ANC-120e
Compact USB to Data Highway Plus Adapter

User Manual

About ANC-120e

The ANC-120e allows you to connect a computer using a free USB port to a DH+ network and communicate with various DH+ enabled devices such as Allen Bradley's PLC5 and SLC5/04. The ANC-120e works with the free version of Allen Bradley RSLinx Classic using the "Remote Devices via Linx Gateway" or "Ethernet devices" drivers, and with RSLinx Enterprise/FactoryTalk Linx and other HMI/SCADA software through its built-in HMI feature. Its auto-configuration features provide a quick and easy connection, as cable polarity, node number and baud rate can be auto-detected. For step-by-step configuration guides and application notes for your software of choice, please visit the ANC-120e product page.

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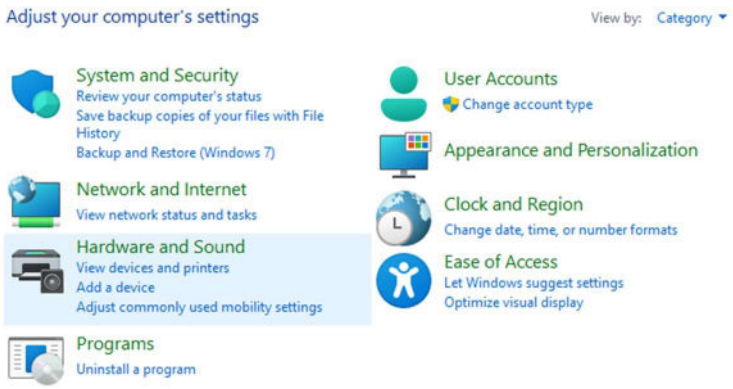
First Time Driver Installation

PLEASE NOTE: ANC-120e uses a standard Microsoft RNDIS driver that is usually included with all Microsoft operating system versions. In case the Microsoft RNDIS driver is not included with the operating system, please use the driver package available as a download on our website.

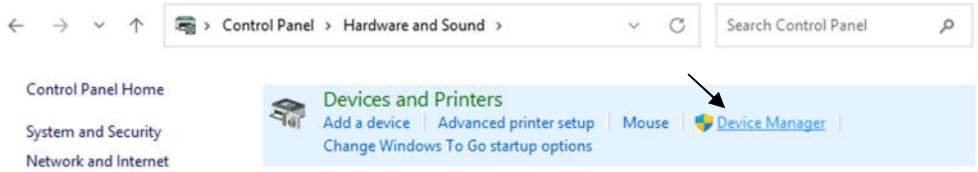
Windows Driver Installation

If the device driver is not installed automatically, please visit our website https://automation-networks.com, look for the ANC-120e section and download the Windows Driver. Then follow the procedure below:

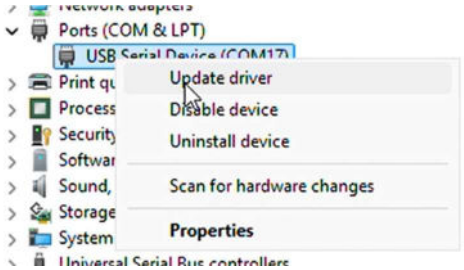
1. Open *"Control Panel"*.
2. Click on *"Hardware and Sound"*.



3. Click on *"Device Manager"*.



4. Windows puts the ANC-120e under *"Ports (COM & LPT)"* category. Find the USB Serial Device.
5. Right click on *"USB Serial Device"*.
6. Click on *"Update driver"*.

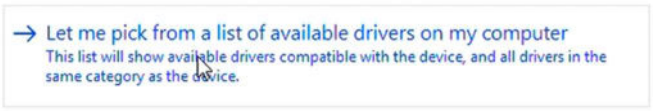


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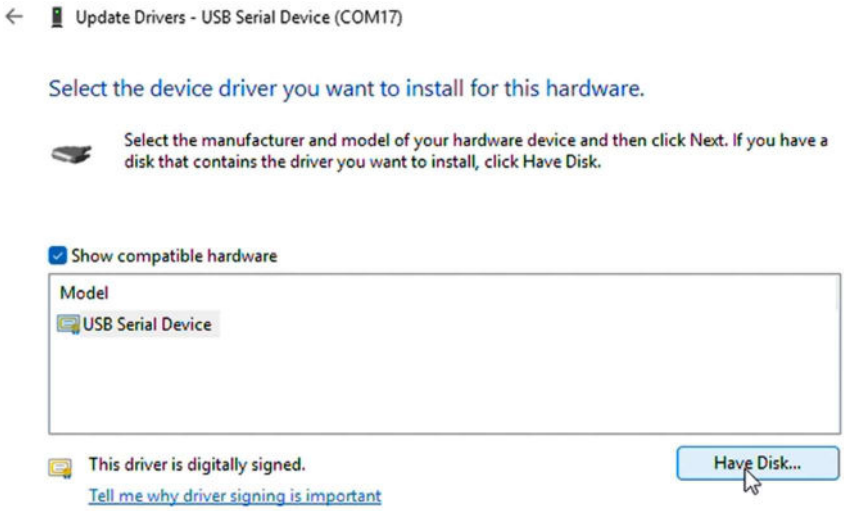
7. Click on *"Browse my computer for drivers".*



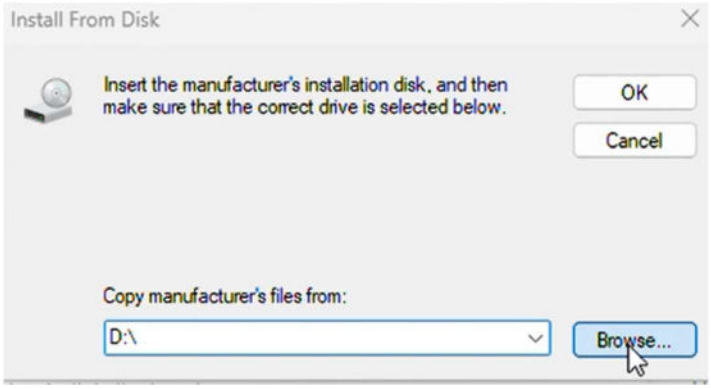
8. Click on *"Let me pick from a list of available drivers on my computer".*



9. In the next window, click on the "Have Disk" button.



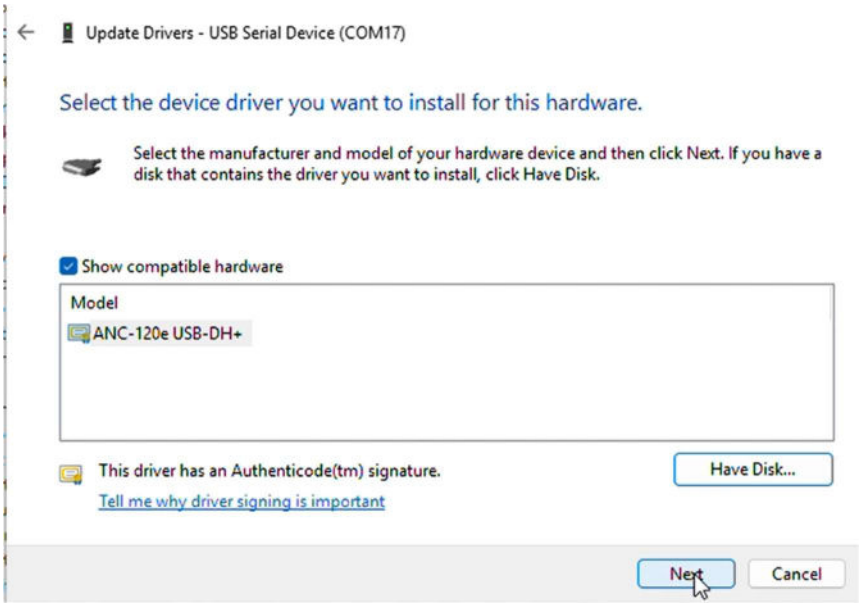
10. Click *"Browse" and navigate to the folder on your computer where the ANC-120e driver package is found. NOTE: If* you don`t have the driver package, you can download it from our website automation-networks.com.



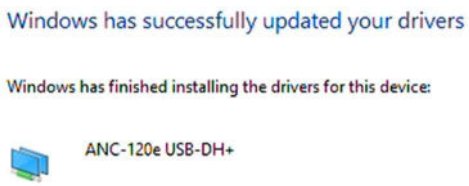
11. Select driver file, press "Open" button and then "Ok".

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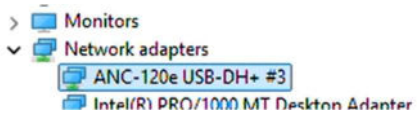
12. Verify that the ANC-120e driver is displayed in this window and select it. Then click *"Next"*.



13. The driver will start installing and a confirmation window will appear showing that the driver was installed successfully.



14. Click "Close" button when the driver installation is finished.
15. Check the *"Device Manager"* window. Verify that the ANC-120e appears as a new network adapter under the *"Network adapters"* list.



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Network Adapter Configuration

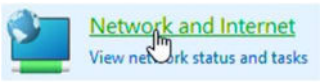
IMPORTANT: Before continuing, make sure you have already installed the ANC-120e driver and that the unit is connected to a USB port on your computer.

The RNDIS driver creates a new Ethernet network adapter for the ANC-120e, which is used to communicate with the device over the USB port.
The default IP address of the ANC-120e is set to 192.168.137.2.

The first time the device is used, you need to configure the new network adapter created by the driver to use a static IP address 192.168.137.1 (different than the ANC-120e but in the same subnetwork) in order to access the ANC-120e's web configuration interface.

> **Windows 10/11 shortcut:** press **Windows key + R**, type **ncpa.cpl** and press Enter to go directly to step 5.

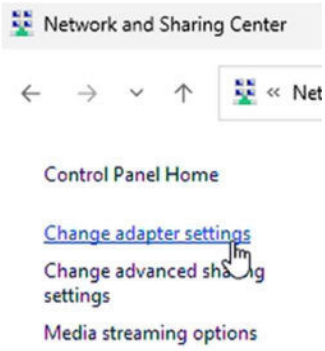
1. Open the Windows Control Panel.
2. Click on "*Network and Internet*".



3. Click on "*Network and Sharing Center*".



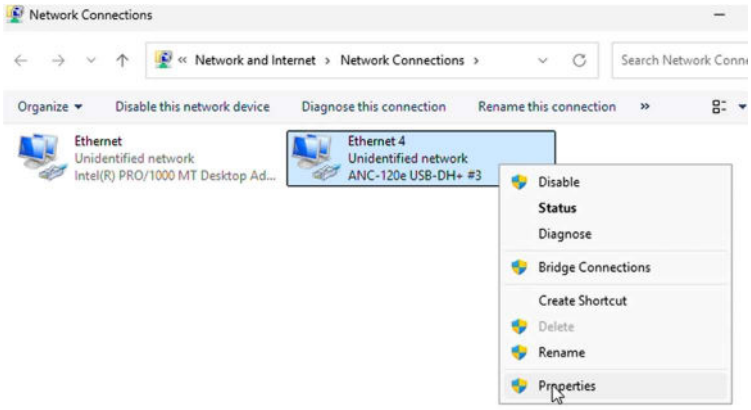
4. Click on "*Change adapter settings*" found on the left side of the window.



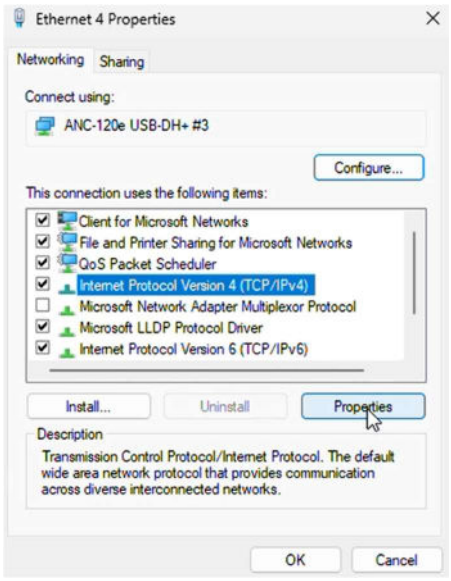
5. Locate a network adapter labeled "*ANC-120e USB-DH+*". Please note, Windows OS can assign any number to the Ethernet port name, in our particular example, Windows OS had assigned a number 4 to our network adapter, hence it is displayed as "*Ethernet 4*", but it can be different in your case.

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6. Right click on the corresponding Ethernet port.
7. Click on *"Properties".*

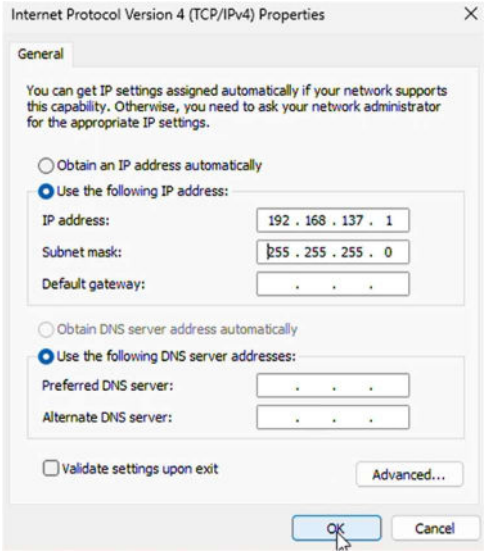


8. From the list of items, select *"Internet Protocol Version 4 (TCP/IPv4)".*
9. Click *"Properties"* button.



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10. Select the option *"Use the following IP address".*
11. Configure the adapter to use following settings:
    IP address: 192.168.137.1
    Subnet Mask: 255.255.255.0
12. Leave the *"Default gateway", "Preferred DNS server"* and *"Alternate DNS server"* settings blank.
13. Click *"OK"* button.



14. Click *"Close"* button in the "Ethernet Properties" window.

IMPORTANT: If your ANC-120e IP address/mask has been already configured with different values than the default, it is necessary to adjust the Virtual Network adapter's IP settings to use the proper network address in the same subnetwork as your ANC-120e. Or reset the device to factory defaults.

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UsingANC-120e

Connections

To connect ANC-120e device to your existing DH+ network or directly to another DH+ device, please use one of the connectors included with the product.

IMPORTANT: Outer shield part of the DH+ cable is not used. Cable shield may be grounded if necessary, using Allen-Bradley recommendations.

1. Connect the DH+ cable to the ANC-120e. The polarity of the cable does not matter.
2. Connect ANC-120e to the available USB port on the computer.
3. The USB side light should blink intermittently for a moment.
4. The DH+ light will blink every 3 seconds showing that the device is connected and associated with a DH+ network.

Due to ANC-120e unique Polarity Detection feature, the way the individual conductors (1/2) are connected does not matter, since upon startup, the ANC-120e will AutoDetect and configure itself to use the correct polarity for successful communication regarding of the conductor cables connection.

LED Diagnostics

ANC-120e is equipped with two LEDs used for visual status and diagnostic display.

The LED closest to the USB connector shows the data exchange between the ANC-120e and the user PC. When the device sends/receives a packet to/from the PC, this LED blinks showing packet exchange.

The LED closest to the DH+ connector shows the current status of the DH+ network:

- *"LED Off"* shows that the device is not currently associated with a DH+ network.
- *"LED blinks regularly every 3 seconds"* shows that the device is associated with the DH+ network.
- *"LED blinks fast without any particular pattern"* shows that the device is associated with the DH+ network and there is ongoing communication taking place with other nodes on the network.

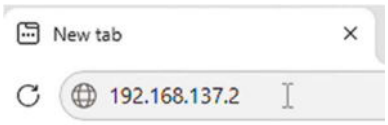
Accessing ANC-120e User Interface

IMPORTANT: Before continuing, make sure that you have installed the ANC-120e driver, configured the virtual Network adapter correctly and that the ANC-120e is connected to the computer.

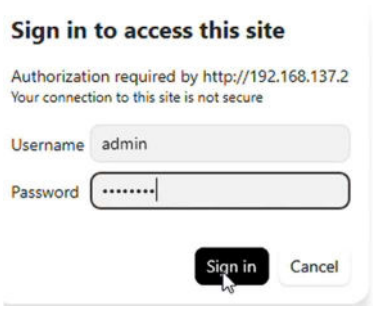
In case the previously configured IP settings were forgotten or lost and connection to the device cannot be established anymore, please perform the factory reset described in chapter "Reset to Default Factory Settings" of this manual.

1. Open any web browser and enter the ANC-120e IP address in the address bar. Default IP address of the device is set to *"192.168.137.2".*

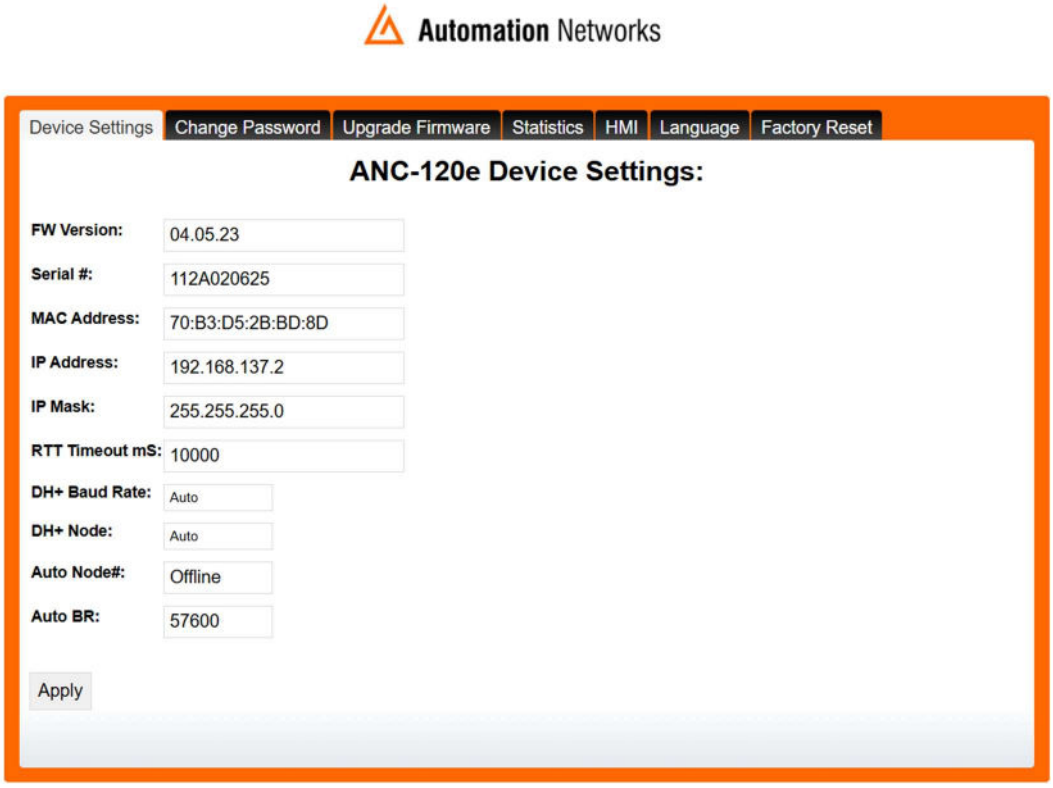
2. Press *"Enter"* key.



3. Enter the username and password in the corresponding fields. By default, the username is set to *"admin"* and password to *"password"*.
4. Click "Sign in" button.



5. If you entered the correct login credentials, you will be presented with the main configuration window.



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Configuration and Interface

Device Settings

ANC-120e comes with several unique and innovative features designed to maximize the efficiency of the device usage under different scenarios. The paragraphs below explain those features in detail.

Automatic DH+ node assignment:
When *"Auto"* is selected in the *"DH+ Node"* drop down menu, ANC-120e will scan the DH+ network it is currently connected to, and will assign itself a free, unused node on the network to be used for all further communication. This unique feature is very convenient when the user needs to communicate with different DH+ devices on different networks and allows simple usage without the need to reconfigure the device using the web interface.

Automatic DH+ Baud Rate detection:
When *"Auto"* is selected in the *"DH+ Baud Rate"* drop down menu, ANC-120e will scan the DH+ network it is currently connected to and will automatically detect and configure itself to use the correct network Baud Rate. This unique feature is very convenient when the user needs to communicate with different DH+ devices moving between different networks and allows simple usage without the need to reconfigure the device using the web interface.

Automatic Polarity detection
This unique feature allows connecting a DH+ cable without worrying about correct cable polarity.

Main Configuration Window

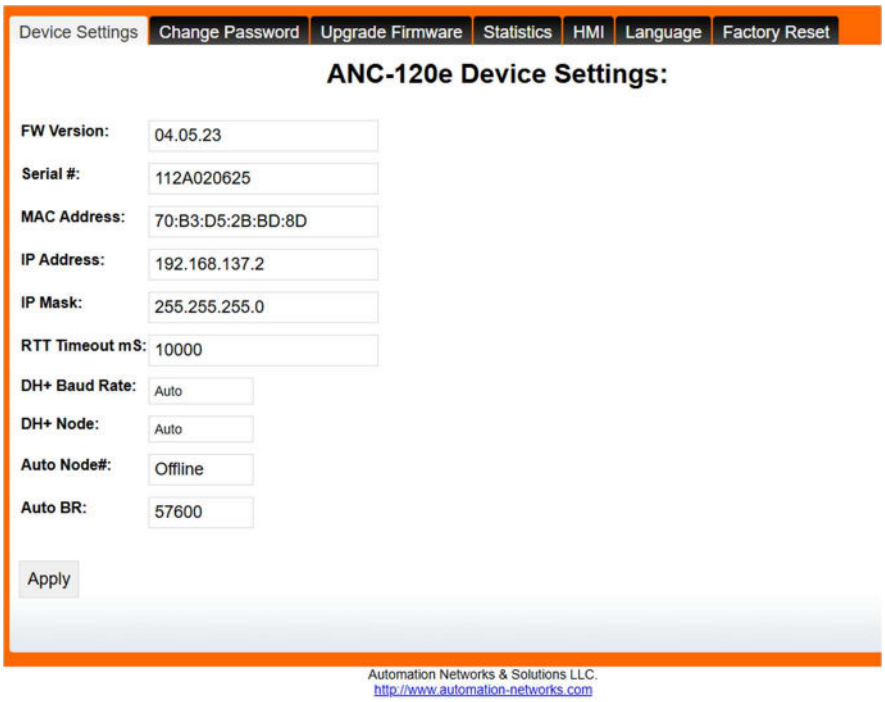
The following information is displayed in the main configuration window:

- *"Fw Version":* field displays the current Firmware version of the device.
- *"Serial #":* field displays the unique serial number of the device.
- *"MAC Address":* field displays the MAC address of the device.
- *"IP address":* field displays the current IP address of the device and allows the user to change it.
- *"IP Mask":* field displays the current netmask of the device and allows the user to change it.
- *"RTT Timeout m S":* field displays the current configured round trip time and allows the user to change it.
- *"DH+ Baud Rate":* drop down menu displays the current DH+ network speed setting and allows the user to change it. By default, device is set to automatic DH+ speed detection; please see the description of this feature at the beginning of this chapter.
- *"DH+ Node":* drop down menu displays the current DH+ node setting for the device and allows the user to change it if desired. By default, device is set to automatic DH+ node assignment; please see the description of this feature at the beginning of this chapter.
- *"Auto Node#":* If DH+ node is set to automatic, field displays offline if there is not DH+ connection or the node number assigned to the device when there is a connection.
- *"Auto BR":* If DH+ baud rate is set to automatic, field displays the current baud rate assigned to the device.

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To use the configuration web interface:

1. Select the desired settings on the main configuration page.
2. Press the *"Apply"* button.
3. The device will reboot automatically, and new settings will take effect.



IMPORTANT: The ANC-120e IP address/mask settings must be on the same subnetwork as the Virtual Network adapter's IP settings of your windows computer. If you change the ANC-120e or the virtual adapter's IP settings, you also need to adjust the other accordingly.

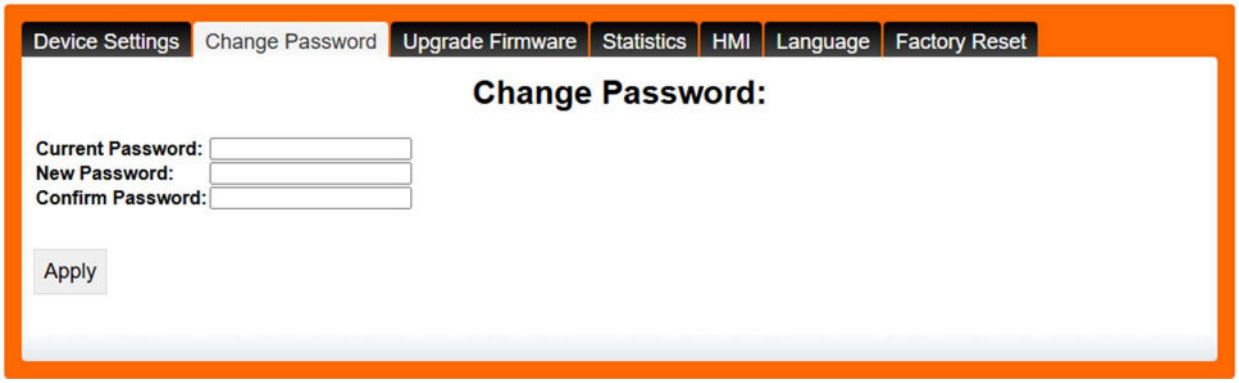
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Change Password

IMPORTANT: It is strongly recommended to change the default device password default value to prevent unauthorized access and reconfiguration of the device.

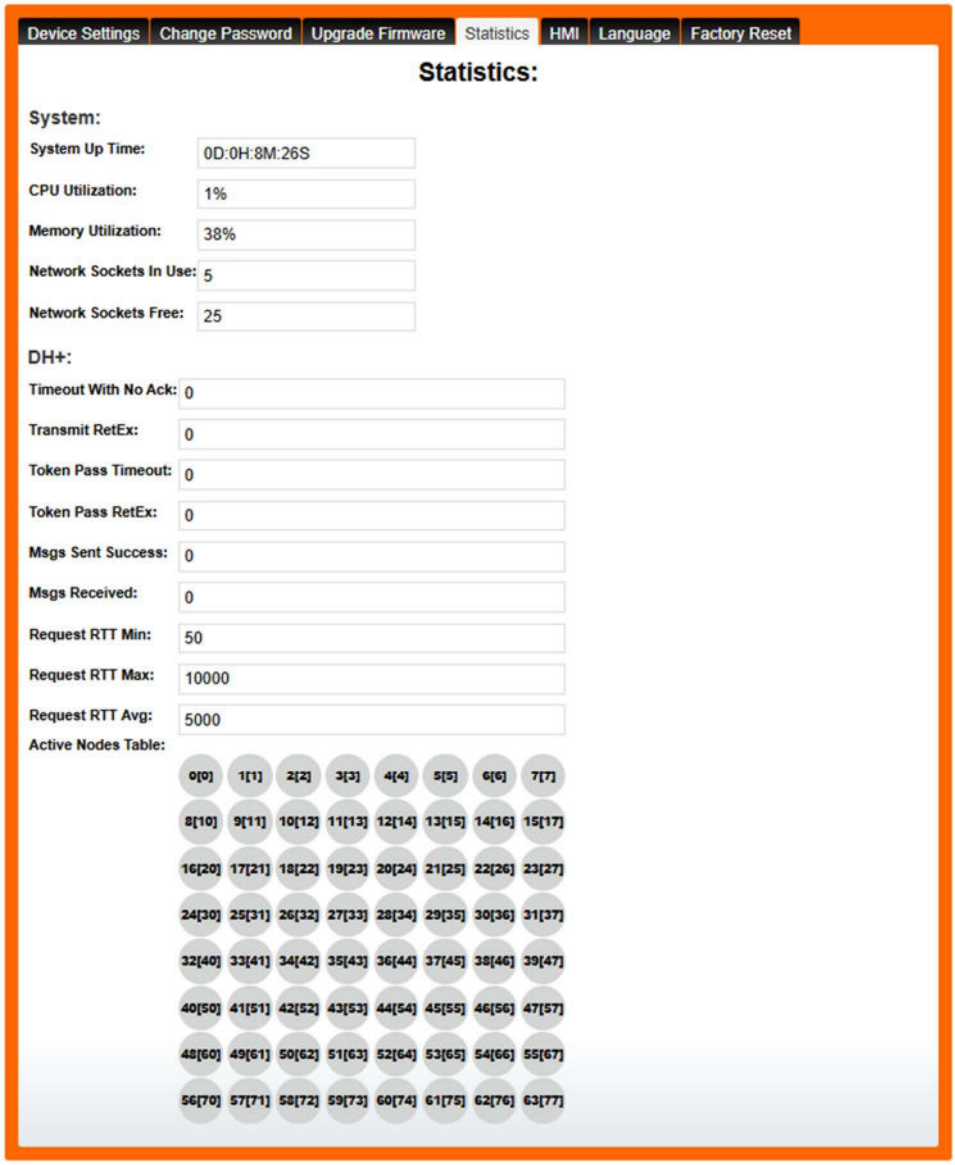
To change the default web interface login password, please follow the steps below:

1. Type in the current password of the device into the *"Current Password"* field. The default password is set to *"password"* from the factory.
2. Type in the desired new password into the *"New Password"* field.
3. Type in the same new password into the *"Confirm Password"* field.
4. Click on *"Apply"* button.
5. The device will reboot automatically, and the new password will take effect.



Statistics

Statistics screen provides real time statistics data about the health of the device and the network it is working on.



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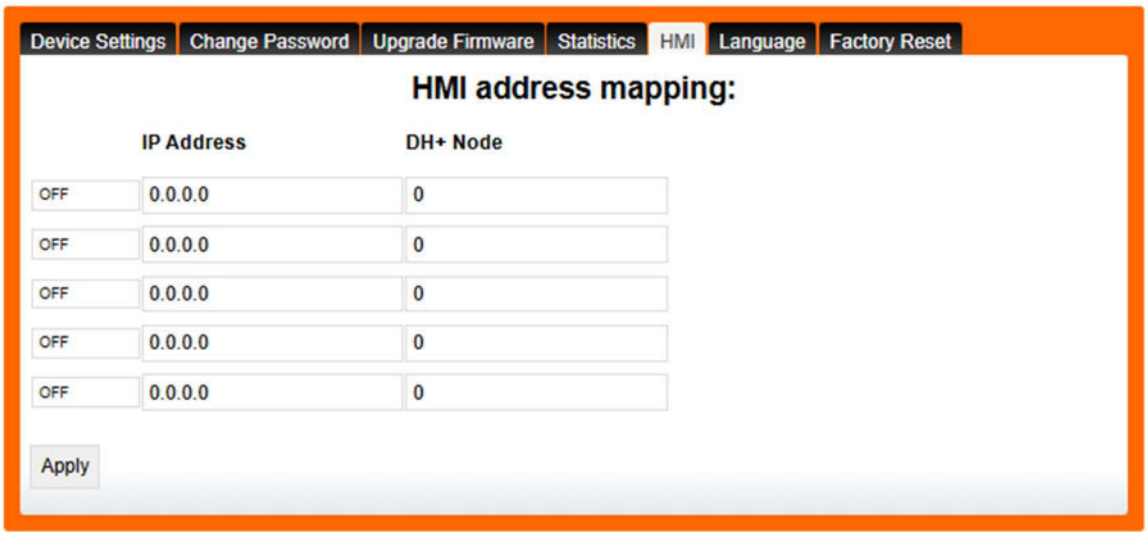
HMI

HMI address mapping allows the user to enable up to 5 IP addresses to which a specific DH+ node number can be assigned.

Please note that these IP addresses must be in the same subnetwork as the ANC-120e IP address.

The DH+ node number must be entered as a decimal value.

Make sure to enable each IP address by changing its setting from OFF to ON.



Language

Language tab offers English or Spanish language for the web interface. Changing the current web interface language does not require a device reboot.



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Reset to Default Factory Settings:

To reset the device to factory default settings when you cannot access its web interface:

1. Connect the device to an available USB port on the computer and wait approximately five seconds.
2. Use a paper clip or something like it to press and hold the reset button found under the little hole next to the DH+ LED indicator light.
3. Release the button when both LEDs light up.
4. Device will reboot restoring its factory default settings.

IMPORTANT: Factory default settings for the device are:

IP address	192.168.137.2
Network Mask	255.255.255.0
DH+ node	AUTO
DH+ speed	AUTO
Interface Language	English
Username	admin
Password	password

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