

WORKBENCH UTILITY OPERATION



CHAPTER 2

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Note: This Chapter only applies if you are using the WinPLC with Think & Do Studio version 6.0 or later. Use Appendix A if using the WinPLC with Think & Do versions 5.2 or 5.3.

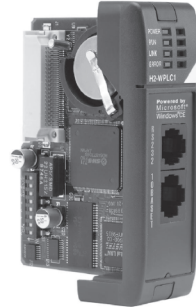
WinPLC Workbench Overview

WinPLC Workbench is a utility to configure and check out a WinPLC I/O system. It is also used to load new ROM images on the WinPLC. Use Workbench with a new WinPLC to set its IP address, thereby allowing other devices or software products to connect with the WinPLC.

Since the WinPLC may be used with various software packages and user developed applications, Workbench can be helpful in troubleshooting to verify that the WinPLC and its I/O are functioning properly.

Workbench is **not** recommended for use with these WinPLC products:

- H2-WPLC1-TD (obsolete)
- H2-WPLC2-TD (obsolete)



Configuring Your WinPLC

PC Setup

Copy Workbench files to a directory on your PC.

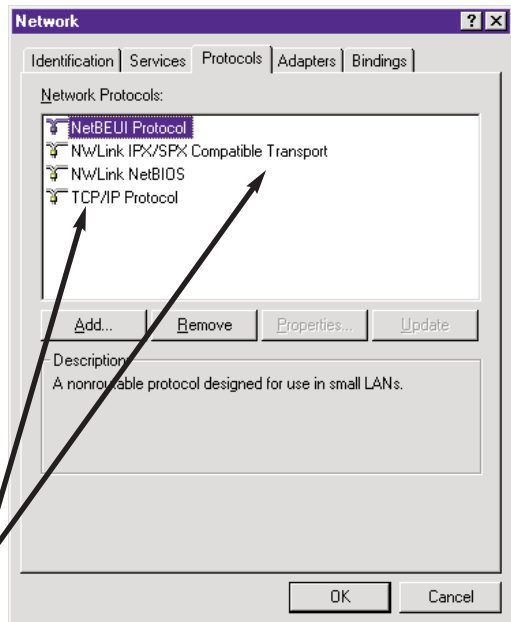
We recommend that you set up a Desktop or Start Button program menu Shortcut.

Make sure your PC has TCP/IP and IPX/SPX Protocols installed. To check, click on your computer's Start button, select Settings and then select Control Panel. Select Network and click on the Protocols tab (see screen).

Direct-connect WinPLC using a cross over cable (see Section 1).

You can connect to the WinPLC across a network; however, setting up the proper IP Address, SubNet Mask, and Gateway are beyond the scope of this manual. See your LAN Administrator for assistance with these settings.

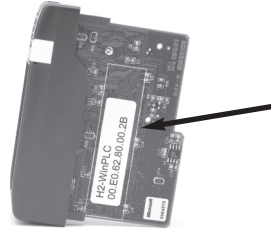
Also, set up the WinPLC module so that it's easy to cycle the power.



IPX/SPX and TCP/IP protocols must be installed on your PC

Catching the WinPLC: Using Workbench To Find Your WinPLC Using its Ethernet (MAC) Address

The “Catch” feature can find a WinPLC by its Ethernet Address (MAC Address). This address is found on the WinPLC label and is set at the factory and cannot be changed. Catch is a robust way to locate the WinPLC in order to setup the TCP/IP communications. Most Workbench features are not enabled until TCP/IP communication has been established.



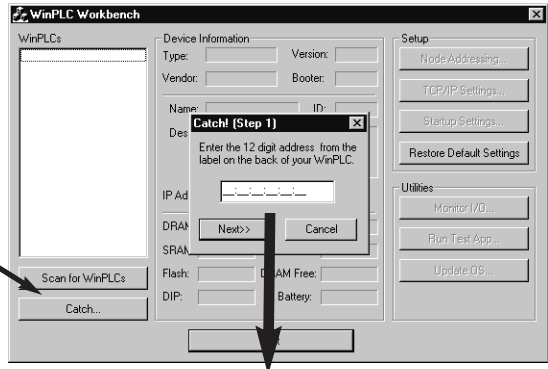
Factory-assigned Ethernet address (MAC address)



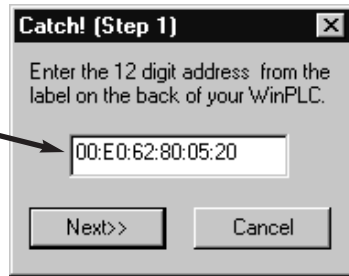
Note: Since the Catch feature uses the IPX/SPX protocol, the PC and WinPLC must be on the same LAN to work properly. Workbench must see the WinPLC while the WinPLC is in its boot-up state, which is indicated by the flashing green RUN LED.

Follow these steps.

Click on “Catch”



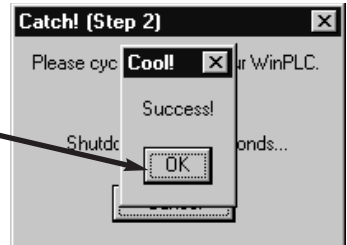
Enter 12-character Ethernet address here, click on “Next”



Cycle power



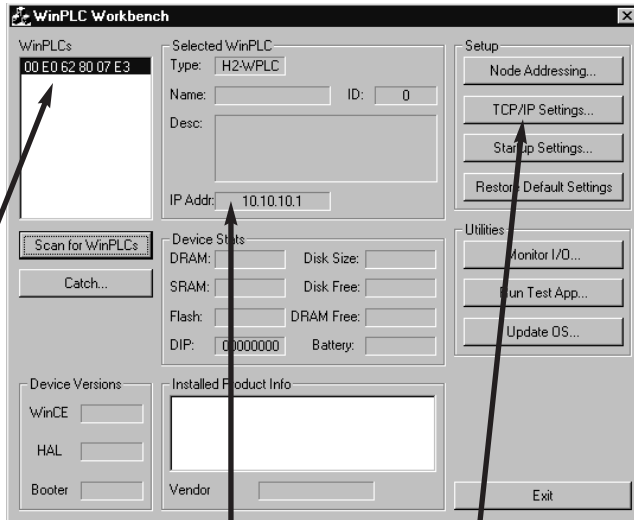
Click on “OK”



Workbench Utility Operation

Workbench has found your WinPLC and its Ethernet address appears in the “WinPLC” window. The green RUN LED should also be flashing. If you have problems, check to make sure you have the correct Ethernet address entered and that the IPX/SPX protocol is loaded on your PC

Ethernet Address



TCP/IP Settings

Setting TCP/IP Communications

Next, click on “TCP/IP Settings” to bring up this screen. Make sure “Enable TCP/IP Setup” is selected.

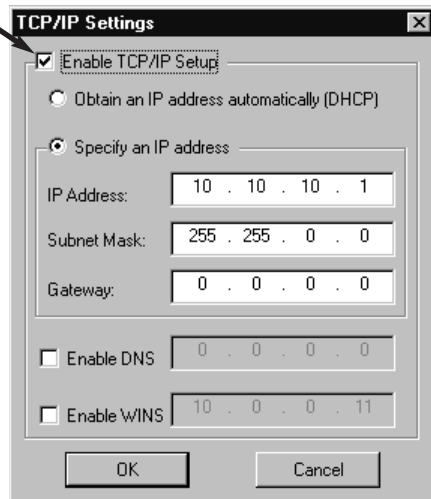
Enable TCP/IP Setup

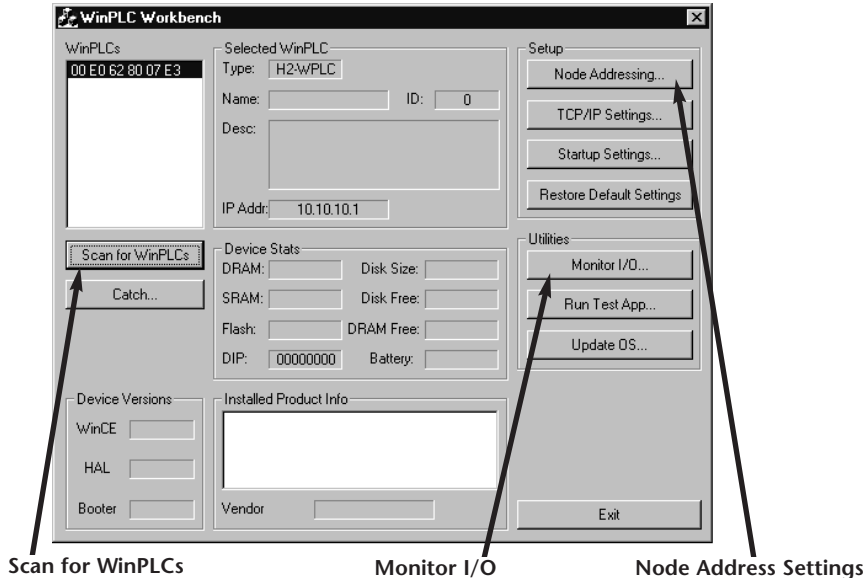
With “Specify an IP address” selected, you can manually enter the IP address. Enter the IP address, click “OK” and cycle power to the WinPLC to activate the address.

NOTE: If the WinPLC has no IP address, Workbench displays the PC’s IP address in this field.



Note: Unless you have detailed knowledge of IP protocol, we recommend that your PC and WinPLC have the same subnet mask. DNS and WINS settings are optional (see your LAN administrator).





Now that the IP address is set, Workbench should be able to find the WinPLC automatically if it is run after the WinPLC is powered up and connected. If the WinPLC is connected after Workbench is running, just click on “Scan for WinPLCs”.

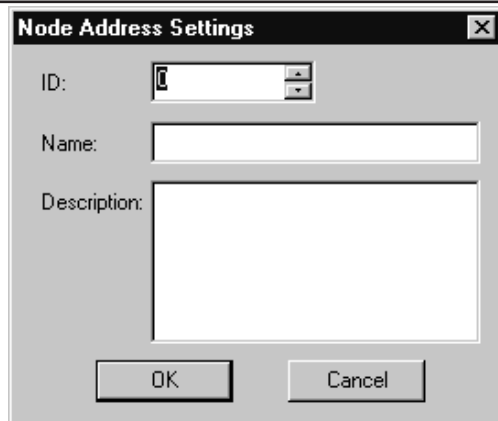
The Workbench window now appears like above, showing information about the WinPLC module. In addition, the “Monitor I/O” utility is now activated.

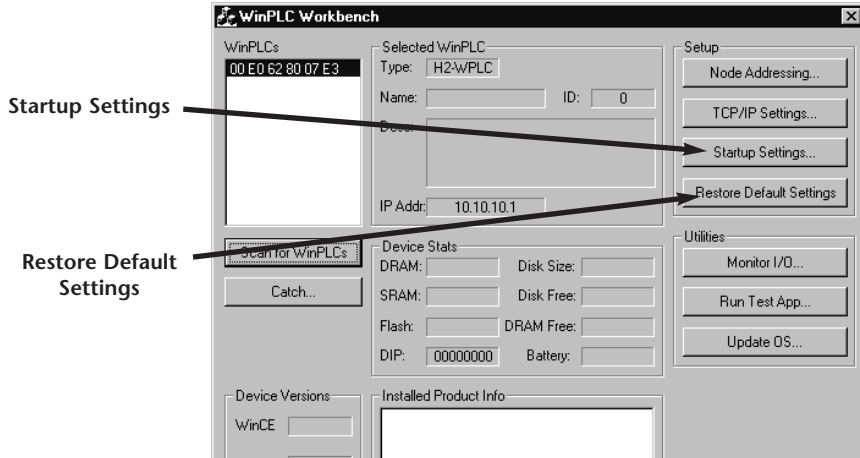
From this point Workbench is using TCP/IP protocol, and with the proper IP address setting you can remotely attach to the WinPLC.



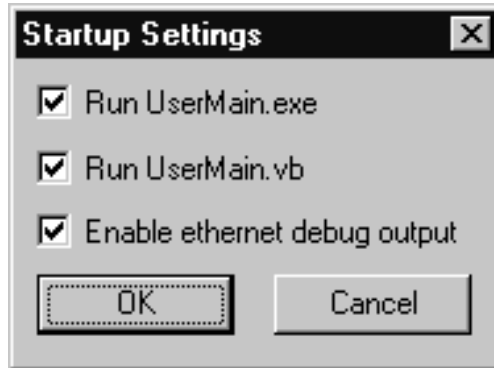
NOTE: While the Catch feature does allow you to capture the WinPLC, even without an IP address, the feature cannot be routed between LANS.

The “Node Address Settings” selection allows you to enter descriptive information for each Win PLC module. For example, you can assign the WinPLC a module ID, name or description.

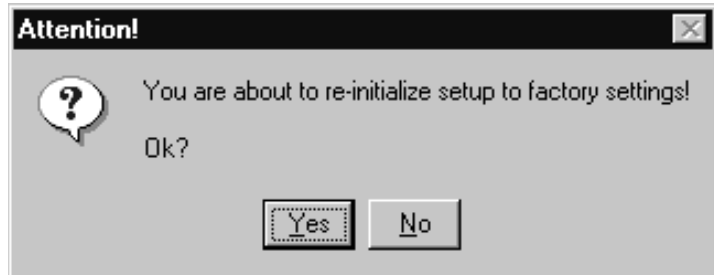




“Startup Settings” are only used by the H2-WPLC1 and H2-WPLC2 models for C and VB programming. See H24-SDK-M for more information on these settings.



Selecting “Restore Default Settings” returns the WinPLC to its factory default settings. You must cycle power before this occurs, so if you accidentally select “Yes”, you can recover by resetting the setup parameters before cycling power.



Following is a description of the utilities provided by Workbench. These programs allow you to monitor and test your I/O modules and your programming connection to the WinPLC without having to write a specific program.

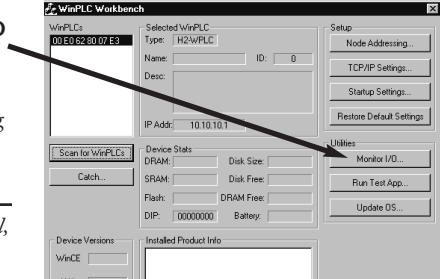
Monitoring the I/O

“Monitor I/O” gives you a way to read from and write to the I/O modules in the base using your WinPLC. It allows you to see the current state of the discrete and analog inputs, toggle your discrete outputs and write values to your analog outputs.



NOTE: The “Monitor I/O” utility uses TCP/IP protocol, so it will not be active until the WinPLC is assigned a valid TCP/IP address.

Monitor I/O



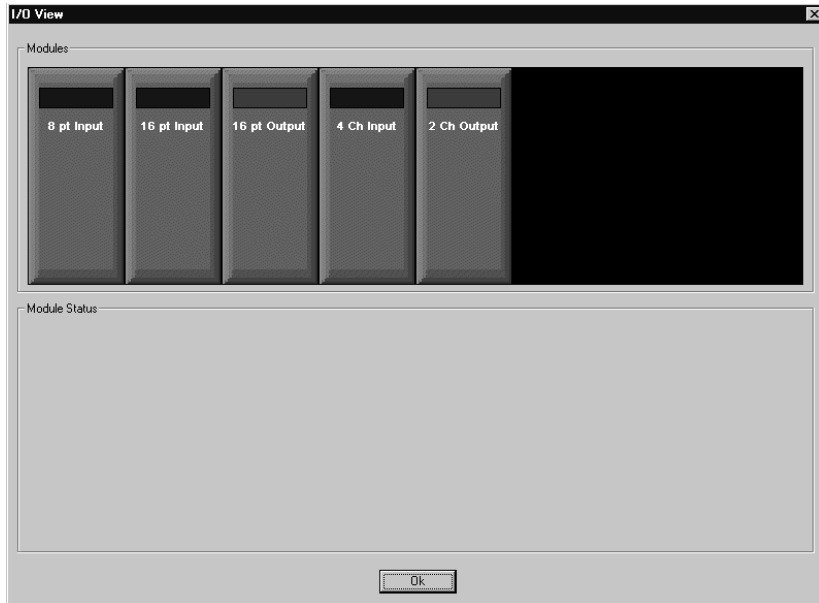
When you click here, Workbench scans the backplane and displays a graphical representation of the modules it finds.

Slots containing specialty I/O modules which are not currently supported by Workbench will be displayed but will be nonfunctional.

Click on a module to open a window with details about that module.



WARNING: Because this utility allows you to manipulate the actual I/O, be very careful not to cause personal injury or equipment damage.



Discrete Input Modules

Below is an example where an 8 channel discrete input module has been selected. Notice that 8 blocks are displayed, each representing one channel. For discrete input modules, points that are ON will be blue, while points that are OFF will be black.

8 Channel Input Module

Blue = Input Point is ON

Black = Input Point is OFF

| Module Status | Discrete Inputs | | | | | | | |
|---------------|-----------------|-------|-------|-------|-------|-------|-------|-------|
| | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
| 0 | Black | White | White | White | White | White | White | White |
| 1 | Black | White | White | White | White | White | White | White |
| 2 | Black | White | White | White | White | White | White | White |
| 3 | Black | White | White | White | White | White | White | White |
| 4 | Black | White | White | White | White | White | White | White |
| 5 | Black | White | White | White | White | White | White | White |
| 6 | Black | White | White | White | White | White | White | White |
| 7 | Black | White | White | White | White | White | White | White |

Discrete Output Modules

Below is an example where a 16 channel discrete output module has been selected. Notice that 16 blocks are displayed, each representing one channel. For discrete output modules, points that are ON will be red, while points that are OFF will be black. To turn ON an output, double-click on the black box, which brings up a window asking you to verify that you want to change the output. Make sure it is safe for you to turn the output on or off.



NOTE: Some older WinPLCs will not allow the state of output points to change.

16 Channel Output Module

Red = Output Point is ON

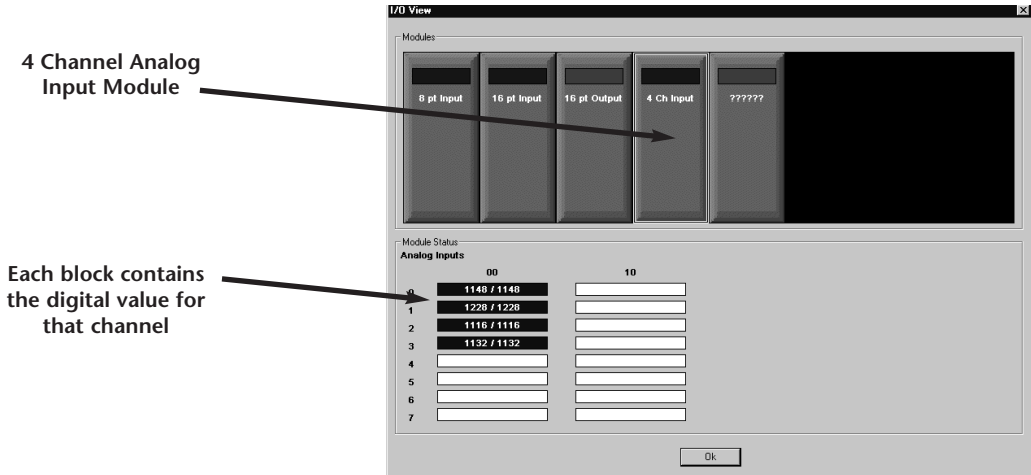
Black = Output Point is OFF

Dialog box appears to verify that you are changing an output.

| Module Status | Discrete Outputs | | | | | | | |
|---------------|------------------|-------|-------|-------|-------|-------|-------|-------|
| | 00 | 10 | 20 | 30 | 40 | 50 | 60 | 70 |
| 0 | Black | Black | Black | Black | Black | Black | Black | Black |
| 1 | Black | Black | Black | Black | Black | Black | Black | Black |
| 2 | Black | Black | Black | Black | Black | Black | Black | Black |
| 3 | Black | Black | Black | Black | Black | Black | Black | Black |
| 4 | Black | Black | Black | Black | Black | Black | Black | Black |
| 5 | Black | Black | Black | Black | Black | Black | Black | Black |
| 6 | Black | Black | Black | Black | Black | Black | Black | Black |
| 7 | Black | Black | Black | Black | Black | Black | Black | Black |

Analog Input Modules

Below is an example where a 4 channel analog input module has been selected. Notice that 4 blocks are illuminated, each representing one channel and displaying some non-zero digital value representing the sensed value. The exact digital value depends on the module resolution and range. For example, a 12 bit input module displays 4095 for a full-scale input.

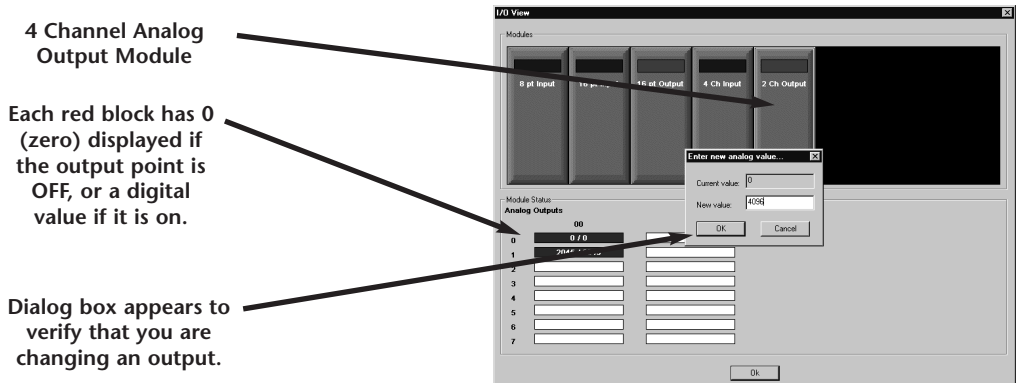


Analog Output Modules

Below is an example where a 2 channel analog output module has been selected. Notice that 2 blocks are illuminated red, each representing one channel and displaying a zero when the output is OFF. To turn ON an output, double-click its block, which brings up a screen allowing you to enter a digital value representing the portion of the full-scale output you desire. The full-scale digital value depends on the bit resolution of the module. For example, set a 10V, 12 bit voltage module to 4095 for a 10V output signal. Enter a value and click OK. A window pops up asking you to verify that you want to turn on/off an output. Make sure it is safe to do so.



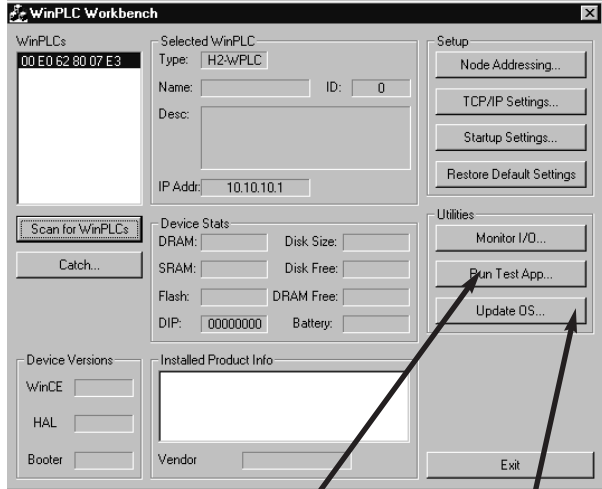
NOTE: Some older WinPLCs will not allow the state of output points to change.



Test Applications Utility

The “Run Test App” feature is only used by the H2-WPLC1 and H2-WPLC2 models for C and VB programming. See H24-SDK-M for more information.

This utility lets you test your development PC’s ability to download a program to the WinPLC and have the WinPLC run that program. The utility decides which test application to run by looking at the operating system image in the WinPLC.



Test OS

Update OS Utility

This utility should only be used if directed to by a Technical Support person to update the EEPROM image stored on your WinPLC. If the manufacturer issues new operating system images for your WinPLC, this utility can be used to do the update. Clicking on any entry in the OS Images displays the image’s description, date of release and other version information. The size of the FLASH drive is determined by the amount of ROM left over after the operating system is loaded, so updating the operating system image deletes the entire FLASH drive and rebuilds it to accommodate the new operating system image. If there is anything in the FLASH drive you want to save, do so before updating the operating system.

