values for both Voltage and Current and looks similar to that shown in Figure 68.

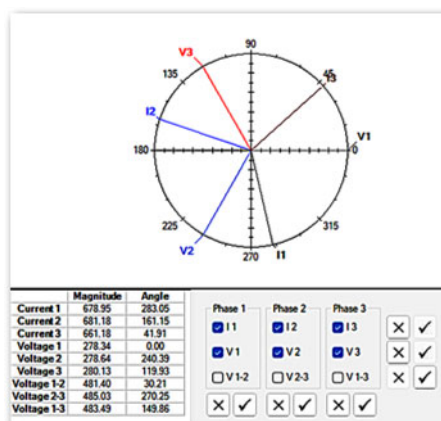


Figure 68: Power Phasor Diagram

4. Ensure the values are correct. If they are not correct, review the SCM Configuration. If the SCM Configuration is correct and the results in Phasor diagram are not correct, contact PdMA Technical Support at techsupport@pdma.cam or 813-774-9982.
5. Repeat the Power test on the segments for Asset 2 and Asset 3 ensuring appropriate results for each.
6. Once appropriate results are obtained, proceed to the next section *Test Schedule*.

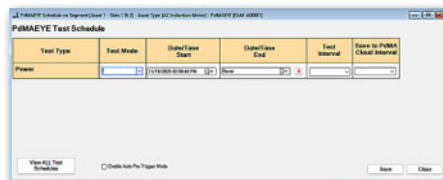
## Test Schedule

1. Click the **PdMAEYE Schedule** button on the Toolbar as shown in Figure 69.



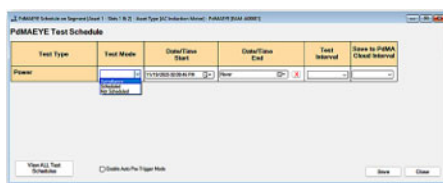
Figure 69: PdMAEYE Schedule Button

- The PdMAEYE Test Schedule window appears like that shown below. **NOTE:** For Multi-Asset Mode there should only be a Power Test type listed (Figure 70).



**Figure 70: Only a Power Test Type Should be Listed**

- In the Test Mode column use the drop-down list and select either Surveillance or Scheduled. Default Test Intervals and Save to PdMA Cloud Intervals will automatically populate. The defaults should be appropriate for most situations (Figure 71).



**Figure 71: Enter Test Schedule**

**NOTE:** ⚠️ Ensure that Enable Auto Pre-Trigger Mode is **NOT CHECKED**.

- The PdMAEYE Schedule should appear similar to that shown in Figure 72.



**Figure 72: Test Schedule Entered**

- Click **Save**.
- The Save Successful window appears Figure 72.



**Figure 73: Test Schedule Saved Successful**

- Click **OK**.

## Test History

- To verify that tests are being performed, highlight the asset (Asset 1 in our example), click the **Test History** button on the Toolbar (Figure 74).



Figure 74: Test History Button

- The Test History window appears (Figure 75).

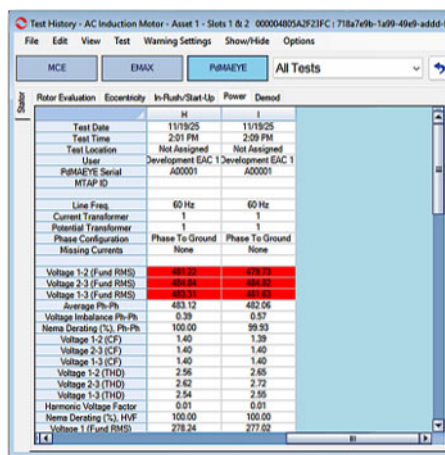


Figure 75: Test History

- Click the PdMAEYE button and select the Power tab. One or more columns of Power Test History should appear.

**NOTE:** It may take one save to the PdMA Cloud cycle for data to appear.

- Perform this step for the other two assets. If data is appearing correctly for all three assets, the PdMAEYE is capturing data correctly, the SCM Configuration is correct, and the Test Schedule is correct. The PdMAEYE is now ready for operation.

## Definitions

- Assignment (Asset Assignment)** – refers to the selection of up to 3 assets on a multi asset segment. Assignment # 1 – will test Asset # 1 using Slots 1 & 2 of the PdMAEYE. Assignment # 2 – will test Asset # 2 using Slots 1 & 3 of the PdMAEYE. Assignment # 3 – will test Asset # 3 using Slots 1 & 4 of the PdMAEYE. Note that in all cases Voltage for the assets will be obtained using Slot 1 of the PdMAEYE.
- Multi Asset Mode** – refers to the ability to test multiple assets (up to 3) using a single PdMAEYE.

3. **Multi Asset Segment** – refers to a segment that allows up to 3 assets to be tested under a single segment.
4. **On-Prem (On-Premise)** – refers to a PdMA network product that fully resides within a customer's own network without external access to the Internet, etc.
5. **Single Asset Mode** – refers to the ability to test a single asset with a single PdMAEYE.
6. **Single Asset Segment** – refers to a segment that allows only a one asset of any type (i.e., AC & DC motors/generators with or without a drive) to be under the segment.
7. **Test Section** – refers to the tabs at the side of the test setup screen. Also, refers to the tabs across the top in the history chart.
8. **Test Selection** – refers to the drop-down list in the test setup screen. These typically include Power, Eccentricity, Rotor Evaluation, etc.

## Shutting Down MCEGold

MCEGold may be shut down by selecting File, Close from the menu or clicking the close button (red X) in the upper right corner. You will be asked to verify that you want to close MCEGold.

## Where to Get Help

Technical Support is available Monday through Friday, 8 A.M. to 5 P.M., EST. You may contact PdMA Technical Support by any of the following methods.

- Telephone: (813) 774-9982
- Fax: (813) 620-0206
- Email: [techsupport@pdma.com](mailto:techsupport@pdma.com)
- Web site: [www.pdma.com](http://www.pdma.com)

## Product Support Manual

To access the Product Support Manual from the menu select Help, Product Manual. A window opens displaying each chapter in the manual as a PDF file. Double click the chapter you wish to view. You must have Adobe Acrobat Reader to view a PDF file. The free Reader can be downloaded from <http://www.adobe.com/products/reader.html>.

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