

STEADYWEB™ 5

Ethernet Option Card
OPTION INSERT

DOC 801-2384

This document to be used
in conjunction with the
**SW5 CONTROLLER
INSTRUCTION MANUAL**



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1. GENERAL DESCRIPTION

The Ethernet Option Card allows communication to the SteadyWeb5 tension controller over a local area network or the world wide web. The option card contains an embedded web server. Once logged onto the SW5 web server, the SW5 can be monitored and controlled from a browser such as Internet Explorer or Mozilla Firefox.

Parameters can be viewed and modified, but the unit cannot be calibrated remotely. Calibration can only be performed at the SW5. Diagnostics will allow remote trouble-shooting, and the ACTIVE setups can be Uploaded and Downloaded remotely.

The purpose of the option insert is to explain how to access the embedded web server from a remote device with an ethernet connection. It is not intended to replace the SW5 Operating Instruction Manual or the Technical Reference Manual.

2. INSTALLATION AND CONNECTION

The Ethernet Option Card 723-2876 may be ordered with a SW5, or as an option to an existing SW5. The SW5 Option card has an RJ45 connector, and should be connected to a local area network with an appropriate network cable. The RJ45 connector has amber and green LED's built into it. The amber LED remains on when there is a network connection. The green LED indicates network activity between the option card and another device on the network. A network device such as a PC or tablet computer needs to be connected to the same LAN. The following drawing shows how the Ethernet Option Card is mounted to the SW5 Control Board:

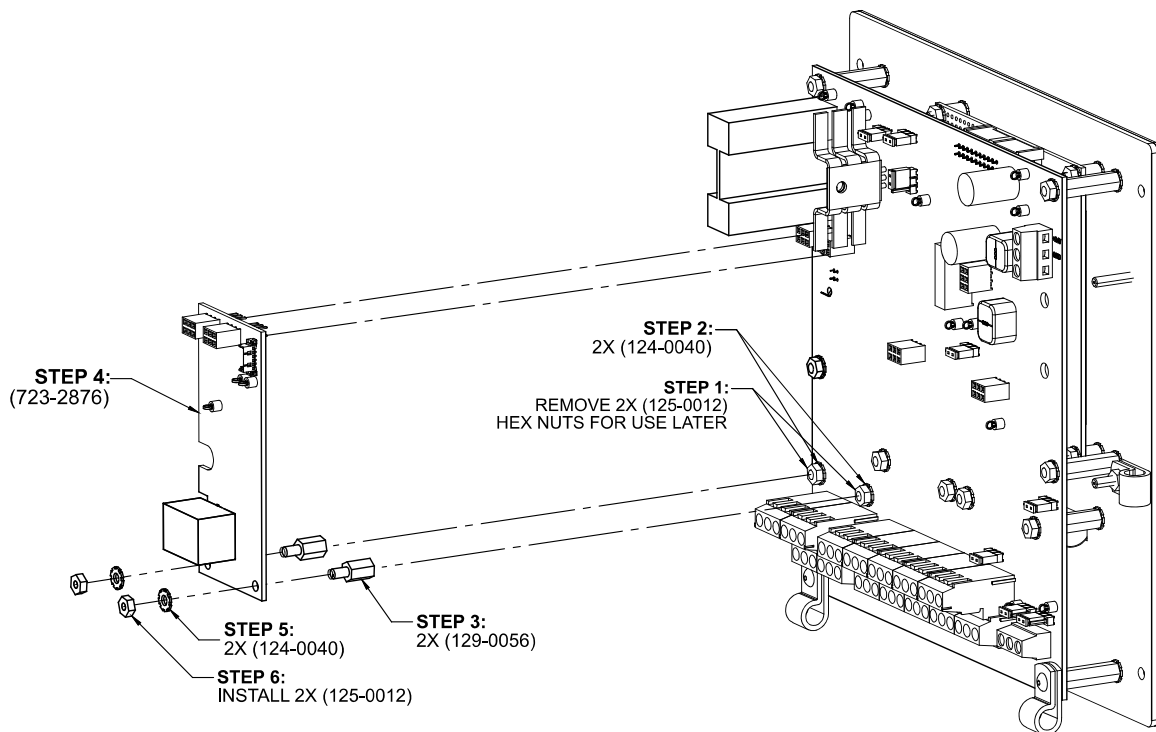


Figure 1 - ETHERNET CARD ASSEMBLY IN STEADYWEB 5

The SW5 must be configured for Ethernet operation. Go to the Setup Menu > Communications Menu > Communications Option and select Ethernet. Forgetting to do this will lead to lots of frustration and calls to Technical Support. Once the SW5 has been properly configured and turned on, the blue R and D LED's on the option card should be flashing, indicating communication between the Ethernet Option Card and the Control Board. The DIAG1 LED should be flashing at a slower rate, and the DIAG2 LED should be on solid.

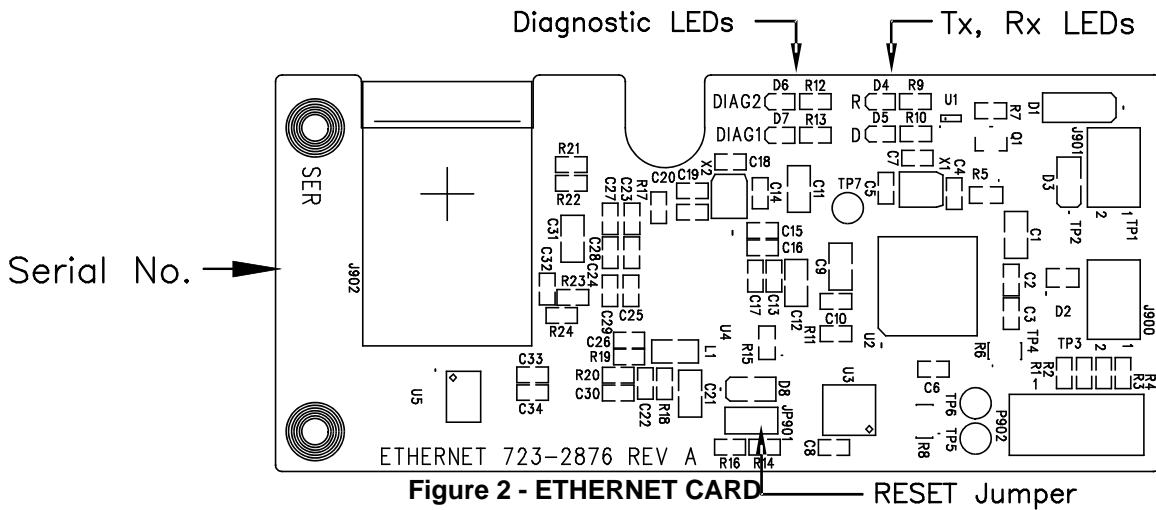


Figure 2 - ETHERNET CARD

3. IDENTIFICATION

The SteadyWeb5 Upgrade Utility provides a way to discover the IP address and host name of devices on the network. It also provides a way to access the SW5 web page by selecting the device and clicking on the Open Web Interface button.

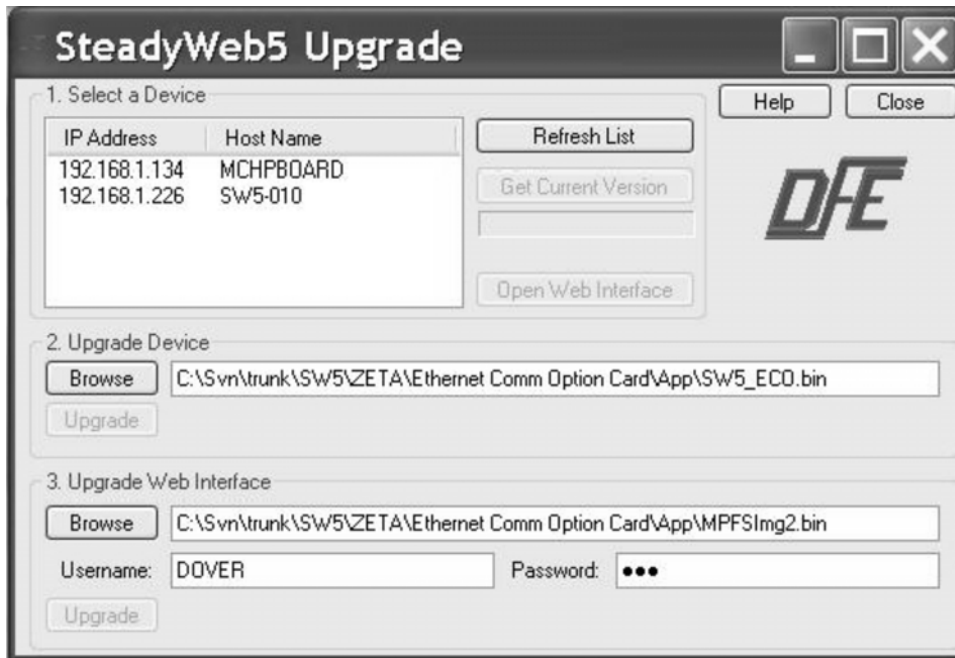


Figure 3 - UPGRADE UTILITY SCREEN

The SteadyWeb5 Upgrade Utility will need to be installed on a PC on the same LAN as the SW5. Run the SW5UpgradeSetup.msi Windows Installer Package to install the software on the PC. Locate the SW5 Upgrade utility in the Dover Flexo Electronics folder. Start the utility, and the Upgrade Window will appear.

The Upgrade Device and Upgrade Web Interface allow the user to upgrade the Ethernet Option Card software, and will be described in a later section.

4. USER NAME AND PASSWORD

Ethernet Option Cards are serialized with a serial number directly under the RJ45 connector. The Host Name will be normally configured at the factory as: **SW5-xxx** where xxx is the three digit serial number. There may be more than one device in the list. Select the device with the correct Host Name. If not configured, select the device with the Host

4. USER NAME AND PASSWORD continued...

Name MCHPBOARD. Go to the Trouble-Shooting section if the Host Name does not appear, or is in red.

The Get Current Version button will display the current Ethernet Option Card software version as **vx.x.xxxx**. If the version only displays a "v", go to the Trouble-Shooting section.

Once the correct device has been selected, the Open Web Interface button will become highlighted. Click the Open Web Interface button, and the following window should appear on the web browser:

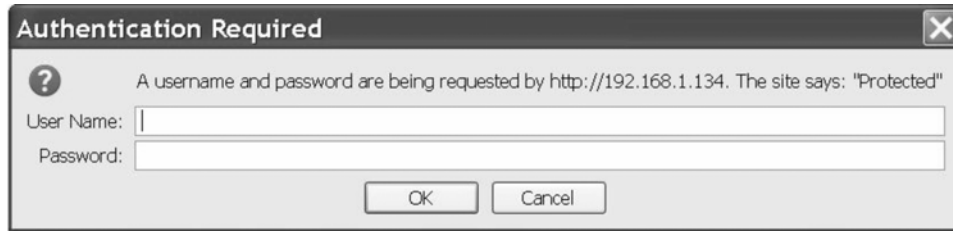


Figure 4 - USER NAME AND PASSWORD SCREEN

The User Name and Password are located in the SW5 Operator Menu under Store/Delete Setup. Setup 31 is the User Name, and Setup 32 is the Password. The factory default User Name is DOVER, and the default Password is SW5. Feel free to change the User Name and Password from the Store/Delete Setup menu. The user name and password can only be changed at the SW5. Enter the User Name and Password and click O.K. The Run View screen should then appear on the browser.

5. RUN VIEW

The Run View provides a real time view of the SW5 similar to the SW5 front panel. Auto and Manual Setpoints can be changed with the arrow keys. The double arrow keys will change the setpoints +10%, and the single arrow key will change them by +1%. Tension, Output, Line Speed, and Diameter are displayed in engineering units and in bar-graph format. Tension, Control, and Taper can be toggled by pushbuttons, and the state is shown with green LEDs. Status flags and Error codes are displayed as red LEDs. The Network, Setups, Parameters, and Diagnostics menus all have their own web pages.

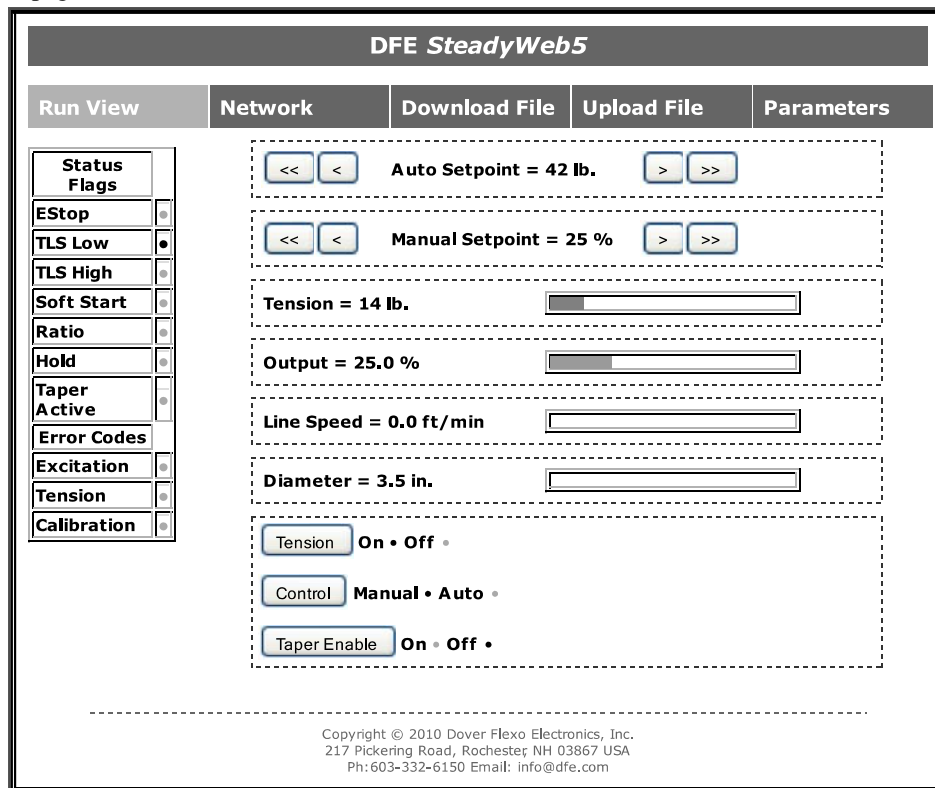


Figure 5 - RUN SCREEN

6. NETWORK SETTINGS

Click the Network button to bring up the Network screen. It will probably be necessary to contact your Network Administrator to set the IP address unless the SW5 will only be used on a Local Area Network. The IP address can be Dynamic or Static. To set a static address, uncheck the DHCP box, and enter the desired static IP address.

The Host Name can be changed from the Network menu. A unique host name is required to identify the SW5 when using the SW5 Upgrade Utility. Click the Save Config button to save the changes. Restart the browser and log into the SW5 using the host name, or use the Upgrade Utility to log back on.

DFE SteadyWeb5

Run View Network Download File Upload File Parameters

Dynamic DNS

This page allows the configuration of the **SteadyWeb5's** network settings.

CAUTION: Incorrect settings may cause the board to lose network connectivity. Recovery options will be provided on the next page.

Enter the new settings for the board below:

MAC Address: 00:04:A3:59:28:40

Host Name: SW5-014

Enable DHCP

IP Address: 192.168.1.148

Gateway: 192.168.1.10

Subnet Mask: 255.255.255.0

Primary DNS: 65.175.128.46

Secondary DNS: 65.175.128.47

Save Config

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Figure 6 - CONNECTION TO THE INTERNET (DYNAMIC DNS)

7. CONNECTION TO THE INTERNET (DYNAMIC DNS)

This section explains how to setup a No-IP Dynamic DNS account, configure the SW5 unit to use that Dynamic DNS account, and configure a router to implement port forwarding to connect to the SW5 webpage over the Internet.

7.1 Creating a No-IP Account

Website: <http://www.no-ip.com>

1. Open the website and create an account.
 - a. Click on Create Account adjacent to the Login button. Each SW5 will require a separate hostname. A single account can have multiple hostnames. The No-IP hostname is different from the Host Name on the SW5 Network page.
 - b. Choose the appropriate account for your application.
 - c. Enter Account information, then click the *I Accept, Create my Account* button.
2. Check your email and click on the link in the confirmation email that No-IP sent.
3. Login to No-IP with your account username and password.
4. From this webpage (<https://www.no-ip.com/members/>) click the *Add a Host* button.

7.1 Creating a No-IP Account continued...

5. Fill out the host information choosing your Hostname, Host Type (Normally DNS Host(A)), and IP Address (Is automatically filled out). The IP Address will be the Wide Area Network IP Address of your Router, and not the SW5 IP Address.
 - a. In order to verify that the SW5 has sent No-IP an updated IP Address you should change the IP Address on this page before continuing. This will allow you to see that the IP Address has changed after configuring the SW5 to use DDNS.
6. Click the *Create Host* button.

You have created a No-IP account.

7.2 Configuring the SW5 to use Dynamic DNS (DDNS)

In order for the SW5 to alert the DDNS service that its IP address has changed, you have to configure the SW5 to use the correct DDNS service, hostname, and password. The following steps explain how to configure the SW5 to use No-IP as the DDNS service.

1. Login to the SW5 webpage
2. Click on the *Network* tab
3. On the Network page, click on the *Dynamic DNS* item
4. Select the DDNS Service that you are using (No-IP).
5. Enter the User Name that is used to log in to the DDNS service.
6. Enter the Password that is used to log in to the DDNS service.
7. Enter the hostname chosen when creating the DDNS account.
8. Click the *Set DDNS Configuration* button. This should cause the SW5 to send the IP address information to the DDNS service.
9. Verify that a Dynamic DNS update occurred
 - a. Log into the No-IP webpage and view the *Hosts/Redirects* tab. Verify that the IP/URL has updated.

7.3 Logging into the SW5 over the Internet

In order to connect to the SW5 webpage from somewhere over the Internet, you may need to forward port 80 on your Router or Firewall to the SW5 unit. This will send all traffic trying to enter port 80 on your Router to the SW5 which will allow someone to open the SW5 webpage over the Internet. However, there are many companies that make routers and their configuration processes are unique. No-IP has created guides which explain how to enable and configure port forwarding on four different name brand routers. The guides are located here:

http://www.no-ip.com/support/guides/routers/router_port_fowarding.html

You can test that the port forwarding is working by typing your DDNS hostname, which was created during the DDNS account creation process, into a web browser and then pressing the Enter key. If the port forwarding is correctly configured, the SW5 web page will load. If the port is not configured properly, the web page will timeout.

8. SETUPS

SW5 configuration parameters are stored in Setups in non-volatile memory. Up to 30 setups including the ACTIVE setup may be stored in a SW5. Setups can also be Downloaded from the SW5 to a configuration file on a Networked PC, or Uploaded from the PC to the ACTIVE SW5 configuration. Setup operations can only be performed with the Tension OFF and the control in Manual

1. Store Setup

Store Setup may be used copy the ACTIVE setup into one of the other 29 setup locations. Each stored setup must have a unique name. An asterisk next to the setup name identifies the last loaded or stored setup.

8. SETUPS continued...

2. Recall Setup

Recall Setup retrieves a stored setup and copies it into the ACTIVE setup.

3. Delete Setup

Delete Setup deletes a named setup.

4. Download File

Setups should be Downloaded into a comma separated variable file having a .csv extension. A suitable file name would be "sw5-nwa.csv".

5. Upload File

A .csv file that was previously downloaded may be uploaded, or copied into the ACTIVE configuration of a SW5.

File Upload and Download provide an easy means of backing up SW5 setups, and copying them into another SW5, for instance. The Store Setup screen is shown in the following diagram:

The screenshot displays the 'DFE SteadyWeb5' interface. At the top, there is a navigation bar with tabs for 'Run View', 'Network', 'Setups', 'Parameters', and 'Diagnostics'. The 'Setups' tab is currently selected. On the left side, there is a vertical menu with buttons for 'Store Setup', 'Recall Setup', 'Delete Setup', 'Download File', and 'Upload File'. The main content area is titled 'STORE SETUP SCREEN' and contains the following text:

To save the ACTIVE setup, select a setup location, enter a unique setup name, and then press SAVE to store the setup. A setup name is limited to 14 characters, and only the following characters may be used:

_0123456789ABCDEFGHIJKLMNQRSTUWXYZ

Setup Location = 4

Setup Name = MASSACHUSETTS

Setup Location (* = Last Loaded or Stored Setup)

- 1 = ACTIVE
- 2 =
- 3 =
- 4 = MASSACHUSETTS*
- 5 =
- 6 =
- 7 = NEW_HAMPSHIRE
- 8 =
- 9 = ALASKA
- 10 =
- 11 =
- 12 = D45
- 13 =
- 14 =
- 15 =
- 16 = MEXICO
- 17 =
- 18 =
- 19 =
- 20 =
- 21 =
- 22 =
- 23 =
- 24 =
- 25 =
- 26 =
- 27 =
- 28 =
- 29 = MAINE
- 30 = FLORIDA

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Figure 7 - STORE SETUP SCREEN

9. PARAMETERS

Parameters have been organized into logical groups in order to simplify SW5 setup. Parameters can be selected from a drop down list, such as Tension Units, or may be entered directly, such as (P) Gain. The current value is shown in bold next to the box where the new value will be entered. The Diameter menu shows all of the parameters associated with Roll Diameter, including Diameter Units and Full Roll Response. The Diameter display is shown in the next screen shot:

The screenshot displays the 'Parameters' tab of the 'DFE SteadyWeb5' interface. On the left is a vertical navigation menu with the following items: Run View, Network, Setups, Parameters (selected), and Diagnostics. Below this menu is a sub-menu with the following items: Tension Control, Diameter (selected), Line Speed, Soft Start, Ratio, TLS, Inputs, Outputs, Acceleration, Tuning, and Display. The main content area shows the 'Diameter' configuration parameters, each with a current value in bold, an input field, and a 'Save' button:

- Core Diameter = **3.5 in.** [input field] Save
- Max Full Roll Diameter = **40.0 in.** [input field] Save
- Diameter Input Type = **Direct** [Direct dropdown] Save
- Diameter Filter Time = **1.00 sec** [0.00 sec input] Save
- Diameter Units = **in.** [in. dropdown] Save
- Diameter Comp. Enable = **Off** [Off dropdown] Save
- Full Roll Gain = **2.0** [input field] Save
- Full Roll Stability = **2.500 sec** [input field] Save
- Full Roll Response = **3.0 sec** [input field] Save

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Figure 8 - DIAMETER DISPLAY SCREEN

The remaining Parameter displays are similar to the Diameter Display.

10. DIAGNOSTICS

The diagnostic displays allow real time monitoring of digital and analog inputs. The Version Menu shows the software versions of the Front Panel, Control, and Ethernet Option card. The Configuration Version will be used in the future if additional configuration parameters are added. The Analog Inputs web page is shown below:

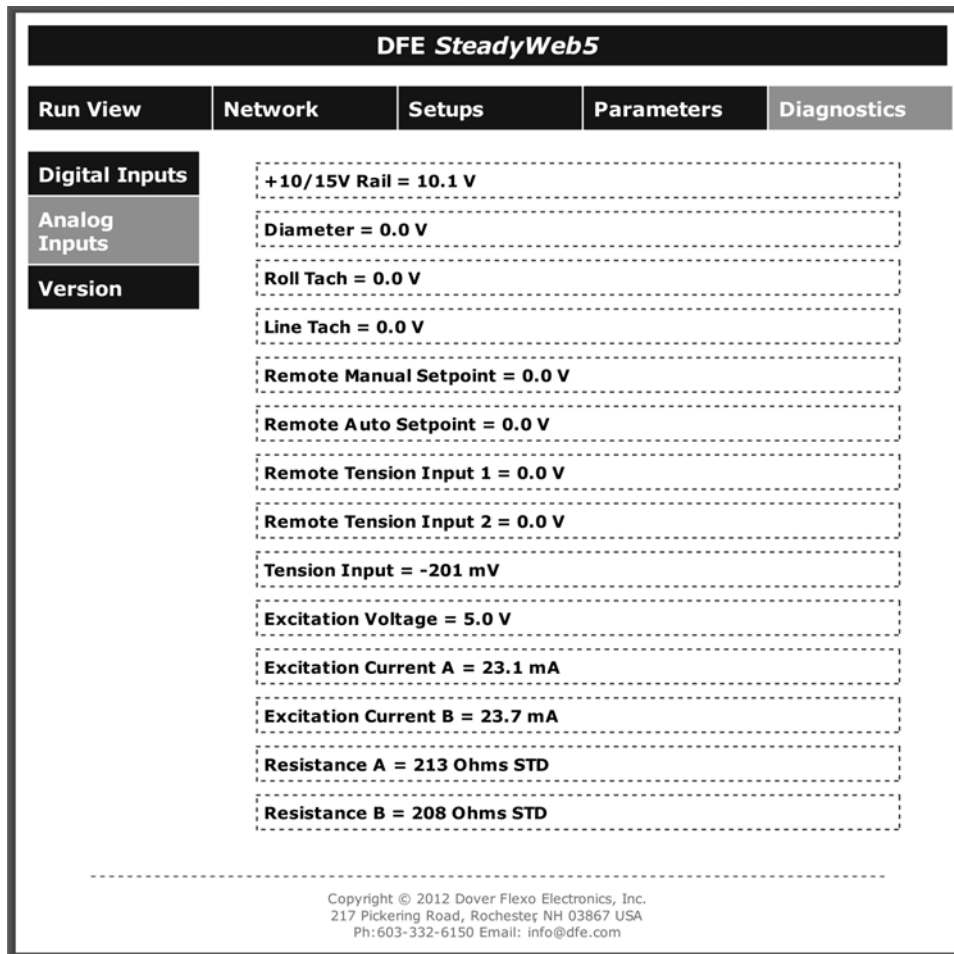


Figure 9 - DIAGNOSTICS SCREEN

11. TROUBLESHOOTING

The following is a list of problems and their solutions:

1. **Main Controller has a Comms Timeout Error.** The blue R and D leds indicate communication between the Ethernet Option Card and the Control Board. If the D led is on solid, then communications has failed. Verify that the Communications Option in the SW5 Setup menu has been set to Ethernet.
2. **Host Name and IP Address appear in Red on SteadyWeb5 Upgrade Utility.** This may occur if the Network settings have become scrambled. Follow these steps to return the network settings to their default values:
 - a.. Turn off power to the SW5
 - b. Use clip leads to short Jumper 901
 - c. Turn power to the SW5 back on with the jumper shorted
 - d. Turn off power to the SW5
 - e. Remove the clip leads
 - f. Turn power back on to the SW5

11. TROUBLE-SHOOTING continued...

The Default Host Name is MCHPBOARD. It should now be possible to use the Open Web Interface button to access the SW5. The Network settings will have to be re-configured, but the remote host should not have changed.

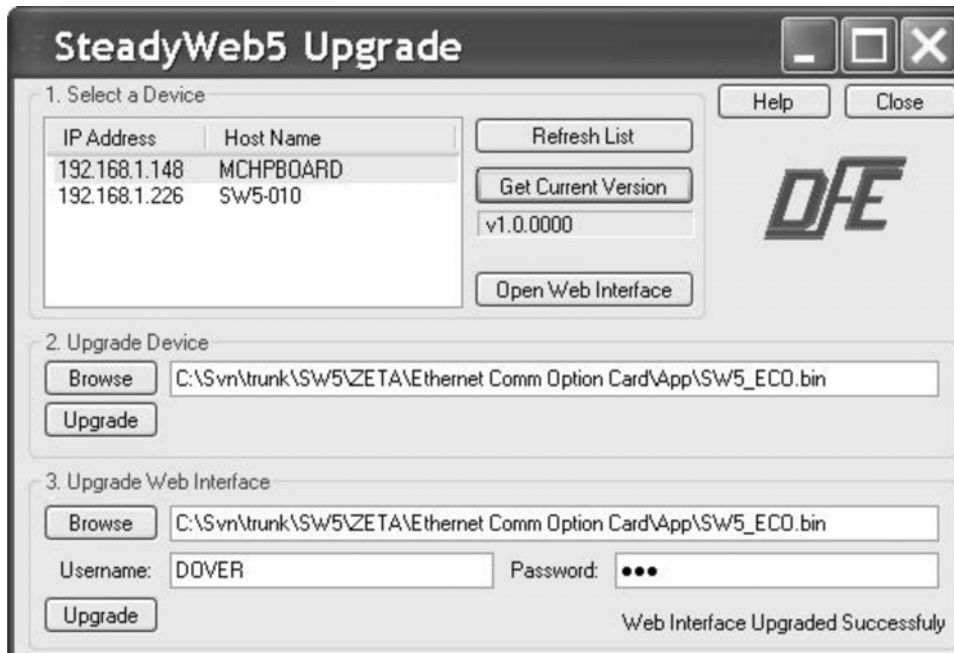


Figure 10 - UPGRADE TO CURRENT VERSION

12. SOFTWARE UPGRADE

It may become necessary to change the Ethernet Option Card Software. The SteadyWeb5 Upgrade utility is designed to update the embedded application software as well as the web interface. Software Upgrades and instructions will be provided by Email.

NOTES

NOTES



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