

## EEConnect

## User's guide

Rev. 1v0

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**Software for Microsoft Windows**

**Setup of devices with Ethernet connectivity**

**Download of software to devices with Ethernet connectivity**



Software: EEEthSetup.160305.1v0  
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# Introduction



## Attention

**DO NOT** attempt to setup any device in operation.

**DO NOT** attempt to setup any device connected to a network where other devices are in operation, as setup may slow down or disturb network operation.

**DO NOT** connected more than one device with the Eilersen Electric defaults settings to the network at a time, as these devices all have the same default IP Address.

Failure to comply with these requirements will pose a severe risk to the safety.

## General



The EEConnect software is used to configure and edit devices from Eilersen Electric with Ethernet interface like the 4050 Ethernet module or the 5024G terminal and others.

It may not be possible to configure all Eilersen Electric devices with Ethernet interface. This depends on the software version installed on the device. Please refer to the user's guide or reference manual for the specific device to discover all possibilities available.

## About this manual

This guide applies to software version:

EEConnect.160305.1v0

To get additional information on the setup of a specific device please refer to the user's guide or reference manual for this device.

The reader should be familiar with general Ethernet/Internet setup and use, e.g. should understand terms like MAC Address, IP Address, Subnet mask, DHCP, network segment, switch, router etc.

Information in this document is subject to change without further notice and does not represent a commitment by Eilersen Electric. Eilersen Electric will not be held accountable for any loss or damage caused by the use of information found in this document.

# Installation



The EEConnect software will run on any PC with an Ethernet Interface and with Microsoft Windows 7, Windows 8, Windows 10 or a newer compatible Windows operating systems.

The EEConnect software consists of one file:

- EEConnect.160305.1v0.Setup.exe

To start the software simply run the EEConnect.160305.1v0.Setup.exe file and follow the installation procedure.

## Firewall issues

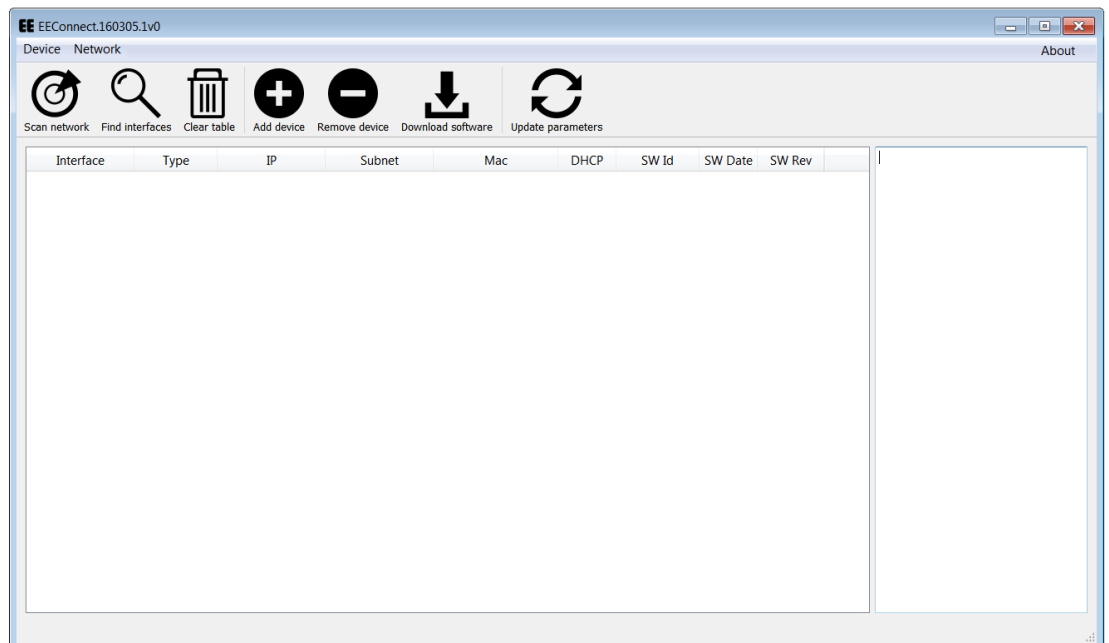


If a firewall is installed it may block Ethernet (UDP and/or TCP/IP) traffic between the PC and connected devices. The firewall may or may not give a warning. If a warning is displayed, please allow any communication between the EEConnect software and the devices on the

network. This may have to be done manually in the firewall settings. Please refer to the firewall manual for instructions on how to manually change the settings.

## Device list screen

When the software opens it will display an empty device list screen, like this:

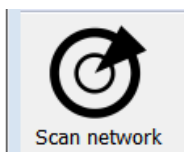


To get at list of connected devices it is necessary to scan the network. Alternatively, the devices can be added manually should the network not allow UDP broadcasts.

# How to

## – Search for Eilersen Electric devices

To search for all connected Eilersen Electric devices with Ethernet setup capabilities click the **Scan network** button.



The process will clear the table for any existing devices and build up a new one from scratch. This will populate the device list like this:

The screenshot shows the EEConnect.160305.1v0 application window. The 'Network' tab is active, displaying a table of discovered devices. The table has columns for Interface, Type, IP, Subnet, Mac, DHCP, SW Id, SW Date, and SW Rev. Three devices are listed, all with IP addresses in the 172.10.10.119 range. The 'Update parameters' button is visible on the right side of the window.

	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	SX23L	172.10.10.25	255.255.255.0	00:50:C2:C5:30:AA	False	Std	140326	2.2
2	172.10.10.119	5024G	192.150.10.50	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6
3	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6

The process is depending on the networks capability to allow UDP broadcasts. Without UDP broadcast capability the devices have to be added manually.

## – Find new active interfaces

To find and add active interfaces to the program during runtime it is necessary to press the **Find interfaces** button.



It is only necessary to use this functionality when new devices are added to an inactive network. E.g. the program is started and no devices or network is connected to the local area connection. In this case the network is not active and the program will omit using this interface.

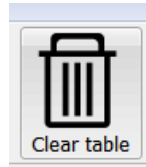
```
Ethernet adapter Local Area Connection:

Media State . . . . . : Media disconnected
Connection-specific DNS Suffix . :
```

The interface will only become active when adding a new device to the local area connection. To add the interface to the program it is necessary to press **Find interfaces**, otherwise the connected devices cannot be found by the program.

## – Clear the table for devices

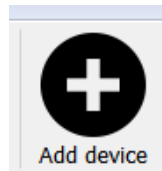
To the devices in the table, all of them, simply press the **Clear table** button.



## – Add devices manually

This can only be done if the device and the interface are in the same segment as the process depends on TCP communication.

To add a device click, **Add device**



This will create a new row in the table where the device address can be entered

	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	5024G	192.150.10.50	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6
2	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6
3	Device IP address:								

Given the address of the device the system itself determines which interface it belongs to and starts retrieving the device information.

	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	5024G	192.150.10.50	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6
2	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6
3	172.10.10.119	5X23L	172.10.10.25	255.255.255.0	00:50:C2:C5:30:AA	False	Std	140326	2.2

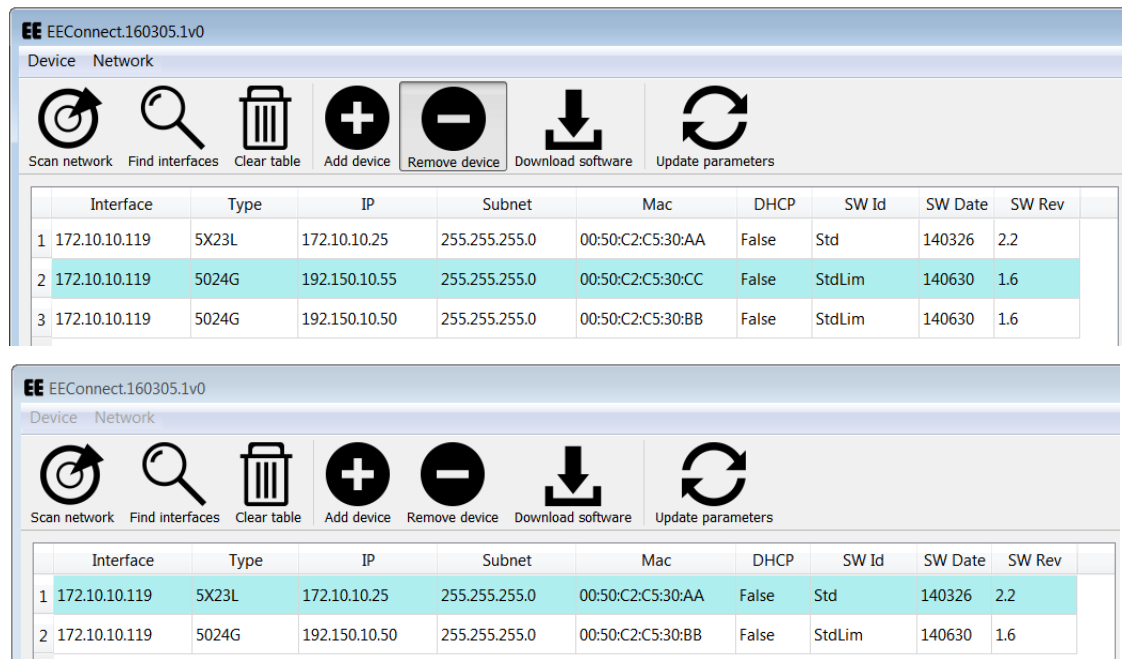
Should the device be connected through tunneling then the device and interface address will most likely not correspond to each other and the system cannot find a match. In this case the row will be expanded to also include choosing which interface the device belongs to.

	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	5024G	192.150.10.50	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6
2	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6
3	Device IP address:		172.0.0.199						

- LinkManager Adapter (10.127.128.158)
- LinkManager Adapter (10.127.128.158)
- VirtualBox Host-Only Network (192.168.56.1)
- Wireless Network Connection (172.10.10.119)

## – Remove device from the table

To remove a specific device from the table, click on the device followed by a click on the **Remove device** button.



The screenshot shows the EE EConnect.160305.1v0 interface. The 'Device' tab is selected. The toolbar includes buttons for 'Scan network', 'Find interfaces', 'Clear table', 'Add device', 'Remove device', 'Download software', and 'Update parameters'. The 'Remove device' button is highlighted. Below the toolbar is a table with columns: Interface, Type, IP, Subnet, Mac, DHCP, SW Id, SW Date, and SW Rev. The table contains three rows of device information.

	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	5X23L	172.10.10.25	255.255.255.0	00:50:C2:C5:30:AA	False	Std	140326	2.2
2	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6
3	172.10.10.119	5024G	192.150.10.50	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6

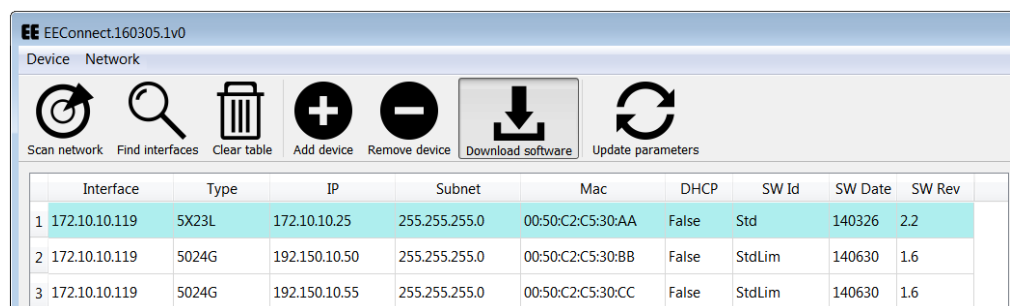
## – Download new software to the device

**PLEASE NOTICE** that software download is only possible to a device in the same network segment as the PC.

**PLEASE NOTICE** that software download is not possible on all devices. Please refer to the device documentation to check that software is downloadable.

Follow these steps to download new software:

- Select the device where to download the new software and click on the **Download software** button.

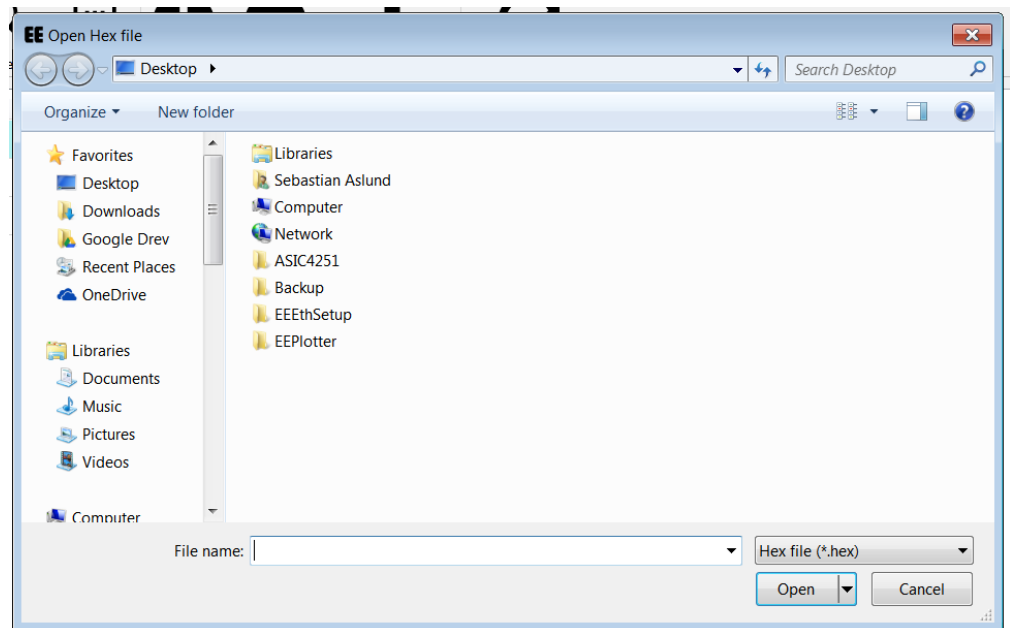


The screenshot shows the EE EConnect.160305.1v0 interface. The 'Device' tab is selected. The toolbar includes buttons for 'Scan network', 'Find interfaces', 'Clear table', 'Add device', 'Remove device', 'Download software', and 'Update parameters'. The 'Download software' button is highlighted. Below the toolbar is a table with columns: Interface, Type, IP, Subnet, Mac, DHCP, SW Id, SW Date, and SW Rev. The table contains three rows of device information.

	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	5X23L	172.10.10.25	255.255.255.0	00:50:C2:C5:30:AA	False	Std	140326	2.2
2	172.10.10.119	5024G	192.150.10.50	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6
3	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6

- A popup will appear with a file explorer. Locate the hex file and press **Open**.





- After opening the hex file the download procedure will start.

	Subnet	Mac	DHCP	SW Id	SW Rev	SW Date
0.5	Downloading part 61 of 888		<div><div></div></div>	8%		

- The procedure will reboot the device into bootloader. Download the software. Boot the system into the new software and update the software parameters.

## – Change the IP Address of the device

- Double click on the IP address of the device in question
- Change the IP address and press enter to finish. The yellow background confirms that the IP is valid and does not conflict with another device in the table.

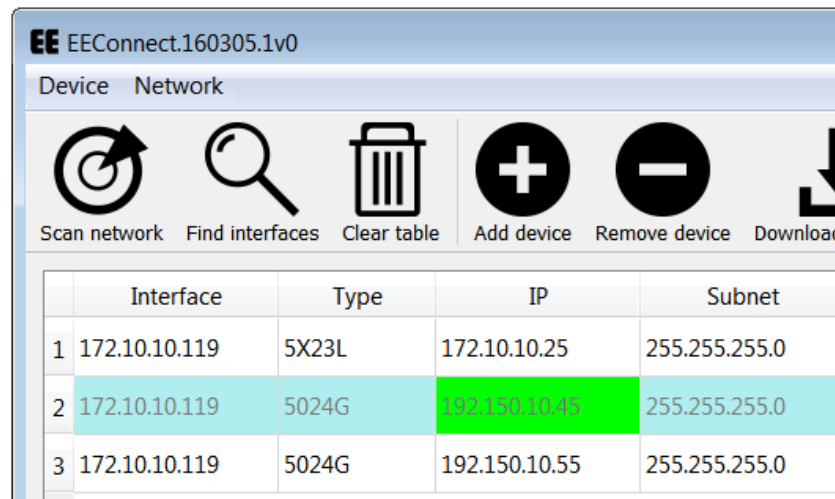
EE EEConnect.160305.1v0				
Device Network				
<div> <div>Scan network</div> <div>Find interfaces</div> <div>Clear table</div> <div>Add device</div> <div>Remove device</div> <div>Download</div> </div>				
	Interface	Type	IP	Subnet
1	172.10.10.119	5X23L	172.10.10.25	255.255.255.0
2	172.10.10.119	5024G	192.150.10.45	255.255.255.0
3	172.10.10.119	5024G	192.150.10.55	255.255.255.0

- Press the **Update parameters** button to apply updates





- When the device has acknowledged the new IP address the background changes to green



	Interface	Type	IP	Subnet
1	172.10.10.119	5X23L	172.10.10.25	255.255.255.0
2	172.10.10.119	5024G	192.150.10.45	255.255.255.0
3	172.10.10.119	5024G	192.150.10.55	255.255.255.0

- The device will reboot and update the row



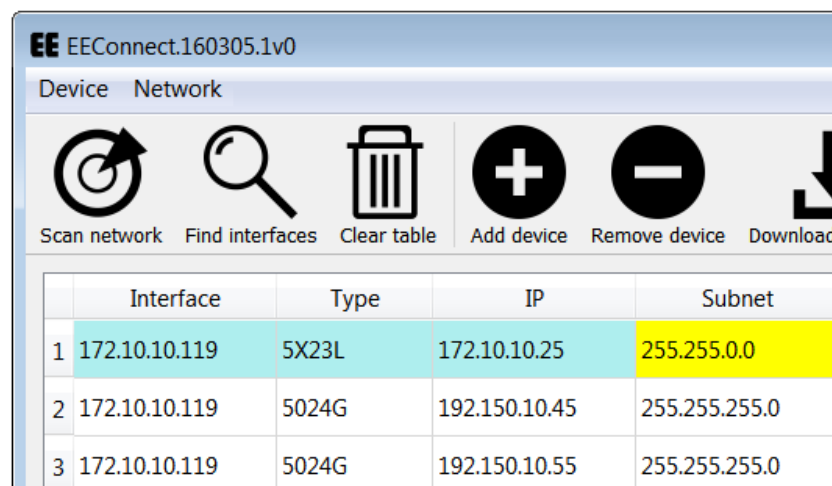
Please notice that entering a new IP Address may stop the communication to the device and/or event disturb the communication on the entire network.

**DO NOT** enter a new IP Address that is currently used by any device on the network.

**DO NOT** enter a new IP Address that is in another segment if an advanced switch or a router may block the communication

## – Change the Subnet of the device

- Double click on the subnet of the device in question
- Change the subnet and press enter to finish. The yellow background confirms that the Subnet is valid.



	Interface	Type	IP	Subnet
1	172.10.10.119	5X23L	172.10.10.25	255.255.0.0
2	172.10.10.119	5024G	192.150.10.45	255.255.255.0
3	172.10.10.119	5024G	192.150.10.55	255.255.255.0

- To apply the update, press the **Update parameters** button. The remaining part is described in the **Change the IP Address of the device** section






Please notice that entering a new Subnet mask may stop the communication to the device and/or event disturb the communication on the entire network.

**DO NOT** enter a new Subnet mask different from the one generally used in the network, without taking care that IP Address conflicts or devices now in a different segment do not cause communication problems.

### – Toggle the DHCP status of the device

- Double click on the DHCP of the device in question. The value will toggle and turn yellow if the value is different from the current setting

  			
move device   Download software   Update parameters			
Subnet	Mac	DHCP	SW Id
255.255.0.0	00:50:C2:C5:30:AA	False	Std
255.255.255.0	00:50:C2:C5:30:BB	True	StdLim
255.255.255.0	00:50:C2:C5:30:CC	False	StdLim

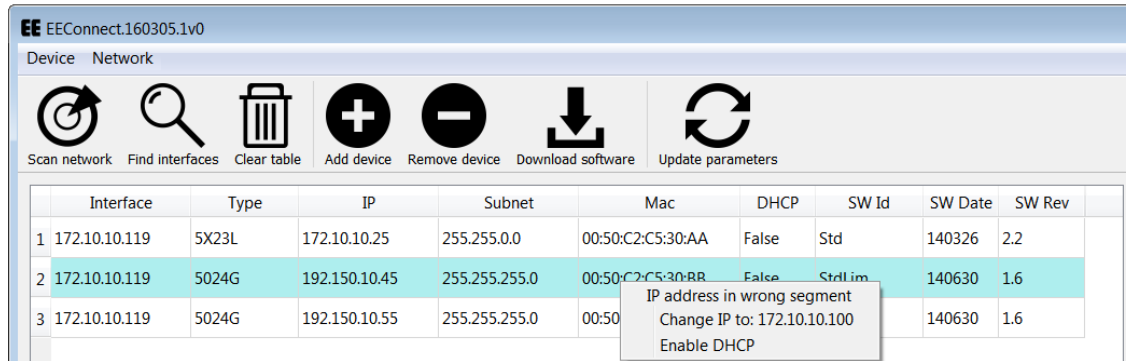
- To apply the update, press the **Update parameters** button. The remaining part is described in the **Change the IP Address of the device** section



Please notice that DHCP is generally **NOT** used in an industrial communication setup. In systems with advanced switches or routers the network topology or MAC addresses may be used to identify devices. Normally however set the DHCP Status to **False**. If DHCP is selected the MAC Address is the only way to identify the devices for further setup.

## – Update settings on devices in a different segment

The easiest way to determine whether a device is in a different network segment from the interface is to right click on it.

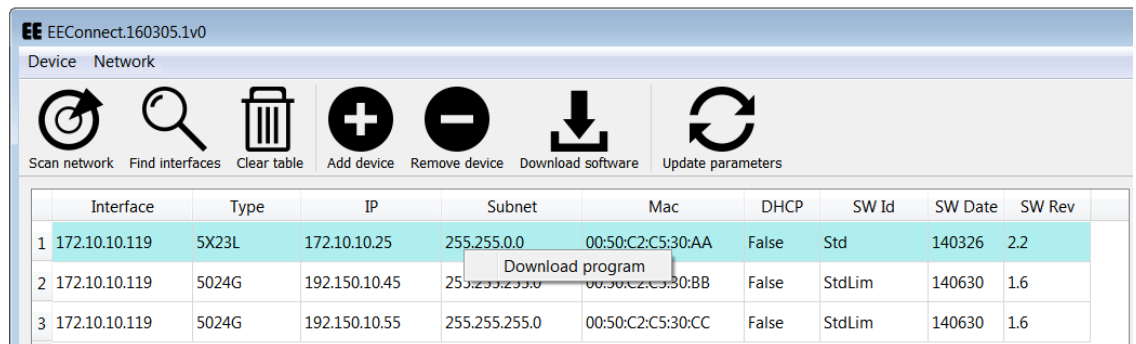


	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	5X23L	172.10.10.25	255.255.0.0	00:50:C2:C5:30:AA	False	Std	140326	2.2
2	172.10.10.119	5024G	192.150.10.45	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6
3	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6



The suggested IP address shall only be taken as a suggestion. It will not conflict with any other device in the list but the same cannot be guaranteed on the network. Furthermore, not all Eilersen Electric devices with Ethernet interface allows DHCP. Please refer to the user's guide or reference manual for the before attempting to enable DHCP.

When the device is on the same segment the right click will instead display the functions solely working through TCP communication.



	Interface	Type	IP	Subnet	Mac	DHCP	SW Id	SW Date	SW Rev
1	172.10.10.119	5X23L	172.10.10.25	255.255.0.0	00:50:C2:C5:30:AA	False	Std	140326	2.2
2	172.10.10.119	5024G	192.150.10.45	255.255.255.0	00:50:C2:C5:30:BB	False	StdLim	140630	1.6
3	172.10.10.119	5024G	192.150.10.55	255.255.255.0	00:50:C2:C5:30:CC	False	StdLim	140630	1.6

When a device is in the same network segment all communication will be handled through TCP while different segment devices are handled through UDP broadcasts. Most of the functionalities found in the TCP communication can also be found in the UDP communication but it is recommended to set the device to be in the same segment as the interface.



Communication with a device on a different segment will cause a substantial amount of UDP traffic and broadcast messages. This could disturb other network traffic, especially if routers are not configured correctly. In such cases it may be a better option to connect the device directly to the PC.

# Trouble shooting

Problem	Solution
No connetion to device	<p><b>Link</b></p> <p><i>Is the link LED lit on the device?</i></p> <p>Yes : No link problem.</p> <p>No: Check the cabling; Check the power to the device and all switches between the PC and the device.</p> <p>If the PC is connected directly to the device check whether a crossed cable is needed.</p> <p>Check that the PC/switch connected directly to the device is capable of running at the device's Ethernet speed (10/100 MB/s) and duplex (half/full). Refer to the device's user's guide or reference manual for details on the device's speed and duplex.</p> <p><b>Firewall</b></p> <p>Refer to section <i>Firewall issues</i> above. If a firewall still is suspected connect the device directly to the PC, disable the firewall and retry the operation. <b>REMEMBER</b> to enable the firewall before anything but the Eilersen Electric device is connected to the PC. <b>DO NOT</b> run the PC with the firewall disabled while it is connected to switches, routers etc.</p> <p><b>Software version in device</b></p> <p>Please notice that not all software version in the devices support setting of configuration on an Ethernet connection. Please refer to the device's user's guide or reference manual for details on how to set the configuration on the device.</p> <p><b>Different segments</b></p> <p>If the PC and device have IP addresses in different segments (taking into account the subnet mask on the PC and/or on the device) an advanced switch or a router may block the transmissions.</p> <p>If so connect the device directly to the PC and retry the operation.</p>

# Appendices

## Appendix A – Setting of MAC Address



The MAC Address is preset to a unique value from the pool assigned by the IEEE to Eilersen Electric.

Eilersen Electric MAC Address range:

00-50-C2-C5-30-00 to 00-50-C2-C5-3f-ff

The MAC Address is set to a default value within this range and **CAN NOT** be set to a random value.

If the user has obtained another pool of MAC Addresses from IEEE and wishes to use one of these, please contact Eilersen Electric for details.

Always apply to the IEEE standards especially regarding the uniqueness of MAC Addresses.

## Revision History

Date	Author	Rev.	Update
2016-03-29	sas	0v2	<i>Initial document created.</i>
2016-04-14	sas	1v0	<i>Updated to version 1v0</i>

## Contact

With further questions or improvement suggestions please contact us:

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