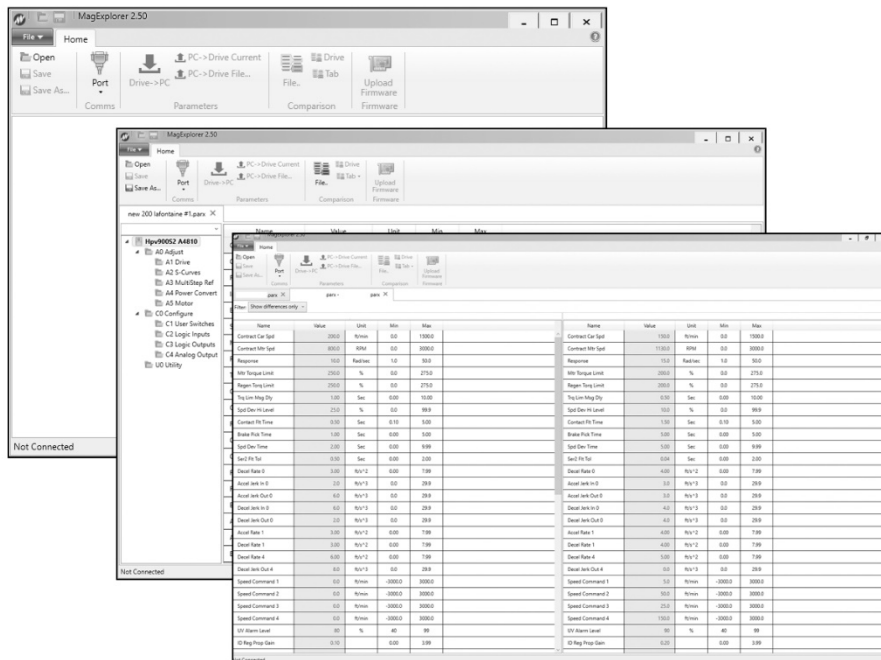




MAGNETEK
ELEVATOR

MagExplorer



Magnetek Explorer Instruction Manual

To properly use the product, read this manual thoroughly and retain for easy reference, inspection, and maintenance. Ensure that the end user receives this manual.

TM7371 rev 05
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Reference www.elevatordrives.com for the latest revision of the Magnetek Explorer software

The Magnetek Explorer is a serial communication program used to work with the HPV 600, HPV900, HPV900 S2, Quattro, HPV1000, and M1000 parameters via a computer's serial port.

The program can:

1. Transfer parameters from a personal computer to the drive (HPV 600, HPV 900 Series 1, HPV900 Series 2, Quattro, HPV1000, and M1000)
2. Transfer parameters from the drive (HPV 600, HPV900 Series 1, HPV900 Series 2, Quattro, HPV1000, and M1000) to the PC
3. Compare two parameter files and report any differences
4. Save the parameters to a file
5. Edit parameter values on the PC
6. Print parameters with settings
7. Create an HTML file (for sharing an online parameter file)
8. Upload Quattro and HPV900 Series 2 software

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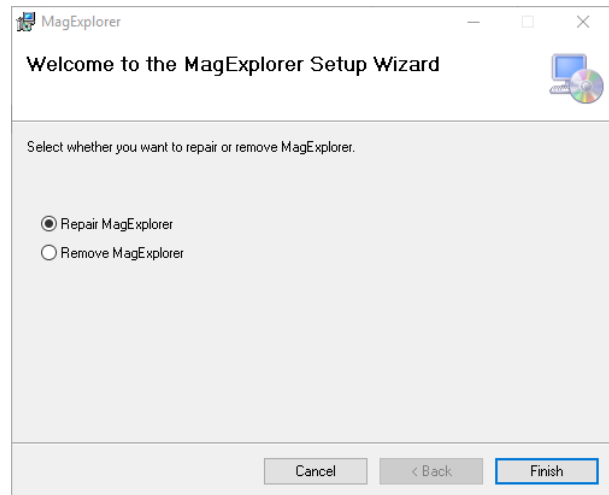
Installation of MagExplorer

1. Click on the following Magnetek elevator download website to get the latest MagExplorer program: <http://www.elevatordrives.com/Elevator/Downloads>

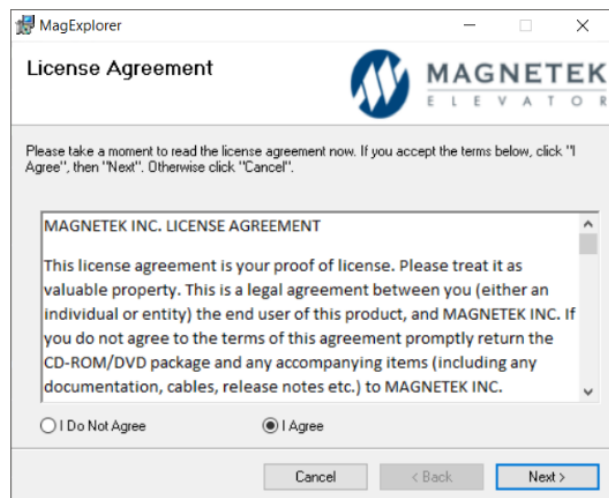
E.g. you will download *MagExplorer 2.50.12.msi.zip* onto your local computer. After unzipping this file, you will get the program file *MagExplorer 2.50.12.msi*.

2. Double click on *MagExplorer 2.50.12.msi* file, follow the instruction below to install MagExplorer program on your PC:

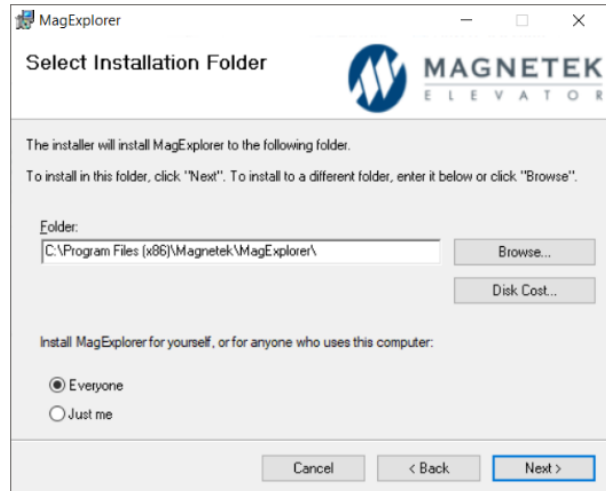
Troubleshooting Tip: If the following “repair or remove” window appears, MagExplorer is already installed. Select “repair” option if updating to the latest version.



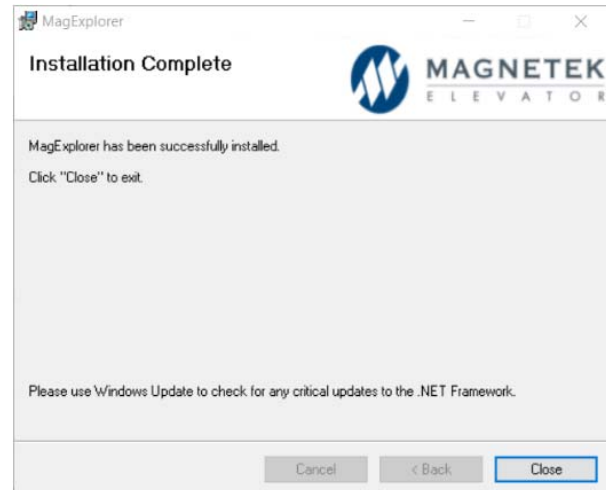
3. Agree to the License Agreement.



4. Select a destination folder, or keep default.

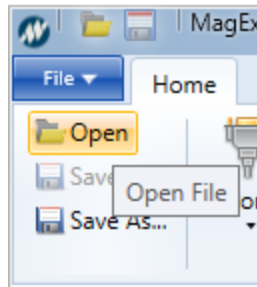


5. Installation will begin, wait until complete.

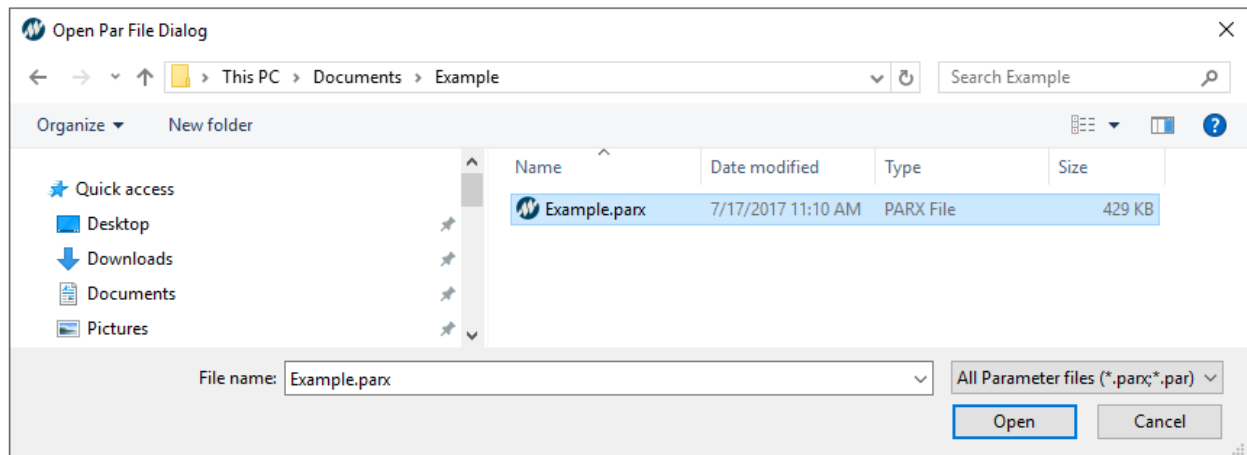


Opening a Parameter File

1. Select the *Open* button.



2. Select the parameter file path and name.

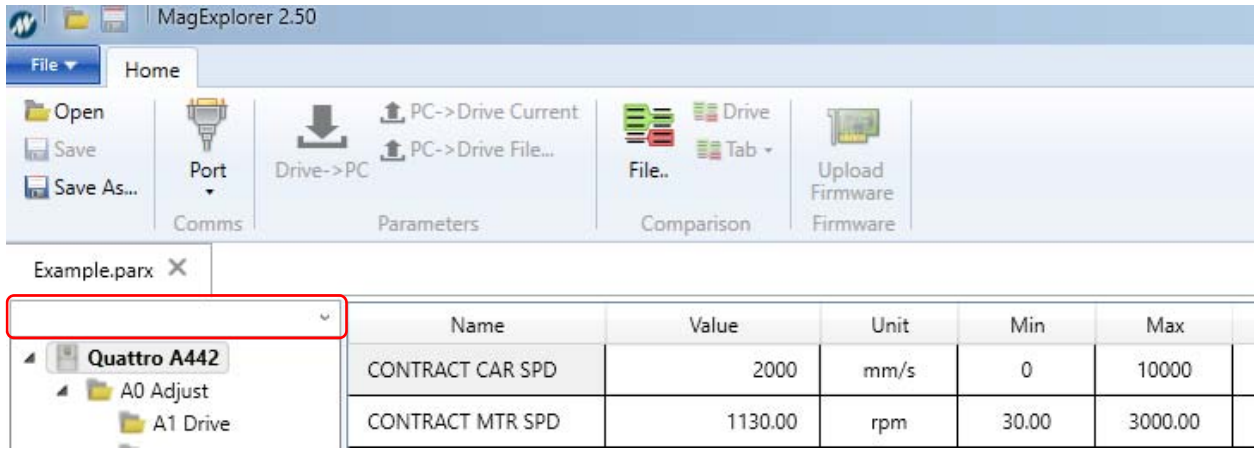


Note: File will not open if the file extension is not .par or .parx

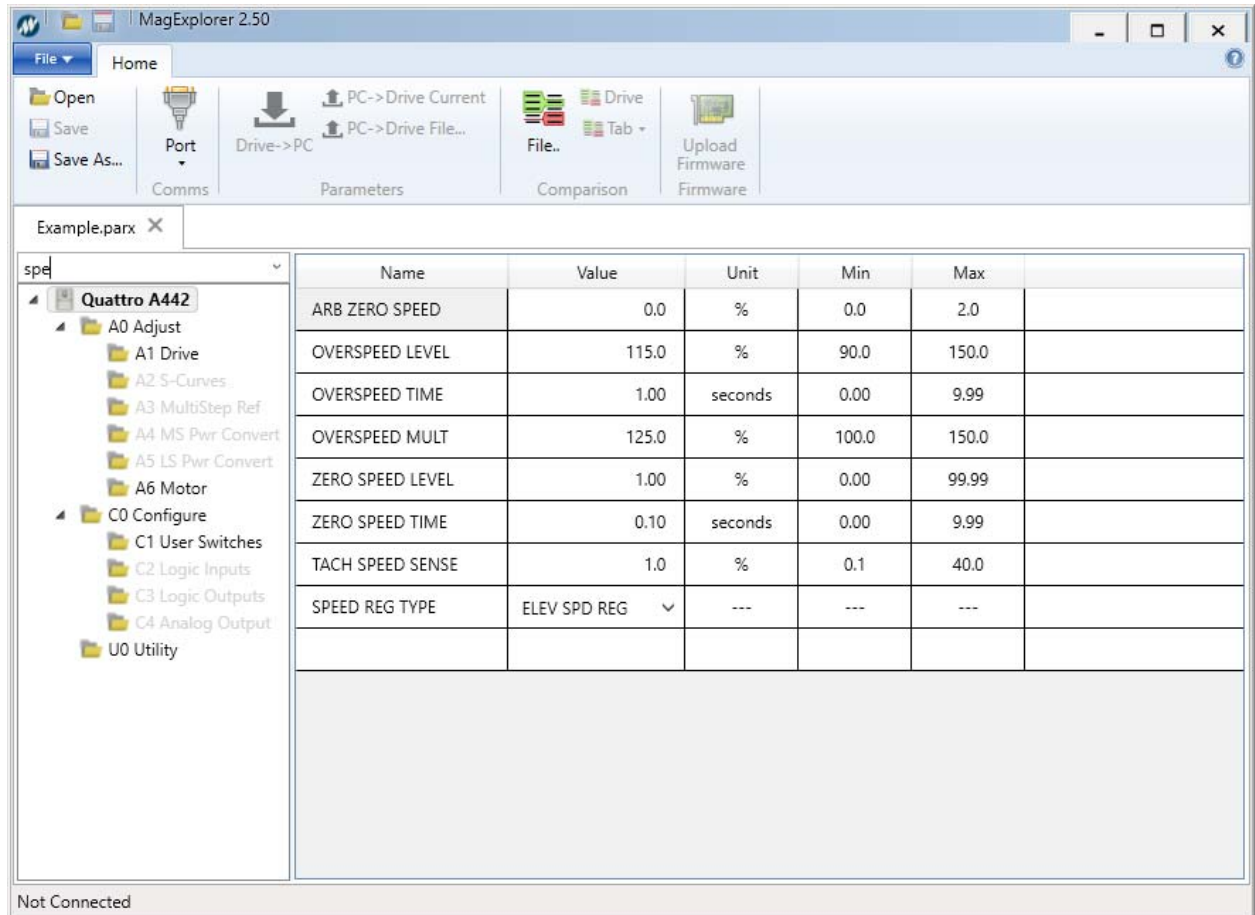
Tip: Press **Alt**, then **H**, then **O** to quickly open a file

Filtering Parameters

1. Click on the search box.

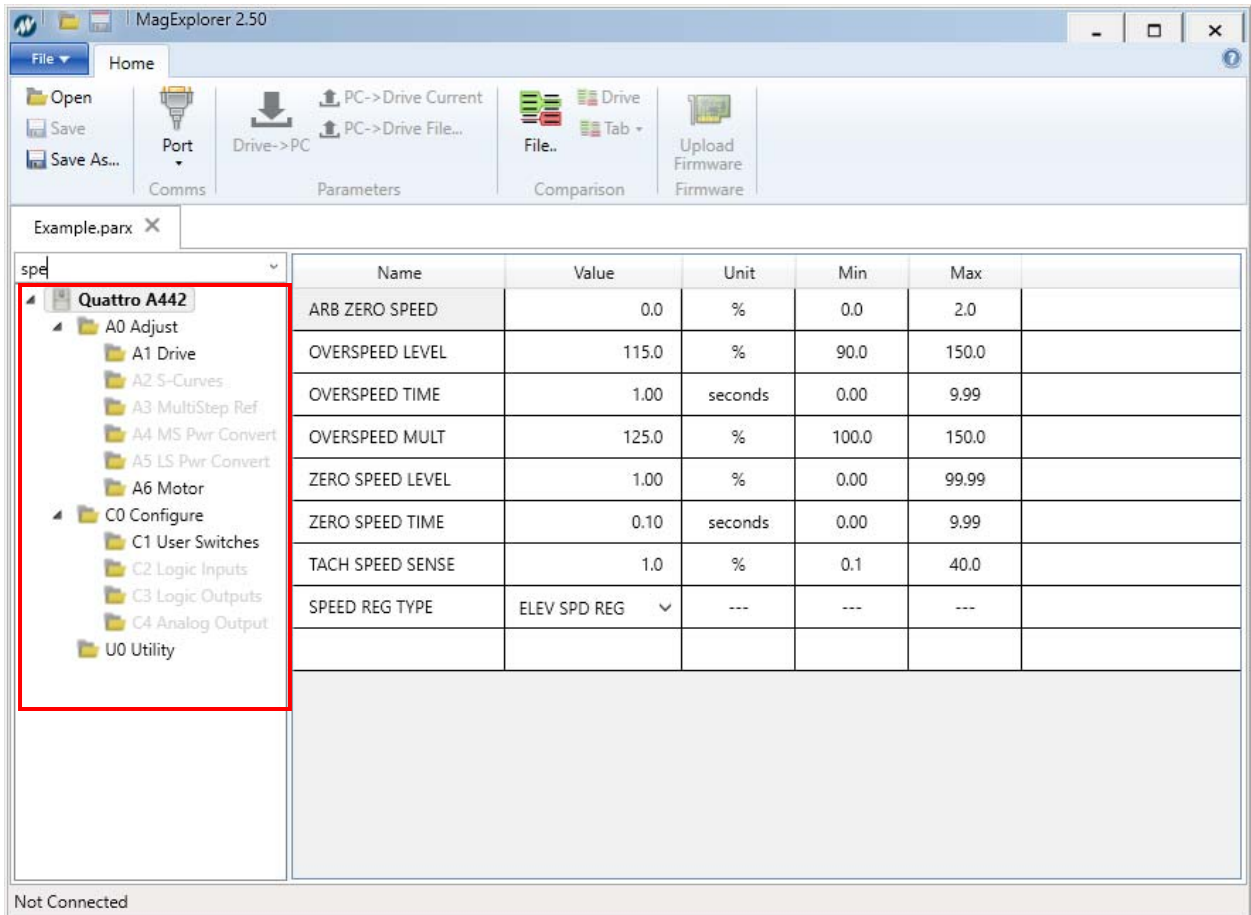


2. Begin typing the parameter name. The menu and parameters list will automatically update to display matching parameters.



Editing Parameters

1. Open parameters in MagExplorer via *Open* or *Drive* → *PC*.
2. Navigate menus using the menu tree on the left.



Note: The M1000 drive will have an additional menu titled, "Standard Menu", which is usually not necessary to access.

Modify Numeric Parameter

1. Select numeric parameter. The location of the cursor is set depending on where the mouse is pointed and clicked. The field only allows values within the valid range for the parameter.

Name	Value	Unit	Min	Default	Max
Contract Car Spd	400.0	fpm	0.1	400.0	3000.0
Contract Mtr Spd	1130.0	RPM	5.0	1130.0	6000.0
Encoder Pulses	2048	PPR	1	1024	60000

2. Change the parameter value using the keyboard. It should remain within the bounds specified by the **min** and **max** columns.
3. Press **Enter** on the keyboard to finalize the change. The parameter label will turn bold if the value is different than the last save. With M1000 and HPV1000 drives, the value field will have a light blue shade if it differs from the default value.

Name	Value	Unit	Min	Default	Max
Contract Car Spd	400.0	fpm	0.1	400.0	3000.0
Contract Mtr Spd	11.0	RPM	5.0	1130.0	6000.0
Encoder Pulses	2048	PPR	1	1024	60000

Modify List Parameter

1. Click the drop down arrow on the right side of the value field of the parameter that will be changed.

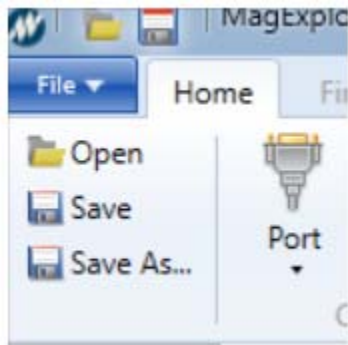
Name	Value	Unit	Min	Max
Encoder Pulses	2048	PPR	500	40000
Encoder Ang Ofst	199		0	35999
Encoder Select	endat ▼	---	---	---
Encoder Connect	forward ▼	---	---	---
Encoder Fault	<div style="border: 1px solid black; padding: 2px;"> forward reverse </div>	---	---	---

2. Select the desired option. The parameter label will turn bold if the value is different than the last save. With M1000 and HPV1000 drives, the value field will have a light blue shade (gray in image) if it differs from the default value.

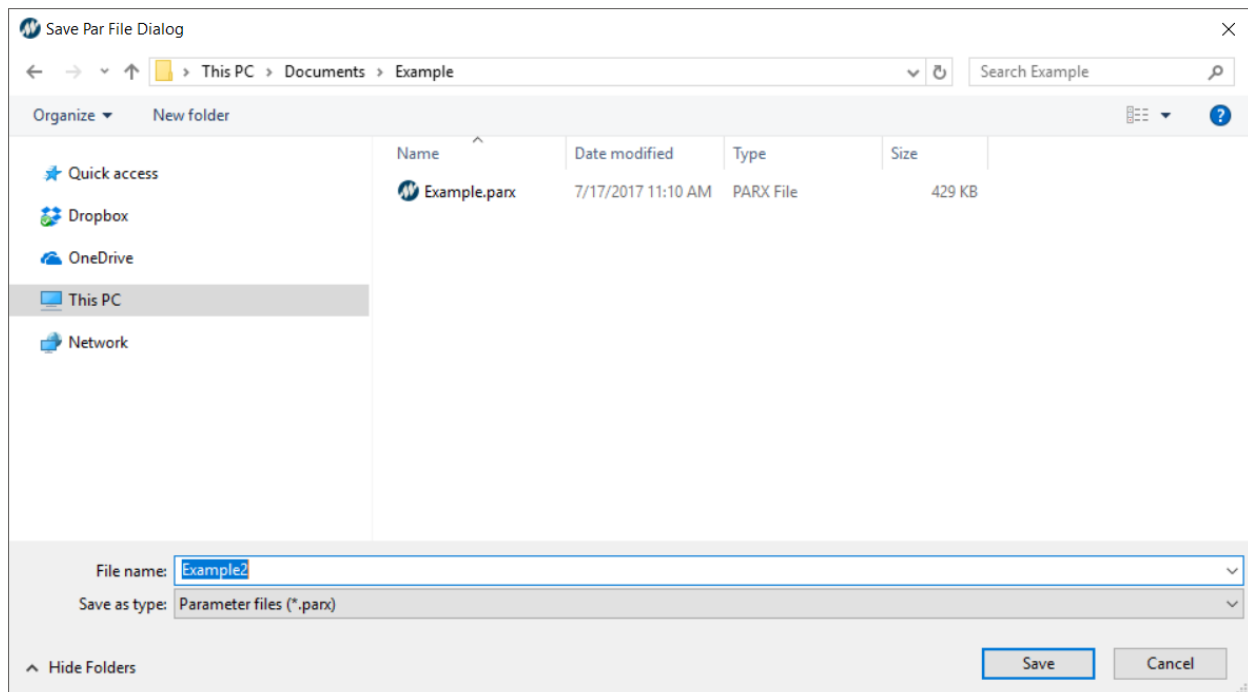
Name	Value	Unit	Min	Default	Max
Spd Command Src	Multi-Step Speed ▼	---	---	Multi-Step Speed	---
Run Command Src	Communication ▼	---	---	Digital Inputs	---
Serial Run Src	Serial Only ▼	---	---	Serial Only	---
Motor Rotation	Forward ▼	---	---	Forward	---
Encoder Connect	Forward ▼	---	---	Reverse	---
Stopping Method	Coast to Stop ▼	---	---	Coast to Stop	---

Saving Parameter

1. Select the *Save As...* function to open a save dialog, or select the *Save* button to save changes to the existing file.

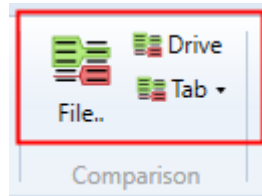


2. If saving as a new file, select parameter file path and name.



Comparing Parameters

1. Select one of the *Compare* buttons. See [Comparing to Drive Parameters](#) for instructions specific to comparing to the drive, see [Comparing to Another Open Tab](#) for instructions specific to comparing to another open tab, or see [Compare to Another File](#) for instructions specific to comparing to another file.



2. Once a compare tab is open, it will display both parameter files side by side displaying all of the differences between the two files. These differences are highlighted in red.

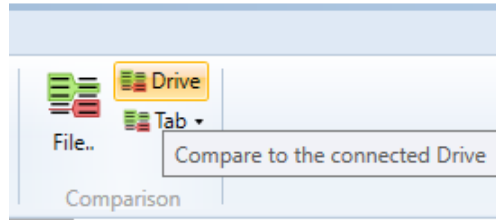
Name	Value	Unit	Min
CONTRACT CAR SPD	6096	mm/s	0
CONTRACT MTR SPD	134.00	rpm	30.00
ENCODER PULSES	10000	pls/rev	600
INERTIA	6.11	sec	0.25
BRAKE PICK TIME	1.00	seconds	0.00
BRAKE SWITCH #	2		0
DSPR TIME	120	minutes	0
ARM INDUCTANCE	3.64	mH	0.01
ARM RESISTANCE	0.0935	OHM	0.0001

3. The filter can be changed to show differences or show all parameters (similar and different) between the files

Name	Value	Unit	Min
CONTRACT CAR SPD	6096	mm/s	0
CONTRACT MTR SPD	134.00	rpm	30.00
ENCODER PULSES	10000	pls/rev	600
ENC RATIO MULT	1.000		0.001
RESPONSE	10.0	rad/sec	1.0
INERTIA	6.11	sec	0.25

Comparing to Drive Parameters

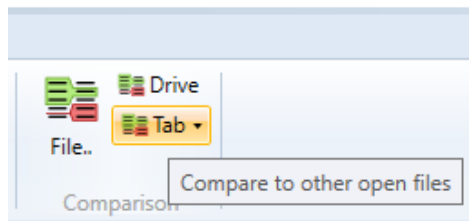
1. Be sure that MagExplorer is connected to the drive, and that at least one parameter file is open. If buttons are gray and cannot be selected, the drive is not properly connected.
2. Click the *Drive* button in the Comparison section.



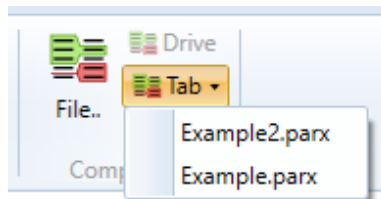
3. MagExplorer will begin downloading parameters from the drive. Once complete, it will open the compare tab.

Comparing to another Open Tab

1. Have two parameter files open at the same time.
2. Click the *Tab* button in the Comparison section.



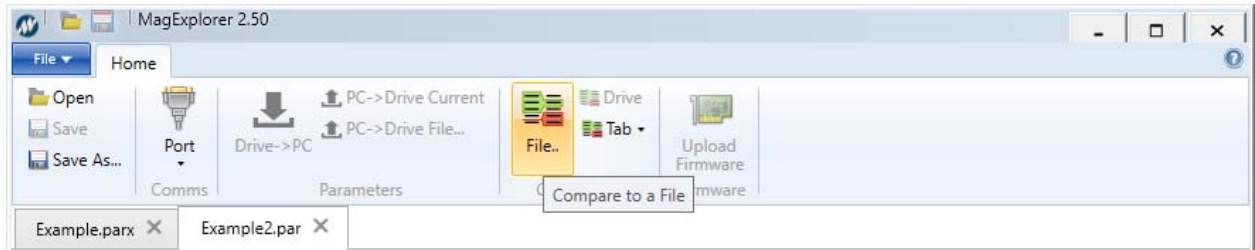
3. A dropdown menu will appear. Select the filename to compare to the current tab.



4. MagExplorer will open the compare tab.

Comparing to another File

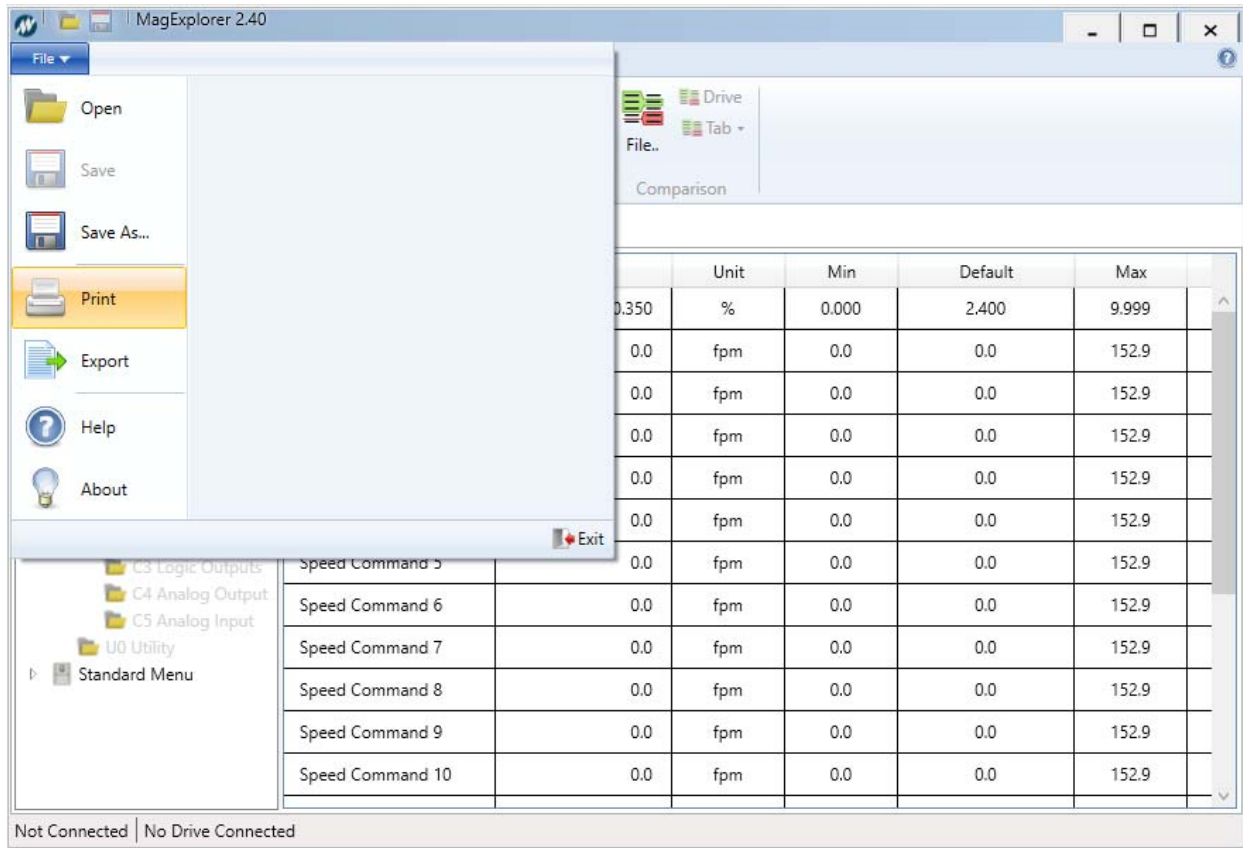
1. At least one parameter file must already be open.
2. Click the *File...* Button in the comparison section.



3. An open dialog will appear. Select the file to compare to, MagExplorer will open the compare tab.

Printing

1. Select the *File* button then the *Print* button. This will open a print dialog.



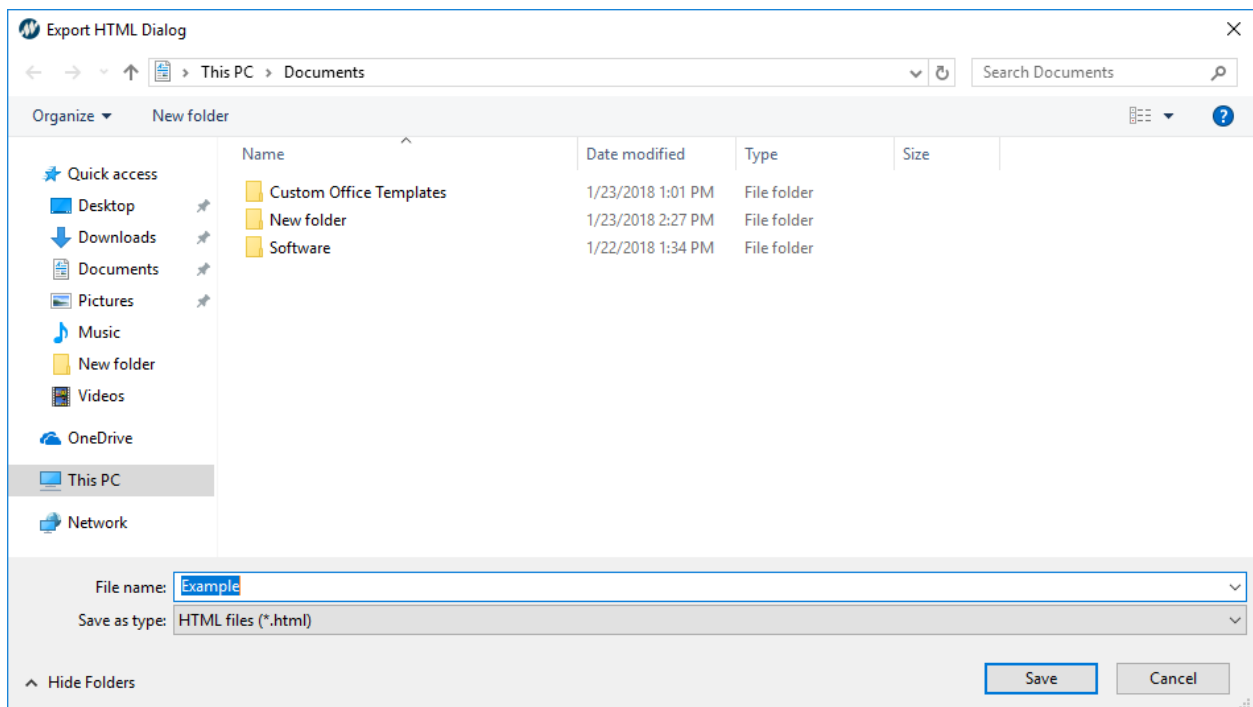
Tip: Pressing **Alt**, followed by **F**, then pressing **P** will print.

Creating an HTML File

1. Click the *File* drop down.



2. Click *Export* in the *File* menu.
3. If exporting to a new file, choose file path and new file name. If overwriting a file, select file path and the overwritten file name.



Connections and Start-up

1. Ensure the proper electrical connections between the digital operator port of the Drive and the serial port (COM1, COM2, etc.) of a Windows based computer.

- a. The following products use a straight DB-9 cable (Magnetek pn MAG-CABLE):

- HPV 600 and HPV 900 Series 1
- Quattro AC and Quattro DC

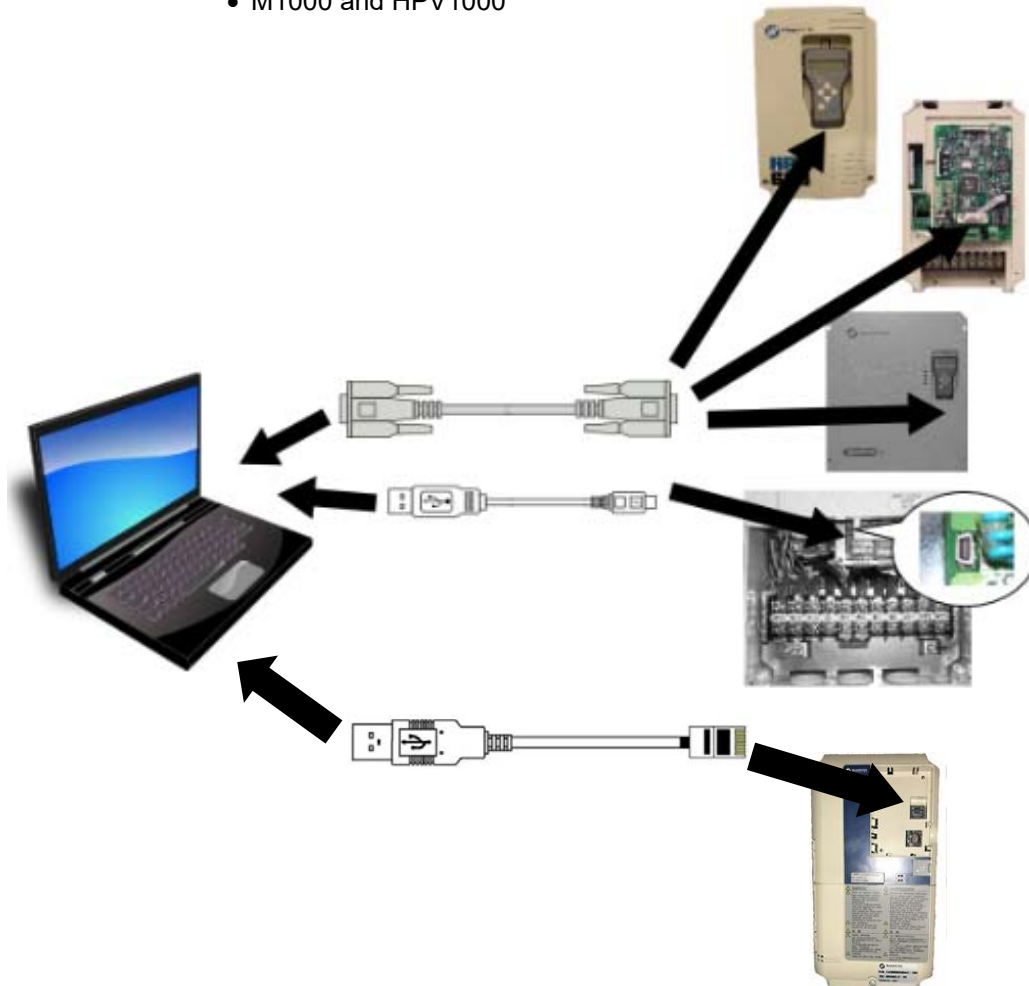
Note: To connect to a newer PC with a DB-9 cable, a DB-9 to USB adapter may be necessary (Magnetek pn ELEV-USB-RS232)

- b. The following product uses a USB-A to a mini USB-B cable (Magnetek pn HPV2-CABLE):

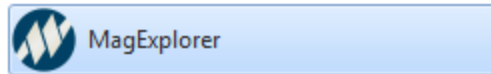
- HPV 900 Series 2

- c. The following products use a DB-9 to RJ-45 cable (Magnetek pn M-HPV1000-CABLE). It may be necessary to have a USB to DB-9 cable as well.

- M1000 and HPV1000



2. From Windows, execute MagExplorer.exe or double click the icon.



3. Select proper serial COM port. If there is more than one listed, disconnect the cable and check to see which com port is no longer available and reconnect the cable. If buttons such as "Drive→PC" are grey and can't be clicked, the port is not connected.



Note: On HPV 900 Series 2, a special driver is required. Refer to *Installing HPV 900 Series 2 Driver* on the next page.

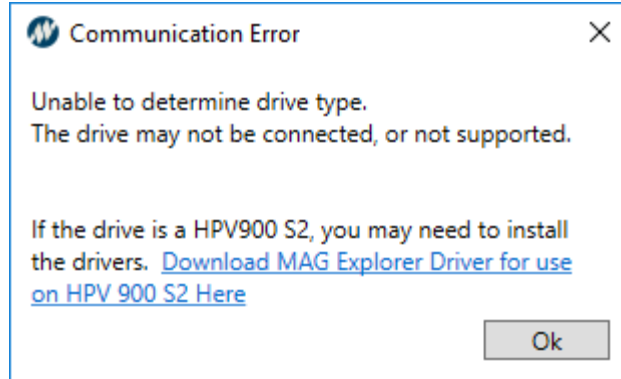
Note: Connecting to an HPV 900 Series 2 can take approximately a minute after connecting device.

4. Once the COM port has been selected, MagExplorer will automatically determine the type of drive that is connected. MagExplorer will also automatically change drive types if plugged into a different drive

Troubleshooting Tip: If no COM ports are available, the cable is not connected between the PC and the drive.

Installing HPV 900 Series 2 Driver

The HPV 900 Series 2 requires a special driver in order to allow the USB to properly act as a COM port. When connected to an HPV 900 Series 2 without the proper driver, this message will appear:

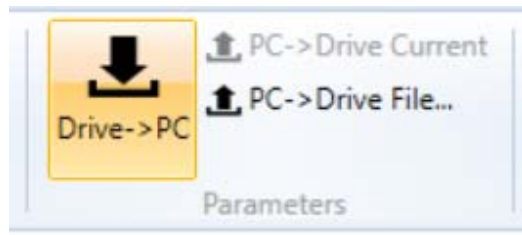


1. Click on the underlined hyperlink and download [MAG Explorer Driver for use on HPV900 S2](#).
2. Unzip the folder and install the application.
3. After the application is installed, press the windows key on the keyboard and type "Device Manager". Open Device Manager.
4. Find the USB port under "other devices", right click on "USB to UART Bridge Controller", and select properties.
5. Under the "Driver" tab, select the "Update Driver" button.
6. The USB should now be recognized as a COM port in MagExplorer.

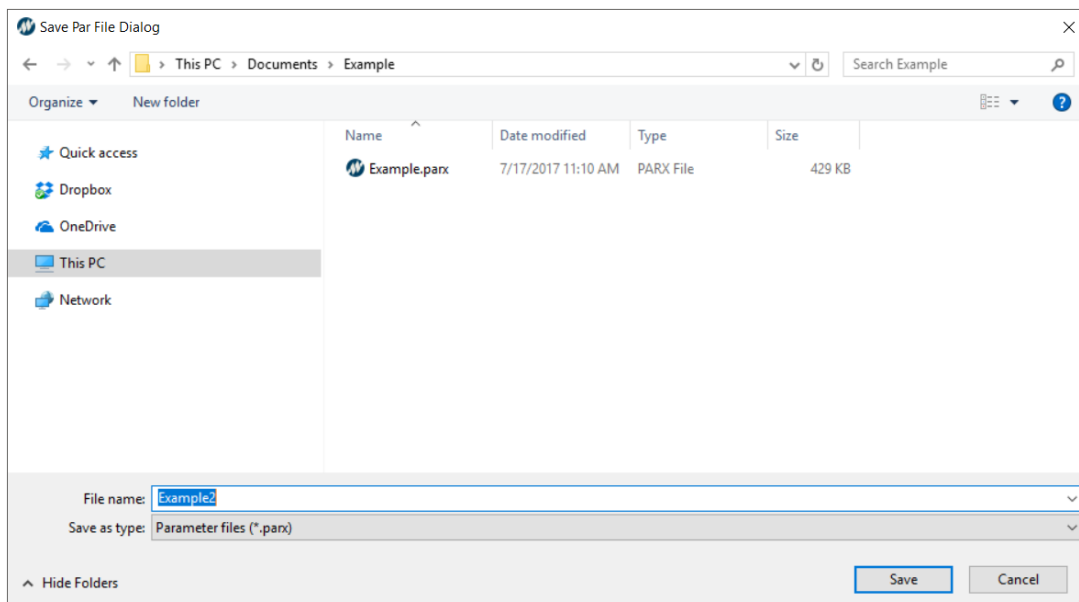
“Drive → PC” – Transferring parameters from the Drive to PC

“DRIVE → PC” is the process of the HPV 600, HPV 900 Series 1, HPV 900 Series 2, HPV 1000, Quattro AC, Quattro DC, M1000, or HPV1000 sending all of its parameter values (from a file with the extension .PAR) to a computer. This process can be used for memory backup. While the drive is running a motor, the only interaction allowed between the drive and Mag Explorer is the transferring of parameters from the drive to the computer.

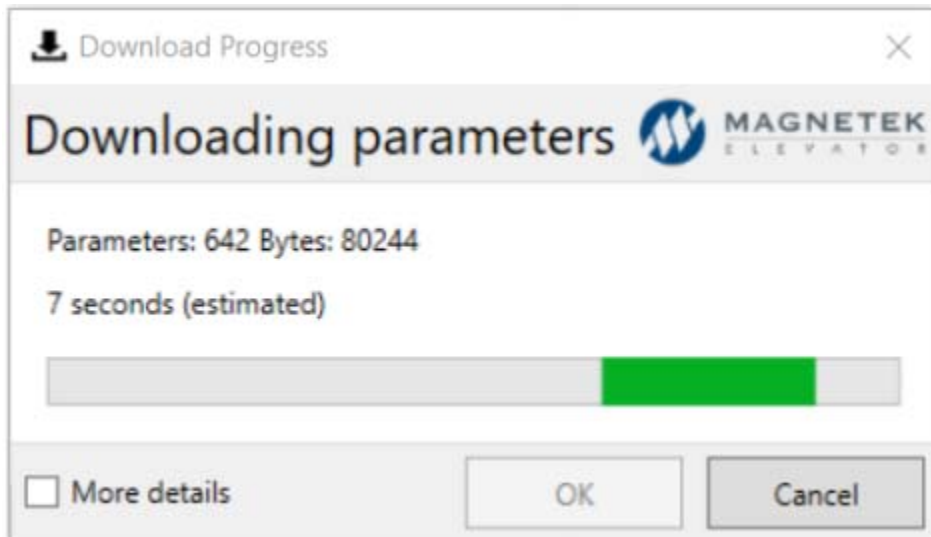
1. Connect to drive (refer back to *Connections and Start-up*, page 14).
2. Select the *Download* function (Drive → PC)



3. Select a parameter file path and name, then save.



4. Your parameters will now download and save onto the PC in the location inputted in the previous step.



“PC → Drive” – Transferring parameters from the PC to Drive

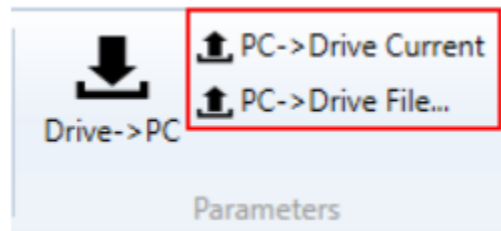
“PC → Drive” is the process of a computer sending all settable parameters (with the extension .PAR) to an HPV 600, HPV 900 Series 1, HPV 900 Series 2, Quattro AC, Quattro DC, M1000, or HPV1000. This process can be used to set up the drive with a set of pre-configured parameters.

Important

It is not recommended for the HPV 600, HPV 900 Series 1, HPV 900 Series 2, Quattro AC, Quattro DC, M1000, or HPV1000 to be running a motor while transferring parameters from the PC to the drive “PC → Drive”, as this could lead to a dangerous operating condition.

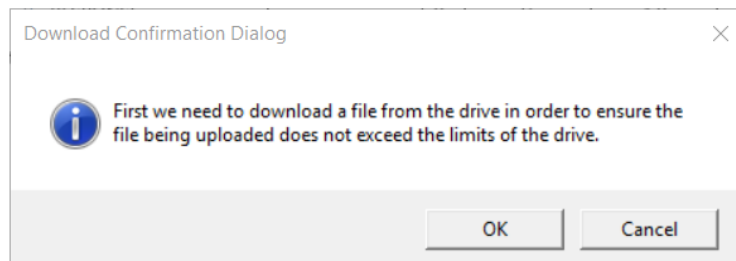
Uploading Parameters to Quattro, HPV 600, HPV 900 Series 1, HPV 900 Series 2

1. Connect to the drive.
2. Select one of the following *Upload* functions
 - “PC→Drive Current” will upload the currently visible file to the drive.
 - “PC→Drive File...” will open a file selection dialog, and will upload the selected file.

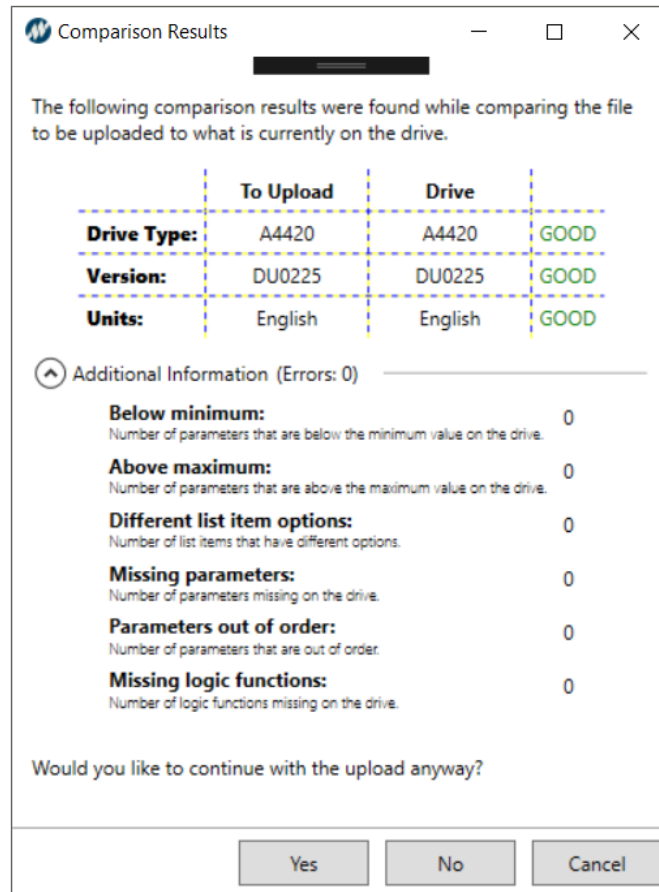


If the parameters are all within range:

1. A dialog box will appear, informing that in order to proceed, MagExplorer must download parameters from the drive first.



2. Click OK to continue. MagExplorer will proceed to download parameters from the drive.
3. Once MagExplorer has completed downloading parameters, it will check to make sure the file being uploaded is compatible and display the results.



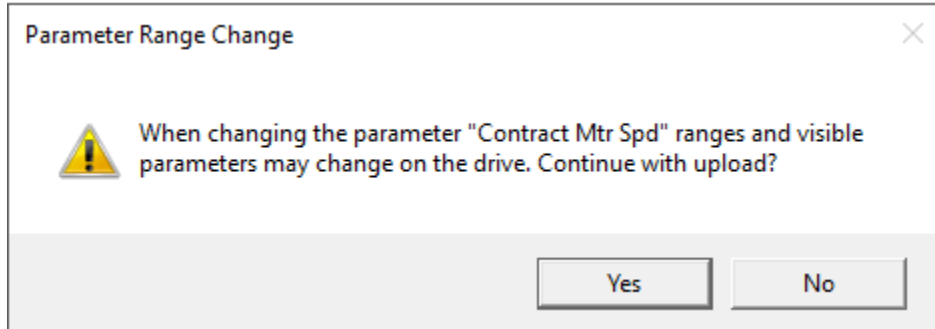
4. Click Yes to upload parameters. MagExplorer will ask if it should save a copy of the drives parameters if they differ from the parameters being uploaded.

Uploading Parameters to M1000 or HPV1000

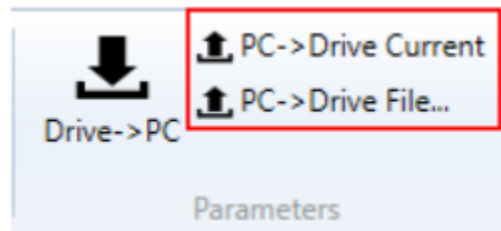
For M1000 and HPV1000 Drives, some parameters are special and must be uploaded first. This is because they can affect the ranges or existence of other parameters. Some of these parameters are

- Contract Car Spd (Ranges only)
- Contract Mtr Spd (Ranges only)

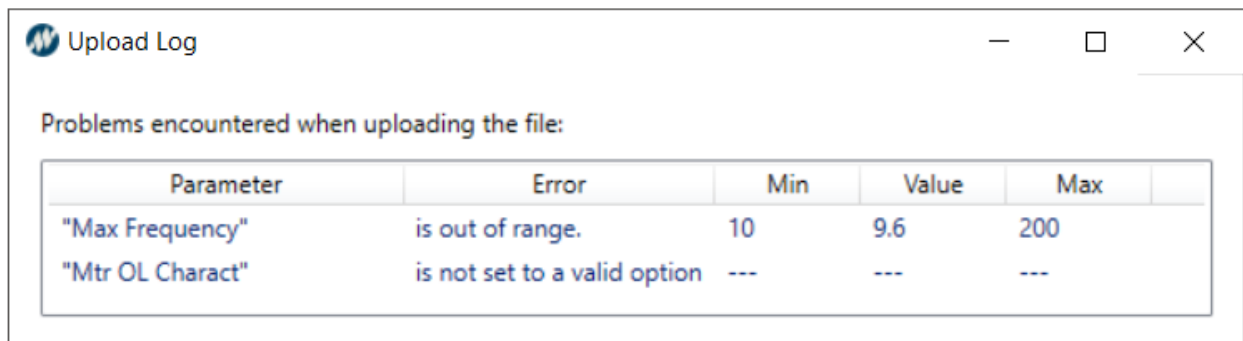
If these differ from the drive, the user will be notified before upload:



1. Connect to the drive.
2. Select one of the following *Upload* functions
 - "PC→Drive File..." will open a file selection dialog, and will upload the selected file.
 - "PC→Drive Current" will upload the currently visible file to the drive.



If there were any errors reported by the drive during upload, the user will be presented with a dialog at the completion of the upload:

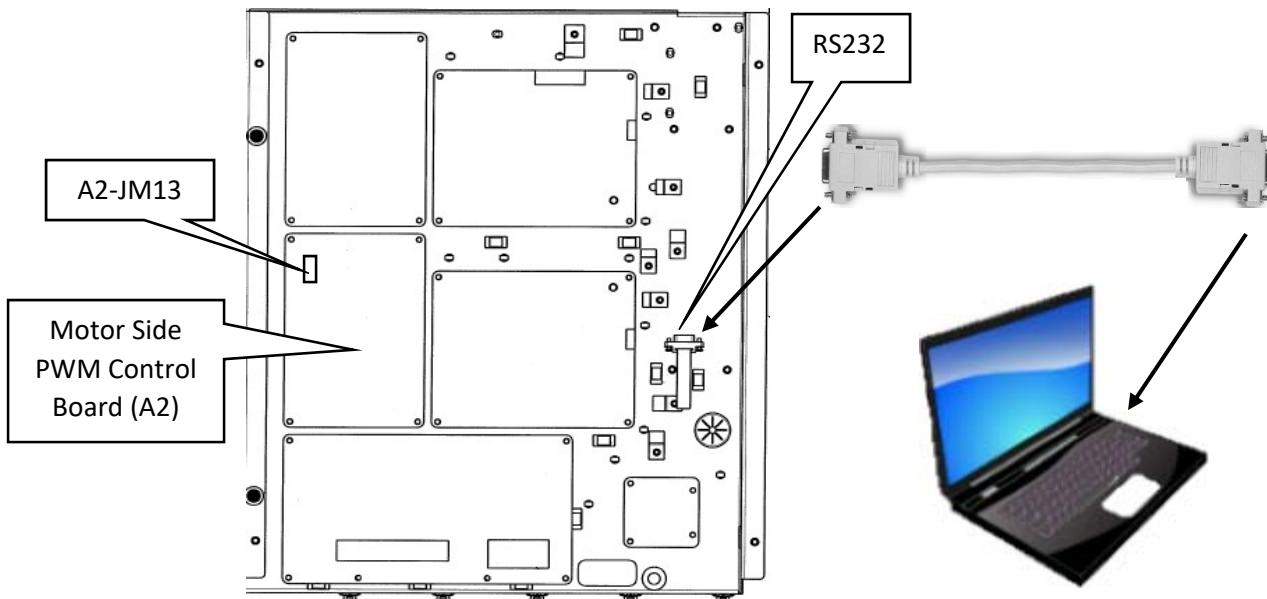


An "Upload Log" dialog box showing a table of problems encountered during file upload. The table has columns for Parameter, Error, Min, Value, and Max.

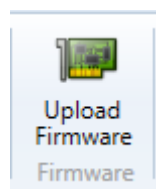
Parameter	Error	Min	Value	Max
"Max Frequency"	is out of range.	10	9.6	200
"Mtr OL Charact"	is not set to a valid option	---	---	---

Firmware Upload: Loading Motor-side Software in Quattro

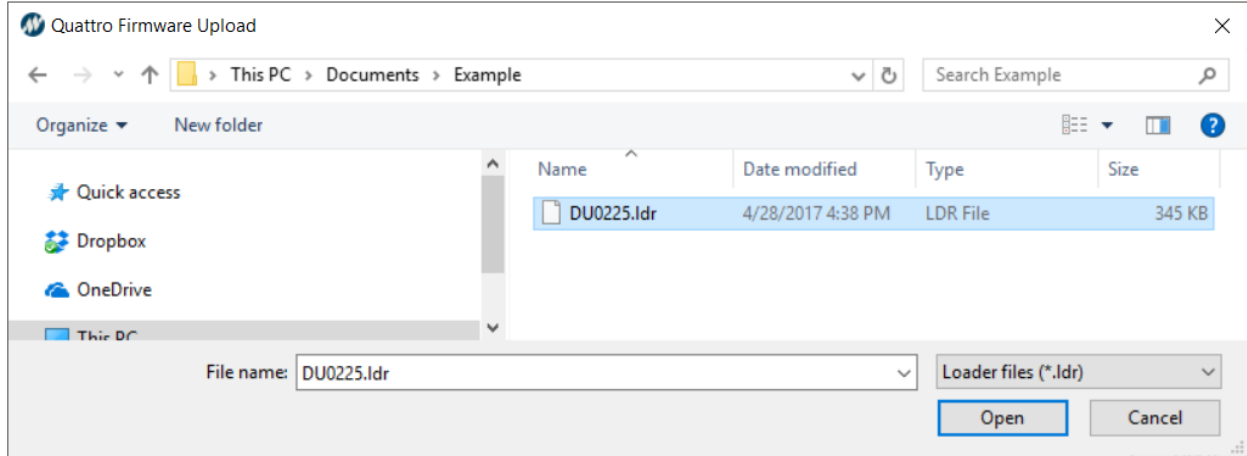
1. Power up the Quattro drive.
2. If wanted, upload the parameter set from the drive to Magnetek Explorer to be placed back in the drive after the new firmware is installed. To do this, see “Drive → PC” on page 17, then save the file.
3. Power down the Quattro drive.
4. Remove jumper from UPLD and NORM on JM13 located on the Motor Side PWM Control Board. See figure below for location of JM13 and the Motor Side PWM Control Board.



5. Place the removed jumper between PRGM and UPLD on the same JM13 found in step 4.
6. Power up the Quattro Drive.
7. Open MagExplorer on the connected PC.
8. Follow the steps in *Connections and Start-up* if not already connected to the drive.
9. Click the *Upload Firmware* button:

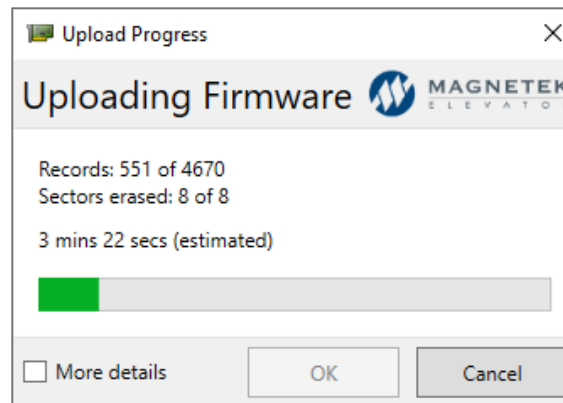


10. Choose a .ldr file to upload:



11. A dialog will appear confirming erasing flash on the drive. If *Yes* is selected, parameter data on the drive will be lost and the firmware will be uploaded. If *No* is selected, the operation will be cancelled.

12. While the upload is in progress, a progress dialog will be present:



13. When the upload is complete, the dialog will remain open, and will state "Upload Complete". Press *OK* to finish.

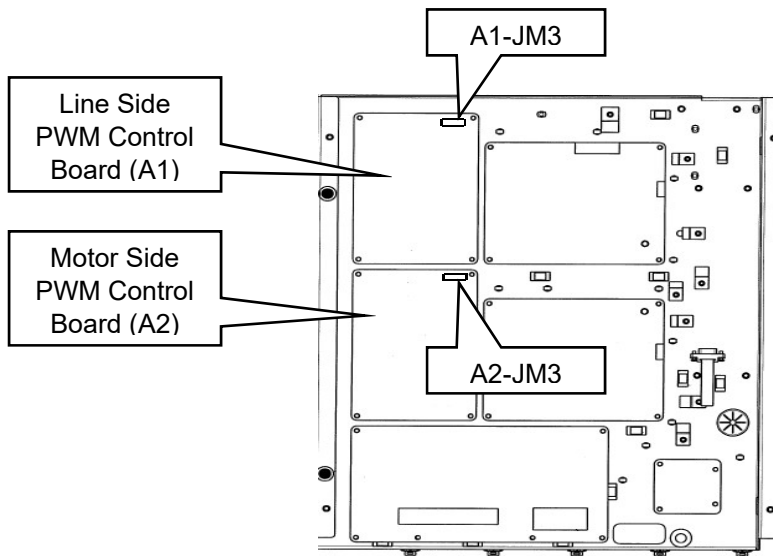
WARNING

Use extreme care when uploading software. Stopping an upload or disconnecting the cable during an upload could corrupt the software and inhibit the user's ability to upload software.

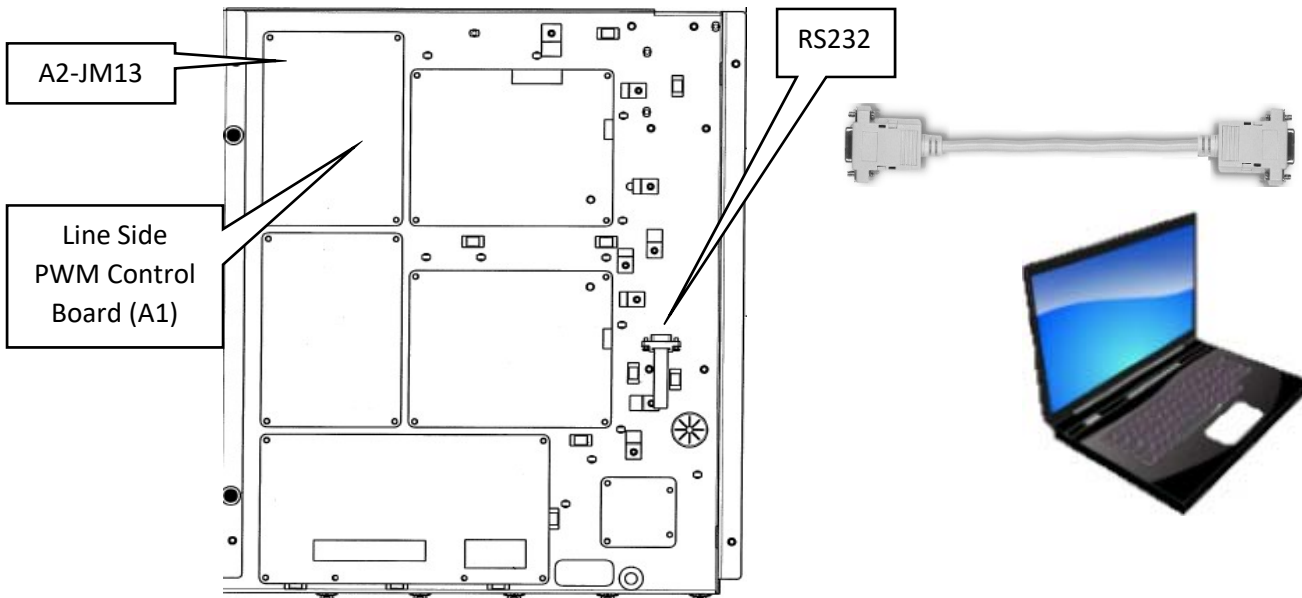
14. Power down the Quattro drive.
15. Reset the jumper to its original position between UPLD and NORM.
16. Reset the ribbon cable JM3 to the original position in JM3 on the Motor side board (A2)
17. Recycle power. Because defaulted values will be loaded into the drive, it is expected a number of faults will occur. Re-insert the parameters saved in step 2 in Firmware Upload–Loading Motor-side Software in Quattro by using the PC→Drive button in the upper middle portion of Magnetek Explorer. See PC→Drive – Transferring parameters from the PC to the Drive on page 19.

Firmware Upload: Loading Line-side Software in Quattro

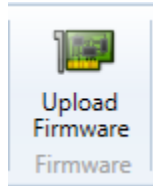
1. Connect RS232 port of computer to RS232 input to drive as shown in below. Open Magnetek Explorer. Note it is not necessary to save line side parameters since they are stored on the motor side control board.
2. Power down QUATTRO.
3. Move Ribbon Cable from JM3 on the Motor Side PWM Control Board (A2) to JM3 on the Line Side PWM Control Board (A1).



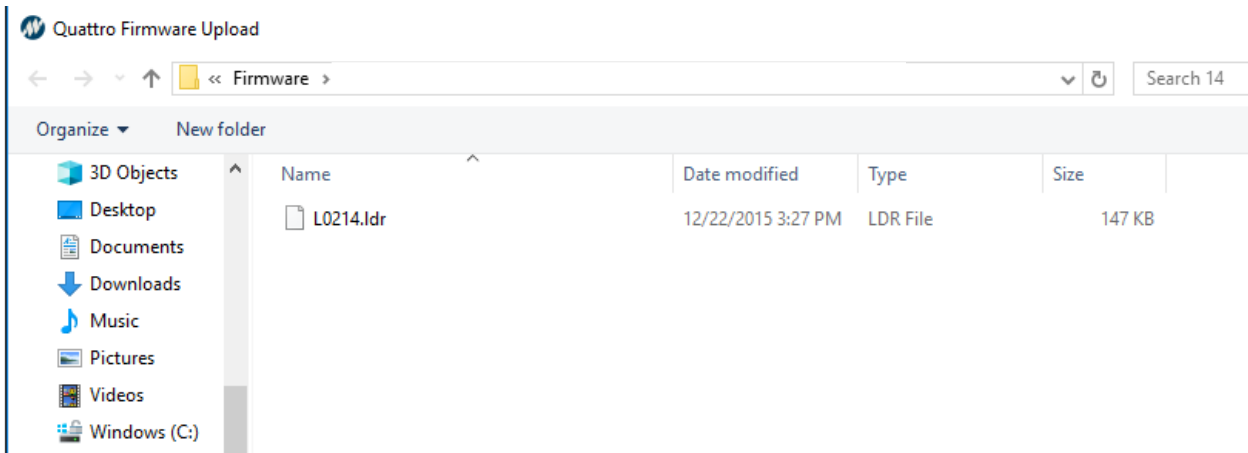
4. Remove jumper from UPLD and NORM on JM13 located on the Line Side PWM Control Board. See figure below for location of JM13 and the Line Side PWM Control Board.



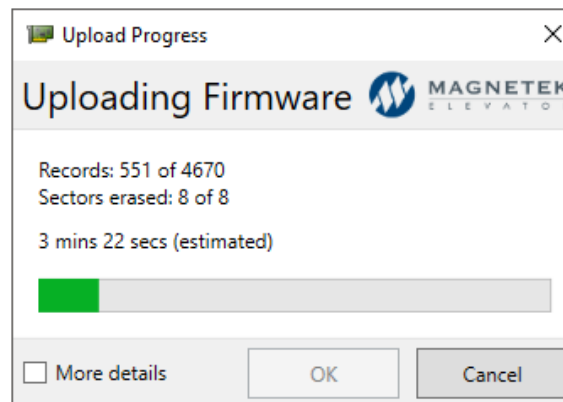
5. Place the removed jumper between PRGM and UPLD on the same JM13 above.
6. Power up the Quattro drive.
7. Open MagExplorer on the connected PC.
8. Click the *Upload Firmware* button:



9. Choose a .ldr file to upload:



10. A dialog will appear confirming erasing flash on the drive. If Yes is selected, parameter data on the drive will be lost and the firmware will be uploaded. If No is selected, the operation will be cancelled.
11. While the upload is in progress, a progress dialog will be present:



12. When the upload is complete, the dialog will remain open, and will state "Upload Complete". Press *OK* to finish.

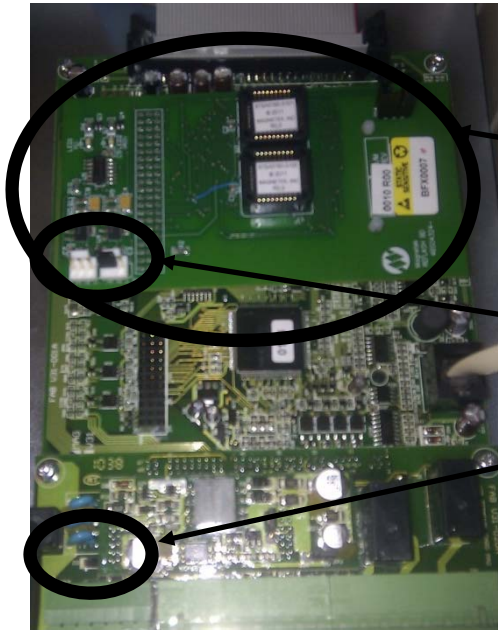
WARNING

Use extreme care when uploading software. Stopping an upload or disconnecting the cable during an upload could corrupt the software and inhibit the user's ability to upload software.

13. Power down QUATTRO
14. Reset the jumper on JM13 to its original position (between UPLD and NORM)
15. Reset the ribbon cable JM3 to the original position in JM3 on the Motor Side Board (A2).
16. Recycle power. Because defaulted values will be loaded into the drive, it is expected a number of faults will occur. Insert the parameters in the Quattro Drive by using the PC→Drive button in the upper middle portion of Magnetek Explorer. See PC→Drive—Transferring parameters from the PC to the Drive on page 19.

Firmware Upload: Loading Software in HPV900 Series 2

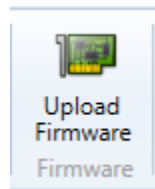
1. Power up HPV900 Series 2.
2. If wanted, upload the parameter set from the drive to Magnetek Explorer to be placed back in the drive after the new firmware is installed. To do this, see “Drive → PC” – transferring parameters from the Drive to PC on page 17. Save the file and proceed to step 3.



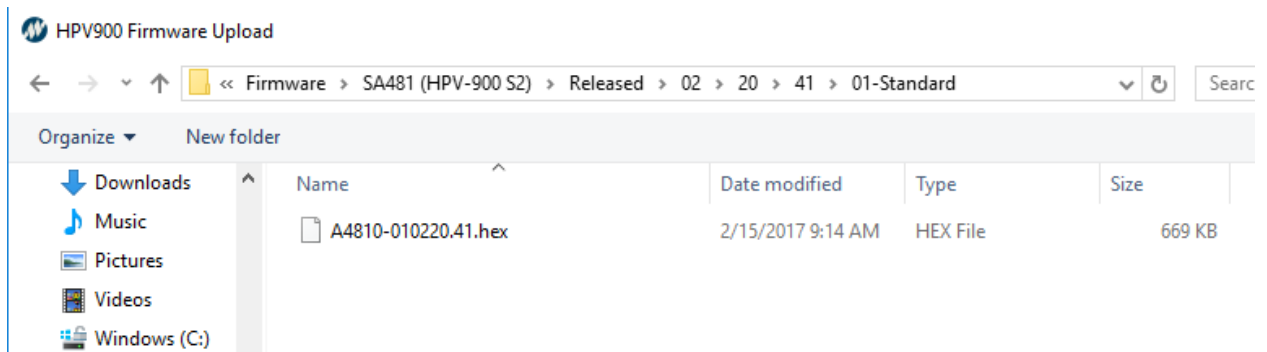
3. Power down HPV900 Series 2.
4. Re-flash board should mount on to the HPV900 Series 2 drive control card fitting the 63 pin connector into its corresponding plug. The board should be mounted such that the plastic standoffs sit over their respective holes on the control card, although it is not necessary to press these standoffs into place.
5. JP2 on the Re-flash board should have pins 2 and 3 jumpered. If they are not, place the jumper on JP2 on pins 2 and 3. This only applies to Rv 00.
6. Connect the USB A to USB mini B cable to the port on the control card of the drive and to the computer with the latest version of Magnetek Explorer and drivers installed.
7. Power up HPV900 Series 2.
8. The LED on the Re-flash board should begin flashing

red.

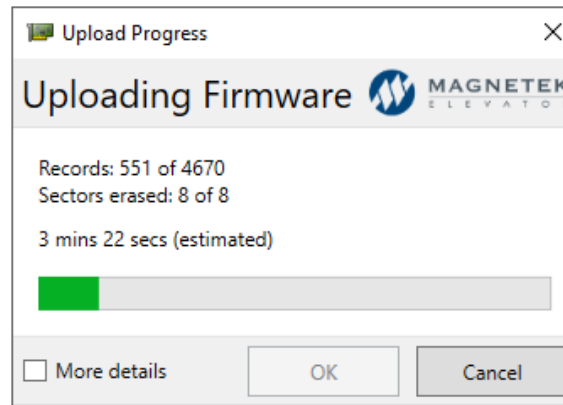
9. Open MagExplorer on the connected PC.
10. Click on the Firmware Upload button on MagExplorer, then click the appropriate upload button.



11. Choose a .hex file to upload:



12. A dialog will appear confirming erasing flash on the drive. If *Yes* is selected, parameter data on the drive will be lost and the firmware will be uploaded. If *No* is selected, the operation will be cancelled.
13. While the upload is in progress, a progress dialog will be present:



14. When the upload is complete, the dialog will remain open, and will state "Upload Complete". A green LED will light up. Press *OK* to finish.

WARNING

Use extreme care when uploading software. Stopping an upload or disconnecting the cable during an upload could corrupt the software and inhibit the user's ability to upload software.

15. Power down the HPV900 Series 2.
16. Remove the Re-Flash board. It is expected a number of faults will occur because the defaulted values will be loaded into the drive. Re-insert the parameters saved in Step 2 by using the PC→Drive button in the upper-middle portion of MagExplorer. See PC→Drive on page 19.

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Magnetek Explorer

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