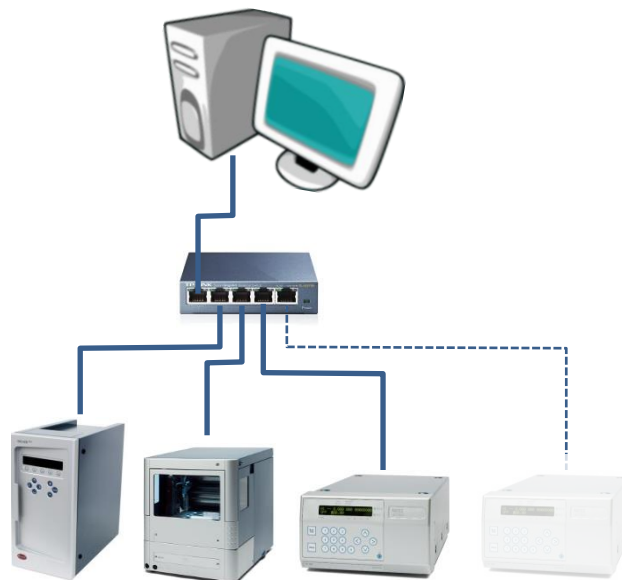


ALEXYS system communication

A troubleshooting guide

250.7020
Version 02, 2015



This document is intended as a reference document in case troubleshooting is necessary.

It should not be necessary to apply the described adjustments when installing a new ALEXYS system. Installation procedures are described in doc.180.0011E.

This document describes how to check/adjust each instruments communication settings.

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CHAPTER 1

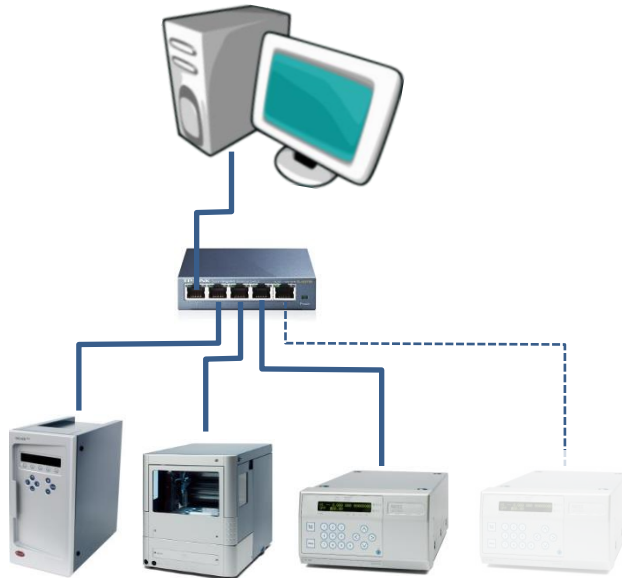
Communication set-up of ALEXYS

Ethernet

The communication between the different instruments of ALEXYS and Clarity software is currently set to use the network technology 'Ethernet', with UTP cables connecting each instrument to a network switch in a dedicated Local Area Network (LAN).

Local Area Network (LAN)

A schematic representation of the communication in the ALEXYS system is shown below.



IP addresses of the instruments

The preconfigured IP addresses of the ALEXYS instruments are set in the range 192.168.005.00x:

- | | | |
|---|--------------|-----------------|
| - | DECADE Elite | 192.168.005.001 |
| - | AS110 | 192.168.005.002 |
| - | LC110S | 192.168.005.003 |

IP address of the computer communication-port

By definition, the computer LAN port that is connected with the switch should have the same first 3 sets of numbers for its IP address to be able to communicate. The convention is to set the 4th set to '10':

- | | | |
|---|-------------------|-----------------|
| - | Computer LAN port | 192.168.005.010 |
|---|-------------------|-----------------|

CHAPTER 2

Desktop computer

IP address of the LAN-port on the computer

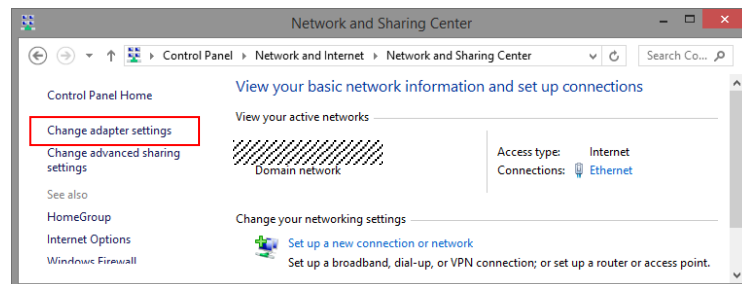
LAN-port type

The network switch needs to be connected to the on-board LAN-port or an added port, type PCI, PCI Express or PCI-X.

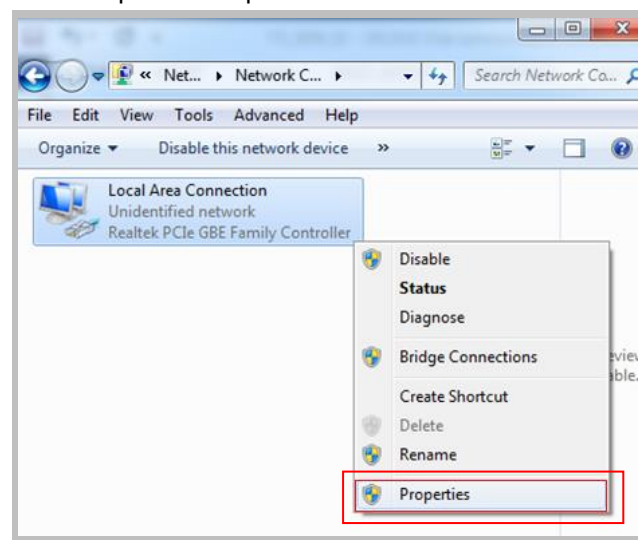
Communication through a USB-LAN adapter is not guaranteed to be trouble-free.

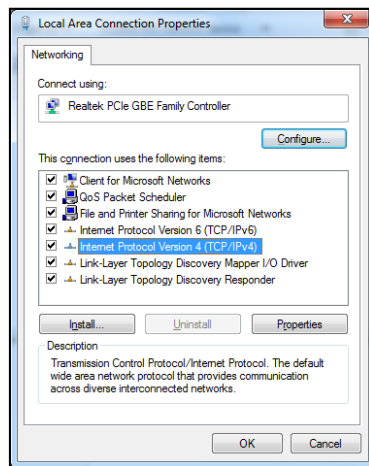
Adjust/check the IP address of the LAN port

- ❑ Open the window 'Network and Sharing Center' (accessible through the Control Panel/Network and Internet or by right-mouse-button clicking on the Network icon in the taskbar).
- ❑ Click on 'Change adapter settings' listed at the left in the window.

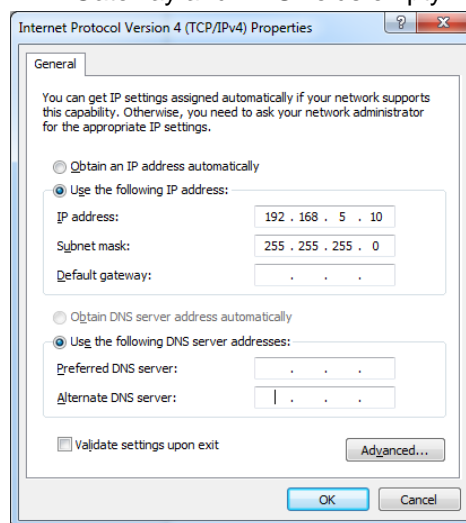


- ❑ Right click on the Local Area Connection icon of the LAN card and click to open its Properties window.





- ❑ Double click in the menu on 'Internet Protocol Version 4 (TCP/IPv4)' to open its properties window.
- ❑ Set the following properties:
 - IP address: **192.168.5.10**
 - Subnet mask: **255.255.255.0**
 - Gateway and DNS fields empty



- ❑ Close the menu(s) by clicking the 'OK' buttons.

Check the switch box

The network switch box does not have an IP address, but it needs a power source.

- ❑ Check the power adapter for connection.
- ❑ Indicator lights show communication.

Check the cables between the instruments and the switch-box

The instruments should be connected to the switch box with normal UTP cables that were provided with the switch box.

CHAPTER 2

Pump LC110S

Internal pump settings

All new LC110S pumps are preconfigured as isocratic pumps and set to communicate over LAN using IP address 192.168.5.3. When installing an ALEXYS system with 2 pumps, change one of the pumps IP address.

Open the internal pump menu

- ❑ Use the horizontal arrow keys to put the cursor in the top line of the LC110S pump display.
- ❑ Press the right horizontal arrow key for approx. 2 seconds.
- ❑ Cycle through the menu items by having the cursor on the left diamond icon and pressing the vertical arrow keys.

Adjust/check the pump communication protocol

- ❑ Cycle through the menu to 'Interface'
- ❑ Confirm/adjust the pump setting is 'LAN manual'

Adjust/check the pump IP address

- ❑ Cycle through the menu to 'IP'



Default IP address of every new LC110S pump

- ❑ In case of a second pump, change the last number of the original IP address to 4 (IP address is then 192.168.005.004 and mask 255.255.255.000)

Adjust/check the pump gradient type

- ❑ Cycle through the menu to 'Gradient Mode'
- ❑ Confirm/adjust the pump setting is set
 - for isocratic pumps 'none'
 - for 2 pumps in gradient mode:
Pump 1: HPG A (ON ON -- --)
Pump 2: HPG B (ON ON -- --)



Exit the internal pump menu

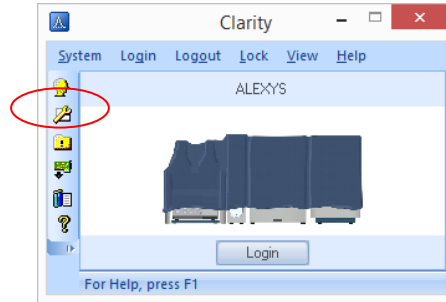
- ❑ Press START/STOP or hold horizontal arrow key for 1 second.

Clarity driver setting for the pump

The Clarity pump driver has to be set to the correct port to find the correct pump.

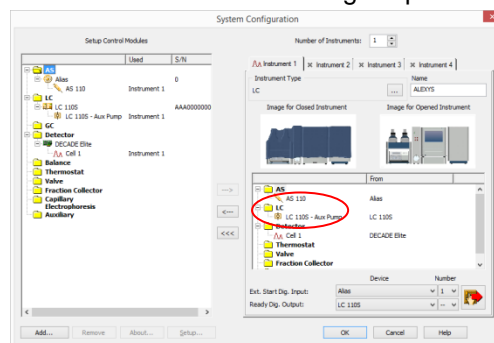
Open the Clarity Configuration Window

- ❑ In the Main window, open the system configuration window (System/Configuration or use the icon).



Open the LC110S pump driver

- ❑ If the driver is not installed, 'Add' it with the lower left button.
- ❑ If the driver is installed, make sure it is listed on the right hand side of the window. Else drag-drop it to the correct Instrument.



- ❑ Double-click open the driver.

Adjust/check communication with the intended pump

- ❑ Check the box 'Use S/N to identify the instrument'
- ❑ Double click on the '...' icon.

LC 110S Configuration

Name: LC 110S

Serial Number: AAA000000000

Interface: LAN

IP Address: 192.168.5.3

IP Port: 10001

Use S/N to identify the instrument:

Do not stop pump when closing Clarity instrument

Gradient Mode: Isocratic

Head: 10 ml

Maximum Flow: 10000 µL/min

Maximum Pressure: 700.0 bar

Auxiliary Pump: Add Info ...

OK Cancel Help

- ❑ Adjust/check the connected pumps s/n
- ❑ Click the 'Select #' button to update the serial number.

Device Information

IP Address	Device	Serial No.	Firmware
192.168.5.3	LC 110 S pump	[blacked out]	01.01

Close

Refresh

Select #

Done

- ❑ Close all the Clarity windows by clicking Close or OK
- ❑ Close Clarity software (which saves the changes)

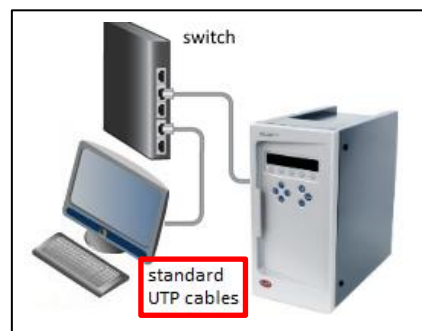
CHAPTER 3

Detector DECADE Elite

Cables

The DECADE Elite should be connected to the switch with a standard UTP cable that is provided with the LAN-connection kit. The UTP cable that is provided in the DECADE Elite is 'crossed' cable, and will not work in combination with the switch.

- Pn. 250.0172: LAN (UTP) cable, 1.5 m
- Pn. 250.0170: LAN (UTP) cable, **crossed**, 3 m



Set-up for ALEXYS



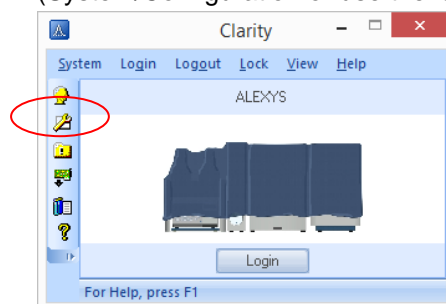
Set-up for stand-alone function

Internal detector settings – checking the IP address with Clarity

All new DECADE Elite detectors are preconfigured to communicate over LAN using IP address 192.168.5.1. The actual address can alternatively be checked with Dialogue Elite software (next chapter)

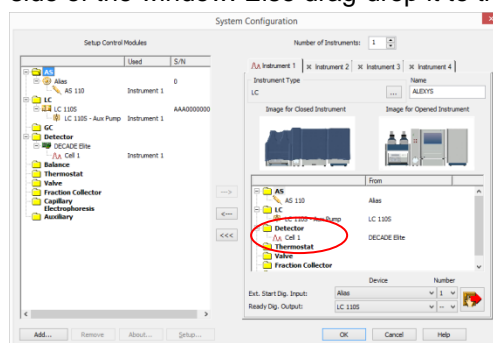
Open the Clarity Configuration Window

- In the Main window, open the system configuration window (System/Configuration or use the icon).

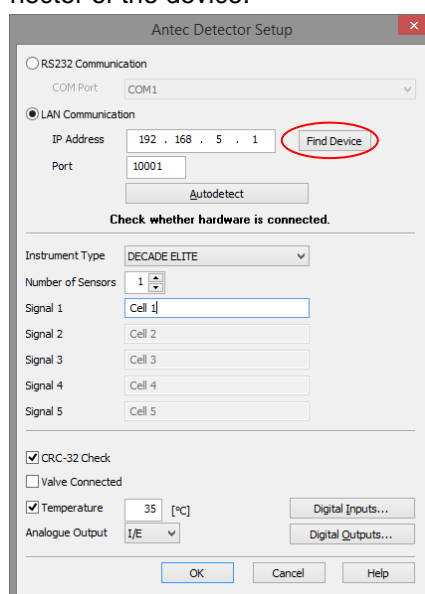


Open the DECADE Elite driver

- ❑ If the driver is not installed, 'Add' it with the lower left button.
- ❑ If the driver is installed, make sure it is listed on the right hand side of the window. Else drag-drop it to the correct Instrument.



- ❑ The 'Find Device' button will generate a list with the connected detectors and their actual IP addresses. If multiple devices are found, check the MAC code that is on the rear panel IO connector of the device.

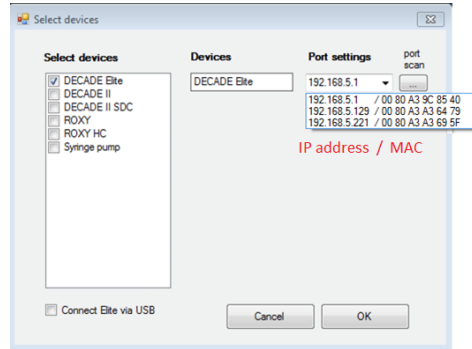


Internal detector settings – checking the IP address with Dialogue Elite

All new DECADE Elite detectors are preconfigured to communicate over LAN using IP address 192.168.5.1. The actual address can alternatively be checked with Clarity software (previous chapter)

Check the actual IP address with the Dialogue Elite program

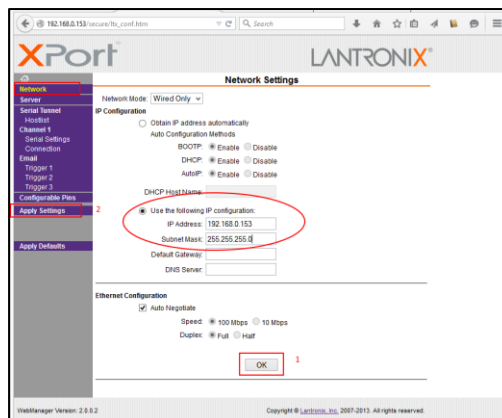
- ❑ At start-up of the software, the 'Select devices' menu opens. The 'Port settings' pull down list shows the connected devices and their IP address.



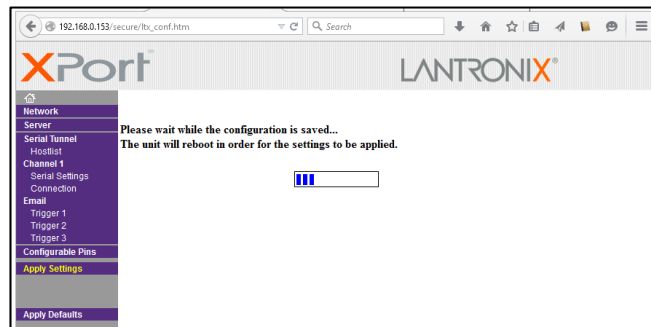
Changing the IP address of the DECADE Elite

If the first 3 sets of numbers in the DECADE Elite IP address are different from 192.168.5, then it needs to be changed to be able to communicate with Clarity.

- ❑ Open an internet browser (e.g. Explorer, Google)
- ❑ Type in the URL the IP address of the DECADE Elite (which was found with Clarity or DECADE Elite software in the previous steps).
 - User = admin or empty
 - Password = the distributor password
- ❑ Open the 'Network' menu, and enter the new IP address
 - subnet mask: 255.255.255.0
 - gateway and DNS open (will be 0.0.0.0)



- ❑ Click OK and 'Apply Settings'



- ❑ The page will have to display a confirmation (blue bar). If not, click again 'Apply Settings'.
- ❑ After changing the IP address, the page can be opened again by typing the new IP address in the URL of the browser.

Do **NOT** click 'apply defaults'!

If this would happen by accident correct with these settings:

- ❑ Serial settings page:
 - baud rate: 921600
 - RS232, 921600, 8, none, none, 1
- ❑ Server page
 - CPU performance: high

CHAPTER 4

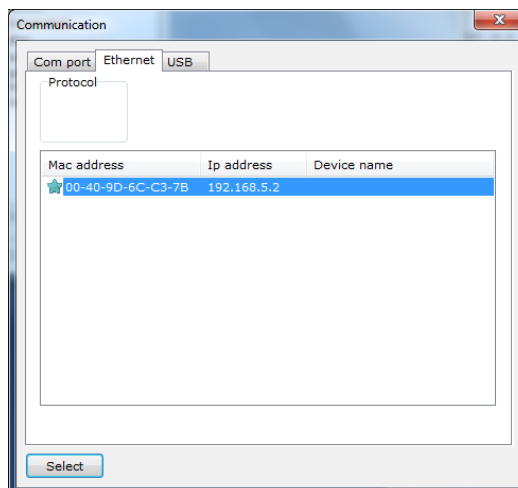
Autosampler AS110

Internal autosampler settings

All new AS110 autosampler are preconfigured to communicate over LAN using IP address 192.168.5.2. The IP subprotocol is set to Transmission Control Protocol (TCP).

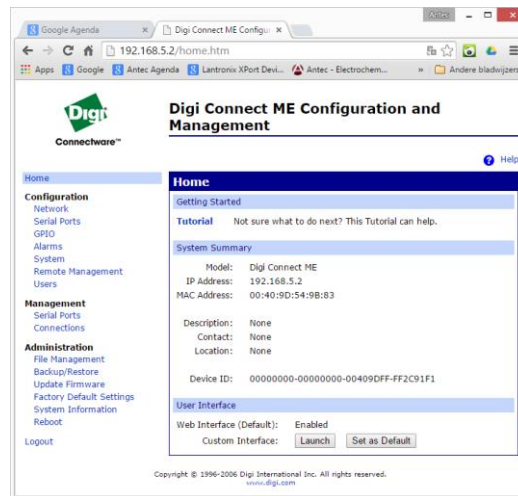
Check the communication of the computer with the Autosampler Service Manager (ASM) program

- ❑ Start-up the ASM program and in the communication menu, open the Ethernet tab.
- ❑ The connected autosampler are listed with their IP addresses
- ❑ Check that the IP address is not different from the planned one.

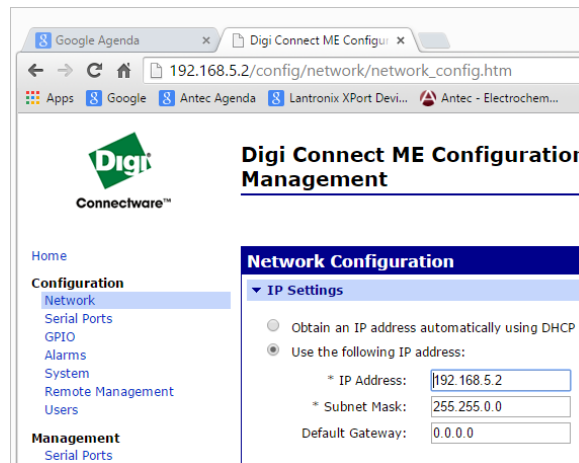


Check the communication of the computer with the AS110

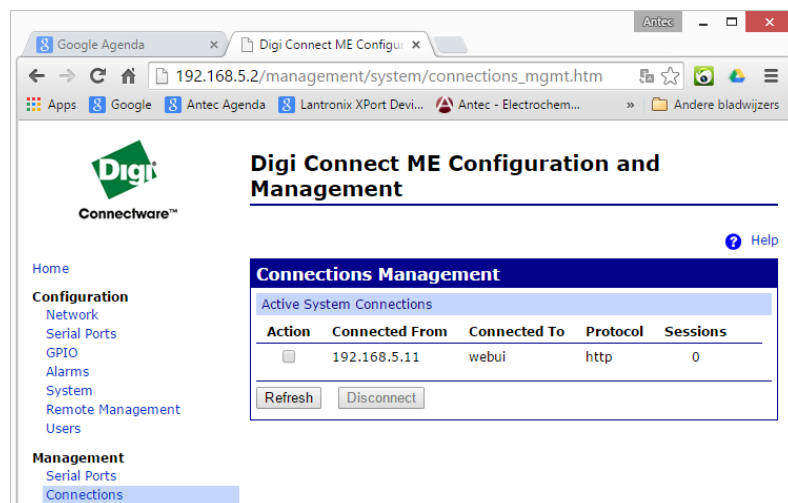
- ❑ Open an internet browser (e.g. Explorer, Google)
- ❑ Type *192.168.5.2* in the explorer-bar
- ❑ The following web page opens if communication works:



- Under the submenu 'Network', an overview of the settings is shown:



- The LAN-port address to which the autosampler is actually connected can be viewed under the tab 'Connections':



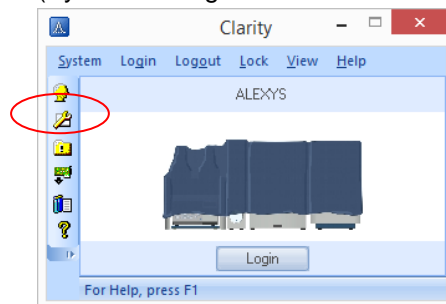
- ❑ To troubleshoot communication, the autosampler can also be connected temporarily to the computer port, thus excluding the switch-box.

Clarity driver setting for the autosampler

The correct Clarity autosampler driver has to be set to the correct port.

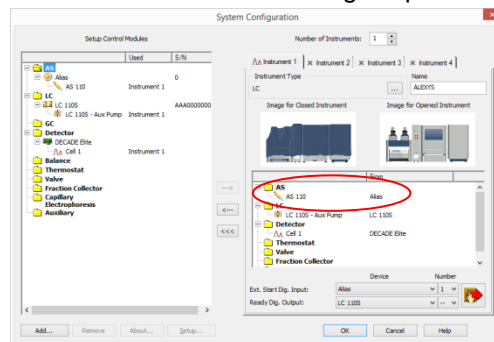
Open the Clarity Configuration Window

- ❑ In the Main window, open the system configuration window (System/Configuration or use the icon).

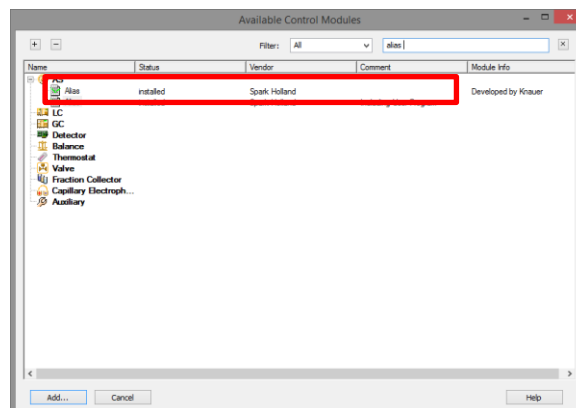


Open the AS110 autosampler driver

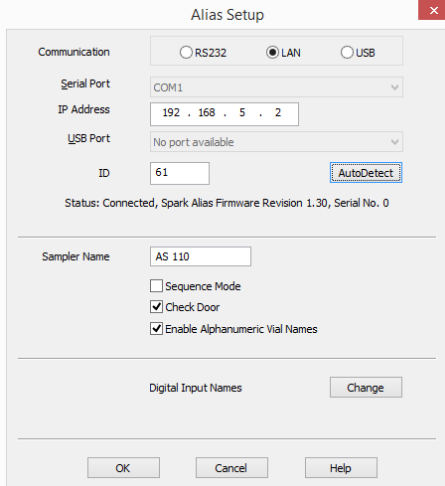
- ❑ If the driver is installed, make sure it is listed on the right hand side of the window. Else drag-drop it to the correct Instrument.



- ❑ If the driver is not installed, 'Add' it with the lower left button. The drivers name is 'Alias – including User Program'



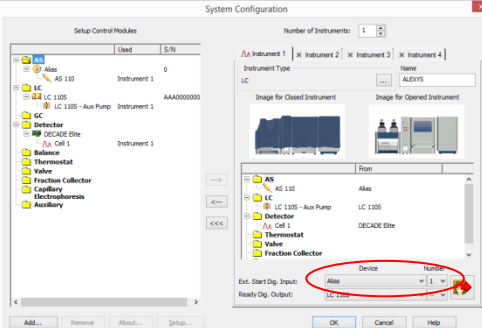
- ❑ Open the driver by double click
- ❑ Check/set/adjust the communication settings to the screen dump below, and use the 'AutoDetect' button to check communication.



The 'Alias Setup' dialog box is shown with the following settings:

- Communication: RS232, LAN, USB
- Serial Port: COM1
- IP Address: 192 . 168 . 5 . 2
- USB Port: No port available
- ID: 61
- AutoDetect button: highlighted with a blue box
- Status: Connected, Spark Alias Firmware Revision 1.30, Serial No. 0
- Sampler Name: AS 110
- Sequence Mode: Sequence Mode
- Check Door: Check Door
- Enable Alphanumeric Vial Names: Enable Alphanumeric Vial Names
- Digital Input Names: Change button
- Buttons: OK, Cancel, Help

- ❑ Close the window with the 'OK' button
- ❑ Make sure that the start trigger for Clarity data acquisition is set to the autosampler (nr 1):



The 'System Configuration' dialog box is shown with the following settings:

- Number of Instruments: 1
- Instrument 1: AS 110, Instrument Type: LC, Name: ALWAYS
- Ext. Start Dig. Input: AS 110 (highlighted with a red circle)
- Ready Dig. Output: LC 1105
- Buttons: Add..., Remove, About..., Setup..., OK, Cancel, Help

- ❑ Close the window with the 'OK' button and restart the Clarity software.