

DYNATRONIX®

PRO SERIES Programmable Pulse Power Supplies



START-UP GUIDE

Installing the DynaComm II Operator Interface

Before attempting to connect to and use your Dynatronix Pro-Series power supply, install the DynaComm II Operator Interface from the CD using the following simple procedure. Once installed, you may proceed to the “**Quick-Start Guide for Dynatronix Pro-Series Power Supplies**” on the next page.

Installing DynaComm II Operator Interface:

Hardware keys:

- If using a parallel port hardware key, attach it to the parallel port prior to beginning the DynaComm II installation.
 - If using a USB port hardware key, insert the USB hardware key when the installation says it cannot locate it. The installation installs the USB hardware key drivers moments before attempting to locate the key.
1. Insert the DynaComm II Operator Interface installation CD.
 2. If the CD does not autoloading, execute the setup.exe file on the CD:
 - Go to Start >>run. At the prompt type X:setup.exe (X=drive letter where the CD is inserted)
 3. Follow the instructions in each of the windows. They are generally self explanatory.
 - Choose “Full Install” when asked if you want to install the “Full Install” or “Operator Interface” only.
 - Insert the USB Hardware key when prompted, as noted above. Let the Windows Hardware Wizard locate the “New Hardware” and check for drivers.
 - The install will ask for a Serial Number. Enter the CD Key number from the CD case as the Serial Number.
 4. Restart your computer after the installation has completed, whether it indicates to do so or not.

Possible installation errors:

1. **TCP/IP error:** *"No TCP/IP protocol has been installed on this computer. DynaComm II requires that the TCP/IP protocol is installed in order to properly execute. Please install a protocol before attempting to install DynaComm II."*
 - The install requires that TCP/IP protocol be installed on the host computer. Talk with your Network Administrator or refer to the TCP/IP protocol installation instructions available on the CD to have the TCP/IP protocol installed. Once the TCP/IP protocol is installed, try the DynaComm II installation again.
2. **Hardware Key error:** If the install states it cannot locate the hardware key:
 - First make sure the key is securely attached.
 - Try rebooting your host computer with the hardware key already installed and run the install again.
 - Try aborting the install, removing and reattaching the key to see if Windows will detect and install it. If it installs, run the install again.

QUICK-START GUIDE

to

DYNATRONIX PRO-SERIES POWER SUPPLIES

Getting started:

To connect to your host computer to your Dynatronix Pro-Series power supply and operate it with the DynaComm II Operator Interface, you will need to perform the following four steps, which are covered in more detail on the following pages:

1. **Connect the host computer to the power supply (Ethernet or Serial):**
 - Ethernet host port connections
 - i. Single cell units - use a CAT 5 Crossover type Ethernet cable
 - ii. Multi cell units - use a CAT 5 “Straight-through” type Ethernet cable.
 - Serial port connection
 - i. RS232 host port - use a 9-pin serial cable from a COM port on the host computer to the RS232 host port on the power supply.
 - ii. RS485 host port - use an RS232 to RS485 converter unit to connect a COM port on the host computer to the RS485 host port on the power supply.
 2. **For Ethernet port connections only: Set the TCP/IP network settings** correctly in the host computer (You will need to know the IP Address of the power supply).
 3. Bring up the DynaComm II Server, and **create a connection to the power supply in the server.**
 4. **Bring up the DynaComm II Operator Interface** and use the power supply.
-

The four steps listed above may appear daunting at first glance - but in reality they are very easy. There is no need to be a networking specialist. The key to understanding the connection from the host to the power supply is that the host communicates to the power supply through the “DynaComm II Server” (commonly referred to as “the server”). Follow the process below and you will be connected to and using your Pro-Series Power Supply in short notice. **If at any time during this process you encounter difficulty** - or need over the phone assistance, please call Dynatronix Customer Support at 715-268-8118 immediately. We want you to be able to use the unit shortly after installation, with minimal delay.

If you are connecting to your power supply serially, and have the physical cable connection made from the host’s COM port to the serial port on the power supply, skip forward to page 9 which describes the next relevant step, how to make a serial connection in the DynaComm II Server.

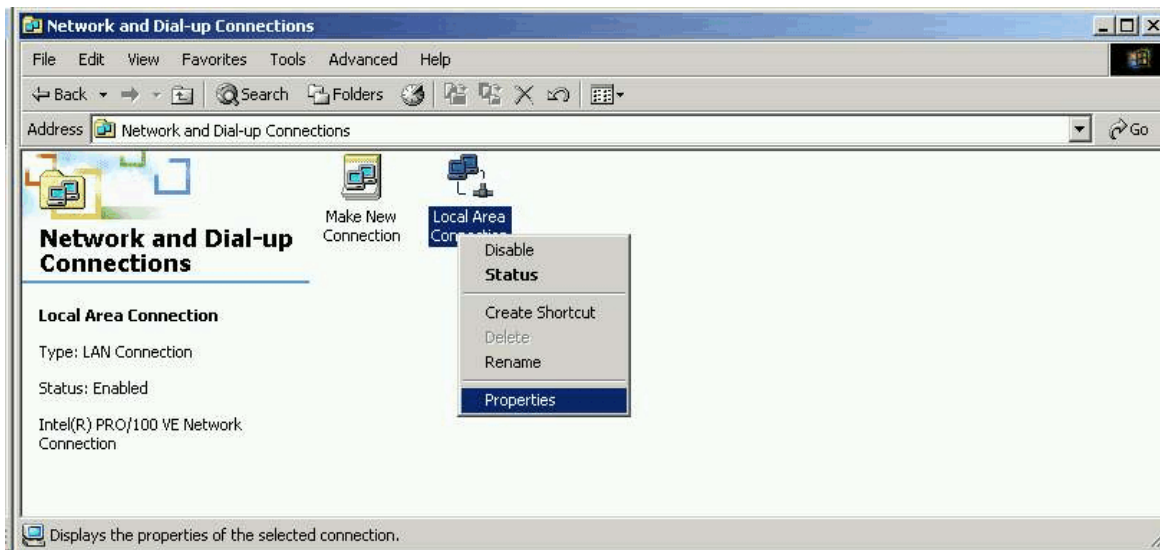
Ethernet Host port users should begin here. In order for the host computer to network with the power supply (through the server), the host computer must have correct TCP/IP settings made. You will need to know the IP address of the power supply (each cell will have its own IP address and unit ID number). Make the correct TCP/IP settings in the host computer using the following procedure:

Windows 9x, 2K or XP Network TCP/IP Protocol Setup for HyperNet Communications

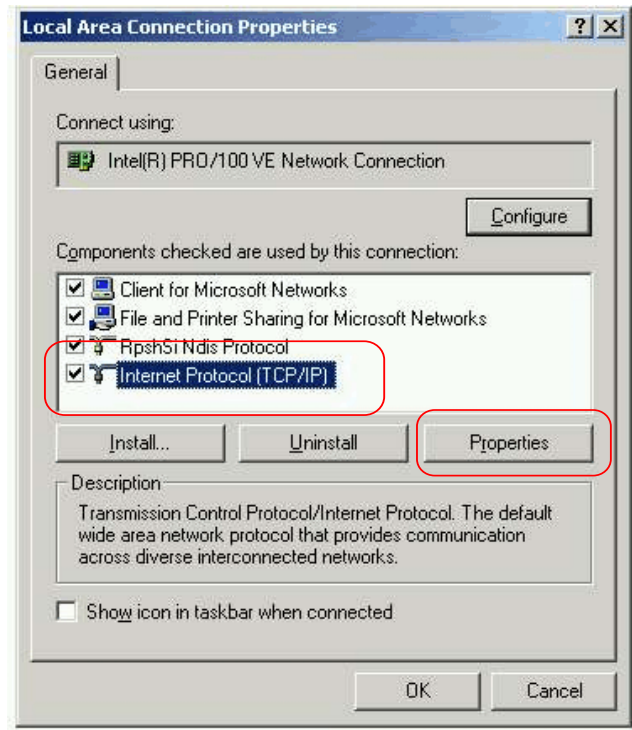
1. Open the Windows control panel as shown below (control panel may also be found in the Windows “Start” menu):



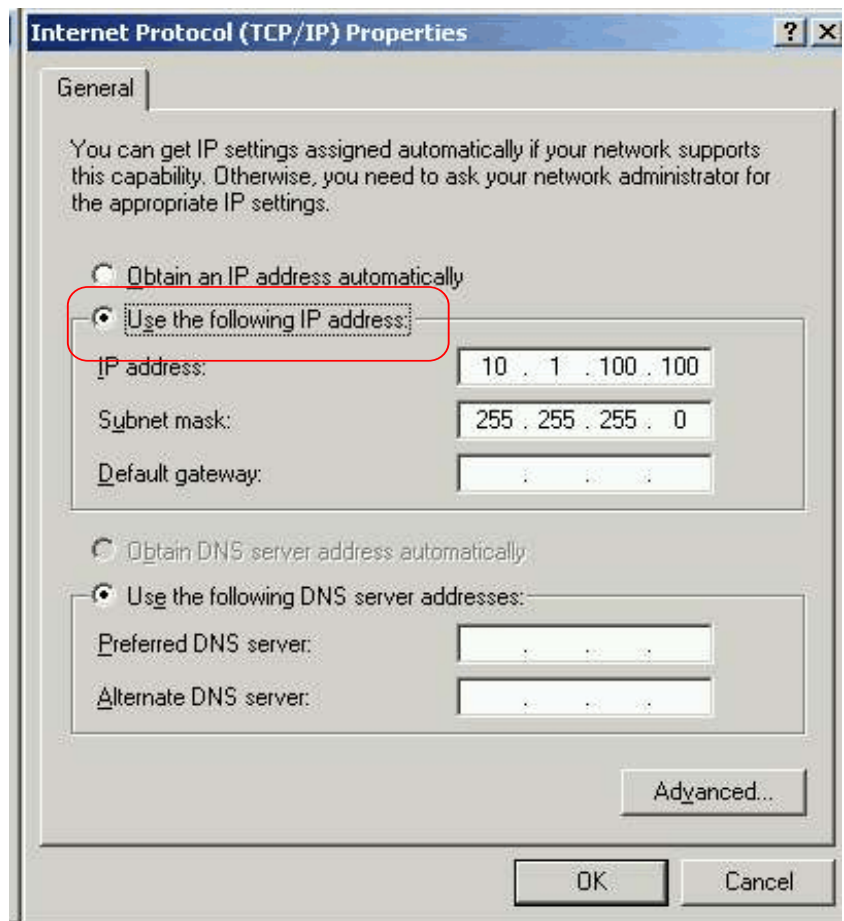
2. Locate the “Network and Dial-Up Connections” icon as shown above, and double-click on it to open a view of the PC’s various connections similar to that below:



3. Right click the “Local Area Connection” icon and select “Properties.” The “Local Area Connection Properties” window will appear.
4. Scroll down to and highlight “**Internet Protocol (TCP/IP).**” Click the Properties button, as shown to the right. The “Internet Protocol (TCP/IP) Properties” window will open.



5. Set the “**Use the following IP address**” Radio button:

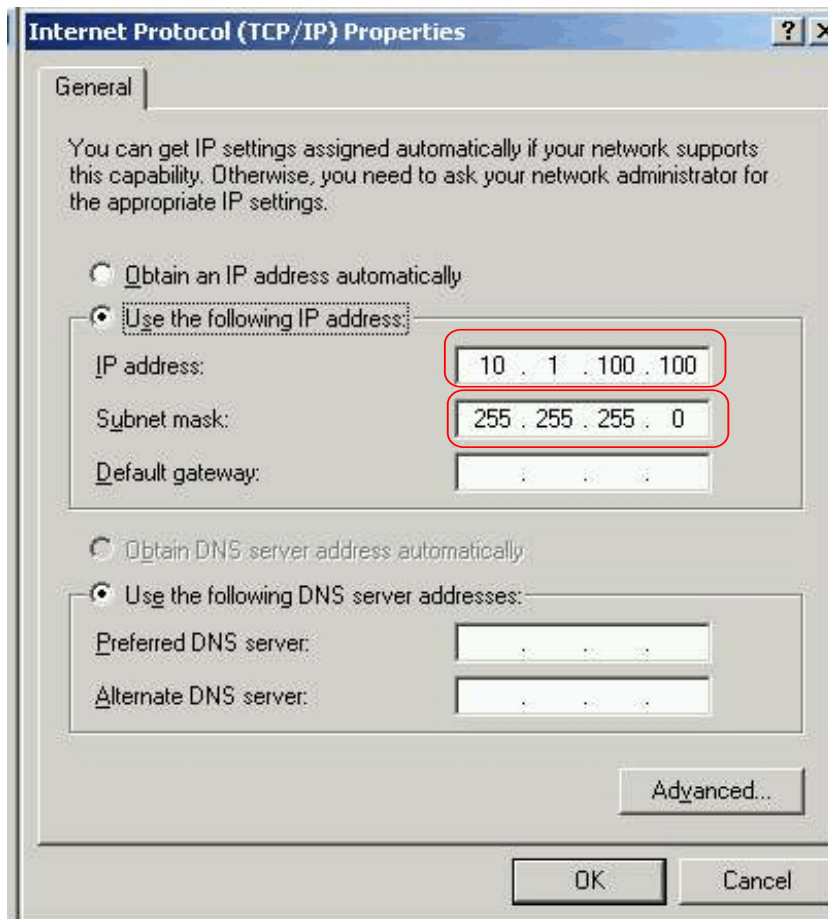


6. Enter an **IP Address** which is in the domain of the power supply's IP Address. For example, the Mach XX controlled Pro-Series power supplies are shipped from the factory with the IP Address preset to **10.1.100.1**. The IP Address of the PC used to communicate with this supply, must have the first three sets of numbers in the IP Address set to the same value as the power supply's IP Address. The 4th set of numbers can be any number between 1 and 255 except that it cannot be the same as that set into the power supply. In this example, it could be any number from 2 to 255. It cannot be 1 because that is the supply's address.

Other examples might be:

- If the supply were 172.16.20.1, the PC could be 172.16.20.9
- If the supply were 192.168.0.100, the PC could be 192.168.0.200

Of course, if the supply is on a LAN with other units or devices, the IP Address must not be the same as any of these others, as well.



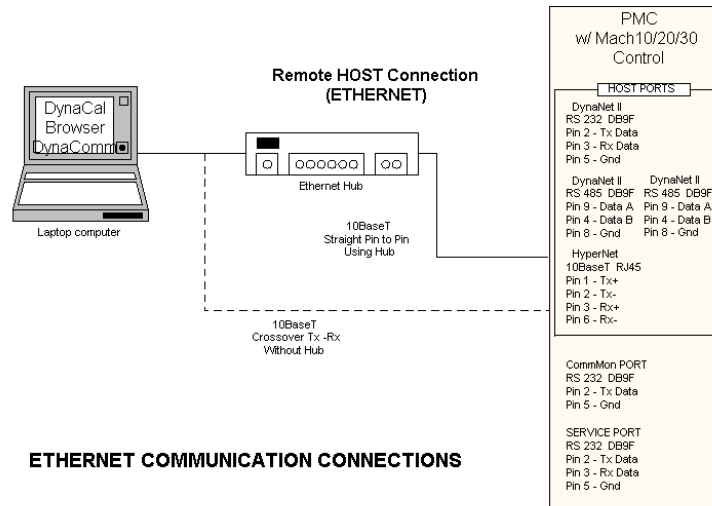
7. The **Subnet Mask** must be set as **255.255.255.0** only. This value will always be the same, regardless of the IP Address used.
8. The DNS Server addresses are to remain blank. If any value has been entered in either the Preferred or the Alternate addresses, delete it.

9. Once the IP address and Subnet Mask values have been entered, click OK to exit the dialog and save the Internet Protocol (TCP/IP) Properties.
10. This returns to the Local Area Network Properties dialog. Click OK again, to exit and make the new connection information active.

NOTE: Windows 9x and NT will request rebooting, at this point, in order for the new address to become active. Windows 2000 and XP do not need to reboot for the new address information to become active.

PHYSICAL ETHERNET CONNECTION TO THE POWER SUPPLY:

11. If you have not already done so, connect the PC’s 10BaseT Ethernet port to the Ethernet Host port of the power supply as shown here:

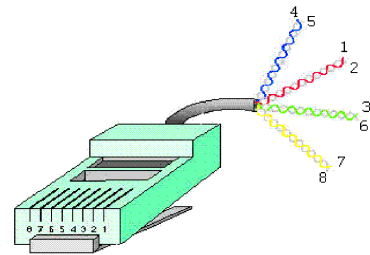
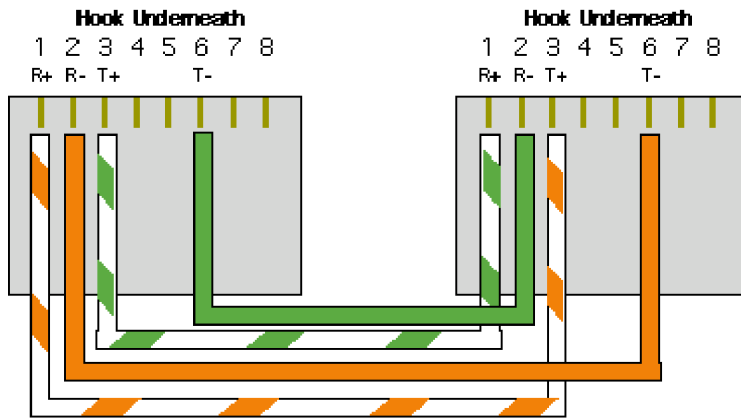


If this is connection to a single cell unit, a **crossover** cable will be required as shown. If the connection is made through an Ethernet hub or switch, a straight-through cable is used. If the power supply is a multiple cell unit, there may be an internal hub or switch built into the supply. In this case, a **straight through** cable is used.

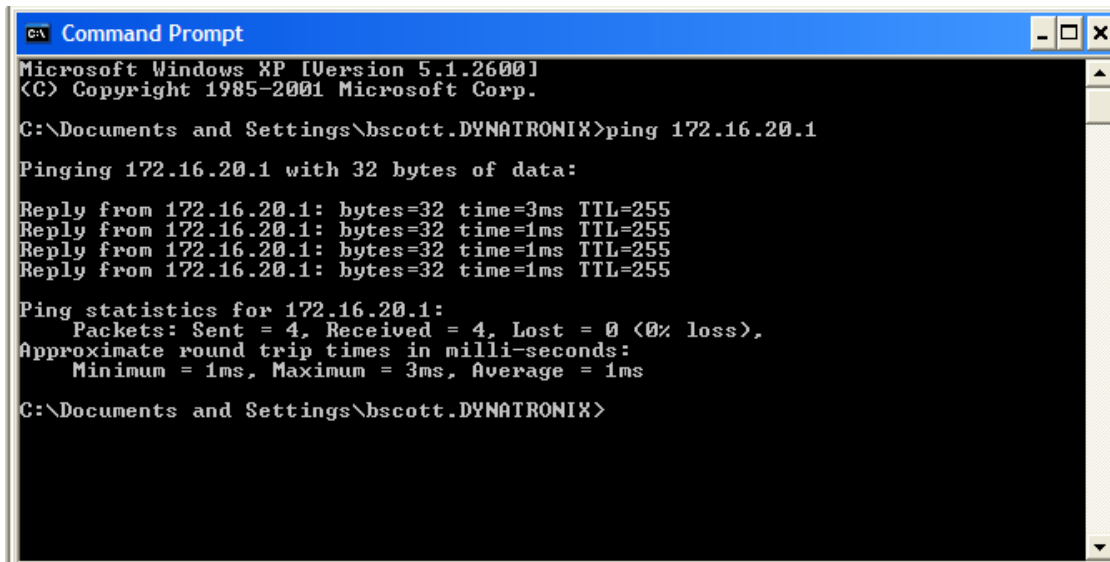
A diagram of a 10/100 crossover cable is provided below, if needed. They can be purchased, of course, but some customers make their own according to the following diagram:

PIN	WIRE	PIN
1	White/Orange	3
2	Orange/White	6
3	White/Green	1
NC	Blue/White	NC
NC	White/Blue	NC
6	Green/White	2
NC	White/Brown	NC
NC	Brown/White	NC

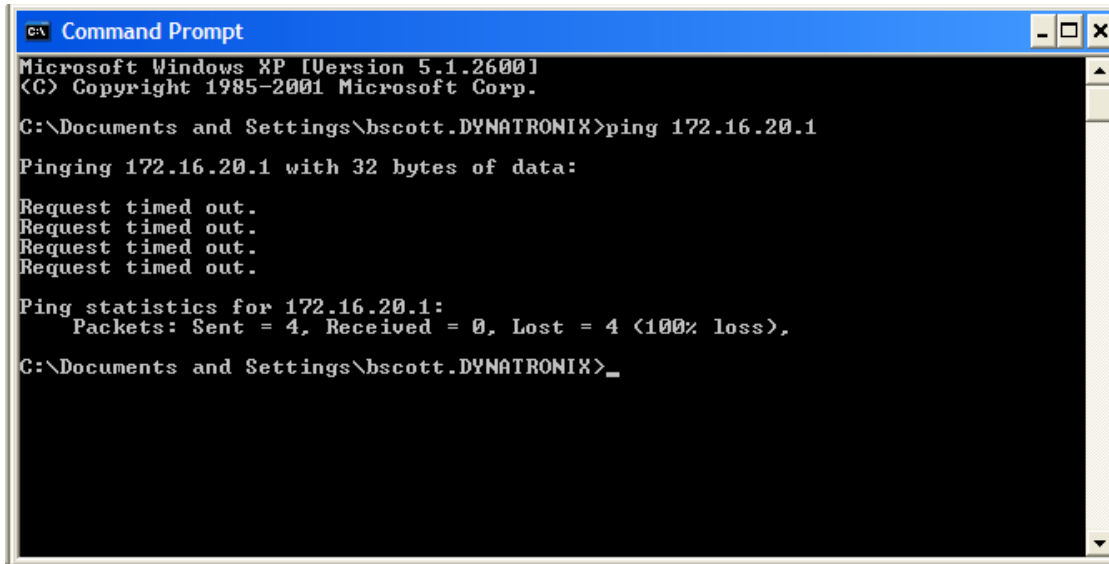
WECCO / AT&T 258A / EIA (TIA) 568A



12. Once the physical cable connection has been made to the power supply and the power supply is powered up, you can test the connection by trying to “ping” the unit from a Windows command line prompt. For example, in Windows XP, choose Start >> All Programs >> Accessories >> Command Prompt. Enter the command “ping 10.1.100.1” where 10.1.100.1 would be replaced by the IP address of the power supply, if different (in this case, the IP address of the power supply is 172.16.20.1). If the connection is good, the ping will receive a reply from the supply detailing the time to receive the reply, as shown here:

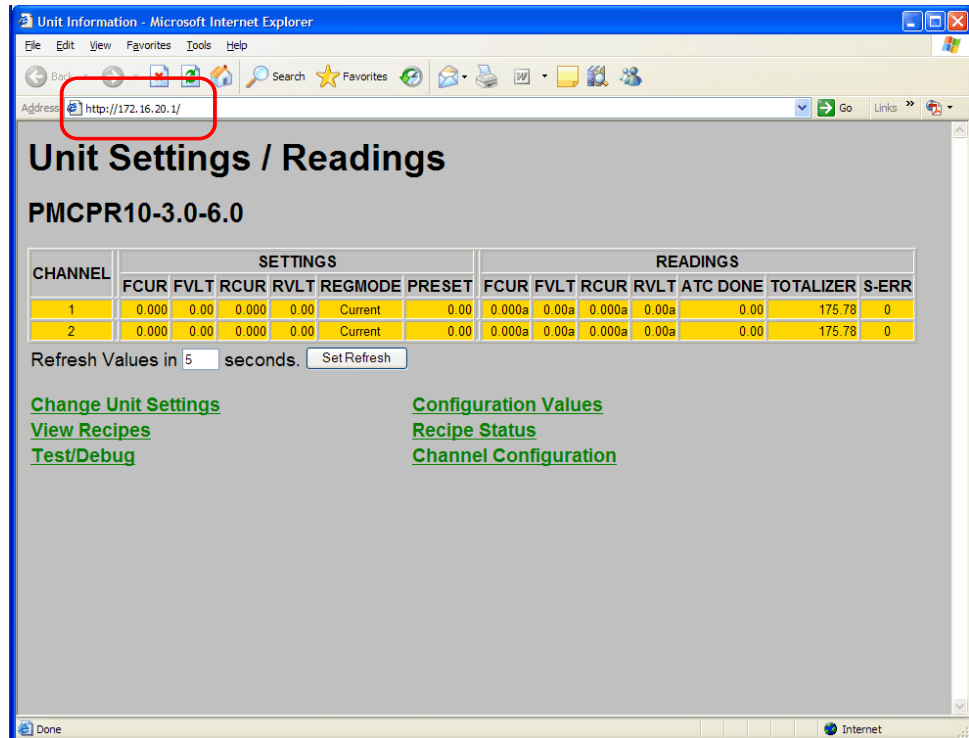


An unreachable connection replies with “Request timed out” messages as shown below, and is generally caused by incorrect TCP/IP network settings or wrong cable type:



If you are having trouble getting the ping to work, call Dynatronix Customer Support at 715-268-8118.

13. At this point, a higher level test can be performed by connecting to the power supply through a web browser such as Internet Explorer (HTTP Protocol). Simply bring up the web browser, enter the IP address of the power supply cell as the address in the web browser, and press return. The “Unit Settings/Readings” page will display as shown to the right.





14. The final steps in preparing to use your power supply with DynaComm II are to bring up DynaComm II Server, create a connection for the supply in the server, and bring up DynaComm II. Follow the instructions below to create a connection in the server.

Creating a Connection in the DynaComm II Server (commonly referred to as “the server”)

The DynaComm II Server is a communication protocol mechanism that provides a link between the DynaComm II Operator Interface (or other plating tool host control software) and the power supply. In addition to performing as a communication mechanism, the server also provides power supply configuration information to the DynaComm II Operator Interface. The DynaComm II Operator Interface installation procedure installs the DynaComm II Server (commonly referred to as “the Server”), and places two icons on the desktop. One is for the Operator Interface, and one is for the Server:



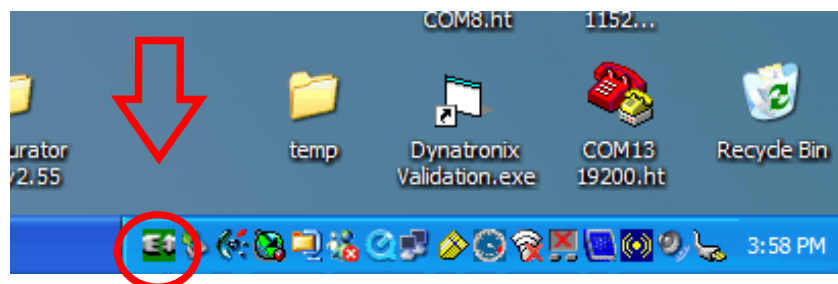
You must bring up  DynaComm II Server and  create a connection to each desired power supply cell before the DynaComm II Operator Interface can connect to and control that cell. You will eventually need one connection in the server per cell of the power supply. The server will support serial or Ethernet port connections.

To make a new connection in the DynaComm II Server:

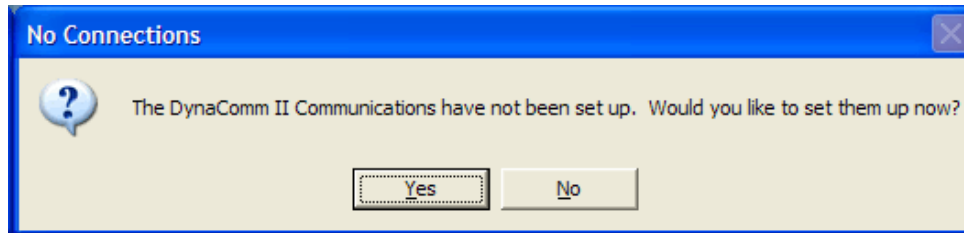
1. Bring up the DynaComm II Server by double clicking on the DynaComm II Server icon on the desktop:



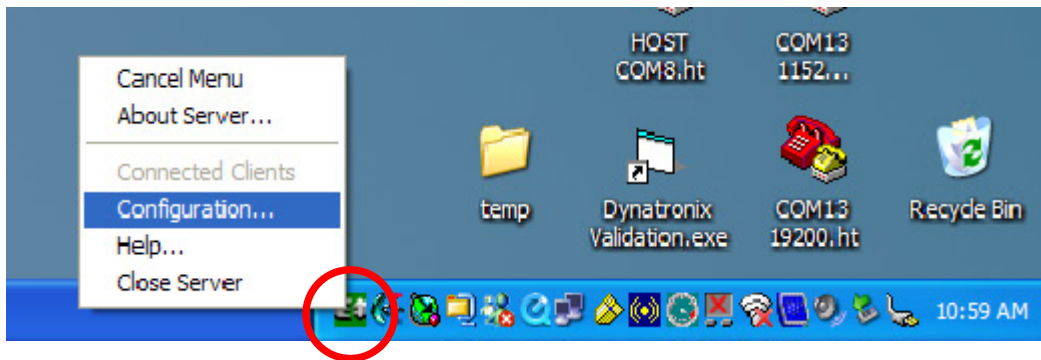
2. When the Server is up and running, no interface window will appear unless no connections have been made in the server or you choose to make connection changes. The only indication that the Server is running is a small green icon on the Windows taskbar:



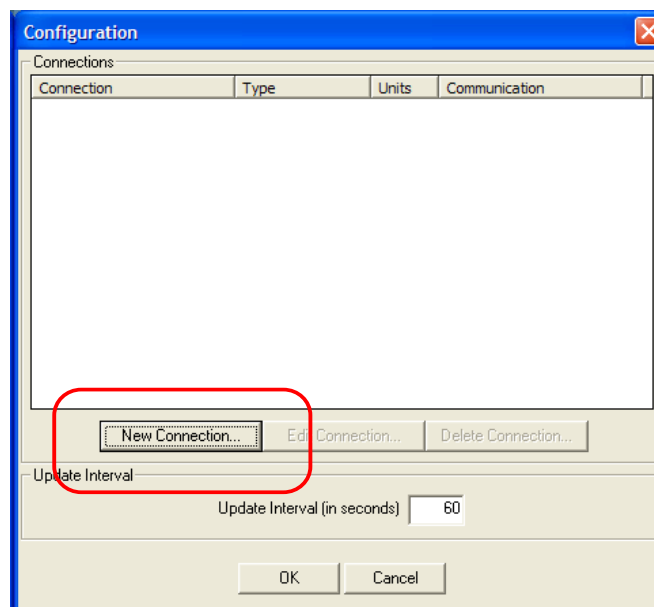
3. If no connections have been set up in the DynaComm II Server, a message window will appear asking if you wish to set up connections as shown below:



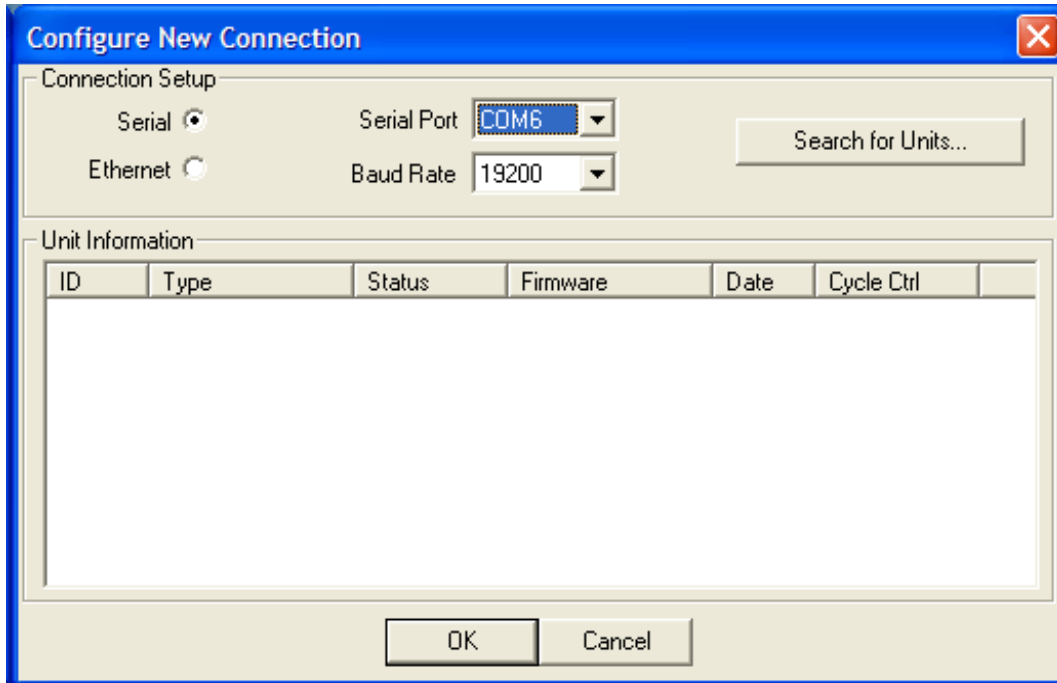
4. Click “Yes” to create a new connection. The “Configuration” window will appear next, and is where all connections are created, deleted, and edited. If previously made connections already exist in the server, and you want to add a new connection or edit existing connections, bring up the “Configuration” window by right clicking the server icon on the taskbar and pull up to “Configuration” as shown below.



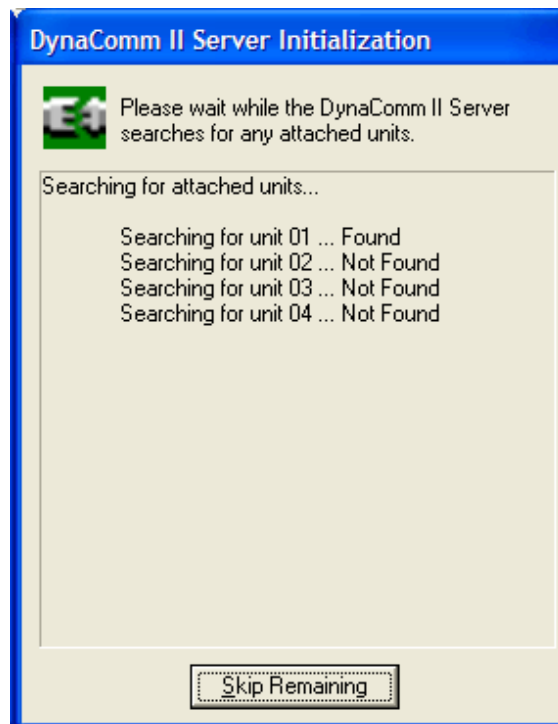
5. In either case, the “Configuration” window will open. The “Configuration” window is where all connections are listed. Connections can be created, edited, or deleted. Click on “New Connection” to create a new connection in the server:



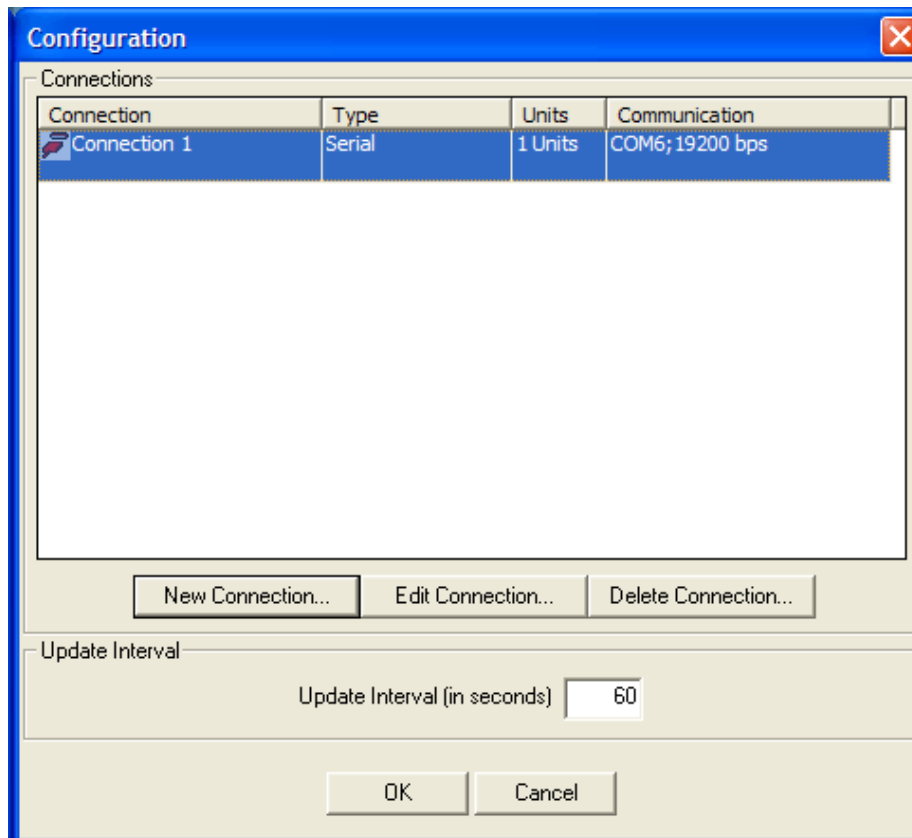
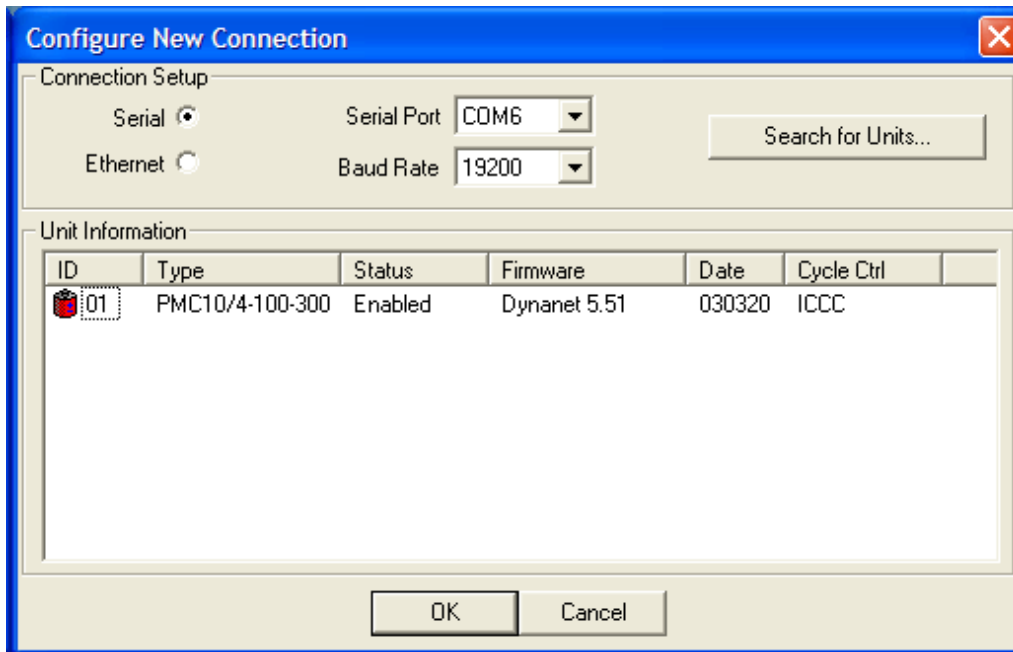
6. The “Configure New Connection” window will open. You can create a serial port connection or an ethernet port connection. If the host is connected serially, choose “Serial,” make the appropriate COM port and Baud rate settings and click on “Search for Units”:



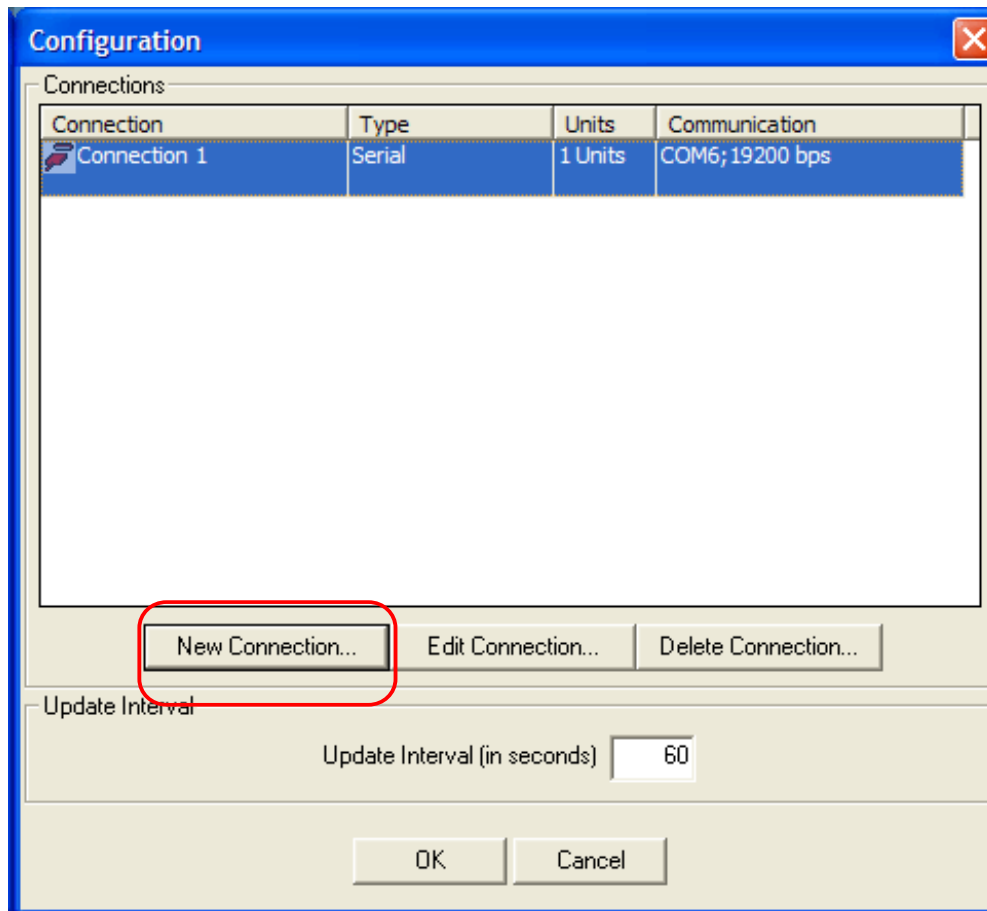
The server will poll the COM port searching for units, starting with unit ID 1. Click on “Skip Remaining” once the server has located your unit. In this case the Unit ID number is “1.”



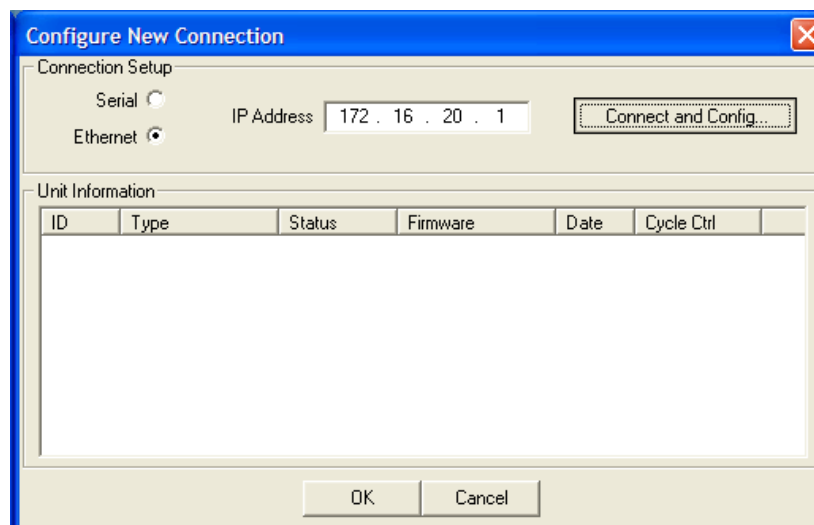
Your unit and its connection will appear on the list of existing connections in the “Configure New Connection” and “Configuration” windows (click “OK” on the “Configure New Connection” window):



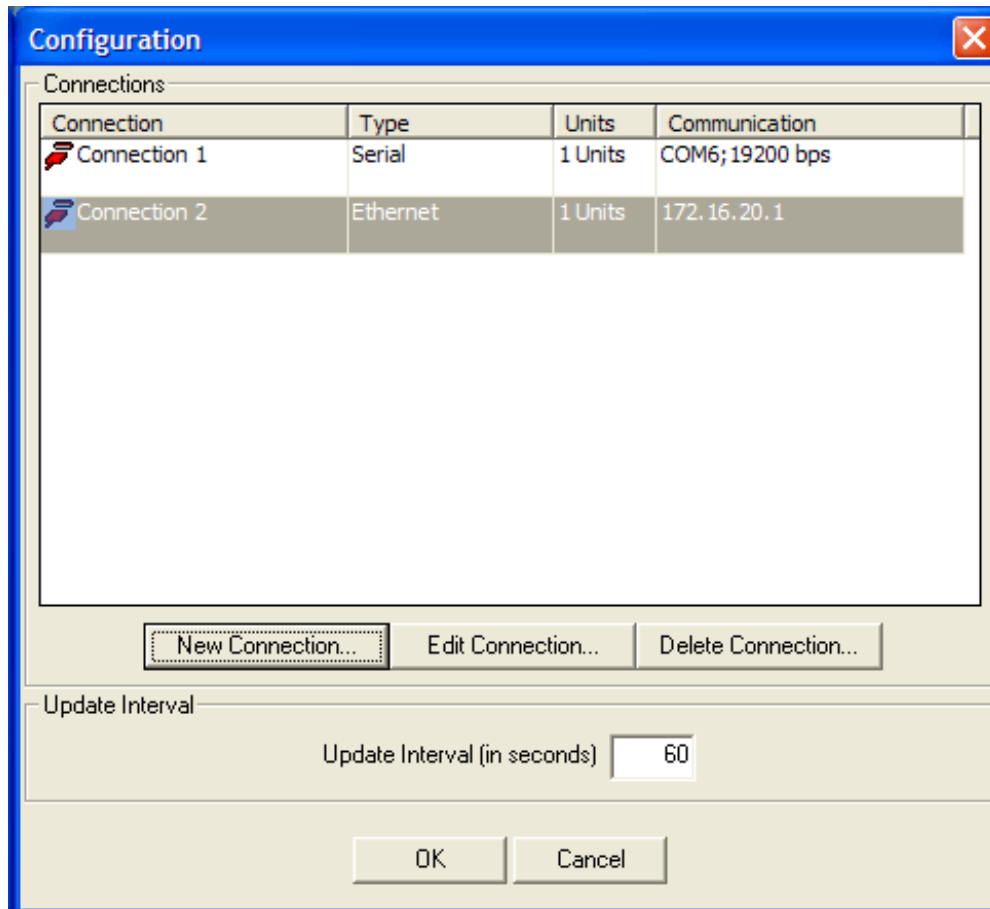
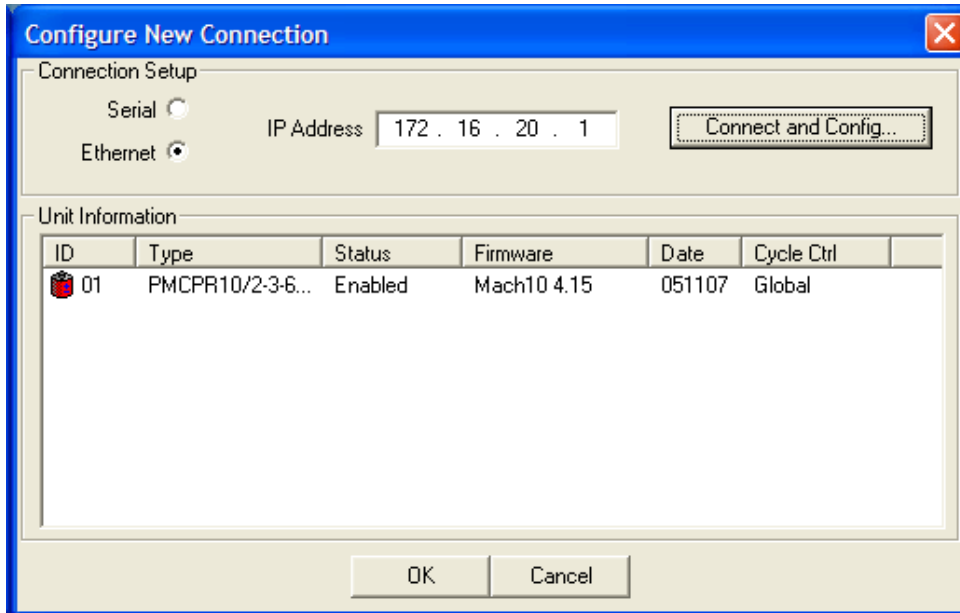
7. If the host is connected via the ethernet port, click “New Connection” in the “Configuration” window.



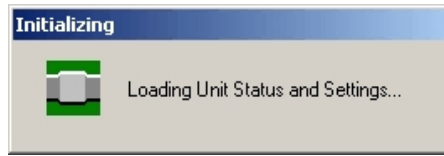
8. The “Configure New Connection” window appears. Choose “Ethernet,” enter the IP address of your power supply, and click “Connect and Config.” The server will look for the given IP address on the network. In this case, the power supply cell’s IP address is 172.16.20.1:



The new unit and connection appear in the “Configure New Connection” and “Configuration” window as shown here (click “OK” in the “Configure New Connection” window):

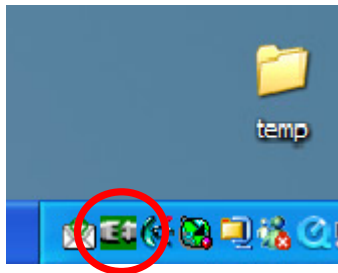


- Click “OK” on the “configuration” window to close it. Anytime the “Configuration” window closes after adding or editing a connection, the server gathers the configuration data for each unit, and the following message window appears momentarily:

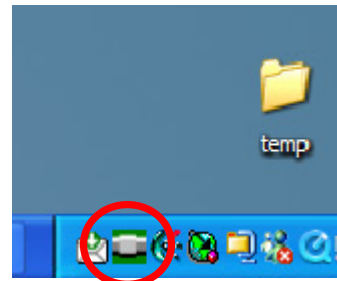


- Bring up the DynaComm II Operator interface. The icon on the taskbar will change to indicate the host program has connected:

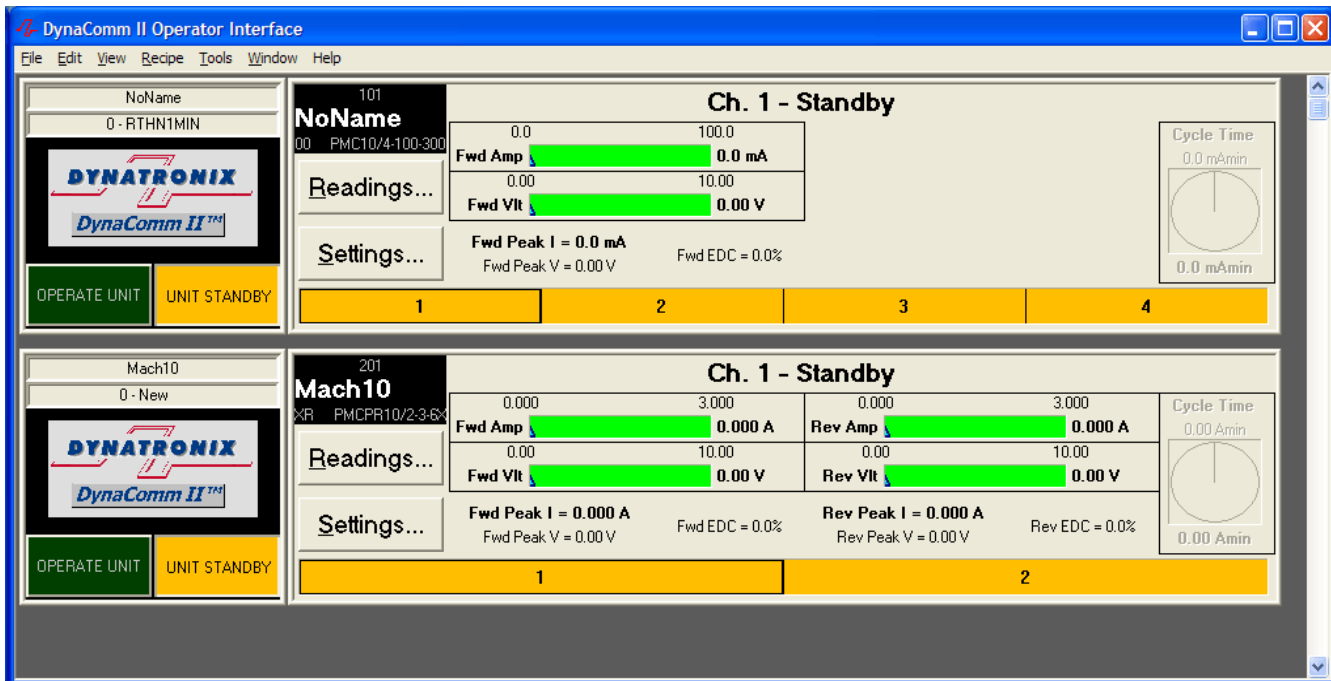
Host disconnected:



Host connected:



All units (cells) listed on the “Configuration” page should appear in the DynaComm II Operator Interface main display as shown here:



DynaComm II Server:

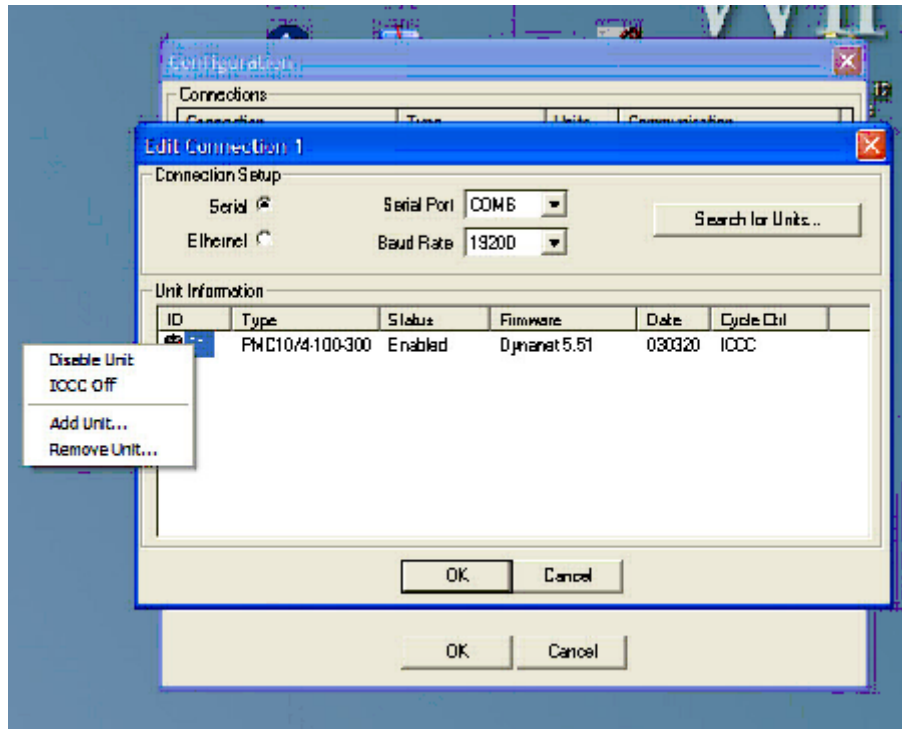
(Beyond the Basics)

1. You will need to create a server connection in the “Configuration” window for each cell that you want to control. You can create a new connection, edit an existing connection, or delete a connection in the “Configuration” window.
2. **COM port numbers** 10 and above are not valid in server versions 1.3.12 and earlier.
3. **Update Interval:** This parameter is used by serial host port connections only. While in Operate, the power supply is continually polled for status and readings. The “Update Interval” setting in the “Configuration” window of the server determines how frequently the unit’s serial port will be polled for status while the unit is in “Standby.” We recommend using a setting of five seconds, even though the default is 60 seconds.
4. **Configuration changes:** If a configuration change has been made in the power supply (for example with the Mach XX Configuration Utility), it must be rebooted (powercycled) for the configuration changes to take place within the power supply. In addition, the new configuration settings must be reacquired by the server from the power supply. Unexpected behavior by the host will result if the configuration is not reacquired by the server. Depending on if the host is connected serially or via the Ethernet port, performing the following:

For Ethernet connections, highlight the desired connection in the “Configuration” window. Click on “Edit Connection,” and “Connect and Config.” For a serial connection, highlight the desired connection in the “Configuration” window. Click on “Edit Connection,” and on “Search for Units.” Click on “Skip Remaining” when it finds your unit.

Another method of causing the server to reacquire the configuration settings is to simply delete the existing connection and create the connection anew. To delete an existing connection, highlight the desired connection on the “Configuration” page, and click “Delete Connection.” Recreate the connection by clicking on “New Connection” and following the instructions previously discussed. When the “Configuration” window is closed by clicking “OK,” the server will reacquire the configuration settings from the power supply, and make them available to the host.

5. **Edit connection:** The “Edit Connection” button in the “configuration” window opens the “Edit Connection” window. Highlight and right click on your units ID number in the “Edit Connection X” window. The resulting menu can be used to perform the following functions:
- a. Disable the unit
 - b. Enable the unit
 - c. Turn ICCO on or off (serial connections only)
 - d. Add units (serial connections only, for example RS485 port daisy chained units)



Getting Started with **DynaComm II** Operator Interface

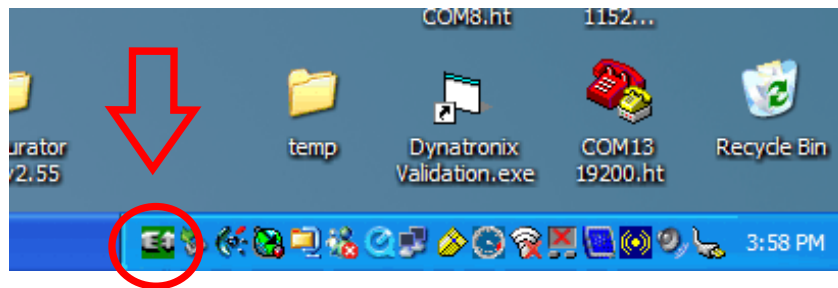
To get started quickly with DynaComm II, follow these simple steps:

1. DynaComm II Server must be running and a connection for your unit made within the server (as explained on the last few pages).
2. Bring up the DynaComm II Operator Interface.
3. Log in with the default “Operator” login, no password required.
4. Click the “Settings” button. The “Settings” window will open.
5. Click the “Select and Set” tab.
6. Make your plating cycle settings in the “Set and Select” tab.
7. Choose which channels you wish to make the settings for.
8. Click “Set” and then “Apply.”
9. Click the “Operate” button on the main OI window to turn the plating output on.
10. Click the “Standby” button on the main OI window to turn the plating output off.

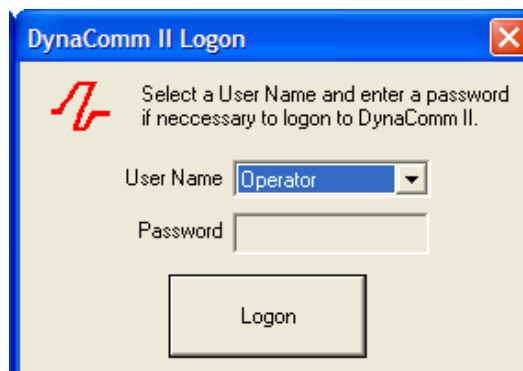
If you are having difficulties, please contact Dynatronix Customer Support at 715-268-8118 without further delay. We want you to be able to use your unit in short notice.

A more detailed explanation of the above steps is included below:

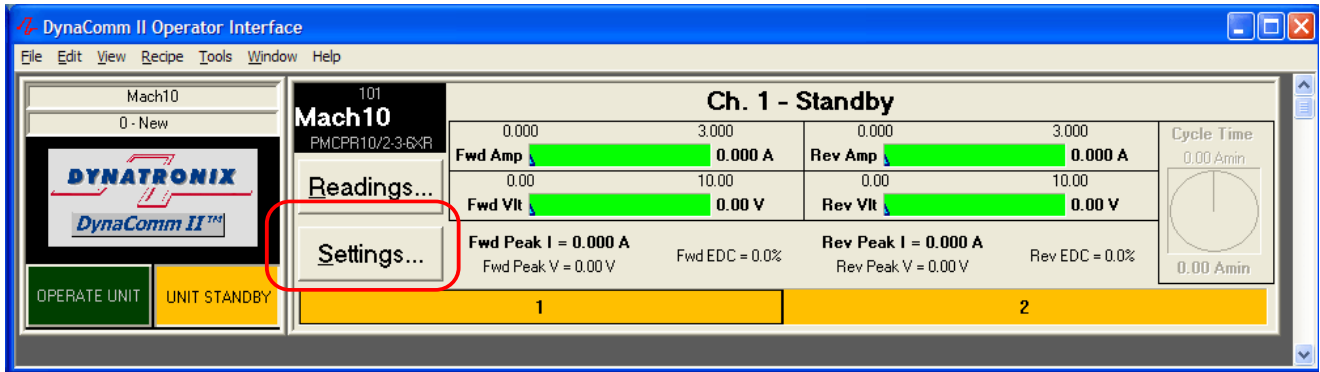
1. DynaComm II Server must be running and a connection for your unit made within the server:



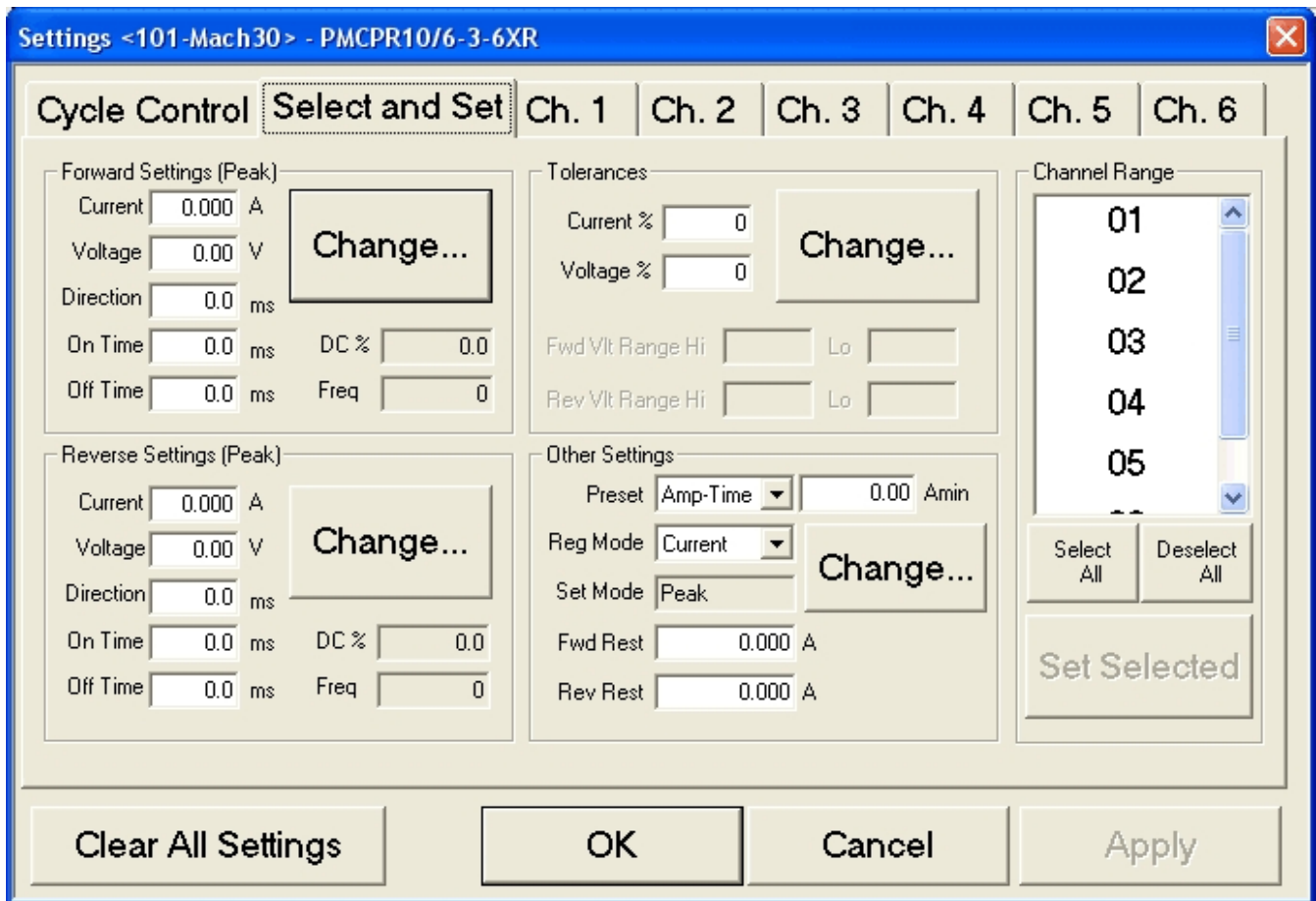
2. Bring up the DynaComm II Operator Interface by double clicking the appropriate icon on the desktop. Log in to DynaComm II with the default login of “Operator” with no password.



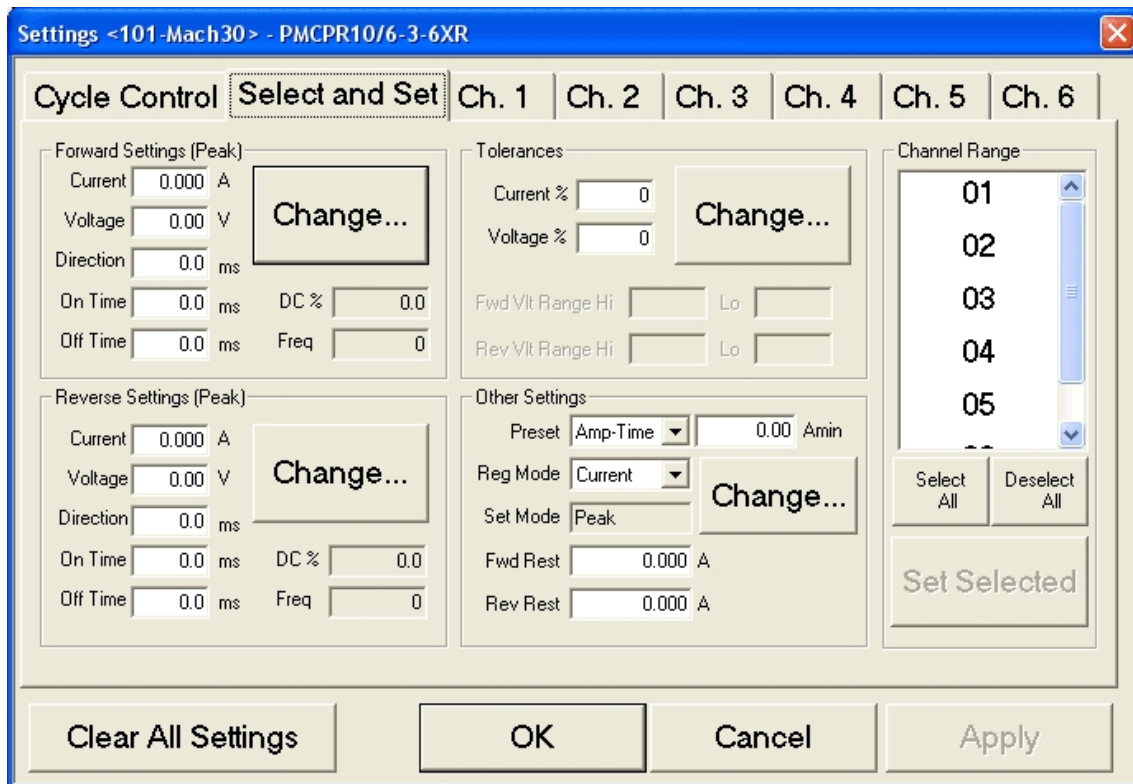
3. Once logged in, the Operator Interface will open. Click on “Settings.” The “Settings” window will open:



4. Click the “Select and Set” tab. This is where you will make your plating cycle settings:



5. Make the following settings on the “**Select and Set**” tab. To make settings, click on the numeric values in the respective boxes and type the desired setting, or click the “Change” button if “Touch Screen Editing is enabled. Tools menu >> Options >> Touch Screen Editing:
 - Forward Current and/or Voltage
 - Forward timing settings (Forward Direction, On, and Off timing)
 - Reverse Current and/or Voltage
 - Reverse timing settings (Reverse Direction, On, and Off timing)
 - Tolerances (Current and/or Voltage)
 - Preset (RTC or ATC cycles, i.e., Real-Time or Ampere-Time cycle preset)
 - Regulation Mode (Current, Voltage, or Crossover mode)
 - Set Mode (Peak or Average)
 - Forward and/or Reverse Rest (setting during Fwd/Rev off-time. Available in Mach 30 control systems only)
6. Choose which channels which you want these settings to be applied to by highlighting the desired channels in the “Channel Range” column.
7. Click “**Set Selected**” and “**Apply**” to place the settings in selected channels control systems.
8. Click “**Operate**” in the main Operator Interface window to turn the plating output on at the settings applied, above (Operate and Channel buttons will turn green to indicate they are in operate). Click “**Standby**” to turn the plating output off (Operate and Channel buttons will turn yellow to indicate they are in standby). Congratulations! You have just made and applied your first plating settings.

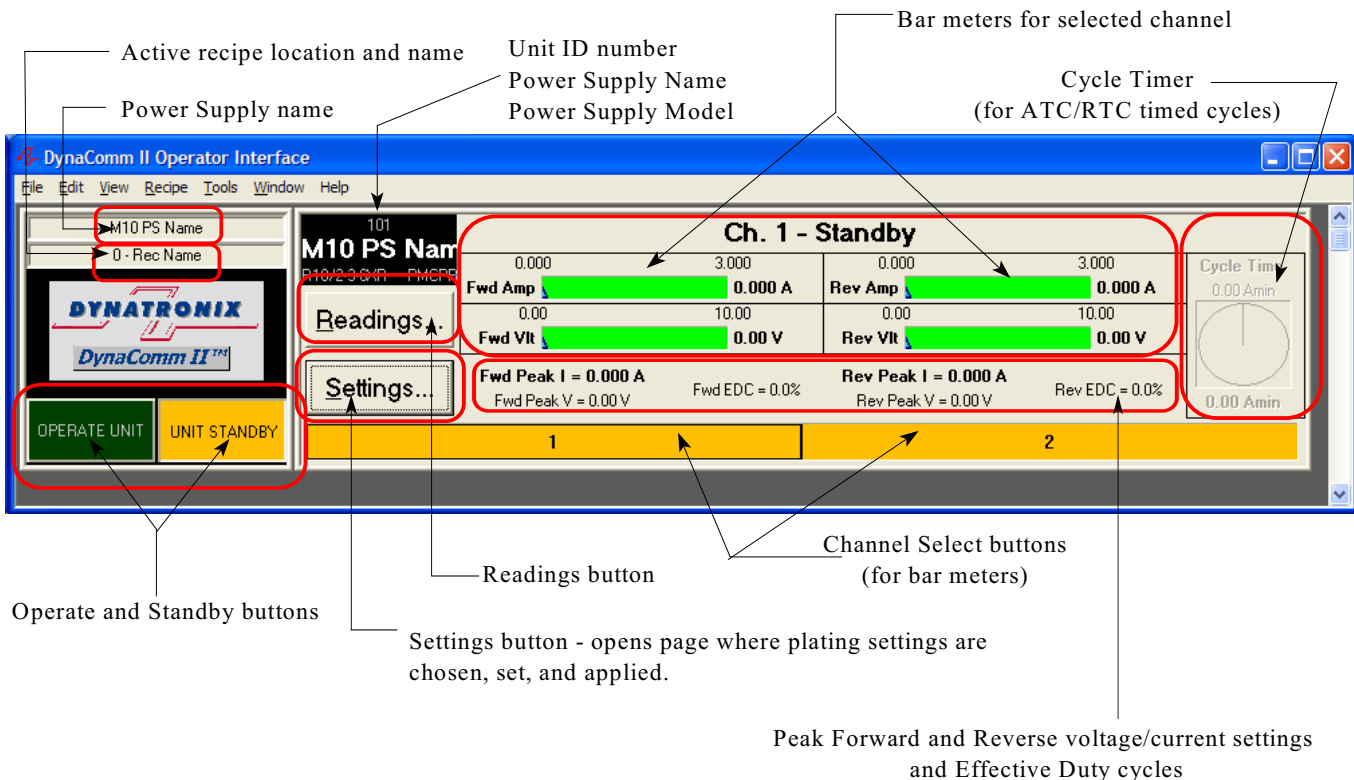


Quick-Guide to the main

DynaComm II Operator Interface Window

The following describes the individual components of main **DynaComm II** main Operator Interface Window. Some users will not use some of the features described, but may use this Quick-Guide in the future for reference.

Main Operator Interface Window:



1. Note the features of the main Interface window:

- Power Supply name (User selectable using “Tools menu >> Change Unit Names)
- Active recipe location and name of the recipe (if using recipes)
- Operate and Standby buttons (turns plating output on and off, respectively)
- Unit information window (Unit ID number, Power Supply name, Power Supply Model)
- Bar meters (indicates **Average** current and voltage readings)
- Readings button (opens a separate Readings window displaying all channels simultaneously)
- Channel Select buttons (displays selected channel current and voltage readings in the Bar meters)
- Peak Fwd and Rev current/voltage settings and Effective duty cycles
- Cycle Timer (active for RTC/ATC timed cycles only)

DynaComm II

Beyond the Basics

Recipes:

There is an in-depth Application Note available from Customer Support at Dynatronix which extensively discusses the creation, editing, downloading, and file maintenance of plating recipes in DynaComm II. Contact Dynatronix Customer Support (715-268-8118) to obtain this document. For now, here are a few generalizations as they apply to recipe usage in DynaComm II:

- Log in to DynaComm II as Supervisor with a password of MASTER (case sensitive) to create/edit/download recipes.
- Recipes are configuration sensitive. A recipe written for a power supply of a given model and timing unit configuration setting will not download to (or run on) a power supply of different model type or certain configuration settings.
- Recipes will not run with "Individual Channel Control" turned on.
- There are 10 recipe locations in power supply memory.
- Recipes (and the most recently applied settings) remain intact in power supply memory, even if the unit is powercycled.
- A recipe will run to completion even if the host disconnects from the power supply.
- Pull down on the "View" menu to "Auto-control mode." This will change the function of the Operate and Standby buttons to "Cycle Start" (Start Recipe) and "Cycle Stop" (Abort recipe). Disable Auto-Control mode for manual plating control.

Menus:

- Some of the menu features are usable only if logged in as Supervisor/MASTER

Datalogging:

- Data gets put in the log via two ways. For one, certain events get logged immediately, as they happen. These include Alarms, going to operate and standby state changes, and recipe events (start and end of recipe). For the second, at user selectable intervals a system snapshot of settings and readings is placed in the log. The user selectable interval is chosen in the Tools>>datalogging window. For instance, if you chose a log interval of .5 minutes, a system snapshot of readings and settings would be placed in the log every 30 seconds. Any other events, such as alarms, would go into the log whenever they were to happen. This snapshot will occur only while one or more channels are in "operate" mode.
- Datalogging is enabled as long as the "DynaComm II Datalogger" icon is up on the taskbar, which comes up on the taskbar when you start DynaComm. To disable datalogging, simply close the Datalogger icon on the taskbar.
- To view the log, click on "Reports" in the datalogging window, and the log will display once you select date and time ranges. Logs can be printed as well. One word of caution however, if you choose short log time intervals (0.1 minutes for example) your log will grow large very quickly and you will have lots of data to sort through to find certain events.
- Log maintenance can be done only if you are logged in as Supervisor/MASTER, and includes copying and purging of data according to date.

- The datalog file in DynaComm II is C:\Program Files\Dynatronix\DynaComm II\Dynalog.mdb. If this file bloats to a very large size, it can cause program lockup when you try to perform maintenance on the file (purge/delete/etc.). DynaComm II doesn't have an automatic datalog file size check mechanism. The solution is to rename this file to something like Dynalog.mdb.backup1 for example or archive it as needed. Obtain a fresh, empty copy of the file from Dynatronix Customer Support and place it as C:\Program Files\Dynatronix\DynaComm II\Dynalog.mdb. The archived Datalog file can be viewed with Microsoft Access.

Daisy chaining supplies via the rs485 ports:

- If you are connected to your supplies serially via the rs485 ports, each supply must have different Unit ID numbers. The last supply in the chain must have an rs485 terminator plug installed on its 2nd rs485 port. If the terminator is not on you may have symptoms of units going offline, and choppy updates in DynaComm. The terminator plug is Dynatronix p/n 136-0029-01.

Thank You for choosing Dynatronix for your power supply needs. We want you to be using your power supply and becoming familiar with its operation in short order.

We are certain you will find Dynatronix Products to be highly effective, easy-to-use tools, and feel it will not take long to become familiar with the usage of the supply as well as the DynaComm II Operator Interface.

If at any time you have questions, are having any difficulties getting connected to or using your power supply in day-to-day production, contact Dynatronix Customer Support at 715-268-8118. We are here to help you!

Best Wishes,

- Dynatronix Customer Support

Revision History

Rev.	Description	ECO	Date	Initials
C	Convert to QSG	2966	12/19/2006	brs
D	Minor revisions	3199	10/10/2007	brs