ProVision®

TRAINING SEMINAR

TIPS & TECHNIQUES TO GET THE MOST FROM PROVISION

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PROVISION TRAINING

CONTENTS:

PROVISION TRAINING

DISSCUSSION TOPICS:

The following topics will be covered during this Provision Training class:

- Opening Provision for the first time
- Changing the Options/Preferences selections
- Connecting to recorders
- Recorder initialization setting
- Custom Template usage
- Creating custom graphs
- Downloading recorder data
- Setting up Watcher folders
- Removing old data files
- Editing graphs
- Editing the Header report
- Selecting graph plots
- Exporting / E-mailing data, custom graphs, and templates
- Importing data, custom graphs, and templates
- Importing Winscan data
- Keeping recorder Firmware current
- Manual and White paper location
- Recorder hookup diagrams

SHORTCUTS:

GENERAL SHORTCUTS FOR MOST GRAPHS:

q Brings up the same menu as right-clicking
e,x Export dialog (Saves graphs as images)
p Print graph
s Toggle between color and Black and white
d Export text dialog
k Increase line thickness
j Decrease line thickness
b Set the upper and lower bounds
m Maximize graph
t Toggle the Point Table ON or OFF.
- Move your mouse to a peak on the graph, your cursor will turn into a finger, left-click mouse to set the reference line.
- With the Point Table ON you can: Use arrow keys (or page up/down) to move the 'Point' to the previous or next point.

Zooming: Zoom in on any graph. Left click mouse and hold, then drag mouse over the area to zoom in on. Release the left button to zoom into the window you made. Supports multiple zooms.
- Use arrow keys to move the zoomed window Left or Right, through the interval data.

u Undo one zoom level
z Undo all zoom levels

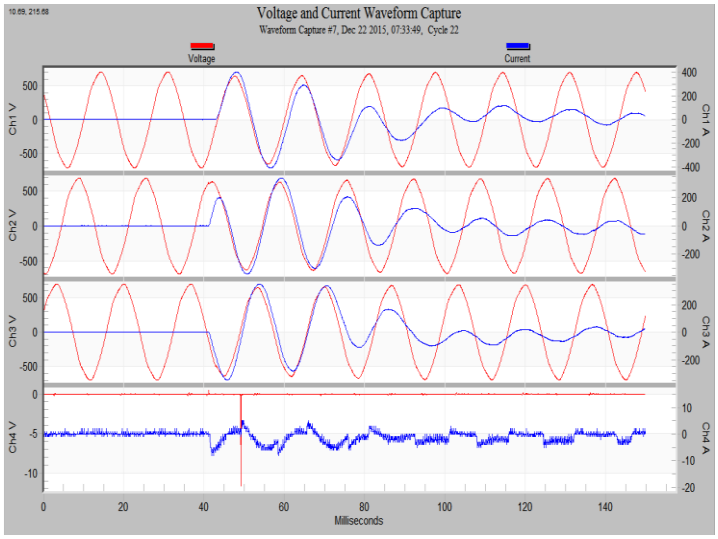
CONTROL KEY SHORTCUTS

Ctrl+O: Open file
Ctrl+X: Cut
Ctrl+S: Save file
Ctrl+V: Paste
Ctrl+P: Print
Ctrl+C: Copy
Ctrl+Z: Undo
Ctrl+Y: Redo
F1: Help
Ctrl+Shift+U: Full screen
Ctrl+Shift+F: Find in files
Ctrl+Shift+B: Display or hide the shortcut bar

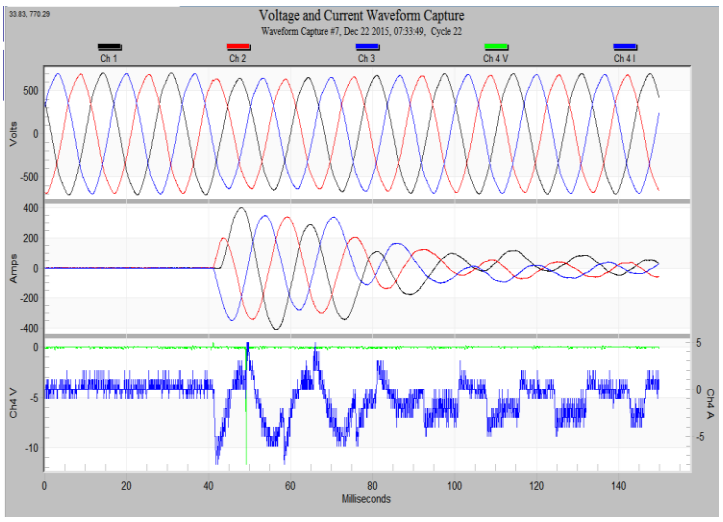
SHORTCUTS FOR THE WAVEFORM CAPTURE ONLY

3 Toggle between 3-phase and individual phase views
l Toggle between Line-to-neutral voltages and Line-to-line Voltages Only if recorded as a WYE
L Select a different waveform
f Toggle fundamental harmonic

Page Up: Move to previous WaveForm Capture
Page Down: Move to next Waveform Capture

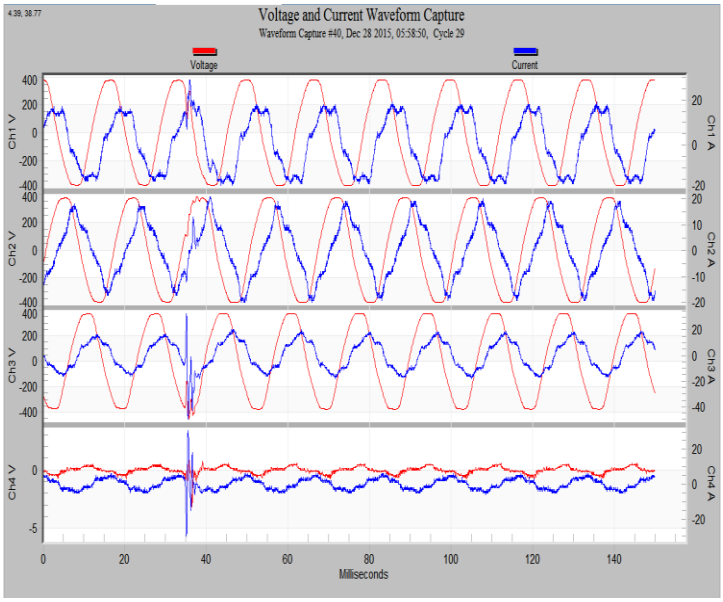


Example 1: Standard Waveform Capture graph

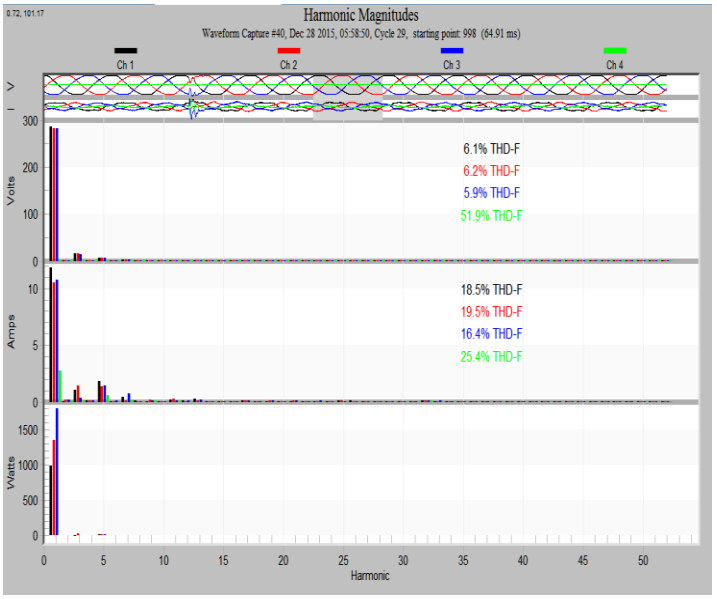


Example 1A: Using the 3 to toggle between 3-phase and individual phase views

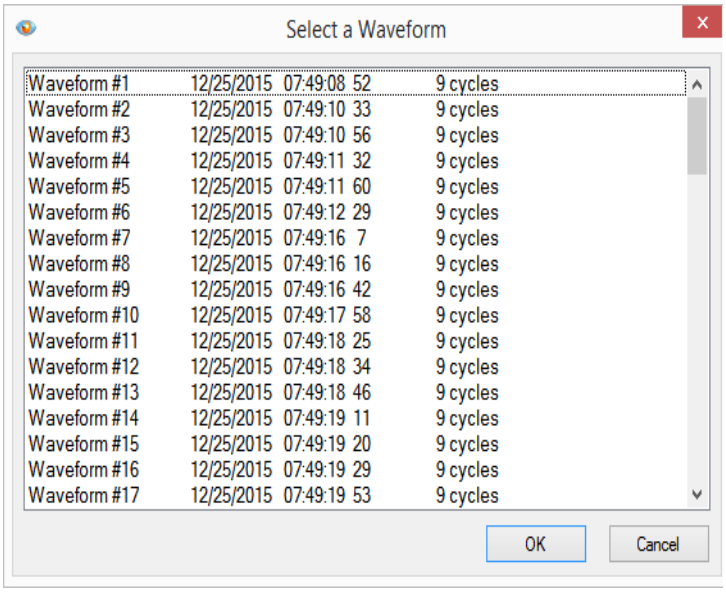
SHORTCUTS:



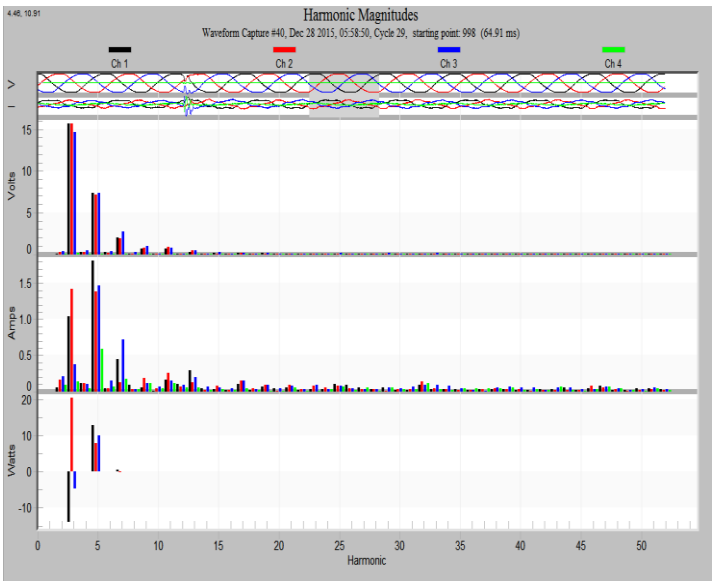
Example 1B: Use the L to select different waveforms



Example 2: With Fundamental displayed



Example 1C: List of Waveforms



Example 2A: Without Fundamental. Toggle using the 'f' key

GETTING STARTED:

Installing ProVision:

- The latest ProVision software can be installed from the PMI website: http://www.powermonitors.com/download/software
- The latest USB driver – needed to connect all recorders to ProVision, can also be downloaded from the PMI website: http://www.powermonitors.com/download/drivers
- Software CDs are available on request
- Save and execute the .msi files then select all the default options during the installation.

CONNECTING RECORDERS:

USB

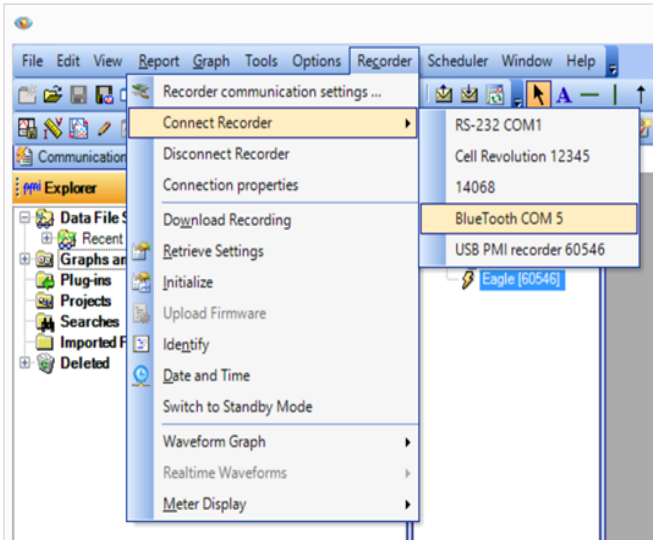
- ProVision automatically scans for any connected PMI recorder
- Detected recorders are displayed in the Devices Tree in ProVision

Cell modem

- PMI Technical Support will need to be contacted to initially configure your cell devices
- Select the Recorder tab, then select Connect Recorder and the recorder name or serial number listed

Serial

- Serial Serial recorders will need external power applied to the recorder
- Select the Recorder Tab, then select Connect Recorder and the PMI USB Adapter Cable



Example 3: Connecting to a PMI recorder

BlueTooth

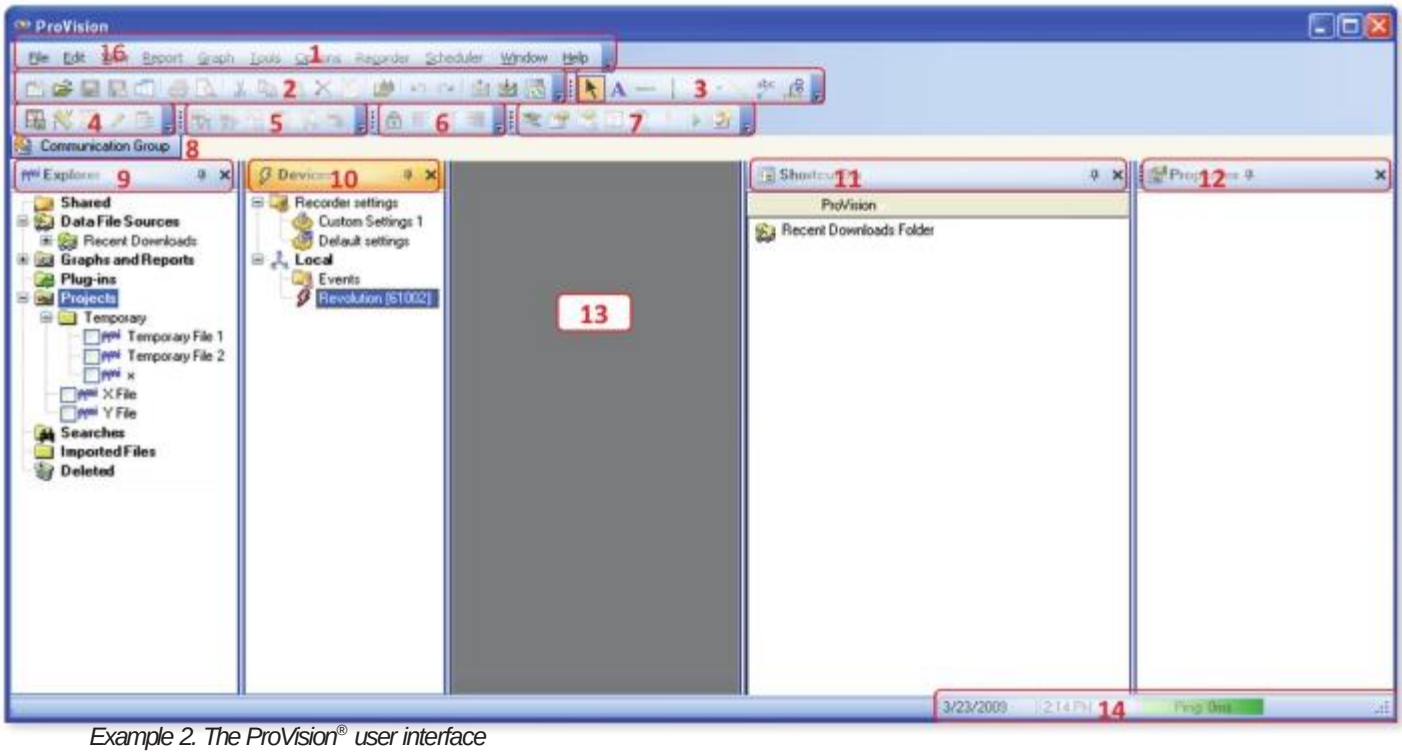
- First, use the PC's BlueTooth manager to pair the PC to the recorder (*pmi* is the pairing code)
- Use the Outgoing COMM port number that is created to configure ProVision.
    - Select the Options tab, then Communications Port Settings. Click the Add button, then serial. Name the connection and select a Serial Port number. Check the "This is a Bluetooth Connection" box and Save.
- Select the Recorder tab, then select Connect Recorder and the BlueTooth recorder name

WiFi

- First, use the PC's Network manager to connect to the recorders WiFi network. Use the recorder's WiFi address when configuring ProVision.

PROVISION TRAINING

GETTING STARTED:



Example 2. The ProVision® user interface

THE PROVISION USER INTERFACE

1. Menu Toolbar: File, Edit, View, Report, Graph, Tools, Options, Recorder, Scheduler, Window, and Help menu
2. Standard Buttons: Create a New Project, Open, Save, Save Graph As Template, Merge Files, Print, Print Preview, Cut, Copy, Paste, Delete, Edit Report Header, Find in Files, Undo, Redo, Send Via E-mail, Receive Via E-mail, and Sync Mobile buttons
3. Graph Annotation Buttons: Pointer For Annotation, Text Annotation, Horizontal Line Annotation, Vertical Line Annotation, Arrow Annotation, Line Annotation, Pointer Annotation, and X Axis Annotation buttons
4. Advanced Buttons: Capture View, Scale Factor, New Mixed Graph, Legend Editor, and Select Plots buttons
5. Waveform Buttons: V/I Waveform, Real Power Waveform, Harmonic Graph, Vector Graph, Parametric Waveform, and Record Waveform buttons.
6. Trace Moving Buttons: Unlock X Axis, Left Justify On Axis, Center Justify On Axis, and Right Justify On Axis buttons
7. Recorder Buttons: Add, Retrieve Settings, Initialize, Identify, Date and Time, Standby, Ready, and Add Event buttons
8. Communication Group Window: Displays the status of communication tasks.
9. Explorer Tree: Watcher folders, Recent Downloads, Graphs and Reports, Projects, Searches, Imported Files, Deleted Files
10. Devices Tree: Recorder Initialization Settings, Events, and connected recorders
11. Provision Shortcuts
12. Properties Window: Properties of currently viewed graph
13. Main Workspace: Main workspace where all graphs and reports will open
14. Date, Time, and ProVision® Intercommunicator Status: Place file in Projects folder, right-click on the file, and select Send by E-mail
15. Select Send selected object to the following address (Microsoft Outlook users only) and type in recipient's e-mail address, or select Save object to file you could send later, type in file name, browse to desired directory, save the file, and send via e-mail as an attachment.
16. View Menu. Use the View menu to hide and unhide the *Communication Group Window, Explorer Tree, Devices Tree, Shortcut Bar, Status Bar* and *Properties Window.* These can also be pinned or unpinned so that they are either always displayed or automatically minimized when the cursor is moved away from them.

PROVISION TRAINING

GETTING STARTED:

RETRIEVING AND SETTING THE RECORDER'S DATE AND TIME

Click Recorder menu and select Date and Time

To synchronize recorder time with PC time, check box for Use PC Time and click OK.

VIEWING REAL-TIME DATA

Make sure recorder is in Ready mode, click on Recorder menu, and choose from Waveform Graph or Meter Display submenus.

UPLOADING FIRMWARE

New ProVision versions check for Firmware updated.

To manually download firmware go to:
http://www.powermonitors.com/download.

- Click Options menu and select Show Advanced Operations
- Click Recorder menu and select Upload Firmware.

DOWNLOADING A RECORDING

- Click on the Recorder menu and select Download Recording. Name the recording when finished and initialize.

ANALYZING DATA

- Select file by checking box left of the file name under PMI Explorer Window.
- Click Report or Graph menu and select desired report or graph or double-click on the file name to open the header report.
- To create a custom graph or report, use the Custom Graph Wizard
  (Click Tools menu and select Custom Graph Wizard)

SENDING DATA BY E-MAIL

- In the Explorer Tree of Provision, Right click on 'Recent Downloads' select 'Open in Explorer'. A window with all your data files will open. You can copy and paste from here to your email.

- If the file is larger than 10 Mb, you can right click on the file name and select 'Send To' then 'Compressed (zipped) folder'. This creates a <filename>.zip folder.

CUSTOMIZING SETTINGS

Click the Options menu, and select Preferences.

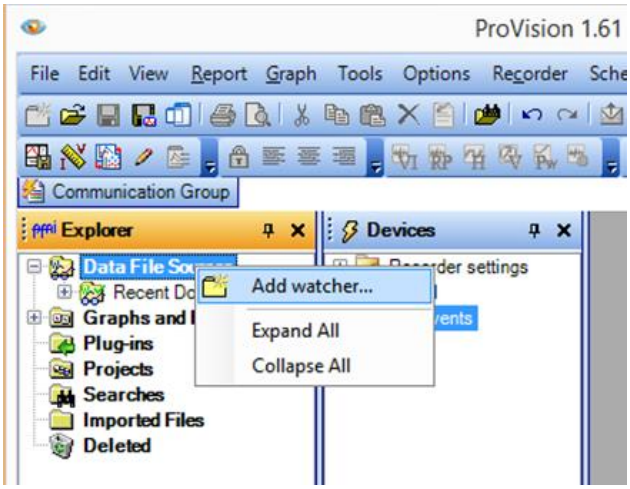
NOTE: Unfamiliarity with these choices when changing settings may have undesirable results.

USING THE WATCHER FOLDER:

A Watcher folder gives the user the ability to store and open ProVision data files in locations other than the default C: drive location.

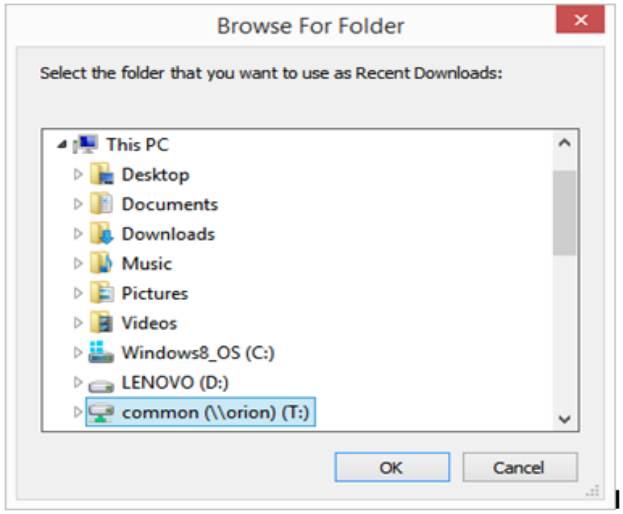
Commonly, Watcher folders are configured to access network drives, making it easier to share data files with other users.

When downloading a data file from a PMI recorder, the user can select a Watcher folder as the stored location, or can store the data file to the default Recent Downloads location and move or copy the data file to the Watcher folder at a later time.

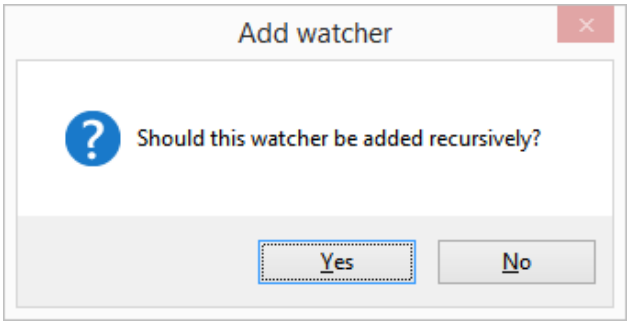


Add Watcher Step 1: Right-click on 'Data File Sources' to add a new watcher folder

Opening Files: To open a ProVision data file, double click on the file name in the Recent Downloads folder or another Watcher folder. The Header Report will be displayed. Alternatively, place a check in the box to the left of the data file name, and then select any report or graph under the Menu Toolbar tabs.



Add Watcher Step 2: Select Add Watcher then select the location of the new Watcher folder



Add Watcher Step 3: A Watcher added Recursively will display all subfolders in addition to the data files

Moving Files: Select the data file and Left-click the mouse to drag the file from one watcher to another.

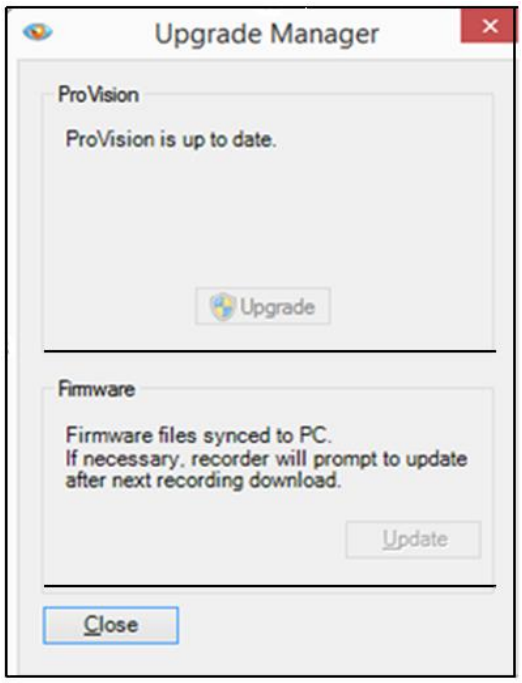
Copy Files: Select the data file, Right-click the mouse and select Copy, then select the destination Watcher folder, Right-click the mouse and select Paste. This creates a second copy of the data file.

Deleting Files: Select 'Recent Downloads' or another Watcher name, then Right-click the mouse and select 'Open in Explorer'. In the window that opens, Right-click and delete the target data file.

PROVISION TRAINING

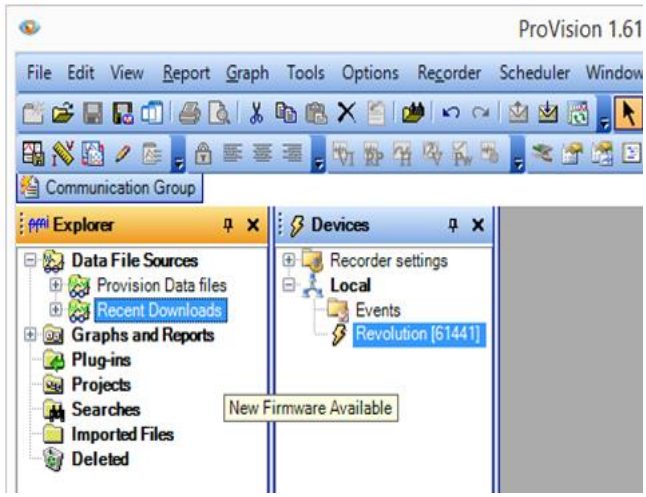
UPDATING FIRMWARE:

Recent versions of ProVision include the Upgrade Manager which allows the user an easy way to ensure that the ProVision software and the recorder Firmware are up-to-date.

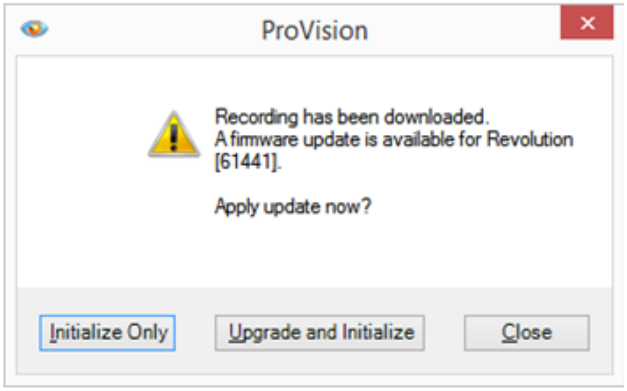


The Upgrade Manager is displayed when ProVision is started. Selecting the Upgrade button, when a new ProVision version is available, will close, update and reopen Provision. Selecting the Update button, will copy the Firmware files to your PC.

Updating Firmware: When a recorder is connected to Provision, the recorder's firmware is checked against the firmware files stored on the PC. If the recorder's firmware is out-of-date, the user will be asked to update the firmware after the next recorder download. A 'New Firmware Available' balloon will also be displayed.



After downloading the recorder, the user will be asked to update the Firmware. The recorder will also need to be reinitialized.

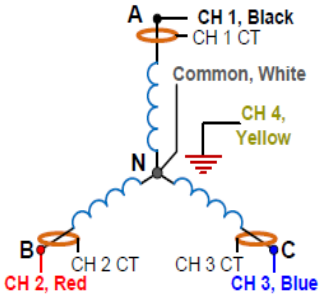


To hide the Upgrade Manager, select the Menu Options tab and Preferences, then de-select 'Check for Updates on Startup'.

The Upgrade Manager can be maually opened by selecting the Menu Help tab and 'Check for Updates'

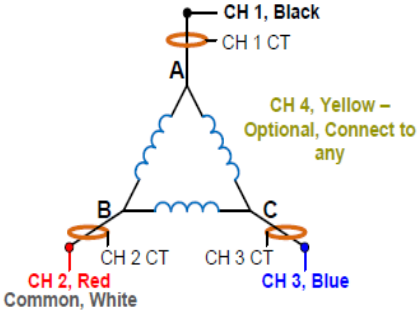
REVOLUTION and EAGLE 440 HOOKUP DIAGRAM:

Three Phase WYE



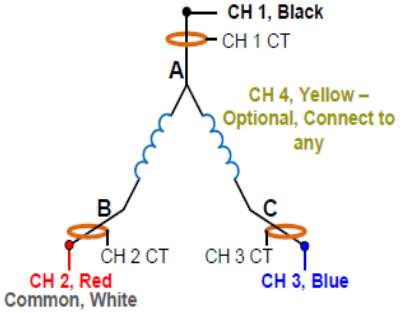
Set circuit type to "wye"

Three Phase Delta



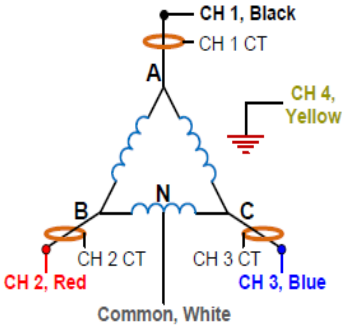
Set circuit type to "3 wire delta"

Open Delta



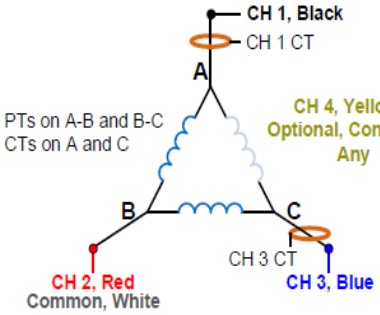
Set circuit type to "3 wire delta"

Four Wire Delta



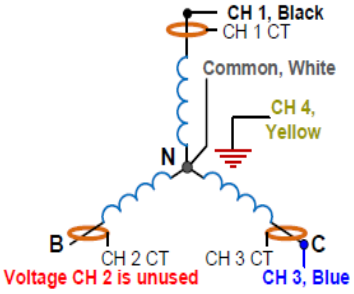
Set circuit type to "4 wire delta"

Two Element Delta



Set circuit type to "3 wire delta"

2½ Element WYE



Set circuit type to "2.5 el. wye"

2 Wire Single Phase

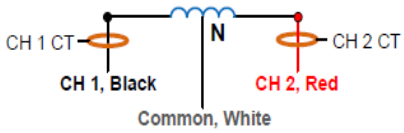
All Other Channels Optional

Set circuit type to "wye"

Notes:

- Directional arrows on CTs should point TOWARDS the load.
- The banana jacks are color-coded by channel: Black – Ch1, Red – Ch2, Blue – Ch3, Yellow – Ch4, White – Common. (Not all channels may apply, depending on your model.)
- Do not exceed 600 volts RMS channel-to-channel or channel-to-common.
- Disable unused channels in software for more recording time.
- Phase-to-Phase voltages are measured in 3-wire delta hookups.
- Line-to-neutral voltages are measured in wye hookups.

3 Wire Single Phase



All Other Channels Optional

Set circuit type to "wye"

SAFETY
- UL/IEC 61010-1 second edition
- 600V CAT III

WHEN CONNECTING THE SIGNAL MEASURING LEADS, DO NOT TOUCH ANY OF THE CONNECTION POINTS. LETHAL VOLTAGES MAY BE PRESENT WHICH CAN CAUSE SERIOUS INJURY OR DEATH.

Protective gloves, safety glasses, and any other PPE required by your organization's applicable safety policies should be worn at all times during installation, operation, and removal of the Eagle. Where possible during installation, disconnect power from any lines to which the Eagle will be attached.

REVOLUTION AND EAGLE HOOKUP:

When connecting the Eagle, keep the following in mind:

- The banana jacks are color-coded by channel: Black - Channel 1, Red - Channel 2, Blue - Channel 3, Yellow -Channel 4, and White - Common. (Not all channels may apply, depending on your model Eagle.)
- The unit is powered from the voltage between Channel 1 (Black) and common (White). For this reason the Black and White inputs must be connected even if you are not using all the input voltage channels. Do not exceed 600 volts RMS channel-to-channel or channel-to common.

When using a three-phase Eagle to monitor a single-phase system, either unplug the unused leads and connect them in parallel so that all channels are recording the same information, or clip them to the Common connection to avoid noise readings.

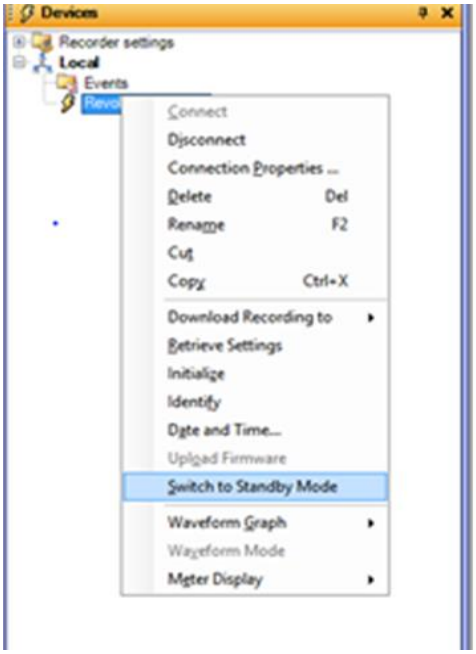
- When all CT channels are not required for hookup, unused channels may be connected as desired for additional monitoring.

Locate the hookup diagram on the other side of this Quick Start Guide that corresponds to your circuit type.

1. Wrap the CTs around the conductors with the arrows facing towards the load. Then connect the CT cable to the Eagle.
2. Connect the Common (White) voltage lead to the Eagle; and connect the voltage clip to the according to your circuit Type.
3. Connect the voltage leads for Channels 4 (Yellow), 3 (Blue), and 2 (Red) to the Eagle; then connect the voltage clips to clip the indicated Channel 2, 3, and 4 conductors.
4. Connect the Channel 1 (Black) voltage lead to the Eagle; then use the dolphin or alligator to attach it to the correct conductor.

Note: It is important to connect the Channel 1 voltage lead last, since this will start the two-minute countdown for recording.
The LED on the side of the Eagle will blink every other second during the two-minute countdown.
Once the two-minute countdown is completed, recording begins and the Status LED will blink once every six seconds.

DISCONNECTING AN EAGLE 440:



1: If possible, use ProVision to place the recorder in Standby Mode to stop recording.

2: Disconnect the CTs from the recorder then remove them from the conductors

3: Remove the Common (White) voltage lead from the recorder, and then remove the voltage clip from the conductor

4: Remove the connected voltage leads fom Channels 4 (yellow), 3 (blue), 2 (red), and 1(black) from the conductors, then remove the leads from the recorder.

APPENDIX A: VIP, IVS-3 REV2, and IVS-3/600P HOOKUP DIAGRAMS: