

Technical Note

Communication Verification

(01/10/2007)



PURPOSE

Verify that communication is established for the following products programming option (488.2 compliant, SCPI *only*): DCS - M9C & DCS – M130, DLM – M9E & DLM-M9G & DLM – M130, DHP - M9D, P series, SG, CW, SW, TW

BACKGROUND

Failure to fully establish and verify communications is the most frequent cause of a power supply appearing to function improperly. If you are able to establish communications as outlined in this document, the supply is working properly. Once you've fully established communications, the supply is ready to communicate using your software. National Instruments (NI) has created drivers specifically for selected Elgar Electronics Corporation (EEC) products, and as a convenience, EEC provides these drivers and in some cases links to the NI webpage from the EEC website.

Please note these drivers are specific to the type of remote interface hardware, such as GPIB or serial or Ethernet. Be sure to download the correct driver for the type of communication hardware being used.

Please refer to the software provider for instructions and further installation and application assistance.

SETUP AND COMMUNICATION VERIFICATION

To perform Ethernet setup and communication verification, first perform RS232 setup and communication verification:

- 1) With your power supply powered off, locate the RS232 port on your power supply, typically located on the rear panel (refer to your programming manual, available at <http://www.elgar.com/> under support).

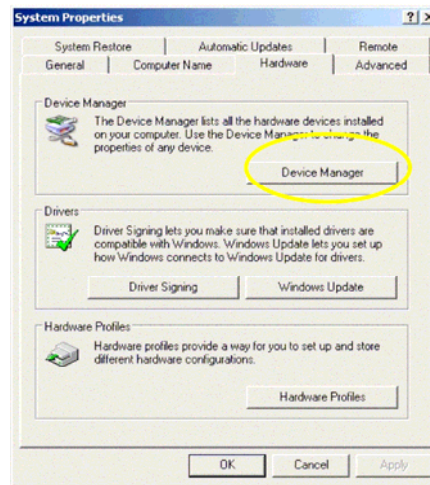


- 2) Connect your RS232 communication cable from the RS232 port on your power supply to a USB port on your computer. Some supplies require the communications cable to be built. Refer to your supplies programming manual for RS232 communications cable requirements.
- 3) Power up your power supply.
- 4) Prepare to configure **HyperTerminal** to establish Ethernet communications, by first finding your communications port number (COM#):
 - a) In MS Windows go to:
Start/ Control Panel/ System.
 - b) In the System Properties window:
click the **Hardware** tab.
 - c) In the System Properties Hardware page:
click the **Device Manager** button, as shown in the following illustration:

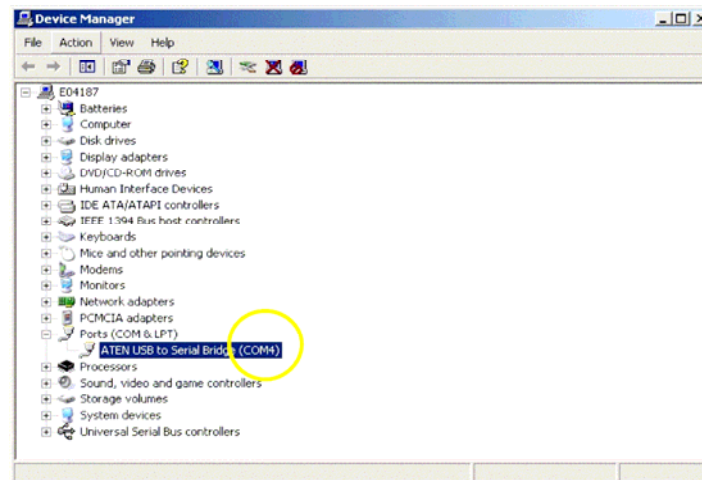
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- d) In the Device Manager window:
locate and expand **Ports (COM & LPT)** to see your serial port number,
shown as **"COM4"** in the following illustration.



- e) Record your COM port number, to be used to set up HyperTerminal.

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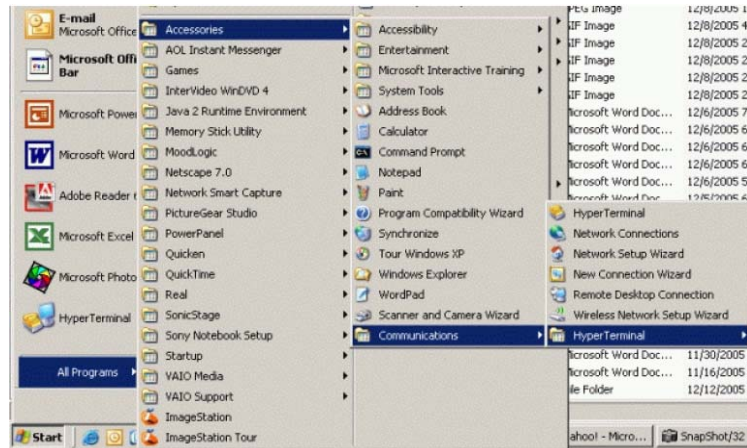
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5) Set up HyperTerminal:

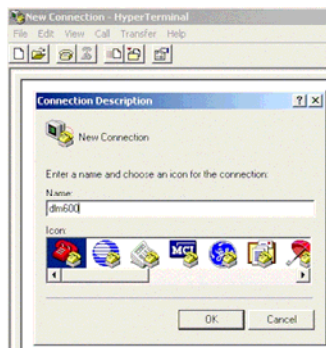
a) In MS Windows go to:

Start/ All Programs/ Accessories/ Communications/ HyperTerminal



b) In the Connections Description window:

give your setup a descriptive name, such as "dlm600" and click OK.



c) Click OK and you will now see the properties window for the setup with the descriptive name you gave it.

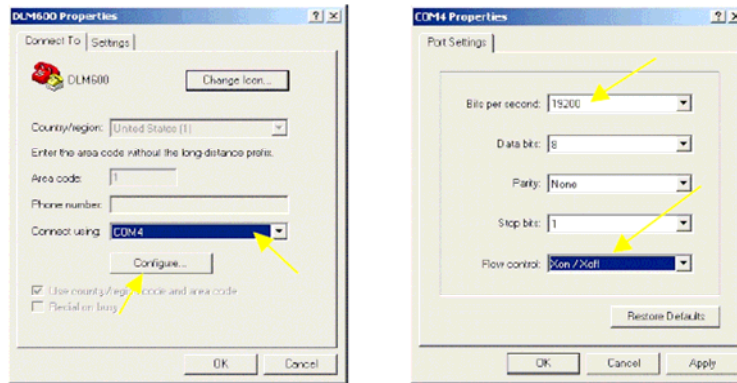
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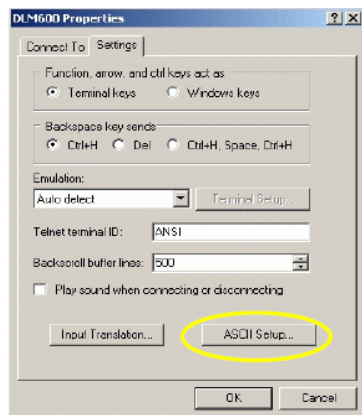
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- d) In the **Connect using** box:
select the **COM#** that you recorded from the Device Manager window and click the **Configure** button.



- e) In the COM# Properties window:
 - i) set the "Bits per second" rate to **19200**
 - ii) set "Flow control" to **Xon/Xoff**
 - iii) verify that "Data bits" is set to **8**
 - iv) verify that "Parity" is set to **NONE**
 - v) verify that "Stop bits" is set to **1**
 - vi) click OK.
- f) Go to **Settings** tab and click on the **ASCII Setup** button.



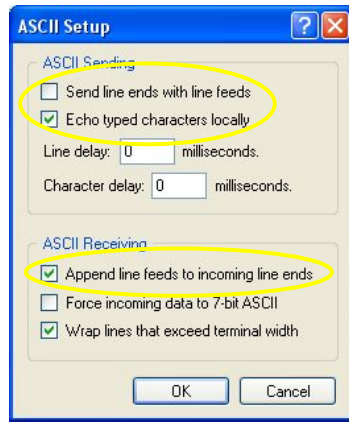
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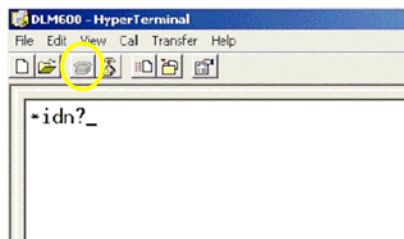
- g) In the ASCII Setup window:
 - i) in the ASCII Sending section, make sure that “Send line ends with line feeds” is *NOT* selected (If it is selected, you may have communications issues such as only one response).
 - ii) in the ASCII Receiving section, check the two boxes, “Append line feeds to incoming line ends” and “Echo typed characters locally.”
 - iii) click OK.



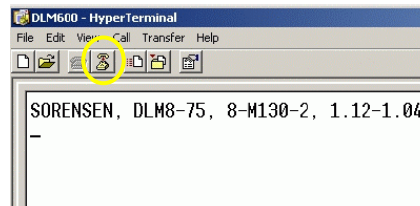
- 6) Check communication by verifying that the “connected” button in hyper terminal is active. With your power supply powered on, in your HyperTerminal window:



- a) type the SCPI command, ***idn?** and press Return.



The supply model information ID string, similar to the example shown below, should appear indicating the supply communication is operational.




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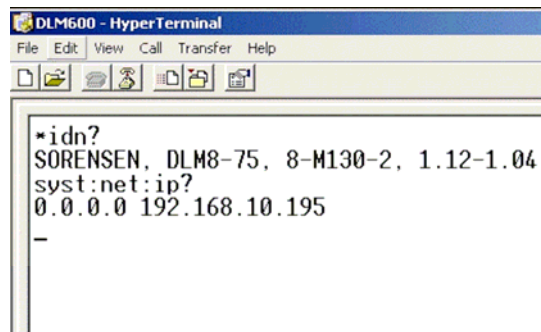


- 7) If you do not get the desired response, as in the preceding illustration, verify the following:
- Cycle power on the supply and allow the unit to reboot; press the “disconnect” button in HyperTerminal, then press the “connect” button . Redo Step 6.
 - Verify HyperTerminal is set to the proper COM#. See Step 4a through 4e and Steps 5d and 5e. Redo Step 6.
 - Verify HyperTerminal settings, Steps 5f and 5g. Redo step 6.
 - Verify the communication cable is wired per the programming manual specifications. Redo Step 6.
 - If these steps do not resolve the communications issues, please contact the factory for assistance.

Once RS232 communication is set up and verified, proceed with Ethernet setup and communication verification.

ETHERNET SETUP

- 8) Check the IP address:
- type the SCPI command, **syst:net:ip?** and press Return.
 - Record the IP address that is displayed, which is the IP address you will use for Ethernet communication.



```
DLM600 - HyperTerminal
File Edit View Call Transfer Help
*idn?
SORENSEN, DLM8-75, 8-M130-2, 1.12-1.04
syst:net:ip?
0.0.0.0 192.168.10.195
-
```


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- c. However, if the IP address returned is not a complete address or is all 0's, you can manually assign a new IP address:
 - i) type the SCPI command, **sys:net:ip"192.168.0.200"**.
(Place the quotation ("") marks as shown).
 - ii) type the command, **sys:net:ip?** to confirm the new IP address.

```
DLM600 - HyperTerminal
File Edit View Call Transfer Help
*idn?
SORENSEN, DLM8-75, 8-M130-2, 1.12-1.04
sys:net:ip?
0.0.0.0 0.0.0.0 0.0.0.0
sys:net:ip"192.168.0.200"
```

```
DLM600 - HyperTerminal
File Edit View Call Transfer Help
*idn?
SORENSEN, DLM8-75, 8-M130-2, 1.12-1.04
sys:net:ip?
0.0.0.0 0.0.0.0 0.0.0.0
sys:net:ip"192.168.0.200"
sys:net:ip?
192.168.0.200 192.168.0.200
```

NOTE: assigning a new IP address using this method, forces the Ethernet communication into using a "Static IP Address" and power to the supply's power switch must be cycled in order for the change to take effect.

To keep the supply Ethernet communication in DHCP mode (using "Obtain an IP Address Automatically"—the Factory default), press and hold the RESET button (typically located on the power supply's rear panel) until the light flashes (~ 10 seconds). Once reset, the unit will return to factory default settings and an automatic IP Address will be assigned. You can then verify this IP by repeating the preceding steps.



ETHERNET COMMUNICATIONS VERIFICATION

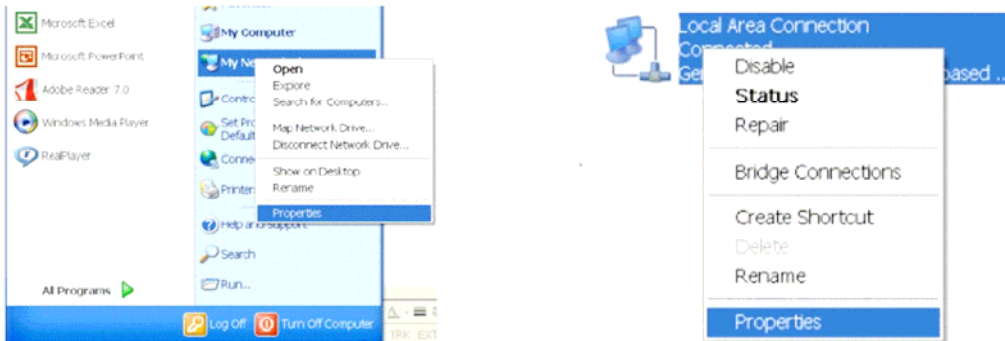
- 9) Disconnect the Serial cable from the RS232 port and connect the Ethernet "Crossover" cable from the Ethernet connector on the rear panel of the power supply, to the Ethernet LAN port on your computer.
- 10) Set up Internet Protocol Alternative Configuration to enable your computer to "talk" to the supply Ethernet IP address:
 - a) In MS Windows left click the **Start** menu:
right click **My Network Places**, and left click **Properties**.
 - b) In the Network Connections window:
right click **Local Area Connection** and left click **Properties**.



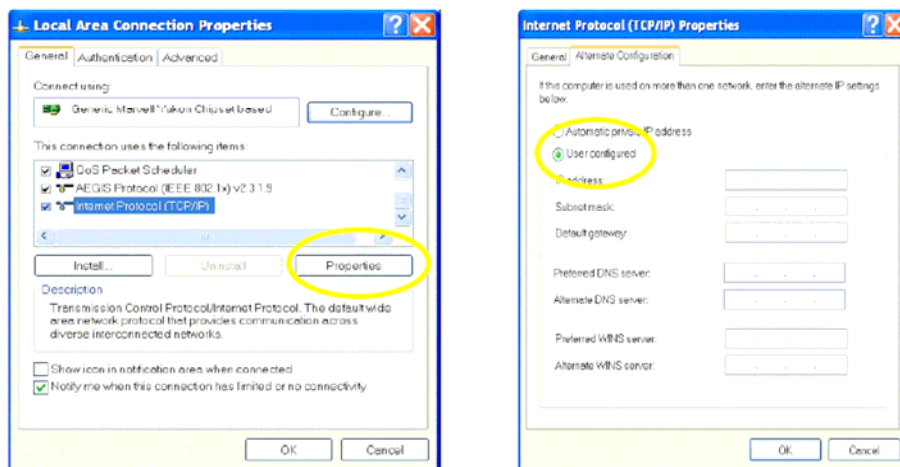
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- c) In the Local Area Connection Properties window: click the **General** tab and highlight **Internet Protocol (TCP/IP)** and click the **Properties** button.
- d) In the Internet Protocol (TCP/IP) Properties window: click the **Alternate Configuration** tab and click the **User Configured** radio button.

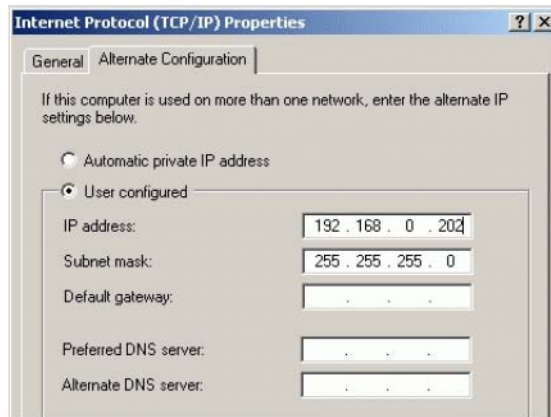


- e) In the IP address field: enter an alternate IP Address that is in the same "family" as the power supply's IP address, i.e., the numbers in the first three groupings, separated by decimals, must match the corresponding numbers in the power supply's IP address that you recorded in Step 8 when you issued the **syst:net:ip?** command. The fourth grouping can be any number from 1 to 255. For example, if the **syst:net:ip?** command had returned the number, 192.168.0.200, you would enter 192.168.0. and then, if you were to choose the number 202 for the last grouping, you would enter 192.168.0.202 in the IP address field.
- f) In the Subnet Mask field: enter **255.255.255.0** and click the **OK** button.

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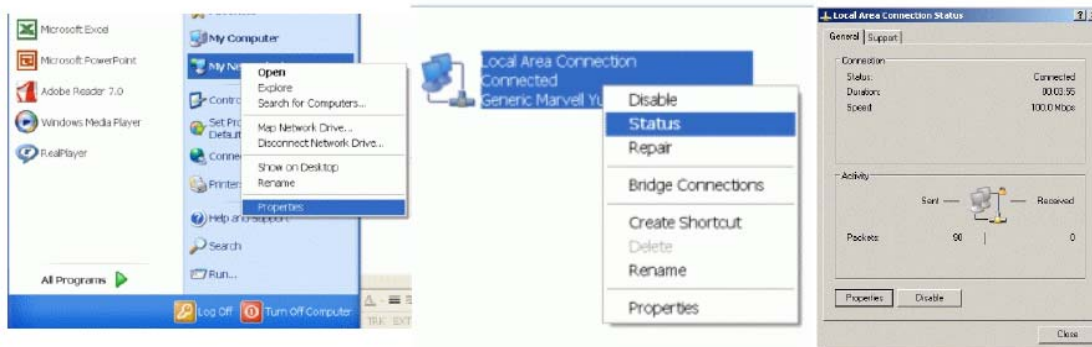
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NOTE: this change will not affect your office network connection because you are using "Alternate" Configuration. You do NOT need to change this back when you are finished communicating with the supply.

- 11) Verify that the Ethernet crossover cable is connected from the Ethernet connector on the power supply, to the Ethernet LAN port on your computer (from Step 9).
- 12) Turn the power supply ON, or if it is already ON, turn it OFF and then ON.
- 13) Wait about one minute for your computer to make a network connection with the supply. You can check this status:
 - a) Left click the **START** menu, right click **My Network Places**, and left click **Properties**.
 - b) In the Network Connections window, right click **Local Area Connection** and click **Status**.
 - c) In the Local Area Connection Status window, the General page has a Connection section that displays the PC's status of either "Connected" or "Acquiring Connection."



When the connection has been acquired, access the supply Web interface.

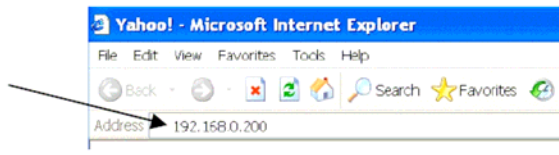
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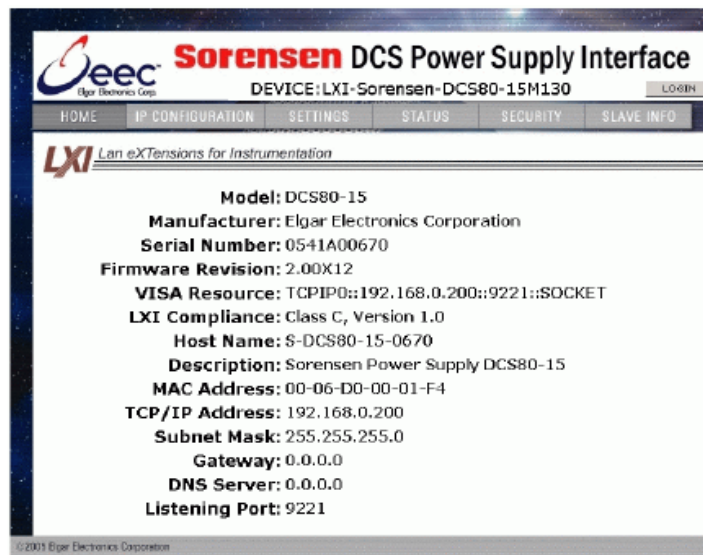
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- 14) Open your Web browser and type the IP Address for your supply into the browser address bar and press RETURN:



The power supply interface HOME page will come up if connection is successful and you will see the identification details for the supply, including serial number, firmware revision, IP information and LXI compliance status.



- 15) If you do not get this response, use the following Troubleshooting steps:

TROUBLESHOOTING

If the power supply Web Browser HOME page does not open, “refresh” your Ethernet connection as follows:

- 1) Left click the **START** menu, right click **My Network Places**, and left click **Properties**.
- 2) In the Network Connections window, right click **Local Area Connection** and click **Disable**. After about 10 seconds, Local Area Connection will be disabled, indicated by its greyed out appearance in the Network Connections window.
- 3) Right click on **Local Area Connection** and click **Enable**.
- 4) Repeat Steps 13 and 14.

If these steps do not resolve the communications issues, please contact the factory for assistance.