

Connect ALIAS™ Bio autosampler to lab scale **ÄKTA™** systems

Instructions

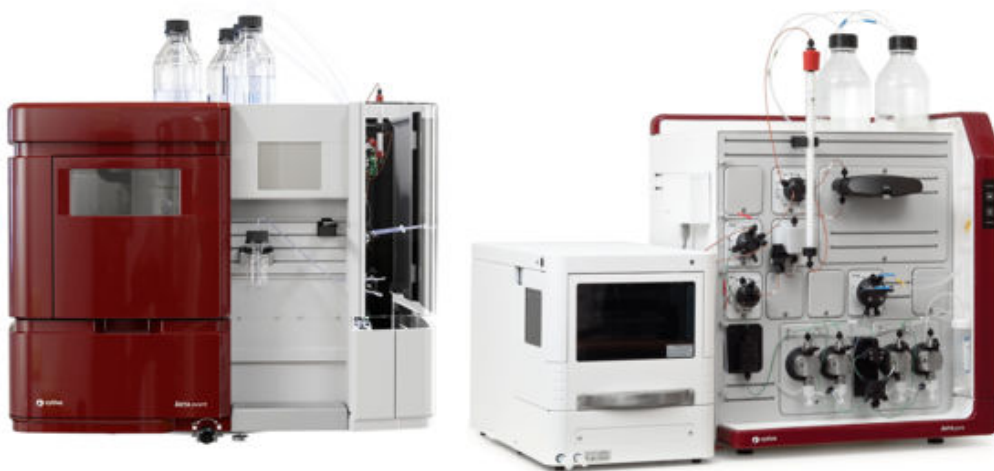


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1 About this Instruction

Scope

This document provides instructions on how to connect the ALIAS™ autosampler to ÄKTA™ lab scale systems, except ÄKTA start™ systems. This document also provides instructions on how to configure the ÄKTA lab scale system, and how to use the ALIAS autosampler in a method.

The following components are required to connect the ALIAS autosampler to ÄKTA lab scale systems:

- ÄKTA lab scale system
- I/O-box E9
- UNICORN™ software version 7.0 or later
- ALIAS autosampler manufactured by Spark Holland BV
- SamPLink software version 1.0.0 or later supplied by Spark Holland BV

Prerequisites

In order to connect the ALIAS autosampler to ÄKTA systems and operate the system according to the intended purpose the following prerequisites must be met:

- You should be familiar with the ÄKTA system and the UNICORN software and have read the respective *Operating Instructions*.
- You have read the *Install I/O-box E9 Instructions* (29021463).
- You have read the documentation supplied with the ALIAS autosampler.

Definitions

This user documentation contains safety notices concerning the safe use of the product. It also contains important notices for critical software information. See definitions below.



NOTICE

NOTICE indicates instructions that must be followed to avoid damage to the product or other equipment.



IMPORTANT

IMPORTANT indicates instructions that are essential for the software to function.

Notes and tips

Note: *A note is used to indicate information that is important for trouble-free and optimal use of the product.*

Tip: *A tip contains useful information that can improve or optimize your procedures.*

Software Help

Software help is integrated in SampLink software and in UNICORN software. Click **Help** in the menu bar, or click the **?** button when shown in dialogs.

Typographical conventions

Software items are identified in the text by ***bold italic*** text.

Hardware items are identified in the text by **bold** text.

In electronic format, references in *italics* are clickable hyperlinks.

2 Description

In this chapter

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2.1 Introduction	6
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2.4 I/O-box E9 connectors	9
2.5 Connections between ALIAS autosampler and I/O-box E9	10

2.1 Introduction

The ALIAS autosampler is a high throughput sample injector intended for use with liquid chromatography systems. The autosampler cannot be used as a stand-alone unit.

There are four different versions of ALIAS autosampler:

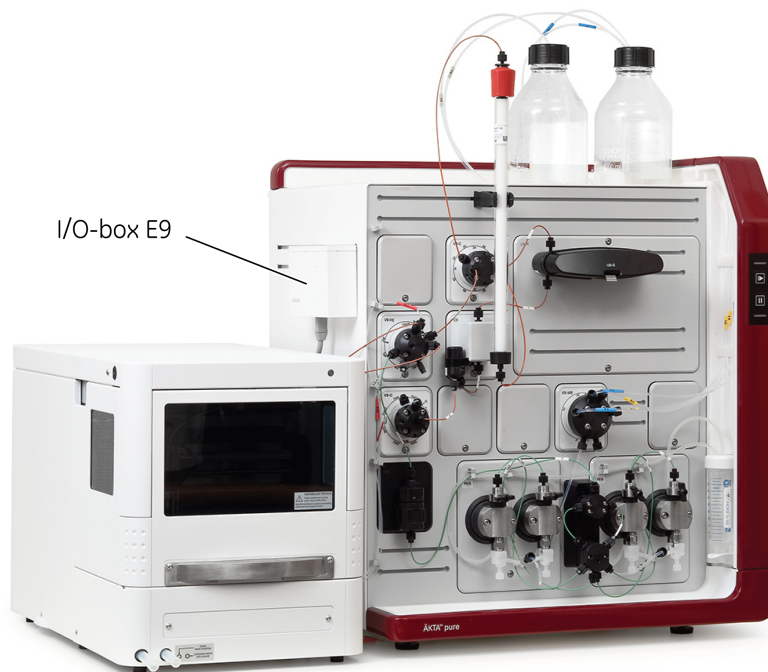
- ALIAS Bio version (standard version designed for analytical and micro-preparative applications)
- ALIAS Bio Cool version (standard cool version designed for analytical and micro-preparative applications)
- ALIAS Bio PREP version (preparative version designed for larger sample volumes)
- ALIAS Bio PREP Cool version (preparative cool version designed for larger sample volumes)



The ALIAS autosampler is controlled by its own software SampLink. The ÄKTA system is controlled by the UNICORN software. The two different systems and software communicate via the I/O box.

2.2 Setup of ÄKTA pure

The illustration below shows the ALIAS autosampler connected to ÄKTA pure™.



Component	Location
ALIAS autosampler	On the bench to the left of the ÄKTA pure system.
I/O-box E9	On the top rail on the left side of ÄKTA pure or on the bench, behind the ÄKTA pure instrument.
Fraction collector F9-R or Fraction collector F9-T (if used)	To the left of the ÄKTA pure system, on top of the ALIAS autosampler. Alternatively, the fraction collector can also be placed below the table top carrying the ÄKTA system and ALIAS autosampler.
Fraction collector F9-C (if used)	On the bench to the left of the ÄKTA pure instrument. It is recommended to place the ALIAS autosampler on top of the fraction collector. Alternatively, the fraction collector can also be placed below the table top carrying the ÄKTA system and ALIAS autosampler.

Note: If the tubing to the fraction collector is replaced with tubing of different lengths, the **Delay volume** has to be updated in the **System settings**. For instructions, refer to "ÄKTA pure User Manual" (291 19969).

2.3 Setup of ÄKTA avant

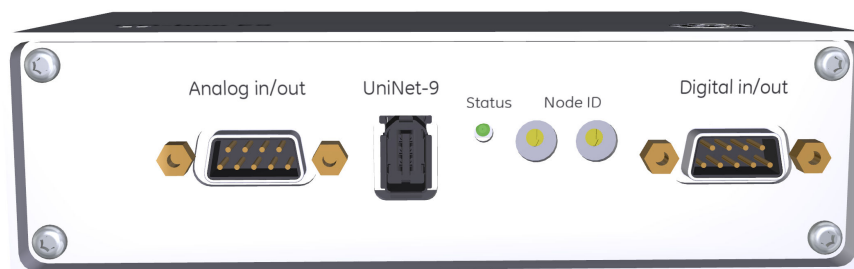
For ÄKTA avant™ the most common placement of the I/O-box E9, with the adhesive feet attached, is on the laboratory bench on the right-hand side of the instrument, close to the UniNet ports.

Place external equipment, such as the ALIAS autosampler, on the right hand side of the ÄKTA avant system, close to the I/O-box and the wet side of the instrument. Alternatively, place the I/O box on the system front rails. This alternative requires that the cables from the back of the system to the front of the system are placed below the system.

2.4 I/O-box E9 connectors

See *Instructions 29021463* for how to install the box, how to add the module to system properties in UNICORN and how to check **Node ID**.

The illustration below shows the I/O-box E9 connectors needed to connect the ALIAS autosampler to ÄKTA system.



Part	Description
UniNet-9	Connector used to connect I/O-box E9 to ÄKTA system.
Node ID	Switches used to configure the I/O-box E9 to the ÄKTA system.
Digital in/out	Signal connector for digital input and output signals. The Digital in/out connector is used to connect the I/O-box E9 to the ALIAS autosampler.

2.5 Connections between ALIAS autosampler and I/O-box E9

The ALIAS autosampler includes a connection cable with an open end intended for I/O connections. The user should make the connections to the connector supplied with the I/O-box E9 by matching the pins as presented in the table below.

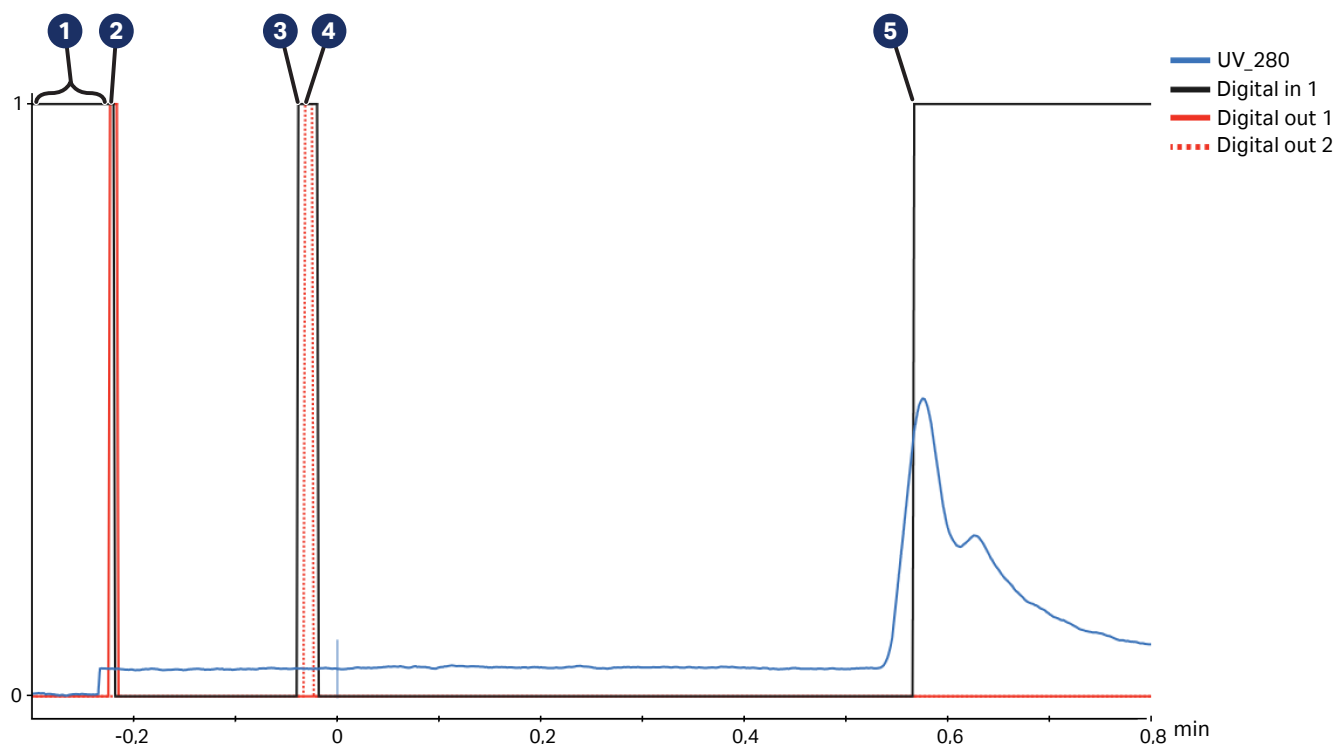
For more information see *Instructions 29021463*.

ALIAS autosampler Signal	ALIAS autosampler cable ID	I/O-box E9 Digital in/out connector pin	UNICORN instruction	Function
Input 1	RED (4-wired)	Pin 6	<i>Pulse Digital out 1</i>	Load sample in the ALIAS sample loop.
Input 2	BLACK (4-wired)	Pin 7	<i>Pulse Digital out 2</i>	Inject sample from ALIAS sample loop into the ÄKTA system.
Output 1	BROWN (3-wired)	Pin 1	<i>Digital in 1</i>	Informing UNICORN that the ALIAS autosampler is ready for the next step.
Signal ground	ORANGE (4-wired)	Pin 5	-	Signal ground
Common	RED (3-wired)			

Instrument communication

Instrument communication between the ALIAS autosampler and the ÄKTA system can be displayed as digital signals in the chromatogram in the result file of the UNICORN **Evaluation** module.

The UNICORN **Evaluation** module visualizes and evaluates data recorded during a run. The illustration below shows the digital signals that are sent between SampLink and UNICORN.



Note: In the example above, the **ALIAS loading** phase is placed before the **Equilibration** phase in the UNICORN method. For more information on where to place the **ALIAS loading** phase in a method, see [Section 5.3.2 Placement of ALIAS loading phase, on page 56](#).

Time point	Description
1	The sequence starts with SampLink sending a continuous digital signal (detected as Digital in 1 = 1 in UNICORN) and waiting for the first UNICORN pulse.
2	• UNICORN sends Pulse digital out 1. • SampLink changes the value of the continuous digital signal (detected as Digital in 1 = 0 in UNICORN). • The ALIAS autosampler starts to load the sample loop.
3	When the sample loop is loaded, SampLink will change value of the continuous digital signal (detected as Digital in 1 = 1 in UNICORN), then waits for the second UNICORN pulse.

2 Description

2.5 Connections between ALIAS autosampler and I/O-box E9

Time point	Description
4	• UNICORN sends Pulse digital out 2. • SampLink changes the value of the continuous digital signal (detected as Digital in 1 = 0 in UNICORN). • ALIAS autosampler turns the injection valve to INJECT and starts the ALIAS washing cycle.
5	When the ALIAS wash cycle is completed, SampLink changes the value of the continuous digital signal (detected as Digital in 1 = 1 in UNICORN) and waits for the first UNICORN pulse to initiate the next sample cycle.

3 Installation

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3.1 Hardware installation

In this section

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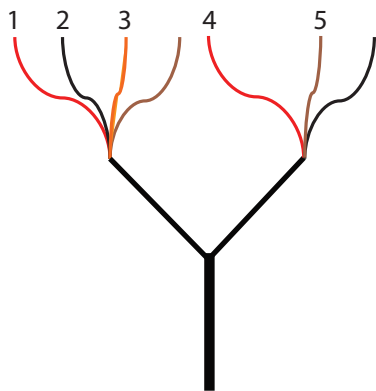
3.1.1 ALIAS autosampler preparation

Unpack the ALIAS autosampler according to the information in *ALIAS User manual*.

3.1.2 Prepare cable interface

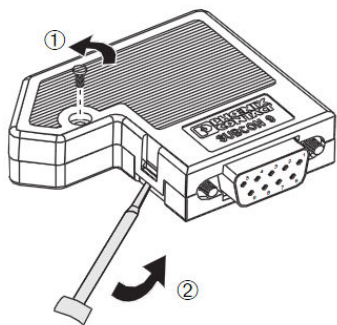
Follow the instructions below to prepare the remote cable interface.

Step	Action
1	Sort out the different wires of the ALIAS autosampler cable.



Part	Description
1	RED (4-wired)
2	BLACK (4-wired)
3	ORANGE (4-wired)
4	RED (3-wired)
5	BROWN (3-wired)

2	Open the housing of the cable interface.
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Step	Action
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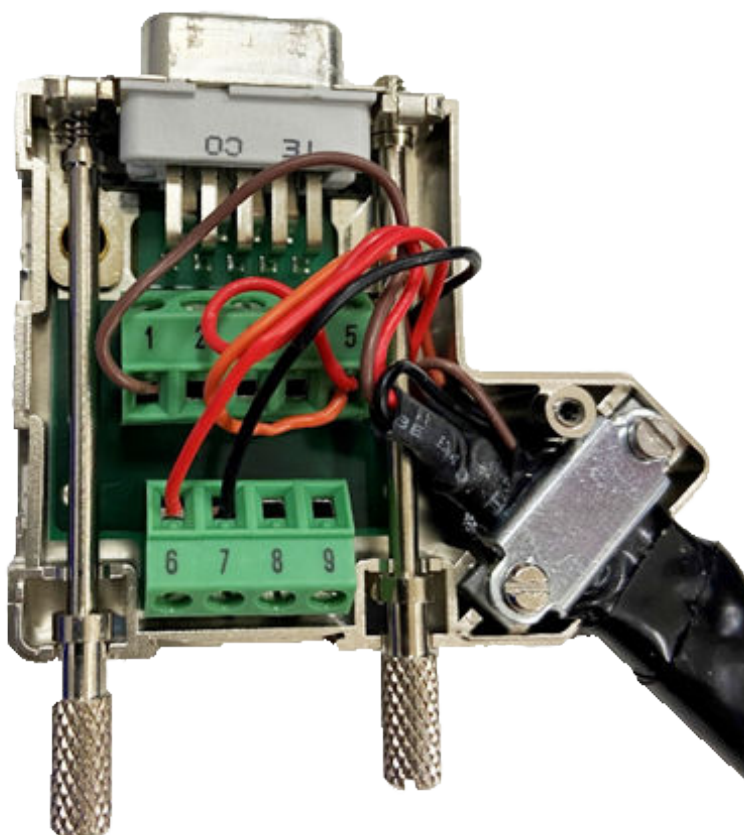
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|---|---|
| 3 | <p>a. Connect the correct wire to the correct position in the cable interface (see table below) and tighten the screws to get good contact between wires and pins.</p> |
|---|---|

Note:

The orange and the red wires connect to the same pin 5.

Wire	RED (4-wired)	BLACK (4-wired)	ORANGE (4-wired)	RED (3-wired)	BROWN (3-wired)
Cable interface pin	Pin 6	Pin 7	Pin 5	Pin 5	Pin 1

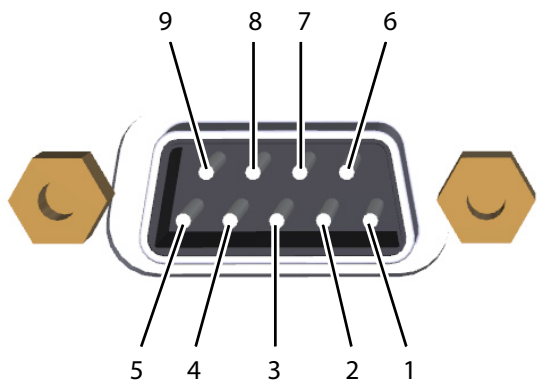
- b.** Isolate the unused wires with a piece of insulating tape.



- | | |
|---|--|
| 4 | Attach the ALIAS autosampler cable to the housing. |
| 5 | Close the cable interface housing. |

3.1.3 I/O-box E9 digital connector pins

The image shows the back side of the I/O-box. The digital connector pins correspond to the pins on the cable interface in [Section 3.1.2 Prepare cable interface, on page 16](#). The pins are identified according to the illustration below.



Part	Function
1	Digital in signal 1
2	Digital in signal 2
3	Digital in signal 3
4	Digital in signal 4
5	Signal ground
6	Digital out signal 1
7	Digital out signal 2
8	Digital out signal 3
9	Digital out signal 4

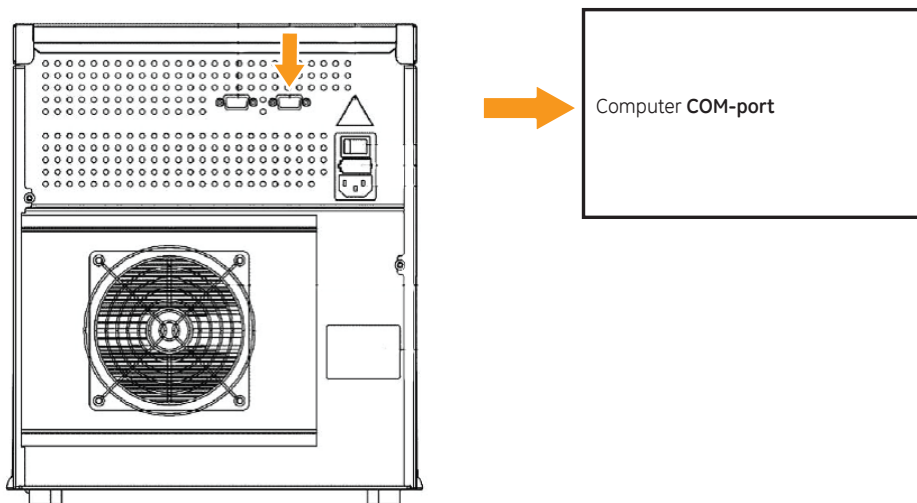
3.1.4 Connect the ALIAS autosampler

Follow the instructions below to connect the ALIAS autosampler to ÄKTA systems via the I/O-box E9.

Step	Action
1	Connect the ALIAS autosampler to mains power using the supplied power cord.
2	Connect the ALIAS autosampler to a COM-port on the computer using the cable supplied with the ALIAS autosampler. Use the right 9-p D-sub (female) connector on the back of the ALIAS autosampler (indicated in the illustration below).

Note:

If there is no COM-port available, use the Converter cable for USB-RS232 which is delivered with the ALIAS autosampler.



3	Connect the remote cable, with the prepared cable interface, between the left 9-p D-sub (male) connector on the ALIAS autosampler and the port Digital in/out on the I/O-box E9 (see illustration below).
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Note:

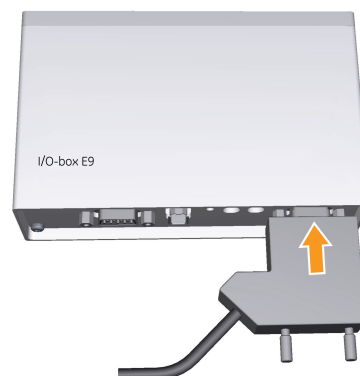
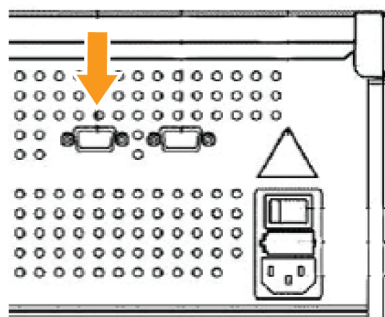
The connector has to be fastened to the I/O-box with the long screws to achieve good contact and to prevent it from falling out.

3 Installation

3.1 Hardware installation

3.1.4 Connect the ALIAS autosampler

Step	Action
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- | | |
|---|---|
| 4 | <p>Connect the I/O-box E9 to the ÄKTA system.</p> <p>Connect the cable (UniNet-9 F-type cable) between the UniNet-9 connector on the I/O-box and the UniNet-9 F-type connector on the ÄKTA instrument.</p> <p>See <i>Instructions 29021463</i>.</p> |
|---|---|

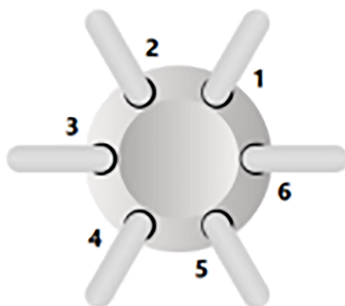
3.1.5 Connect the ALIAS autosampler to the flow path

ÄKTA pure

Follow the instructions below to connect the ALIAS autosampler to the flow path of the ÄKTA pure.

Note: The length of the tubing shall always be as short as possible to minimize the dead volume - see [Section 3.1.6 Optimize the tubing diameter, on page 23](#).

Step	Action
1	Connect a piece of PEEK tubing i.d. 0.5 mm (about 500 mm long) between port LoopE on the injection valve V9-Inj of the ÄKTA pure and port 1 (pump) on the ALIAS autosampler valve.
2	Connect a piece of PEEK tubing i.d. 0.5 mm (about 450 mm long) between port LoopF on the injection valve V9-Inj of the ÄKTA pure and port 6 (column) on the ALIAS autosampler valve. The image below shows the injection valve of the ALIAS autosampler, where the ports 1 and 6 leading to and from the ÄKTA system.



Note:

Use the tubing connectors that are supplied for each instrument. The connectors used for the ALIAS autosampler valve differ from the fingertight connectors used for ÄKTA systems. The ALIAS autosampler should use Valco™ connectors.

Tip:

The top cover of the ALIAS autosampler can be removed for easy installation of the tubing. Unscrew the two screws that connect the top cover and the front cover. Push the two snap locks, one on each side, to unlock and separate the covers from each other. Push the top cover backwards to remove it.

3	To avoid introducing air in the flow path, during a run, connect a stop plug in the Syr port on the injection valve of the ÄKTA pure.
---	--

After the tubing is connected, wash the flow path to check for leakage. See [Wash the flow path, on page 65](#).

3 Installation

3.1 Hardware installation

3.1.5 Connect the ALIAS autosampler to the flow path

ÄKTA avant

Follow the instructions above for ÄKTA pure, but change the length of the PEEK tubing to:

- about 750 mm long between port **LoopE** on the injection valve **V9-Inj** of the ÄKTA system and port **1** (pump) on the ALIAS autosampler valve.
- about 700 mm long between port **LoopF** on the injection valve **V9-Inj** of the ÄKTA system and port **6** (column) on the ALIAS autosampler valve.

Note: *The length of the tubing shall always be as short as possible to minimize the dead volume - see [Section 3.1.6 Optimize the tubing diameter, on page 23](#).*

3.1.6 Optimize the tubing diameter

Note: Depending on the placement of the ALIAS autosampler the length of the tubing will differ. Use tubing as short as possible to prevent band broadening.

Choose tubing i.d. based on flow rate and viscosity of the liquid used.

Follow the instructions below to choose the optimal tubing i.d. when connecting the ALIAS autosampler to ÄKTA systems.

Step	Action
1	Use PEEK tubing, i.d. 0.50 mm initially.
2	Perform a test run. Check resolution and system pressure.
3	- If the obtained chromatographic resolution is not as high as expected, change to PEEK tubing i.d. 0.25 mm to decrease the band broadening effect. However, be aware that the system pressure then will increase. or - If the system pressure is too high, change to PEEK tubing i.d. 0.75 mm to decrease the pressure. E.g., when running at a high flow rate and/or with high viscosity samples. However, be aware that the increased volume will most likely affect the resolution.

3.2 Software installation

Install the ALIAS autosampler software on the computer connected to the ÄKTA system and ALIAS autosampler. The software is supplied with the ALIAS autosampler.

Installation is performed in two steps.

Installation of:

- SampLink
- SampLink ALIAS driver

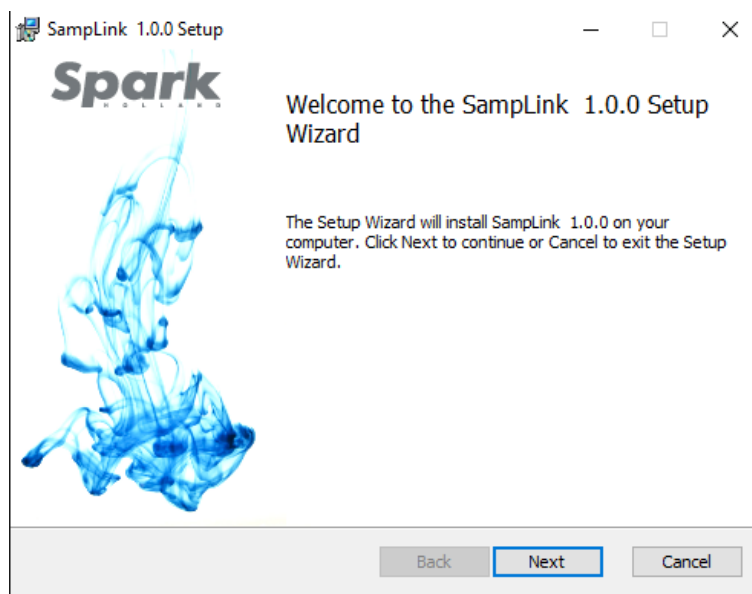
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3.2.1 SampLink

Follow the steps below to install SampLink.

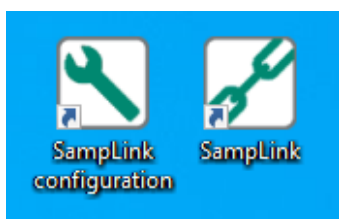
Step	Action
1	Insert the USB stick with the software into the computer.
2	Locate and double-click the SampLink version folder.
3	Click Next to follow the instructions in the installation wizard.



SampLink consists of two parts:

- **SampLink configuration**, and
- **SampLink** software application

To have easy access to these programs it is recommended to create shortcuts on the desktop when installation is complete, see [Section 3.2.3 Create SampLink shortcut, on page 27](#).



3.2.2 SampLink ALIAS driver

Follow the steps below to install the *SampLink ALIAS driver*.

Step	Action
1	Locate and double-click the <i>SampLink ALIAS driver</i> folder on the software USB.
2	Click the <i>SetupAlias</i> file (Windows® Installer).
3	Click <i>Next</i> to follow the instructions in the installation wizard.

3.2.3 Create SampLink shortcut

During the installation process of SampLink, shortcuts in the Windows start menu are only created for the Windows account that is currently logged in.

Follow the steps below to create shortcuts to the desktop.

Step	Action
1	Log in to Windows on the desired user account.
2	Open File Explorer . 
3	Navigate to the installation folder of SampLink. The default installation folder is: <code>C:\Program Files (x86)\Spark Holland\SampLink</code> . Note: <i>The SampLink configuration software file is named <code>CoreConfig.exe</code> and the SampLink software file is named <code>CoreMain.exe</code>.</i>
4	Create a shortcut. - To create a shortcut to the Windows startmenu, right-click the <code>CoreConfig.exe</code> or <code>CoreMain.exe</code> and select Pin to start. - To create a shortcut to the Windows desktop, right-click the <code>CoreConfig.exe</code> or <code>CoreMain.exe</code> and select Send to → Desktop (create shortcut). <i>Result:</i> The SampLink software can now be accessed from the Windows startmenu or the desktop on the current Windows user account.
5	If desired, rename the created shortcuts.

3 Installation

3.2 Software installation

3.2.4 Firmware update

3.2.4 Firmware update

ALIAS autosampler was previously controlled by the SparkLink software, this software has been replaced by SampLink. If you are currently running any version of SparkLink with ALIAS autosampler, then a firmware update is needed to make ALIAS autosampler compatible with SampLink. The firmware installation must be performed by Cytiva service personnel. Contact your Cytiva representative.

4 Configuration

In this chapter

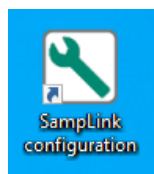
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4.1 Configure the ALIAS autosampler in SampLink

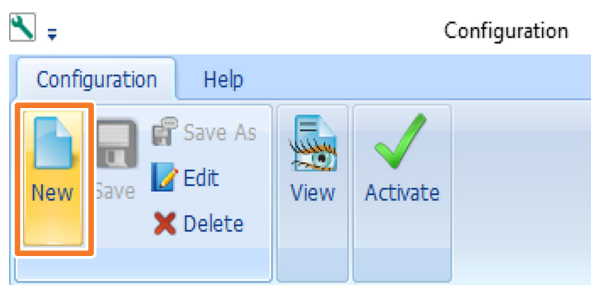
Follow the instructions below to configure the ALIAS autosampler.

Step	Action
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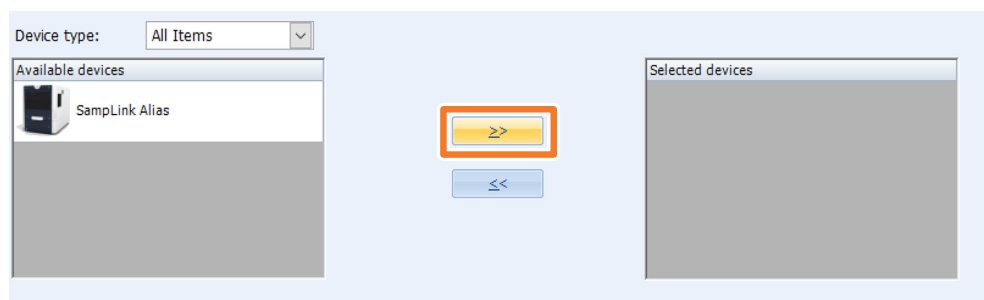
- | | |
|---|---|
| 1 | Start the SampLink Configuration software. |
|---|---|



- | | |
|---|--|
| 2 | Click New to create a new system configuration or select to open an existing configuration to edit. |
|---|--|

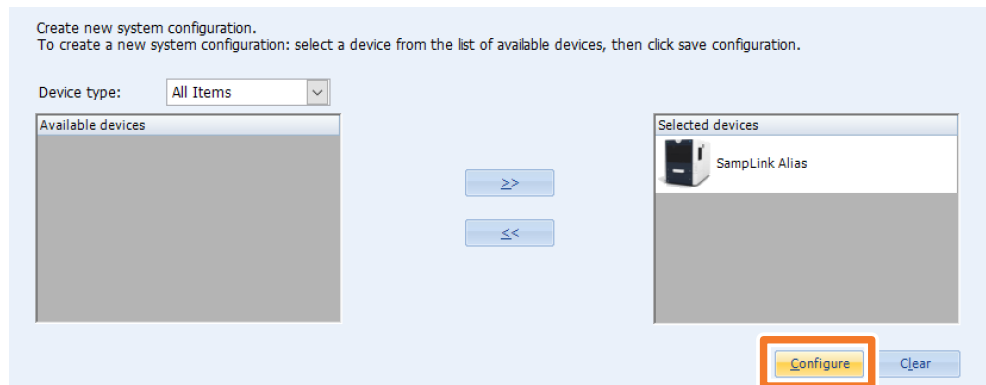


- | | |
|---|--|
| 3 | When creating a new configuration, select the ALIAS device in the Available devices box and click the arrow button. |
|---|--|



Step	Action
------	--------

4	Click the Configure button.
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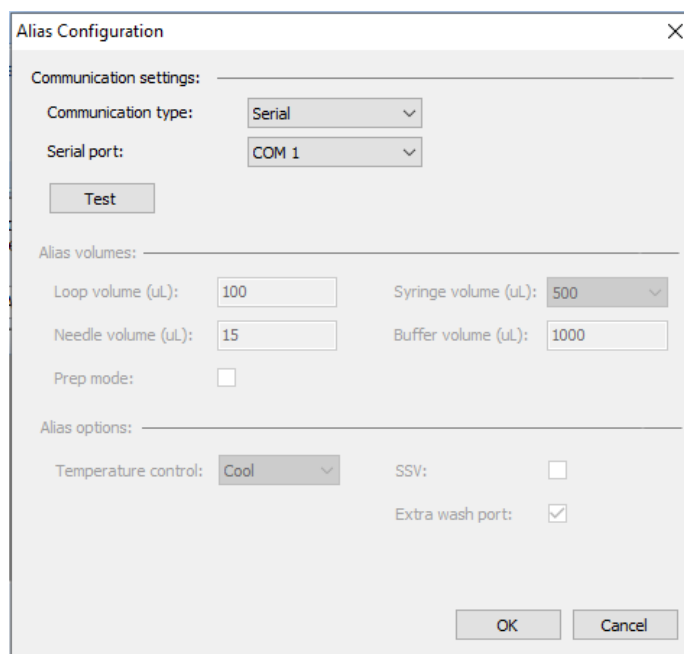
Result:

The **ALIAS Configuration** screen, opens. The **ALIAS Configuration** screen has three parts:

- **Communication Settings**
- **Alias Volumes**
- **Alias Options**

Note:

The **Alias options** part will remain greyed out. Temperature control can be set in the method setup, see [Section 5.2.2 Create a SampLink method, on page 43](#).



Step	Action
5	For the Communication Settings part: a. Select Communication type → Serial b. Select Serial port in the drop down menu. c. Check that chosen communication port is active by clicking the Test button. <i>Result:</i> • If the test succeeds, a green symbol appears. Options for Alias Volumes becomes available. • If the test fails, an orange symbol appears. Make sure that all the settings are correct, and press Test again.

Accepted connection

Alias Configuration

Communication settings:

Communication type: Serial

Serial port: COM 1

Test

Alias volumes:

Loop volume (uL): 500

Syringe volume (uL): 500

Needle volume (uL): 15

Buffer volume (uL): 1000

Prep mode:

Alias options:

Temperature control: Cool

SSV:

Extra wash port:

OK

Cancel

Failed connection

Alias Configuration

Communication settings:

Communication type: Serial

Serial port: COM 1

Test

Alias volumes:

Loop volume (uL): 100

Syringe volume (uL): 500

Needle volume (uL): 15

Buffer volume (uL): 1000

Prep mode:

Alias options:

Temperature control: Cool

SSV:

Extra wash port:

OK

Cancel

Note:
If the computer is not connected to the ALIAS autosampler, the **Serial port** menu may be empty. In this case, connect the computer to the ALIAS autosampler.

Note:
If the USB to serial converter cable is used to connect the ALIAS autosampler to the computer, a driver needs to be installed. If this is needed, contact your Cytiva representative.

Step	Action
------	--------

6	For the Alias Volumes part:
---	------------------------------------

	a. Enter volumes according to installed hardware.
--	--

Note:

Buffer volume = volume in tubing, see ALIAS User Manual. The volume is visible on the tubing.

It is important to choose the correct needle volume.

Needle volume in ALIAS Bio version = 15 µL

Needle volume in ALIAS Bio PREP version = 60 µL

	b. For the ALIAS Bio PREP version, check the Prep mode box. Loop volume and Syringe volume will be set to a fixed volume.
--	---

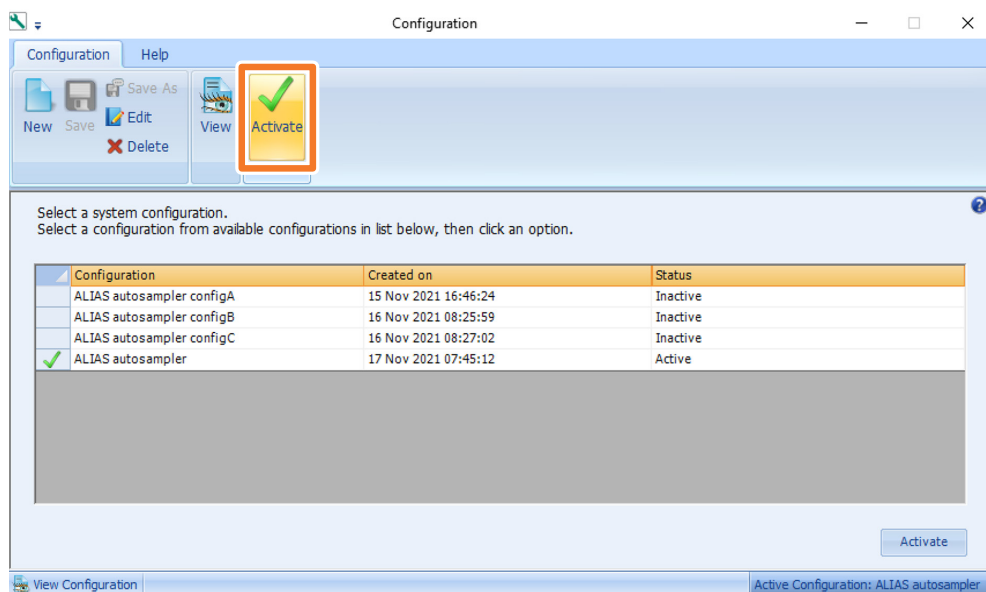
7	Click OK .
---	-------------------

Result:

The **Configuration** screen appears.

8	Click Save or Save as to save the configuration.
---	--

9	Select preferred configuration and click Activate .
---	--



Note:

When opening the SampLink configuration, the last activated configuration is used.

4.2 Configure I/O-box E9 in UNICORN



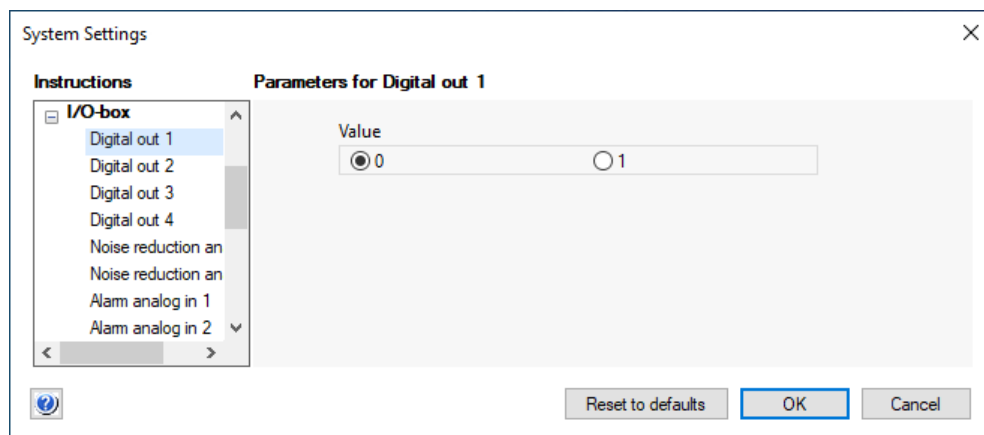
IMPORTANT

Changing the instrument configuration resets the system setting of the I/O-box E9 to the default value, i.e. to **Value 1** for **Digital out 1** and **Digital out 2**. If instrument configuration is changed, reconfigure the I/O-box E9 settings in UNICORN according to the instruction below if working with an ALIAS autosampler.

Follow the instructions below to configure I/O-box E9.

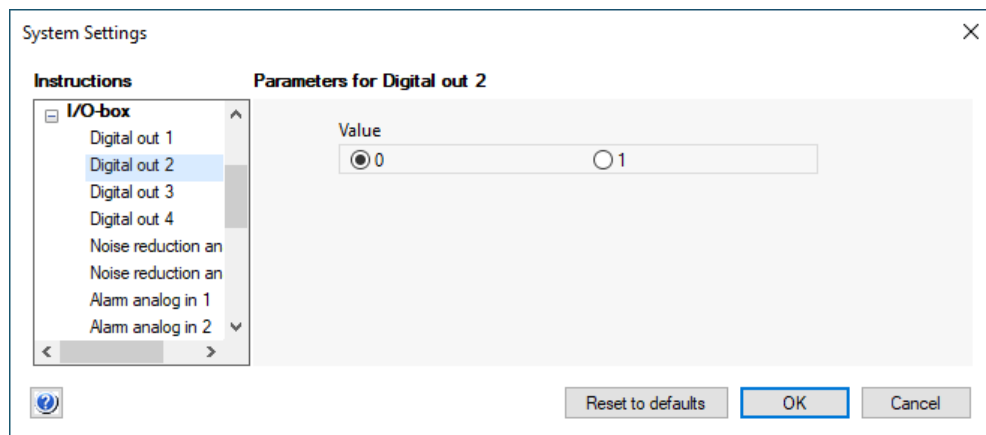
- | Step | Action |
|------|---|
| 1 | In UNICORN, select System Control → System settings → I/O-box . |
| 2 | In the Instructions window, select Digital out 1 and set Value to 0 . |

Result:



Step	Action
------	--------

- | | |
|---|---|
| 3 | In the Instructions window, select Digital out 2 and set Value to 0 . |
|---|---|



- | | |
|---|-------------------|
| 4 | Click OK . |
|---|-------------------|

4.3 Configure SampLink I/O settings

Follow the instructions below to configure the I/O settings in SampLink.

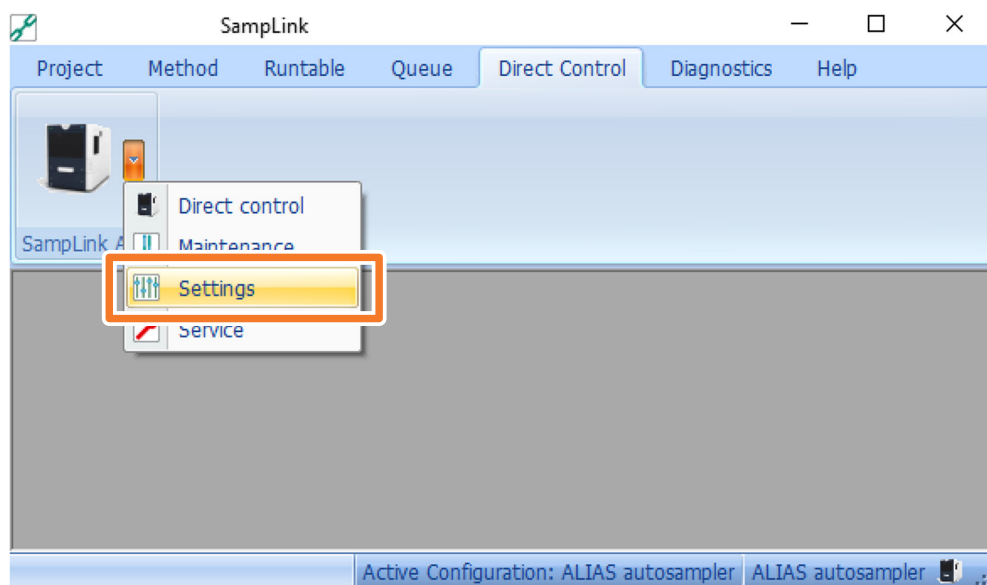
Step	Action
------	--------

- | | |
|---|------------------------------|
| 1 | Start the SampLink software. |
|---|------------------------------|



- | | |
|---|--------------------------------------|
| 2 | Go to the Direct Control tab. |
|---|--------------------------------------|

- | | |
|---|---|
| 3 | Click the arrow next to the ALIAS icon to open a drop down menu. Then, select Settings . |
|---|---|



Result:

The **I/O settings** window opens.

Step	Action
4	The I/O settings window has 4 parts. Input 1 , Input 2 , Output and Options . Select the following options:

- Set **Input 1** to **Sync**.
- Set **Input 2** to **Freeze**.
- Set **Output** to **Auxiliary 1**.
- Under **Options**:
 - Set **Inject marker pulse (s)** to **2,0**.
 - Set **Next injection active edge** to **Falling**.
 - Set **Freeze level** to **Low**.
 - Set **Reset output after last series** to **Yes**.

The screenshot shows the 'SampLink Alias - Settings' window with the 'I/O settings' tab selected. The left sidebar contains 'I/O settings' and 'System info' tabs, an 'Initialize' button, and status/version information (Status: Idle, Version: 1.01). The main area is titled 'I/O settings Alias input and output' and contains four sections: 'Input 1' with radio buttons for Next injection, Freeze, Stop, and Sync (selected); 'Input 2' with radio buttons for Next injection, Freeze (selected), Stop, and Sync; 'Output' with radio buttons for Inject marker, Auxiliary 1 (selected), and Alarm; and 'Options' with four settings: 'Inject marker pulse (s)' set to 2,0, 'Next injection active edge' set to Falling, 'Freeze level' set to Low, and 'Reset output after last series' checked. 'Submit' and 'Cancel' buttons are at the bottom right.

5	Click Submit . <i>Result:</i> The settings are saved.
6	Click Cancel . <i>Result:</i> The I/O settings window closes.

5 Method setup

In this chapter

Section		See page
5.1	Workflow overview	39
5.2	SampLink setup	40
5.3	UNICORN setup	52

5.1 Workflow overview

Using the ALIAS autosampler with ÄKTA systems and I/O-box E9 requires four stages. Stages 1-3 are executed in SampLink:

Stage	Description
1	Set up a SampLink project (will contain Methods, Results and Runtables).
2	Set up the SampLink method (i.e., injection parameters, injection mode, etc.).
3	Set up the SampLink runtable (i.e., which vials/wells to inject from, and the injection volumes).
4	Create the UNICORN method to be used together with the ALIAS autosampler.

5.2 SampLink setup

In SampLink, the workflow includes creating a Project, which is populated by Methods and Runtables. The created Runtables are submitted to a run Queue.

In this section

Section		See page
5.2.1	Create a SampLink project	41
5.2.2	Create a SampLink method	43
5.2.3	Create a SampLink runtable	48

5.2.1 Create a SampLink project

Follow the instructions below to create a SampLink project.

Step	Action
------	--------

- | | |
|---|---|
| 1 | Start the SampLink Application software. |
|---|---|



Note:

The first time SampLink is started, a prompt will appear to create a project. Accept the prompt and skip step 2.

- | | |
|---|---|
| 2 | Select the Project tab and click New to create a new project. |
| 3 | Enter a project name and click Create . |

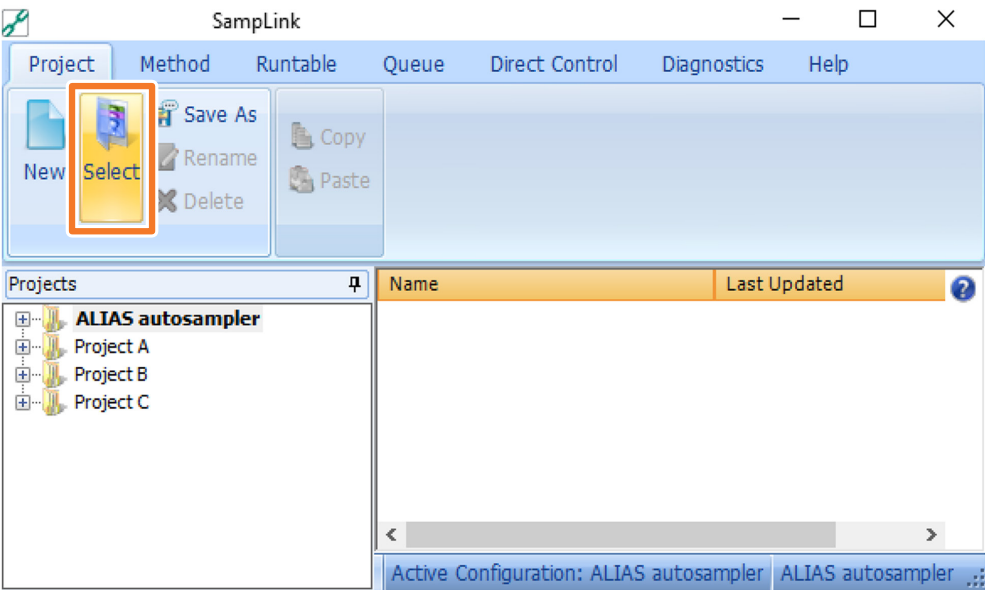
Create Project	
Name	Created on date
Project A	16 Nov 2021 15:09:27
Project B	16 Nov 2021 15:09:04
Project C	16 Nov 2021 15:09:34

Project name: Create Cancel

- | | |
|---|--|
| 4 | Select a project: <ol style="list-style-type: none"> Click the target project node in the list of projects in the Projects navigation panel on the left. |
|---|--|

Step	Action
------	--------

- | | |
|----|---|
| b. | Click the Select icon on the Project tab. The project is now displayed in bold to indicate that it is selected. |
|----|---|



5.2.2 Create a SampLink method

Follow the instructions below to create a SampLink method.

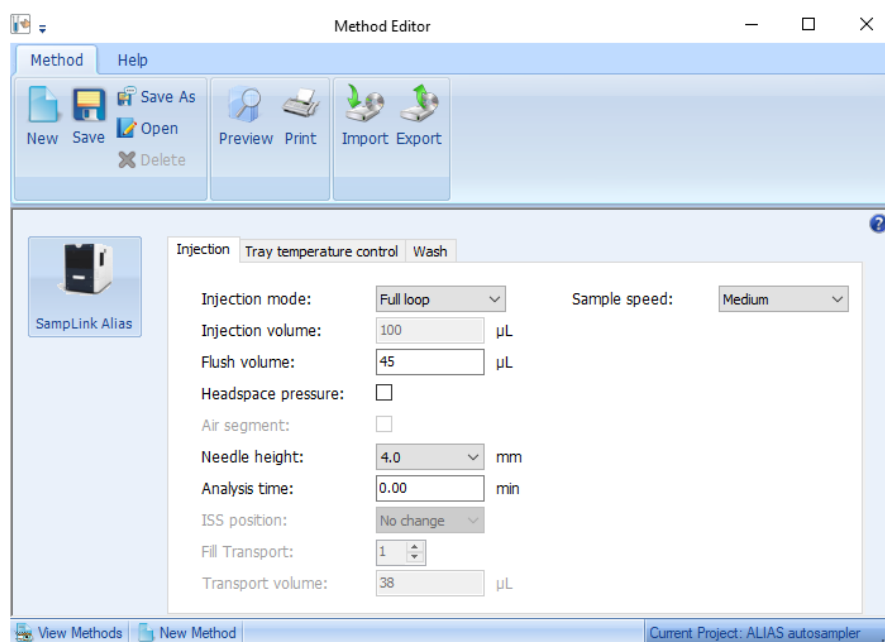
Step	Action
------	--------

- | | |
|---|---|
| 1 | Open SampLink and select the Method tab. |
| 2 | Click Method Editor to create a new method for the selected project. |

Tip:

The bottom right of the status line indicates which project is currently selected.

- | | |
|---|---|
| 3 | To select injection mode, click the Injection tab. |
|---|---|



Step	Action
4	For Injection mode select: • Full loop • Partial loop , or • uL Pickup

Injection

Tray temperature control

Wash

Injection mode:

Full loop

Sample speed:

Medium

Injection volume:

100

µL

Flush volume:

45

µL

Headspace pressure:

☐

Air segment:

☐

Needle height:

4.0

mm

Analysis time:

0.00

min

ISS position:

No change

Fill Transport:

1

Transport volume:

38

µL

See the table below for more detailed information about the different settings in the **Injection** tab.

Note:

The injection mode **Partial loop** differs between the ALIAS Bio version and the ALIAS Bio PREP version.

In the ALIAS Bio version it is not allowed to program an injection volume larger than half the loop sizes for partial loop fill. In the ALIAS Bio PREP version, it is allowed to program a injection volume equal to the full loop size of 10 mL.

	Injection mode →Full loop	Injection mode →Partial loop	Injection mode →uL Pickup
Injection volume	The injection volume is defined by the physical loop volume as entered into the SampLink configuration. See Section 4.1 Configure the ALIAS autosampler in SampLink, on page 30.	Selectable. The maximum injection volume is 50% of the loop volume.	Selectable. The maximum injection volume is ((loop volume– 3× needle volume) / 2)

Step Action

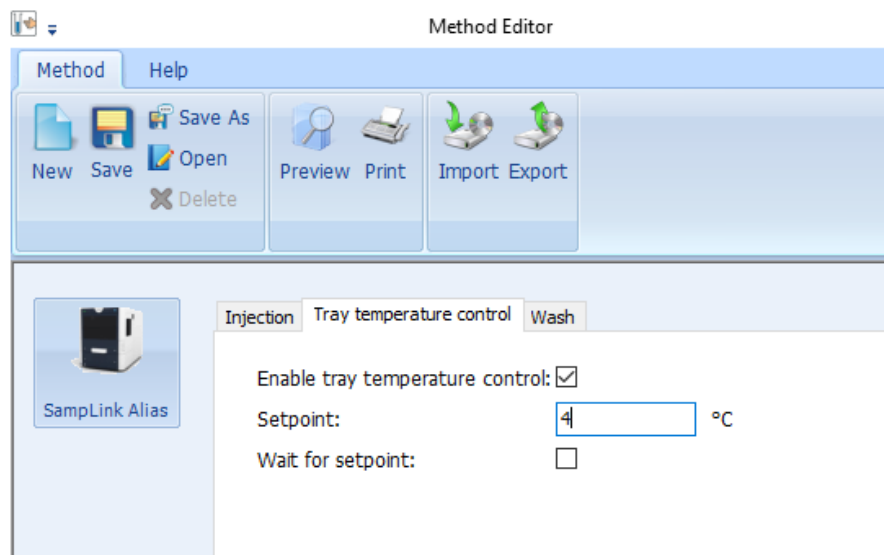
	<i>Injection mode → Full loop</i>	<i>Injection mode → Partial loop</i>	<i>Injection mode → uL Pickup</i>
<i>Flush volume</i>	The volume from the well/vial for filling the sample line with sample and to remove the wash solvent. 2 – 3 x the needle volume is recommended.	Same as for <i>Injection mode → Full loop</i>	No flush volume is used.
<i>Sample speed</i>	Depends on the viscosity of the samples and can be selected in three settings: • <i>Low</i> • <i>Medium</i> • <i>High</i> Default setting is <i>Medium</i> and works well for most samples and buffers.	Same as for <i>Injection mode → Full loop</i>	Same as for <i>Injection mode → Full loop</i>
<i>Headspace pressure</i>	Only needed for vials with septa. It will assist the syringe in aspirating the programmed amount of sample. <i>Note:</i> <i>Headspace pressure is not recommended to be used when using vials with cross slit septa.</i>	Same as for <i>Injection mode → Full loop</i>	Same as for <i>Injection mode → Full loop</i>
<i>Air segment</i>	The air segment will be aspirated into the tubing between the injection valve and the syringe valve. Can be selected to create a good separation between the wash solvents and the aspirated sample.	Same as for <i>Injection mode → Full loop</i>	It is not recommended to use air segment in <i>uL Pickup</i> since there is a risk to introduce air into the sample loop which may affect the results.

Step	Action
------	--------

	<i>Injection mode → Full loop</i>	<i>Injection mode → Partial loop</i>	<i>Injection mode → uL Pickup loop</i>
Needle height	Can be set in a range from 2.0 – 6.0 mm in steps of 0.5 mm. The 2.0 mm is the minimum value, where the needle will be penetrated as deep as possible into the sample vials. The height is measured from the tray. Depending of the shape of vial (bottom), a different height may need to be selected.	Same as for Injection mode → Full loop	Same as for Injection mode → Full loop

See the documentation supplied with the ALIAS autosampler for more information about the different injection modes.

- 5 If using ALIAS Bio Cool or ALIAS Bio PREP Cool, click **Tray temperature control** tab to edit temperature control settings for the sample tray.
 If it is important that the temperature is reached before starting the runtable, specify a **Setpoint** temperature and select **Wait for setpoint** option.



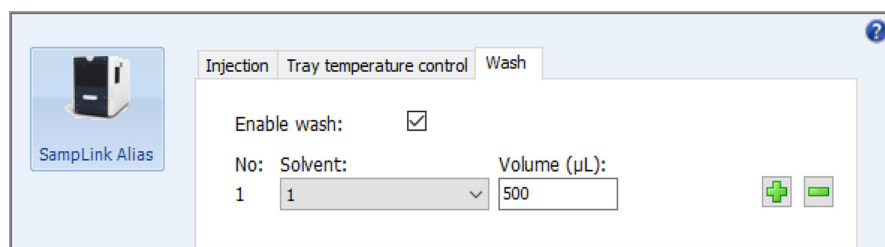
- 6 To edit the wash parameters, click the **Wash** tab.

Step	Action
------	--------

7	Set the required wash volume.
---	-------------------------------

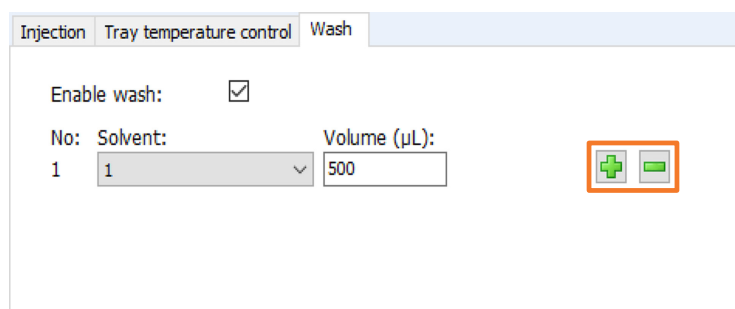
Note:

The set wash volume of wash solvent is used to rinse the buffer tubing and the sample needle. The wash solvent washes the internal flow path in the ALIAS autosampler, excluding the sample loop. The wash of the sample loop is performed by the ÄKTA system.



8	In case of a second wash solvent availability, a wash program can be programmed by selecting the wash solvent and the wash volume.
---	--

- a. Add a washing solution by clicking the + button.
- b. Delete a washing program, by clicking the - button.



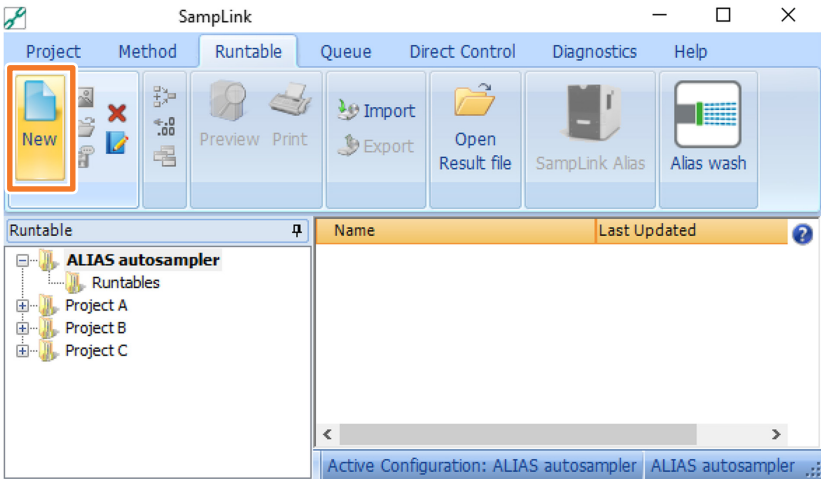
9	Save the method.
---	------------------

- a. Click **Save** in the **Method Editor** dialog.
- b. In the **Save As** dialog, enter a method name and click **Save**.

5.2.3 Create a SampLink runtimeable

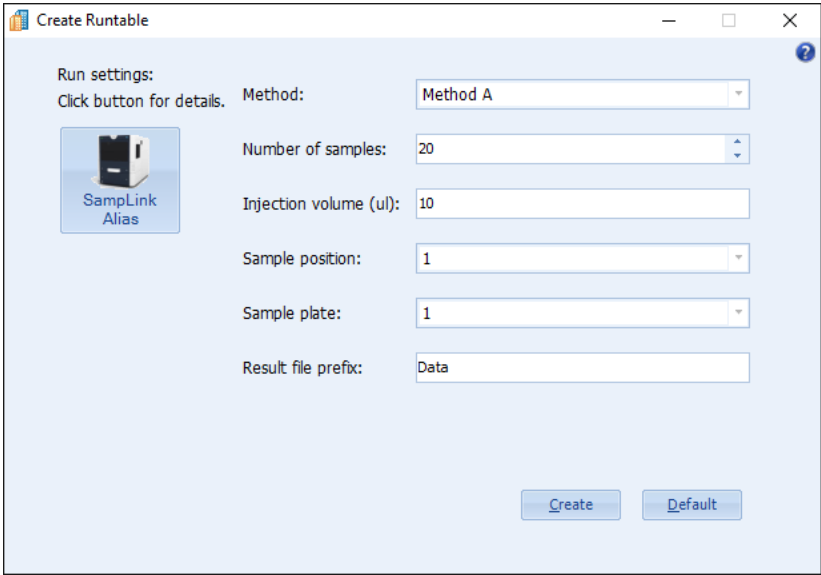
Follow the instructions below to create a new SampLink runtimeable.

Step	Action
1	Open SampLink and select the Runtimeable tab.
2	Click New or edit an already existing runtimeable by clicking Edit → Add samples .



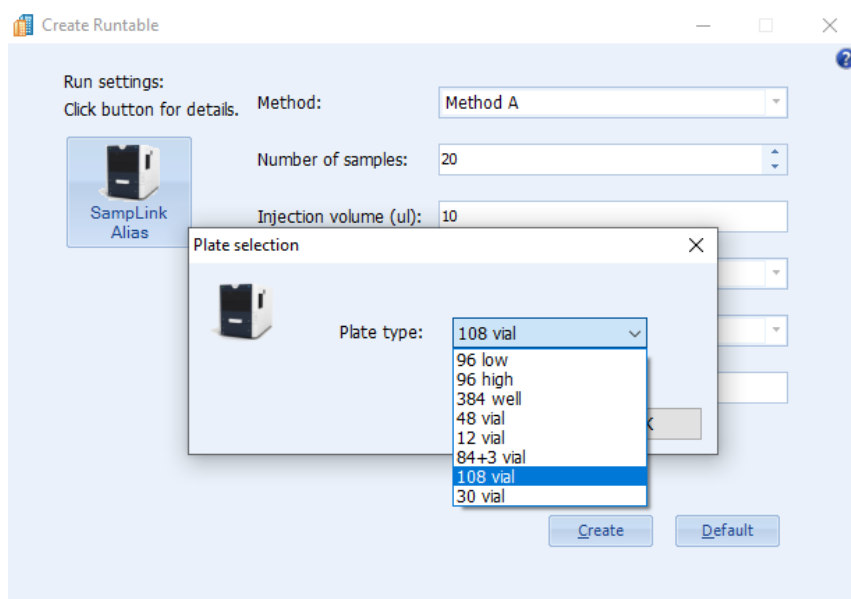
Note:
Active configuration and currently selected project are shown at the bottom right of the status line.

Result:
The screen **Create runtimeable** appears.



Step	Action
------	--------

- | | |
|---|---|
| 3 | <p>In the Create Runtime window:</p> <p>a. To change plate type click the SampLink Alias icon. In the Plate selection window that appears, select Plate type in the drop-down menu.</p> |
|---|---|



NOTICE

The **Plate type** setting defines the needle position for sample loading. The needle can break or take damage if the **Plate type** setting does not match the placed sample rack or microtiter plate.

- b. **Method:** Select the desired method from the drop-down list.
 For instructions on how to create a new method, see [Section 5.2.2 Create a SampLink method, on page 43](#).
- c. **Number of samples:** Enter the number of samples to be processed dependent of the maximum number in the selected type of plate.
- d. **Injection volume:** Set the injection volume. As default, the value of the method will be used. Changing the injection volume in the runtime will overrule the injection volume of the method.
- e. **Sample position:** Set the correct sample position of the first sample. The following samples are automatically assigned. Sample positions can be edited in the next step.

Step	Action
------	--------

f.	Sample plate: Select plate #1 (left) or plate #2 (right).
----	--



NOTICE

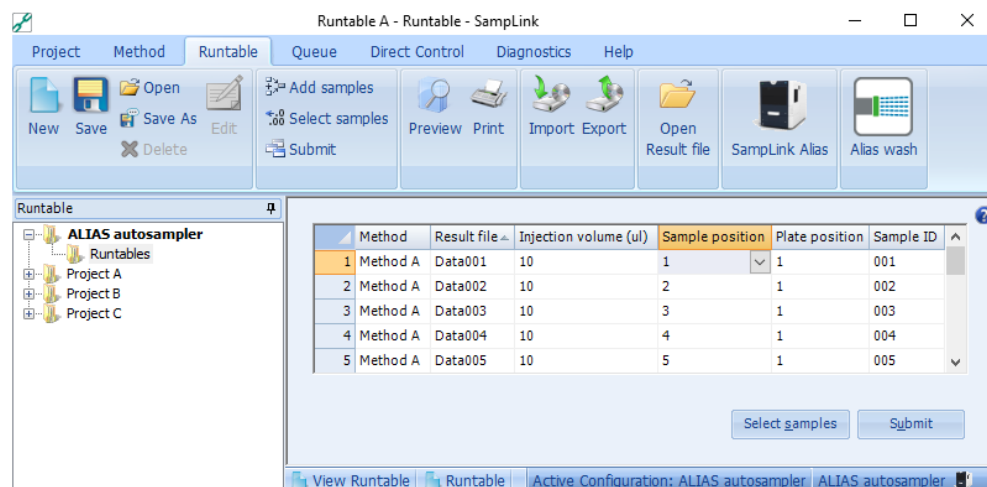
The **Sample plate** setting defines the needle position for sample loading. The needle can break or take damage if the **Sample plate** setting does not match the placed sample rack or microtiter plate.

g. **Result file prefix:** Set the result file prefix. The default name is **Data**.

h. When completed, click **Create**.

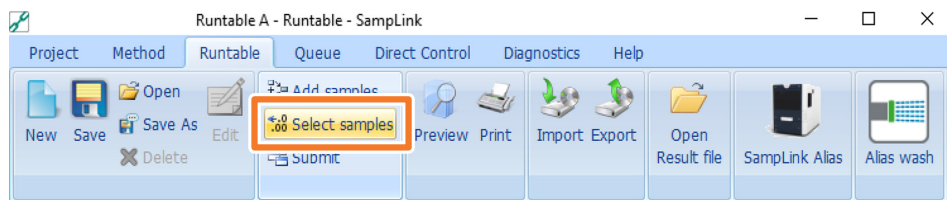
Result:

The **Runtable** opens. In this screen, the selected methods, result files, injection volumes, sample positions, plate positions and sample ID are displayed. These values can be modified and additional samples can be added, if needed.



4 Check that the samples are in the correct positions.

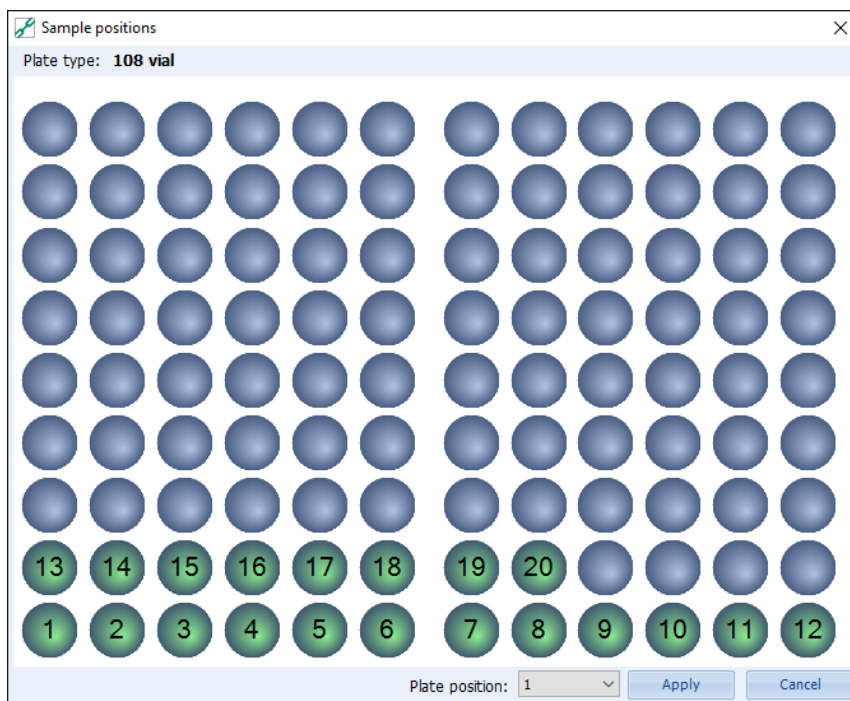
a. Click **Select samples**.



Result:

The **Sample positions** window opens.

Step	Action
------	--------

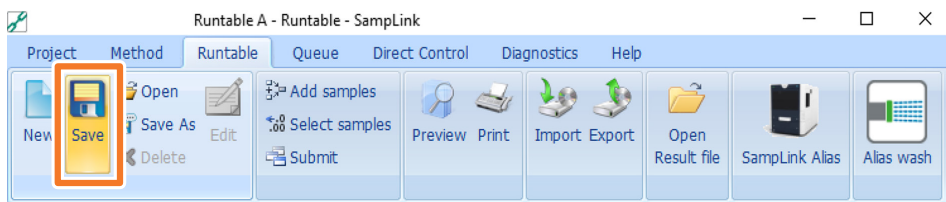


- b. Make sure the selected plate type is correct.
 To change plate type, click **Cancel** and then select the **SampLink Alias** icon on the ribbon. Set **Plate type** to the correct plate.
- c. To edit sample positions, right-click a highlighted sample and uncheck it.
- d. Right-click the correct sample position on the plate and select a sample from the menu.
- e. Click **Apply** if plate type and sample positions are OK.

5

Save the runtable:

- a. Click the **Save** icon.



- b. In the **Save as** dialog, enter a Runtable name and click **Save**.

Tip:

The runtable can also be exported to a Microsoft® Excel® sheet. Click **Export** and select **Excel file** as the file type to save the runtable in Excel format.

5.3 UNICORN setup

The UNICORN method needs to be updated to include the phases relevant for the ALIAS autosampler.

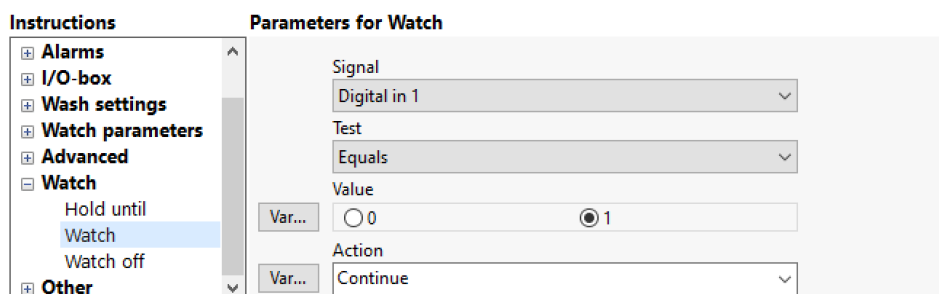
In this section

Section	See page
5.3.1 Create and edit UNICORN phases	53
5.3.2 Placement of ALIAS loading phase	56
5.3.3 Handling multiple sample injections	60

5.3.1 Create and edit UNICORN phases

To include the ALIAS autosampler in a run, add two user-defined phases (**ALIAS loading** and **ALIAS injection**) in the UNICORN method. For more information on how to use the **Method Editor** in UNICORN, refer to the UNICORN user documentation.

Step	Action
1	Create or open the UNICORN method in Method editor .
2	Create a user-defined phase, name it ALIAS loading . a. In the Phase Library tab, select User Defined. b. Click Insert. c. Name the phase ALIAS loading.
3	Click the Text Instruction tab. a. Set base parameter to Base → Time. b. Insert instruction Watch, select settings as follows: Signal → Digital in 1 Test → Equals Value → 1 Action → Continue



- c. Insert instruction **Pause** and select **Infinite**.
- d. Insert instruction **Pulse digital out 1**, set length to 0,5 sec.

Result:

In **Text Instructions** tab, the **ALIAS loading** phase looks like the image below.

```

0.00 Phase: ALIAS loading
    0.00 Base: Time, Any
    0.00 Watch: Digital in 1, Equals, 1, Continue
    0.00 Pause: Infinite {min}
    0.00 Pulse digital out 1: 0.5 {sec}
    0.00 End_Block
  
```

Step	Action
------	--------

4	Create a user-defined phase, name it ALIAS injection .
---	---

Note:

The **ALIAS injection** phase is always placed directly before the **Sample Application** phase.

a. In the **Phase Library** tab, select **User Defined**.

b. Click **Insert**.

c. Name the phase **ALIAS injection**.

5	In Text Instructions tab:
---	----------------------------------

a. Set base parameter to **Base** → **Time**.

b. Insert instruction **Watch**, select settings as follows:

Breakpoint	Instructions	Parameters for Watch
0.10 min Var...	- Alarms - I/O-box - Wash settings - Watch parameters - Advanced - Watch - Hold until - Watch - Watch off - Other	Signal Digital in 1 Test Equals Value Var... 0 1 Action Var... Continue

Breakpoint → **0.10**

Signal → **Digital in 1**

Test → **Equals**

Value → **1**

Action → **Continue**

c. Insert instruction **Pause**, select the **Infinite** option.

d. Insert instruction **Pulse digital out 2**, set length to 0,5 sec.

Result:

In **Text Instructions** tab the **ALIAS injection** phase is:

0.00	Phase: ALIAS injection
0.00	Base: Time, Any
0.10	Watch: Digital in 1, Equals, 1, Continue
0.10	Pause: Infinite {min}
0.10	Pulse digital out 2: 0.5 {sec}
0.10	End_Block

Step	Action
------	--------

6	Select Sample Application phase. Click the Phase Properties tab.
---	--

The screenshot displays the UNICORN software interface. On the left, the 'Method Phases' list includes 'Method Settings', 'Equilibration', 'ALIAS loading', 'ALIAS injection', 'Sample Application' (highlighted in blue), 'Column Wash', and 'Elution'. At the bottom of this list are buttons for 'Delete', 'Save Phase...', and 'Duration & Variables'. On the right, the 'Phase Properties' tab is active, showing configuration options for the 'Sample Application' phase. These include a 'Flow Rate' of 1.000 ml/min, an 'Injection' type of 'Loop Injection', a 'Loop type' of 'Capillary loop', 'Loop position' 1, 'Sample inlet' set to 'Sample pump', 'Fill loop with' 0.60 ml, 'Empty loop with' 1.00 ml, and 'Sample volume' 0.00 ml. There are also checkboxes for 'Wash sample flow path with buffer', 'Prime sample inlet with', and 'Use the same inlets as in Method Settings'.

- Select **Loop Injection**.
- Set **Loop type** → **Capillary loop**.
- Set **Empty loop with** to 3 times the ALIAS autosampler loop volume plus the connecting tubing volume.

Note:

Connecting tubing volume is calculated for the tubing between port **LoopF** on the injection valve **V9-Inj** of the ÄKTA system and **port 6** (column) on the ALIAS autosampler valve.

5.3.2 Placement of **ALIAS loading** phase

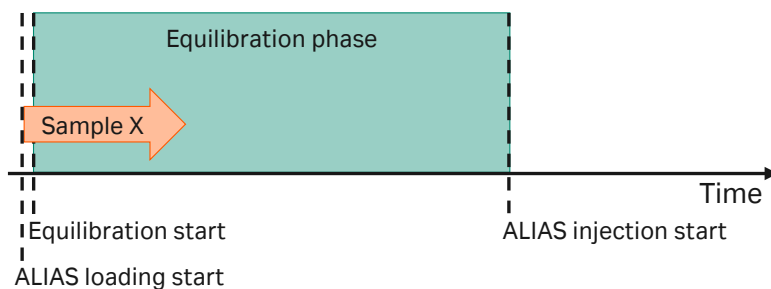
The **ALIAS loading** phase can be placed before or after the **Equilibration** phase in the UNICORN method.

For samples that do not require cooling, place the **ALIAS loading** phase before the **Equilibration** phase. For more information, see [ALIAS loading before Equilibration phase, on page 56](#).

For temperature-sensitive samples, it is recommended to place the **ALIAS loading** phase after the **Equilibration** phase to keep the sample in a cooled environment until sample loading. See [ALIAS loading after Equilibration phase, on page 57](#) and [Optimize ALIAS loading phase placement, on page 58](#) for information on when this is unnecessary.

ALIAS loading before Equilibration phase

When the **ALIAS loading** phase is placed before the **Equilibration** phase, the **ALIAS loading** phase and the **Equilibration** phase take place at the same time. The sample is loaded into the ALIAS sample loop and depending on the sample volume, might finish before the **Equilibration** phase is done. See the illustration below.

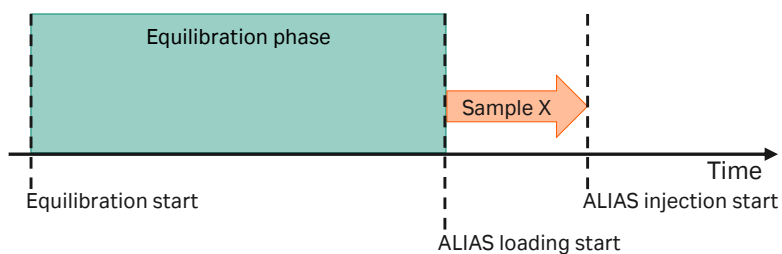


The illustration below shows an example of a UNICORN method set up with the **ALIAS loading** phase before the **Equilibration** phase.

The screenshot displays the UNICORN software interface. On the left, the 'Method Phases' list shows a sequence of phases: Method Settings, ALIAS loading (highlighted in blue), Equilibration, ALIAS injection, Sample Application, Column Wash, and Elution. Below this list are buttons for 'Delete', 'Save Phase...', and 'Duration & Variables'. On the right, the 'Phase Properties' panel is open, showing a tree view of the method setup. The '0.00 Phase: ALIAS loading' phase is selected, and its properties are listed: Base: Time, Any; Watch: Digital in 1, Equals, 1, Continue; Pause: Infinite {min}; Pulse digital out 1: 0.5 {sec}; End_Block. Below this, other phases like '0.00 Phase: Equilibration' and '0.00 Phase: ALIAS injection' are also listed with their respective properties. At the bottom right, there is an 'Instruction Box'.

ALIAS loading after Equilibration phase

When the **ALIAS loading** phase is placed after the **Equilibration** phase, the ALIAS autosampler waits for the **Equilibration** phase to finish before loading the sample into the ALIAS sample loop. The sample is cooled until the **Equilibration** phase is done. See the illustration below.



The illustration below shows an example of a UNICORN method set up with the **ALIAS loading** phase after the **Equilibration** phase.

The screenshot displays the UNICORN software interface. On the left, the 'Method Phases' list shows a sequence of phases: Method Settings, Equilibration, **ALIAS loading** (highlighted in blue), ALIAS injection, Sample Application, Column Wash, and Elution. Below this list are buttons for 'Delete', 'Save Phase...', and 'Duration & Variables'. On the right, the 'Phase Properties' panel is open, showing the configuration for the selected 'Phase: ALIAS loading'. The properties include: Base: CV, Vc=0.100 (ml), (Any)#Column type; Watch: Digital in 1, Equals, 1, Continue; Pause: Infinite (min); Pulse digital out 1: 0.5 (sec); End_Block. Below this, the 'Phase: ALIAS injection' properties are also visible, including: Base: Time, Any; Watch: Digital in 1, Equals, 1, Continue; Pause: Infinite (min); Pulse digital out 2: 0.5 (sec); End_Block. At the bottom right, there is an 'Instruction Box'.

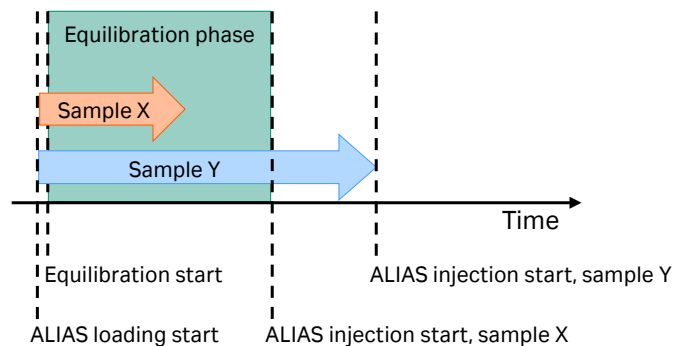
Optimize **ALIAS loading** phase placement

Placing the **ALIAS loading** phase after the **Equilibration** phase is unnecessary for cooled samples when the **ALIAS loading** phase takes longer than the **Equilibration** phase.

When deciding on where to place the **ALIAS loading** phase in the UNICORN method, the following factors should be considered:

Factors:	Description:
Column equilibration time	The column equilibration time is based on the flow rate and the equilibration volume of the column.
Sample loading time	The sample loading time is based on the sample volume and the syringe aspiration speed.

The illustration below shows an example of the effect of two different sample volumes being loaded during the **Equilibration** phase.



5.3.3 Handling multiple sample injections

When running methods with multiple sample injections this can be handled by creating a **Scouting** method or by creating a **Method** queue.



IMPORTANT

The number of samples in the submitted SampLink runtable Queue or Queues must correspond to the number of samples initiated in the UNICORN scouting method or method queue.

Create a **Scouting** method

To create a scouting method that automatically handles several sample injections, follow the instructions below.

Step	Action
1	Start UNICORN and open the Method Editor module.
2	Open the desired method under File → Open .
3	Create a Scouting method: Click on the Scouting icon.

a. Click on the **Scouting** icon.



b. Select scouting parameters. For example **Flow rate** and **Sample_ID** parameters.

c. Add the necessary number of runs.

Step	Action
------	--------

- | | |
|----|---|
| d. | If preferred, enter the Sample ID of the samples to be run. |
|----|---|

Method Settings,....			Sample Application
Run	Included	Flow rate {ml/min}	Sample_ID
1	☒	1.000	1
2	☒	1.000	2
3	☒	1.000	3
4	☒	1.000	4
5	☒	1.000	5
6	☒	1.000	6
7	☒	1.000	7
8	☒	1.000	8
9	☒	1.000	9
10	☒	1.000	10
11	☒	1.000	11
12	☒	1.000	12
13	☒	1.000	13
14	☒	1.000	14
15	☒	1.000	15
16	☒	1.000	16

- | | |
|----|----------------------------|
| e. | Click OK to submit. |
|----|----------------------------|

4

If **Sample_ID** has been chosen as scouting variable it can be used as result name. If desired, follow the substeps below.

- | | |
|----|--|
| a. | In the icon menu, click on Result Name and Location icon. |
|----|--|



- | | |
|----|--|
| b. | Select Variable as Result name . |
| c. | Select Sample_ID in the drop-down list. |

Step	Action
	<i>Result:</i> Result Name & Location ☐ No Result ☐ Add unique identifier Result location: /DefaultHome Browse.. Folder name for Design of Experiments or Scouting: Result name: ☐ Name ☒ Variable ☐ Method name ☐ Date Sample_ID OK Cancel

Create a method queue

To extend flexibility, scouting methods can be combined in a method queue. Create a method in UNICORN and add them to a method queue.

A method queue can handle up to 10 consecutive methods.

For more information, refer to the user documentation of UNICORN.

6 Operation

In this chapter

Section		See page
6.1	Before you start	64
6.2	Prepare the flow path	65
6.3	Start a run	70
6.4	Monitoring and evaluation	75

6.1 Before you start

Follow the steps below before you start a run with the ALIAS autosampler connected to an ÄKTA system.

Step	Action
1	Start the ÄKTA system as described in the corresponding <i>Operating Instructions</i> .
2	Start the ALIAS autosampler SampLink software.
3	Setup a SampLink project, see Section 5.2.1 Create a SampLink project, on page 41 .
4	Setup a SampLink method, see Section 5.2.2 Create a SampLink method, on page 43 .
5	Setup a SampLink runtable, see Section 5.2.3 Create a SampLink runtable, on page 48 .
6	Start the UNICORN software and prepare the UNICORN method, see Section 5.3 UNICORN setup, on page 52 .
7	Prepare samples and load the ALIAS autosampler, see Section 6.3.1 Place samples in the ALIAS autosampler, on page 71 .
	Tip: <i>Temperature control of the ALIAS autosampler can be enabled before placing the samples in the sample compartment. Use the direct control menu for this, see Section 7.2 Direct control and System info, on page 78.</i>
8	Perform an initial wash of the flow path, see Wash the flow path, on page 65 .

After completing the steps listed above, submit and start the SampLink runtable and the UNICORN scouting method or method queue, see [Section 6.3.2 Submit and start a SampLink runtable, on page 72](#).

6.2 Prepare the flow path

Flow path

The flow path of the ÄKTA system contains the tubing, valves, pumps and monitors.

For information on how to connect the ALIAS autosampler to the flow path of the ÄKTA system, see [Section 3.1.5 Connect the ALIAS autosampler to the flow path, on page 21](#).

For information on how to setup the ÄKTA system flow path, refer to the user documentation of the ÄKTA system.

Wash the flow path

Before starting a run it is recommended to wash the flow path. To wash the flow path of both the ÄKTA system and the ALIAS autosampler both UNICORN and SampLink are used.

- Use UNICORN to rinse the ALIAS sample loop and the ÄKTA system.
- Use SampLink to wash the internal flow path in the ALIAS autosampler. The internal flow path includes the needle, the buffer tubing and the syringe.

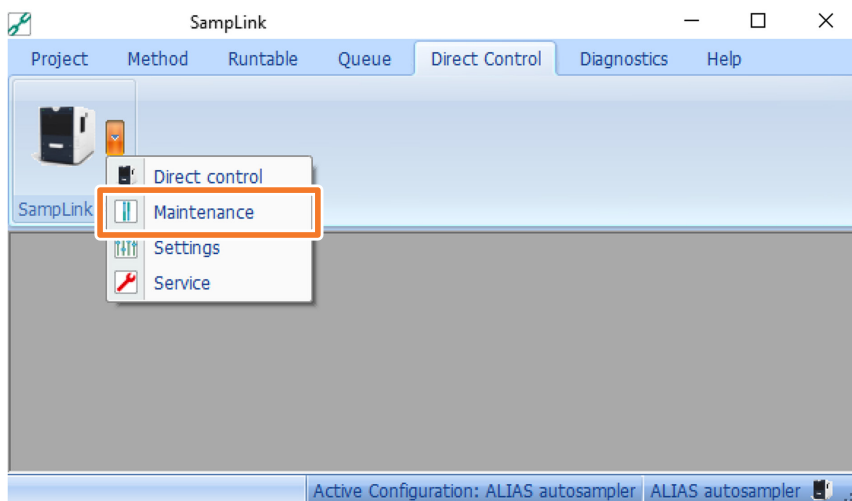
ÄKTA system and ALIAS sample loop wash

Follow the steps below to wash the ALIAS sample loop and the ÄKTA system flow path.

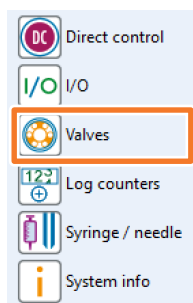
Step	Action
1	Turn on the power to the ALIAS autosampler and the ÄKTA system.
2	Check that the ALIAS injection valve is in position Inject . Note: <i>The default position of the ALIAS injection valve is Inject. This means that the flow from the ÄKTA system is directed to the sample loop when the ÄKTA injection valve is in position Inject.</i> a. Open SampLink. b. Go to the Direct Control tab.

Step	Action
------	--------

- | | |
|----|---|
| c. | Click the arrow next to the SampLink ALIAS icon to open a drop down menu. Then, select Maintenance . |
|----|---|



- | | |
|----|-------------------------------------|
| d. | Select Valves from the menu. |
|----|-------------------------------------|



- | | |
|----|--|
| e. | Make sure that the Injection valve is in the Inject position. If necessary, change the valve position to Inject by clicking the Inject button. |
|----|--|

3

Perform a manual run in UNICORN.

- | | |
|----|--|
| a. | Start UNICORN and open the System Control module. |
| b. | Click Manual → Execute Manual Instructions . |

*Result:*The **Manual instructions** window opens.

Step	Action
------	--------

- c. Turn the injection valve on the ÄKTA system to **Inject**.
- d. Set the Column valve to **Bypass**.
- e. Set the flow rate to a low flow rate (e.g. 1 mL/min).
- f. Continue the run until a volume is reached of one time the ÄKTA system flow path plus three times the volume of the ALIAS sample loop.
- g. Press the **End** button.

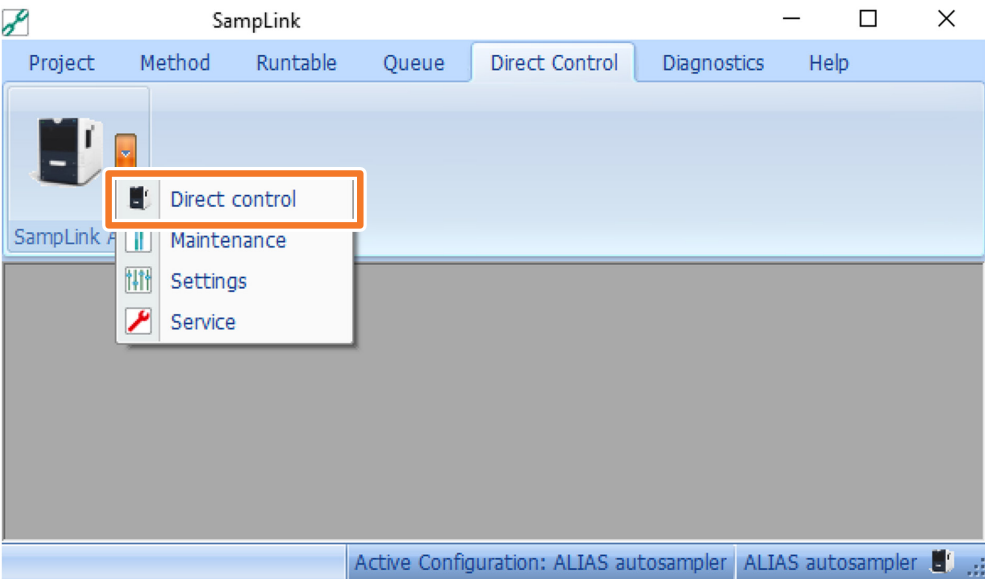
ALIAS autosampler wash

Follow the steps below to start an **Initial wash** program for the ALIAS autosampler.

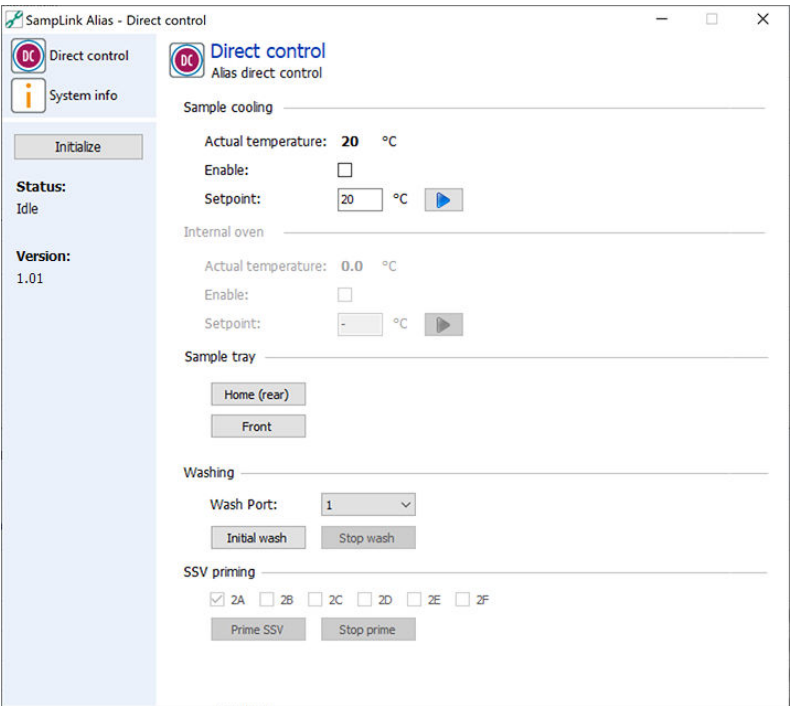
Step	Action
------	--------

- 1 Turn on the power to the ALIAS autosampler.
- 2 Open **SampLink**.
- 3 Go to the **Direct Control** tab.

Step	Action
4	Click the arrow next to the SampLink ALIAS icon to open a drop down menu. Then, select Direct Control .



Result:
The **Direct Control** window opens.



5	In the Washing section: a. Select Wash Port 1 or 2.
---	---

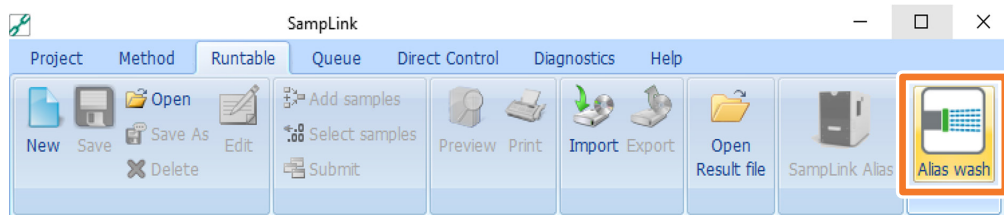
Step	Action
------	--------

	b. Click the Initial wash button.
--	--

Result:

The ALIAS autosampler starts an **Initial wash** program. The needle, the buffer tubing and the syringe is rinsed.

Tip: *If **Wash Port 1** is to be used, the wash can also be started in the **Runtable** tab by clicking the **Alias wash** icon.*



6.3 Start a run

The ALIAS autosampler loads and injects the samples in a consecutive manner. During the chromatography run of one sample, the sample can either remain in the sample microtiter plate, or be loaded into the ALIAS sample loop and await a signal for injection to the ÄKTA system. For more information, see [Section 5.3.2 Placement of ALIAS loading phase, on page 56](#).

In this section

Section		See page
6.3.1	Place samples in the ALIAS autosampler	71
6.3.2	Submit and start a SampLink runtable	72

6.3.1 Place samples in the ALIAS autosampler

Follow the instructions below to place samples in the sample compartment of the ALIAS autosampler.

Step	Action
1	Manually open the door of the ALIAS autosampler. <i>Result:</i> The sample tray moves forward.
2	Place a sample rack or microtiter plate with prepared samples in the sample compartment. Note: <i>Place the sample plate in the left slot if plate #1 is selected in the runtable, or in the right slot if plate #2 is selected in the runtable. For information on how to create a runtable, see Section 5.2.3 Create a SampLink runtable, on page 48.</i>  NOTICE The Plate type and Sample plate settings for the SampLink runtable defines the needle position for sample loading. The needle can break or take damage if the Plate type or Sample plate settings does not match the placed sample rack or microtiter plate.
3	Close the door of the ALIAS autosampler. <i>Result:</i> The sample tray returns to the default position.
Tip:	<i>The sample compartment can also be opened by using SampLink.</i> <i>For more information, see Section 7.2 Direct control and System info, on page 78.</i>

6.3.2 Submit and start a SampLink runtable

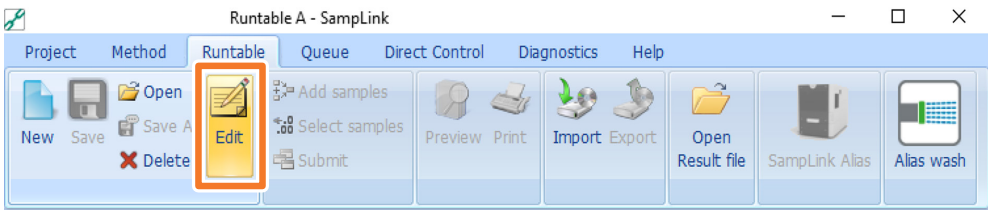
The next steps describe how to submit a runtable to a queue and start the queue.

When the ALIAS autosampler is loaded with samples and the UNICORN method is ready, continue with the instructions below.

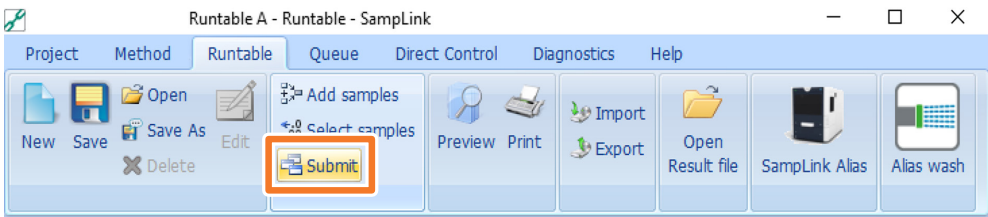
Note: Place samples in the ALIAS autosampler and prepare the UNICORN method before starting the queue. For information on how to create the UNICORN method, see [Section 5.3 UNICORN setup, on page 52](#).

Note: Perform a wash of the ÄKTA system and ALIAS autosampler flow path before starting a method, see [Wash the flow path, on page 65](#).

Step	Action
1	Open SampLink .
2	Go to the Runtable tab.
3	Click on Edit to open the runtable.

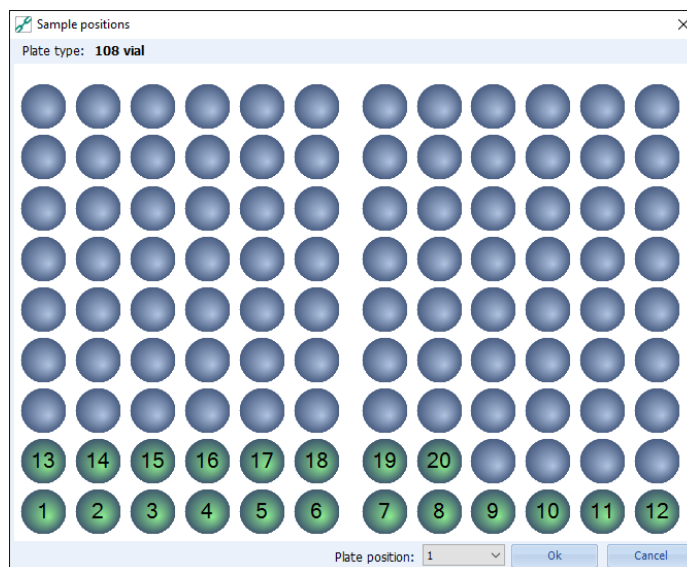


4	To add the runtable to the queue, click Submit .
---	---

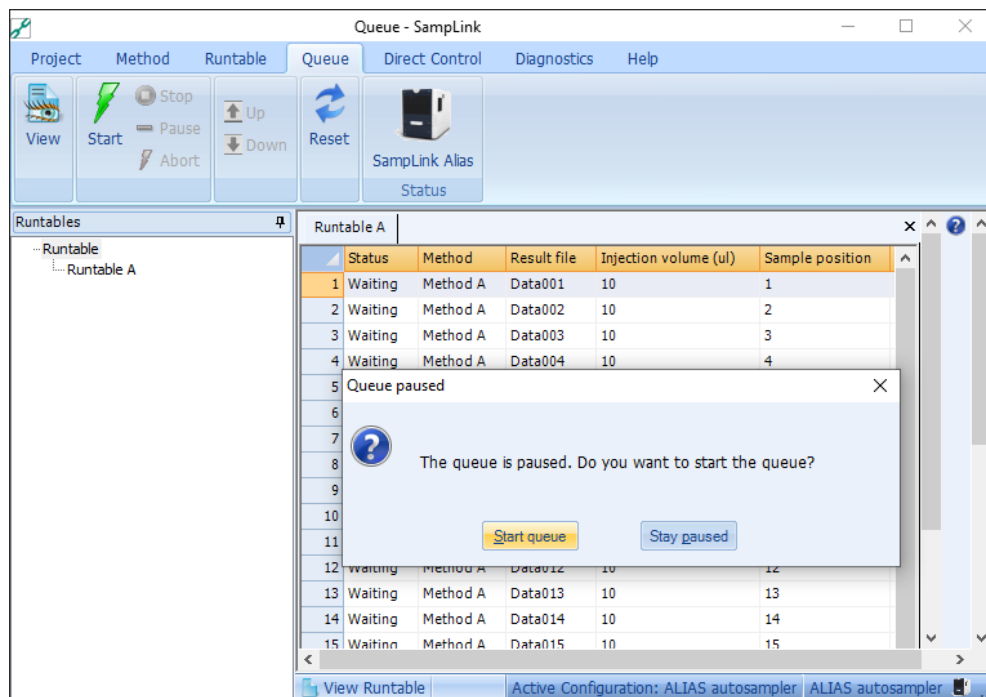


Step	Action
------	--------

- | | |
|---|--|
| 5 | The plate type and sample positions are displayed. Click OK to add the runtable to the queue. |
|---|--|



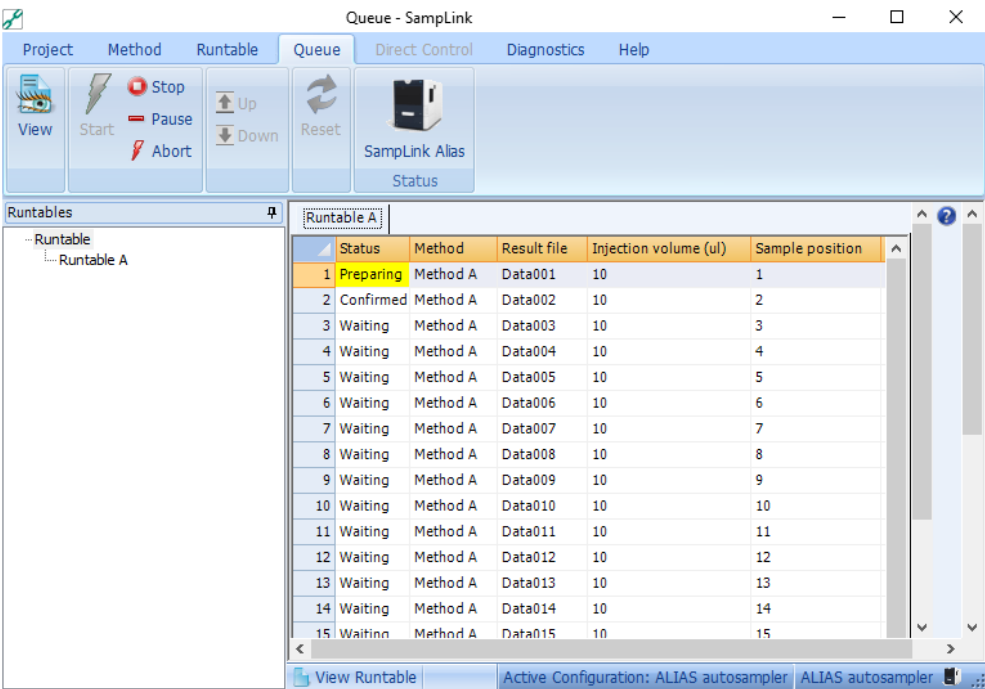
- | | |
|---|----------------------------|
| 6 | Click Start queue . |
|---|----------------------------|



Step	Action
------	--------

Result:

The ALIAS autosampler runtable queue will start. The ALIAS autosampler will wait for commands from UNICORN for the sample injection, provided that the I/O-box E9 is configured according to [Section 4.2 Configure I/O-box E9 in UNICORN, on page 34](#).



Note:

Additional runtables can be added to an ongoing queue.

Note:

The ALIAS autosampler door should not be opened once the queue has been started.

Note:

The correct configuration of the I/O box is necessary to avoid losing sample at multiple sample injections.

After starting the runtable, start the UNICORN method as a scouting scheme or a method queue. Refer to the UNICORN user documentation for information on how to start the UNICORN method. For information on how to create a UNICORN method, see [Section 5.3 UNICORN setup, on page 52](#).

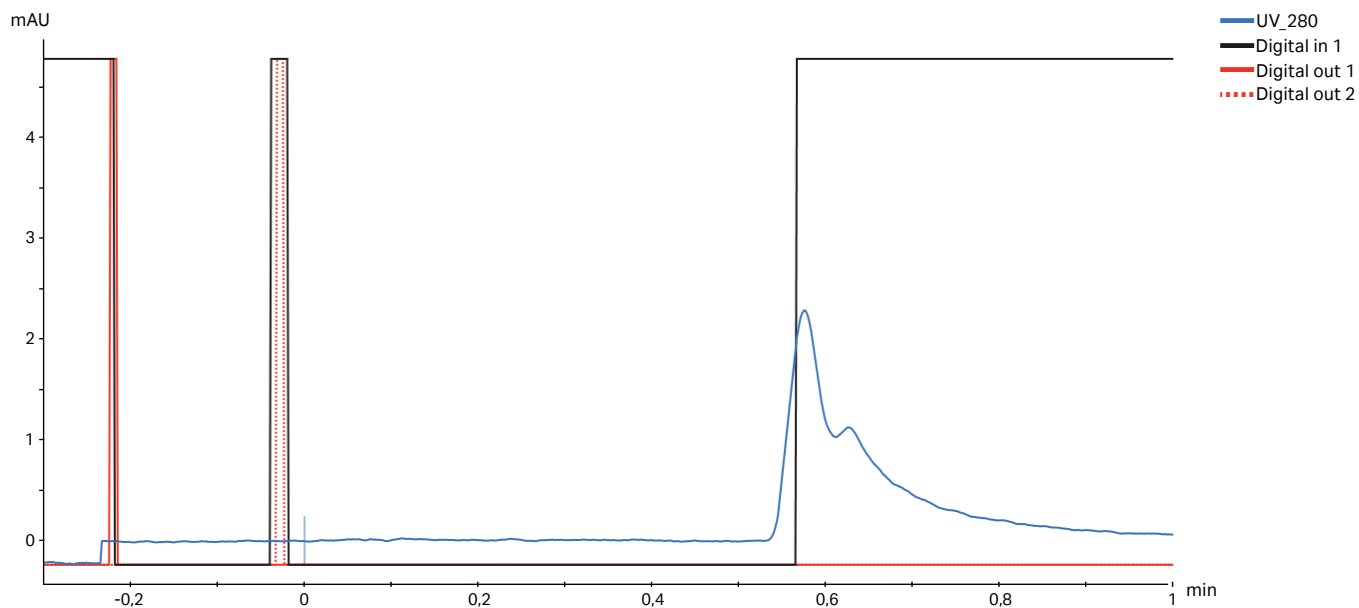


IMPORTANT

The number of samples in the submitted SampLink runtable Queue or Queues must correspond to the number of samples initiated in the UNICORN scouting method or method queue.

6.4 Monitoring and evaluation

The UNICORN **Evaluation** module visualizes and evaluates data recorded during a run. The illustration below shows the chromatogram pane.



For information on the signals between UNICORN and SampLink, see [Instrument communication, on page 10](#).

7 Direct control and maintenance

In this chapter

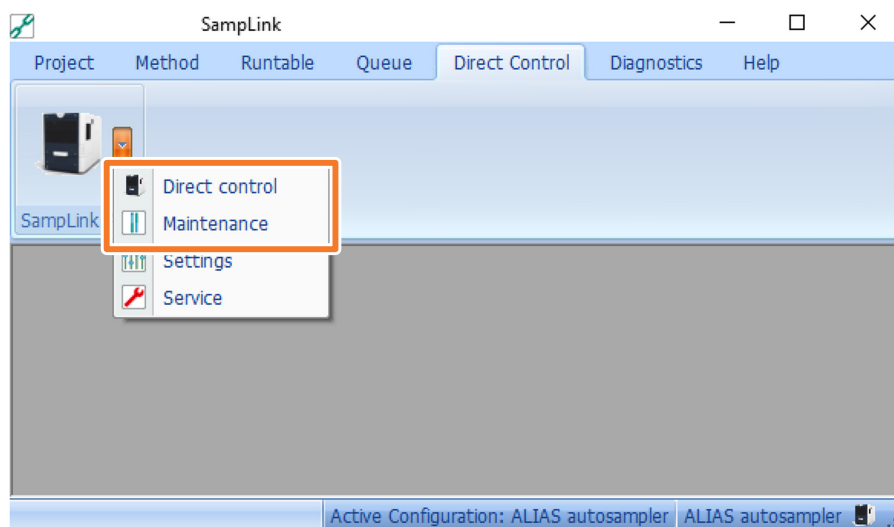
Section		See page
7.1	Introduction	77
7.2	Direct control and System info	78
7.3	Maintenance	80

7.1 Introduction

SampLink also offers the possibilities for the ALIAS autosampler:

- **Direct control**
- **Maintenance**, and
- **Service** (Not described here. For more information, contact your Cytiva representative.)

Find the menu by clicking the **Direct control** tab. Then click the small arrow in the system icon. Click on **Direct control** or **Maintenance** in the menu to open the respective window.

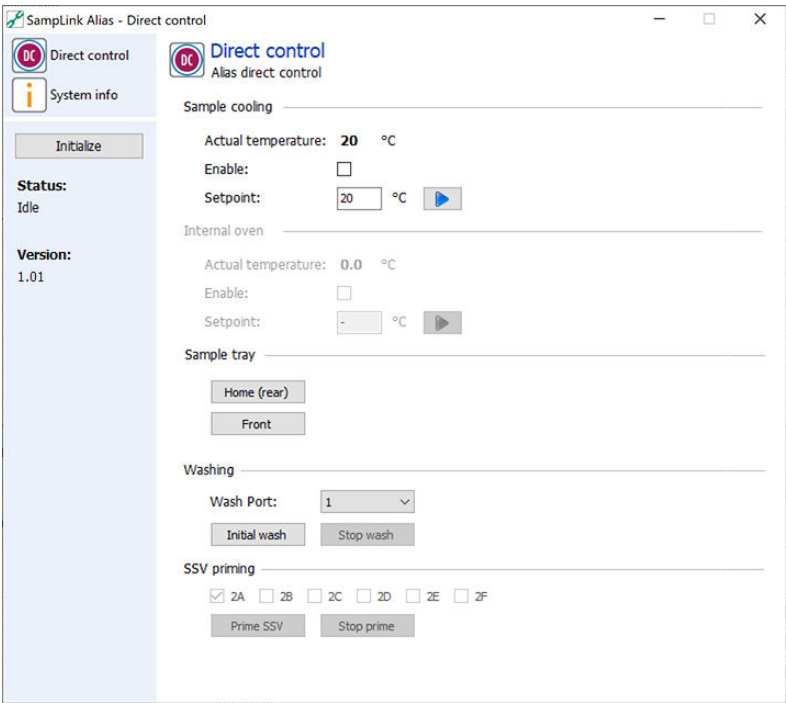


For more information about the **Direct control** or **Maintenance** choices, see [Section 7.2 Direct control and System info, on page 78](#) or [Section 7.3 Maintenance, on page 80](#).

7.2 **Direct control** and **System info**

Description of **Direct control** window

Follow the description in [Section 7.1 Introduction, on page 77](#) to find the **ALIAS Direct Control** window. See the table below for a description of the different settings in the window.

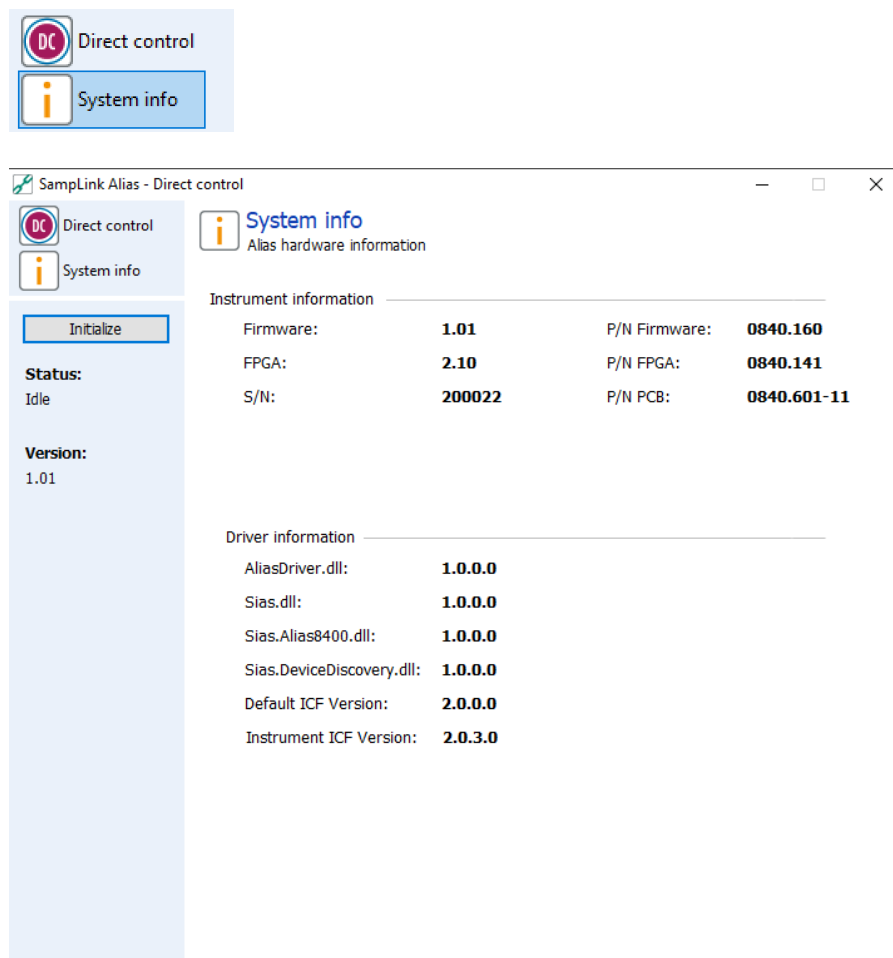


Note: If a queue is still active, **Direct control** buttons will not be active. Make sure to pause the queue before opening **Direct control**.

Setting	Description
Sample cooling	The sample cooling option (if installed) can be turned on/off. It displays the actual sample temperature and set point.
Sample tray	The sample tray can be moved to the front, to load the sample racks or microtiter plates and the tray can be moved to the rear position. Tip: By opening/closing the door of the ALIAS, the same functionality will be achieved.
Washing	By clicking the Initial wash button, the initial wash will be started using the selected Wash port . The needle, the buffer tubing and the syringe will be rinsed.
SSV priming	In case of an installed Solvent Selection Valve , the SSV priming menu can be used to prime all lines.
Initialize	This button can be used to initialize the ALIAS autosampler, where all the modules will be set into the home position. It can also be used to reset an error state.

Description of **System info**

Click **System info** in **Alias - Direct control** screen.



The **System info** screen shows the ALIAS autosampler hardware information, such as firmware version and serial number.

This information might be requested by the technical support department of the manufacturer in case of an upgrade or service action.

7.3 Maintenance

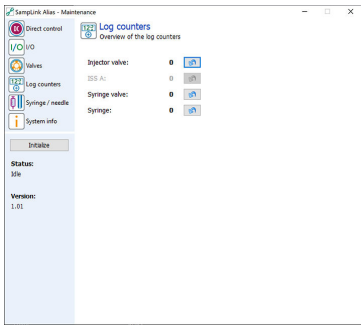
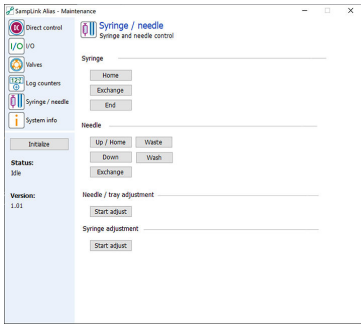
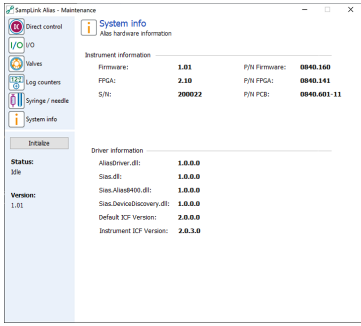
Description of *Maintenance* window

Follow the description in [Section 7.1 Introduction, on page 77](#) to find the **Maintenance** window.
Choose a setting in the menu.



See the table below for a description of the different settings in the window.

Setting	Description	Window
I/O	In the screen, the Auxiliary #1 can be switched On or Off. This function can be used to check if the hardware connection to another device is properly made. The integrated compressor can be switched On or Off, by selecting the PASA Compressor.	The screenshot shows the 'I/O' tab selected in the menu. It displays 'Aux 1' with an 'On' checkbox, 'Compressor' with a 'PASA Compressor' checkbox, and 'Inputs' with 'Input 1' and 'Input 2' both set to 'Low'. There is an 'Initialize' button and status/version information at the bottom.
Valves	Displays the position of the Injection valve, ISS valve, Syringe valve and the optional SSV (Solvent Selection Valve). The positions of the valves can be changed and will be displayed accordingly.	The screenshot shows the 'Valves' tab selected in the menu. It displays three valve diagrams: 'Injection valve' with 'Inject (1-2)' and 'Load' buttons, 'Syringe valve' with 'Waste' and 'Inject' buttons, and 'SSV' (Solvent Selection Valve) with a 'Load' button. There is an 'Initialize' button and status/version information at the bottom.

Setting	Description	Window
Log counters	The Log counters screen provides the details on the movements of the valves. A service technician can reset if one of the modules have been replaced.	
Syringe / needle	Syringe and needle can be moved to Home, Exchange and End positions. The related positions of needle and tray can be adjusted. Syringe can be adjusted.	
System info	Displays Instrument information and Driver information.	



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