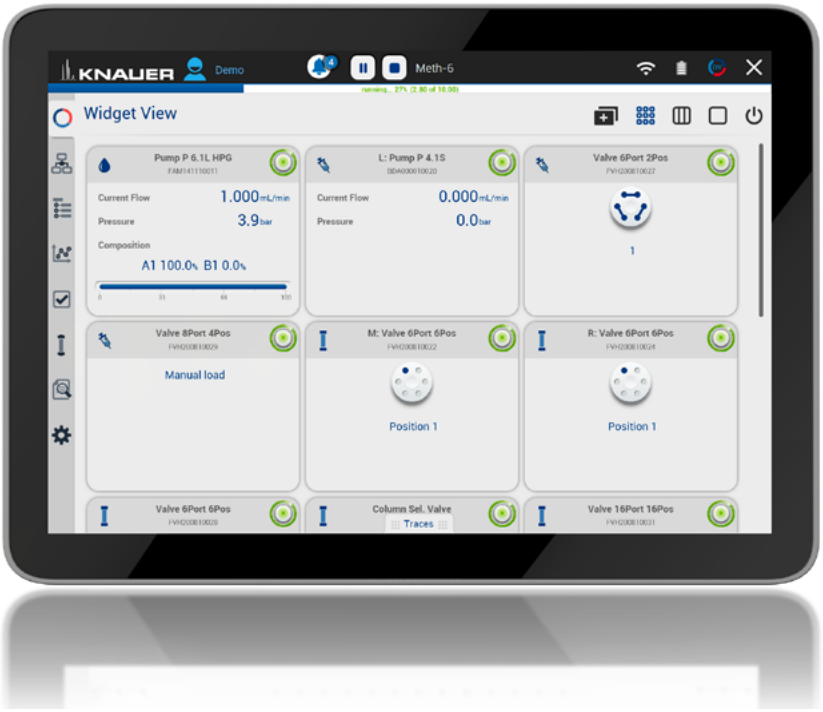
Science with Passion

KNAUER

Mobile Control

Version 6

Software instructions



Document no. V6851-4

Note: For your own safety, read the instructions and observe the warnings and safety information on the device and in the instructions. Keep the instructions for future reference.

Note: In case you require this instruction in another language, please submit your request including the corresponding document number via e-mail or fax to KNAUER.

Support: Do you have questions about the installation or the operation of your instrument or software?

International Support:

Contact your local KNAUER partner for support:

www.knauer.net/en/Support/Distributors-worldwide

Support in Germany

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Version information: Document number: V6851-4
Version number: 1.0
Release date: December 29, 2023
Translation of the original edition

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1. Product information

The Mobile Control is a perfect addition to your chromatography data system and can be sufficient to operate your instrument in stand-alone mode. Mobile Control completes two main tasks: On the one hand the software provides full access to AZURA® devices and features all functionalities of a display. On the other hand Mobile Control can be used to operate devices or even whole systems with dedicated tasks. Program for hand-held devices which operates with Windows 10 and 11.

Licenses and Operating modes

- Display - without data acquisition
- Data - with data acquisition
- FRC - with data acquisition and fraction collection option
- Upgrade to Data
- Upgrade to FRC
- LNP - control of IJM NanoScaler systems (more information in chapter13.2)

Note: This manual only describes the functionalities of the Mobile Control. Note the instructions of the respective devices.

Identification

The software name, manufacturer name, article no. and serial number can be found on the device card, which is in the scope of delivery.

Legend

① Serial number
② Article number

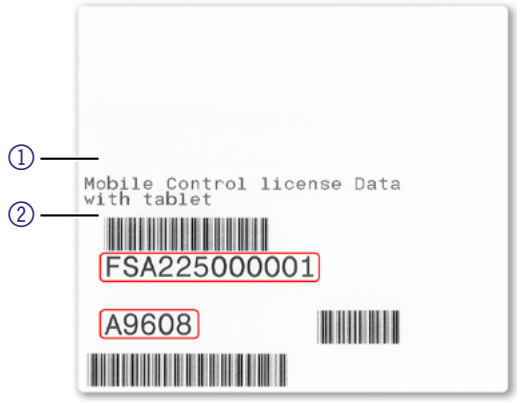


Fig. 1-1 Device card

Target groups

This instruction addresses persons who are qualified as chemical laboratory technicians or have completed comparable vocational training.

The following knowledge is required:

- Fundamental knowledge of liquid chromatography
- Knowledge regarding substances that are suitable only to a limited
- Extent for use in liquid chromatography
- Knowledge regarding the health risks of chemicals
- Participation during an installation of a device or a training by the company KNAUER or an authorized company.

What must be taken into account?

- All instructions of the devices described in this document
- Environmental, installation and connection specifications in the instructions national and international regulations pertaining to laboratory work
- Good Laboratory Practice (GLP)
- Accident prevention regulations published by the accident insurance companies for laboratory work
- Power strip: If several devices are connected to one power strip, always consider the maximum power consumption of each device.
- Power supply: Only connect devices to voltage sources, whose voltage equals the device's voltage.

2. Mobile Control

2.1 New features in version 6.0

- Single installer for Mobile Control and Data Viewer
- New devices: Foxy R1/ R2, Vario-4000/ Plus, P 8.1L, 40D, 50D, 40P, 80P
- Fraction Collection option – time, volume, threshold based
- Live Traces – Traces are displayed beyond a running method
- Variables for method parameters
- Direct Control during a running method
- Eluent Control
- Manual Integration in Data Viewer
- Do not stop pumps in case of disconnection
- Column Management
- System pressure sets a maximum pressure for the whole system
- Export of X- and Y-values of traces
- HTML graph export as vector graphic
- Start of run setting: Skip autosampler injection
- Logs in report
- Widget View which is designed for better reading if you operate a big number of instruments.
- Global standby button for the whole system
- Monitor Mode is no longer supported due to technical reasons
- Bug fixes and optimization

2.2 System requirements

Parameter	Requirement
Operating system	Microsoft Windows® 10 or 11
Display size	Minimum 10“
Minimum screen resolution	1280 x 800
RAM	1 GB without data collecting 2 GB with data collecting
CPU	1.33 GHz
Processor	Dual-Core
Disc space	500 MB

2.3 Supported devices

Device type	Type	Minimum required firmware version
Assistant	AZURA ASM 2.1L	V 01.18
	AZURA ASM 2.2L	V 01.14
Autosampler	AZURA AS 6.1L	V 01.22
	AZURA AS 3950 2.1LA	V 01.17
Column thermostat	AZURA CT 2.1	V 01.06/V 02.02
Detector	AZURA RID 2.1L	V 01.24
	AZURA UVD 2.1L	V 02.06
	AZURA DAD 2.1L*	V 01.12
	AZURA DAD 6.1L*	V 01.26
	AZURA MWD 2.1L	V 01.12
	AZURA UVD 2.1S	V 01.14
	BlueShadow 40D - ADI01, ADI04	V 02.05
	BlueShadow 50D - ADJ01, ADJ11	V 02.18
Fraction Collector	Foxy R1/R2#	V 01.01.11
	Vario-4000/Plus#	V 01.25
Interface box	IFU 2.1 LAN	V 01.05
Pump	AZURA P 2.1L	V 01.09
	AZURA P 6.1L	V 01.07
	AZURA P 2.1S	V 01.38
	AZURA P 4.1S	V 01.38
	AZURA P 8.1L	V 01.01
	BlueShadow 40P - APC30XX	V 01.12
	BlueShadow 40P - APC40XX, APC60XX	V 02.30
	BlueShadow 80P - APD30XX, APD60XX	V 02.26
	BlueShadow 40P - APD20XX,	V 01.08
Valve	AZURA V 2.1S	V 05.01
	AZURA VU 4.1	V 06.22

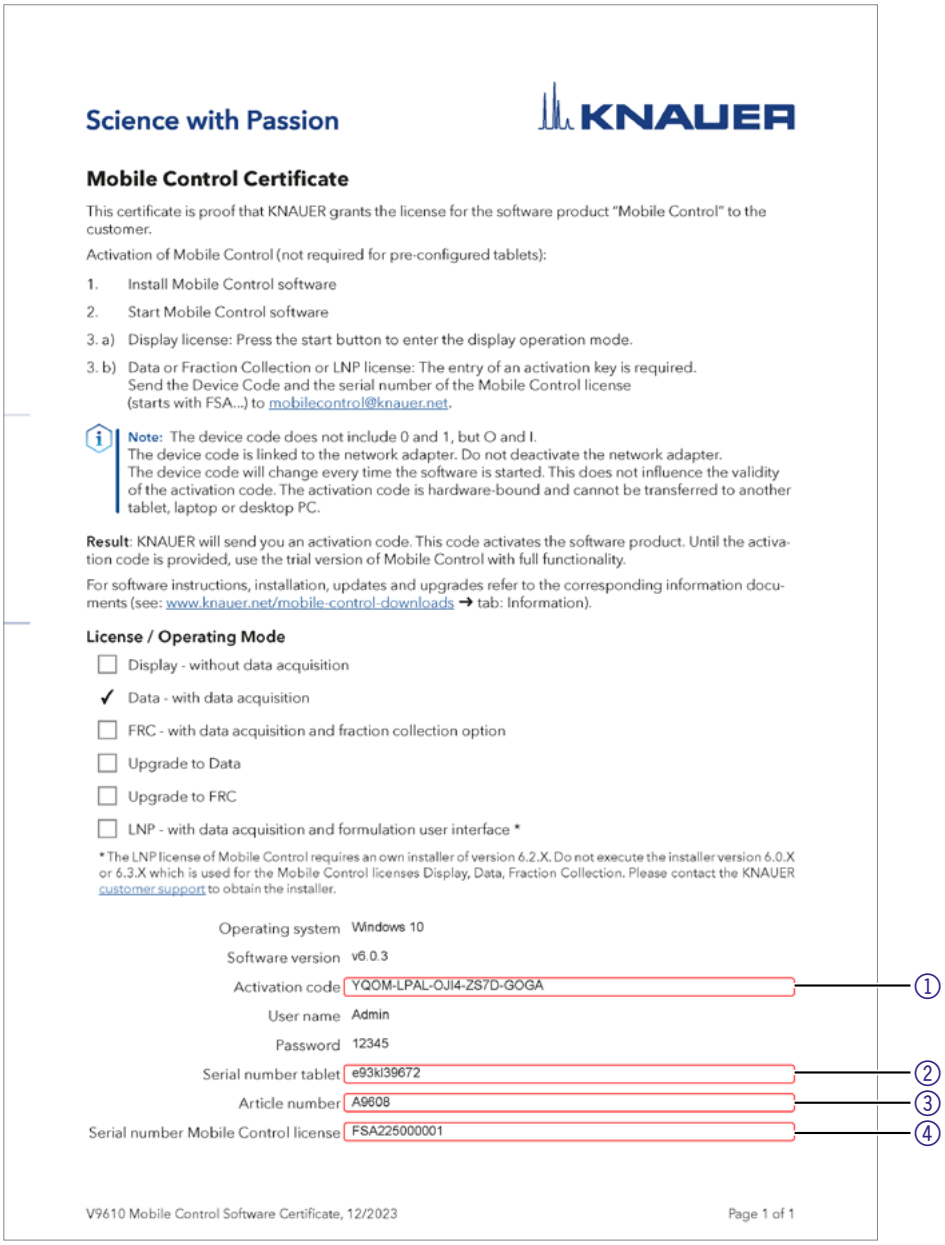
* no acquisition of 3D data supported (4 channels only)
# only one rack type is supported per device. Racks of different type cannot be combined in one device.
X = A-Z

2.4 Mobile Control Certificate

After purchasing a Mobile Control license, KNAUER provides a certificate (containing activation code, serial numbers and more). Keep the certificate secure.

Legend

① Activation code
② Serial number tablet
③ Article number
④ Serial number Mobile Control license



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Mobile Control Certificate

This certificate is proof that KNAUER grants the license for the software product "Mobile Control" to the customer.

Activation of Mobile Control (not required for pre-configured tablets):

1. Install Mobile Control software
2. Start Mobile Control software
3. a) Display license: Press the start button to enter the display operation mode.
3. b) Data or Fraction Collection or LNP license: The entry of an activation key is required. Send the Device Code and the serial number of the Mobile Control license (starts with FSA...) to mobilecontrol@knauer.net.

Note: The device code does not include 0 and 1, but O and I.
The device code is linked to the network adapter. Do not deactivate the network adapter.
The device code will change every time the software is started. This does not influence the validity of the activation code. The activation code is hardware-bound and cannot be transferred to another tablet, laptop or desktop PC.

Result: KNAUER will send you an activation code. This code activates the software product. Until the activation code is provided, use the trial version of Mobile Control with full functionality.

For software instructions, installation, updates and upgrades refer to the corresponding information documents (see: www.knauer.net/mobile-control-downloads → tab: Information).

License / Operating Mode

- ☐ Display - without data acquisition
- ✓ Data - with data acquisition
- ☐ FRC - with data acquisition and fraction collection option
- ☐ Upgrade to Data
- ☐ Upgrade to FRC
- ☐ LNP - with data acquisition and formulation user interface *

* The LNP license of Mobile Control requires an own installer of version 6.2.X. Do not execute the installer version 6.0.X or 6.3.X which is used for the Mobile Control licenses Display, Data, Fraction Collection. Please contact the KNAUER customer support to obtain the installer.

Operating system	Windows 10
Software version	v6.0.3
Activation code	YQOM-LPAL-OJI4-ZS7D-GOGA ①
User name	Admin
Password	12345
Serial number tablet	e93kl39672 ②
Article number	A9608 ③
Serial number Mobile Control license	FSA225000001 ④

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Fig. 2-1 Software certificate

Note: Before activation, the Mobile Control will generate a new device code every time the Mobile Control is opened. It is insignificant which of these codes you send to KNAUER together with the serial number of the purchased license, as the activation code provided by KNAUER is valid for all device codes generated by this end device.

Note: With activation of Mobile Control, the license is linked to the MAC address of the network adapter of the device and cannot be transferred to another device. If the device goes out of operation, one more license may be generated for a new device. Contact the KNAUER technical support for a new license.

Note: You can use the activation code to activate the latest version of Mobile Control. Mobile Control updates are for free. No need to ask for a new code. Refer to the installation information update (included in the download folder).

3. Installation

3.1 Download and installation

Four types of modes are available:

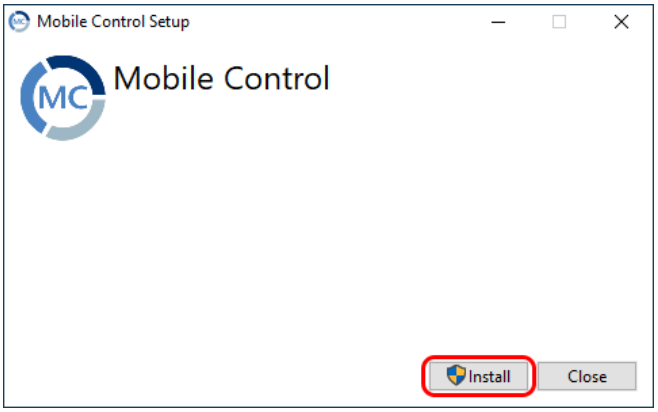
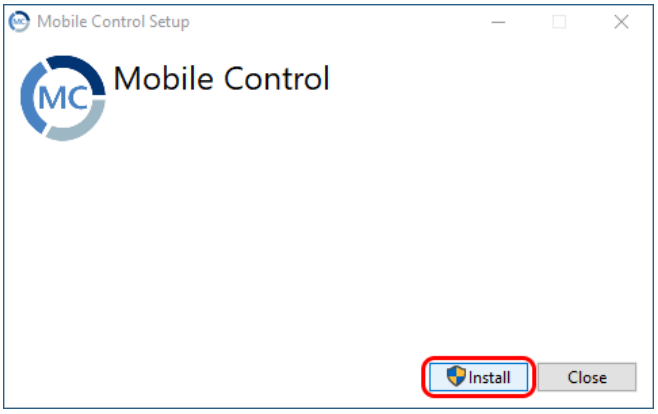
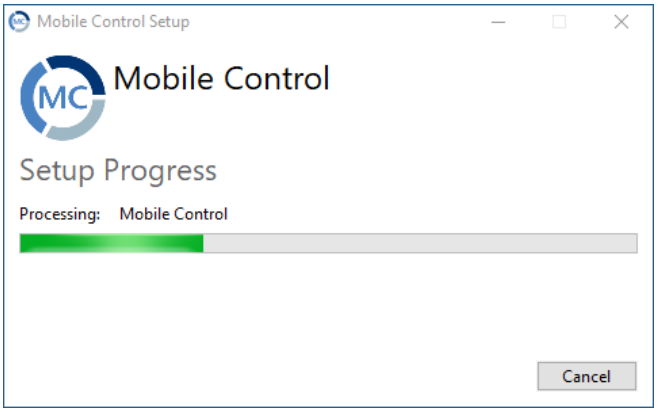
1. **Demo Mode**
   - offers an overview of the MC functionalities
   - operation of virtually connected devices is possible
   - simulation of methods, sequences and data acquisition
   - free of charge
2. **Trial Period**
   - full functionality (like fraction collection license) for 30 days
   - free of charge
3. **Display Version**
   - full functionality without data acquisition
   - every update is free of charge
4. **Licenses that require activation**
   - full functionality with data acquisition (refer to chapter 2.1 for functions)
   - various functionality depending on the license full or fraction collection
   - every update is free of charge

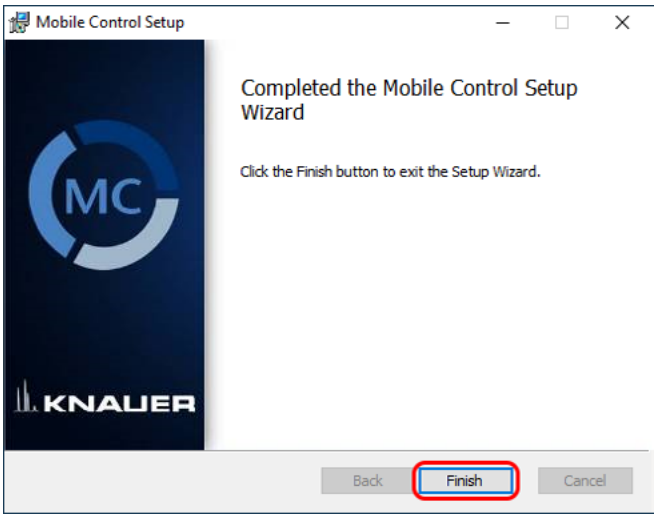
Note: There are two **independent installers** for Mobile Control and Firmware Wizard. Please perform two individual installations. The Mobile Control license/installer includes the Data Viewer.

Note: If you ordered a software license with tablet, Mobile Control is already installed. Following instructions are given if you ordered the software license without a tablet. Refer to the installation information included on the document website (see below).

Note: If you have a previous version, deinstall it.
Delete **C:/Mobile Control** after securing of the data. The system configuration and all programs have to be recreated. Refer also to the installation information included on the document website (see below).

Download the latest installation information from our website:
www.knauer.net/mobile-control-downloads, section downloads.

Process	Figure
1. Download the zip-folder including the installer of Mobile Control and Firmware Wizard from the website: www.knauer.net/mobile-control-downloads.	
2. A zip-file will be downloaded. After successful download, extract the content of the zip-folder and run the files “Mobile Control vX.X.X.exe” and “Firmware Wizard v.X.X.X.exe”.	
3. An install wizard opens.	
4. Select <Next>. **5.** Enter customer information. Select <Next>.	 **Fig. 3-1** Installation of the software
6. Select <Install>.	 **Fig. 3-2** Installation of the software
7. The software will be installed on your computer.	 **Fig. 3-3** Installation of the software

Process	Figure
8. Complete the installation by selecting <Finish>. A desktop icon will be created.	
	Fig. 3-4 Installation of the software
9. Double-click the Mobile Control icon to open the software.	
	Fig. 3-5 Desktop icon

3.2 Activation of the software

3.2.1 Start screen

Note: If you order a Mobile Control license together with a tablet, KNAUER delivers the configured tablet with activated Mobile Control and certificate.

Note: Make sure that the WLAN or LAN is switched on before entering the activation code.

3.2.2 License activation

Note: No activation is required for the display license. Press the start button to enter the display operation mode.

Fig. 3-6 Software Mobile Control

After starting the Mobile Control the first time, a 20-digit device code is generated. This device code is linked to the MAC address of the network adapter of the hand-held device on the Mobile Control is installed (see below).

Legend

① Display Version
② Activate Full Version (currently selected)
③ Device code (see also section 3.2.2.2)
④ E-mail address: (see also section 3.2.2.1)
⑤ Trial Period (see also section 3.2.3 Trial period)
⑥ Demo Mode (see also section 3.2.4 Demo mode)

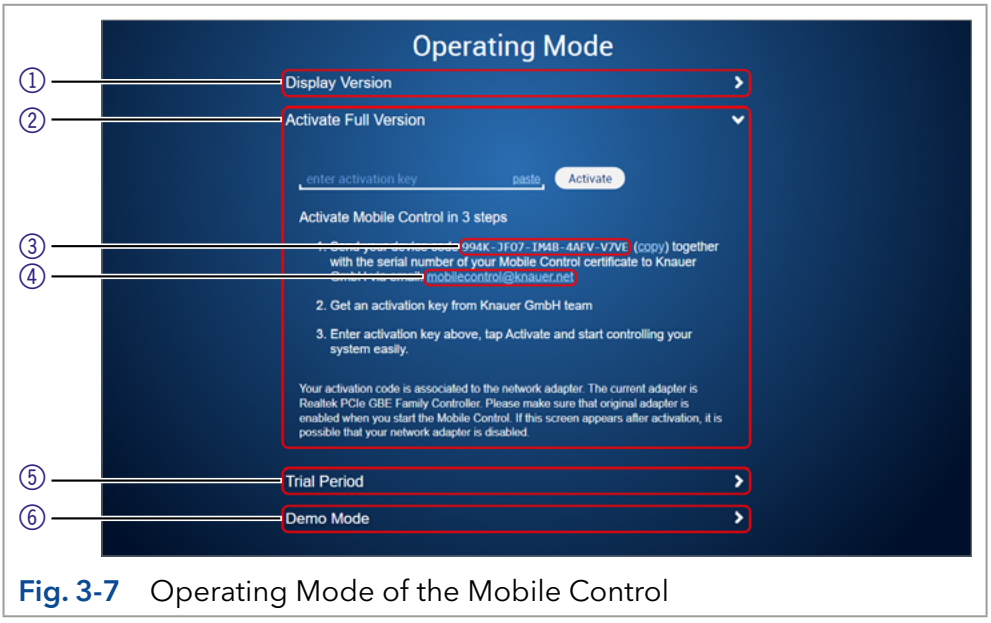


Fig. 3-7 Operating Mode of the Mobile Control

Note: A non-activated Mobile Control will generate a new device code every time the software is started. It is insignificant which of these codes you send together with the serial number of the license, in order to request the activation code, as the provided activation code is valid for all device codes generated by the end device.

3.2.2.1 Activation via automatically generated e-mail

1. Click on the mail address. A mail with your device code will be generated (if the mail is not generated, proceed as explained in chapter 3.2.2.2).
2. Add the serial number of your software before sending. You find it on the device card or the certificate, delivered with your order (starts with FSA...).
3. Send the mail.

Legend

① Activation code Mobile Control/ Chrom
② Serial number tablet
③ Article number
④ Serial number MC license

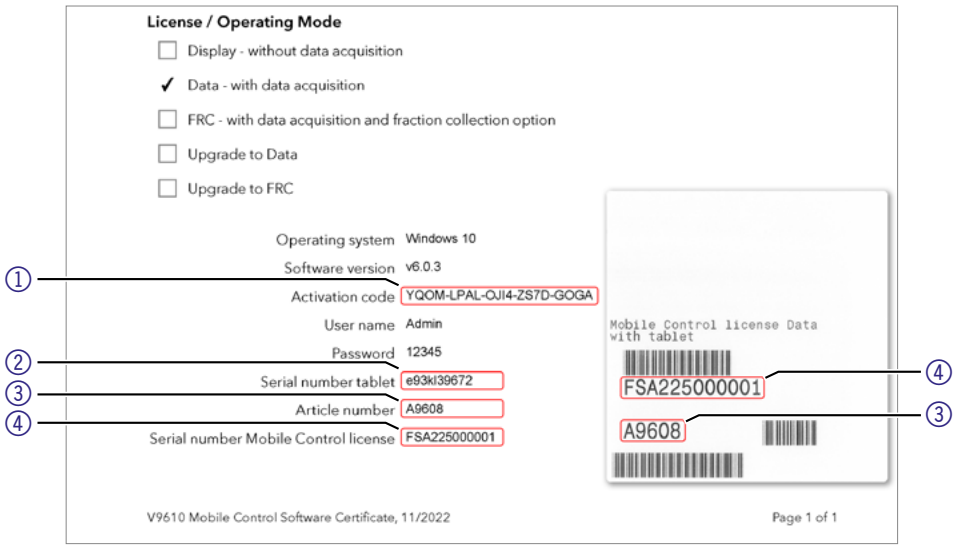


Fig. 3-8 Mobile Control certificate (left) and device card (right)

3.2.2.2 Activation via copy of the device code

1. Press the <copy> button and open your mail program.
2. Paste the code in mail.
3. Add the serial number of your Mobil Control license before sending. You find it on the device card, delivered with your order. It begins with FSA (refer to Fig. 3-10).

Send a mail to mobilecontrol@knauer.net.

Note: Until the activation code is provided, just start the trial option with fraction collection functionality.

3.2.2.3 Activation via trial version

Go to SETTINGS > ABOUT. Click Upgrade link. A new window opens. You can activate your Mobile Control via activation code (refer to chapter 3.2.2.1).

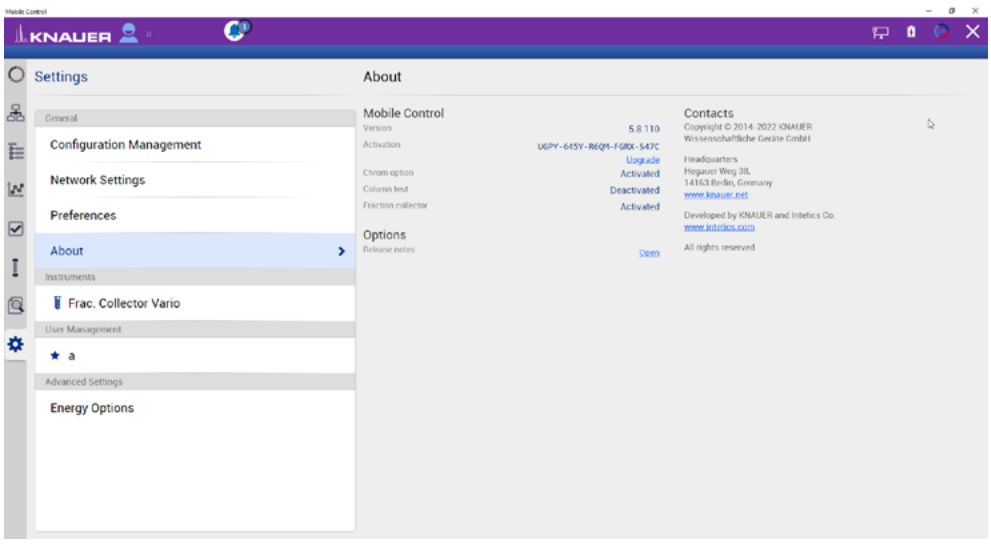


Fig. 3-9 Activation via Trial version

3.2.3 Selecting the trial version

Press the <Start Trial> button to activate the software with fraction collection (FRC) functionality for 30 days.

3.2.4 Selecting the demo tour

Note: The trial option features the functionality of the fraction collection license.

1. Press the <Demo Mode> button to activate the software in the demo mode

   or

2. Select Demo as user during the Login.

Note: No password is required to enter the demo mode.

Note: Virtual devices can only be found if tablet is connected to a router.

Note: Use the button Demo Config in the system configuration menu of the Demo Tour to choose between different sets of available instruments, e.g. LNP.

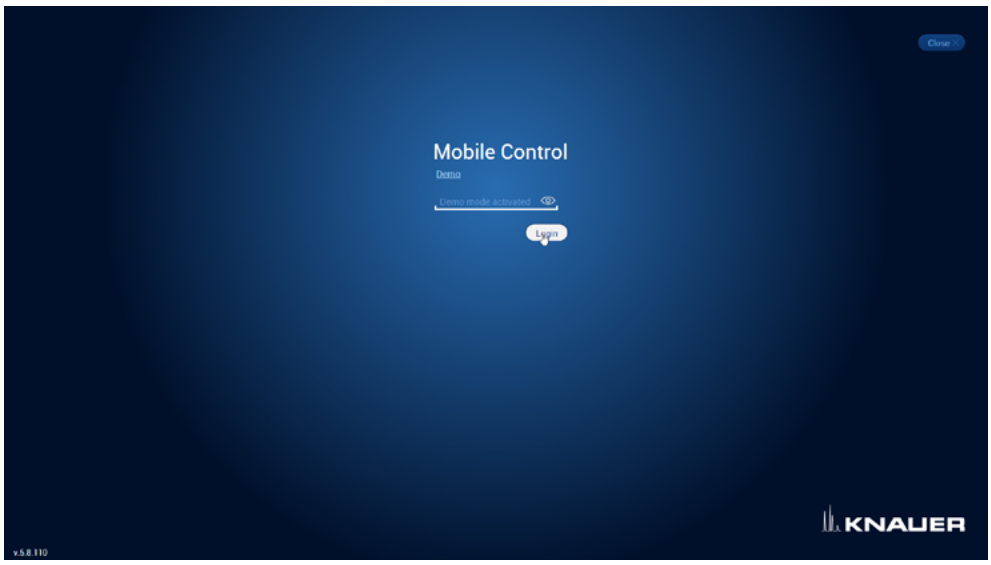


Fig. 3-10 Log into Demo mode

3.2.5 Updating the Mobile Control

To update the Mobile Control, download the latest version from the KNAUER website. Mobile Control updates with the same article number are free of charge.

Uninstall the previous version of the Mobile Control before installing the updated version. In advance you can export programs saved in the old version and save the collected data.

The latest update information is included in the download folder.
You can also download this file from our website:
www.knauer.net/mobile-control-downloads.

3.2.6 License validity

After activation, the license is linked to the MAC address of the WLAN or LAN adapter of the PC/tablet/notebook and cannot be transferred to another device. If the device goes out of operation, one more license may be generated for a new hand-held device. Contact the KNAUER Technical Support for a new license. Mobile Control updates are for free. You can use the activation code to activate the latest version of Mobile Control.

KNAUER Technical Support:

Phone: +49 30 809727-111
E-mail: mobilecontrol@knauer.net

You can make your requests in English and German.

Re-installing the operating system on the same device has no effect on the validity of the license because the license is linked to the hardware of the device. The activation code may be entered again.

3.2.7 Mobile Control manual

The manual is provided for download on the KNAUER website www.knauer.net/en/Support/User-manuals/Software.

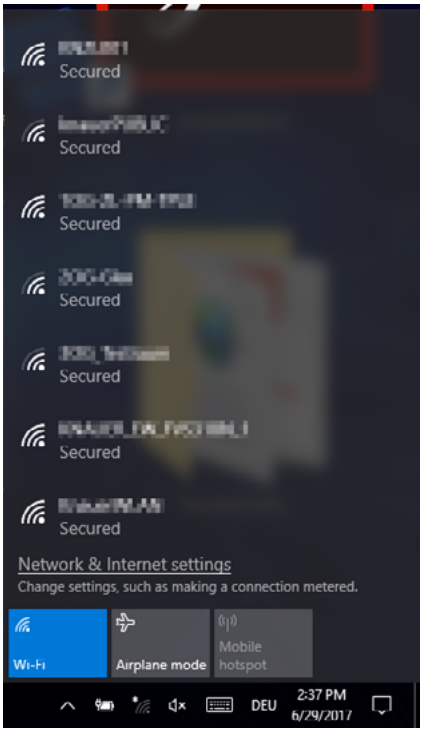
When you order a Mobile Control with a tablet, the manual as PDF file is included.

4. Starting Mobile Control

4.1 First steps

4.1.1 Connecting the PC/notebook/tablet to a network

To operate the devices with the Mobile Control, a LAN connection has to be established between the PC/notebook/tablet and the WLAN router. All devices are connected via LAN cables with the WLAN router.

Process	Figure
The highlighted icon in the lower left of your display indicates the status of the network connection. **1.** Click on the symbol to enter the network settings on your tablet. Mobile control will be supported for tablets/ PCs/notebooks running with operating system Microsoft Windows 10.	 **Fig. 4-1** Open the zip-file
2. Select the network you want to connect to.	 **Fig. 4-2** Network overview

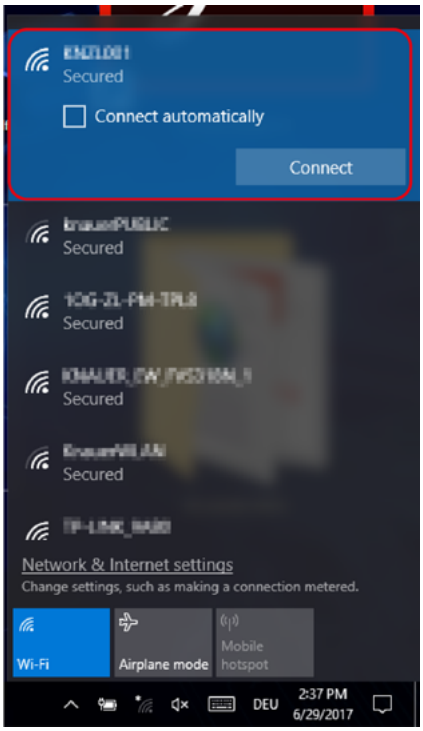
Process	Figure
3. Select <Connect> to connect to the network. You can activate the checkbox to connect automatically to this network.	

Fig. 4-3 Connecting to the network

4. If required, enter the password.

5. Click <Connect>.

6. After successfully checking the network requirements, the computer is connected.

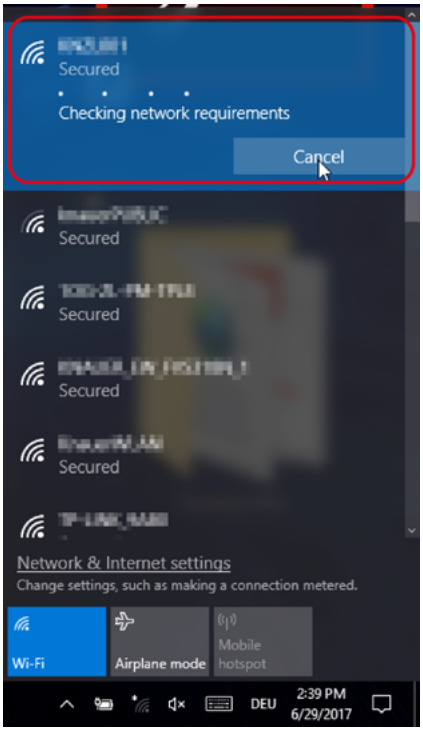
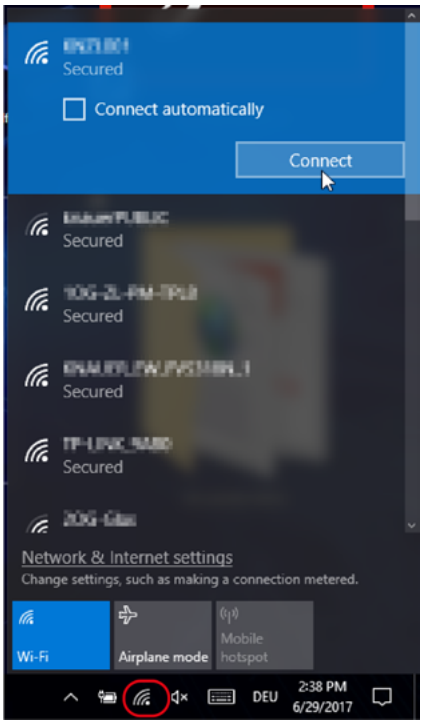
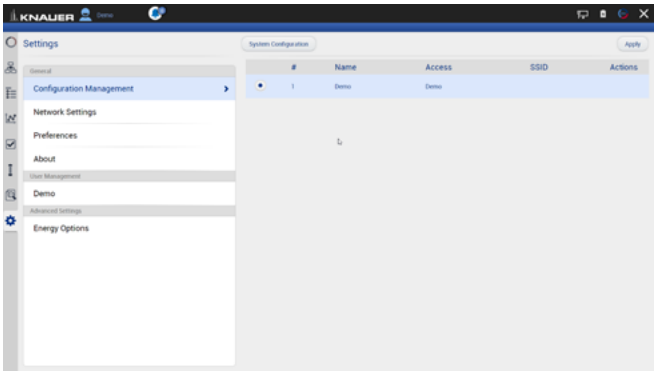


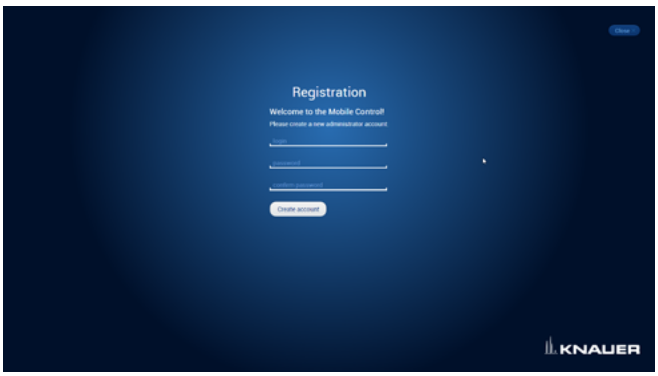
Fig. 4-4 Network connection

Process	Figure
7. If the network symbol on the lower left side has changed, your network connection is working.	
	Fig. 4-5 Network status
8. You can also check or edit your network connection in the Mobile Control app: SETTINGS > CONFIGURATION MANAGEMENT.	
	Fig. 4-6 Configuration list in the software

Note: If WLAN connection is lost, all pumps will stop with exception of the standalone pumps AZURA® P 4.1S and AZURA® P 2.1S. Compact pumps integrated in an assistant also stop automatically in this case.

4.1.2 Create a user account

If you start the Mobile Control for the first time, you are prompted to enter a user name and a password. This user (administrator) has full access to the Mobile Control and can create additional users, edit them or assign rights (refer to chapter 12.3).

Process	Figure
1. Double-click on the icon.	
	Fig. 4-7 Icon on the desktop
2. The start screen of the software opens.	
	Fig. 4-8 Start screen
3. Enter user name and password. **4.** Repeat entering the password. **5.** Click <Create Account>.	
	Fig. 4-9 Registration screen

Note: If you received a tablet with a pre-installed Mobile Control, KNAUER has set up a user account for you already. In this case, the **user name** is 'Admin' and the **password** is '12345'. You can find this information on the provided certificate as well. The user name and the password can be changed (refer to chapter 12.3).

6. Log in by entering the user name and password or click <Close> to close Mobile Control.

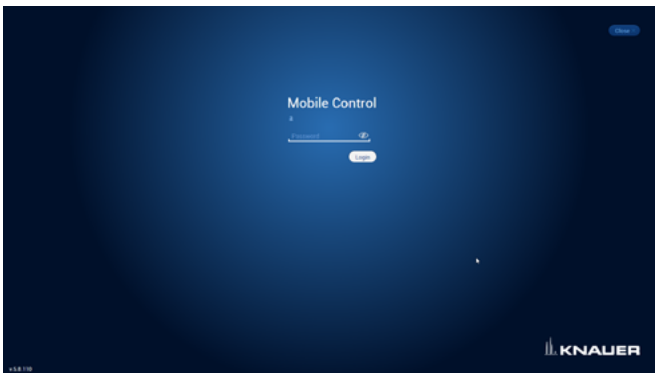


Fig. 4-10 Login screen

Practical tip: If more than one configuration is defined, it is necessary to select the required configuration. For more information, see chapter 12.3.

4.2 General user interface

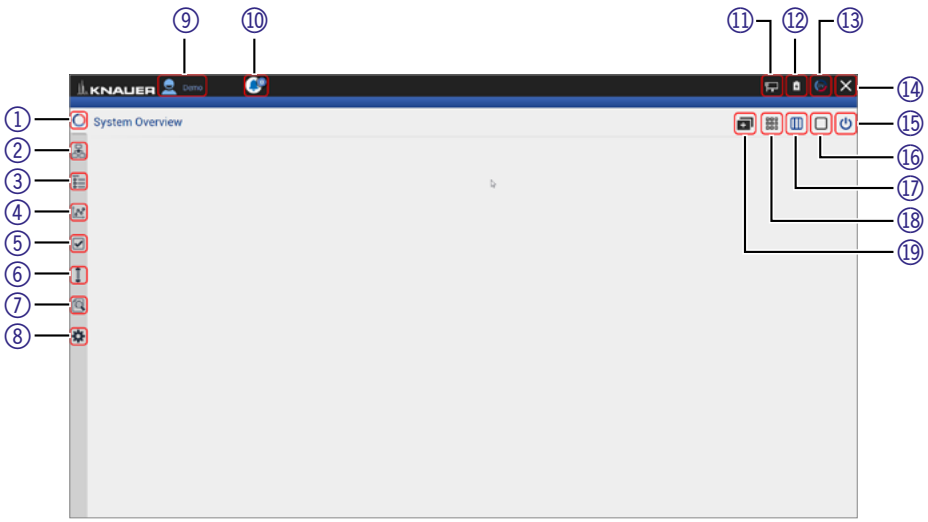


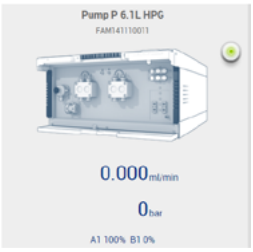
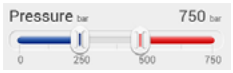
Fig. 4-11 General user interface

Legend

① System Overview
② Methods and Sequences
③ Run Queue
④ Chromatogram View
⑤ Checks & Tests
⑥ Column Management (excluded in LNP version)
⑦ Logs and Errors
⑧ Settings
⑨ Logged User
⑩ Error Messages
⑪ LAN Connection
⑫ Battery Status
⑬ Data Viewer
⑭ Exit/Logout
⑮ Standby/Power up
⑯ Detail View
⑰ System Overview
⑱ Widget view
⑲ System Configuration

4.2.1 Control elements

Control element	Explanation
	System Overview ■ Shows an overview of all connected devices with the most important parameters.
	Methods & Sequences ■ List of all saved methods and sequences.
	Run Queue ■ Overview of processable methods and sequences.
	Chromatogram View ■ The Chromatogram shows the live data of detectors, pumps and valves.
	Checks & Tests ■ Displays GLP data for the selected device. ■ Performs a system check.
	Column Management (excluded in LNP version) ■ Create a column library. Individual columns can be given a maximum pressure and the number of injections is tracked.
	Logs & Errors ■ Lists all errors and system logs.
	Settings **General** ■ Configuration Management: Create new or edit existing configurations and define the system configuration, summarizes all configurations with the router SSID and authorized users. ■ Network Settings shows network interfaces and LAN settings. ■ Preferences displays basic settings in the software. ■ About: The section lists the software version number, activation code, contacts, release notes and installation information with troubleshooting hints. **Instruments** ■ A list of all connected devices is displayed. You can change the settings of each device. **User Management** ■ User accounts or the Demo account for the Demo Mode can be created or edited. **Advanced Settings** ■ Energy Options displays standby mode settings and wakes up devices from standby mode.
	System Configuration ■ Shows existing system configuration.

Control element	Explanation
	Widget View, System Overview, Detail View ■ Toggles between Widget View, System Overview and Detail View.
	**Device Widget** ■ Displays most important parameters depending on the device. ■ Push the widget to enter the Detail View of the device.
	Error messages ■ Displays error messages. Click on the icon to read them.
	Stop ■ Stops the run.
	Exit/Logout ■ Exit closes the application. ■ Logout logs out the current user and displays the login screen.
	Standby/Power up ■ Sent into standby or power up single, all or a selection of devices
	■ Button with different functionalities, e.g. Run or Stop.
	**Text field and slide control** ■ Slide control sets values. The set value is displayed in the text field. ■ Enter the numeric value by tapping the text field.

5. System Overview

5.1 System configuration

In the system configuration you can determine the group of devices which are controlled by Mobile Control.

The devices can be assigned in four categories: Eluent Delivery, Sample Injection, Column & Periphery, Detection, Fraction Collection. This classification is continued through Mobile Control, e.g. to facilitate method writing.

Practical tip: For easier handling, all device components in the menu "Methods" are arranged in the same way as the tabs in menu "System Overview". Before you add a program we recommend to ensure correct system configuration.

5.2 Categorization of the functional blocks

Note: Only one instrument can be assigned to fraction collection block.

Device	Block	Maximum device number
Autosampler	Sample injection	1
Column Thermostat	Column & periphery	2
Detector, Interface box IFU 2.1 LAN	Detection	3 (max. 6 signals)
Pump	Eluent delivery	6
Valve	Sample injection	20 (12 pcs. in assistants)
	Column & periphery	
	Fraction collection	only Multiposition valves
Fraction Collector	Fraction collection	1

Note: The maximum allowed number of valves is 20, which does not depend on the combination of the functional blocks and within these blocks.

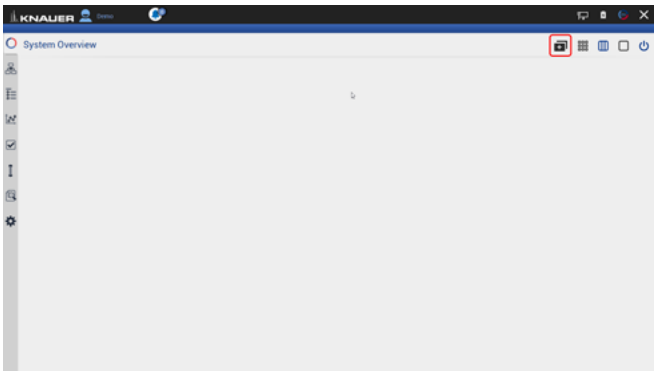
Process	Figure
1. Click on <System Configuration> to configure your system.	

Fig. 5-1 System Configuration overview

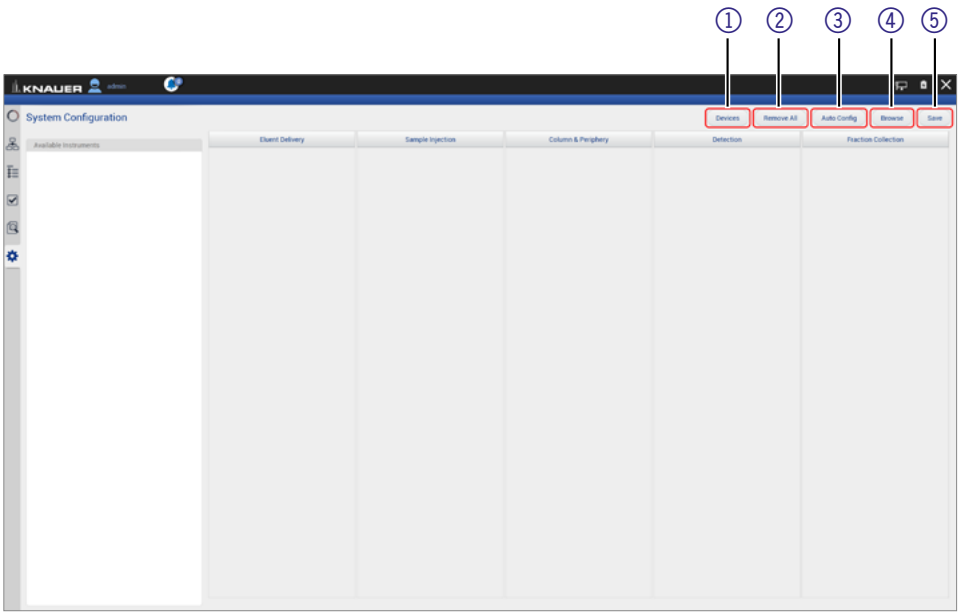


Fig. 5-2 Function buttons

Legend

① Use **Devices** to manually configure Virtual detector, Foxy and Vario-4000 fraction collectors.

② **Remove All** deletes the actual system configuration.

③ **Auto Config** performs an automatic configuration with connected devices in the network.

④ **Browse** searches for all devices in the connected network and displays them on the left side (available instruments, does not apply to fraction collector Foxy and Vario-4000).

⑤ Always use **Save** to confirm your selection.

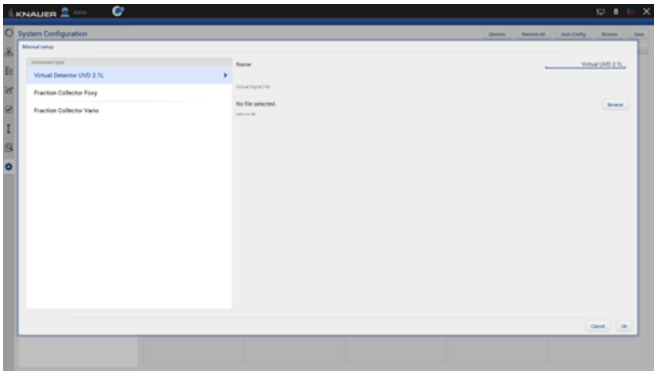
Process	Figure
2. Virtual Detector - Select an exported signal CSV file whose first trace is played by the virtual detector.	

Fig. 5-3 Manual Configuration

Note: The units of the signals (AU, mAU, µRIU...) set in the preferences of Mobile Control have to be the same as for the recorded signal trace in the exported file..

3. Enter the name, serial number, IP address and IP port to manually configure the Foxy or Vario-4000 fraction collector.

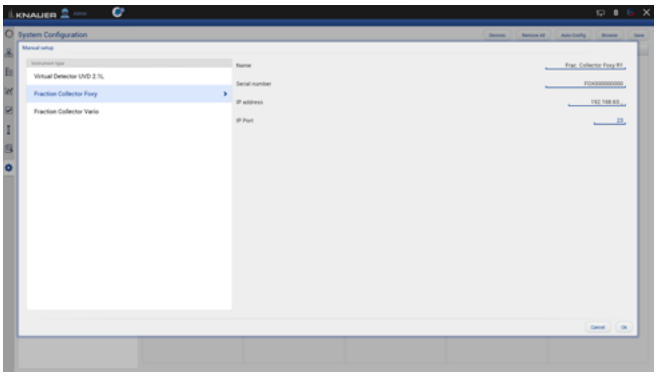


Fig. 5-4 Manual Configuration

4. The software loads all connected devices. This may take a few seconds.

Fig. 5-5 Loading process of System Configuration

5. On the left side all available/online devices are shown.

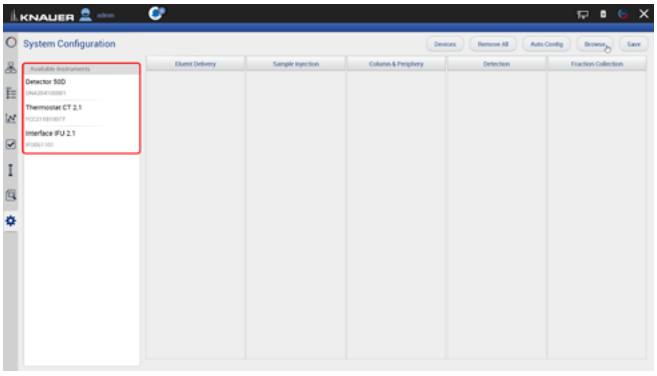


Fig. 5-6 Connected devices

6. Select <Browse>.
7. Drag and Drop to shift the device into the block.

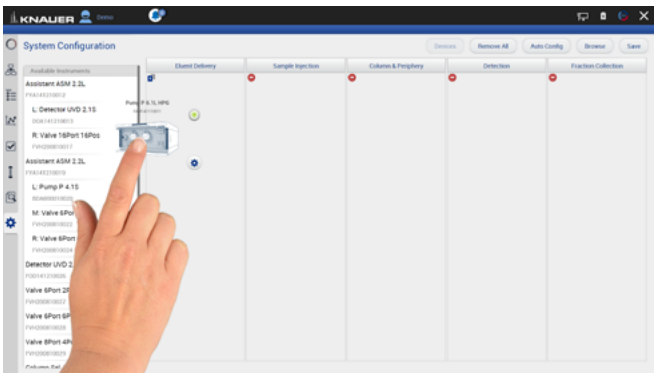


Fig. 5-7 Drag and drop of the devices

8. Press the “Settings” symol ⚙ or on the device to enter the device settings.

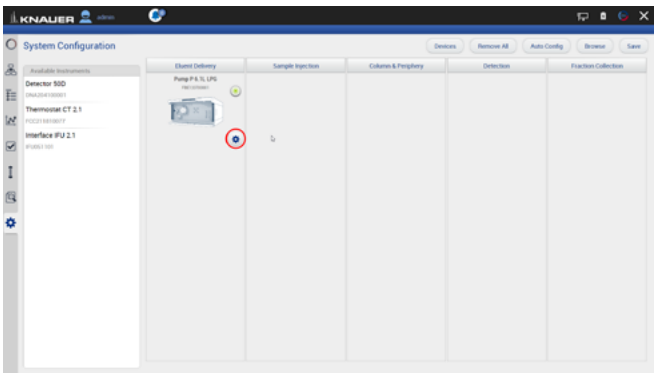


Fig. 5-8 Settings symbol of the devices

9. Here general device settings are shown. Refer to chapter 12 for further information.

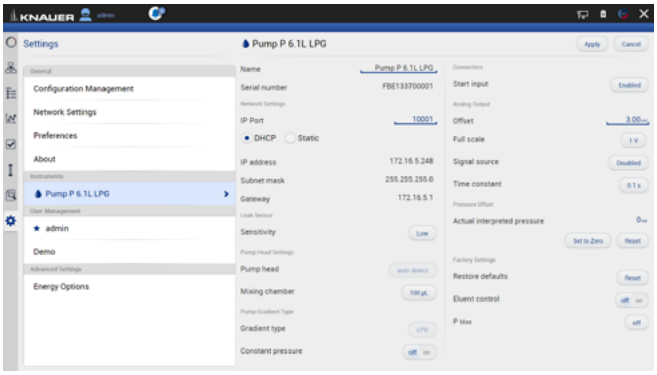


Fig. 5-9 Device settings

10. If you tap <Autoconfig>, the devices will be configured automatically.

Fig. 5-10 Autoconfigured system configuration

11. After confirming the configuration with <Save>, an overview of the system configuration is shown (System Overview). Below each symbol device-specific parameters are displayed.

Fig. 5-11 Overview connected devices

12. Go to SYSTEM OVERVIEW.
13. You see the system configuration with most important device specific parameters below the widget.
14. Click on device status button or the device to enter the detail view.

Fig. 5-12 System Overview listed devices

Note: If you want to face more than one system configuration, add new configurations in configuration management (refer to chapter 12.4.1).

5.2.1 Binary HPG (high pressure gradient) configuration of AZURA® P 2.1L pumps

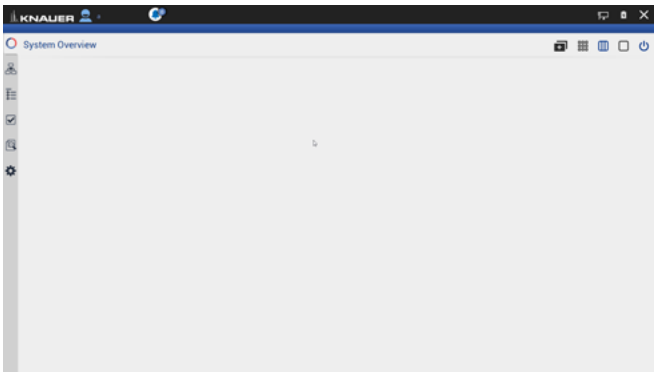
Process	Figure
1. Go to SYSTEM OVERVIEW > SYSTEM CONFIGURATION.	

Fig. 5-13 Overview - System Configuration

2. Drag the pump with your finger to the functional blocks and dropit into the eluent delivery.

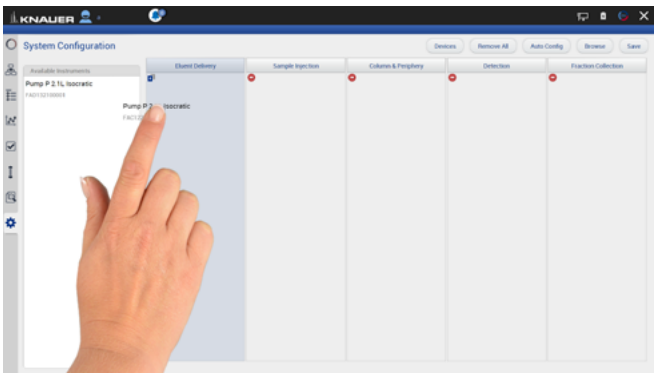


Fig. 5-14 Drag and drop first pump

Note: The pump you shift at first in the functional block is set as HPG A automatically. You can change this setting later in menu Device settings. Refer to chapter 12.2.8.

3. The pump is part of the system configuration.

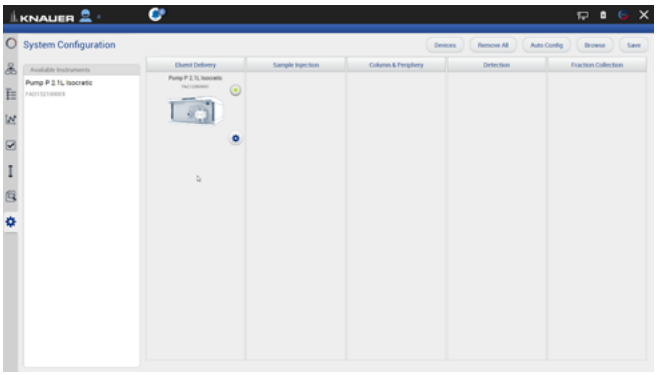


Fig. 5-15 First pump in System Configuration

4. Drag and drop the second pump.
5. The first pump will be highlighted, indicating you can synchronize both pumps. Drop the second pump into the violet “Synchro“ frame.
6. Confirm your action with <Save>.

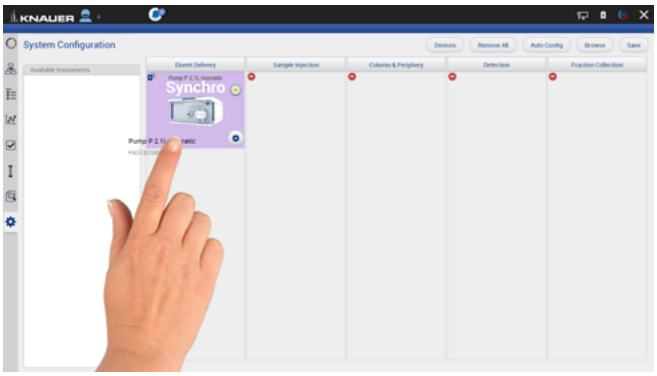


Fig. 5-16 Drag and drop second pump

Note: If you want to add two seperate AZURA® pumps P 2.1L, drag and drop the second pump below the “synchro“ widget.

7. A message confirms the setup of the Binary HPG pump.

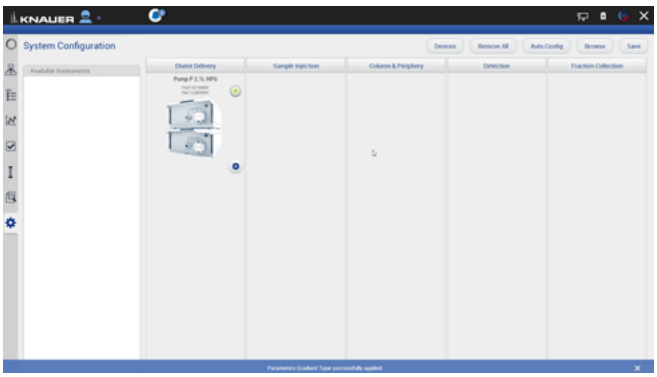


Fig. 5-17 View of the synchronized pumps

8. Go to SETTINGS to edit/view the device settings of the synchronized pumps (also refer to chapter 12.2.8).

Note: Setting a Binary HPG of two compact pumps AZURA® P 2.1S/P4.1S is not supported.

5.2.2 Synchronous switching of two valves

Synchronous valve switching enables for example column selection or sample loop selection.

You can synchronize valves of the same type, e.g. 2x 6 Multiposition valves or 2 x 6 port 2 position valves. You can synchronize valves of the same type, which have the same number of position.

Synchronization of valves works for block:

- Sample Injection
- Column & Periphery

Note: You can synchronize valves inside an assistant or stand-alone valves, but you cannot synchronize a valve inside an assistant with a stand-alone valve.

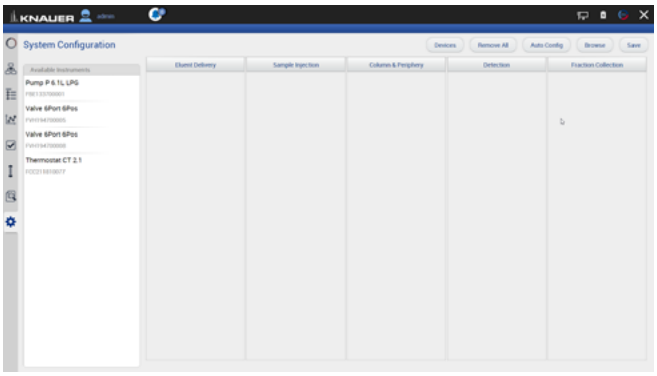
Process	Figure
1. Go to SYSTEM OVERVIEW > SYSTEM CONFIGURATION. 2. Click <Browse> to get a list of all connected devices.	

Fig. 5-18 Enter System Configuration

3. Drag and drop the first valve in the appropriate column.

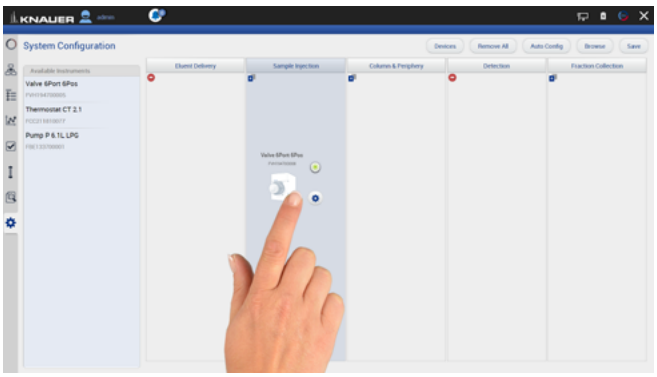


Fig. 5-19 Addition of a valve

4. The valve is part of system configuration.

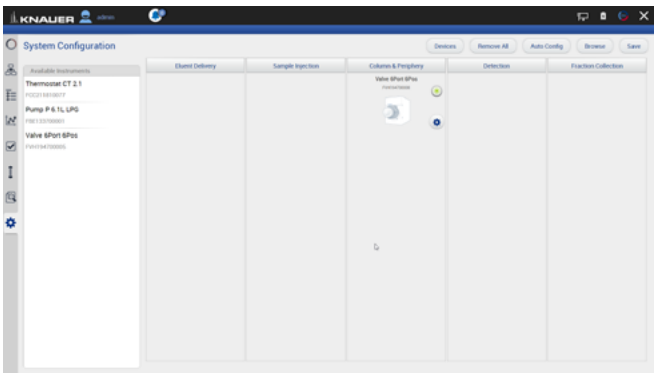


Fig. 5-20 Configured valve

5. Drag and drop the second valve. The first valve will be highlighted, indicating you can synchronize both valves. Switch the second valve into the violett "Synchro" frame.

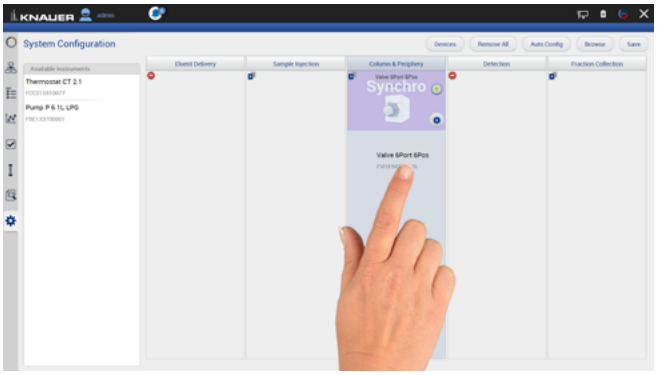


Fig. 5-21 Drag and drop of the second valve

Note: If you want to add 2 independent valves, drag and drop the second valve below the "synchro" widget.

6. Always confirm your settings with <Save>.

7. Tap on the device symbol to enter the detail view.

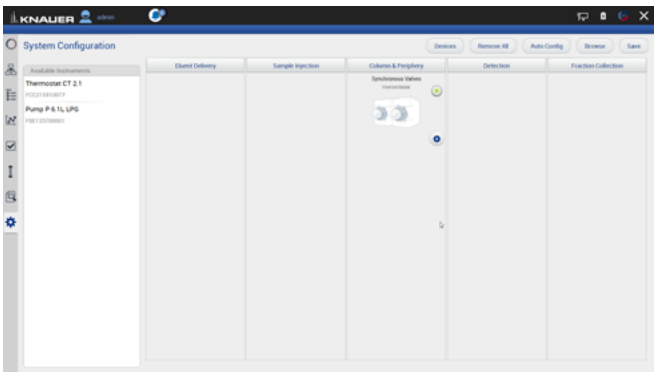


Fig. 5-22 View of the synchronized valves

5.3 Device status

Device Status	Ready	Running	Busy	Error	Standby
Color of the light					

5.4 Widget View

The widget view is made for a clear overview of the most important parameters of many devices.

5.5 Detail View

The Detail View is entered by clicking on the widget of the desired device in the System Overview. In the Detail View you can directly control the device and read its parameters.

5.5.1 User interface

Process	Figure
1. Go to SYSTEM OVERVIEW. 2. Click on device status button or the device to enter the detail view.	

Fig. 5-23 System Overview - listed devices

Legend

① Apply
② Cancel
③ Device status and important parameters
④ System Configuration
⑤ Widget View
⑥ System Overview
⑦ Detail View
⑧ Standby/Power up
⑨ Shifts to next device
⑩ Purge
⑪ Run
⑫ Toggle between 1st and 2nd page of Detail View
⑬ Shifts to previous device

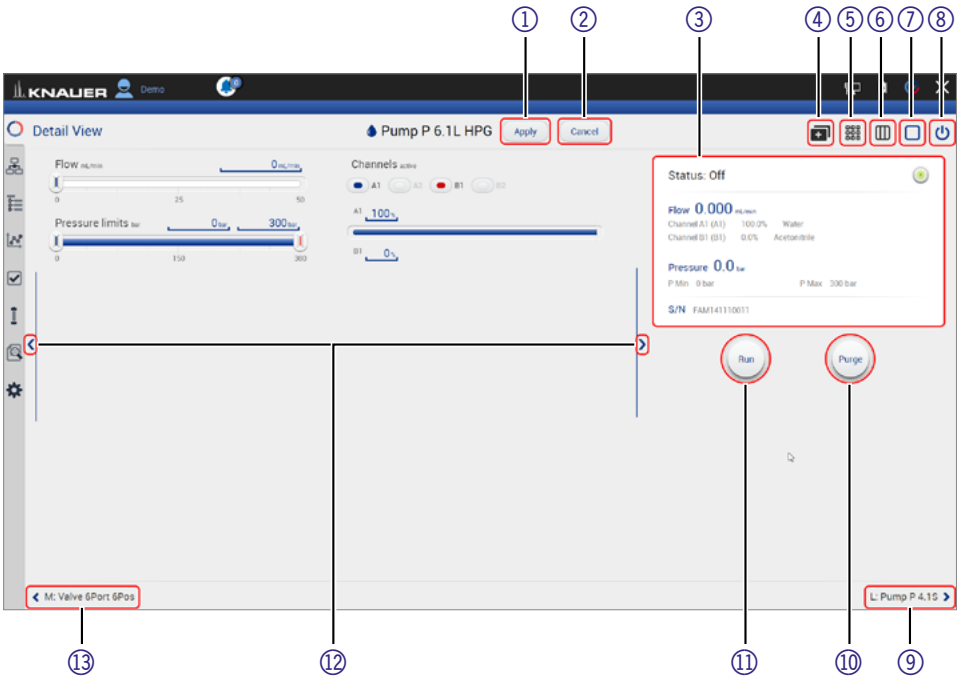


Fig. 5-24 Overview - Detail view - general interface

Practical tip: Parameters in the upper right device status frame are sent directly from the device (real time).

Note: Always confirm your settings with <Apply>. Except for P 4.1S/P 2.1S standalone devices, all other pumps start pumping at a flow rate entered in the detail view by clicking on <Apply>. If the pump is not to start, a flow rate of 0 ml/min has to be entered.

5.5.2 Assistant ASM 2.2L

The modules of the Assistant ASM 2.2L are shown as independent devices in the System Overview. The events of the assistant device can be controlled in the module that is positioned first from the left in the module docking station. If the module is a valve drive VU 4.1 configured as a fractionating valve, the events cannot be controlled.

5.5.3 Assistant ASM 2.1L

The picture below shows an example for a configuration of an Assistant ASM 2.1L.

Fig. 5-25 Detail View - Assistant

Possible devices of an assistant:

Pump	
Flow	Set the flow rate by entering the value or with slide control.
Pressure	Set the minimum and maximum pressure by entering the value or with slide control.
Valve	
Position	You can change the position of the valve, by Enter the position or click on the position of the valve on the display.
Detector	
Wavelength	Tap the text field and enter the required value. You can also adjust the value by slide control.
Deuterium lamp	Choose between ON/OFF.
Events	
(from supported devices)	Events can be manually activated. They operate external devices (refer to the instructions of the respective device for more information) Choose between ON, Pulse or OFF. **Note:** Event controls are displayed in the detail view and method setting of the module in the leftmost position of the assistant.

5.5.4 Autosampler

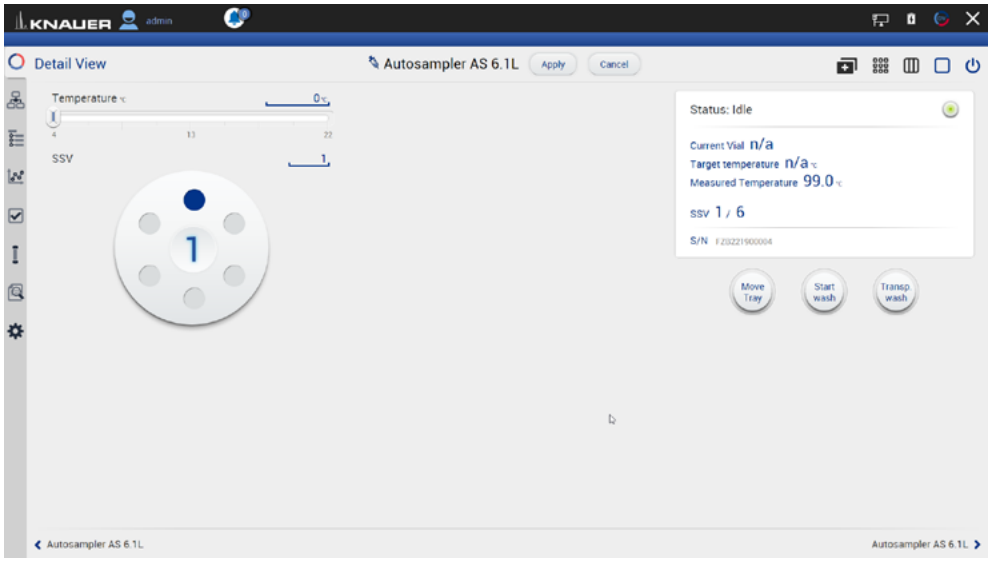


Fig. 5-26 Detail View - Autosampler

Temperature	Set the temperature by entering the value or with slide control (if temperature control is installed).
Move tray	The tray is moved to front or back (enter or remove vials).
Start wash	The autosampler starts a wash cycle to wash the needle.
Transp. wash	The autosampler starts a wash cycle using the transport liquid to wash the needle with it.

5.5.5 Column thermostat

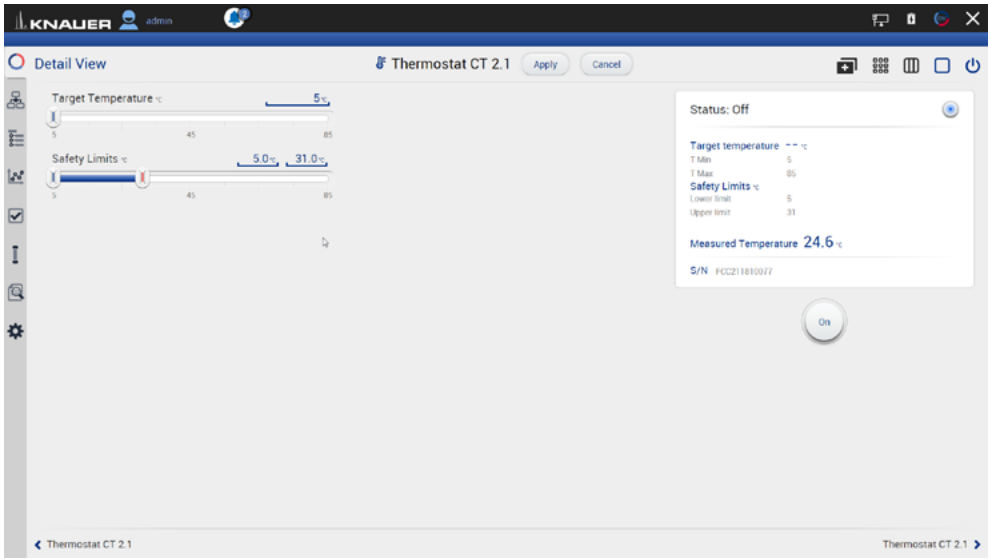


Fig. 5-27 Detail view - Column thermostat

Target Temperature	Choose a temperature within the range of Temperature safety limits. Steps of 1 °C are possible.

Temperature safety limits	Safety limits can be set in the range of 5 °C and 85 °C.

5.5.6 Detector

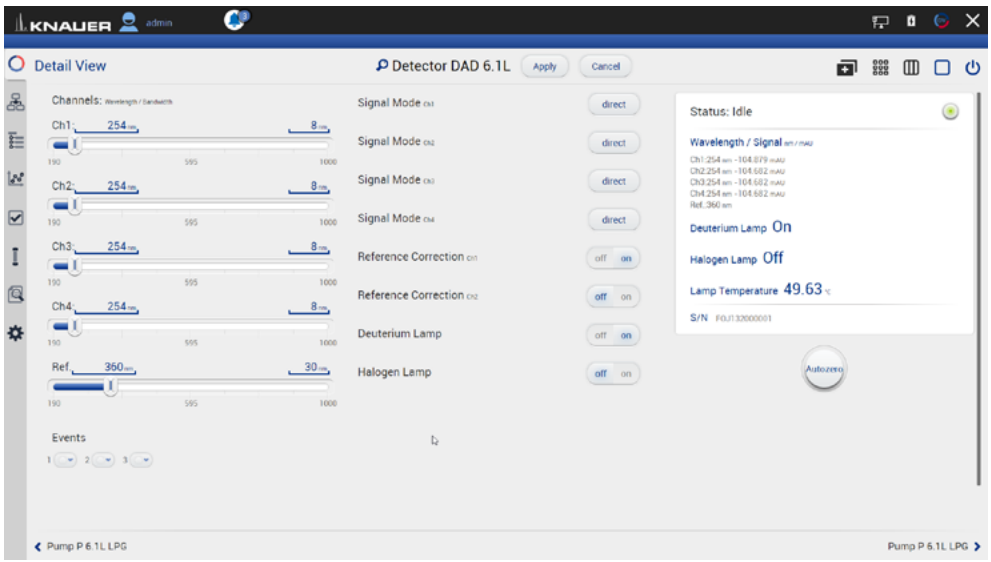


Fig. 5-28 Detail view - Detector

Wavelength	Tap the text field and enter the required value. You can also adjust the value by slide control.
Events (from supported devices)	Events can be programmed or manually activated. They operate external devices (refer to the instructions of the respective device for more information) Choose between ON, Pulse or OFF.
Signal Mode	Choose between Direct Signal and Inverted Signal. Direct Signal (+): Displays signal without modifications. Inverted Signal (-): Displays the inverted signal.
Reference correction (only AZURA® MWD 2.1L, DAD 2.1L and DAD 6.1L)	In order to minimize baseline drift due to refractive index effects, a reference wavelength can be set in order to correct the baseline. The reference should be set in the same spectral region as the signal wavelength (UV or Vis) but at a wavelength at which the analyte has no absorbance.
Deuterium lamp	Choose between ON/OFF. If the device is in standby mode, the lamp is switched off.
LED (only AZURA® RID 2.1L)	Choose between ON/OFF. LED of the device can be switched off to prolong the lifetime.

Note: In case of detectors with 2 lamps, both lamps can be switched ON/OFF (e.g. AZURA® DAD 6.1L).

Flushing the reference cell (only AZURA® RID 2.1L)	The flush function activates the reference cell valve enabling this cell to be purged with eluent. The flush valve can be switched on and off immediately either via software or via analog command; alternatively via software a flush time program can be selected, whereby the valve is switched on and after a selected time span (30 s, 60 s, 120 s, 400 s) the valve is automatically switched off. The flush time program can be interrupted at any time with the off command.
Target temperature (only AZURA® RID 2.1L)	It is possible to select the temperature of the optical unit in the range 30-55 °C in 1 °C steps via software. We recommend to set the temperature 5-10 °C above the ambient conditions, in order to improve and ensure baseline stability.
Autozero	The detector performs an autozero.

5.5.7 Interface Box IFU 2.1 LAN

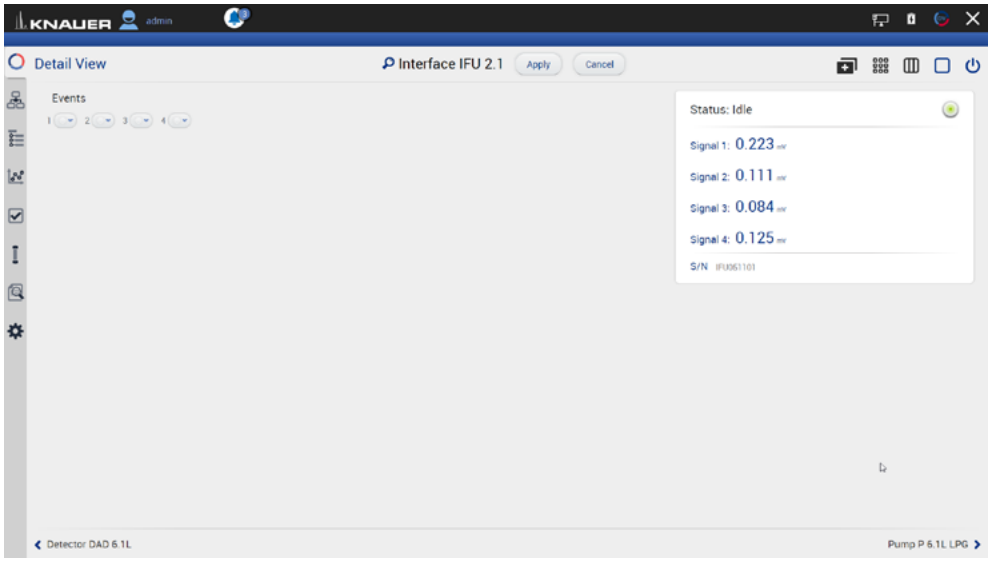


Fig. 5-29 Detail view - Interface Box IFU 2.1 LAN

AZ1 - AZ4	An autozero of the respective channel will be performed.
Events (from supported devices)	Events can be programmed or manually activated. They operate external devices (refer to the instructions of the respective device for more information) Choose between ON, Pulse or OFF.

5.5.8 Pump

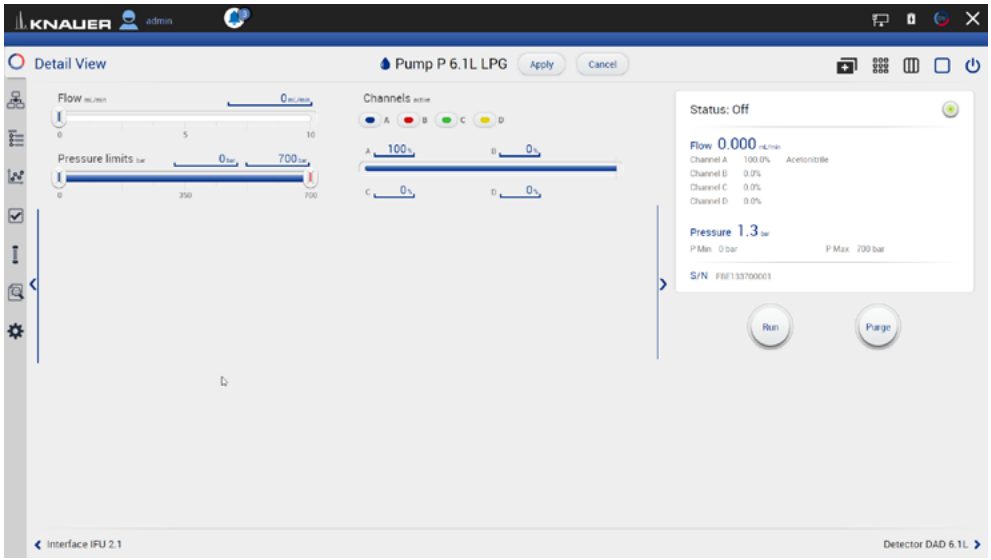


Fig. 5-30 Detail view - Pump

Flow	Set the flow under Flow by entering the value or with slide control. The pump starts running. The pump can be stopped again with the Stop-button in DETAIL VIEW.
Pressure limits	Set the minimum and maximum pressure under Pressure limits and confirm with <Apply>. Minimum and maximum pressure is set with 2 slide controls or via the text field. Minimum pressure: The pump switches off after 30 seconds, if the pressure goes below the minimal pressure limit. This may be the case, if a leak is occured or air bubbles are in the system. Maximum pressure: To protect the column, the pump switches off immediately, if the pressure excesses the maximum pressure limit, e.g. in case of clogging or an excess flow rate.
Gradient	If a gradient-compatible pump or pump combination has been connected, the gradient can be set under Detail View. Some pumps have to be configured as gradient pump under Settings > Pump (refer to chapter 12.2.7).

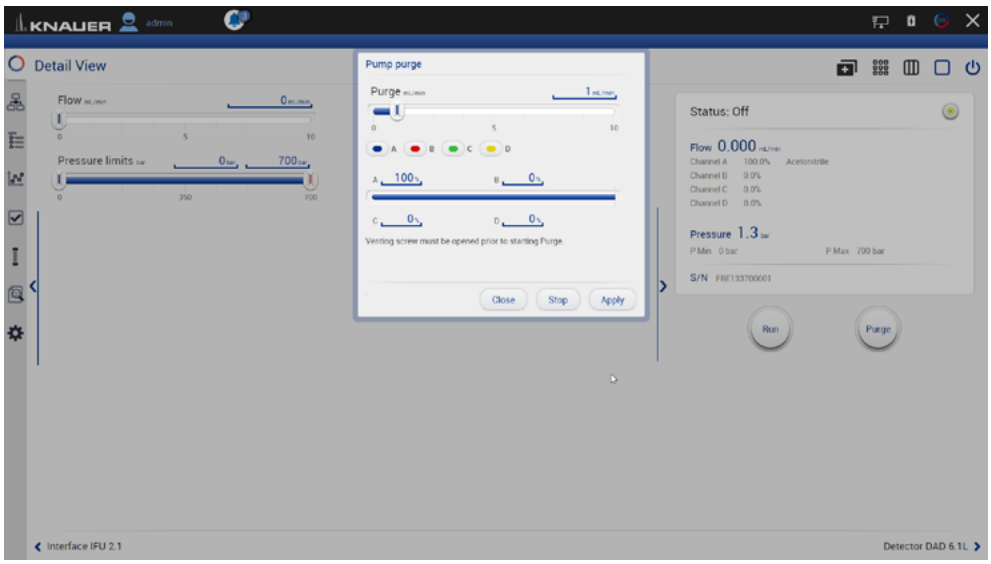


Fig. 5-31 Detail view - Pump purge

Purge

Use this function, to remove air from the pump head or to change the solvent.

1. Open the venting screw at the pressure sensor to prevent a pressure surge and damage to the column.
2. Enter the flow under Purge.
3. Press <Purge>.

Refer to the corresponding pump instruction for further informations.

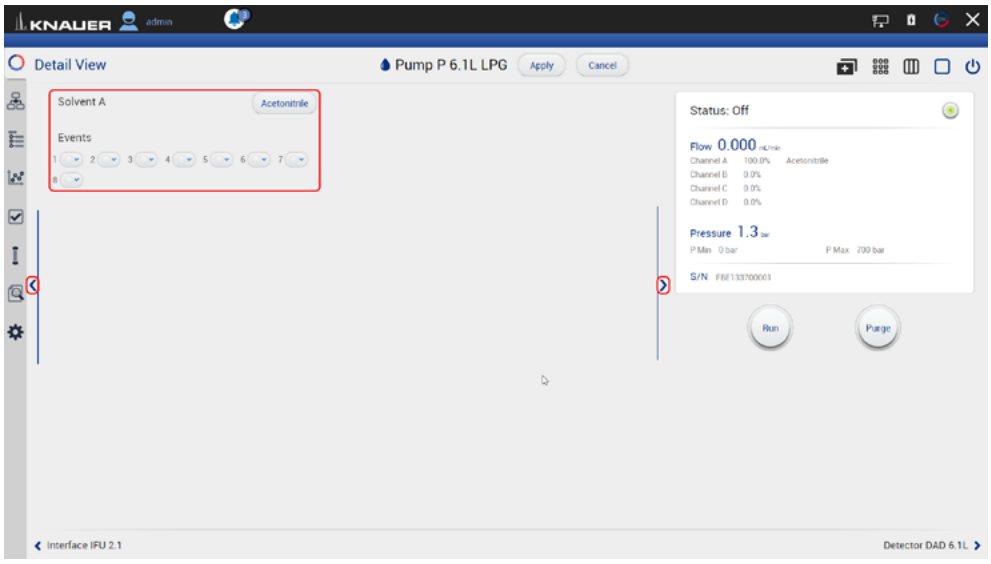


Fig. 5-32 Detail view - PMax Mode and Solvent Factor

Solvent factor

Use one of the blue arrow buttons ❮ ❯ to switch to further settings. Select the solvent channel A,B,C or D and the solvent. For other solvents than listed, select the text field in last row of the list and enter the factor of compressibility for a user defined solvent.

In LPG mode, you can only select one solvent factor, even the eluent consists of more than one solvent.

Note: Solvent factor can only be entered for the AZURA® pumps P 6.1L and P 2.1L.

PMax Mode

This function is only supported by AZURA® pump P 6.1L. It enables settings which determine how the pump reacts when maximum pressure is reached.

If PMax Mode is activated, the pump continues to run with set pressure. The flow is adjusted in order to keep the pressure. The maximum flow should be normally in the range of your current target flow to prevent enormous eluent consumption during leakage.

Switch the PMax Mode on and enter the maximum flow. Confirm your settings with <Ok>.

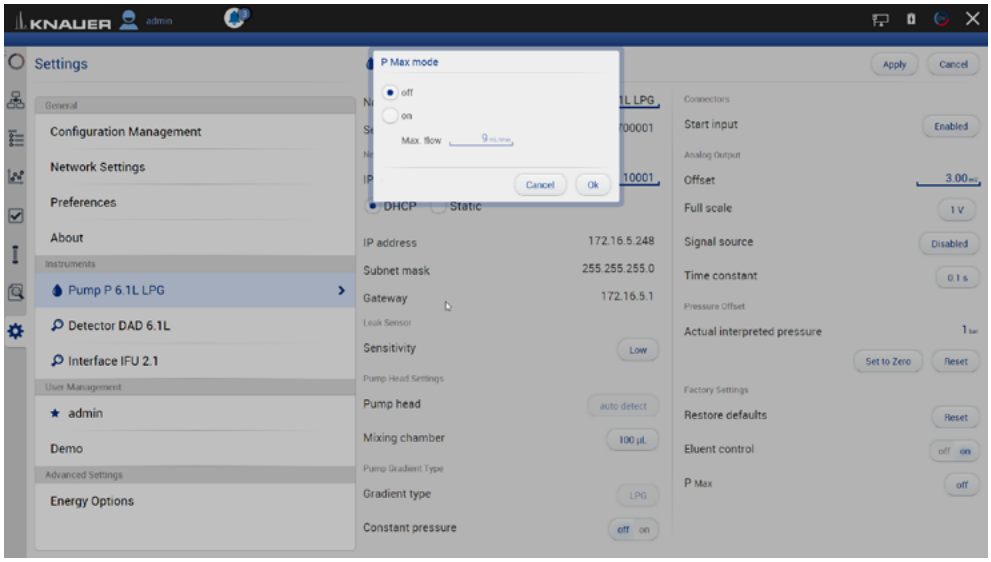


Fig. 5-33 Activation of PMax mode

Events
(from supported devices)

Events can be programmed or manually activated. They operate external devices (refer to the instructions of the respective device for more information)

Choose between ON, Pulse and OFF.

5.5.9 Valve

5.5.9.1 2 position valve

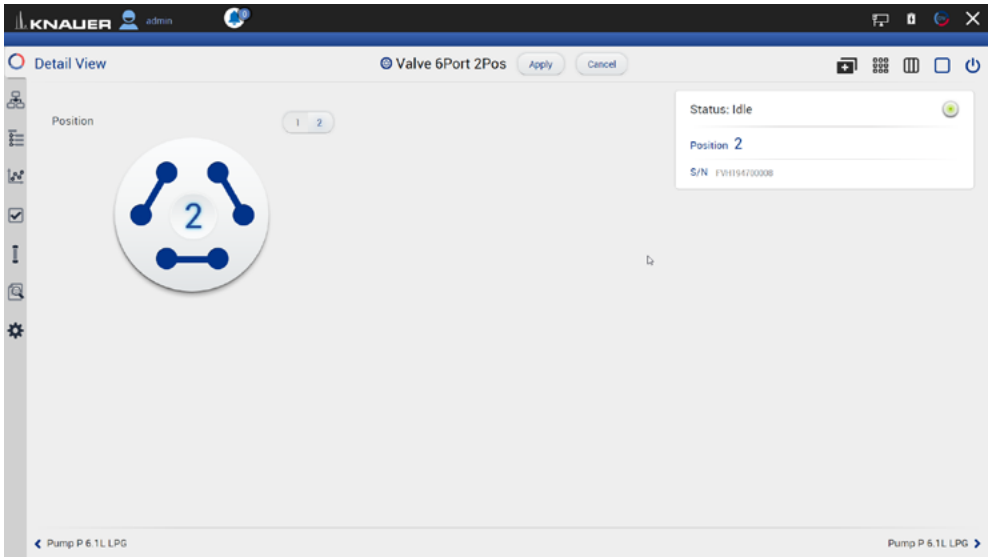


Fig. 5-34 Detail View - Example 6 port 2 position valve

Position	Choose between Load and Injection. Confirm your setting with <Apply>. You can also touch the valve and change the position.

5.5.9.2 Multiposition valve

Both valves are switched synchronously, either via position text field or via <Prev>/<Next> buttons.

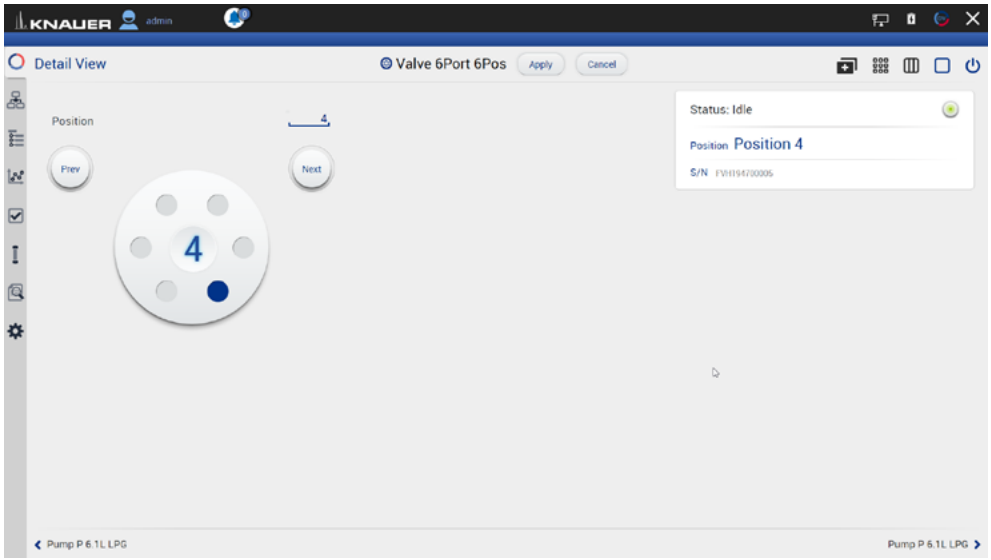


Fig. 5-35 Detail View - Example multiposition valve

Position	Enter a position or touch the corresponding port of the valve and change the position. Confirm your setting with <Apply>.

Prev/Next	Position will be switched to the previous or next possible position of the valve.

5.5.10 Synchronized switching

Both valves are switched synchronously, either via position text field or via <Prev>/<Next> buttons.

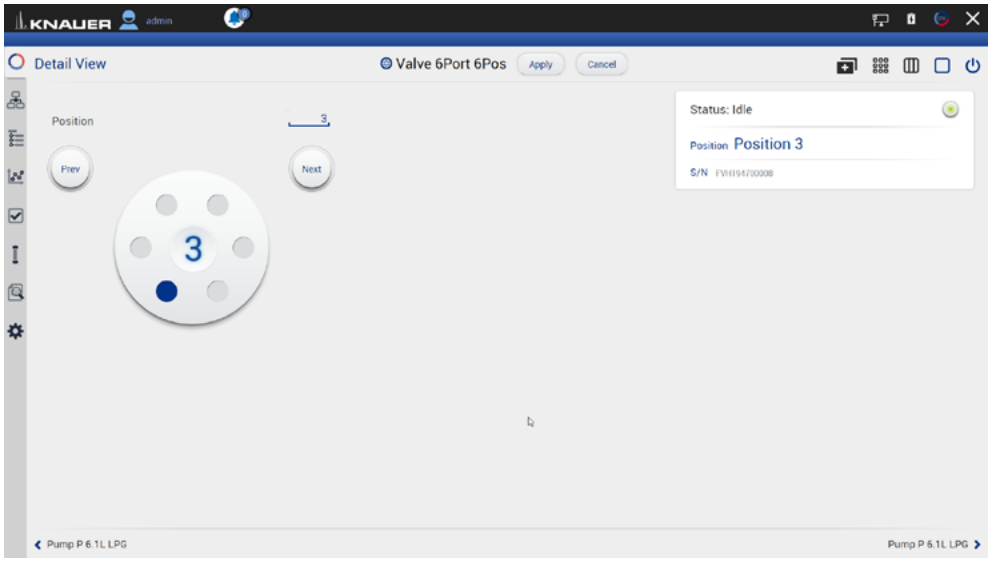


Fig. 5-36 Detail View - Example synchronized valves

Position	Enter a position or touch the corresponding port of valve and change the position. Confirm your setting with <Apply>.
Prev/Next	Position will be switched to the previous or next possible position of the valve.

Note: For synchronization of the valves, refer to chapter 5.2.2.

5.6 Eluent Control

Eluent Control is by default turned off. Activate this function in the setting of each pump in the system configuration.

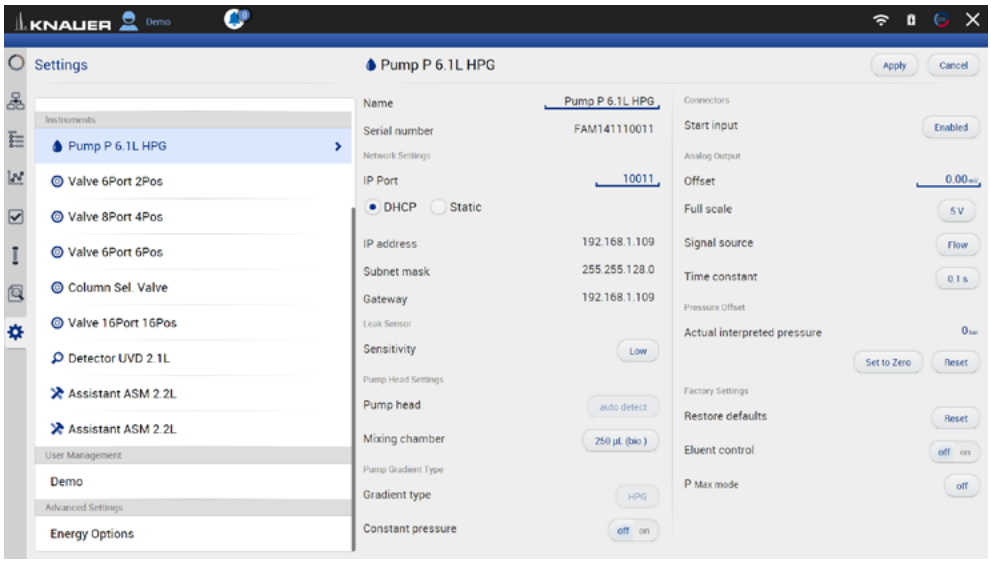


Fig. 5-37 Settings of a pump

Fig. 5-38 Detail View of a pump showing the level indicator of Eluent Control

Fig. 5-39 System Overview of a pump showing the level indicator of Eluent Control

Fig. 5-40 Alert after falling below the warning level

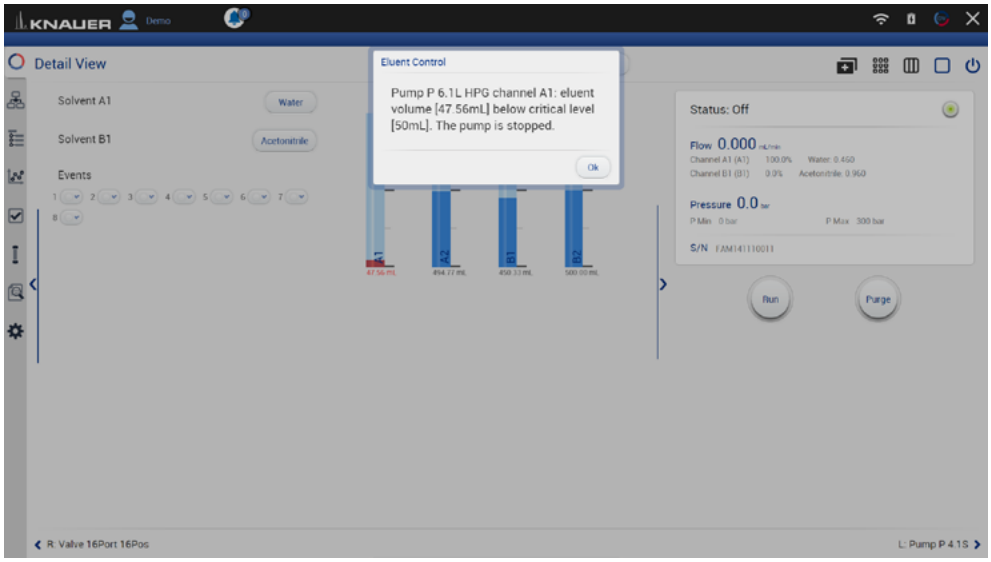


Fig. 5-41 The method is paused and the pump stopped after falling below the critical level.

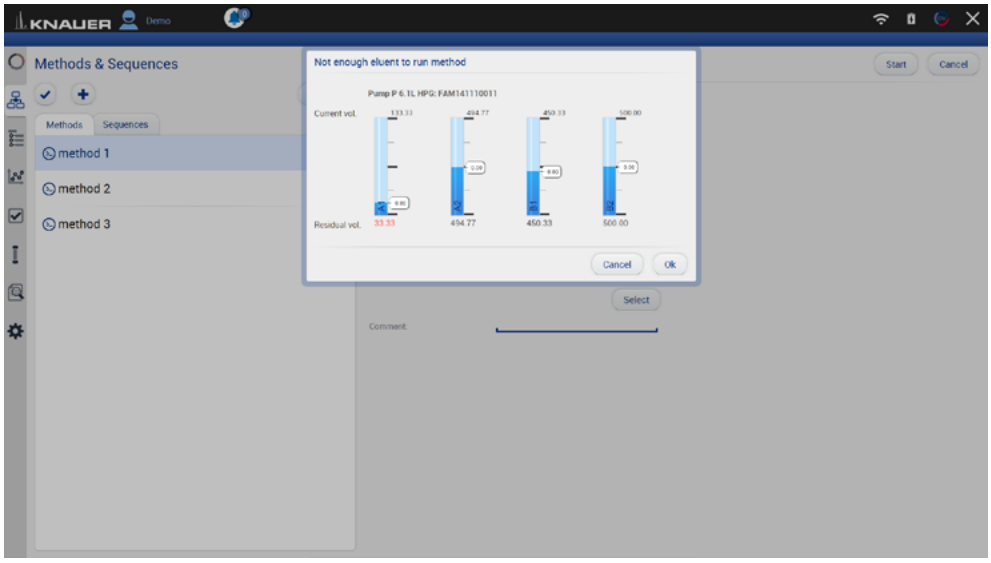


Fig. 5-42 A method is not started if there is too little eluent.

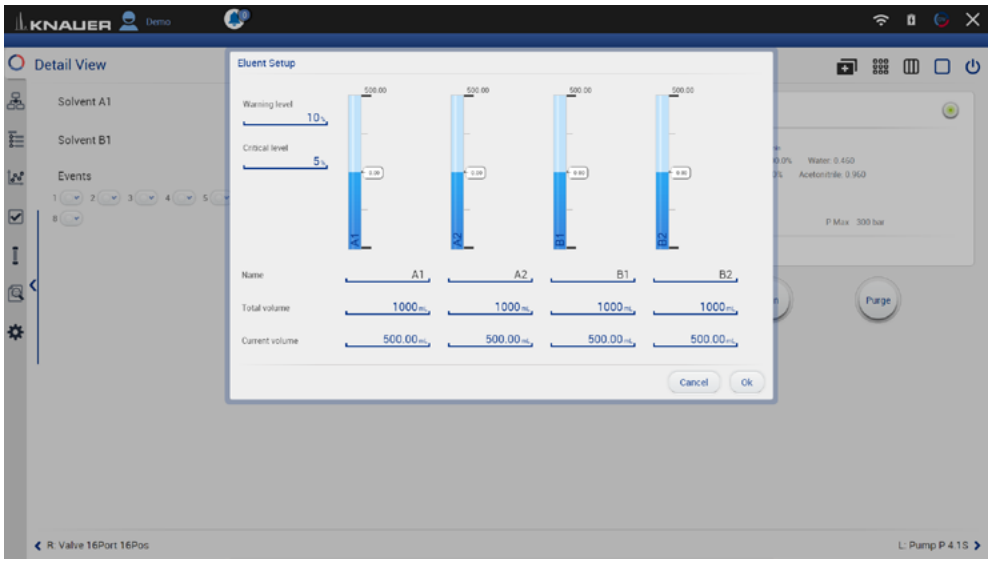


Fig. 5-43 Eluent Control Setup

In the eluent control, the consumption of eluent is calculated based on the set flow rate and subtracted from the total volume of eluent set by the user. The eluent level is displayed graphically for each channel in the detail and system overview. If the level falls below a warning level, a permanent alert appears. If the level falls below a critical level, the method is paused, and pump delivery is stopped. Both limit values can be defined by the user. For each channel, which can be named separately, a total volume and a current volume can be specified. If the current volume is set in the Eluent Control Setup, which is reached by clicking on the level indicator, the difference between the current and the newly set volume is displayed on the side of each level indicator. A method is not started if there is too little eluent, and the user is informed by a message.

6. Methods & Sequences

In this menu you can create your individual methods and add them up to a complete sequence.

Note: Mobile Control saves by default all result files in C:\Mobile Control\Projects\Project folder*\Results\Queue_date_time.
* The project folder is named default or can be renamed in Mobile Control settings > user management.

6.1 General interface

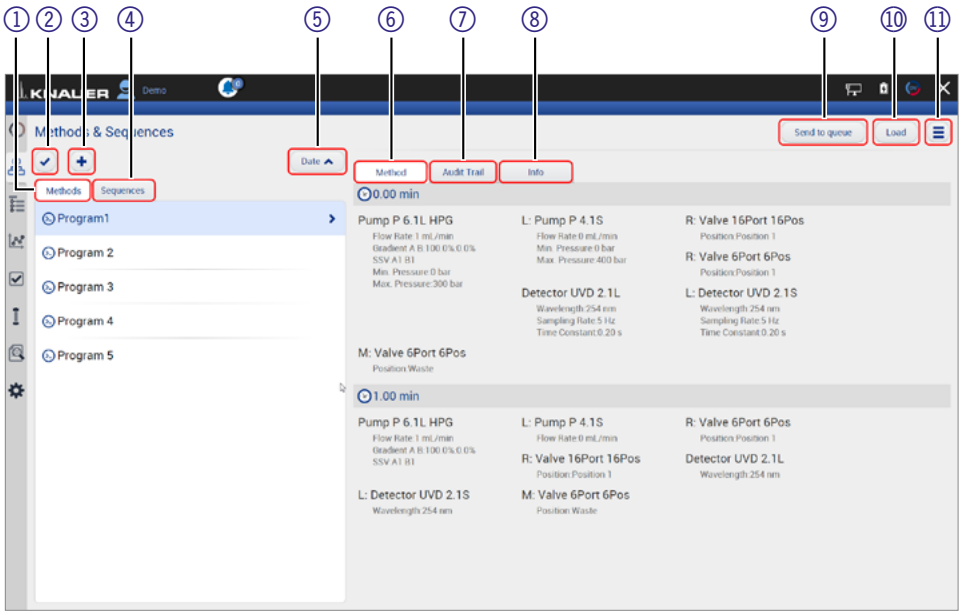


Fig. 6-1 General interface

Legend

① **Methods** displays all methods.
② **Multi select**: Select several methods or sequences to edit, delete or export.
③ **Add** a method or sequence or import a method.
④ **Sequences** displays all sequences.
⑤ **Sort** methods or sequences by date or name.
⑥ **Method**: Shows time based commands of the method.
⑦ **Audit Trial**: Shows entries of the audit trial.
⑧ **Info**: Summarizes all method settings, activated auxiliary traces and system configuration.
⑨ **Send to queue**: sends the selected method or sequence in the run queue.
⑩ **Load** the selected method.
⑪ **Multi function button**
with more useful functions like preview, method editing, exporting...

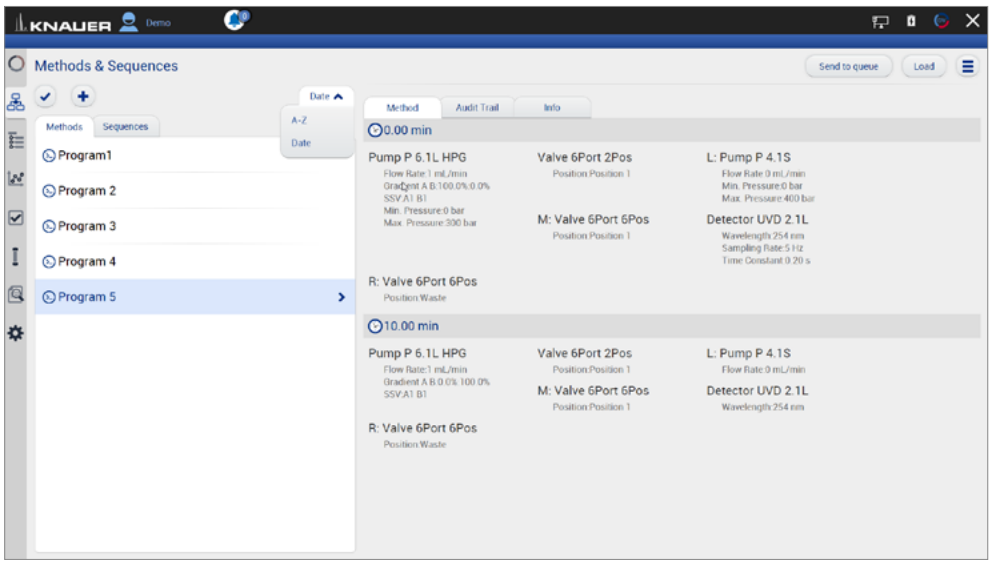


Fig. 6-2 Order of methods

Methods can be sorted either in alphabetical order or by date of creation. Push the button a second time to change the order of methods.

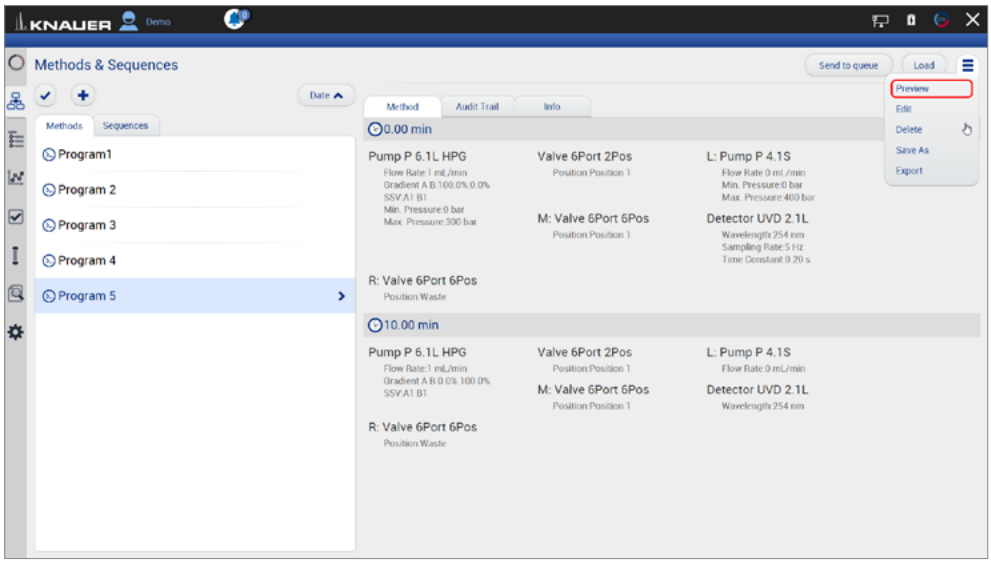


Fig. 6-3 Preview

By pushing “Preview” the first program line of all devices will be executed. This allows to check whether all devices are running as expected or to equilibrate the LC system. The maximum duration of preview run is 4 hours but can be stopped manually. Edit the selected method. Select several methods to edit, delete or export them.

Legend

① **Add method**:
Create your own method and edit all settings.

② **Add sequence**:
Create a sequence by adding methods.

③ **Import**:
Import Mobile Control methods. Data format is *mcp.

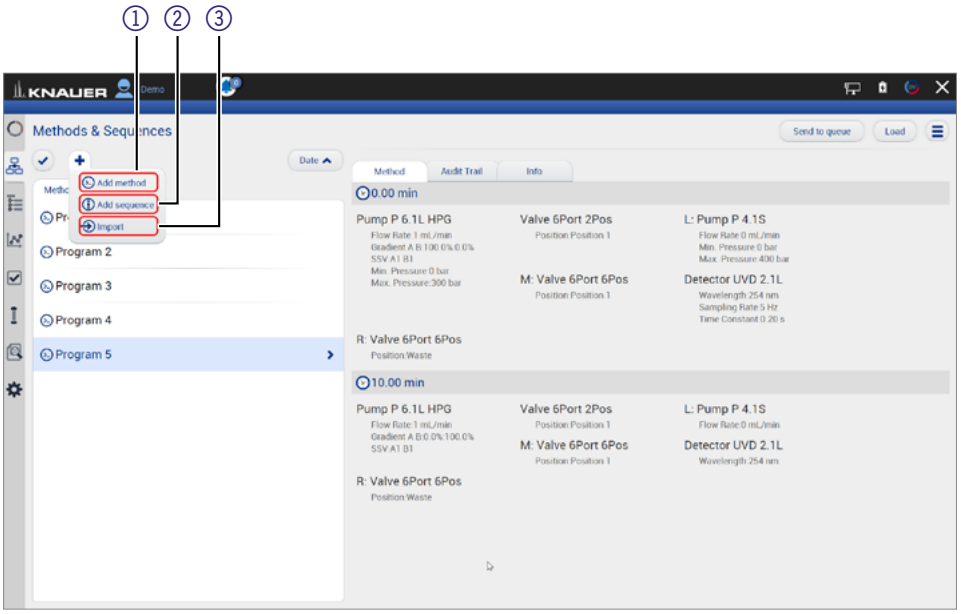


Fig. 6-4 Methods & Sequences - Overview

Note: If you import a method from another Mobile Control, ensure that the configuration of your system is identical.

6.2 Add a method

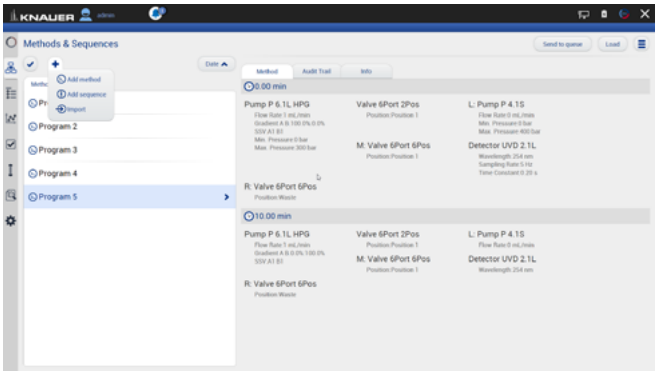
Process	Figure
1. Go to METHODS & SEQUENCES. 2. Select <+> and tap “Add method”.	

Fig. 6-5 Add a method

3. Name your method.
4. Begin with “Settings” and set all required parameters according to chapter 6.4 until 6.8 for correct adjustment.
5. Confirm your settings with <Save>.
6. By pressing the button <Close> you will be directed to the overview page.

Note: Special characters are not supported in the method name.

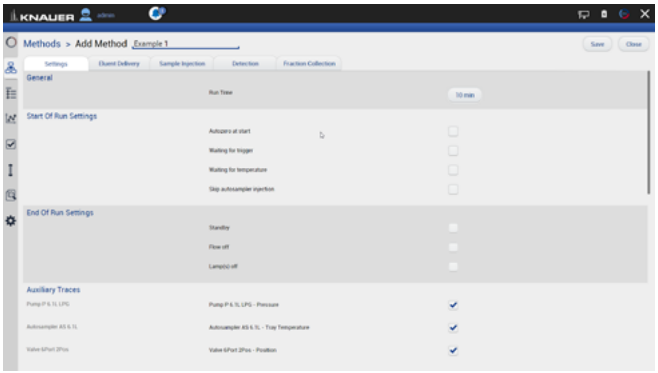


Fig. 6-6 Settings

You can program an automatically stop of pump and lamp of the detector after finished measurement. Scroll down to END OF RUN SETTINGS and activate the required checkboxes.

7. Confirm your settings with <Save>.

Note: In a series of methods we recommend to deactivate the checkboxes for switching off the flow and lamp in “End of run settings”. Only for the last method the end of run settings are activated.

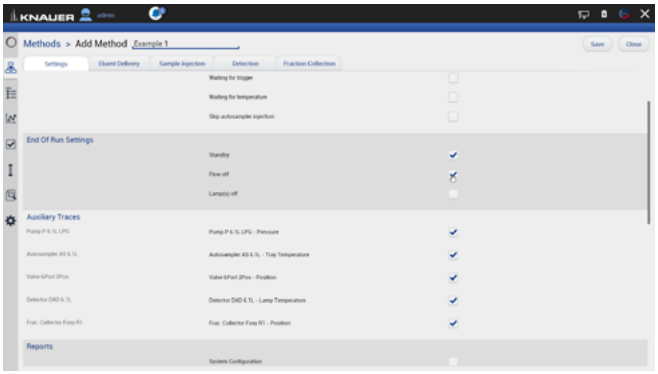


Fig. 6-7 Example of End of run settings

8. In the method overview all methods are listed. The detailed commands of each method are shown.
9. If you want to change the method, select <Edit> in the upper right menu.
10. To start the method, refer to chapter 6.11.

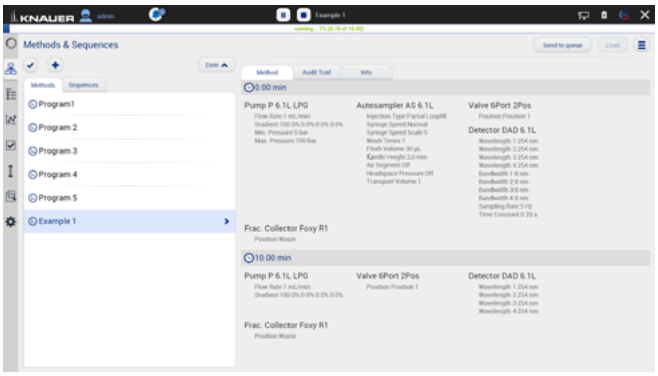


Fig. 6-8 Method - overview

6.3 Method interface

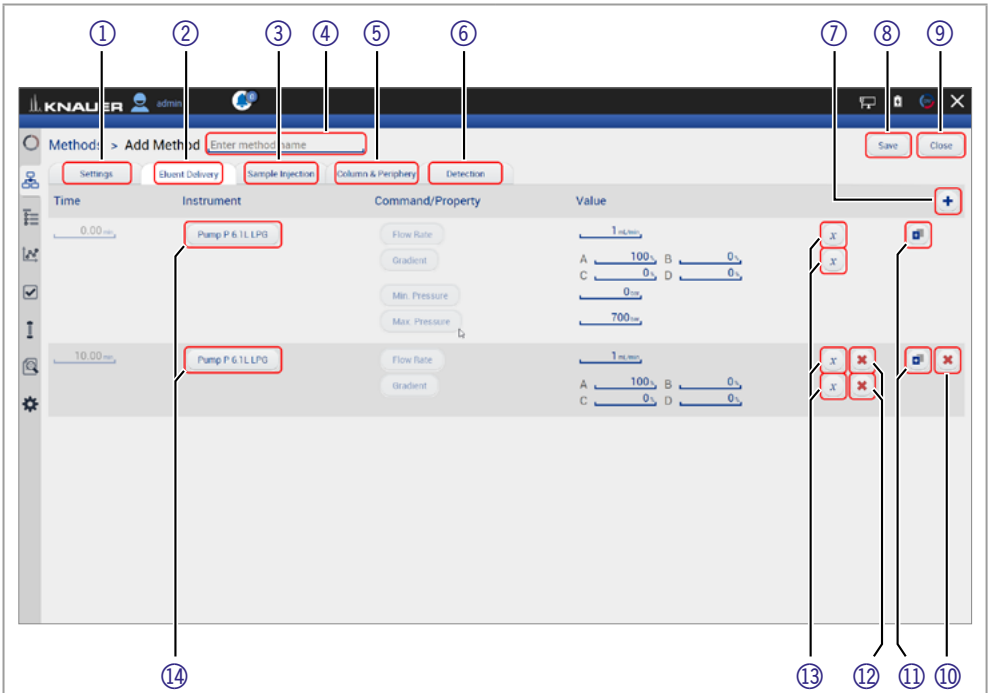


Fig. 6-9 General interface

Legend

① Settings (refer to chapter 6.4)
② Eluent Delivery (refer to chapter 6.5)
③ Sample Injection (refer to chapter 6.6)
④ Name the method
⑤ Detection (refer to chapter 6.7)
⑥ Fraction Collection (refer to chapter 6.8)
⑦ Save the method
⑧ End input without saving
⑨ Add a method line, it is always a copy of the previous line.
⑩ Delete whole method line
⑪ Add a command/property
⑫ Delete method parameter
⑬ Set a variable for the method parameter
⑭ Select an instrument

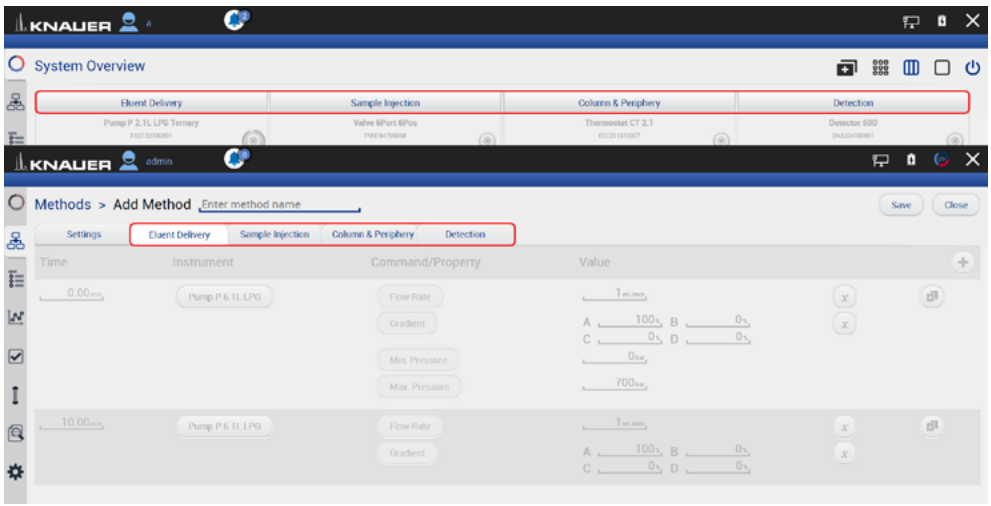


Fig. 6-10 Arrangement of the device components

Practical tip: For easier handling, all device components in the menu “Methods” are arranged in the same way as the tabs in menu “System Overview“.

6.4 Settings

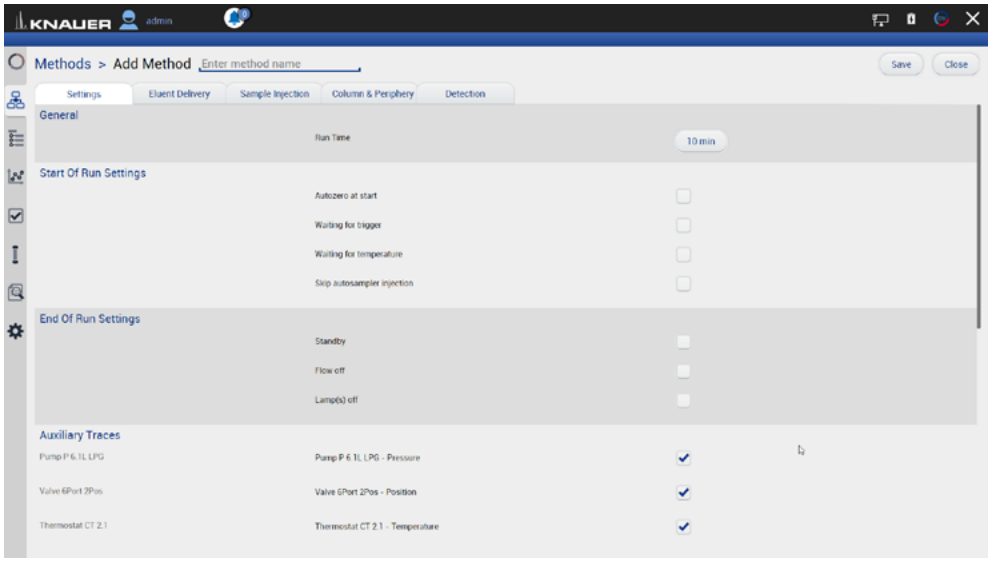


Fig. 6-11 Add Method - example for settings (upper part)

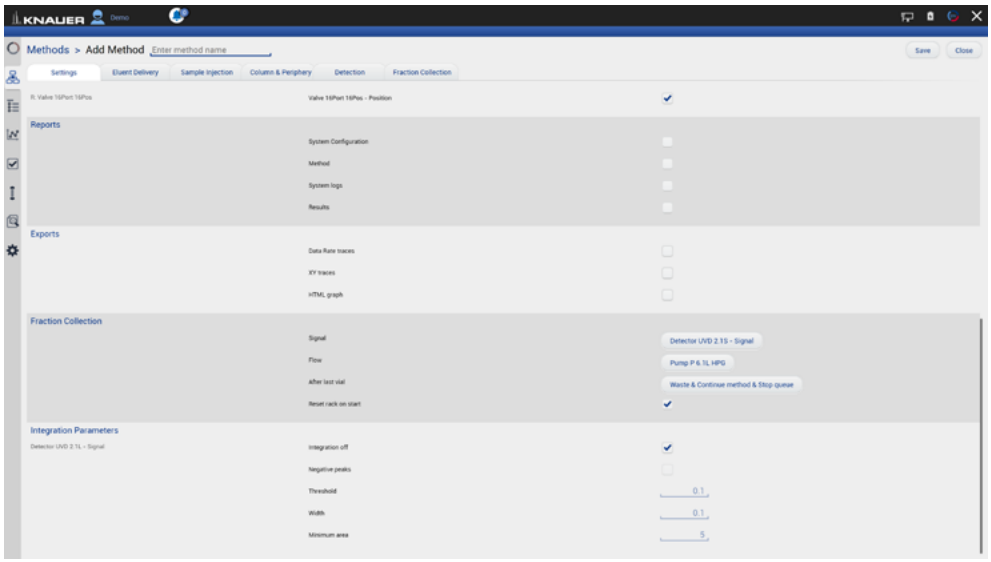


Fig. 6-12 Add Method - example for settings (lower part)

Start of run settings		
	Autozero at start	Performs an autozero at the start of the method if activated.
	Waiting for trigger	Starts the run not until a signal was sent from an external device e.g. injection valve.
	Waiting for temperature	Starts the run not until a defined temperature is reached. Start temperature can be defined in the column thermostat CT 2.1 or in the RI detector RID 2.1L.
	Skip autosampler injection	The method is carried out without the injection step of the autosampler.
End of run settings		
	Standby	All devices go in standby mode after the run.

	Flow off	Flow of the pump is automatically switched off after the run.
	Lamp(s) off	Lamp of the detector is automatically switched off after the run.
Auxiliary traces (not available in Display License)		
	Autosampler - Temperature	
	Column Thermostat - Temperature	
	Detector (AZURA® RID 2.1L, DAD 2.1L/6.1L, MWD 2.1L) - Temperature	
	Pump - Pressure, Flow rate in isobar/constant pressure mode	
	Valve - Position	
Reports		
	System Configuration	Choose the components, which should be displayed in the system report.
	Method	
	System logs	
	Results	
Ex**ports**		
	Data Rate traces XY traces HTML graph	Export the signal and auxiliary traces as values of the signal strung together or as a pair of time and signal value. The chromatogram is exported as HTML file.
Fraction collection		
	Signal Flow After last vial Reset rack on start	fraction collection relevant method settings (see chapter 13.1.2)
Integration parameters (not available in Display License)		
	Integration off	Activate the checkbox to edit integration parameters.
	Negative Peaks	
	Treshold	
	Width	
	Minimum area	

6.5 Eluent Delivery

Legend

① **Time**
Enter point of time

② **Instrument**
Select device

③ **Command/Property**
Select parameter

④ **Value**
Enter value

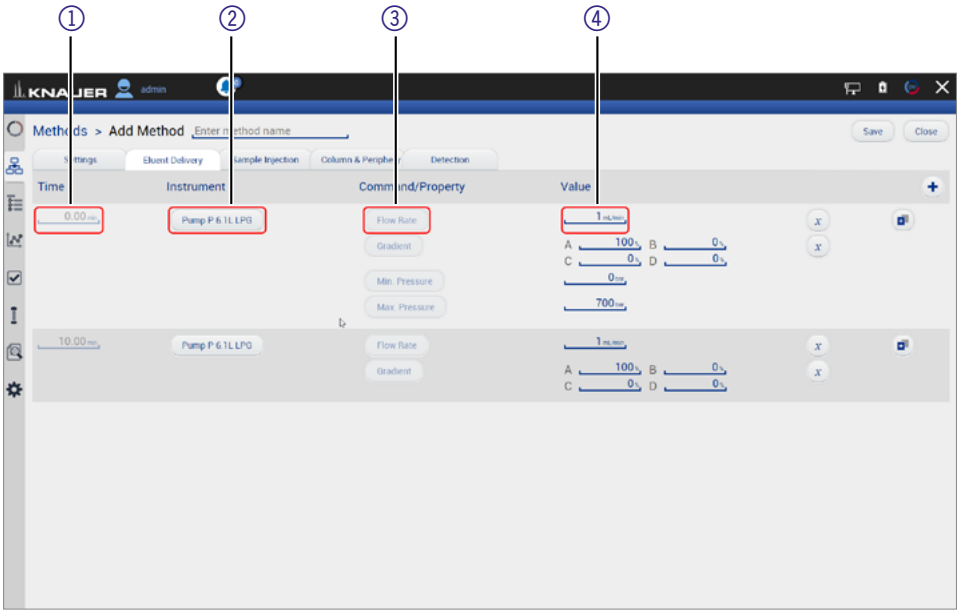


Fig. 6-13 Methods - Example for Sample Injection

6.6 Sample Injection

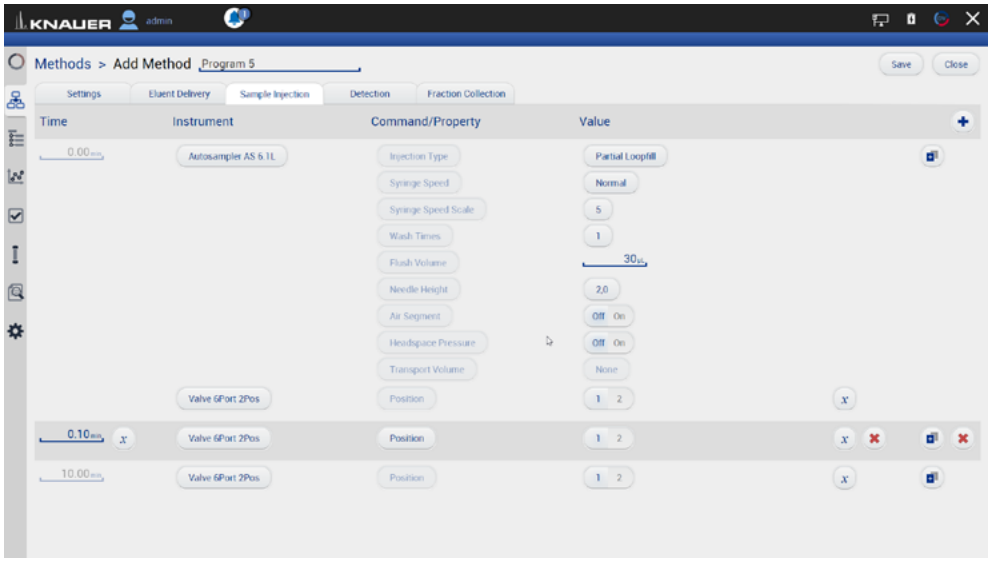


Fig. 6-14 Methods - Example for Sample Injection

6.7 Detection

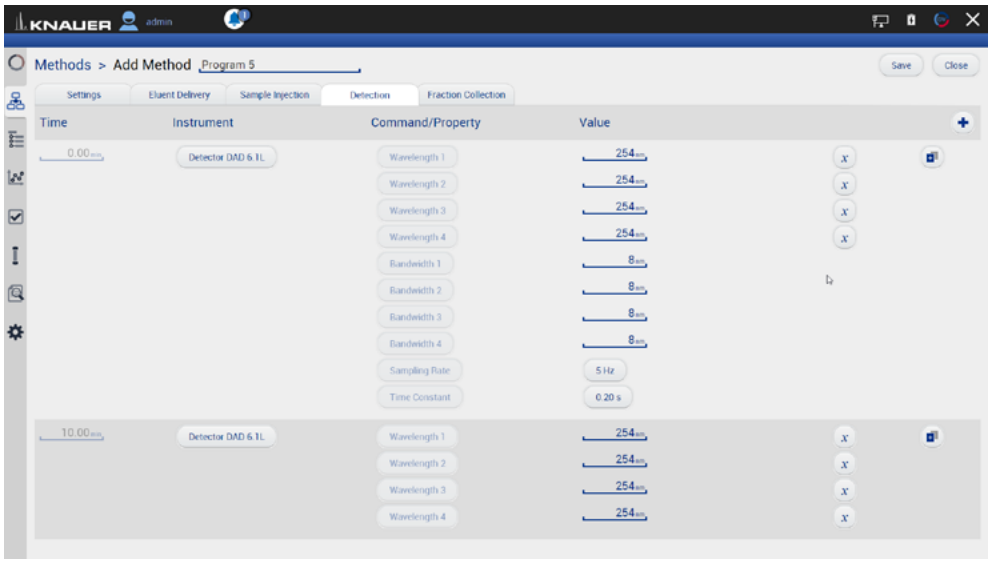


Fig. 6-15 Methods - Example for Detection

6.8 Fraction Collection

Note: Only one multiposition valve or a fraction collector can be addressed for fraction collection. Cascading of several valves is not supported.

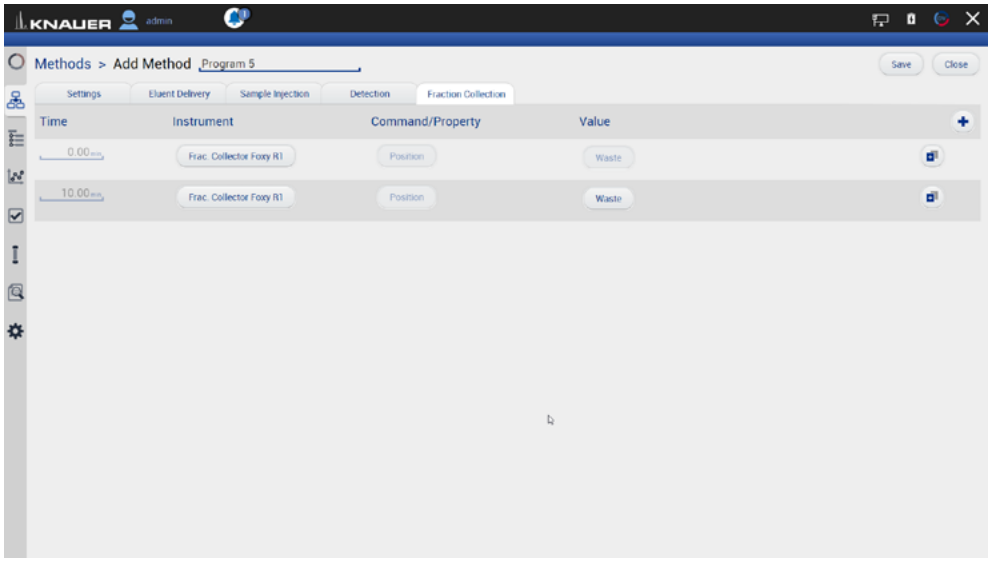
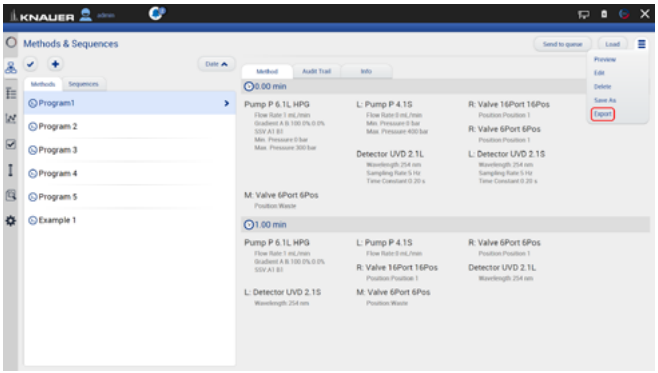
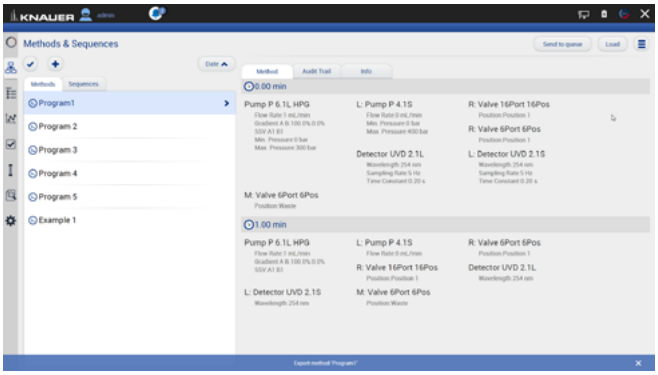
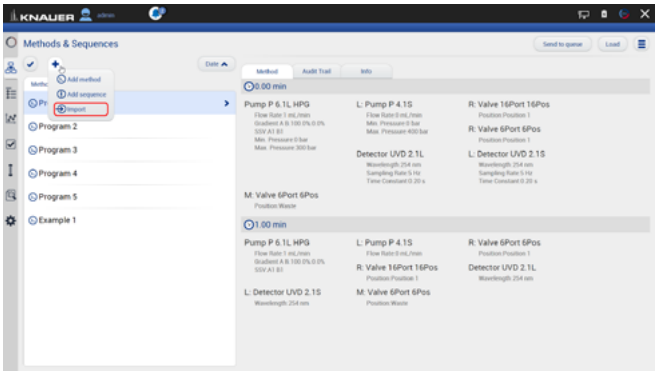


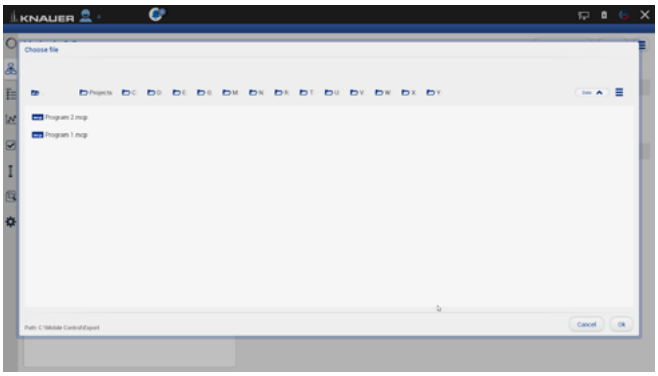
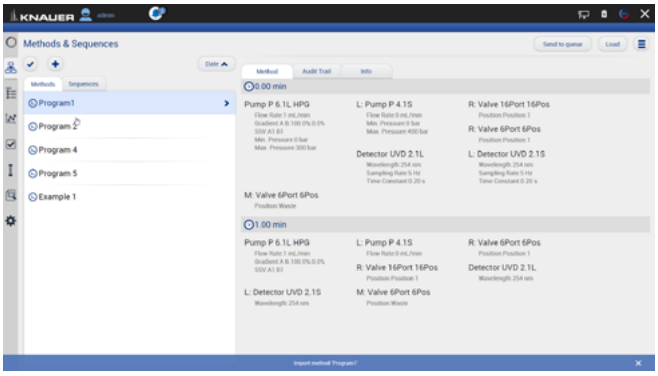
Fig. 6-16 Methods - Example for Fraction Collection

6.9 Export and import methods

Note: Only methods can be exported or imported. The function does not support sequences. Only exchange methods between systems with the same system configuration.

Process	Figure
Export **1.** Go to METHODS & SEQUENCES and choose the tab "Methods". **2.** Select the method to be exported and tap <Export> in the upper right menu. **Note:** To export more than one method refer to chapter 6.10.	 **Fig. 6-17** Exporting a method
3. The method is exported and saved in C:\Mobile Control\Export:	 **Fig. 6-18** Exporting one method

Process	Figure
Import By selecting more than one program several programs can be imported. **1.** Go to METHODS & SEQUENCES and choose the tab "Methods". **2.** Tap <+> and choose <Import>.	 **Fig. 6-19** Importing a program

Process	Figure
3. A folder opens. Select the method or several methods to be imported.	
	Fig. 6-20 Choosing a file
4. The methods are imported.	
	Fig. 6-21 Importing several programs

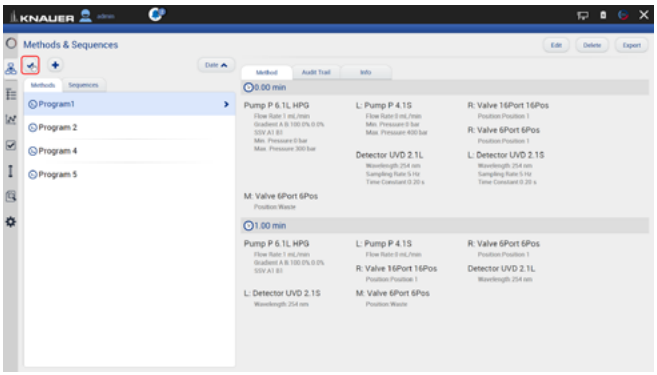
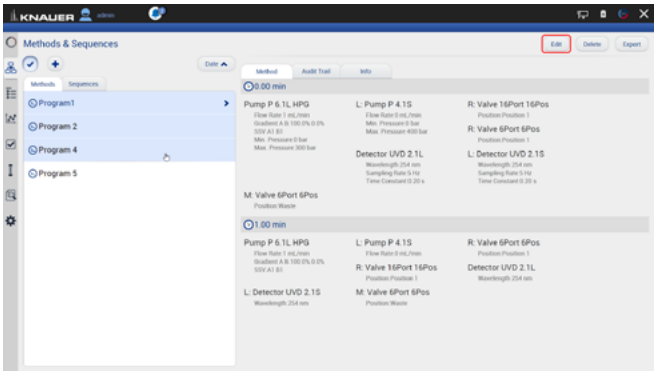
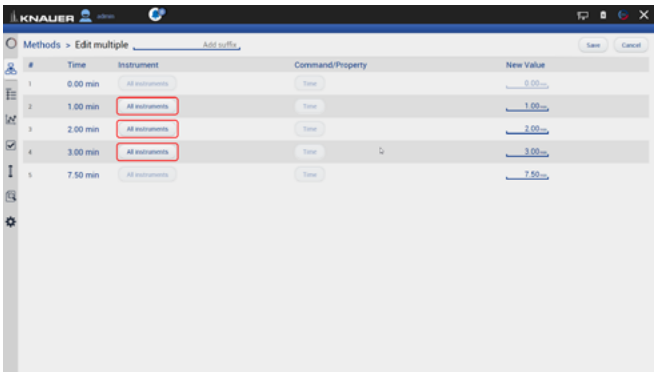
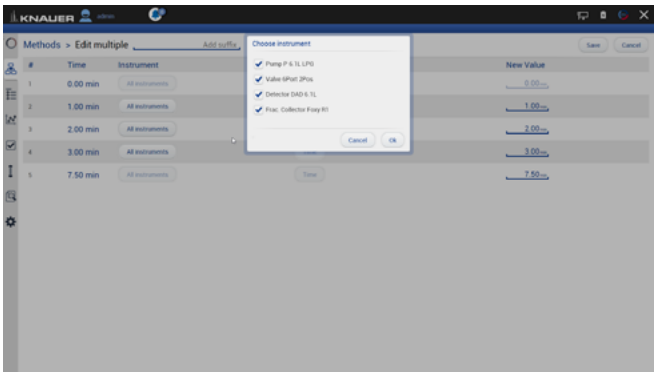
6.10 Edit, export or delete multiple methods

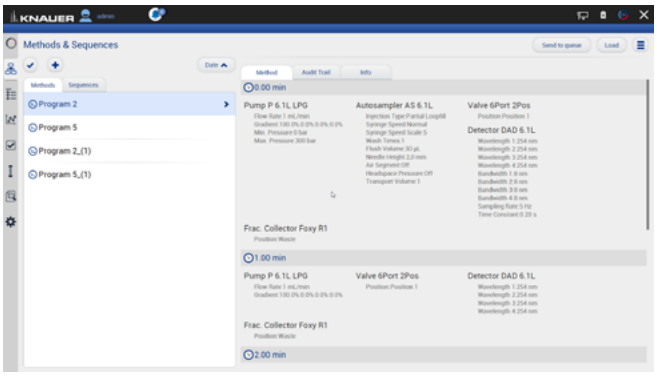
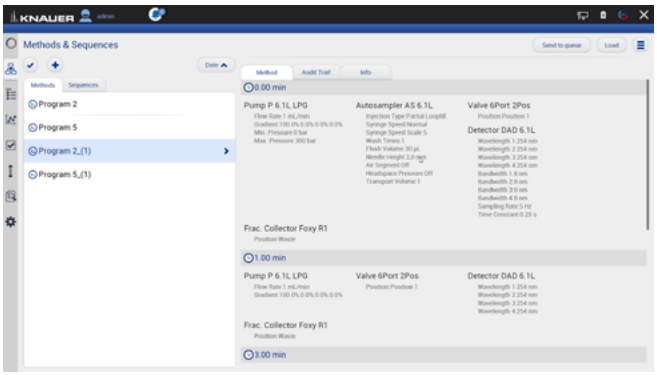
With this feature you can select several methods to export, delete or edit them. The multiple editing function avoids time-consuming editing of each individual method. Consider that only time points which are equal in all selected methods can be changed.

Do not apply edit multiple for running methods. Use this function for example to adjust fraction collection to a shifted retention time of the target peak. The time point of switching the fraction collection valve can be adjusted in all desired methods.

Device parameters like valve position, flow rate or wavelength cannot be changed.

Note: Editing the first and last line of multiple methods is not supported.

Process	Figure
Edit multiple programs **1.** Go to METHODS & SEQUENCES and choose the tab “Methods”. **2.** Tap the multi select button to selcet multiple methods.	
	Fig. 6-22 Select multiple methods
3. Select several methods that you want to edit and press <Edit>.	
	Fig. 6-23 Edit multiple methods
4. To select the insruments you want to edit tap <All instruments>.	
	Fig. 6-24 Select instruments
5. Choose the instruments you want to edit and press <Ok>.	
	Fig. 6-25 Confirm selection

Process	Figure
6. Change the time of the program line you want to adjust. If you enter a suffix the program will be copied with program name + suffix. If nothing is entered the program is overwritten.	
	Fig. 6-26 Enter a suffix and adjust the time
7. Confirm your settings with <Save>.	
	Fig. 6-27 Updating
8. The methods with modified time points have been saved as a copy with the filename + suffix.	
	Fig. 6-28 The original method is selected.
9. Program line three has been changed from 2 to 5 minutes.	
	Fig. 6-29 The adjusted program is selected.

Process	Figure

Delete multiple programs

1. Go to METHODS & SEQUENCES and choose the tab “Methods”.
2. Tap the upper right menu and choose <Select>.
3. Select the programs you want to delete.
4. Press <Delete>.

Note: Export of several programs works the same way. Instead of delete use the export button.

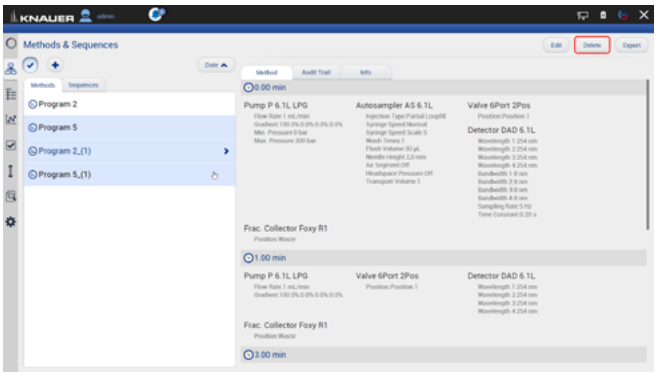


Fig. 6-30 Delete multiple programs

5. Confirm your selection with <Ok>.

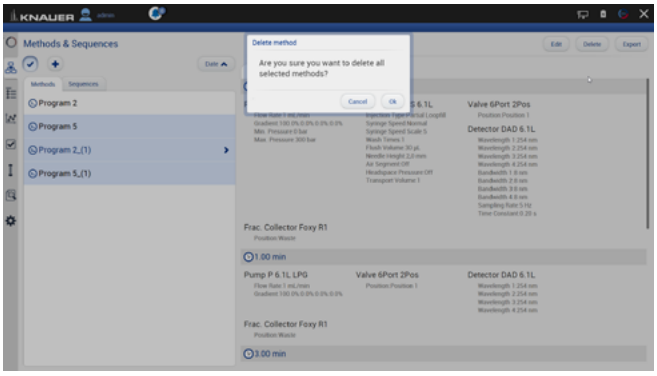


Fig. 6-31 Confirm selection

6. The selected programs have been deleted.

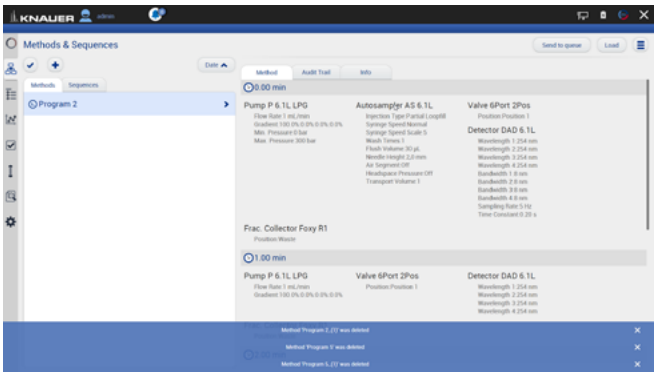
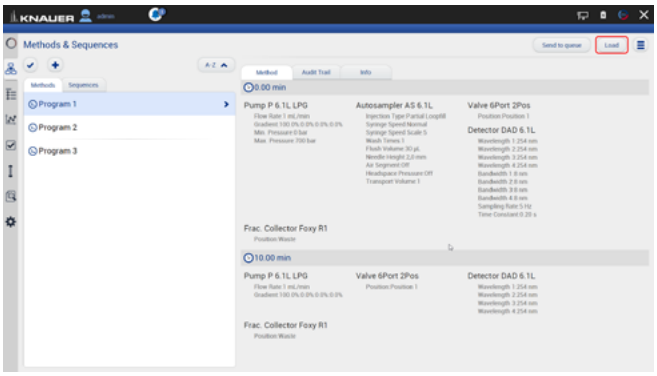
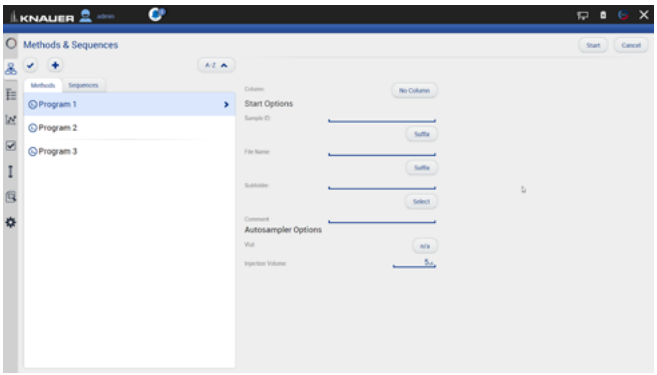
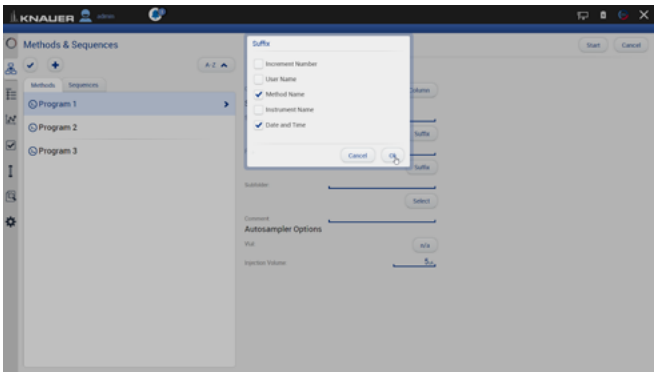
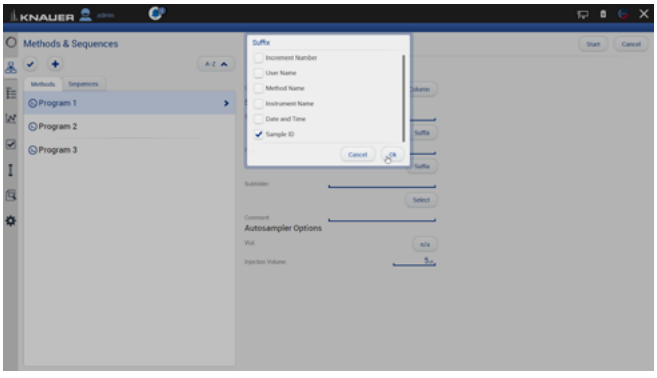


Fig. 6-32 Programs have been deleted.

6.11 Start a method

6.11.1 Starting a single method

Process	Figure
1. Go to Methods & Sequences and choose the tab “Methods“. 2. Press <Load>.	
	Fig. 6-33 Load the method
3. By clicking you will be directed to a new tab with input fields to enter a sample ID, file name and comment. All entries are saved in the result file and part of the report. 4. Select <Suffix> to name the measurement. 5. Select the subfolder which was created in Settings/User Management	
	Fig. 6-34 Input before method start
You can choose between: ■ Increment Number ■ User Name ■ Method Name ■ Instrument Name ■ Date and Time We recommend to choose “Method Name“ and “Date and Time“. 6. Confirm your selection with <Ok>.	
	Fig. 6-35 Input for sample ID
7. Select <Filename> to name the file. To avoid same filename, naming of the run has to be individually. We recommend to choose “Method Name“ and “Date and Time“. 8. Confirm your selection with <Ok>.	
	Fig. 6-36 Naming the method

9. If you select <Start>, a new time bar is shown on the upper part of the screen.
   It shows the name of the method and the progress of the run.
10. You can abort the run by pressing <Stop>.

Fig. 6-37 Start the run

11. The method is send to the run queue.
    For more information refer to chapter 7.

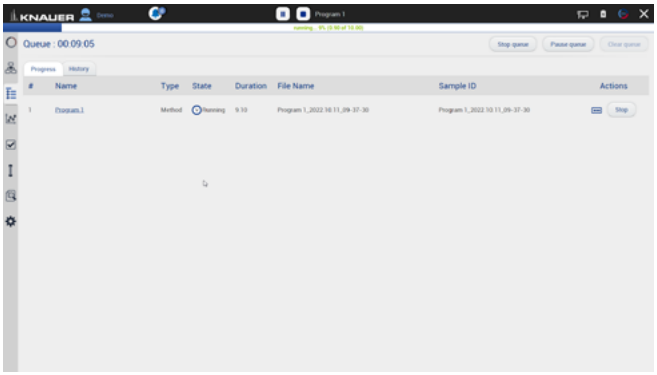


Fig. 6-38 Method in run queue

12. If you set a start with external trigger, measurement starts if you press the Play button ▶ or by release of the signal from a device (e.g. release of manual injection valve).

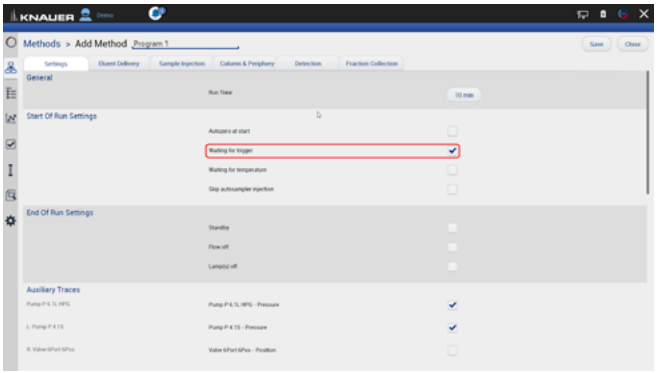
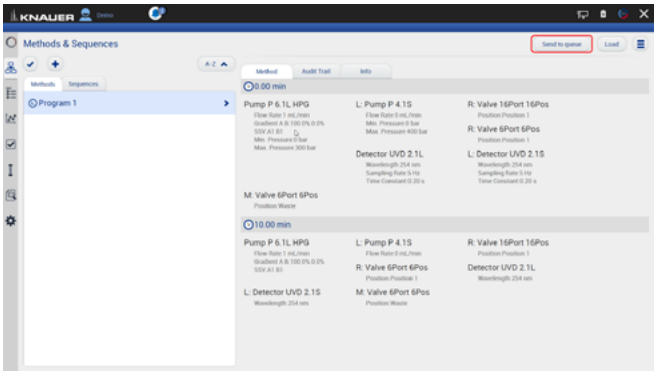
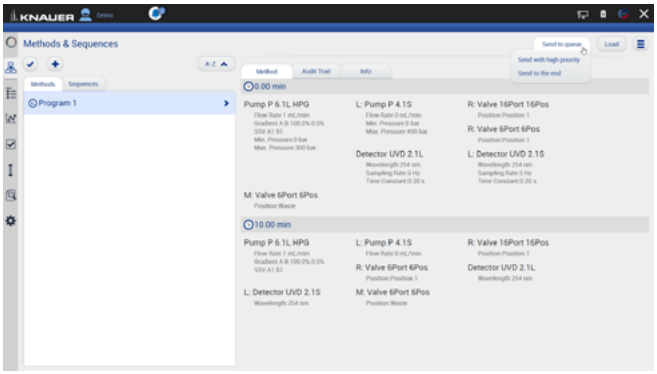
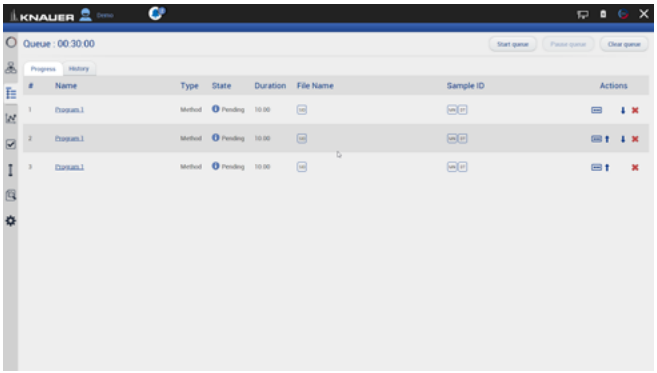
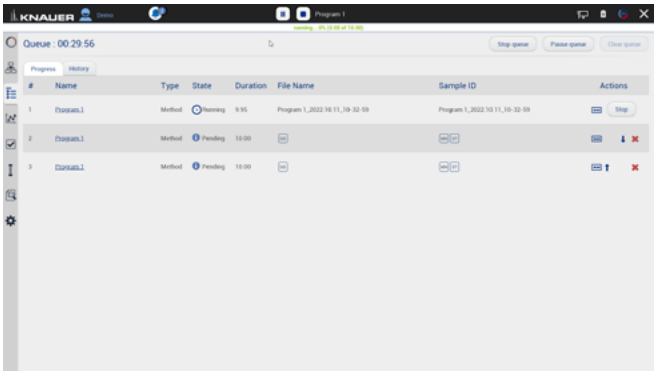


Fig. 6-39 Activate the trigger in method setting

Fig. 6-40 Start a loaded method with the Play button ▶.

6.11.2 Starting several programs/sequences

Process	Figure
1. Go to METHODS & SEQUENCES and choose the tab “Methods” or “Sequences” 2. Choose the program or the sequence. 3. Select <Send to queue>.	
	Fig. 6-41 Send a method or sequence into the run queue
4. If you select <Send to queue> you have two further options: a) <Send with high priority> means the sequence will start at first or next if a method is already running. b) <Send to the end> means the sequence is inserted at the last position of the run RUN QUEUE.	
	Fig. 6-42 Further options
5. Select the menu RUN QUEUE which shows a list of all added methods and sequences. You can delete or rearrange the order of methods/sequences. 6. Press <Start queue> to start the run.	
	Fig. 6-43 Further options
7. If you select <Start>, a new time bar is shown on the upper part of the screen. It shows the name of the program and the progress of the run. 8. You can abort the run by pressing <Stop>.	
	Fig. 6-44 Further options

9. After the successful run, a status message is shown. If reporting is selected in method settings, a second status which shows the report file name, links to the PDF file.

   If ASCII export is selected, a third status links to the CSV file.

Fig. 6-45 Method is finished and status lines are shown.

6.11.3 Preview run

Process	Figure

Preview run

1. In the preview run the first program line of all devices will be executed. This allows to check if all devices are running as expected to equilibrate the system. The maximum duration of preview run is 4 hours infinite time and has to be stopped manually. During a preview run signals from detectors or auxiliary traces will be acquired.
2. The result file is stored in C:\Mobile Control\Projects\Default\Results\preview_run.h5 and is overwritten with every started preview run.

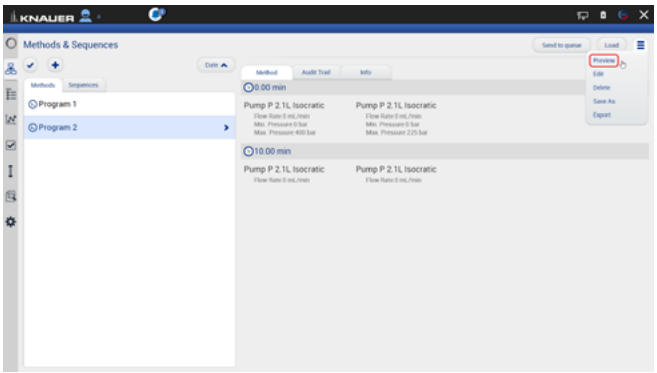


Fig. 6-46 Select preview

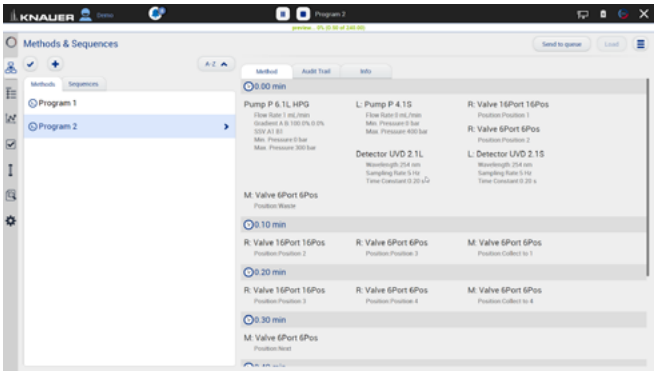


Fig. 6-47 Preview run is started

6.12 Audit trial

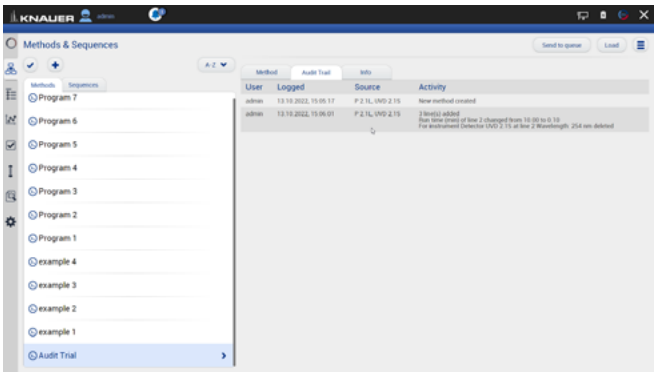
Process	Figure
The audit trial records all changes in methods/ sequences. A list summarizes all altered commands by a user with a timestamp. The audit trial can be activated in the settings of Mobile Control (refer to chapter 12.1.4 Preferences). If you press <Method> you return to the window with Methods and Sequences.	

Fig. 6-48 Audit trial

6.13 Add a sequence

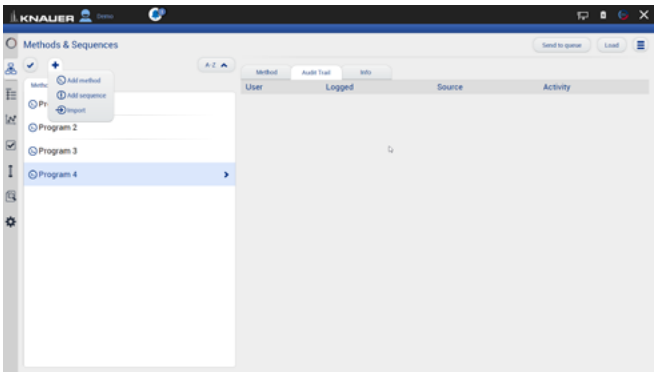
Process	Figure
1. Go to METHODS & SEQUENCES. 2. Select <+> and tap “Add a sequence“.	

Fig. 6-49 Add a sequence

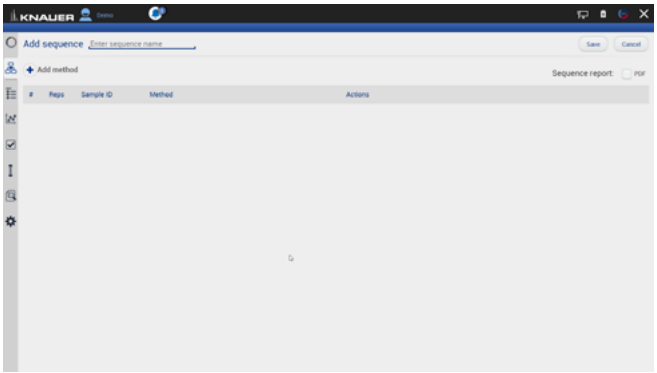
3. Name your sequence. 4. Click on the <+> Add method to choose one of the existing methods. Further you can add the sample ID, file name, a comment or set the number of repetitions.	

Fig. 6-50 Name a sequence

5. Select the method you want to run first.
   You can change the order of methods also at the end.
6. Confirm with <Ok>.

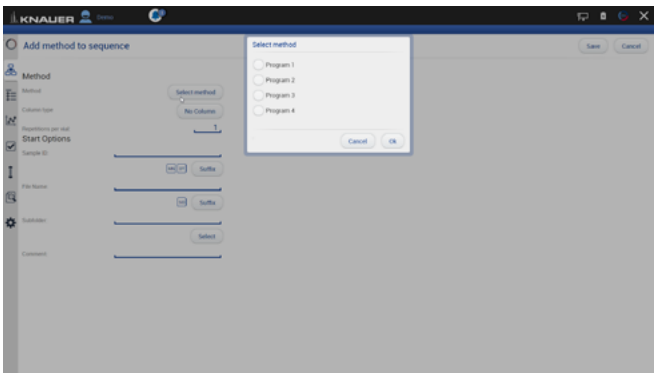


Fig. 6-51 Add method to sequence

7. Tap <No Column> and select a column from the list.
8. Confirm with <Ok>.

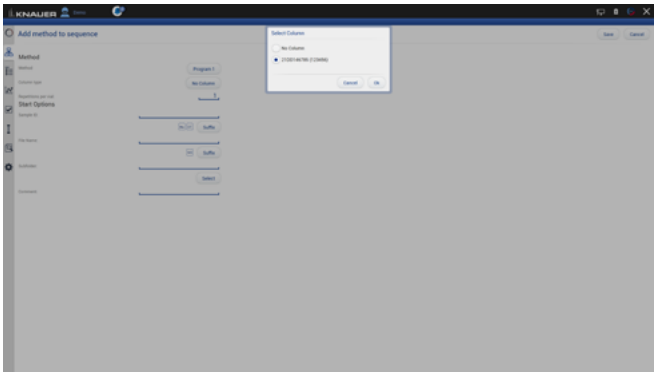


Fig. 6-52 Select a column

9. Name the Sample-ID and select <Suffix>.

   You can choose between:
   - Increment Number
   - User Name
   - Method Name
   - Instrument Name
   - Date and Time
10. Confirm with <Ok>.

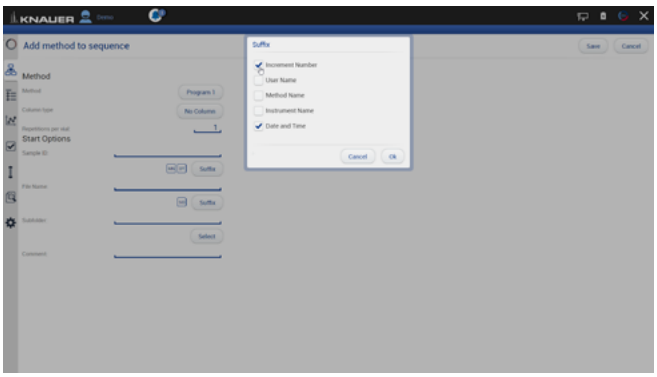


Fig. 6-53 Sample ID

11. Name the Filename and select <Suffix>.

    You can choose between:
    - Increment Number
    - User Name
    - Method Name
    - Instrument Name
    - Date and Time
    - Sample-ID
12. Confirm with <Ok>.

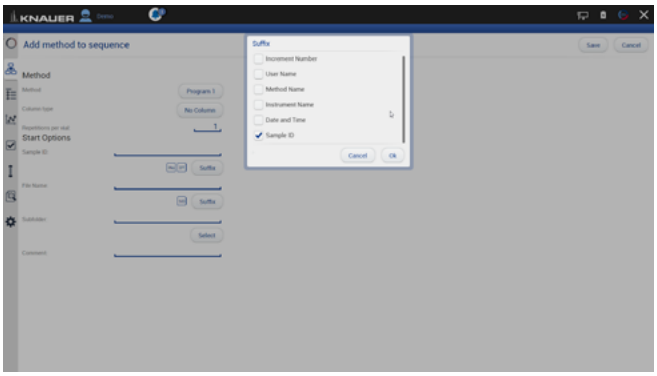


Fig. 6-54 Naming the method

13. Tab <Subfolder> to select a subfolder.

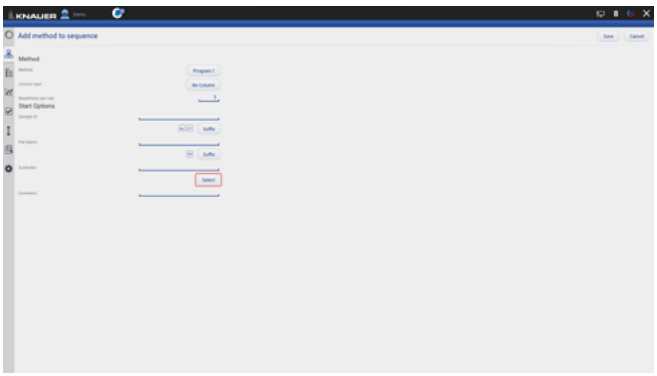


Fig. 6-55 Select a subfolder

14. Select the repetitions per vial.
15. Confirm your settings with <Save>.
    You will be directed to a new window.

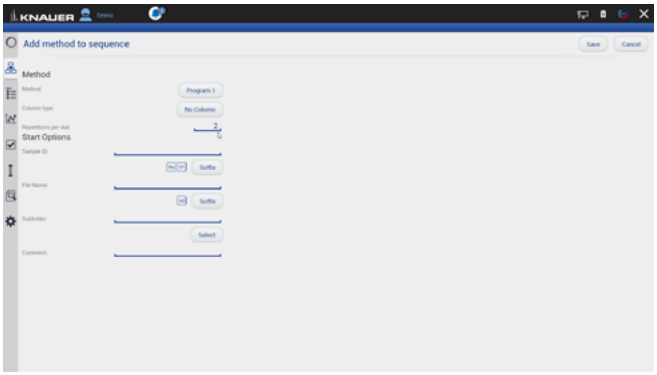


Fig. 6-56 Set repetitions

16. A list summarizes all programs the sequences.
17. Click on the pen symbol to edit the sequence. Click on the red cross to delete the program.
18. Press <Save> to save the sequence.
19. Select the <+> symbol to add the next program. Add the next program.

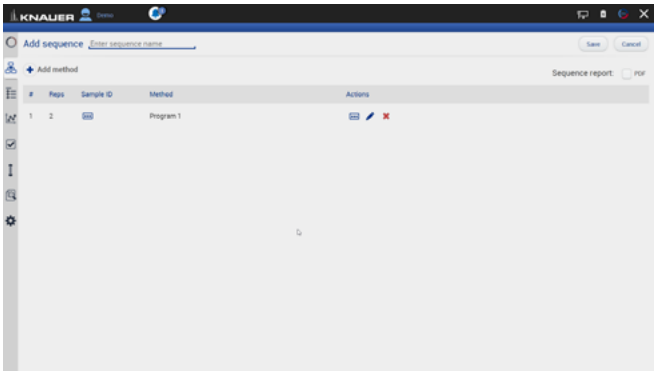


Fig. 6-57 Overview of sequence

20. Select the program.
21. Proceed in the same way as done with first program (Sample naming).

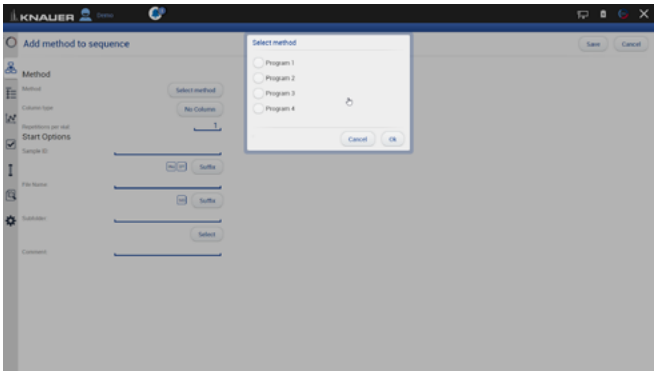


Fig. 6-58 Select a program

22. You see both programs in the list.
23. You can change the order by selecting the arrow on the right side of each row.
24. Activate the check box PDF to create a sequence report.

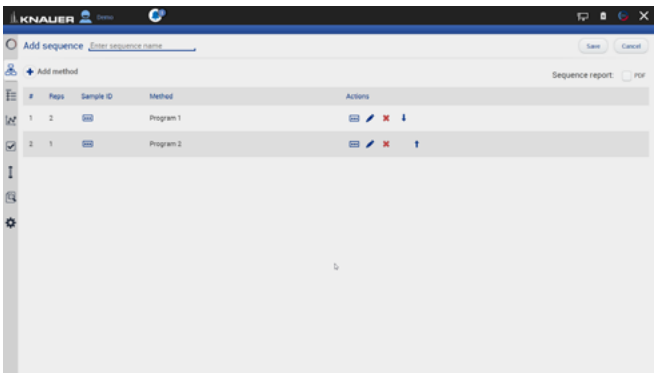


Fig. 6-59 Overview of sequence

25. Select <Save>. You will be directed to the homescreen of menu the METHODS & SEQUENCES.

6.14 Variables

Method variations can be easily performed with the help of method variables. Variables can be defined for method parameters like time of a command, flow rate of a pump. Before starting the method, the numerical values for the defined variables are entered.

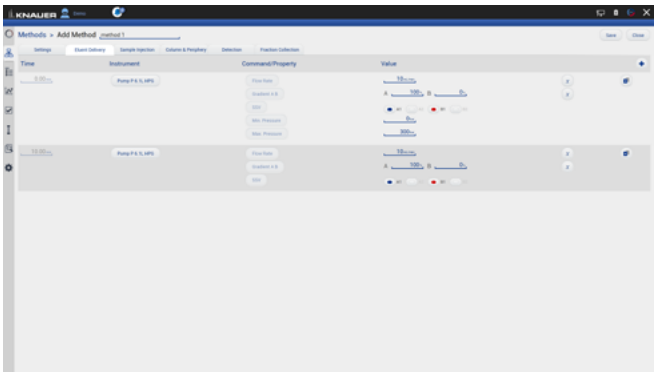
Process	Figure
1. Create a method. 2. Press the “x” button next to the parameter value.	

Fig. 6-60 Add a sequence

3. Create a new variable and press ‘Ok’.

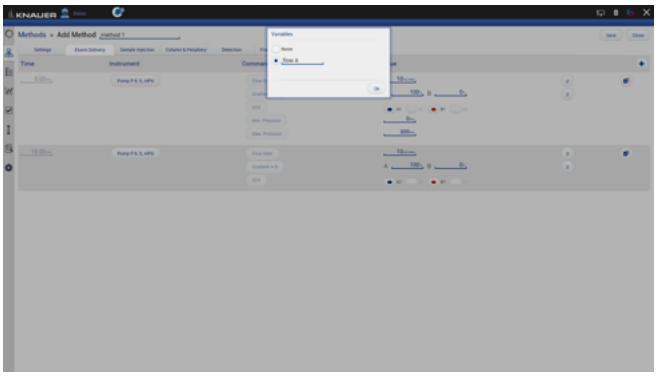


Fig. 6-61 Creating a new variable

4. In the next method line, the existing variable can be selected or a new variable can be created.
5. Save the method and press ‘Load’. Before starting the method, the variable value has to be entered.

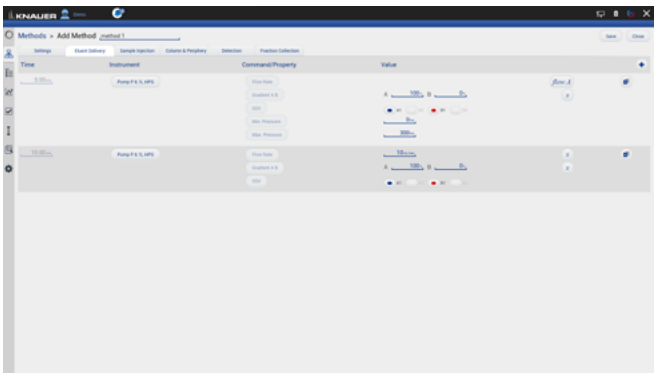


Fig. 6-62 Create more or select existing varaiables and save the method

6. The method is started with the entered values for the variables.

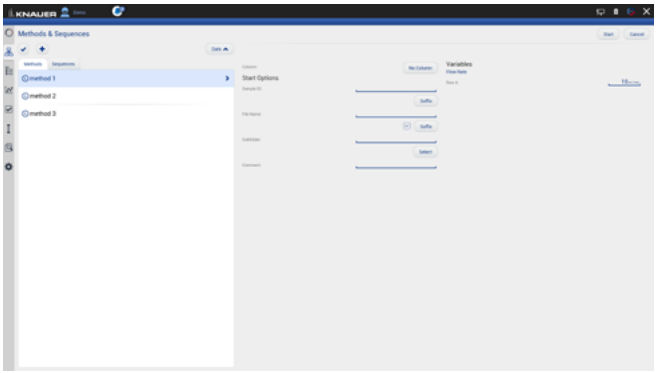


Fig. 6-63 Select a column

Note: For sequences the value of the variable is entered for each sequence line during editing of the sequence.

7. Run Queue

The run queue is used to manage and schedule methods and sequenes. Once a sequence or method is initiated, it is entered into the run queue automatically.

7.1 General interface

To view the current run queue, select the <Run Queue> button. Each row in the run queue represents a method or sequence that is in process or waiting. From the run queue, you can view details about each run or sequence in the queue, including the following:

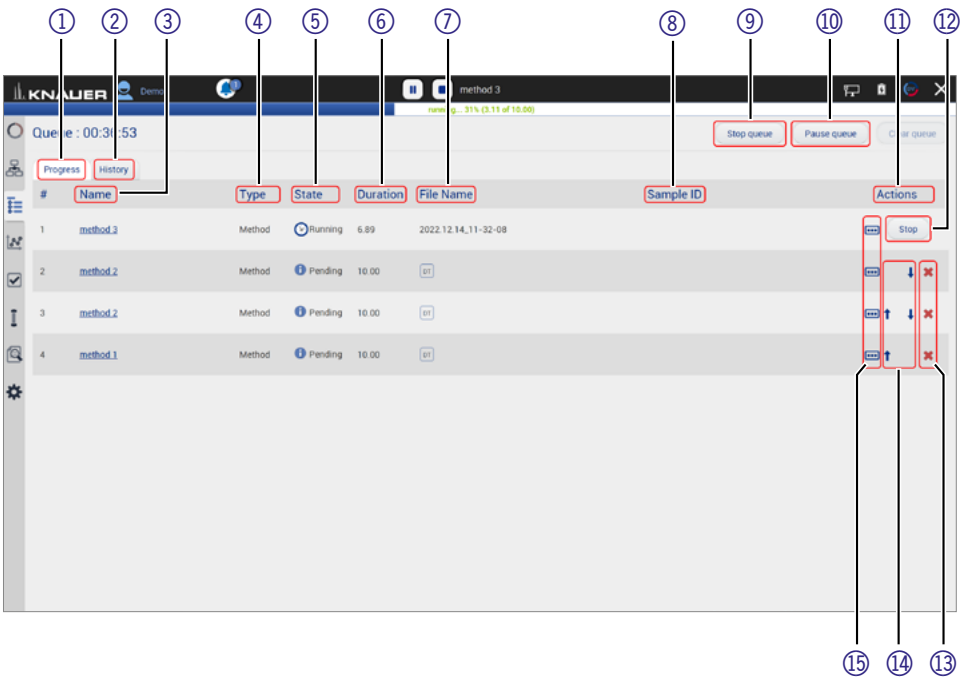


Fig. 7-1 General interface

Legend

① Tab <Progress> shows the sequences that still have to be processed.

② Tab <History> shows the sequences that have already been processed.

③ Name of the method/sequence

④ Type of the method/sequence

⑤ State - Pending, Running, Completed, Aborted

⑥ Duration of the method/sequence

⑦ File name of method/sequence (refer to chapter 6.11)

⑧ Sample ID (refer to chapter 6.11)

⑨ <Stop Queue> aborts the actual method/sequence

⑩ <Pause Queue> immediately pauses the run. You can decide whether the flow is off or kept on.

⑪ Actions - you can stop methods/sequences.

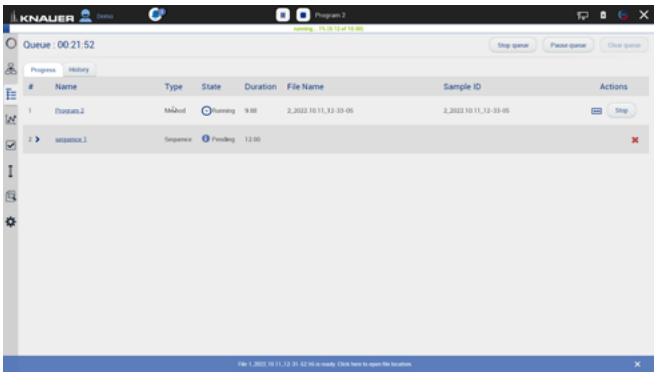
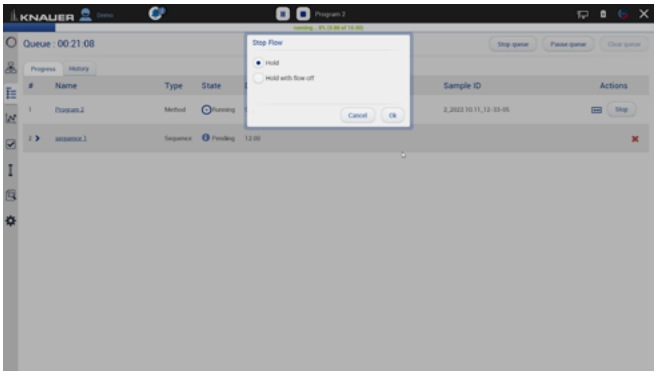
⑫ <Stop> will immediately terminate the item currently running in the queue and pause the sequence.

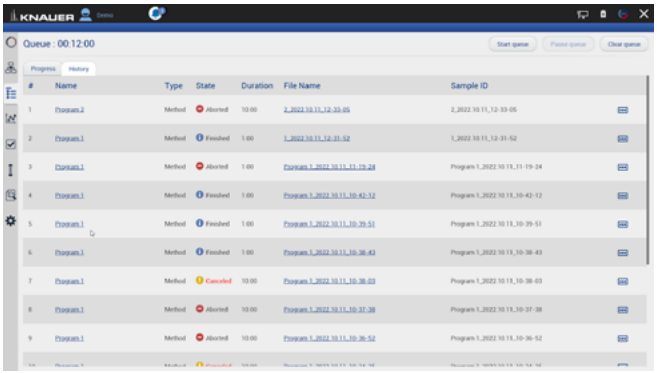
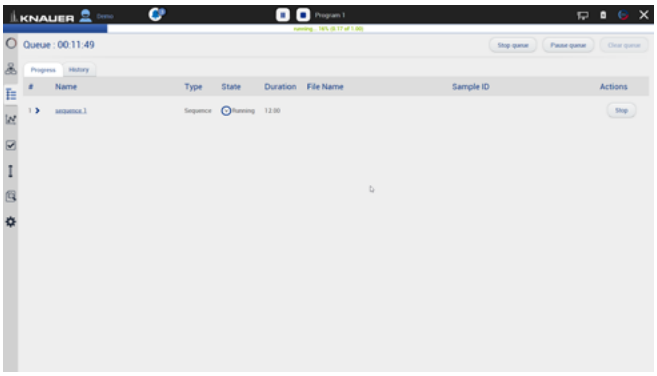
⑬ Delete method/sequence from run queue

⑭ Rearrange order of methods/sequences

⑮ Show comments

7.2 Show progress and history

Process	Figure
Tab <Progress> **1.** You can view all queued methods/sequences.	
	Fig. 7-2 Show progress
2. Select <Pause Queue> to hold the flow with the following options: ■ Hold ■ Hold with flow off	
	Fig. 7-3 Pause Queue

Process	Figure
Tab <History> **1.** You can view all previous performed methods/sequences.	
	Fig. 7-4 Show history
2. You see a list with important data of the method/sequence. ■ Name of method/sequence which is linked to the corresponding entry in Methods & Sequences ■ Type (method/sequence) ■ State ■ Duration ■ Filename which is linked to the folder which holds the result file, reports and exports ■ Sample ID ■ Comments **3.** To return, select <Progress>.	
	Fig. 7-5 History list

8. Chromatogram view

With the start of data acquisition at the beginning of a method or sequence, a new icon appears on the left side of the screen. The chromatogram view opens automatically after method start and which shows the detector signal, auxiliary and method traces.

8.1 Live traces

Data acquisition can be started independent from the start of a method. Click the "start live" button in the Chromatogram View. Adjust the duration of the displayed live trace in Settings/Preferences – 1, 5, 15, 30, 45, 60 min. A result file cannot be saved from the acquired live trace data.

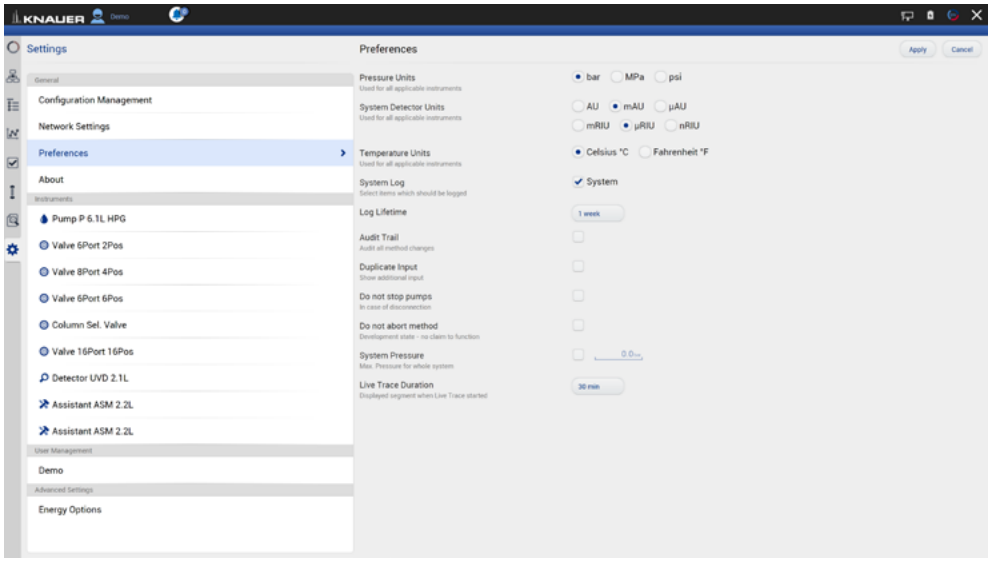


Fig. 8-1 Settings / Preferences / Live Trace Duration

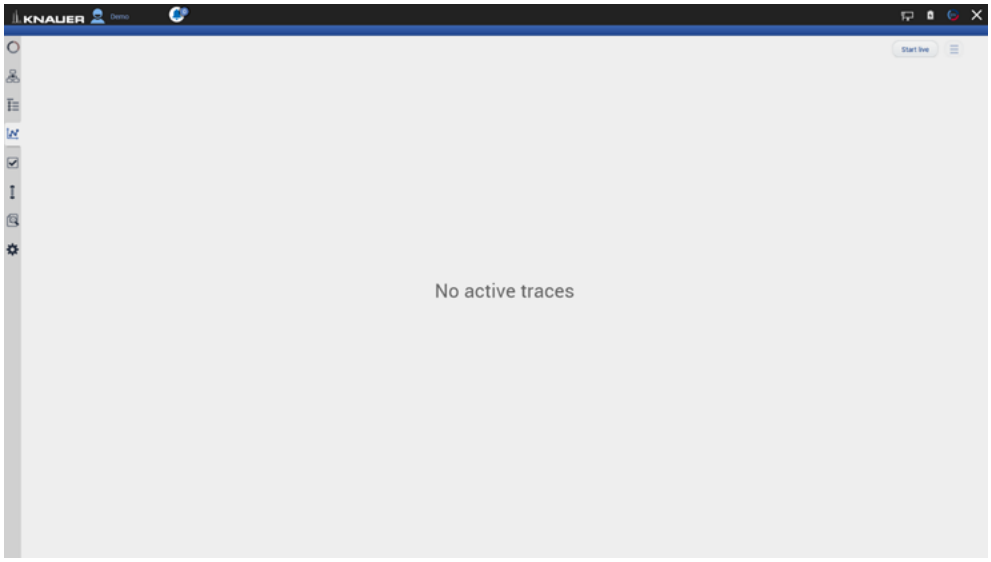


Fig. 8-2 Chromatogram View with Start live button

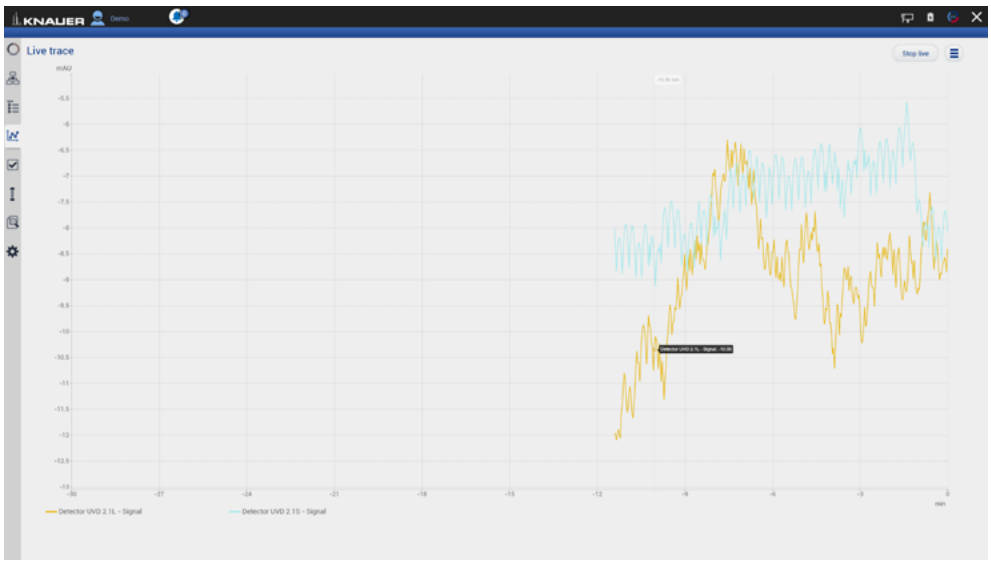


Fig. 8-3 Live traces

8.1 Showing/hiding traces, defining left y-axis

In the list of traces all available data traces, auxiliary traces and method parameters are shown. Switch buttons to <ON> to display the traces in the chromatogram.

Process	Figure
1. You can activate the traces during or after a measurement. **2.** To show or hide the traces, select <Traces> which is part of the multi function button. A new window is opened.	

Fig. 8-4 Show traces

3. Activate the boxes to display the traces.

4. Confirm with <Ok>.

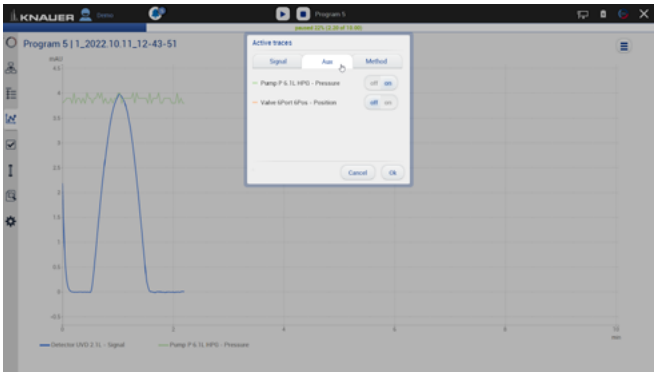


Fig. 8-5 Active traces

Note: The selection of traces displayed in the chromatogram is saved. The next time the method is started, the chromatogram is displayed in the same view.

The selection of traces is saved in the result file. The Data Viewer shows the chromatogram in the same view as it was recorded in Mobile Control.

Note: Activate the method trace "gradient" to display the composition of the gradient in the chromatogram.

5. Define left y-axis.
   The scale and unit of the left y-axis can be assigned to different traces. Touch the trace name of interest and the y-axis will adapt to the trace. The selected trace name is highlighted in bold font.

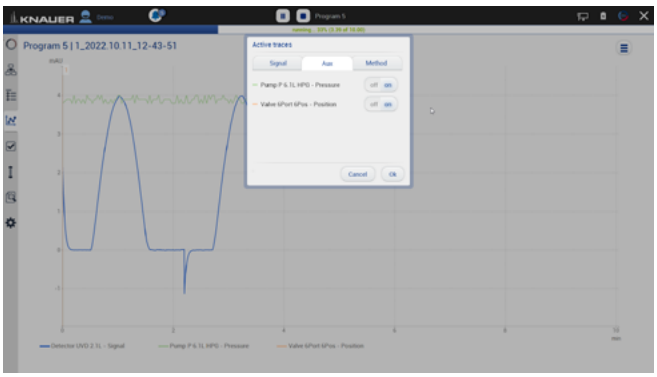


Fig. 8-6 The UV trace is selected. The y-axis shows the absorbance in AU.

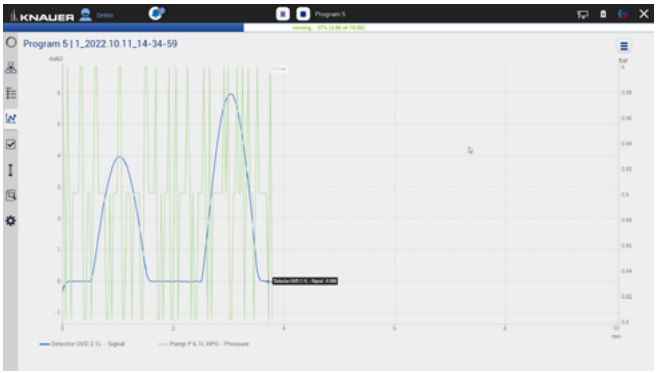


Fig. 8-7 The pressure trace is selected. The y-axis shows the pressure in bar.

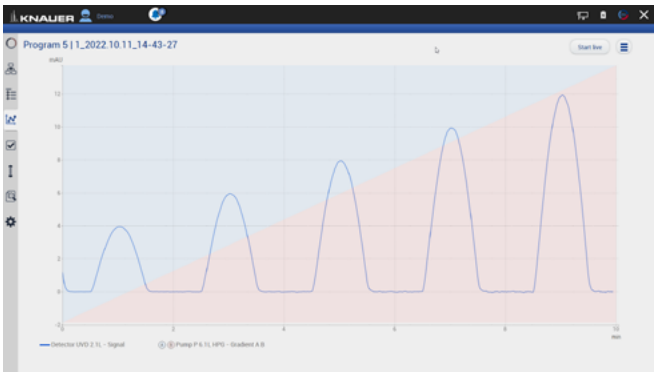
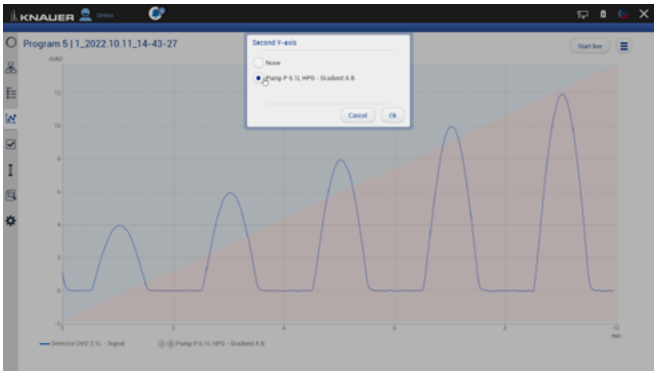
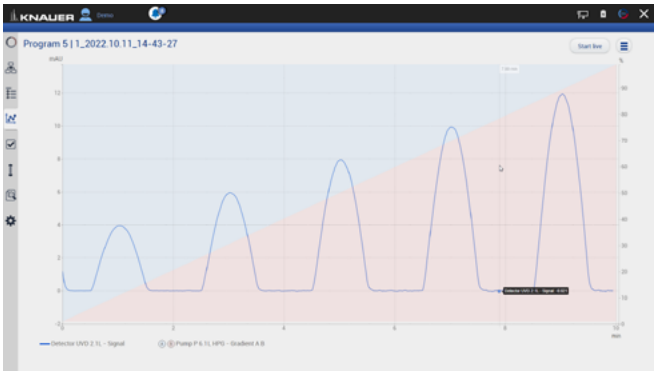
8.2 Normalize traces

Process	Figure
1. Traces can be normalized to other traces. Traces which are too far apart to be displayed together can be shown in the chromatogram window.	

Fig. 8-8 Select the trace to normalize.

Fig. 8-9 Normalized traces shown in the chromatogram.

8.3 Add Second y-axis

Process	Figure
For one of the active traces a 2nd y-axis can be added. The 2nd y-axis on the right shows the unit and the scale for the selected trace. The trace is automatically normalized. **1.** Chromatogram shows two traces, the UV signal and gradient composition.	
	Fig. 8-10 Chromatogram shows UV signal and gradient composition
2. For one of the active traces a 2nd y-axis can be added. Select the gradient/ desired trace after pushing <Second y-axis>.	
	Fig. 8-11 Select second y-axis for pump gradient
3. The 2nd y-axis on the right shows the unit and the scale for the selected trace (gradient composition of pump). The trace is normalized automatically.	
	Fig. 8-12 2nd y-axis shows the composition of the gradient on a percentage basis

8.4 Zoom into the screen

8.4.1 Via hand

To move the data trace, touch the surface with one finger and move the finger in the required direction (refer to Fig. 8-12).

1. To zoom in, touch the screen with two fingers and slide them apart.
2. To zoom out, touch the screen with two fingers and slide them together.
3. Double click on the screen with finger to scale the data trace to original size

Note: Zoom along the y-axis of the program trace gradient composition is not supported.

Fig. 8-13 Zoom in and out

8.4.2 Via mouse

The data trace can be moved by moving the mouse with pressed left mouse button.

1. Scroll wheel up/down + ALT: Zoom in/out y-axis.
2. Scroll wheel up/down + CTRL: Zoom in/out x-axis.

Double-click with the left mouse button to completely unzoom the data track.

Note: After zooming, the view section can be moved down, up, left and right.

9. Checks & Tests

9.1 GLP

In menu GLP, you find a list of all devices for which GLP data can be displayed. Choose the respective device to view GLP data. By pressing the button “Show all errors” the device errors of each device are displayed.

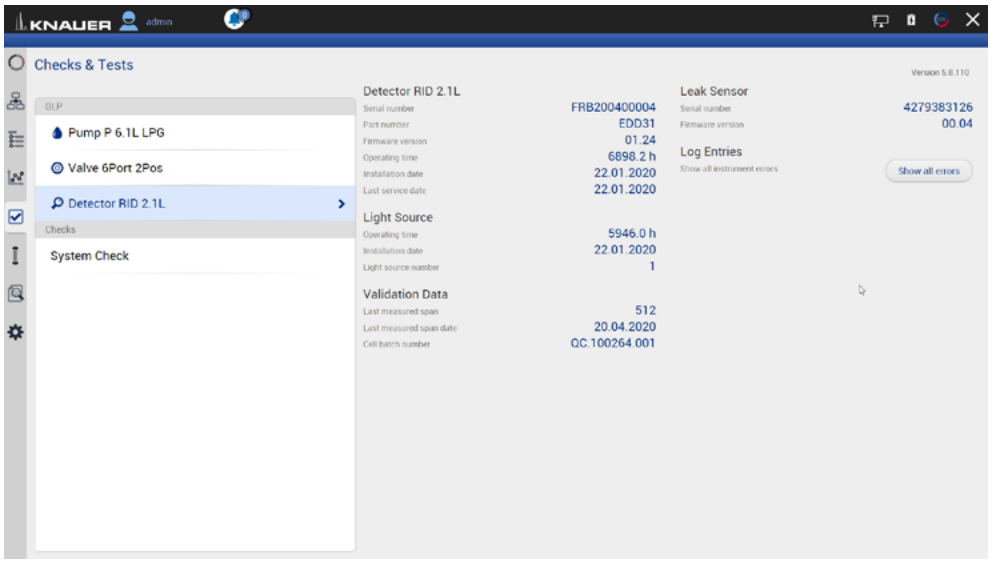


Fig. 9 -1 Checks & Tests - Overview

By pressing the button “Show all errors” the device errors of each device are displayed.

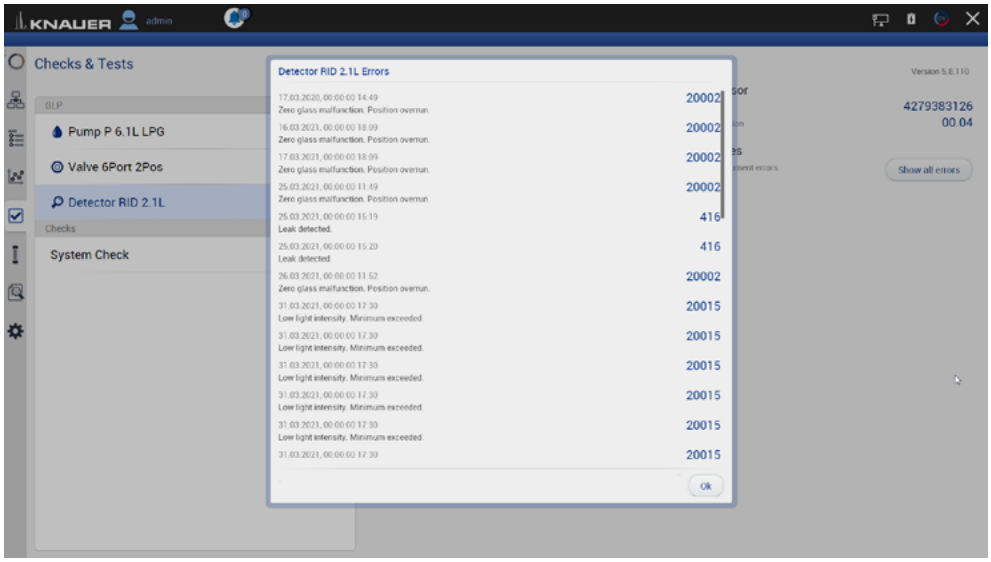


Fig. 9 -2 Show all errors for a selected device

AZURA® Autosampler AS 6.1L
Serial number
Firmware version
Injector valve cycles
Syringe valve cycles
Syringe cycles

AZURA® Column Thermostat CT 2.1	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	

AZURA® Assistant ASM 2.1L	
The view of the assistant depends on the installed devices.	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Left, Middle, Right device
	Serial number
	Pump
	Firmware version
	Operation time
	Head type
	Valves
	Configuration
	Switching cycles
	Detector
	Firmware version
	Operation time
	Starts
	Leak sensor
	Serial number
	Firmware version

AZURA® Assistant ASM 2.2L	
The view of the assistant depends on the installed devices.	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	

	Leak sensor
	Serial number
	Firmware version

Note: The view of the assistant depends on the installed devices. The GLP data of the assistant modules resemble the entries of the standalone devices.

Detector AZURA® MWD 2.1L	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Optical Properties
	Optical bandwidth (FWHM) [nm]
	Stray light (AU)
	Lower spectral limit [nm]
	Upper spectral limit [nm]
	Number of shutter switches
	Integration time
	Wavelength Accuracy
	Holmium 360.9 nm
	Holmium 446.2 nm
	Deuterium beta line 486.0 nm
	Deuterium alpha line 656.6 nm
	Lamp Power Supply
	Serial number
	Operating time
	Firmware version
	Supply number
	Deuterium Lamp
	Serial number
	Operating time
	Starts
	Lamp number
	Installation date
	Leak Sensor

	Serial number
	Firmware version

Detector AZURA® UVD 2.1S/UVD 2.1L	
Serial number	
Firmware version	
Operating time	
Instrument's power cycles	
Installation date	
Last service date	
	Optical Properties
	Optical bandwidth at 656 nm (FWHM)
	Light intensity I-Sig at UV-maximum
	Light intensity I-Ref at UV-maximum
	Number of filter wheel switches (only UVD 2.1L)
	Integration time
	Lamp Power Supply
	Serial number
	Operating time
	Firmware version
	Supply number
	Deuterium Lamp
	Serial number
	Operating time
	Starts
	Lamp number

Detector AZURA® DAD 2.1L/DAD 6.1L	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Optical Properties
	Optical bandwidth at 656 nm (FWHM)
	Optical bandwidth at 253 nm (FWHM)
	Stray light (AU)
	Lower spectral limit [nm]

	Upper spectral limit [nm]
	Number of shutter switches
	Integration time
	Wavelength Accuracy
	Holmium 360.9 nm
	Holmium 446.2 nm
	Deuterium beta line 486.0 nm
	Deuterium alpha line 656.6 nm
	Lamp Power Supply
	Serial number
	Operating time
	Firmware version
	Supply number
	Deuterium Lamp
	Serial number
	Operating time
	Starts
	Lamp number
	Leak Sensor
	Serial number
	Firmware version

Detector AZURA® RID 2.1L	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Light Source
	Operating time
	Installation date
	Light source number
	Validation Data
	Last measured span
	Last measured span date
	Cell batch number
	Deuterium alpha line 656.6 nm

	Leak Sensor
	Serial number
	Firmware version

AZURA® Pump P 6.1L	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
Motor operating time	
	Leak Sensor
	Serial number
	Firmware version
	Head left/right
	Serial number
	Operation time
	Cycles
	Volume
	P-index
	Head type
	Leak Sensor
	Serial number
	Firmware version

AZURA® Pump P 8.1L	
Serial number	
Firmware version	
Installation date	
Last service date	
Operating time	
Flow delivery time	
Total volume	
Number of SSV	
Degasser present	
Manual purge valve	
	Pressure sensor
	Type

	Leak Sensor
	Serial number
	Firmware version
	Head A/B
	Serial number
	Last service date
	Operation time
	Current operation time
	Cycles
	Current cycles
	Seal number
	Volume
	Head type
	Maximum pressure

AZURA® Pump P 4.1S, P 2.1S
Serial number
Firmware version
Operating time
Installation date
Last service date
Motor operating time

AZURA® Pump P 2.1L	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Leak Sensor
	Serial number
	Firmware version
	Motor
	Operation time

BlueShadow 50D	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Optical Properties
	Optical bandwidth at 656 nm (FWHM)
	Stray light (AU)
	Lower spectral limit [nm]
	Upper spectral limit [nm]
	Number of shutter switches
	Integration time
	Wavelength Accuracy
	Holmium 360.9 nm
	Holmium 446.2 nm
	Deuterium beta line 486.0 nm
	Lamp Power Supply
	Serial number
	Operating time
	Firmware version
	Supply number
	Deuterium Lamp
	Serial number
	Operating time
	Starts
	Lamp number
	Installation date
	Halogen Lamp
	Serial number
	Operating time
	Lamp number
	Installation date

BlueShadow 40D	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Optical Properties
	Optical bandwidth at 656 nm (FWHM)
	Light intensity I-Sig at UV-maximum
	Light intensity I-Ref at UV-maximum
	Number of filter wheel switches
	Integration time
	Lamp Power Supply
	Serial number
	Operating time
	Firmware version
	Supply number
	Deuterium Lamp
	Serial number
	Operating time
	Starts
	Lamp number

BlueShadow 40P and 80P	
Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
Motor operating time	
	Head
	Serial number
	Operating time
	Cycles
	Volume
	P-index
	Head type
	Maximum pressure

Interface Box IFU 2.1 LAN
Serial number
Firmware version

Valve V2.1S
Firmware version
Switching cycles
Serial number

Valve Drive VU 4.1
Serial number
Part number
Operating times
Power cycles
Drive revolutions
Firmware version
Installation date
Last service date

Valve V 4.1
Serial number
Part number
Position
Ports
Maximum pressure (bar)
Seals number
Installation date
Last service date

Foxy & Vario-4000
IP port
IP address
Serial number
Firmware version
Rack type
Vial count
Vial volume
Installation date
Operating time

9.2 System Check

Note: The system check is based on reviewing the GLP data. The GLP check list in the following chapter summarizes the thresholds for passing the system check. Action resulting form the check are recommendations. Please consider the true state of your device before realizing.

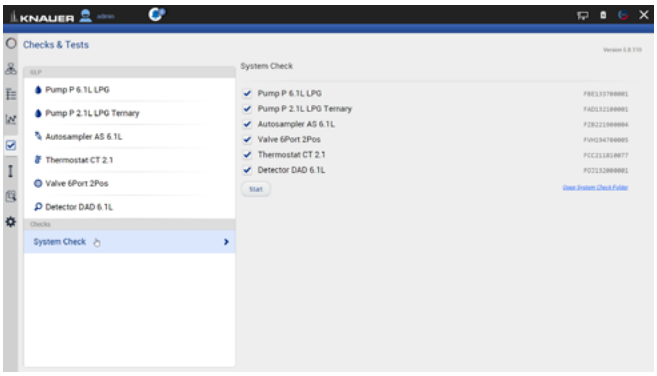
Process	Figure
1. Go to Checks & Tests and select System Check. 2. Activate the checkboxes to perform a system check. If you want only one device to be checked, activate the respective checkbox. 3. Press <Start>.	

Fig. 9 -3 Logs & Errors

Note: When the system check is finished a summary of the test is shown (PDF file shown below). A system check cannot be performed for devices which are embedded in programs.

9.2.1 GLP check list

ASM 2.1L	UVD 2.1S: After 2 000 hours lamp operating time, the deuterium lamp should be replaced. P 4.1S: After 1000 hours, the pump heads should be maintained. V 4.1S/VICI: After 50 000 switching cycles, the rotor seal should be replaced.
AS 3950/AS 6.1L	After 12 500 injector valve cycles, a preventative maintenance procedure should be carried out.
DAD 6.1L	After 2 000 hours deuterium lamp operating time, the deuterium lamp should be replaced. After 1 000 hours halogen lamp operating time, the halogen lamp should be replaced.
RID 2.1L	After 20 000 hours lamp operating time, the LED lamp should be replaced. After 1 year, the span should be checked.
UVD 2.1S & 2.1L **MWD 2.1L/DAD 2.1L**	After 2 000 hours lamp operating time, the deuterium lamp should be replaced.
P 4.1S	After 1 000 hours, the pump heads should be maintained (saved only in data base, this means only valid for one tablet; no check is carried out if the pump head has been changed or maintained).

P 6.1L/ P 2.1L	After 7 000 000 cycles, the pump heads should be maintained.
V 2.1S, VICI or V 4.1	After 50 000 switching cycles, the rotor seal should be replaced.
Fraction collector Foxy/Vario-4000	No tests defined.

10. Column Management and System Pressure

The column library can be used to manage columns by serial numbers, determine the number of injections for the individual column, and automatically reduce the system pressure to the maximum pressure of the column.

In the column template, the general parameters of the column, such as column type, particle size, length, internal diameter, maximum pressure are defined. With “Add column”, a column type can be selected from the template list and created as a unique column by entering the serial number. Once a unique column is activated the maximum pressure entered for the column is set as system pressure. This limit applies as maximum pressure to the entire system. The maximum pressure of all pumps is restricted to the system pressure both in the Detail View and during the method. As soon as the method is sent to the queue, maximum pressure values are adjusted. If the column management function is not used, the system pressure can be entered under Settings/Preferences/System pressure. The column entries can be exported to a CSV file via “Export column”.

Traces can be normalized to other traces. Traces which are too far apart to be displayed together can be shown in the chromatogram window.

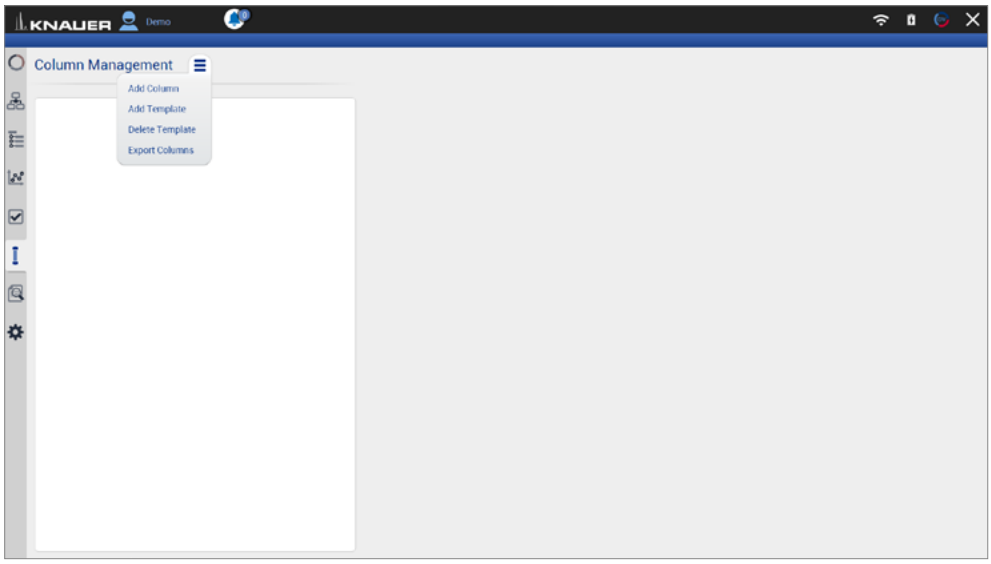


Fig. 10-1 Menu of the column management

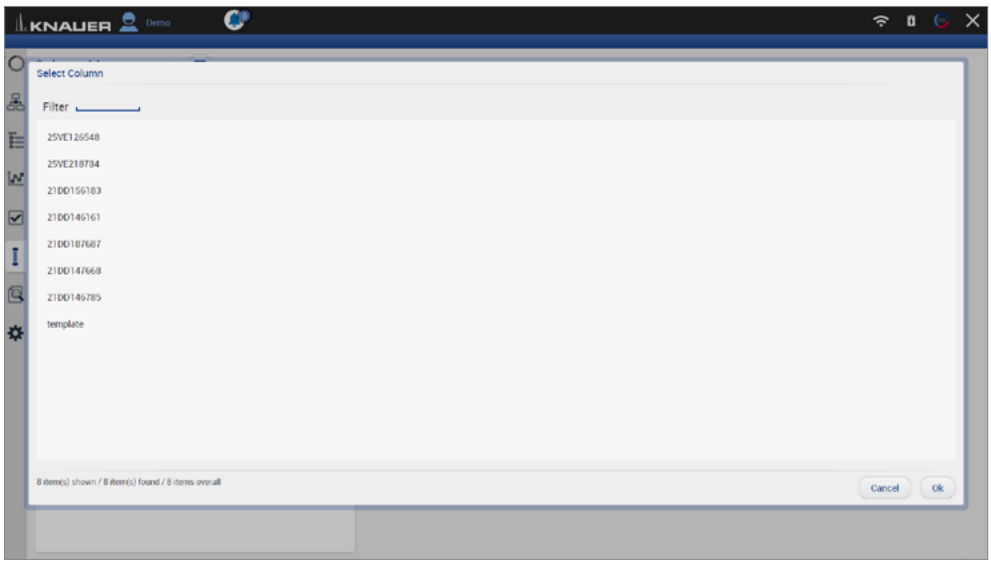


Fig. 10-2 Add new column from template list

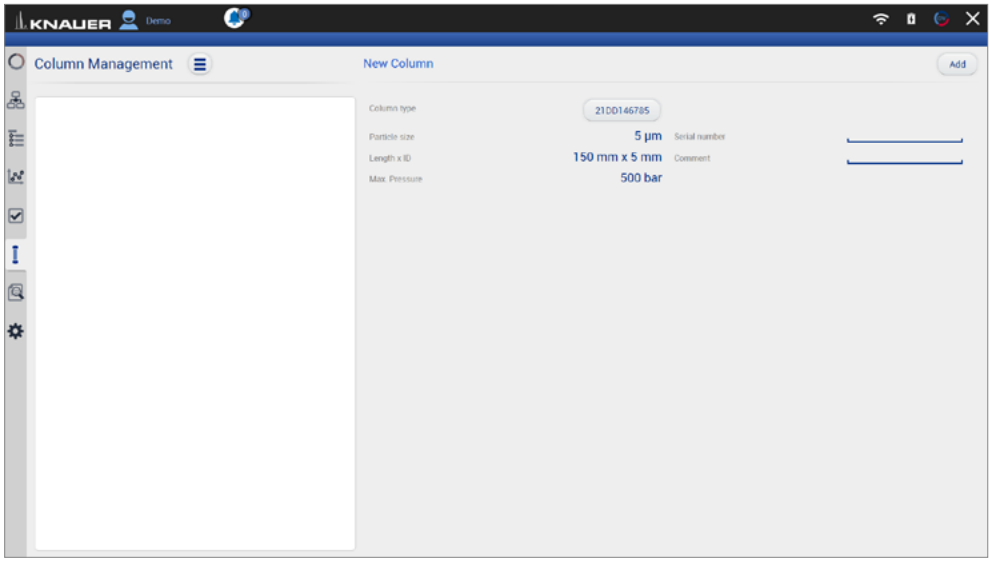


Fig. 10-3 Entering the serial number

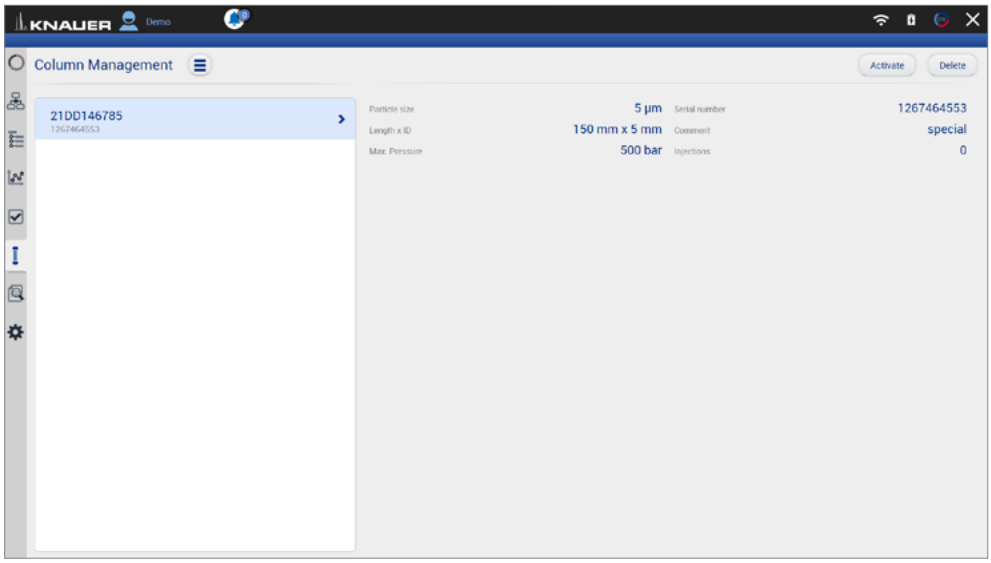


Fig. 10-4 Activate column

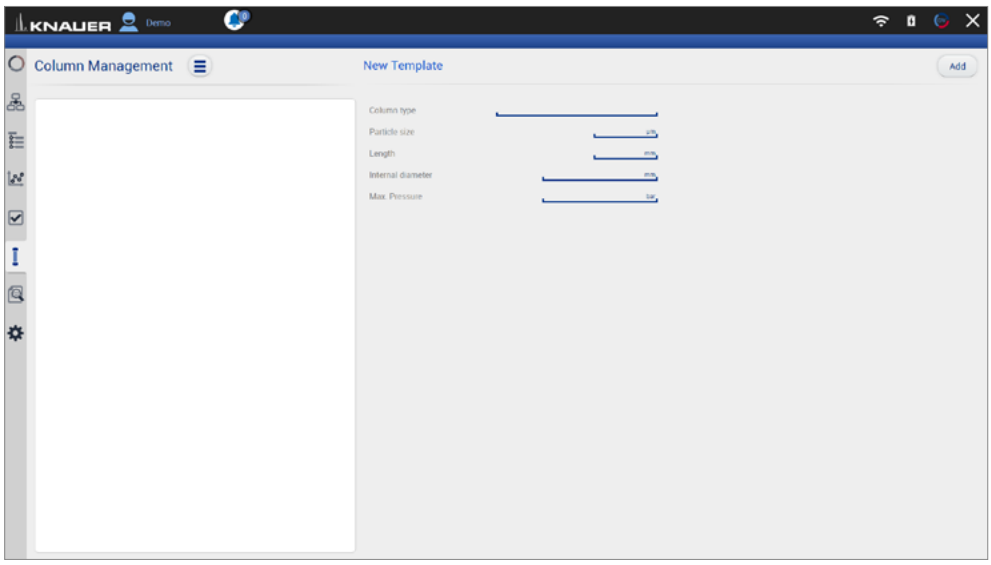


Fig. 10-5 Add a new template

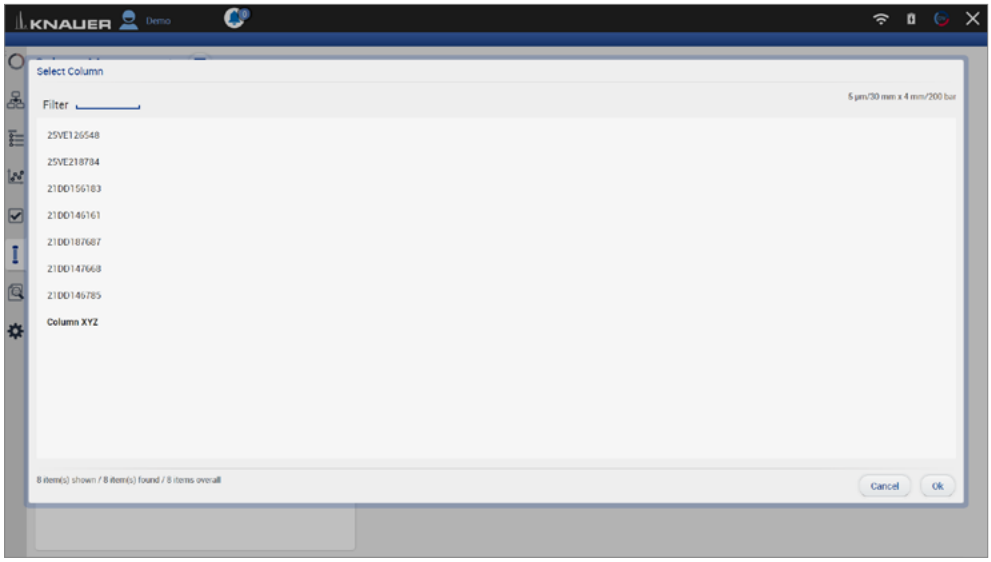


Fig. 10-6 New template

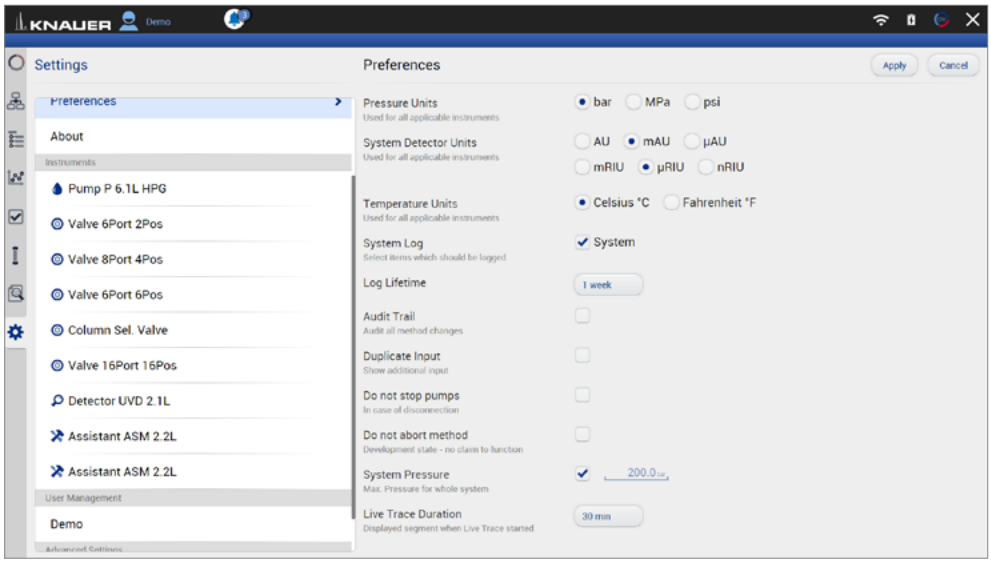


Fig. 10-7 System pressure in Setting/Preferences

11. Logs & Errors

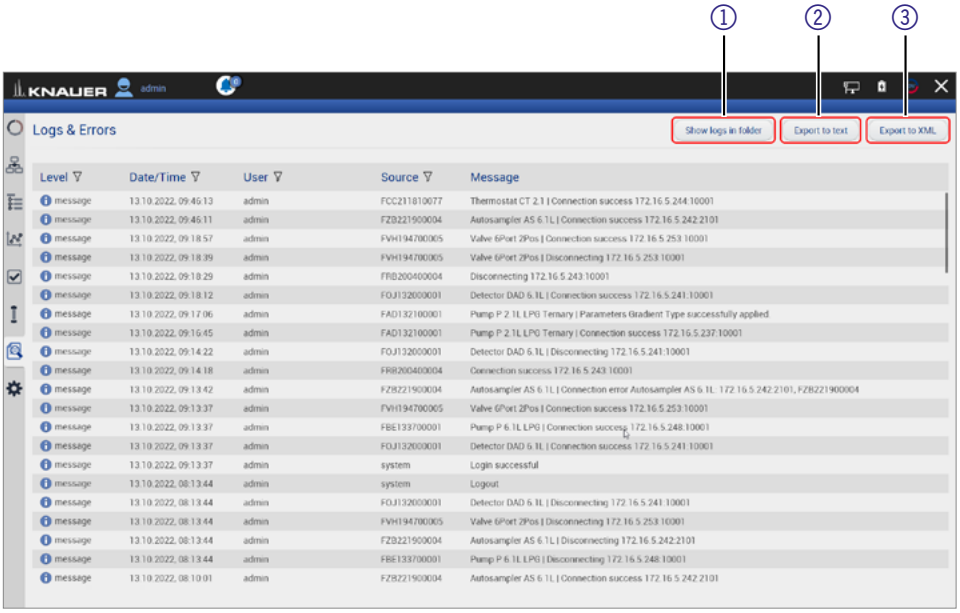


Fig. 11-1 Logs & Errors

Legend

① **Show logs in folder:**
Opens the folder C:\Mobile Control\Logs.

② **Export to text:**
Exports a text file in the C:\Mobile Control\Logs.

③ **Export to XML:**
Exports a XML file in the C:\Mobile Control\Logs.

④ **Period:**
Define a time period showing the recorded logs and errors.
Press the button and enter two dates which define the period.

⑤ **Filter:**
Filters the results dependent on the user and the device.

Note: System logs are activated by default and can be deselected in Settings > Preferences. Recording of communication logs is deactivated by default. Activation of communication logs is described in the following chapter 11.1.

Note: In case of any error caused by a device, the pump will be stopped and the column thermostat will be switched off. Only exception are stand alone compact pumps AZURA® P 4.1S/P 2.1S. This safety feature can be bypassed by enabling “Do not stop pumps” in Settings > Preferences.

11.1 Activation of communication log

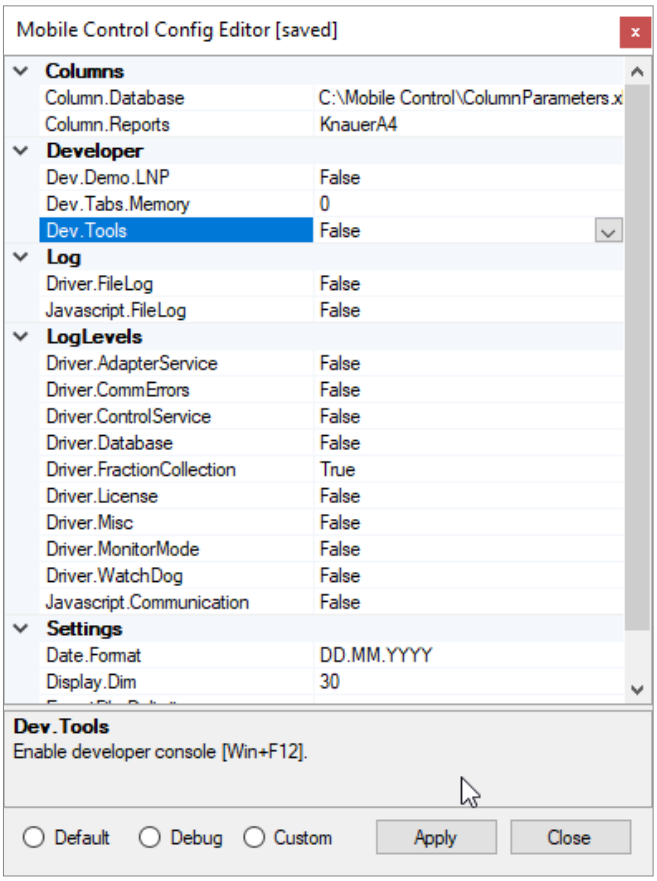
Process	Figure
1. Start the ConfigEditor.exe to set the communication logs. The separate tool is located in C:\Program Files (x86)\Mobile Control\ConfigEditor.exe. 2. Select “Debug” and press apply. Activate Mobile Control before selecting the logs.	

Fig. 11-2 Log files

Note: Log files are saved in C:\Mobile Control\Logs. Mind the hard disk space if logs are activated.

12. Settings

12.1 General

12.1.1 Configuration management

Create new or edit existing configurations and define the system configuration.

12.1.2 Network settings

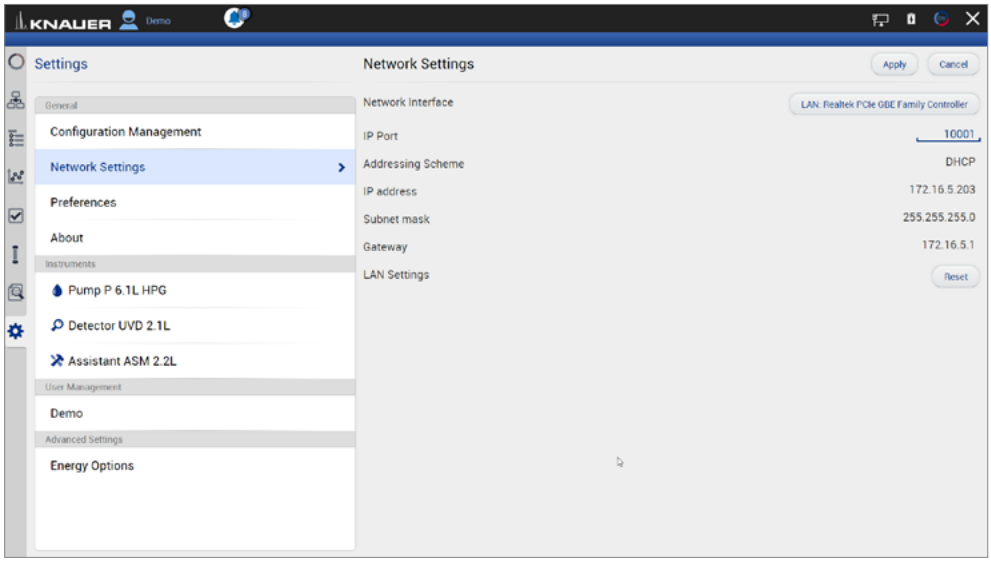


Fig. 12-1 Networks settings

Network Interface	List of the network adapter.
Port	Port = 10001 (factory default) For stable connection use identical port numbers in the device configuration of the chromatography software or Mobile Control and in the device.
Addressing Scheme	Shows the LAN settings of the tablet, laptop or desktop PC. DHCP: automatically setting of IP address STATIC: manual entry of IP address
IP Address	Displays the IP address.
Subnet Mask	Displays the subnet mask.
Gateway	Displays the gateway.
LAN Settings	Reset communication settings of KNAUER devices to DHCP. A device you want to reset should be switched on and connected to the same router. Enter the serial number of the device and click the <Reset> button. Restart the device. The device is now set to DHCP. You can also set LAN settings of the device with Firmware Wizard (refer to chapter 15.1).

Note: Communication in the LAN is realized via ports. If more than one HPLC system is connected to the same LAN and you plan to control them separately, you can use different ports to avoid interference. To do this, the port number of each device has to be changed to the same port number in the device configuration of the chromatography software or Mobile Control.

We recommend to use the same port number for all devices in the same system.

12.1.3 Reset of LAN settings to DHCP

In Mobile Control you can set the device on DHCP.

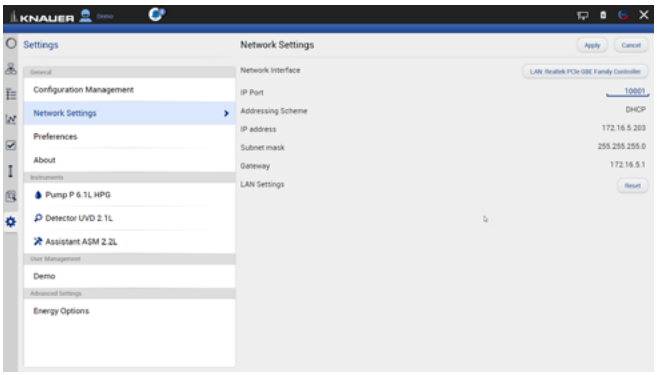
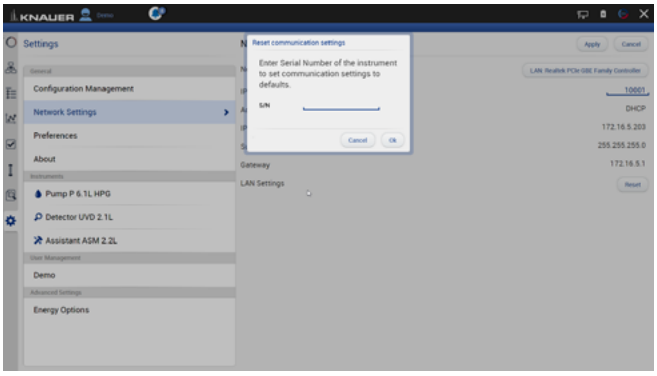
If you can not find the device on the network because you do not know the static IP address, change the network setting to DHCP.

This function can be carried out by:

1. Mobile Control
2. Firmware Wizard

In the following, the first approach is explained.
For the using the Firmware Wizard, refer to chapter 15.1.

A static IP address can be set in the setting section of each interface (refer to chapter 12.2.1) or by the Firmware Wizard (refer to chapter 15.1).

Process	Figure
1. Go to Settings > Network Settings.	
	Fig. 12-2 Open Network Settings
2. Press <Reset>. A window is opened.	
	Fig. 12-3 Reset LAN Settings

3. Enter the serial number of the device.
4. Confirm with <Ok>. The device is now set to DHCP.
   Here, you can only change the LAN settings to DHCP. With the Firmware Wizard you can change from Static (fixed IP address) to DHCP and vice versa (refer to chapter 12.1.2).
5. We recommend a restart of the devices, to accept the new LAN settings.

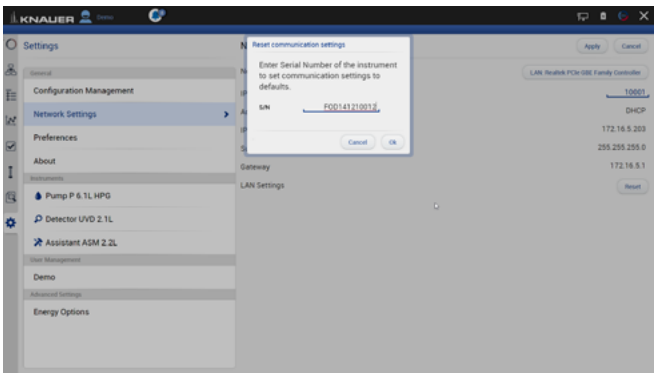


Fig. 12-4 Reset LAN Settings

Note: For AZURA P 2.1S/P 4.1S devices, resetting the network settings to DHCP can only be performed with the Firmware wizard.

12.1.4 Preferences

Note: Always confirm your selection with <Apply>.

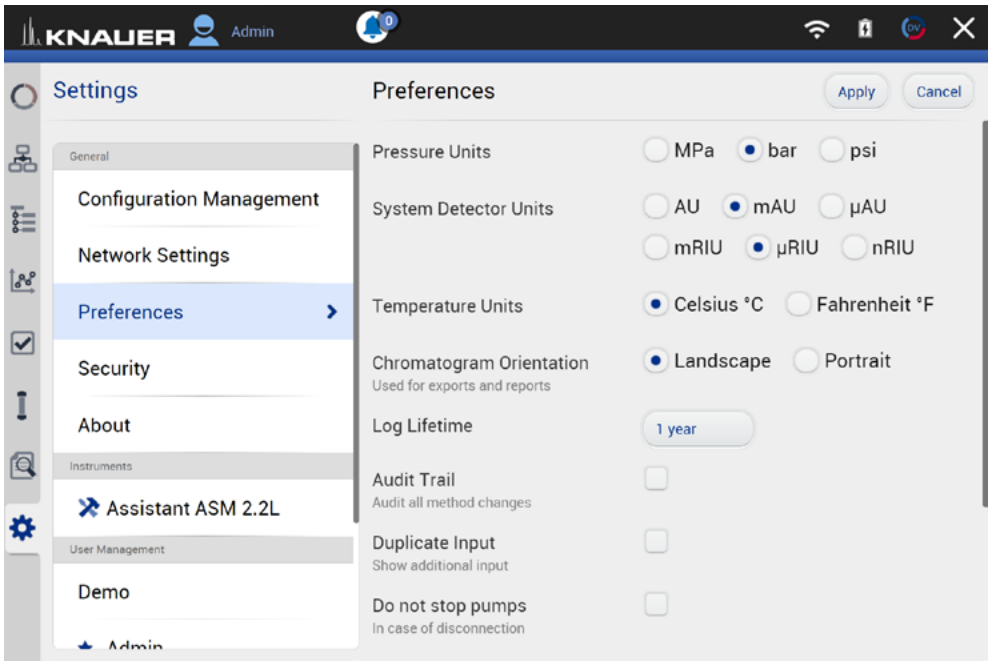


Fig. 12-5 Preferences overview (upper section)

Pressure Units	Selection between bar, MPa and psi.
System Detector Units	Selection between AU, mAU, µAU (UV detectors), mRIU, µRIU, nRIU (RI detectors).
Temperature Units	Selection between degrees Celsius °C and degrees Fahrenheit °F.
Chromatogram Orientation	Choose between portrait and landscape orientation of the chromatogram displayed in reports and exported files.

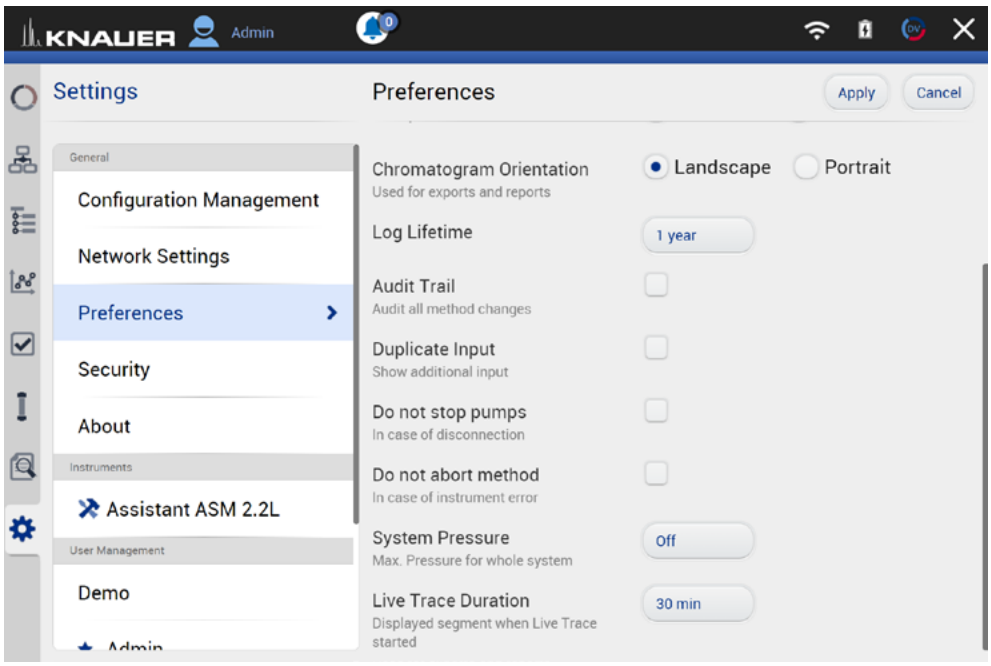


Fig. 12-6 Preferences overview (lower section)

Log Lifetime	Log lifetime: duration the log data are stored Choose between one month, six months, one year and infinite.
Audit Trial	Records all program changes. You can view the protocol under Methods & Sequences (refer to chapter 6.12).
Duplicate input	Duplicate input facilitates filling entry fields with the virtual keyboard. Since the virtual keyboard covers a large part of the screen, a popup window appears in the upper section repeating the input request.
Do not stop pumps	In case of disconnection the pump continues to convey with the last parameters. This function does not apply to pumps in the Assistant ASM 2.2L which always stop after disconnection.
Do not abort method	Normally a method is aborted when a device error occurs. With this function activated the method is continued despite device error. A following method is not started. Due to its development state, the customer should test this function in advance. There is no claim to function.
System pressure	The entered system pressure is applied as maximum pressure to all pumps present in the system configuration .
Live Trace Duration	The duration can be set here.

12.1.5 About

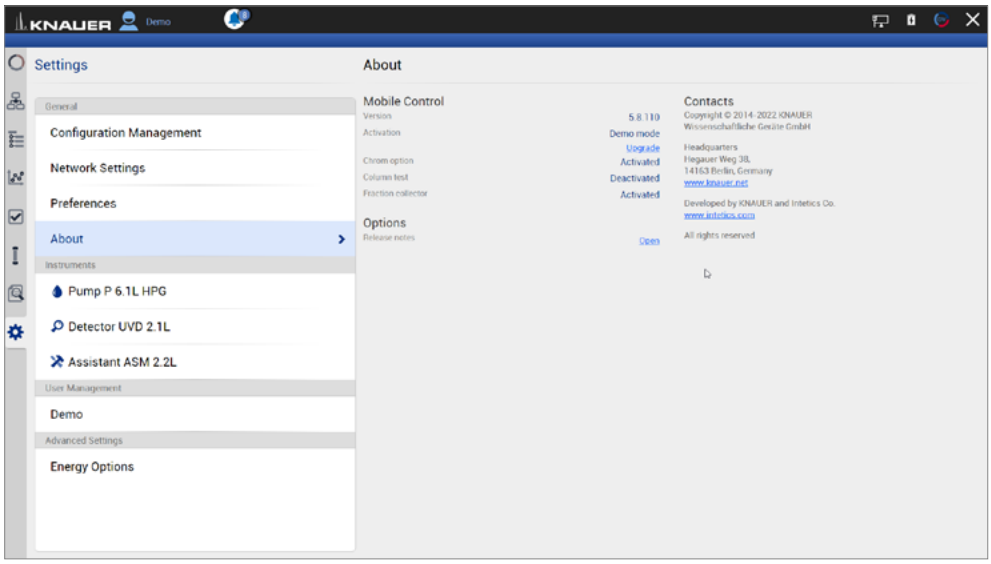


Fig. 12-7 About

This chapter provides information about the version of Mobile Control and which operating mode/license is enabled.

If you are in Trial Period or in Demo Mode you will find a link to activate Mobile Control. Open the Upgrade link which opens the activation page. Enter the new activation code that will unlock the new functionality. For an activated license the activation code is displayed.

Open the Installation information to learn more about:

- Installation
- Upgrade
- Troubleshooting
- Windows settings for Mobile Control
- Supported instruments
- Computer requirements
- Operating the Mobile Control
- Notes on the use of Mobile Control

Also consider the known issues on Mobile Control in this document.

12.2 Instruments

All devices configured in the system are listed. The right part shows the device settings. Here, device specific parameters can be changed.

12.2.1 General interface

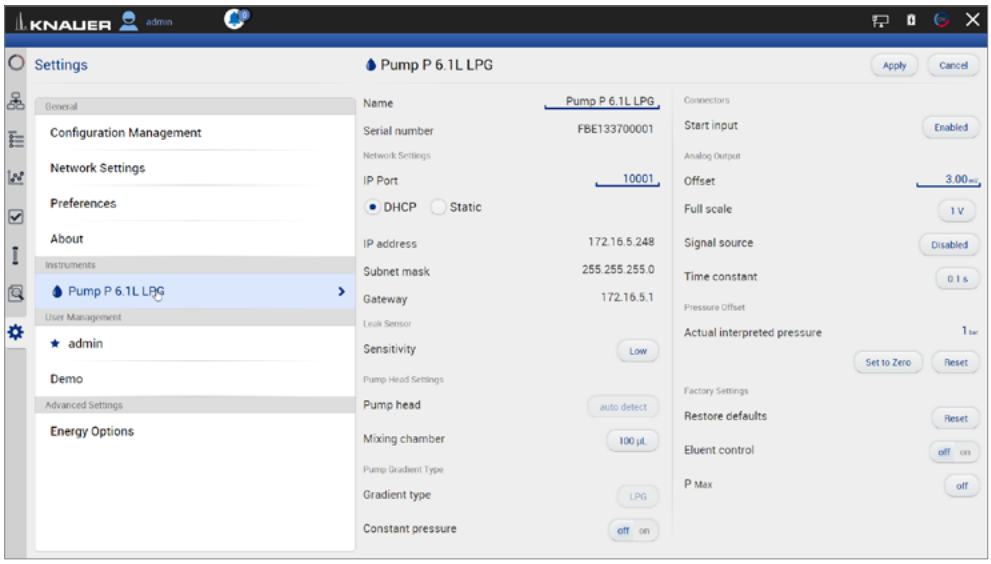


Fig. 12-8 Device Settings - general interface

Name

By default, the device designation is used as device name. Tap the name to change it. Change the name if more than one device of the same type is configured in the system.

Serial number S/N

The serial number of the device is read out automatically.

IP Port

Communication in LANs is realized via ports which are part of the network address. If more than one HPLC system is connected to the same LAN and you plan on controlling them separately, you can use different ports to avoid interference.

To do so, the port number of every device has to be changed to the same port number in the device configuration of the chromatography software or Mobile Control. We recommend to use the same port number for all devices in the same system.

Note: The factory settings for the port of AZURA devices is 10001. Use identical port numbers in the device configuration of the chromatography software or Mobile Control and in the device, otherwise the connection cannot be established.

Note: There are some instruments that do not allow to change port number (AS 6.1L, Foxy, IFU 2.1 LAN, CT 2.1).

DHCP/Static

In DHCP mode the router allocates IP address and Subnet mask automatically.

Static enables you to enter IP address and Subnet mask manually.

Activate checkbox “Static“ and enter the required network parameters (see Fig. 9-8).

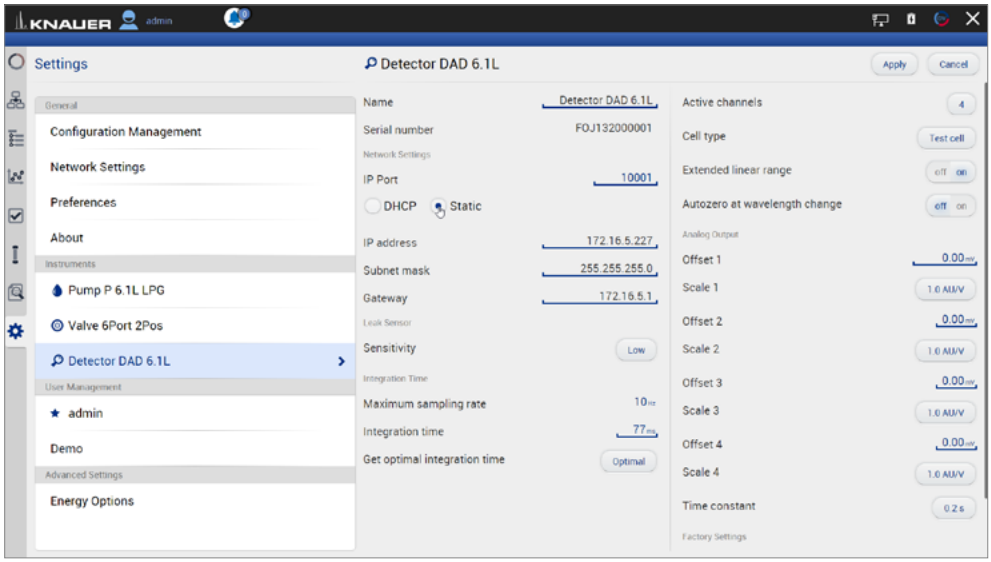


Fig. 12-9 Static IP address

IP addess	Displays the IP address of the device.
Subnet mask	An IP address consists of two parts. One part of the IP address designates the network address of the device. The other part designates the distinct address of an device inside of a network. The subnet mask defines which part of the IP address is the network address of an device. It determines which other devices the respective device can communicate with, namely all devices with the same network address. This network is called subnet. This means that all devices of a system and the computer have to operate in the same subnet, using the same network address. Devices in other networks can only be communicated with via a router.
Gateway	If communication has to be established with devices in other networks, a gateway is used. The gateway routes all network requests, which are not directed towards its own network (subnet) to another network (subnet). This task is usually performed by routers which communicate with subnets via IP protocols.
Leak Sensor	The leak sensor can be switched on and off. Three different settings are available, LOW (low sensitivity), MEDIUM (medium sensitivity), and HIGH (high sensitivity). Press the button <ON>, to activate the leak sensor.
Sensitivity	Choose between Low, Medium, or High .
Restore Factory Settings	This function enables your to re-set the device to its default settings.

12.2.2 Assistant

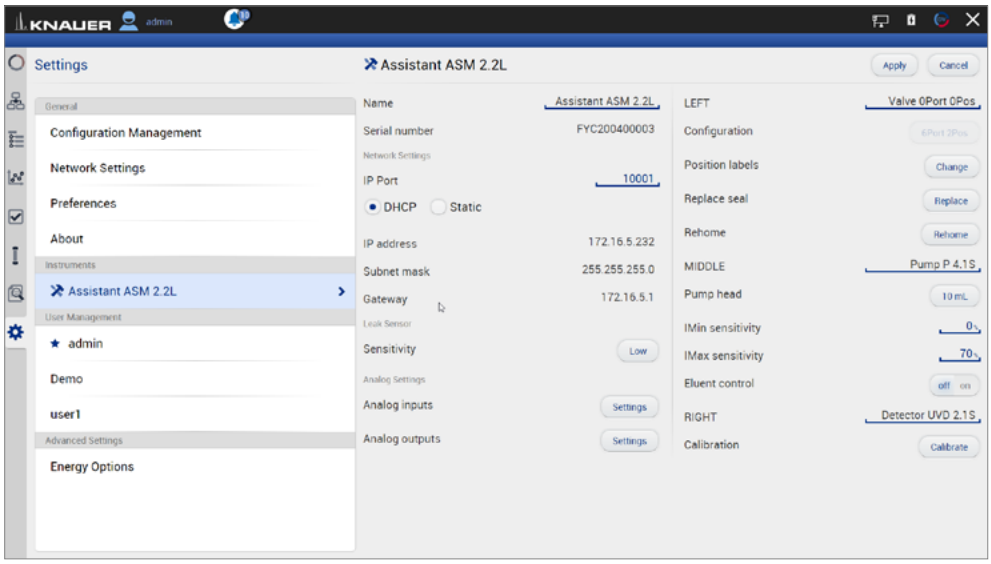


Fig. 12-10 Device Settings - Assistant

Depending on the devices built in, the configuration is divided in LEFT, MIDDLE, and RIGHT. Devices are displayed according to device configuration.

Pump Head	Select the size of the pump head. Choose between 10 ml and 50 ml.
IMin Sensitivity (pump)	The motor current is a measure for the current load of the pump and therefore the system pressure for pumps which do not have a pressure sensor. The pump switches off when the current falls below the entered value. Setting for the minimum motor current permitted before the pump switches off (in %).
IMax Sensitivity (pump)	The pump switches off when the current exceeds the entered value. Setting for the maximum motor current permitted before the pump switches off (in %).
LEFT/MIDDLE/RIGHT	Divided configuration, depending on the devices built in.
Configuration (valve)	A list field with different valve types is displayed. Choose the setting according to your valve: 6, 12, 16.
Scale (detector)	Choose between 0 AU/V, 0.5 AU/V, 1 AU/V, 1.5 AU/V 2 AU/V, 2.5 AU/V, 3 AU/V, 3.5 AU/V, 4 AU/V, 4.5 AU/V and 5 V.
Time Constant (detector)	Smooths the measured values. Measuring points of a set time interval are combined and the mean value is displayed as a measuring point. A broader interval increases the smoothing proportionally. Choose between 0.00 s, 0.01 s, 0.02 s, 0.05 s (DAD), 0.1 s, 0.2 s, 0.5 s, 1.0 s, 2.0 s, 5.0 s, and 10 s.

12.2.3 Autosampler

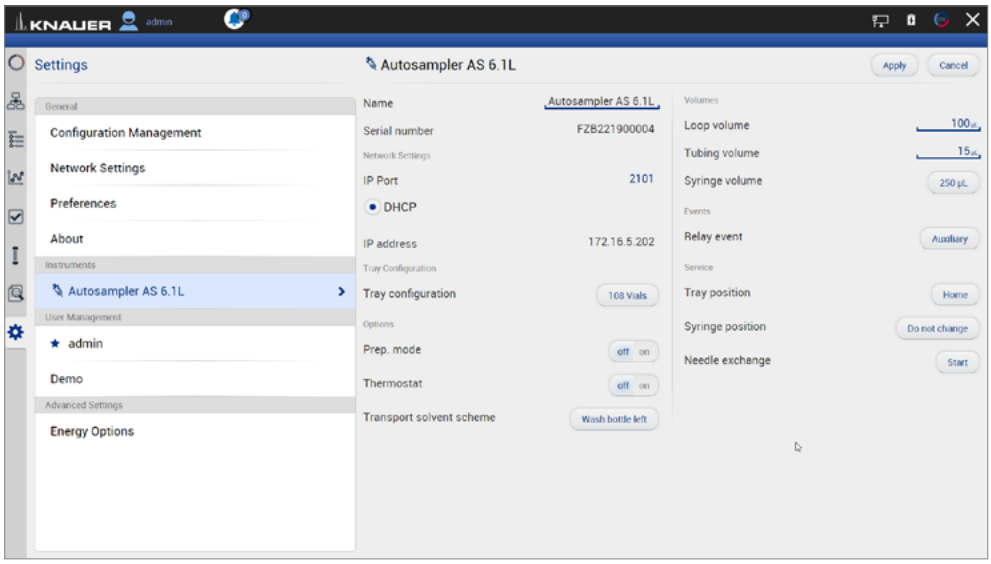


Fig. 12-11 Device Settings - Autosampler

Availability of options depends on the device type. Unavailable functionalities are grayed out.

Tray Configuration	Opens menu to select used autosampler tray configuration. Choose according to your installed trays.

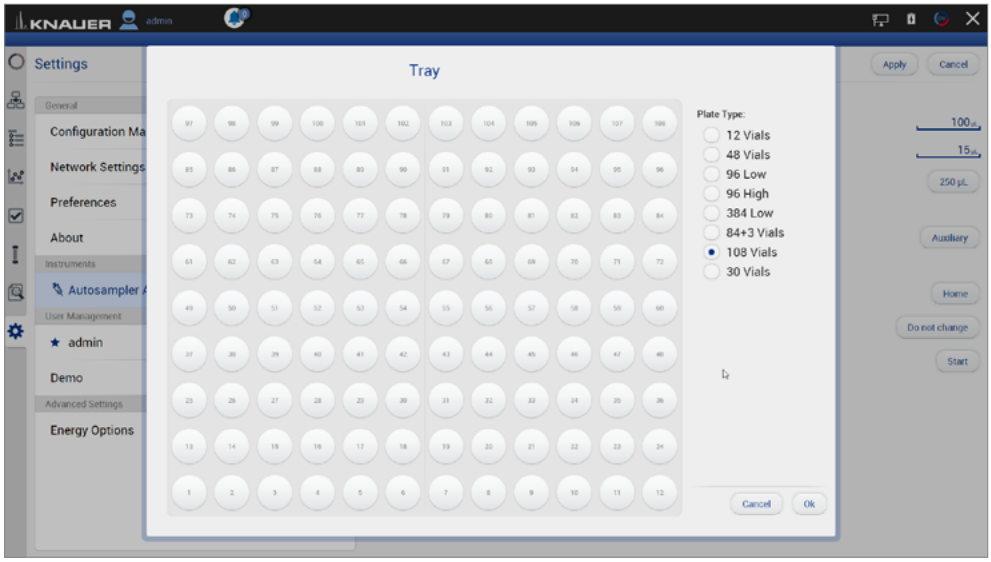


Fig. 12-12 Tray configuration

Prep. Mode	Turn on, if autosampler uses Prep Mode
Thermostat	Turn on, if autosampler uses thermostat
Loop Volume	Enter volume of installed sample loop volume
Tubing Volume	Enter volume of installed tubing volume
Syringe Volume	Enter volume of installed syringe volume
Relay Event	Choose relay event if needed

Tray Position	Push the button to select position of the tray. A new window is opened (see fig. 9-12) Select position of tray. Home: backside of tray cabinet, Front: frontside of tray cabinet to change vials

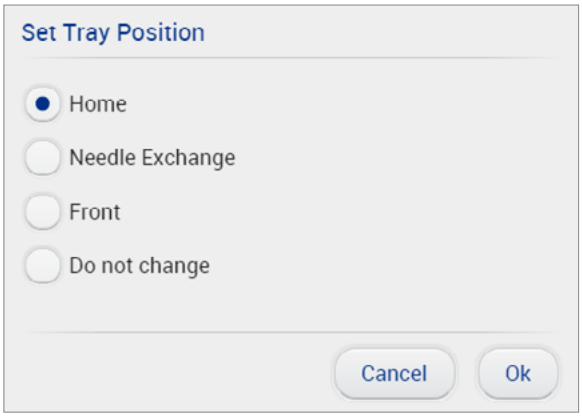


Fig. 12-13 Set Tray Position

Syringe Position	Choose, if syringe needs to be changed.
Needle Exchange	Press start to exchange sample needle.

12.2.4 Column Thermostat 2.1

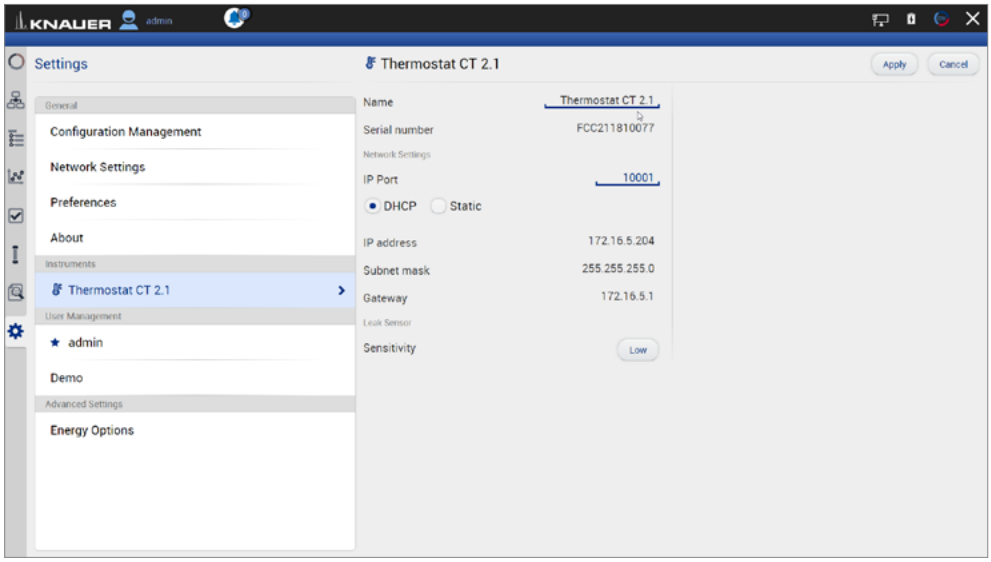


Fig. 12-14 Device Settings - Column Thermostat

12.2.5 Detector

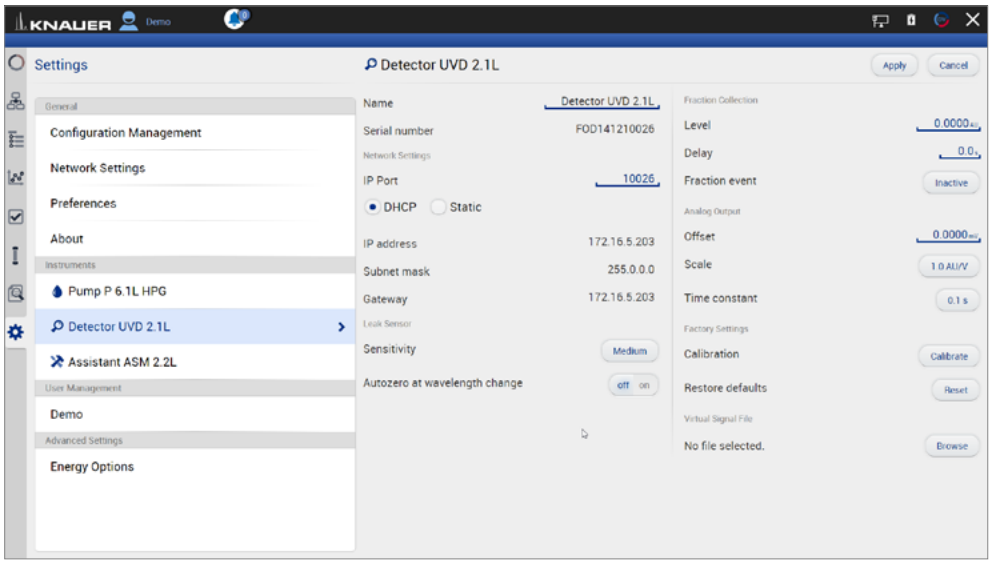


Fig. 12-15 Device Settings - Detector

Level (only available in AZURA® UVD 2.1L)	Treshold which can be set. If this value is exceeded, an event starts.
Delay	Time delay between exceeding of the level treshold and event output.
Fraction event	Choose between inactive, Event 1 (relay contact) and Event 2 (TTL compatible output). (refer to the detector instructions).
Offset	Type in the correction offset which will be used for the signal recalculation.
Scale	Choose between 0 AU/V, 0.5 AU/V, 1 AU/V, 1.5 AU/V 2 AU/V, 2.5 AU/V, 3 AU/V, 3.5 AU/V, 4 AU/V, 4.5 AU/V and 5 V.
Time constant	Smoothes measuring values. Measuring points of a set time interval are combined and the mean value is displayed as a measuring point. A broader interval increases the smoothing proportionally. Choose between 0.00 s, 0.01 s, 0.02 s, 0.05 s (DAD), 0.1 s, 0.2 s, 0.5 s, 1.0 s, 2.0 s, 5.0 s, and 10 s.
Calibration	
Restore defaults	You can use this function to reset the device to its default settings.
No file selecteted	

Integration Time
(only available in AZURA® DAD 2.1L, DAD 6.1L and MWD 2.1L)

Activate the <optimal> button and the program calculates the optimal integration time. The maximum sampling rate for the integration time is also calculated and displayed.

Fig. 12-16 Example for settings DAD 6.1L

A data rate of 20 Hz is only permitted when using one data channel.
If several data channels of a detector are used, the data rate has to be reduced to 10 Hz.

12.2.6 Interface Box IFU 2.1 LAN

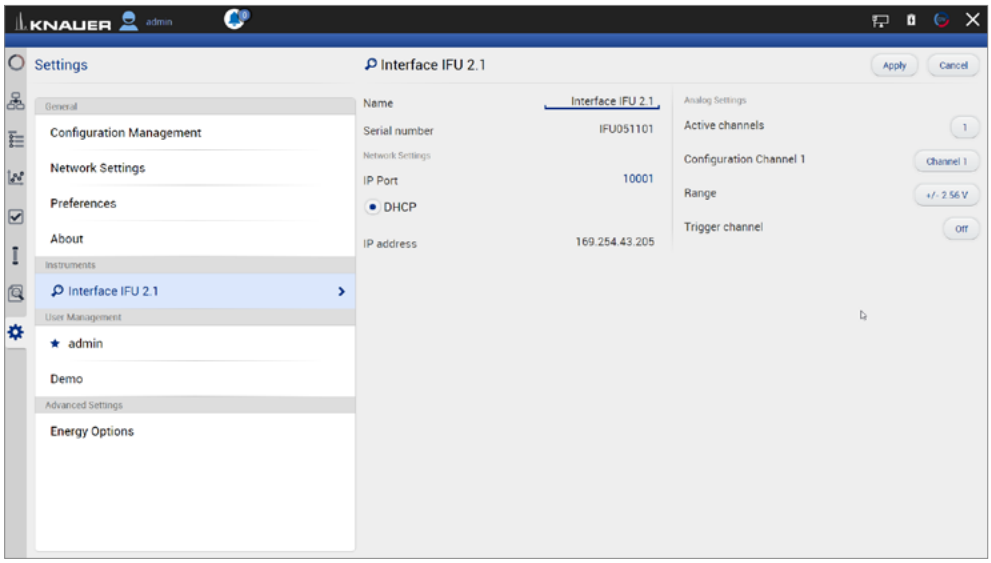


Fig. 12-17 Device Settings - Interface Box IFU 2.1 LAN

Note: The analog output of Interface Box IFU 2.1 LAN is not supported in version 5.0.0.

Active Channels — Choose the number of active channels (1-4).

Configuration Channel — Individual configuration of each channel. Select a channel and a new window is opened (see fig. 9-17).

- 1st line: Channel name. You can name the channel individually, e.g. with the name of the connected device.
- 2nd line: Displayed Unit of the recorded signal. Default setting is mV.

- 3rd line: Y-Axis multiplier. Here you can change the conversion factor of the recorded voltage signal. The default value is 0.001 corresponding to mV-unit setting

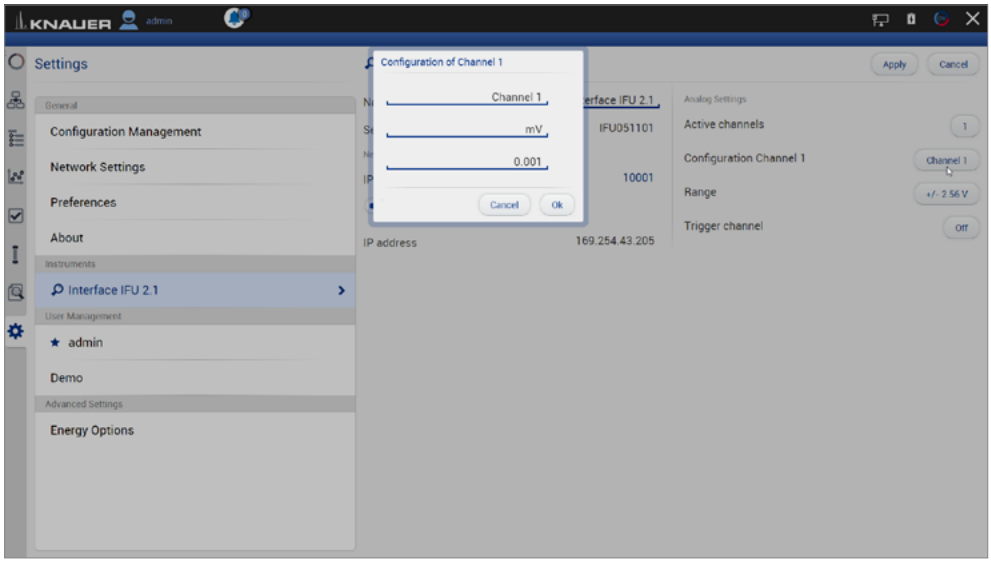


Fig. 12-18 Channel configuration

Range

The voltage range can be adjusted to the expected signal to get a higher resolution (see fig. 9-18).

One of the following ranges can be selected:

±2.56 V, ±1.28 V, ±0.64 V, ±0.32 V, and ±0.16 V

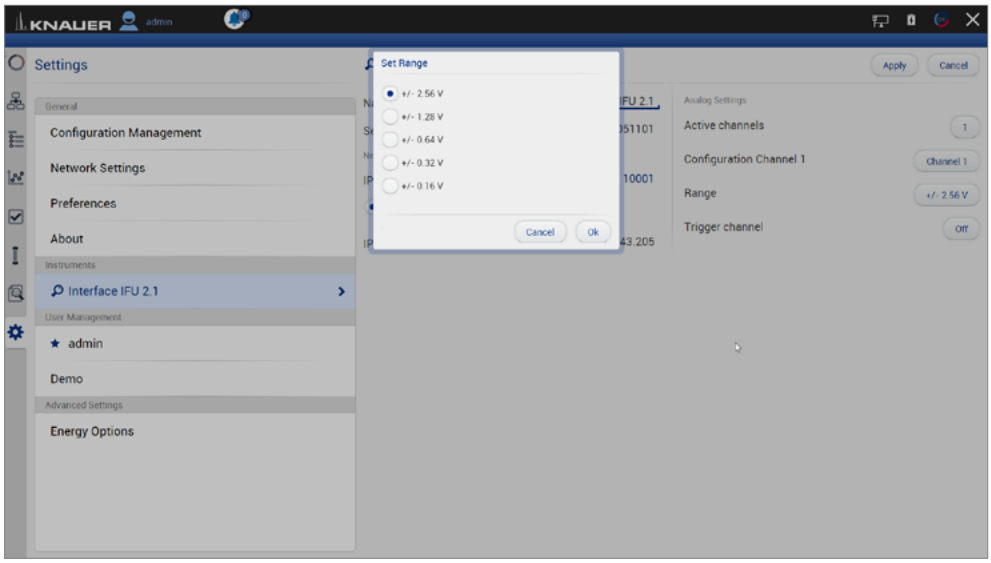


Fig. 12-19 Voltage Range

Trigger Channel

If a method should be started via an external device, one of the four channels can be selected to receive the trigger signal. "Waiting for trigger" has to be activated for this function.

12.2.7 Pump

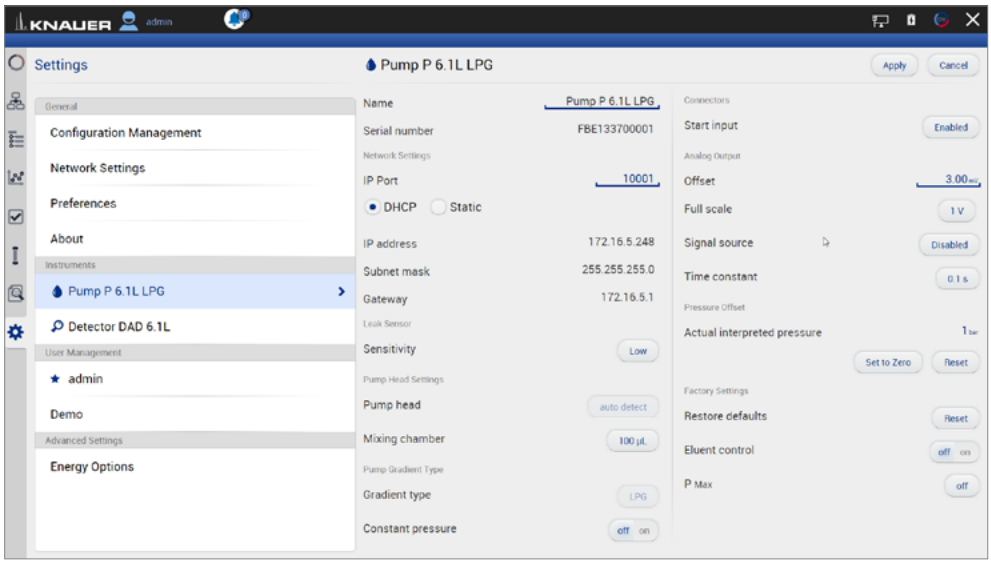


Fig. 12-20 Device Settings - Example AZURA® Pump P 6.1L

Availability of options depends on the device type. Unavailable functionalities are grayed out.

Pump head	Displays the volume of the pump head.
Mixing Chamber	Choose between 50 µl, 100 µl, 200 µl, 250 µl or enter a value. Change only the volume if a different mixing chamber is installed.
Gradient Type	Some pumps are pre-configured as isocratic, HPG or LPG pump. In this case, the configuration cannot be changed. For pumps that are not pre-configured, you can select (see below). For AZURA P 4.1S pumps, HPG mode is not supported.
Constant Pressure (only available for AZURA® P 6.1L)	Constant Pressure mode allows you to define a desired back pressure and a gradient composition. The flow rate will be adapted until selected pressure is reached. Use 'Minimum' and 'Maximum Control Flow' in Detail Overview to set the minimum and maximum flow rates.

Note: Refer to "APPENDIX A" for detailed instruction how to configure pumps in isobar or constant pressure mode.

Isobar mode (only available for AZURA® P 2.1L)	Isobar mode allows you to define a desired back pressure. The flow rate will adapted until selected pressure is reached. Use 'Minimum' and 'Maximum Control Flow' in Detail Overview to set the minimum and maximum flow rates.

Start Input	Choose Disabled, if you want to deactivate the analogue input. Choose between Start pump and Stop pump, if the pump should start or stop running upon receiving the trigger signal. Select Enabled, if the trigger signal shall be used to start a method. For more information about analog control, refer to the pump instructions.
Offset	Offsets the analog output signal in V.
Full Scale	Choose between 1V 2V and 5V to define the range of the analog output signal.
Signal Source	Choose between Pressure, HPG/LPG - A, HPG/LPG - B, Disabled, and Flow.
Time Constant	Smoothes measuring values. Choose between 0.1 s, 0.2 s, 0.5 s, 1.0 s, 2.0 s, 5.0 s, and 10 s.
Actual Interpreted Pressure	Manual autozero of the pump pressure.

12.2.8 Gradient Typ

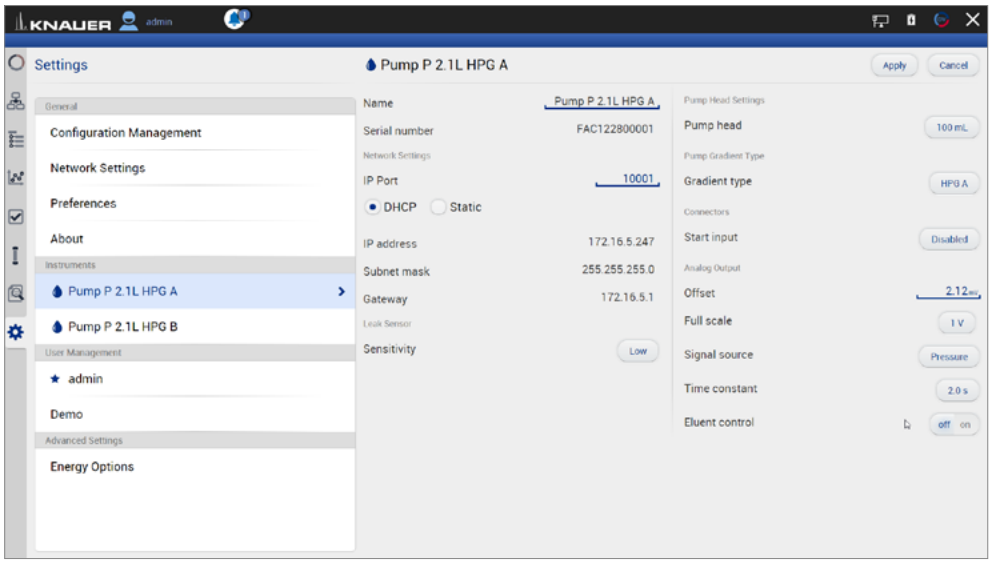


Fig. 12-21 Device Settings - Synchronized Pumps

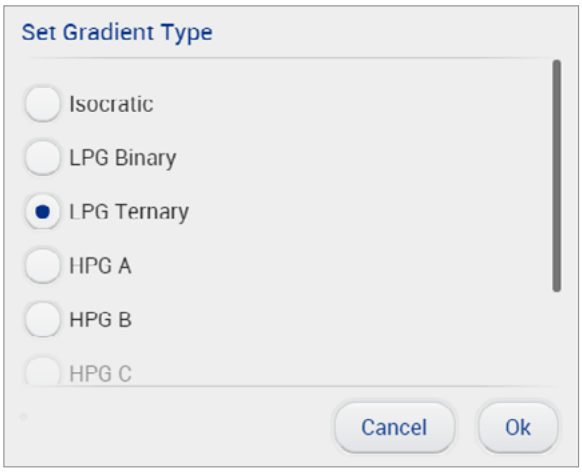
Gradient Type (only available for AZURA® P 2.1L) Equal pump heads are recommended for HPG mode. When using different pump heads (e.g. 500 and 1000 ml), maximum pressure values have to be considered. First, the pump with the lower maximum pressure has to be selected, then the second pump can be added to activate HPG mode.	Choose between 

Fig. 12-22 Set Gradient Type

Start Input	Choose Disabled, if you want to deactivate the analogue input. Choose between Start pump and Stop pump, if the pump should start or stop running upon receiving the trigger signal. Select Enabled, if the trigger signal shall be used to start a method for the analogue input of the pump.
Offset	Offsets the analog output signal in V.
Full Scale	Choose between 1 V, 2 V, and 5 V.
Signal Source	Choose between Pressure, HPG/LPG - A, HPG/LPG - B, Disabled, and Flow.
Time Constant	Smoothes measuring values. Choose between 0.1 s, 0.2 s, 0.5 s, 1.0 s, 2.0 s, 5.0 s, and 10 s.

12.2.9 Valve

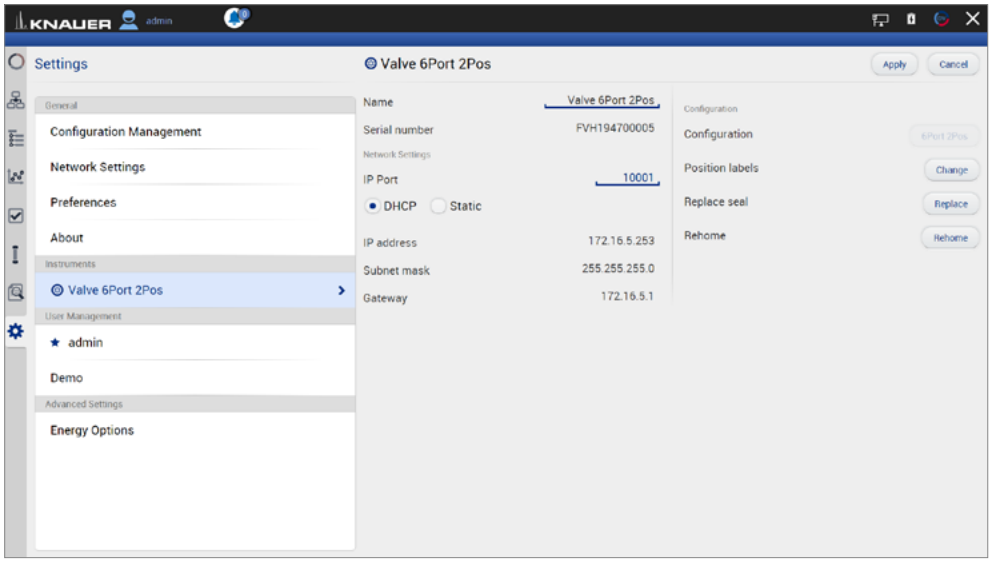


Fig. 12-23 Device Settings - Valve

Configuration	The RFID chip of the valve V 4.1 is read out and the valve type is automatically displayed.
Position labels	Each position of the valve can be given its own designation.
Replace seal	When replacing the rotor seal, the GLP specification Seal swichting cycles is set to zero and the number of seals used is increased by one.
Rehome	Reset the position of the valve drive to Home position for dis-/mounting the valve onto the valve drive.

Note: On the valve drive VU 4.1, the event output can be switched to ON, OFF and Pulse independently of the valve switching events. Pulse is not supported.

12.3 User management

The user account of the user that is logged-in is displayed under USER MANAGEMENT. The administrator can create new user accounts or assign rights to any user by activating the check boxes.

Legend

① **Create New User account**

② **Change Password**

③ **Apply**
Confirm your entry

④ **Cancel**
Cancel your entry

⑤ Choose a configuration.

⑥ **Delete picture**

⑦ **Choose picture**
Upload a picture

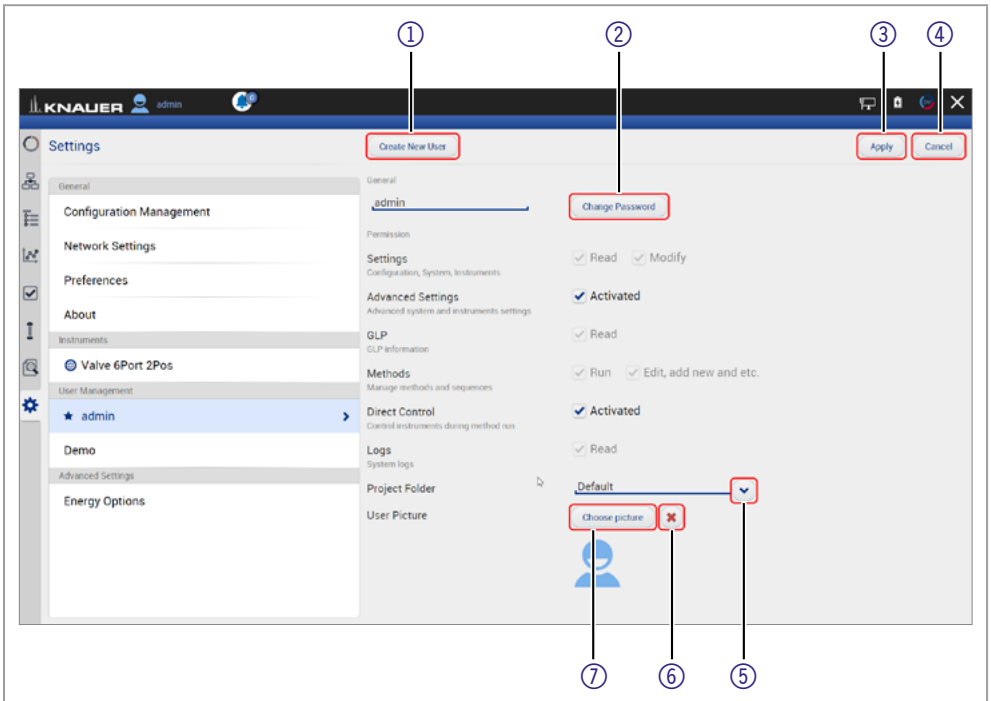


Fig. 12-24 User management overview

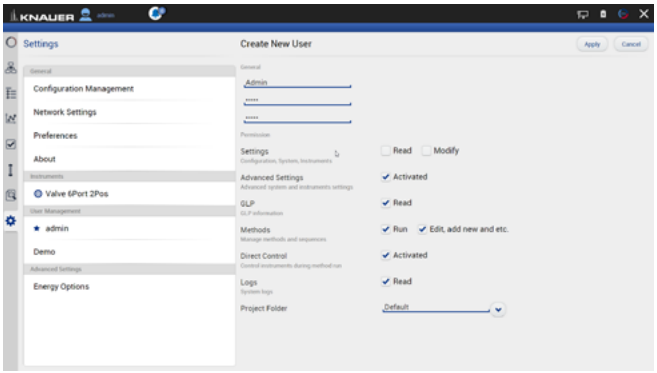
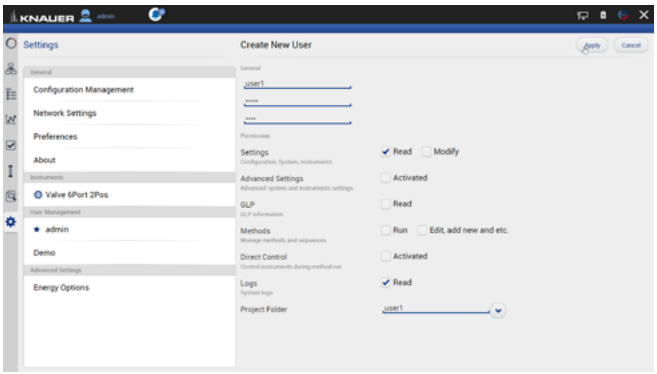
Settings	Choose between “Read” and “Modify“.
Advanced Settings	Check the box to authorize the user to make advanced system and instrument settings.
GLP	Check the box to authorize the user to read the GLP data.

Methods	Choose between ■ Run ■ Edit, add new and more
Direct Control	Check the box to authorize the user to control instruments during method run
Logs	Check the box to authorize the user to read the log files.
Project Folder	Name the folder. All user specific data are saved.
User Picture	Upload a picture of the user. A folder is opened.

Note: The user specific files will be saved in folder C:\Mobile Control\Projects\Project folder*.

12.3.1 Create a new user

This option is only available for administrators.

Process	Figure
1. Go to Settings > User management. 2. Select <Create new user>.	 Fig. 12-25 Create new user
3. Activate the checkboxes depending on the authorization you want to give. 4. Always confirm your settings with <Apply>.	 Fig. 12-26 Settings - user account

5. After successful creation of the new user account a status message is displayed.

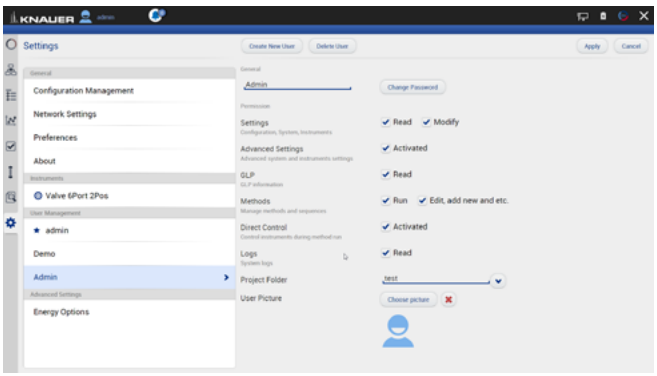


Fig. 12-27 Settings - user account

6. On the left side, the menu with restricted authorization is shown. The menu bar on the left side is limited.

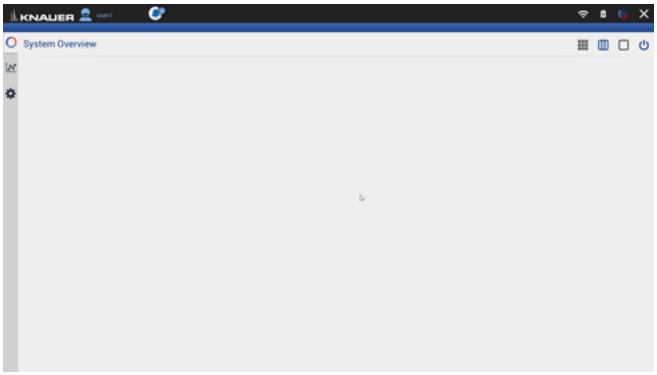


Fig. 12-28 Restricted authorization

7. Options which cannot be changed are displayed in grey out.

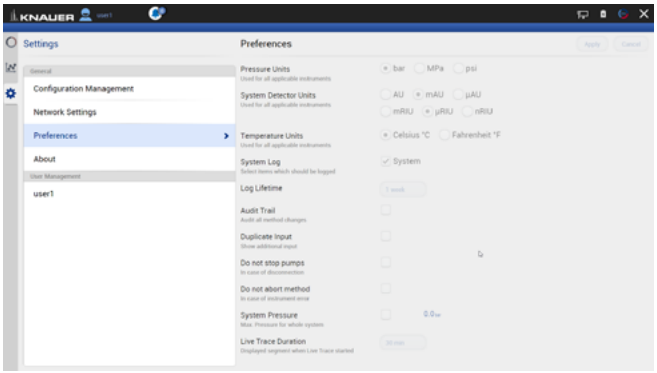
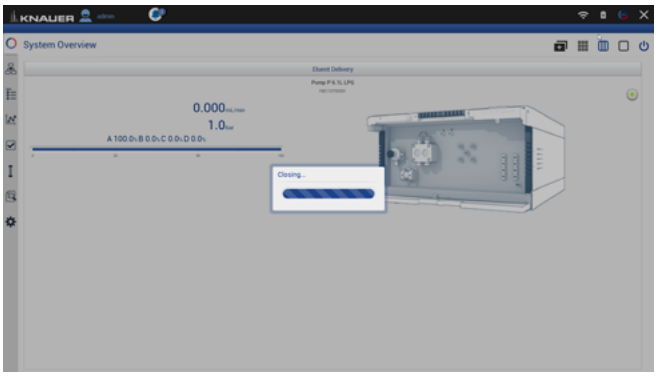
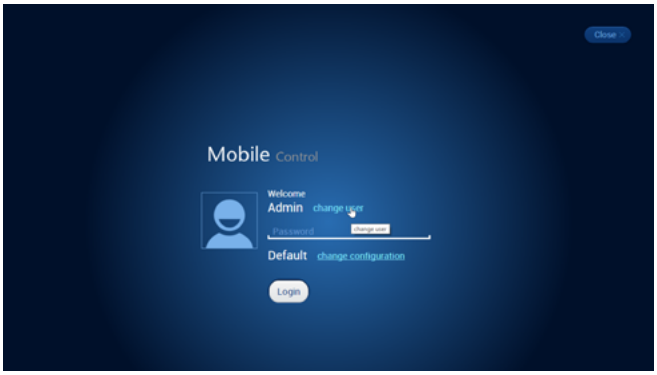
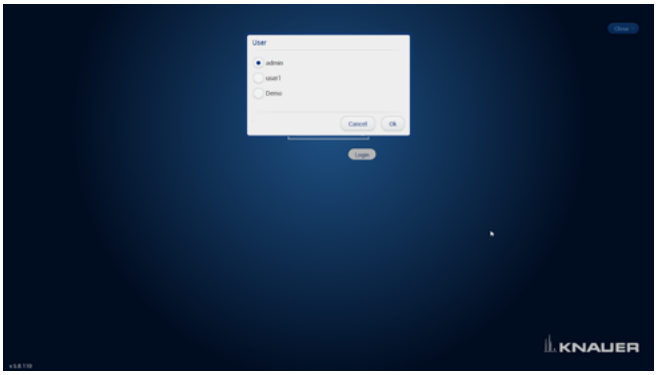


Fig. 12-29 Restricted authorization

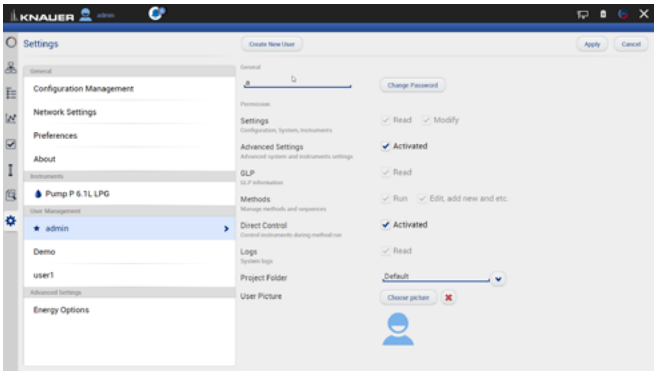
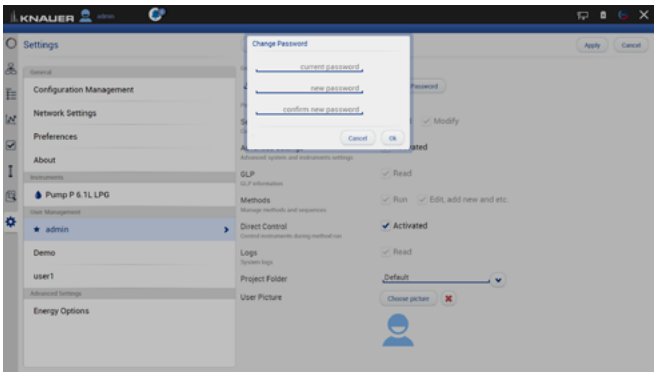
12.3.2 Change user account

The user has to have the respective permissions to do so Settings > READ AND MODIFY).

Process	Figure
1. Log off. 2. Confirm with <Ok>.	 **Fig. 12-30** Log off
3. Select <Change User>.	 **Fig. 12-31** Log in screen
4. Enter the user name and the password. 5. Press <Login>.	 **Fig. 12-32** Log in screen

12.3.3 Changing own password

Each user can change their own password, if provided with the respective permissions. The administrator can change the password of every user, without knowing their current password.

Process	Figure
1. Log in with your user account. 2. Go to SETTINGS > USER MANAGEMENT. 3. Select <Change password>. A new window is opened.	
	Fig. 12-33 Change own password
4. Enter the current password, and two times the new password. 5. Confirm with <Ok> and <Apply>.	
	Fig. 12-34 Change own password

Note: If you want to change the password of another user, you have to log in as administrator and select the user (USER MANAGEMENT) to change the password.

12.4 Settings

12.4.1 Configuration management

The Configuration Management allows to control and manage different HPLC systems with one tablet. The systems are connected to different routers (networks). Each configuration is linked to the SSID (Service Set Identifier) of the router and contains information of the integrated AZURA devices in the system.

Network settings **and** system configuration are saved in each created configuration.

Legend

① Click on the button to create a new configuration.

② Shows the current configuration.

③ Apply

④ Lists the name of the configuration.

⑤ Lists the users which have access to this configuration.

⑥ Lists the name of the service set identifier (network).

Possible edit actions:

Click on the red cross symbol to delete a configuration.

Click on the pen symbol to edit the settings.

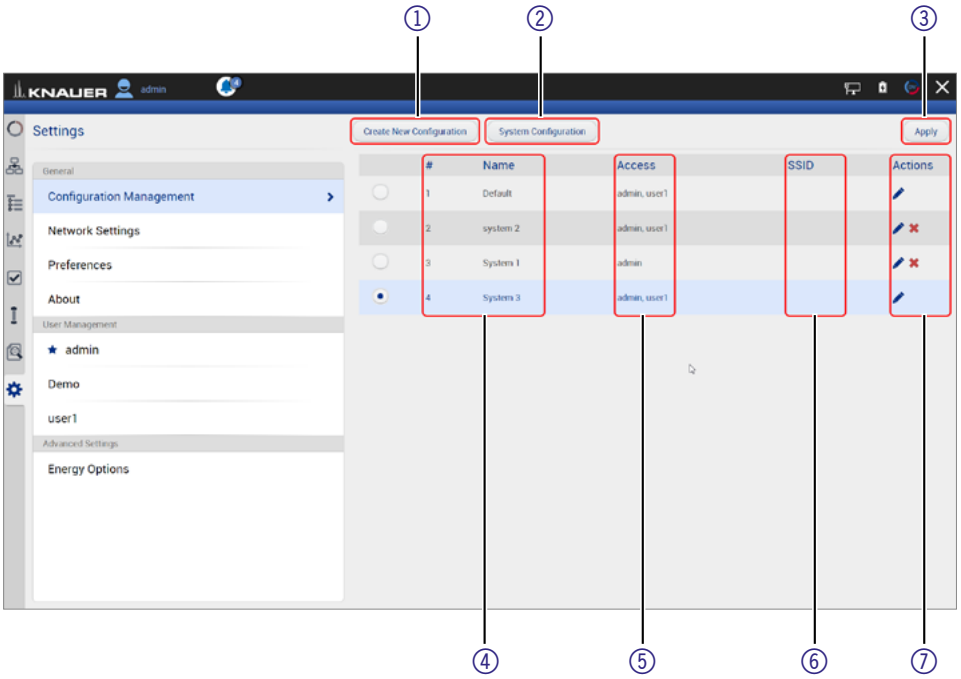


Fig. 12-35 Configuration list

Fig. 12-36 Connection of different systems to Mobile Control

There are 2 possibilities to create a configuration:

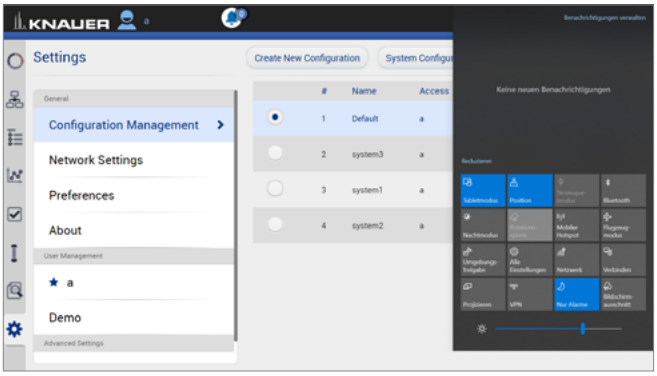
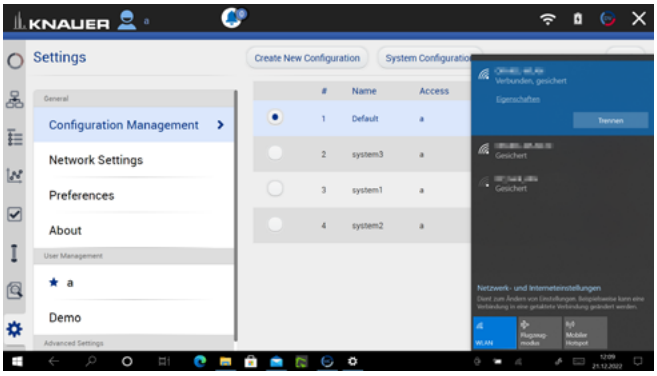
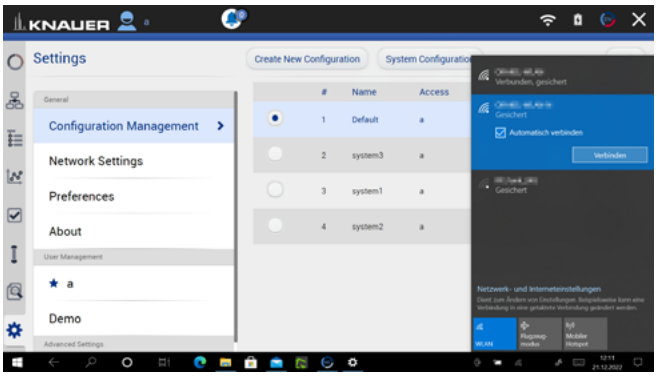
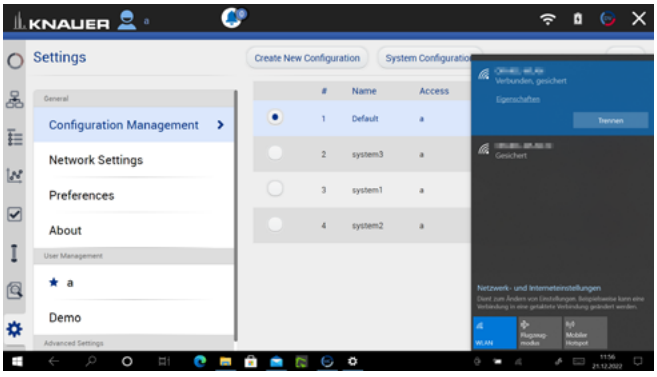
a) in menu configuration management (refer to chapter 12.4.1.1)

b) via Log in (refer to chapter 12.4.1.2)

Both ways are explained in the following chapters.

Note: Before adding a new configuration the required router has to be connected to the PC/notebook/tablet.

12.4.1.1 Configuration via menu Settings

Process	Figure
1. Open the info center in your tablet software. 2. Select network.	
	Fig. 12-37 Change own password
3. Select the network, you want to connect to.	
	Fig. 12-38 Choose network
4. Press <Connect>.	
	Fig. 12-39 Connect to network
5. A message informs that the network has been changed.	
	Fig. 12-40 Status message

6. Select <Create new configuration>.

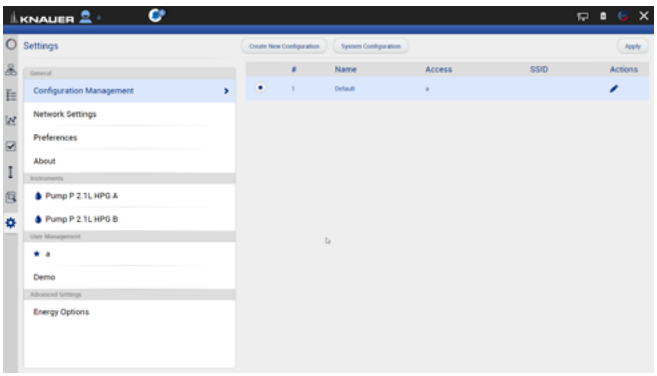


Fig. 12-41 Create configuration

7. Name the configuration.
8. Confirm with <Apply>.

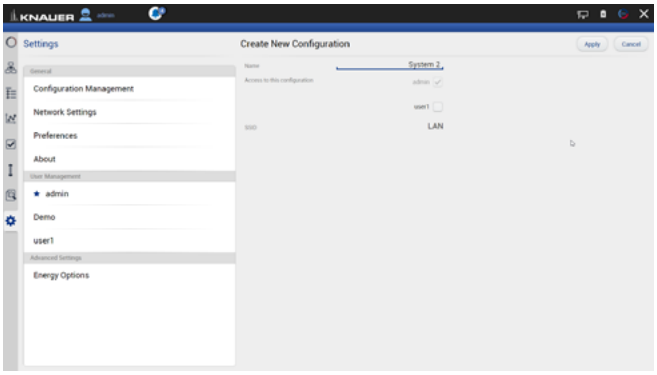


Fig. 12-42 Edit new configuration

9. You see the new configuration in the list with name, access and SSID. You can edit or delete the configuration.

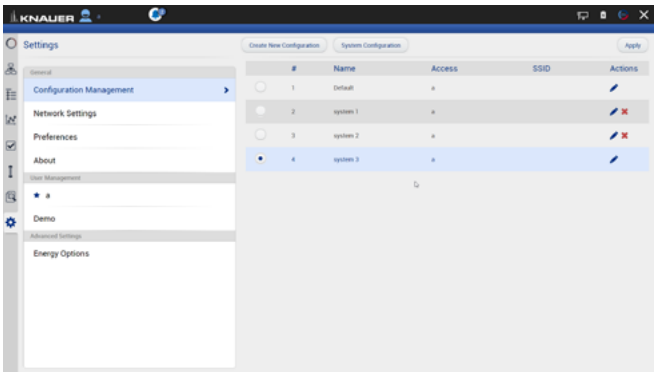


Fig. 12-43 Configuration List

10. Go to SYSTEM CONFIGURATION and configure your new system.

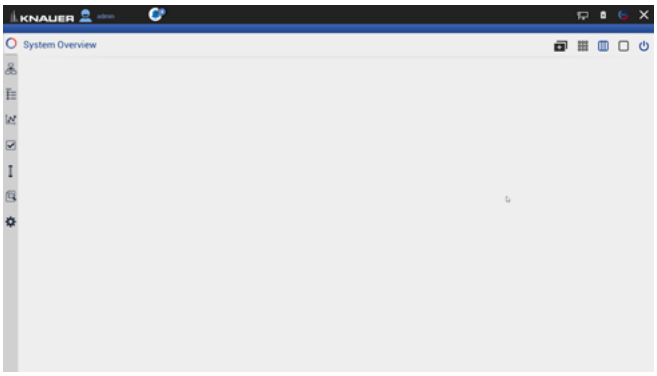
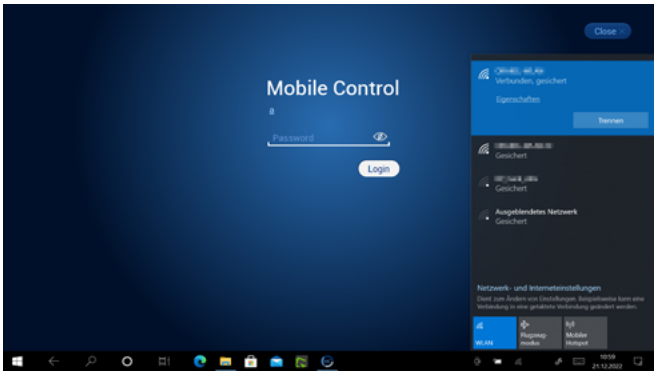
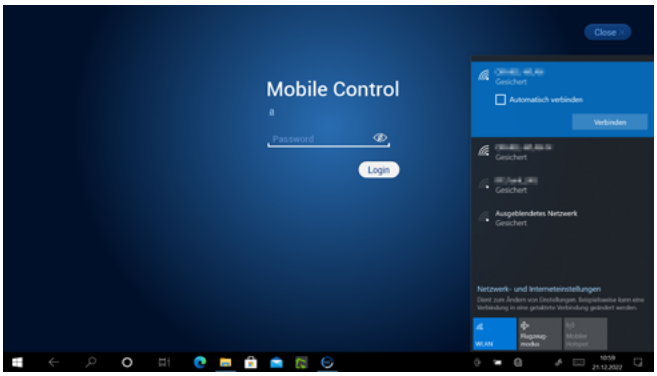
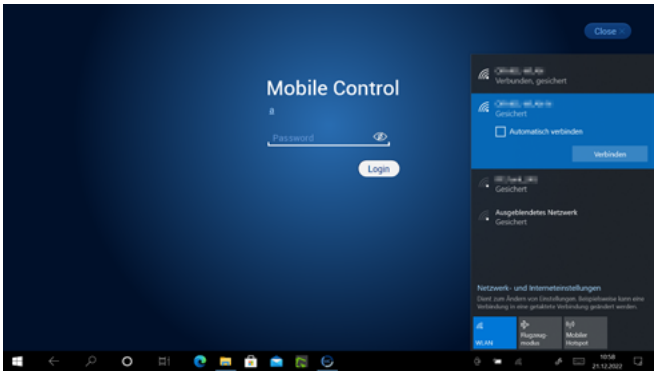
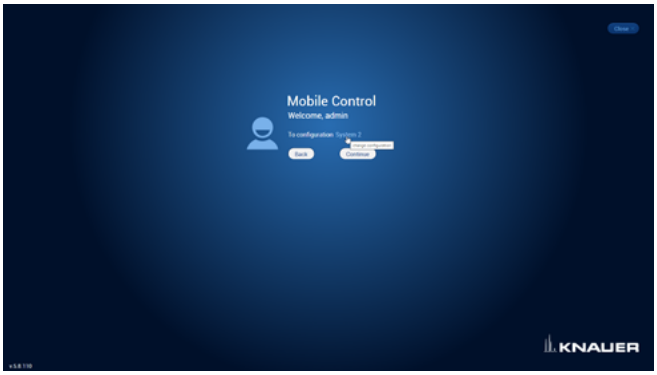


Fig. 12-44 System Configuration

After selecting a configuration, the application connects automatically to the corresponding router and enables the communication with AZURA® devices.

12.4.1.2 Configuration via Log in

Process	Figure
1. Open network connection which is showing all available networks.	
	Fig. 12-45 Open network connections
2. Select and connect to the desired network.	
	Fig. 12-46 Choose network (system)
3. The tablet/laptop/PC is now connected to another network.	
	Fig. 12-47 Connect with network (system)
4. Select <Change configuration> and enter the name of the new configuration.	
	Fig. 12-48 Change configuration

5. Log in Mobile Control

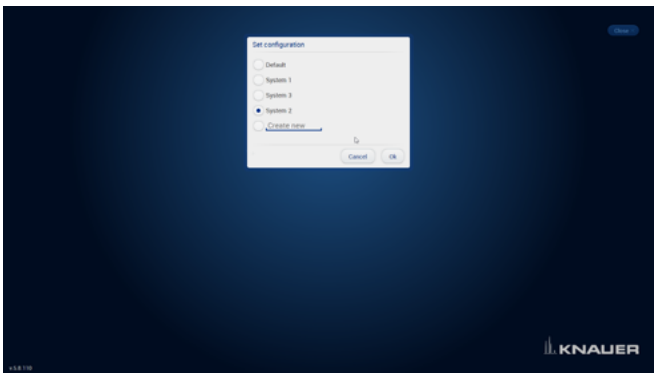


Fig. 12-49 Add new configuration

6. A message informs that the network has been changed.

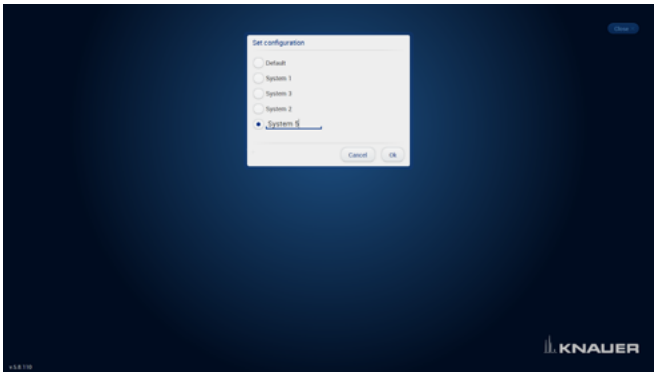


Fig. 12-50 Log in

7. Go to SETTINGS > CONFIGURATION MANAGEMENT. The new configuration is listed with name, access and SSID. You can edit or delete the configuration.

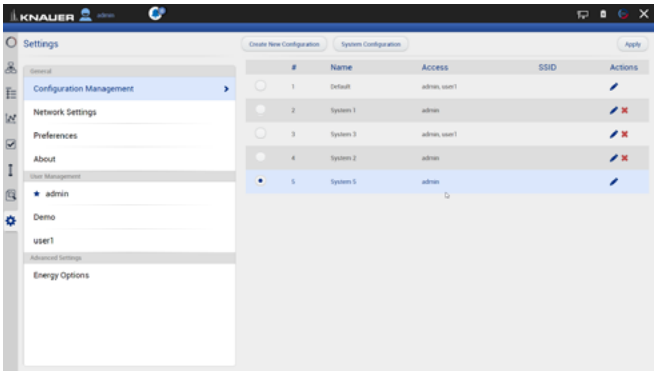


Fig. 12-51 Configuration list

12.4.2 Energy Options

In the energy options, single devices or a system can be put into standby mode and woken up from standby mode.

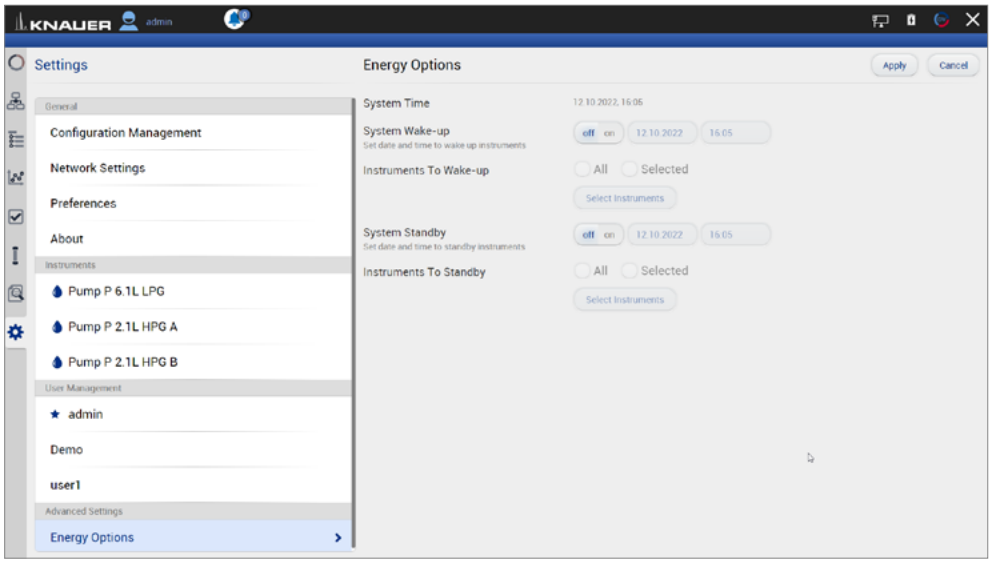


Fig. 12-52 Energy Options

12.4.2.1 Putting devices into standby mode manually

To put the device into standby mode manually, go to SYSTEM OVERVIEW and tap the STANDBY/POWER UP BUTTON ⏻.

12.4.2.2 Putting devices into standby mode automatically

To put the system or single devices into standby mode automatically, go to SETTINGS > ADVANCED SETTINGS > ENERGY OPTIONS > SYSTEM STANDBY.

1. Tap the date and time buttons to enter the respective data.
2. To activate the standby mode, tick the check box.
3. Activate one of the options under Instrument to Standby. ALL puts all devices which are part of the configuration into standby mode. Individual devices can be selected with SELECT INSTRUMENT. NOT ONE deactivates the standby mode for all devices.

12.4.2.3 Waking up devices from standby mode manually

To wake up the device from standby mode, tap SYSTEM OVERVIEW > STANDBY/POWER UP BUTTON > POWER UP. Note the waiting period which the lamp of the detector needs to be ready for use. Find the necessary data in the user manual of the device.

12.4.2.4 Waking up devices from standby mode automatically

To put the system or single devices into standby mode automatically, tap SYSTEM SETUP · ENERGY OPTIONS · System wake-up.

1. Tap the date and time buttons to enter the respective data.
2. Under SYSTEM WAKE-UP, tick the check box.

Activate one of the options under Instrument to wake-up. Activating ALL wakes up all devices which are part of the configuration into standby mode. Individual devices can be selected with SELECT INSTRUMENT. NOT ONE deactivates the wake-up functionality for all devices.

13. Special Features

13.1 Fraction Collection

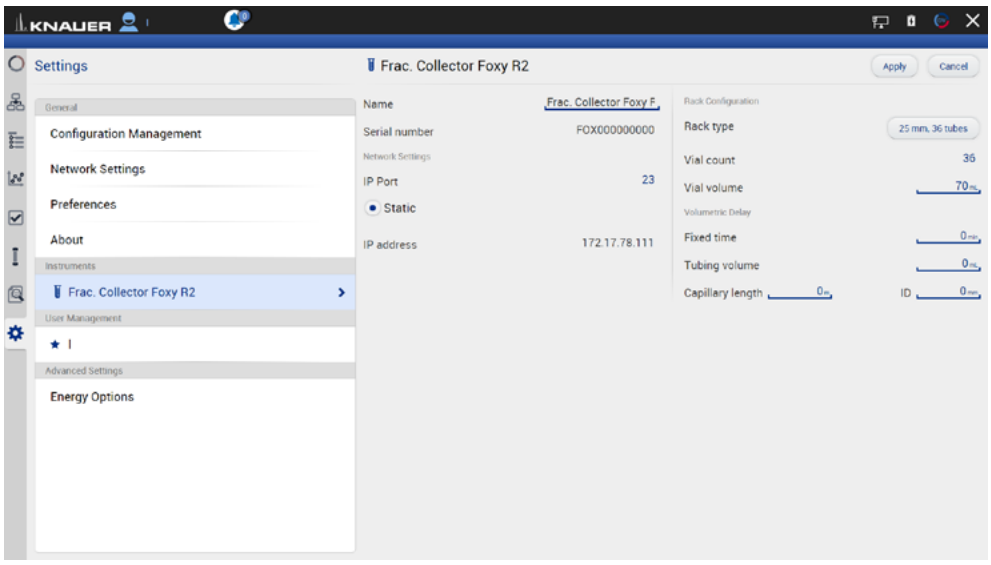


Fig. 13-1 Settings of fraction collector Foxy

In the settings of the device configured for fraction collection, the rack type can be selected and the maximum volume of the tube can be entered. The volumetric delay can be entered in three different ways: fixed time, tubing volume or capillary length and inner diameter.

13.1.1 Detail View

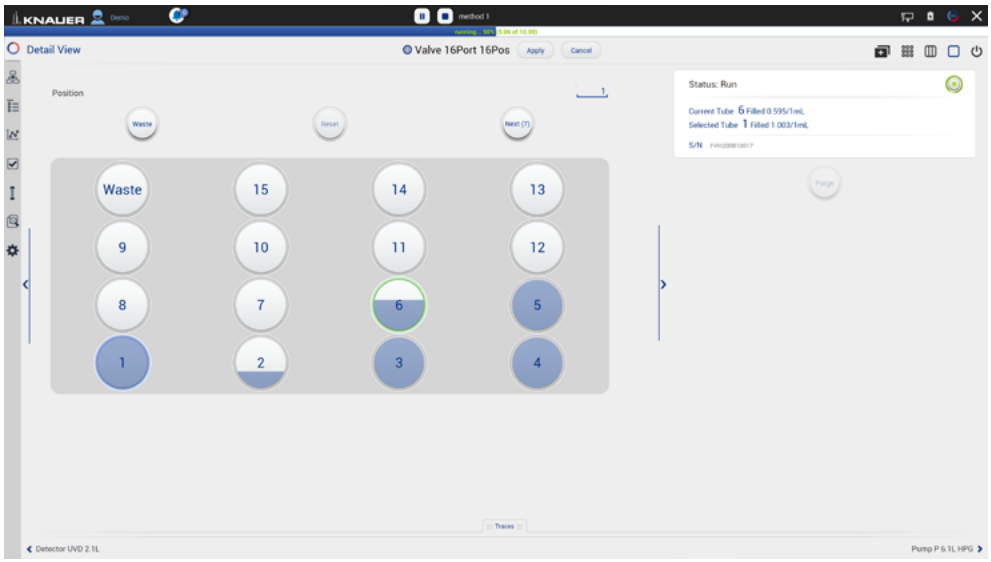


Fig. 13-2 Detail View of fraction collection device (rack view)

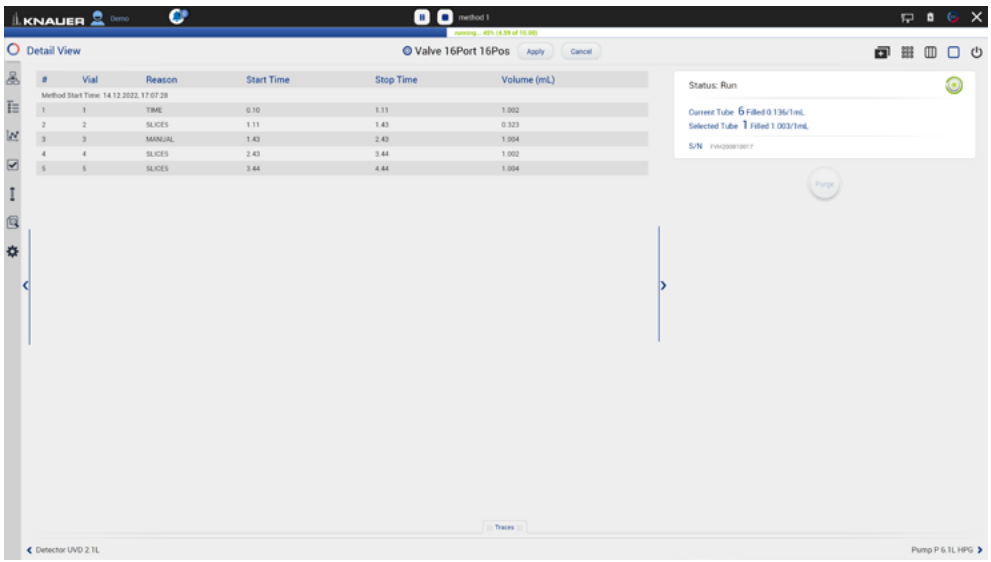


Fig. 13-3 Detail View of fraction collection device (table)

The Detail View of a device configured in the fraction collection block shows the Rack View with fill levels of the tubes (see Fig. 13-2) and a table with start, end time, volume of the fractions and the reason of the switching event (see Fig. 13-3).

Reset	With the reset of a rack the fill levels of all tubes are set to zero.
Collect/Waste	Switching between waste and fraction collection.
Next	The fraction collector/valve moves/switches to the next free, unfilled tube/position.
Purge (only for fraction collection valves)	The purge button automatically starts a method which can be individually created by the user.
Home (only for fraction collectors)	The fraction collector moves to the home position.

13.1.2 Method

Note: The fraction collection valve or the fraction collector is set to Waste at start/time 0 min of any method. Monitoring of fill levels of fraction collection tubes is only supported during methods.

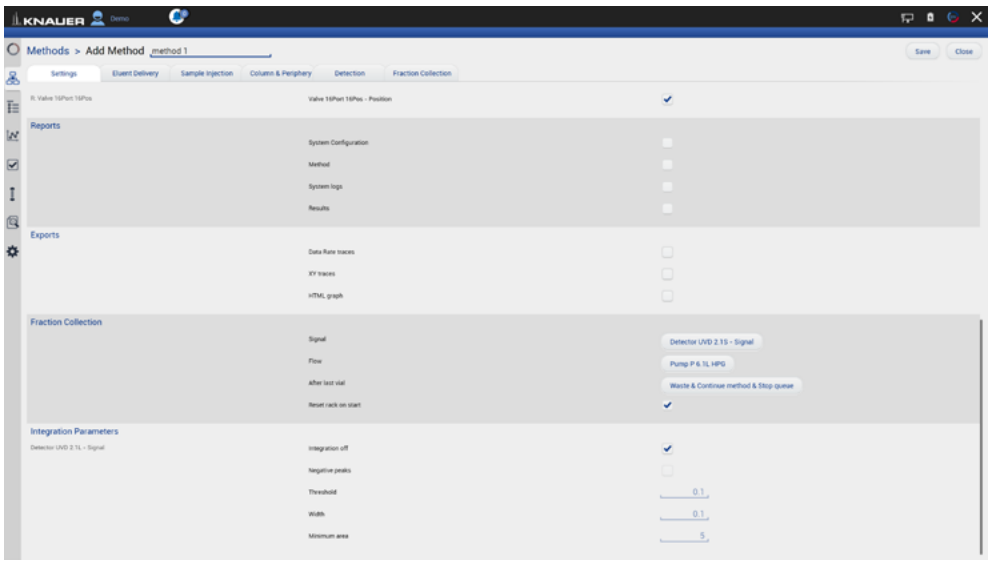


Fig. 13-4 Method settings for fraction collection

Signal	Select the detector of the system configuration whose signal is monitored to trigger the threshold dependent fraction collection.
Flow	Select the pump of the system configuration whose flow is used to calculate the time delay depending on the entered volumetric delay in the setting of the device configured in the fraction collection block.
Reset rack on start	With the start of the method the rack is reset, and the fill levels of all tubes are set to zero.
After last vial	This function describes the behavior during a method when the last vessel in the rack is filled.
Pause & Reset rack	The method is paused with flow off and the rack is reset.
Reset & Restart collection	The rack is reset, and the fraction collection starts with the first position.
Waste & Continue method & Stop queue	The fraction collection device switches to waste. The currently running method is continued and a following method in the queue is not started/ the queue is stopped.
Waste & Continue method and queue	The fraction collection device switches to waste. The currently running method and queue are continued. The following method in the queue is started.
Stop method & Continue queue	The currently running method is stopped but the following method in the queue is started.
Stop method & queue	The currently running method and the queue are stopped. The following method in the queue is not started.

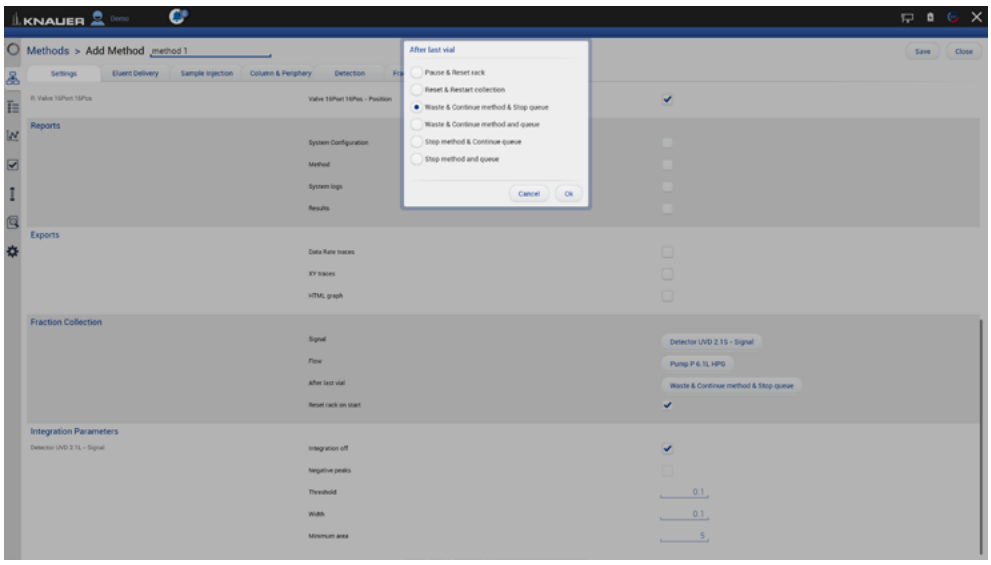


Fig. 13-5 Choice of After last vial settings

13.1.2.1 Programming fraction collection in the method

Choose between two different fraction collection modes - position or peak recognition - which can be defined in each method line. The mode “position” in combination with the value “waste” ends fraction collection and the flow is directed into the waste.

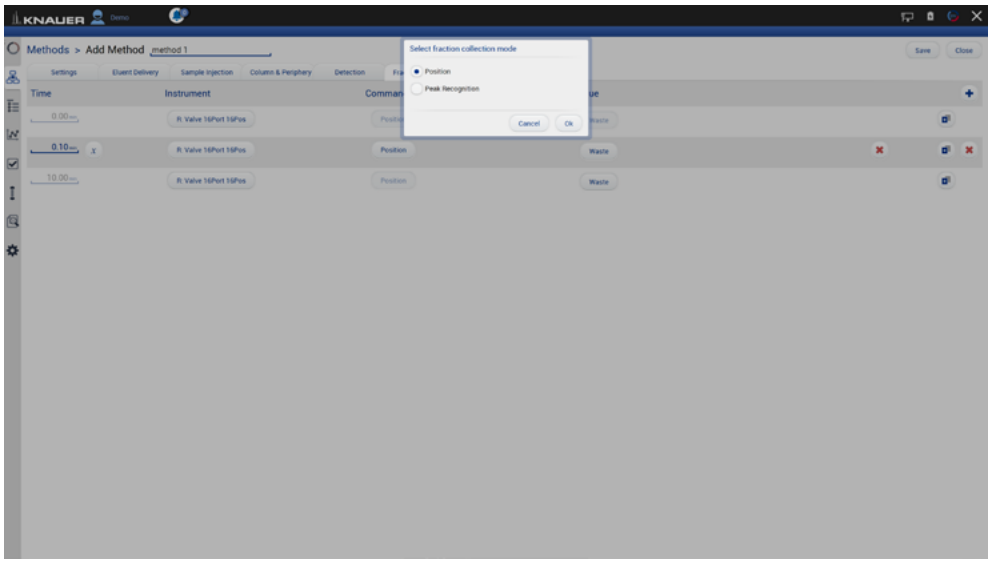


Fig. 13-6 Choice of fraction collection modes

In the fraction collection mode “position” the flow can be directed into the waste, the next unfilled tube, or a tube at a certain position. Under slices the maximum volume defined in the settings of the fraction collection device can be selected or any volume smaller than the maximum volume can be entered. As soon as the defined volume is reached, except for the waste position, the system switches to the next unfilled vessel. The waste does not have a maximum volume.

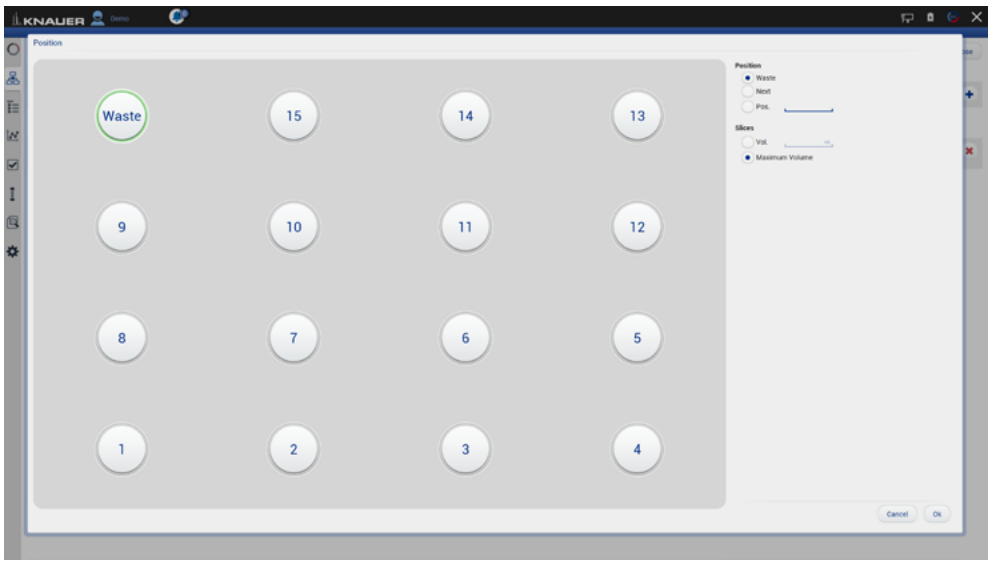


Fig. 13-7 Fraction collection mode position in method

In the mode “peak recognition” the fraction collection starts with exceeding a threshold and stops after falling below a second threshold of the detector signal. Start and stop thresholds are defined by the user. Fractions are collected into the next unfilled tube or into a tube at a certain position. With the latter, it can be set whether either all fractions are collected pooled into the specific tube - All in – only available for fraction collection valves or a new tube is used for each newly detected peak/ exceeded threshold – Start from. The slices setting is described in the fraction collection mode “position”. For fraction collectors, the “Move to” action moves the collector outlet to the entered position, but the waste/ fraction valve continues to direct flow to the waste.

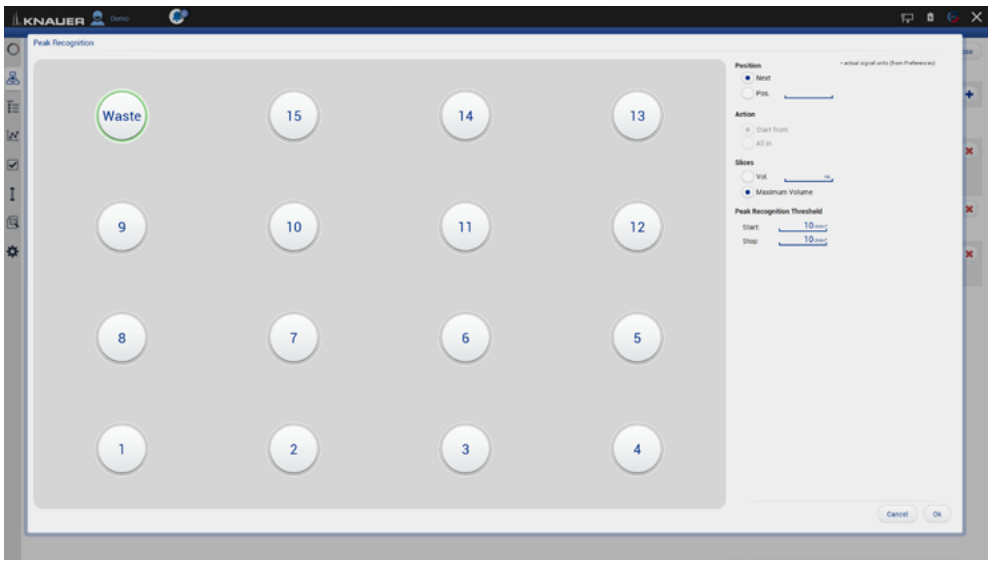


Fig. 13-8 Fraction collection mode peak recognition for valves in method

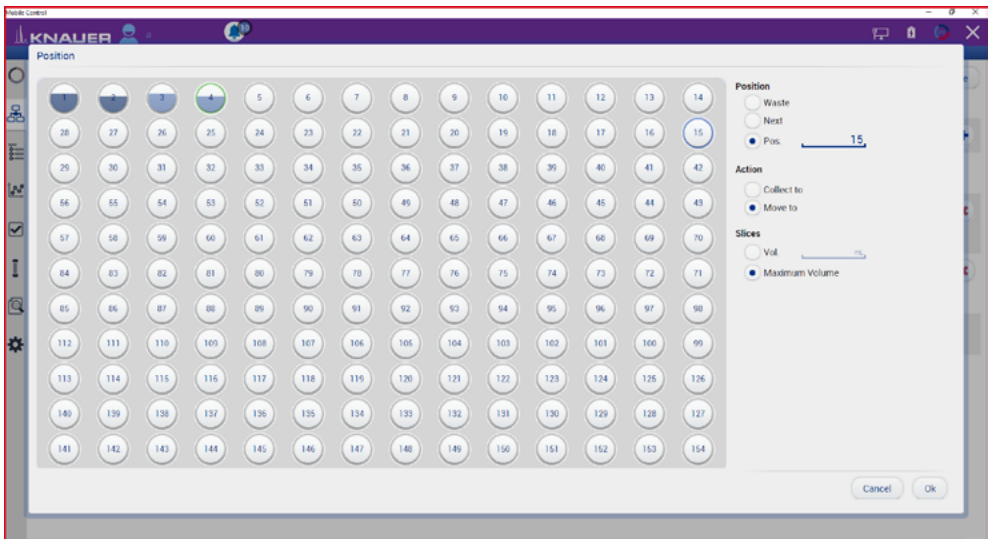


Fig. 13-9 Fraction collection mode peak recognition for fraction collectors in method

13.1.2.2 Direct control during a running method

If allowed in the user management, the user can intervene in the fraction collection during the running method. If the device is in waste position, collection can be started or switched to the next unfilled tube. If the device is collecting, it is possible to switch to waste. The direct control event can be terminated via resume. After clicking the resume button, the following method lines for the fraction collection device are executed as described in the method.

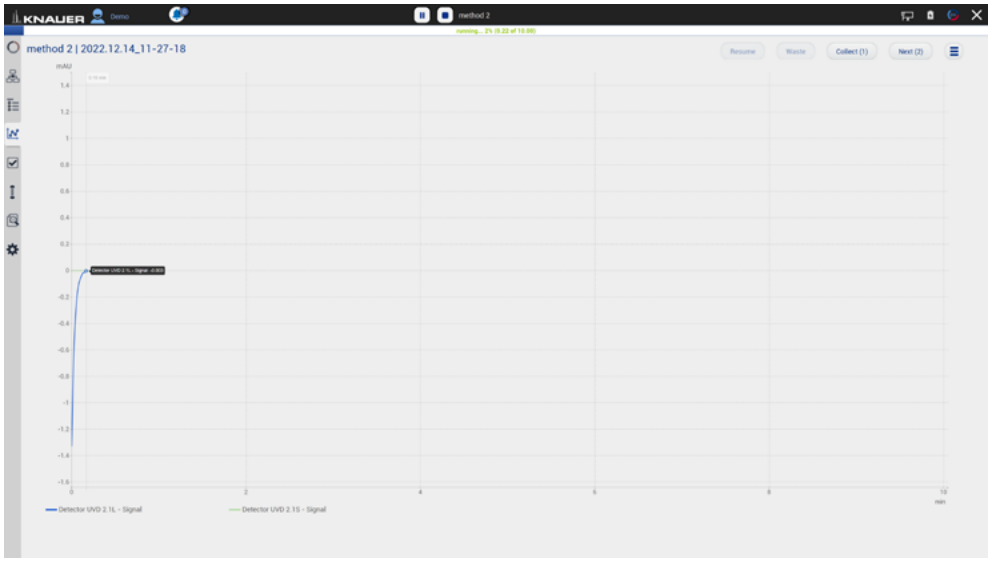


Fig. 13-10 Chromatogram View with direct control buttons for fraction collection

13.2 LNP License - Control of IJM NanoScaler

The LNP license of the Mobile Control software is designed to control the IJM NanoScaler system and is limited to its system configuration. Additional or alternative devices are not supported. The LNP license is adapted to the formulation workflow featuring a special LNP user interface and predefined method structures. Formulation methods can be created using familiar LNP parameters like volumes and ratios. The LNP license differs from the other Mobile Control products and does not support following features:

- Variables for method parameters
- Direct Control during a running method
- Fraction collection option
- Column Management (menu item removed)
- Monitor Mode with other software packages
- LNP license supports only KNAUER devices which are part of the IJM NanoScaler system

Special LNP features:

- Modified user interface of method writing in menu Method & Sequences (renamed: Lipid Nanoparticles)
- Predefines method structures for Pre/Aftercare and Formulation methods
- All methods in the LNP license use waiting for trigger, the end of run setting flow off and start with flow off for all pumps

13.2.1 Configuration of IJM NanoScaler

The IJM NanoScaler system consists of three P 4.1S pumps and one, two or three VU 4.1 valves. Configure the device manually in the functional blocks - pumps in the functional block Eluent Delivery, valves in Column & Periphery (see Fig. 13-12). According to the order in the configuration the devices are defined as...

Order of configuration	LNP function	Block
First pump	Pump 1 – Lipid	Eluent Delivery
Second pump	Pump 2 – API	Eluent Delivery
Third pump	Pump 3 – Quench	Eluent Delivery
First valve	Valve 2 – Fraction	Column & Periphery
Second valve	Valve 1 – API	Column & Periphery
Third valve	Valve 3 -Lipid	Column & Periphery

After the system configuration is set, the NanoScaler mode / configuration type of a device can be changed by selecting the LNP pump or valve type in the settings of the device (see Fig. 13-3).

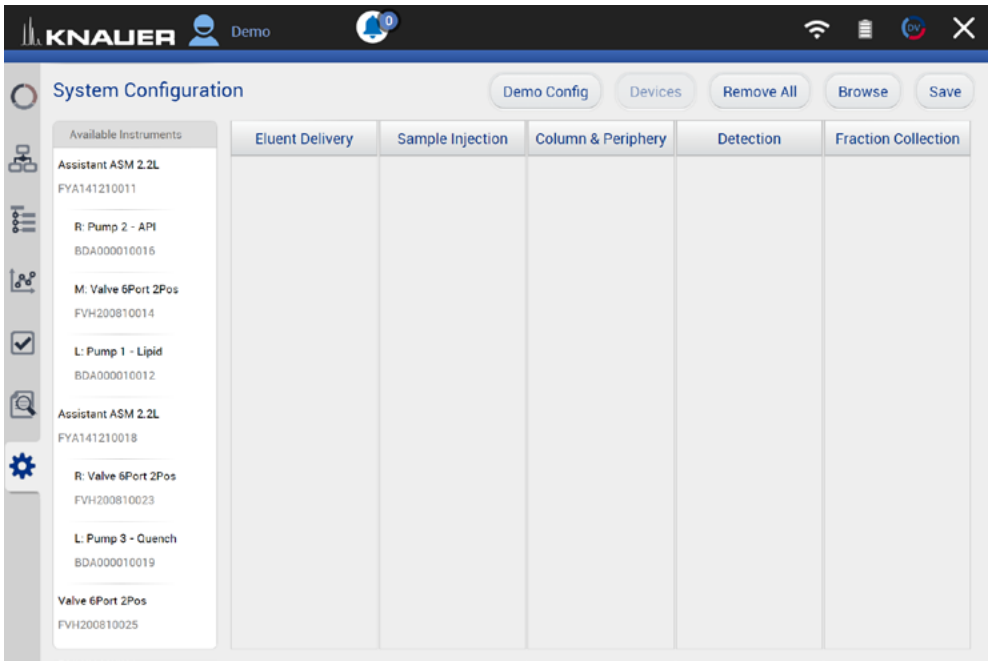


Fig. 13-11 Configuration of devices in the IJM NanoScaler system

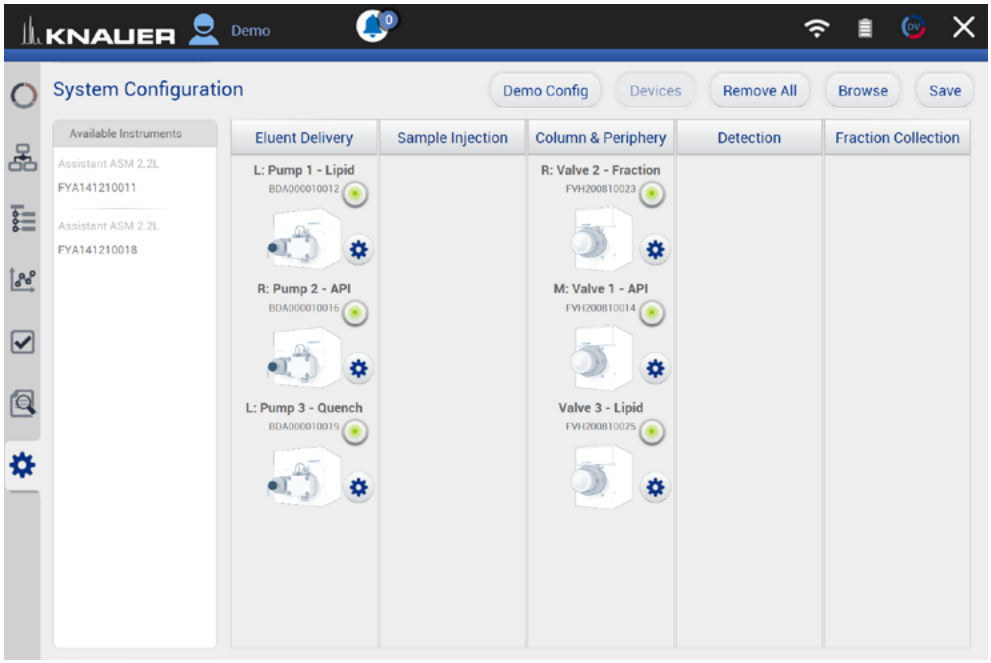


Fig. 13-12 Configuration of devices in the IJM NanoScaler system

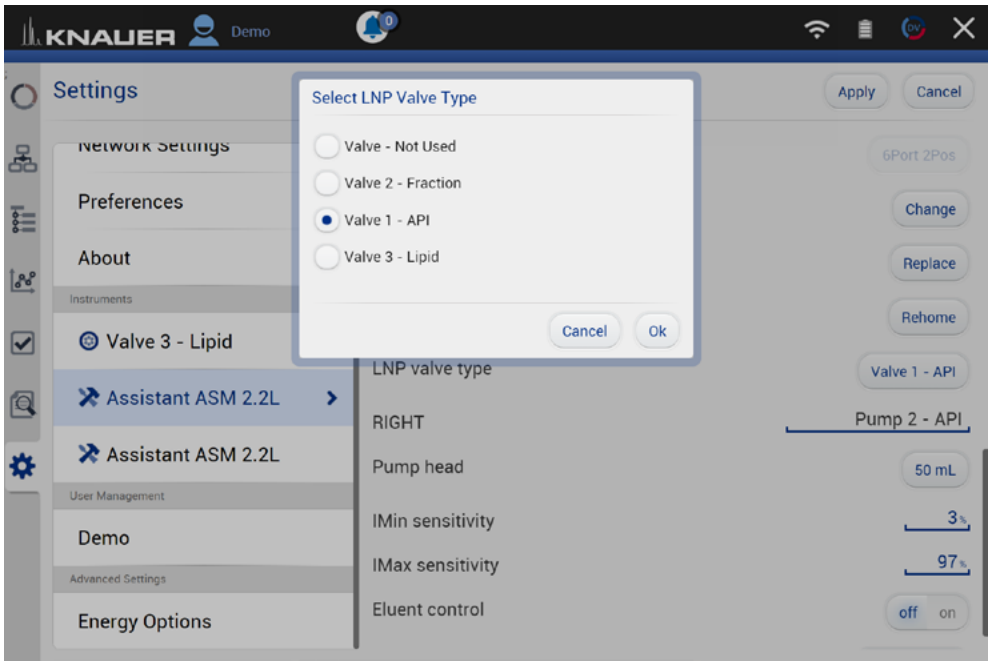


Fig. 13-13 Changing the LNP function of a device

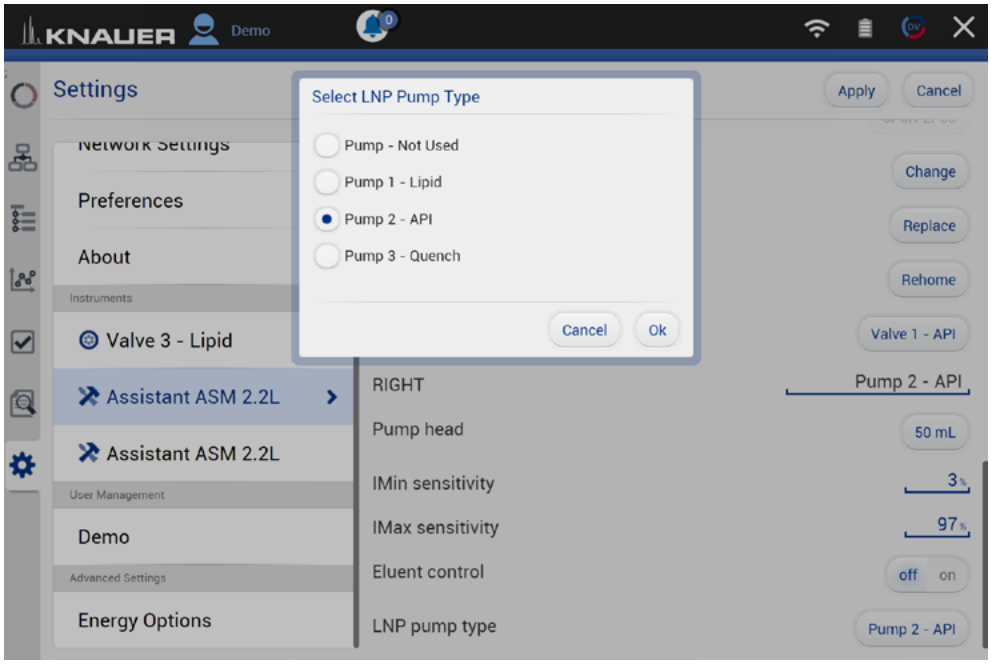


Fig. 13-14 Changing the LNP function of a device

13.2.2 Writing methods for formulation

The user interface of the menu Lipid Nanoparticles is adapted to the needs of LNP method writing. There are two different types of methods. Pre/Aftercare methods are used before or after LNP formulation to prepare or to clean the system. Formulation methods are created by entering flow rates or volumes of API, lipid and quench.

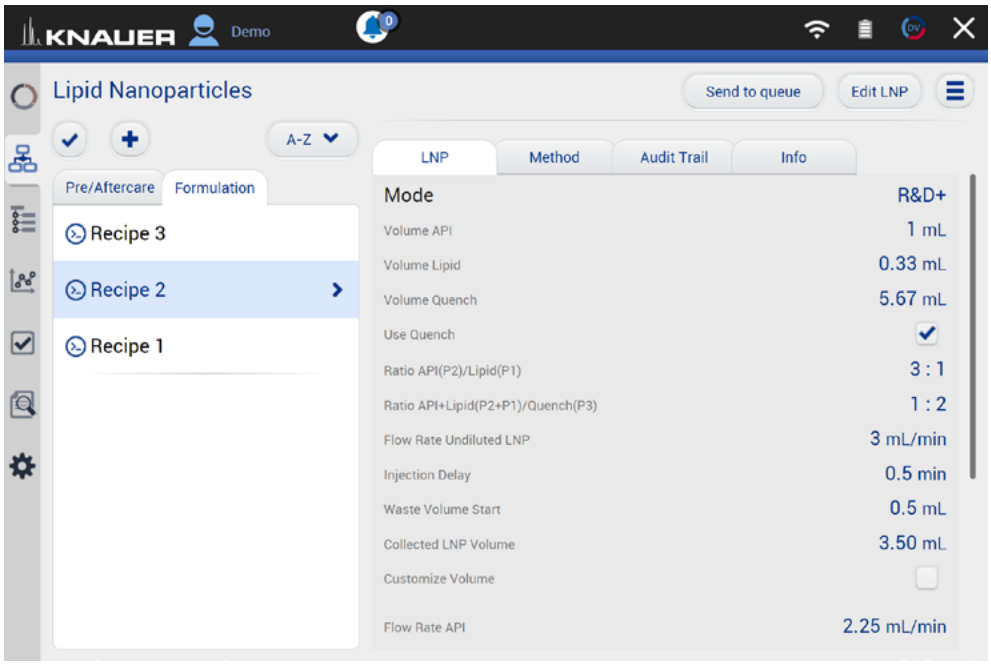


Fig. 13-15 Lipid Nanoparticles menu with two tabs for the method types Pre/Aftercare and Formulation

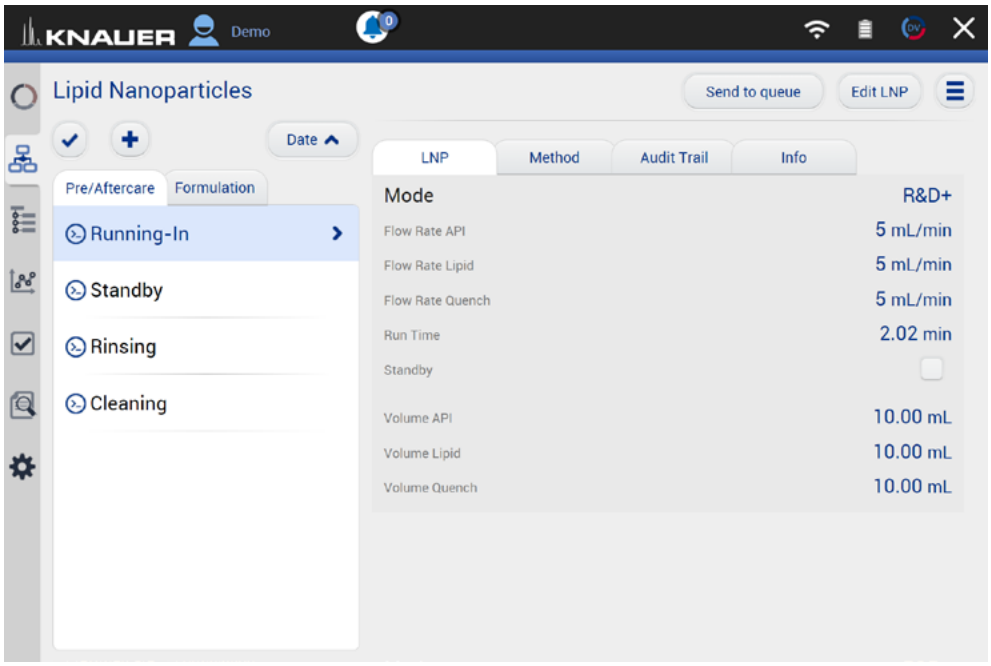


Fig. 13-16 Lipid Nanoparticles menu with two tabs for the method types Pre/Aftercare and Formulation

13.2.2.1 Pre/Aftercare methods

Methods of this type are used to prepare the system for formulation or to clean it afterwards. Enter the flow rates for the three pumps (API, lipid, quench) and the run time. The required volumes are displayed. In the first 80 % of the method, the valves are set to flush the sample loops and the fraction tubing. Then the valves switch, and the remaining tubing including the waste tubing is rinsed. Select the standby checkbox so that the system's devices enter the standby state at the end of the method. The devices only go into standby when the method is at the end of the queue/executed last.

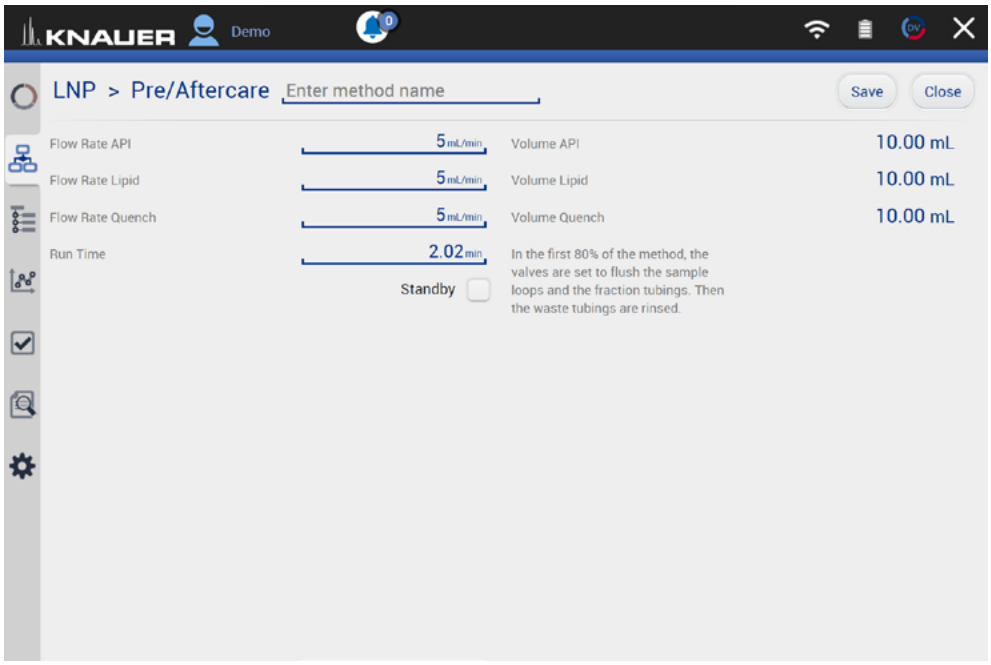


Fig. 13-17 Input screen of Pre/Aftercare method

13.2.2.2 Formulation methods

Depending on the system composition, different formulation workflows are executed by the software. For each mode the LNP user interface shows the input fields, the calculated parameters, a flow scheme of the system configuration and a schematic representation of the method structure. The input is volume or flow rate based. Quenching the formulation is optional.

In the standard configuration the IJM NanoScaler can be operated in two different modes.

R&D Mode

Devices: Pump 1 – Lipid, Pump 2 – API, Pump 3 – Quench,
Valve 2 – Fraction, Valve 1 – API

The standard operation mode of the IJM NanoScaler is the R&D mode (see Fig. 13-18). Thereby small API volumes can be encapsulated by the usage of the integrated sample loop. Only the sample loop is filled with API solution by syringe. Pump 2 pumps buffer to push the API solution out of the loop into the system. This mode is used for API volumes of 500 µl, 1, 2 or up to 5 ml according to the volume of the sample loops.

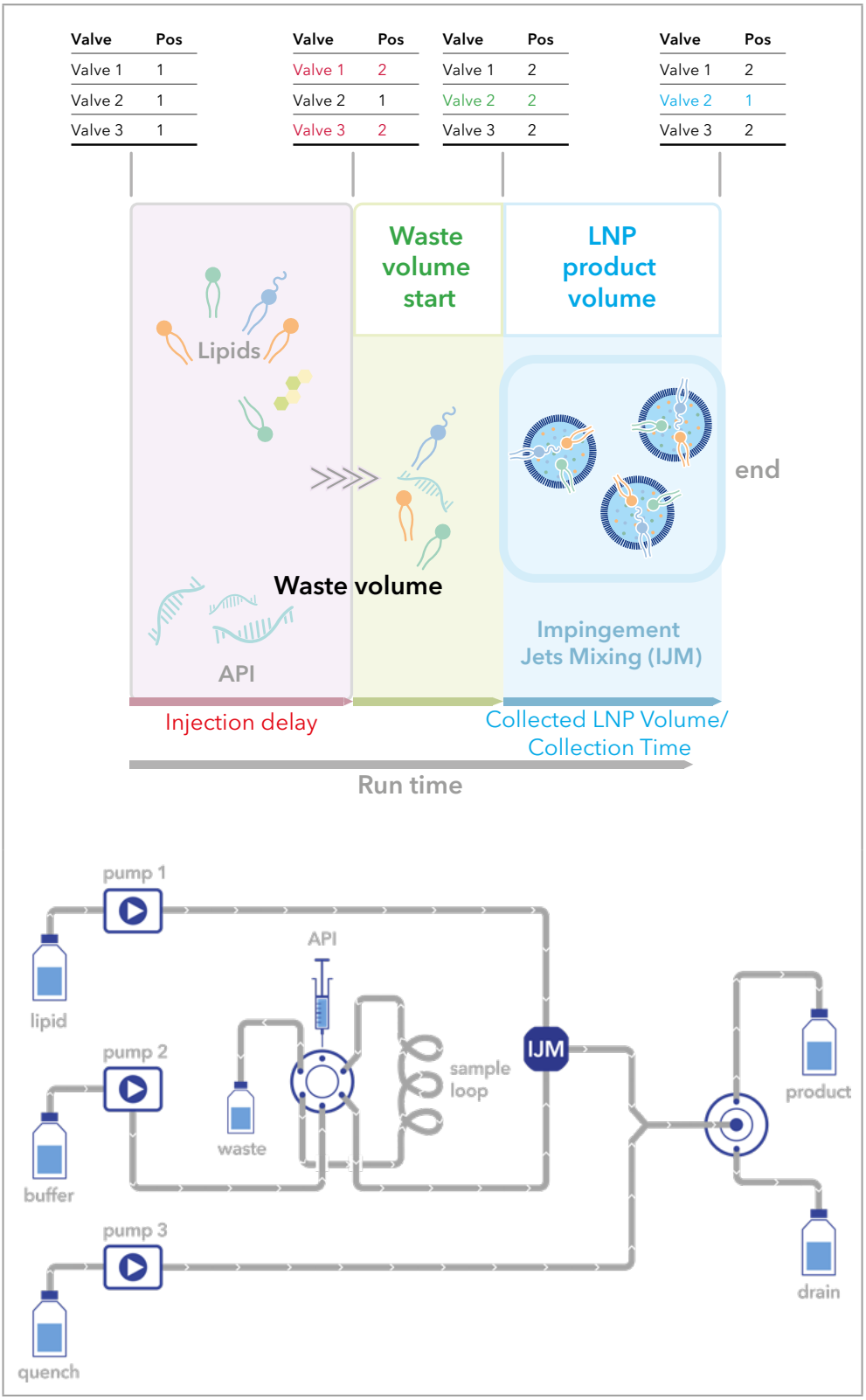


Fig. 13-18 Flow scheme and illustration of the NanoScaler in R&D mode

R&D+ Mode

Devices: Pump 1 – Lipid, Pump 2 – API, Pump 3 – Quench,
Valve 2 – Fraction, Valve 1 – API, Valve 3 -Lipid

The R&D mode of the standard IJM NanoScaler can be upgraded to the R&D+ (see Fig. 13-19). The upgrade features a second loop in an additional valve to apply small volumes of lipids via a sample loop (see Fig. 13-22).

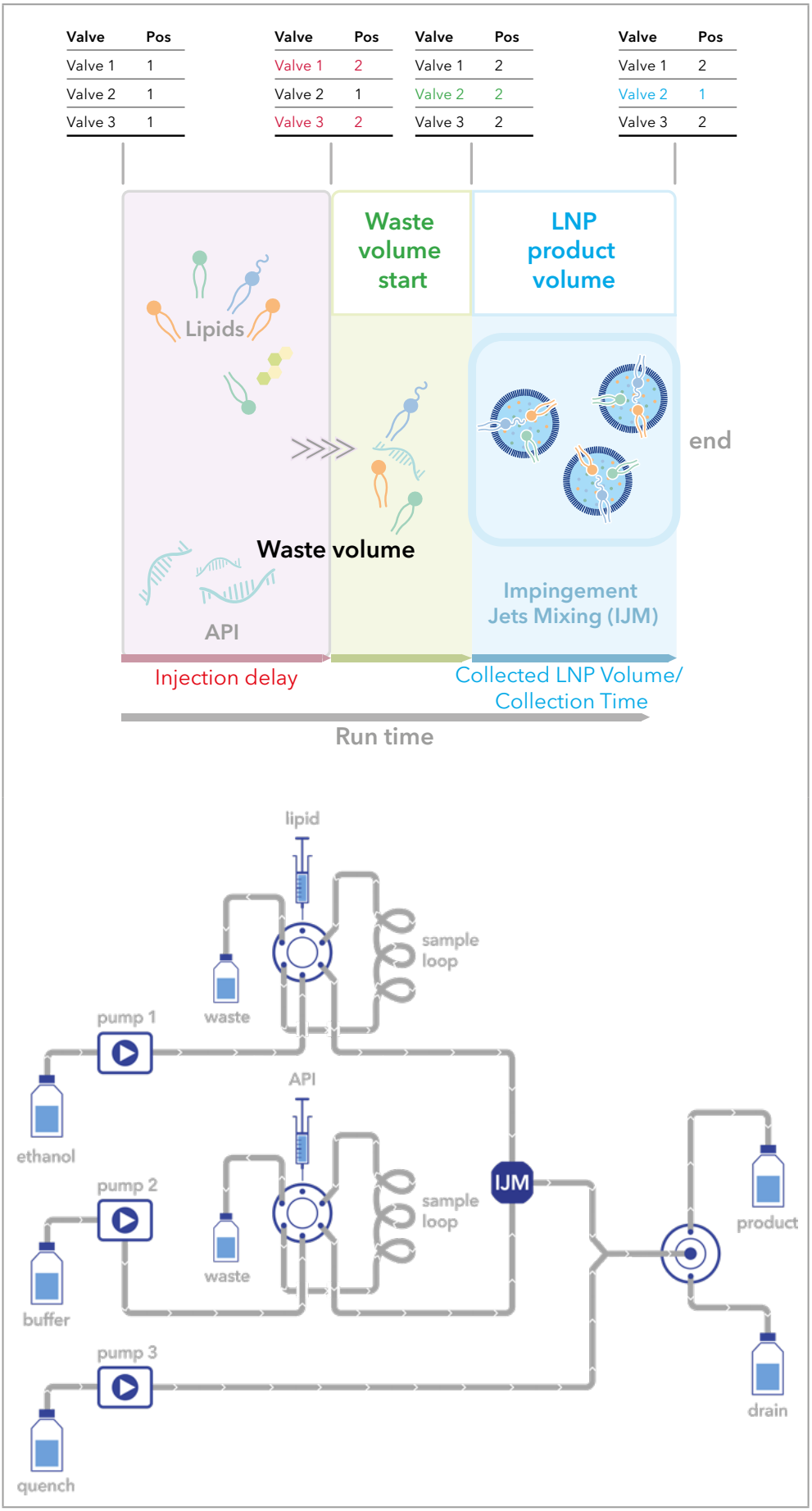


Fig. 13-19 Flow scheme and illustration of the NanoScaler in R&D+ mode

Production configuration

Devices: Pump 1 – Lipid, Pump 2 – API, Pump 3 – Quench, Valve 2 – Fraction

In the second operation mode, the production mode, larger volumes of API (> 5 ml) can be encapsulated by direct transfer of the API solution with pump 2. Therefore, the sample loop and valve 1 are excluded by connecting the pump 2 outlet to the IJM (see Fig. 13-20).

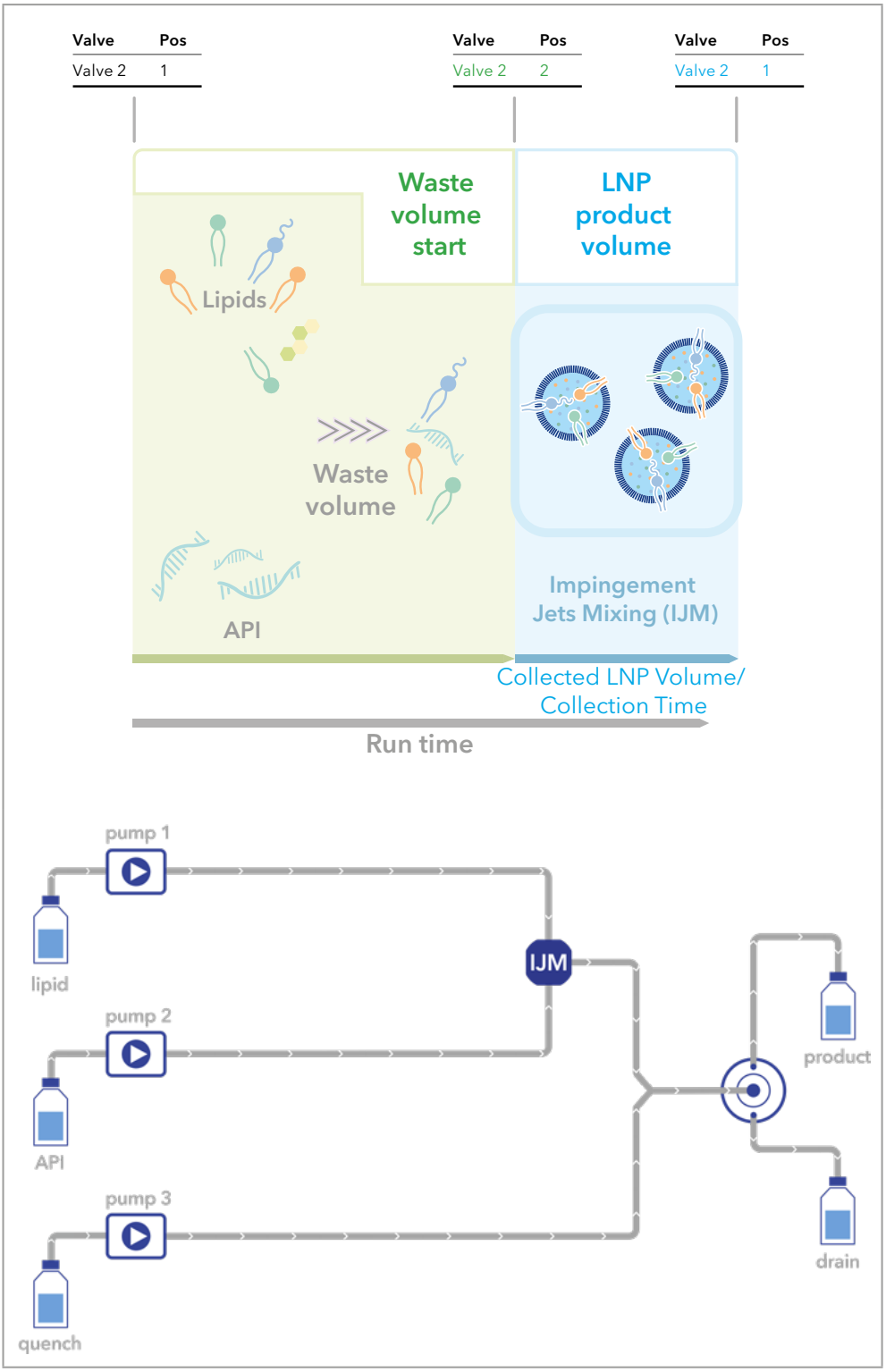


Fig. 13-20 Flow scheme and illustration of the NanoScaler in production mode

13.2.2.3 Formulation parameters

The R&D and the R&D+ configuration use the same input in the LNP user interface. The production configuration does not include the injection delay and volume waste.

LNP user interface of R&D, R&D+ mode and production mode:

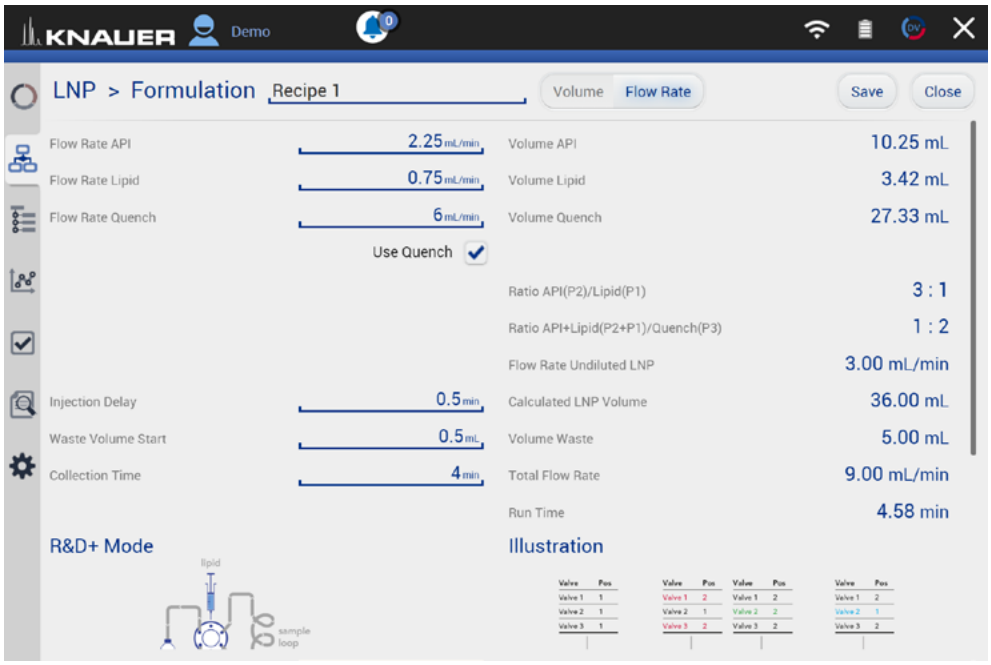


Fig. 13-21 Input screen of flow rate mode in R&D / R&D+ configuration

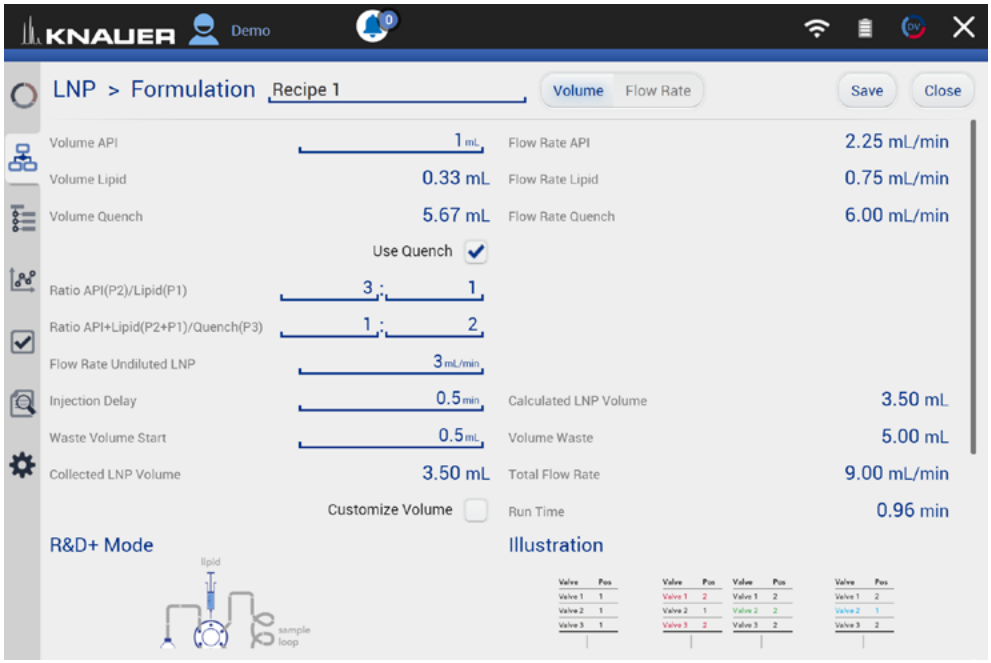


Fig. 13-22 Input screen of volume mode in R&D / R&D+ configuration

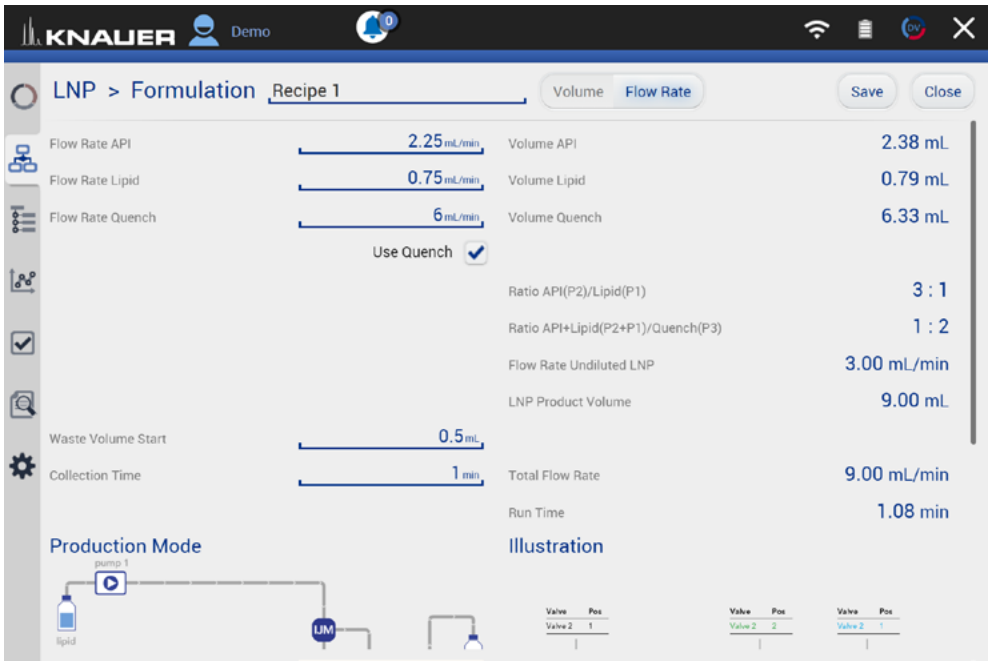


Fig. 13-23 Input screen of flow rate mode in Production configuration

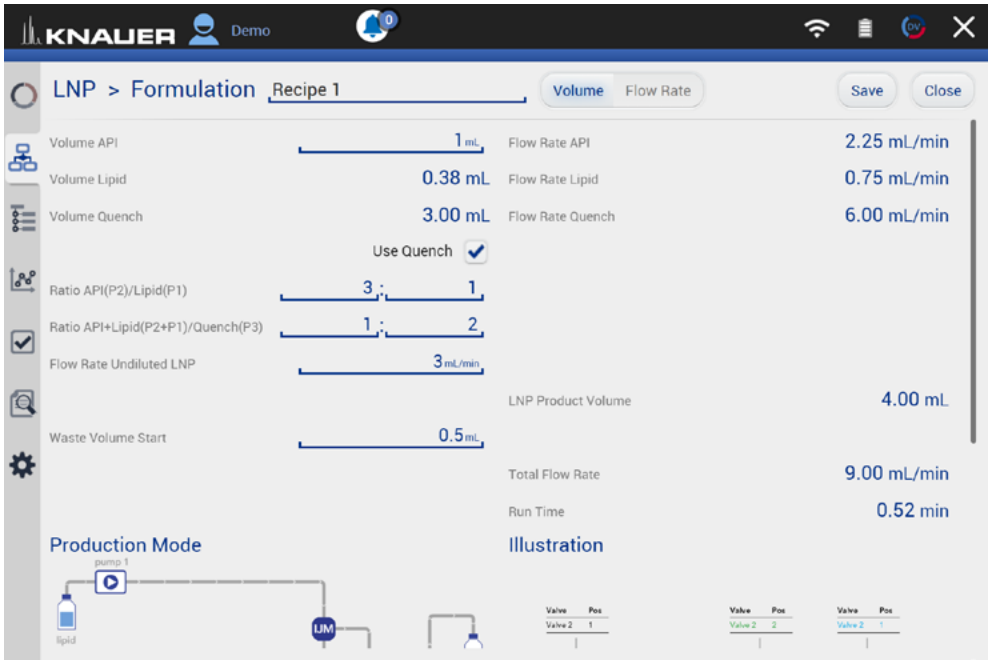


Fig. 13-24 Input screen of volume mode in Production configuration

Input		
Parameter	**Description**	**Mode**
Flow rate	Flow rates of the pumps API, Lipid and Quench	Flow rate
Volume API	Volume of API to be used in formulation approach	Volume
Ratio API / Lipid	Desired ratio of API to lipid. Flow rates of API, Lipid and Quench pumps are calculated depending on this ratio.	Volume
Ratio API + Lipid / Quench	Desired ratio of sum of API and lipid to quench. Flow rates of API, Lipid and Quench pumps are calculated depending on this ratio.	Volume
Flow Rate Undiluted LNP	Flow rate of undiluted formulation. Sum of flow rates of API and lipid pump.	Volume
Injection delay*	Time period between start of the method and the valve switching event that integrates the API (Valve 1 – API) and/or lipid loop (Valve 3 – Lipid) into the flow path. During that time the pumps ramp up and the system equilibrates. Valve 2 – Fraction is set to waste position.	Volume, Flow rate
Use Quench (checkbox)	Enable or disable the quenching option resulting in an active or inactive input for the quench pump.	Volume, Flow rate
Waste volume start	After the injection event the volume of Waste Volume Start is conveyed into the waste. After the volume is reached, the Valve 2 – Fraction switches from waste to fraction. The Waste volume start reduces the collected LNP product volume by removing the initial phase products of formulation.	Volume, Flow rate
Collection time	Time of collecting the formulation product starting from the Valve 2 - Fraction switching event (defined by waste volume start). After the collection time is expired the Valve 2 switches from Fraction to Waste and the method ends. A reduced Collection Time reduces the collected LNP product volume by removing the late phase products of formulation. Prolonging the Collection Time extends the method and dilutes the collected formulation product.	Flow rate

Input		
Collected LNP Volume	Volume that is collected starting from the Valve 2 - Fraction switching event (defined by waste volume start). After the volume is expired the Valve 2 switches from Fraction to Waste and the method ends. By default, the value of the collected LNP Volume equals the Calculated LNP Volume. By selecting the check box Customize Volume the Collected LNP Volume can be changed. A reduced volume reduces the collected LNP product volume by removing the late phase products of formulation. Prolonging the Collected LNP Volume extends the method and dilutes the collected formulation product.	Volume

Output		
Parameter	**Description**	**Mode**
Volume	Volumes conveyed by API, Lipid and Quench pumps	Flow rate
Ratio API / Lipid	Ratio of API to lipid resulting from the entered flow rates of API, Lipid and Quench pumps.	Flow rate
Ration API + Lipid / Quench	Ratio of sum of API and lipid to quench resulting from the entered flow rates of API, Lipid and Quench pumps.	Flow rate
Flow Rate Undiluted LNP	Flow rate of undiluted formulation. Sum of flow rates of API and lipid pump.	Flow rate
LNP product volume	Volume that is collected starting from the Valve 2 - Fraction switching event (defined by waste volume start) until the end of the method.	Flow rate, Volume,
Total flow rate	Sum of flow rates of API, Lipid and Quench pumps	Flow rate, Volume
Run time	Run time of the method. At the end of the method the Valve 2 – Fraction switches from fraction to waste.	Flow rate, Volume
Flow rate	Flow rates of the pumps API, Lipid and Quench	Volume
Volume waste*	Volume that is discarded during the method. The position of Valve 2 – Fraction is set to waste.	Volume, Flow rate

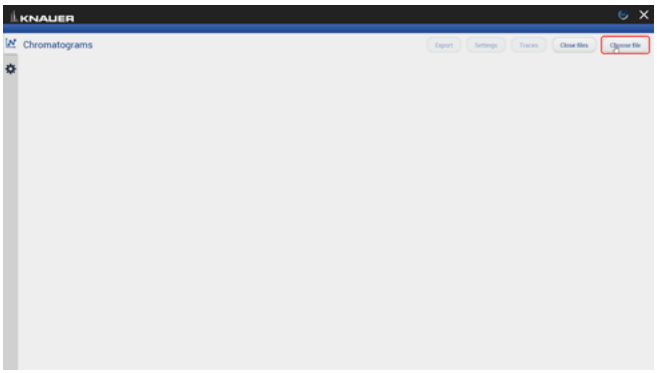
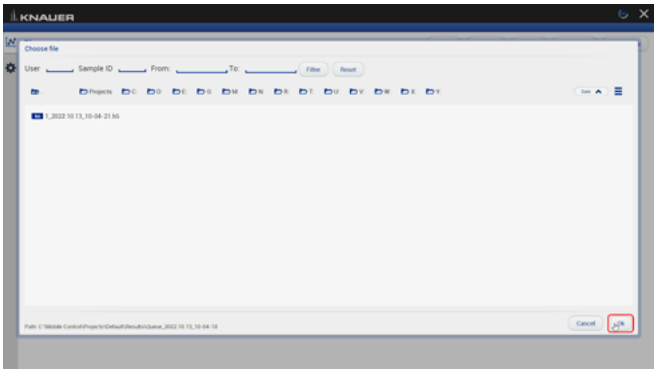
* Injection Delay and Volume waste are not included in production configuration.

14. Data Viewer

Note: Chromatograms can be revisited with the Data Viewer which is installed together with Mobile Control. A separate activation of the Data Viewer is not necessary.

Process	Figure
1. Press the button on the upper right side of the screen or open the software via the desktop icon. A new window opens.	 **Fig. 14-1** Open Data Viewer
2. Data Viewer is loading.	 **Fig. 14-2** Data Viewer - Start screen

14.1 Load a chromatogram

Process	Figure
3. The interface is similar to Mobile Control Interface. **4.** Select <Choose file> to load a measurement into the Data Viewer.	 **Fig. 14-3** Data Viewer - Overview
5. Select a result file (.h5) and confirm with <Ok>. By default, Mobile Control saves all result files in C:\Mobile Control\Projects\ Project folder*\Results\Queue_date_time. * The project folder is named default or can be renamed in Mobile Control settings > user management.	 **Fig. 14-4** Data Viewer - Select run
6. The chromatogram is displayed.	 **Fig. 14-5** Data Viewer - Chromatogram

Note: The selection of traces in the chromatogram view of Mobile Control is saved in the result file. The Data Viewer shows the chromatogram in the same view as it was recorded in Mobile Control.

Note: The data format of Mobile Control result files is *.h5.

14.2 Chromatogram window

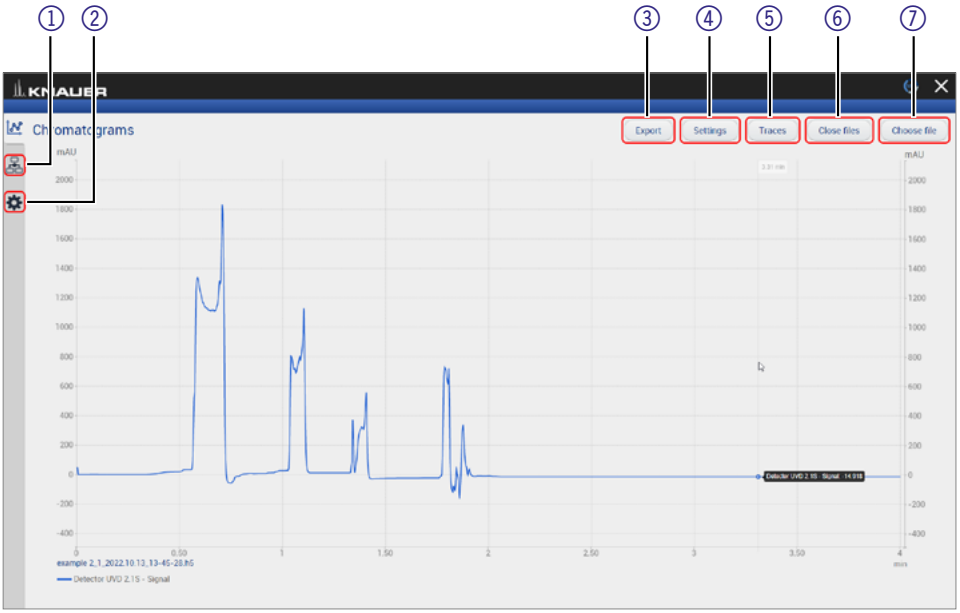


Fig. 14-6 Chromatogram - Overview

Legend

① Methods and Sequences	Displays the details of the method, the integration parameters for analysis and the system configuration. Further, there is the option to create reports and to export the traces.
② Settings	Change the appearance of the chromatogram or the units of the traces. Information about the Data Viewer is displayed.
③ Export	Export selected traces to PDF or HTML.
④ Settings	Choose between Normalization, Second y-axis and Overlay (refer to Fig. 14-7)
⑤ Traces	Select the traces to be displayed in the chromatogram. ■ Detector signal ■ Auxiliary traces ■ Method traces
⑥ Close files	Select one, all or a selection of chromatograms to be closed.
⑦ Choose file	Load a chromatogram. If another chromatogram is open, it will be displayed together with an already loaded chromatogram.

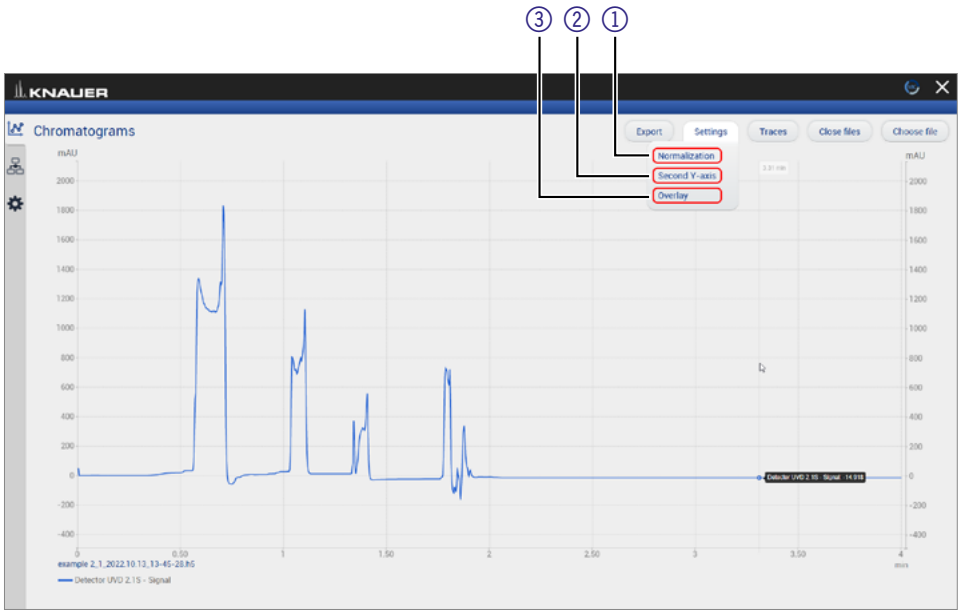


Fig. 14-7 Chromatogram - Overview - Settings

Legend

① Normalization	Traces can be normalized to other traces. This function allows you to normalize one or more chromatograms to the first chromatogram, adjusting the heights such that the apex height of a selected peak matches that of the peak selected on the first trace.
② Second Y-axis	For one of the active traces a 2nd y-axis can be added. The 2nd y-axis on the right shows the unit and the scale for the selected trace. The trace is automatically normalized.
③ Overlay	Set an offset for the x-axis/time and the y-axis/signal.

Note: The chromatogram window of Data Viewer is similar to Mobile Control. Regarding the functions of this view please refer to chapter 8.

14.2.1 Overlay of two measurements

Process	Figure
1. After a first result file has been opened, select <Choose file>.	

Fig. 14-8 Data Viewer - Overlay

2. Select the second result file.
3. Confirm with <Ok>.

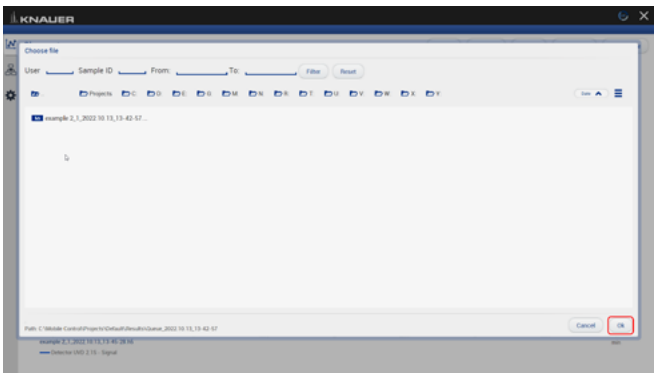


Fig. 14-9 Data Viewer - Overlay

4. Both chromatograms are displayed in the diagram.

Fig. 14-10 Data Viewer - Overlay

5. If you want to close chromatograms press “close files” and select one, all or a selection of chromatograms. Confirm closing the files by ok. Alternatively, close single chromatograms in the method menu of the individual measurement.
6. Select <Close>.

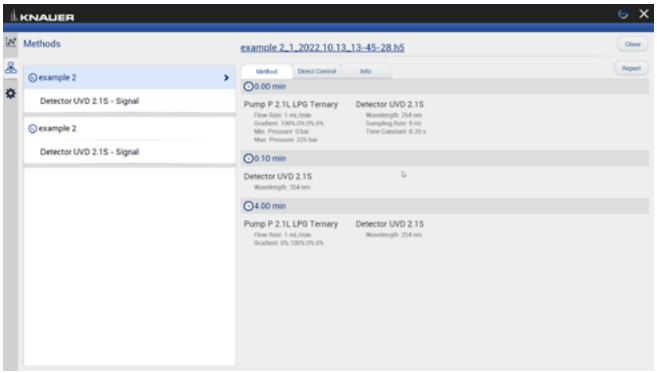


Fig. 14-11 Data Viewer - delete measurement

14.3 Methods

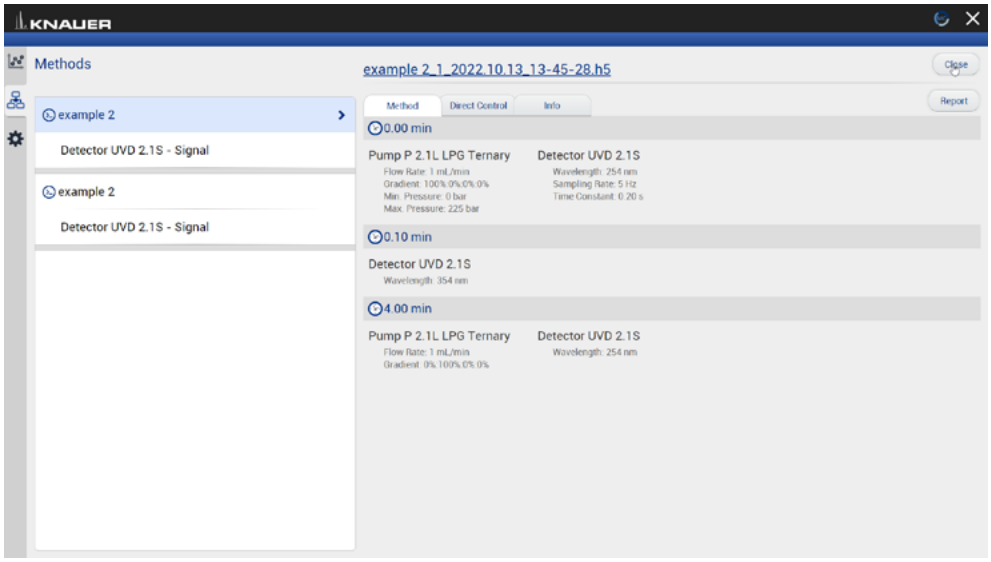


Fig. 14-12 Methods

The file name is linked to the folder including the result file.

Choose the sections System Configuration, Method, Results and System logs to be included in the report. The results of the chromatogram analysis, as well as the traces of the chromatogram can be exported in ASCII format. Choose between export of signal values strung together or as a pair of time and signal value. The chromatogram is exported as HTML file. The report and the exported files are saved in a separate folder which is created in the folder of the result file.

Method commands, direct control events, method settings, system configuration and logs are summarized in sorted tabs.

14.3.1 Integration Parameters

Each detector signal can be analyzed. It is possible to define separate integration parameters for each trace.

Legend

① **Auto Integration** Automatic configuration of the integration parameters

② **Manual Integration** Manual configuration of the integration parameters

③ **Save** the integration parameters.

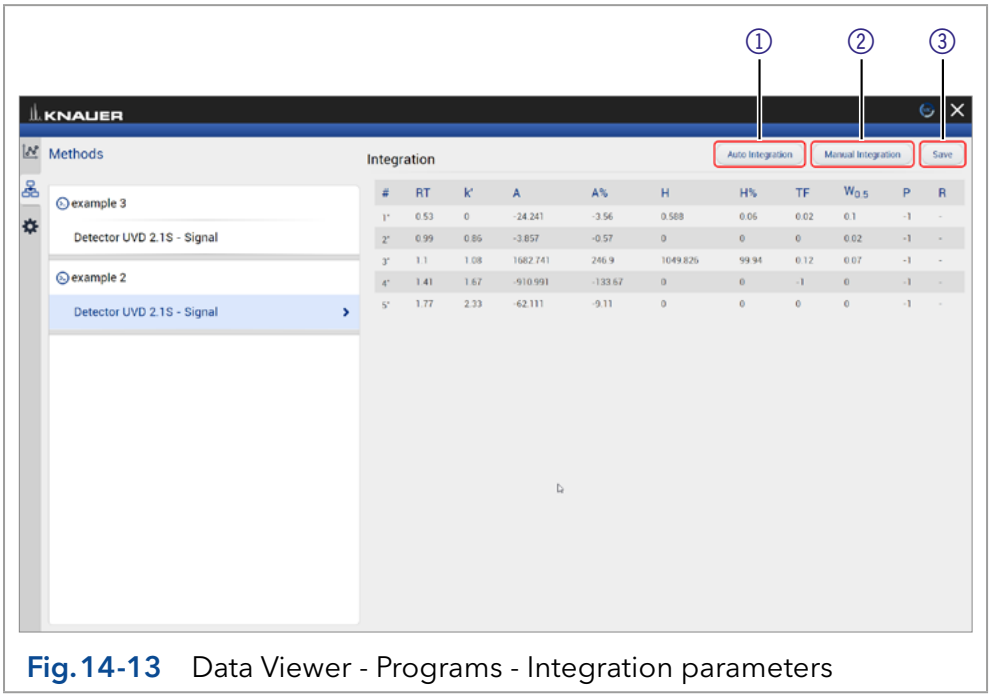


Fig. 14-13 Data Viewer - Programs - Integration parameters

If you move the mouse over the column labels in the table header, the full name of the result value will be displayed.

The following result values are calculated during the analysis:

- Peak number
- Retention time
- Cap factor
- Peak Area
- Peak Area [%]
- Peak Height
- Peak Height [%]
- Asymmetry
- Width at half height
- Platen numbers
- Resolution

Two Integration events are required for each run: Width, and Threshold. These parameters are used to detect peak start, stop, and apex, and to distinguish true peaks from noise.

Width

The Width is used to calculate a value for smoothing, the data points before the integration algorithm is applied. In most circumstances, an initial Width value based on the narrowest peak in the chromatogram will be adequate for proper integration of all peaks.

Threshold

This parameter is the first derivative, used to allow the integration algorithm to distinguish the start and stop of peaks from baseline noise and drift. The recommended Threshold value is based on the highest first derivative value determined in that section of the chromatogram.

Minimum Area

The Minimum Area parameter is used to reject unwanted peaks in the chromatogram. A value of e.g. 1 000 will omit all peaks with an area of smaller than 1 000.

After entering of integration parameters and pressing the apply button the chromatogram will be re-processed and analyzed. The integration table will be updated automatically.

14.3.1.1 Auto integration

Start an automated integration by entering values for threshold, width and minimum area. The section of the chromatogram which is supposed to be auto integrated can be limited by entering two time value “from” and “to”. Deselect “integration off” and start automated integration with pressing “Ok”. Include negative peaks by ticking the checkbox.

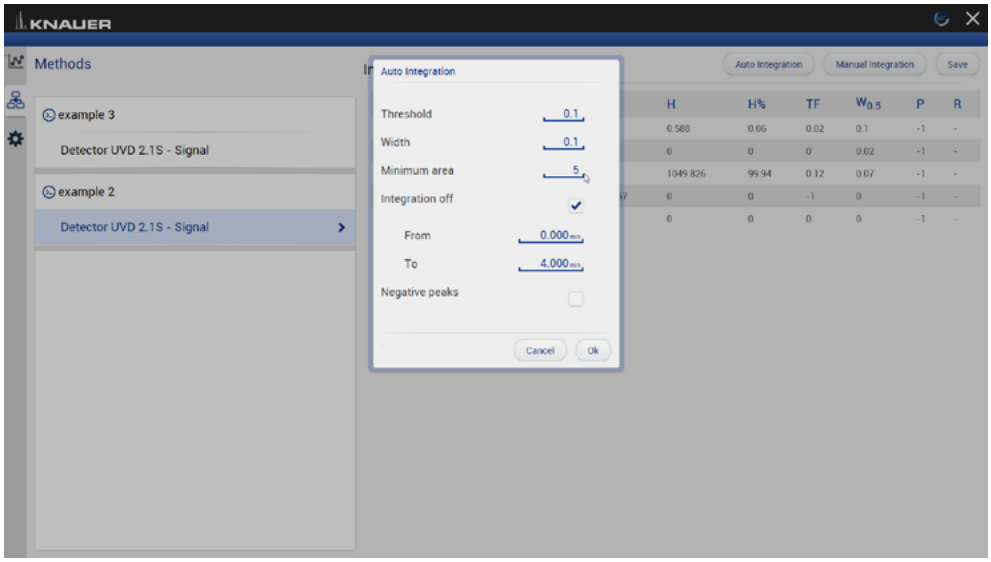


Fig. 14-14 Auto integration

14.3.1.2 Manual Integration

Start and end points of peaks can be defines manually by selecting “Add Peak”. The first point set in the chromatogram is the start of the peak the second point the end of the peak. Several peaks can be defined. Set an perpendicular drop to divide the selected peak into two peaks. By selecting “Remove peak” single peaks can be removed.

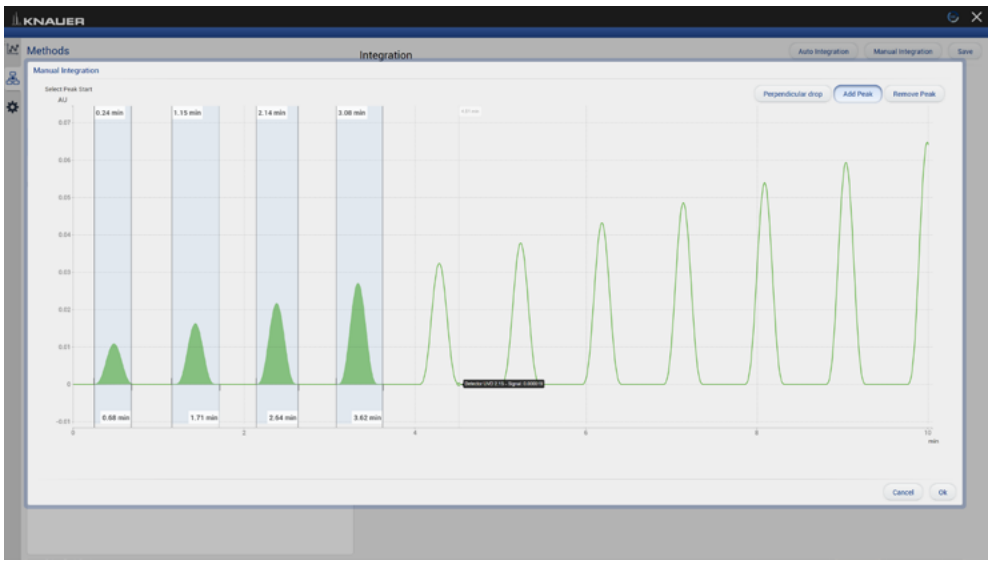


Fig. 14-15 Manual integration

14.3.1.3 Fraction collection

The submenu Fraction Collection in Methods shows the Rack View of the run and a table with start, end time and volume of the fractions.

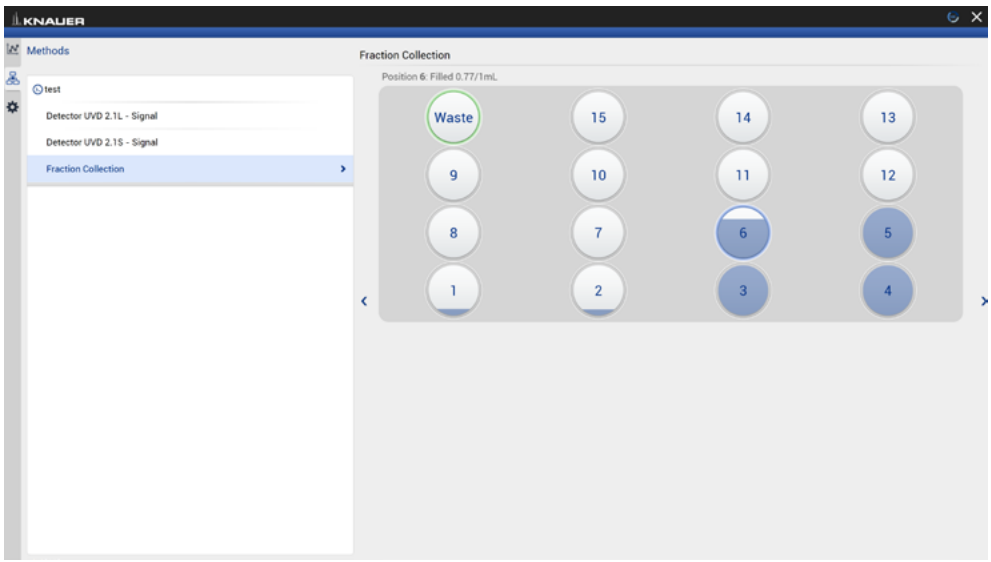


Fig. 14-16 Methods - Fraction collection - Rack View

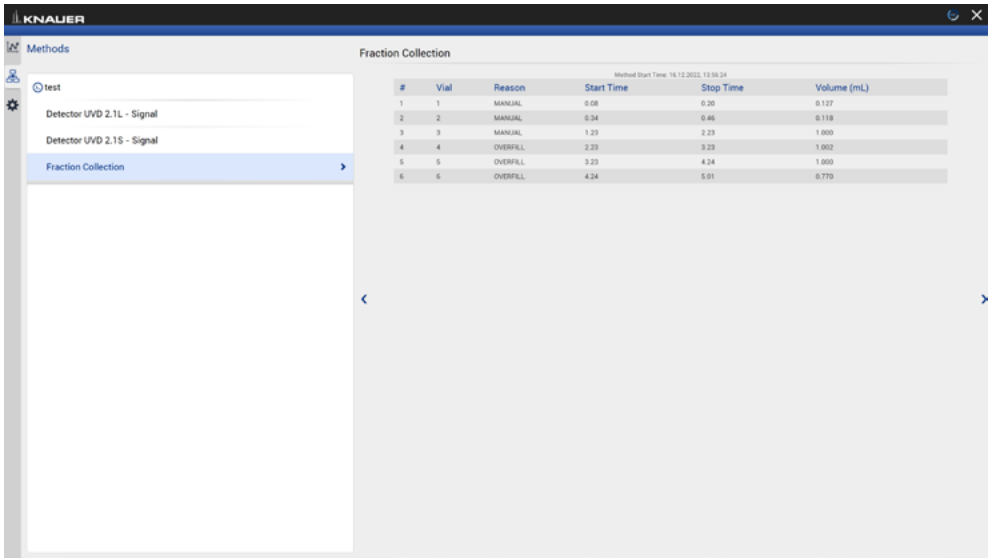


Fig. 14-17 Methods - Fraction collection - table with start, end time and volume of the fraction

14.4 Settings

14.4.1 Appearance

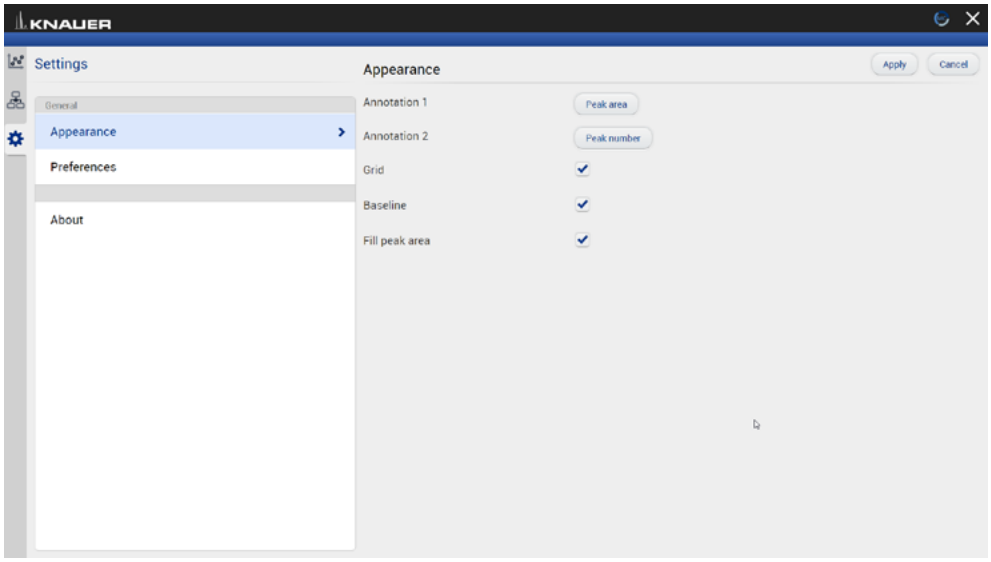


Fig. 14-18 Data Viewer - Settings - Appearance

The appearance of the chromatogram can be adapted in the settings window. For each peak two annotations can be chosen from the result values which are displayed in the chromatogram. The following check boxes are available:

- Grid: Activate or deactivate
- Baseline: Hide or show
- Fill peak area: The area below the integrated peak can be filled with solid color

14.4.2 Preferences

This chapter describes how you can change the units of the traces. Always confirm your selection with <Apply>.

Pressure Units Selection between bar, MPa and psi.

System Detector Units Selection between AU, mAU, µAU (UV detectors), mRIU, µRIU, nRIU (RI detectors).

Temperature Units Selection between degrees Celsius °C and degrees Fahrenheit °F.

14.4.3 About

The version of the installed Data Viewer is shown.

15. Firmware Wizard

Note: Installation of the Firmware Wizard is a separate installation step. Activation of the software is not necessary

The Firmware Wizard can be used to:

- Change LAN settings. If supported by your PC a direct LAN connection with selected devices can be used. Otherwise use a switch/router. Please find a list of AZURA® devices with corresponding firmware versions below in chap. 2.3.
- Update firmware of connected devices.

You can download the firmware wizard form our website. It is included in the Mobile Control download folder. For download instructions, please refer to chap. 3.1.

15.1 Reset LAN settings

Please refer to Table 13-1 for the minimal firmware versions of the device and the version of the Firmware Wizard. The LAN settings can be changed for AZURA® devices with the listed or higher version.

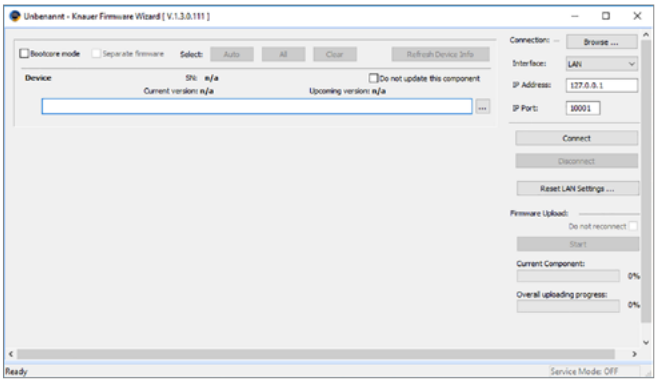
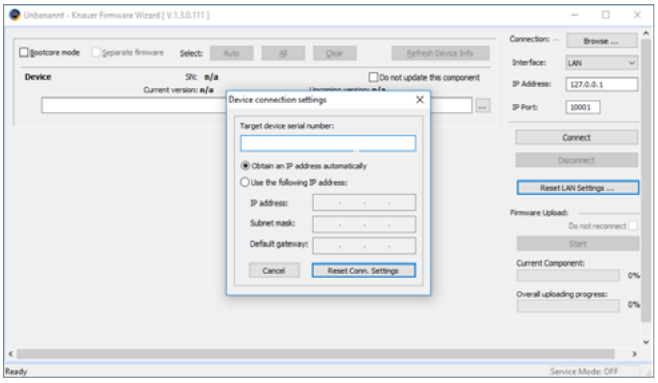
Process	Figure
1. Open the software. 2. Select <Reset LAN Settings...>. 3. A new window opens.	
4. Enter the serial number or the MAC address of the AZURA® device. 5. Select ▪ fixed IP address (enter IP address, subnet mask, and default gateway) or ▪ DHCP (obtain an IP address automatically). 6. Press <Reset Conn. Settings>. 7. We recommend a restart of the devices, to accept new LAN settings.	

Fig. 13-1 Menu Firmware Wizard

Fig. 13-2 Menu Firmware Wizard

15.2 Update firmware version of connected devices

This chapter contains detailed information on how to perform an update of all possible firmware components for the various devices.

Note: The firmware update of other KNAUER devices (Smartline, BlueShadow) is possible but not fully supported. In case of issues please contact KNAUER.

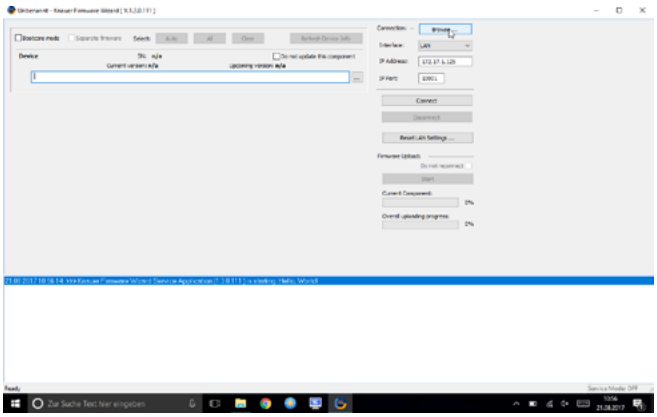
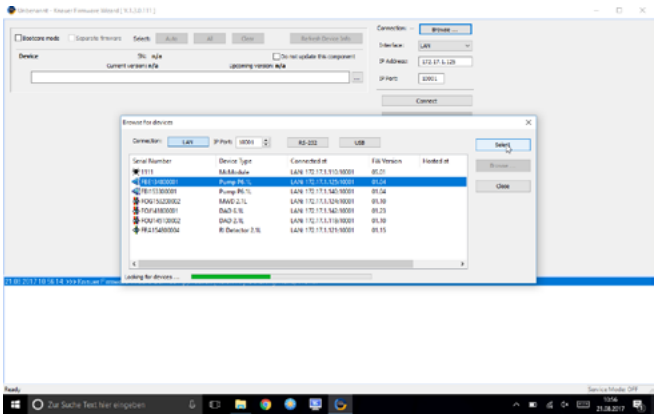
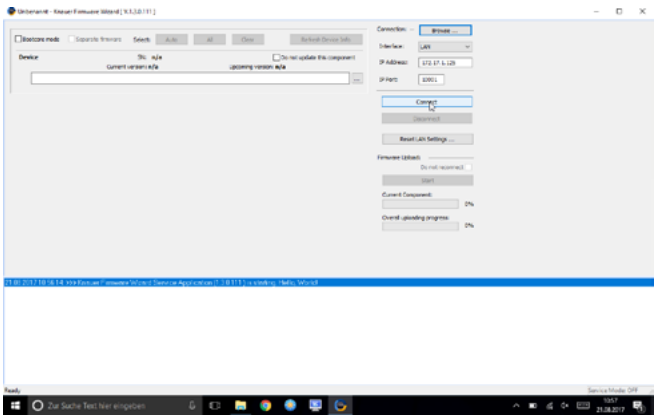
Firmware Wizard V1.03.000.419 or higher

Device type	Type	Firmware upload via LAN	Minimum required firmware version	Change LAN settings
Assistant	AZURA® ASM 2.1L	LAN	V1.18	✓
	AZURA® ASM 2.2 L	LAN	V1.14	✓
Column Thermostat	AZURA® CT 2.1	only via RS-232	V1.06/V2.02	✓*
Detector	AZURA® RID 2.1L	LAN	V1.24	✓
	AZURA® UVD 2.1L	LAN	V2.06	✓
	AZURA® DAD 6.1L	LAN	V1.26	✓
	AZURA® DAD 2.1L	LAN	V1.12	✓
	AZURA® MWD 2.1L	LAN	V1.12	✓
	AZURA® UVD 2.1S	LAN	V1.14	✓
	AZURA® CM 2.1S	only via RS-232	V1.07	✓*
	BlueShadow 40D - ADI01, ADI04	LAN	V2.05	keypad
	BlueShadow 50D - ADJ01, ADJ11	LAN	V2.18	keypad
Pump	AZURA® P 6.1L	LAN	V1.07	✓
	AZURA® P 2.1L	LAN	V1.09	✓
	AZURA® P 2.1S	only via RS-232	V1.38	✓*
	AZURA® P 4.1S	only via RS-232	V1.38	✓*
	BlueShadow 40P – APC30XX	LAN	V1.12	keypad
	BlueShadow 40P – APC40XX, APC60XX	LAN	V2.30	keypad
	BlueShadow 80P – APD30XX, APD60XX	LAN	V2.26	keypad
	BlueShadow 80P – APD20XX	LAN	V1.08	keypad
Valve	AZURA® V 2.1S	no	V5.01	✓*
	AZURA® V 4.1	no	V6.22	✓

Table 13-1 List of AZURA® devices with minimal required firmware versions for firmware upload or change of LAN settings.

* Changing LAN settings by entering the serial number requires that the device has been found by Firmware Wizard after browsing. Changing LAN settings by MAC address does not require that the device has been found after browsing. The IP address can be part of another network.

Note: Do not disconnet or disturb the connetion to the device during firmware upload.

Process	Figure
1. Open the software. 2. Ensure to be connected with the network which includes the device. 3. Select <Browse>. A new window is opened.	
	Fig. 13-3 Menu Firmware Wizard
4. Select <Browse>. A list of connected devices is displayed. 5. Select the device you want to update and press <Select>.	
	Fig. 13-4 Select device
6. Press <Connect>.	
	Fig. 13-5 Connect with device

7. After successful connection you see a status message in the lower part of the screen.
8. In this example the firmware wizard is connected with a pump.
9. Check the displayed current firmware version.
10. Press the shown button to import the update file.

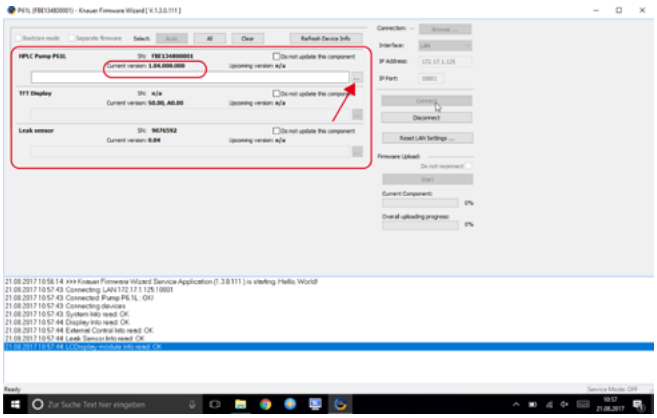


Fig. 13-6 Connect with device

11. Import the update file.

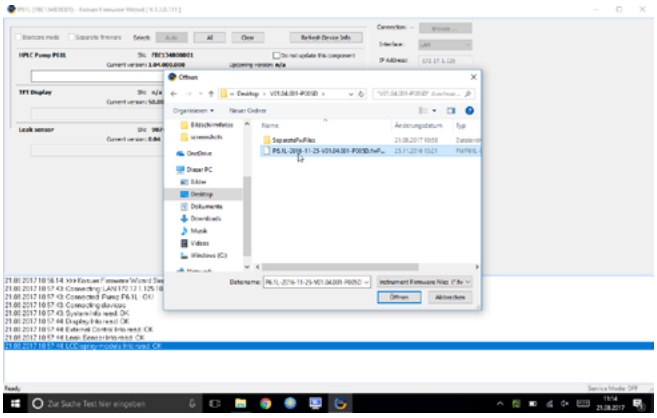


Fig. 13-7 Import the update file

12. If the version of the update file you want to is older then the installed version you see a red warning symbol on the left.

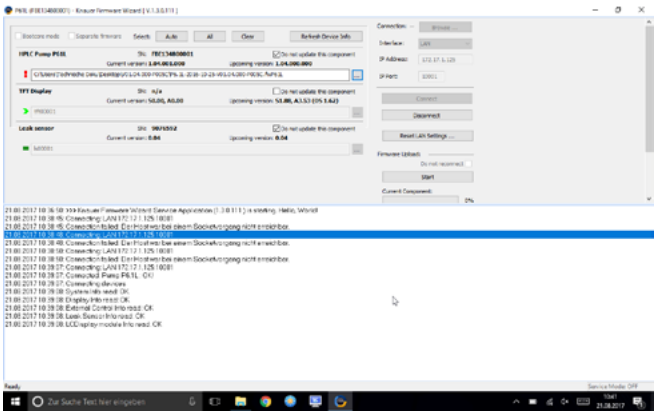


Fig. 13-8 Check the imported version

13. If the version of the update file you want is newer then the installed version you see a green arrow on the left. You can decide which devices should be updated and which not, by activating the checkbox “Do not update this component“.
14. Press <Start>.

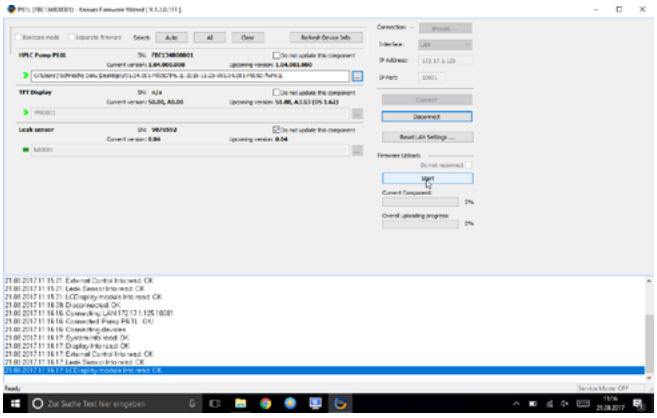


Fig. 13-9 Check the imported version

15. You can observe the update process on the lower right side of the screen.

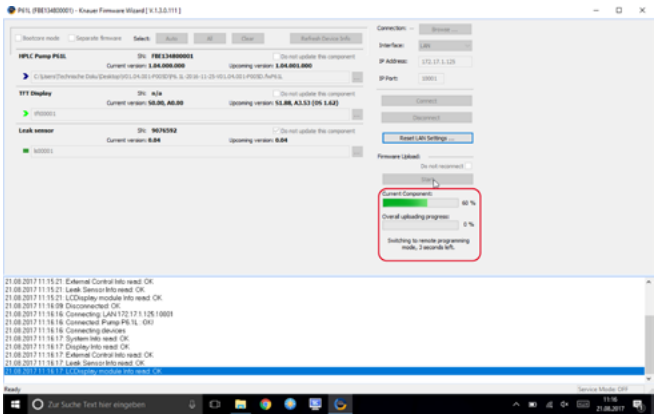


Fig. 13-10 Start update process

16. After successful update process, a status message is shown.
17. Press <Disconnect>.
    When the upload is complete and successful, a green tick on the left side of the component line will be shown. The Firmware Wizard can be closed.
18. We recommend a restart of the devices, to accept new LAN settings.

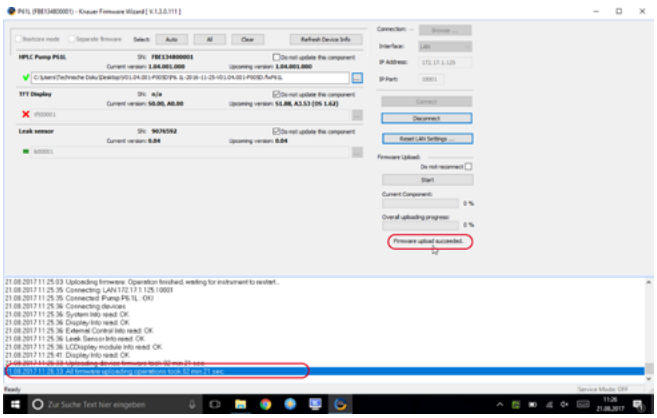


Fig. 13-11 Finished update process

16. Troubleshooting

If you are facing problems with the operation of Mobile control, follow the steps below.

Steps
1. Restart Mobile Control software.
2. Restart tablet, devices and router.
3. Check the Windows settings (firewall, Defender, overdue Windows updates). Further information can be found in the release notes.
4. Remove the system configuration and create a new one.
5. Delete C:\MobileControl (or rename the folder to keep the data) and create a new user (new activation of Mobile Control).
6. Uninstall Mobile Control and delete C:\Mobile Control. Install Mobile Control again. Activate the software using the activation code.
7. Contact Customer Support and provide the following information: ■ Version numbers of the firmware, the Mobile Control software; screenshots generated. ■ Activate Mobile Control Communication Logs (refer to chapter 11.1). ■ Reproduce the Mobile Control issue and provide the log files. ■ Check Windows Event Viewer.

17. Repeat Orders

This list for reorders is valid for the time the document has been published. Deviations afterwards are possible.

For reorders of spare parts use the enclosed packing list. Contact the Technical Support in case there are any questions on spare parts or accessories.

Further information

Further information on spare parts and accessories can be found online: www.knauer.net

	Descriptions	Order No.
Documents	Software instructions	V6851-3
	Installation information	V6858
	Mobile Control Certificate	V9610
Mobile Control	Mobile Control license Display - with tablet, without data acquisition, Windows Pro	A9607
	Mobile Control license Data - with tablet, with data acquisition, Windows Pro	A9608
	Mobile Control license Display - without data for Windows	A9610
	Mobile Control license Data - with fraction collection, with data acquisition for Windows	A9612
	Mobile Control license FRC - with fraction collection, with data acquisition for Windows	A96131
	Mobile Control license FRC - with tablet, with fraction collection, with data acquisition, Windows Pro	A96132
	Upgrade license Mobile Control to Data - A9612	A9614
	Upgrade license Mobile Control to FRC - A96131	A96141
Tools	Mobile Control Mount flexible tablet mount for 7"-12" tablets	A9617
	USB-LAN ADAPTER Network adapter for tablets USB 2.0 <-> 10/100 Ethernet including LAN cable	A96181
	WLAN Router, 8-port Gigabit RJ-45	A64809
	WLAN Router with international power supply with plug, 8-port Gigabit RJ-45	A64809INT
	Single device WLAN router for Mobile Control 1xRJ45, 10/100 MBit, WLAN, WLAN router for single devices	A64811
	Tablet Lock with stand, SecuPlus Tablet Lock (silver)	A9615

APPENDIX A Configuration of flow and pressure

Note: Please read the corresponding technical documentation for handling and safety reasons.

Note: When a constant system pressure is necessary, the pumps P 2.1L and P 6.1L can be set to isobar / constant pressure mode. The isobar (P 2.1L) and constant pressure (P 6.1L) modes were developed under standard HPLC conditions with standard system components. The parameters for pressure control are stored in the pump's firmware and cannot be modified by the user.

What's new? With the current version of Mobile Control, it is possible to obtain a constant pressure by varying the flow rate.

A 1.1 Minimum flow rate and maximum flow rate

Time out

The default time out is 30 s. If the pump does not reach the target pressure it will stop after the time out period and a message appears.

Minimum flow rate

Note: If you are not familiar with the system, do not change the parameters.

NOTICE

Device defect

When flow rate decreases below the minimum value, the following error message is displayed: **Unable to attain min. flow setpoint**

The software program stops, but the pump is continuing to work.

➔ For safety reasons, stop the pump manually.

Target pressure

- Pressure which should be reached. Set this parameter to the required pressure

NOTICE

Device defect

When the pressure falls below/exceeds the target pressure, the following error message is displayed: **Unable to attain pressure setpoint.**

The software program stops, but the pump is continuing to work.

➔ For safety reasons, stop the pump manually.

Minimum pressure p_{min} and maximum pressure p_{max}

Max. pressure is preset in accordance to p_{max} of the pump head. When p_{max} is reached, the pump stops automatically (safety function). Min. pressure is preset. When p_{min} is not reached, the pump stops after approx. 30 s.

Practical tip: If your column is very sensitive to pressure increase, you can lower the preset p_{max}.

A 1.2 Configuration

AZURA® P 2.1L

1. Select “Settings > Gradient Type“.
   A new window is opened.

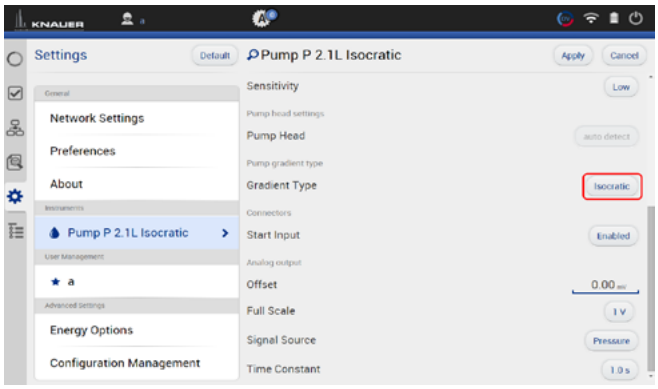


Fig. A-1 Gradient Type

2. Select “Isobar“ and confirm with <Ok>. The window is closed.

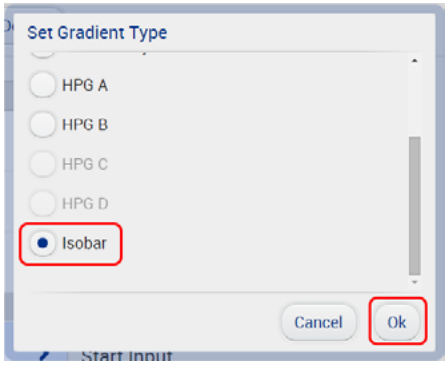


Fig. A-3 Set Gradient Type

3. The gradient type “isobar“ is displayed.
   Always confirm your selection by pressing <Apply>.

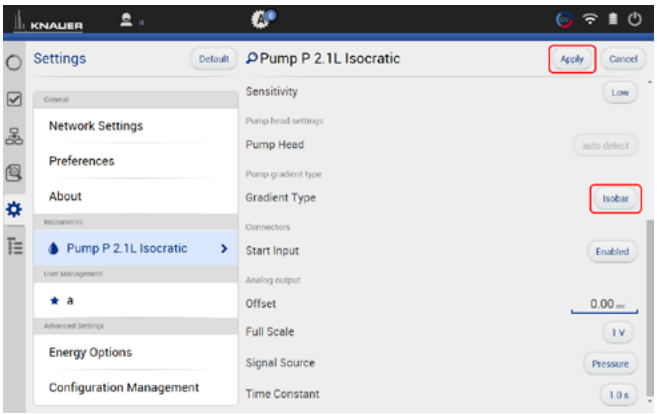


Fig. A-4 Confirm selection

AZURA® P 6.1L

1. Select “Settings“. Activate the Constant pressure button.

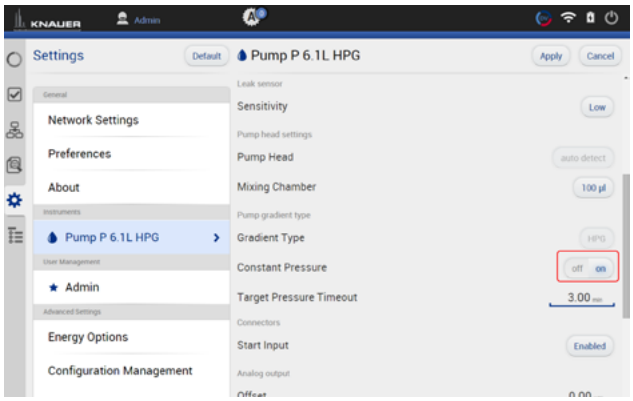


Fig. A-2 Constant Pressure

2. No action

3. The Constant Pressure button is activated.
   Always confirm your selection by pressing <Apply>.

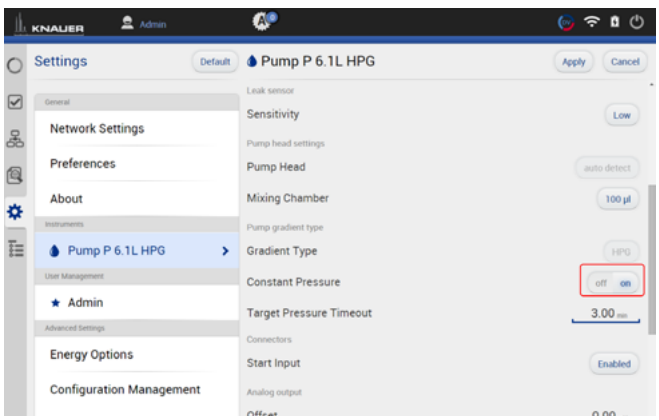


Fig. A-5 Confirm selection

4. The message “Parameter successfully applied” appears at the bottom of the screen.

5. Select System Overview. You see a new tab called “Pump P 2.1L isobar”.

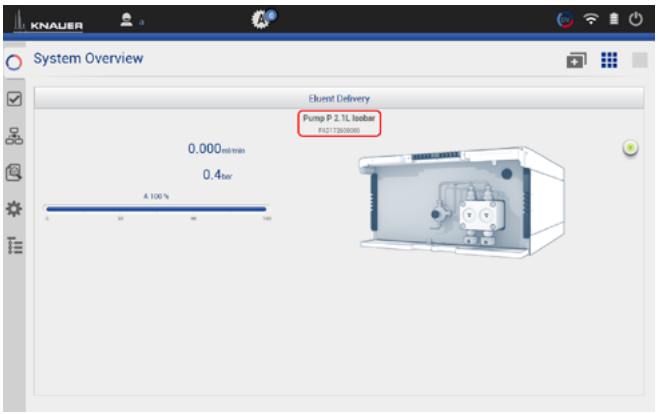


Fig. A-6 System Overview

5. Select System Overview. You see a new tab called “Pump P 6.1L HPG (gradient type)”.

Fig. A-7 System Overview

Next steps Set the required parameters.

There are two different possibilities, explained in the next chapters (please refer to chap. A1.2.1 or chap. A1.2.2).

A1.2.1 Direct control

AZURA® P 2.1L

1. Select “Overview” and click on the pump picture to enter the Detail View menu.

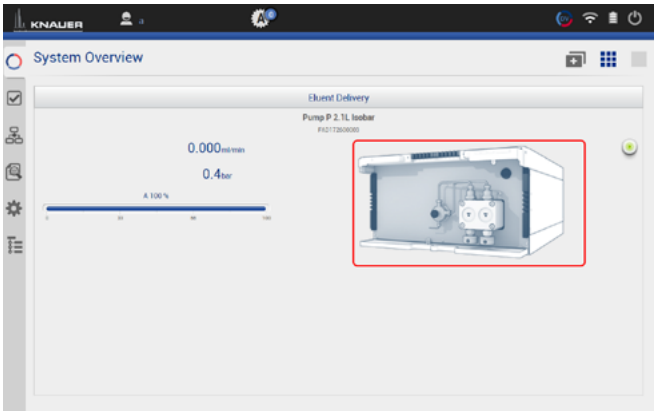


Fig. A-8 Direct control

AZURA® P 6.1L

1. Select “Overview” and click on the pump picture to enter the Detail View menu.

Fig. A-9 Direct control

2. Set:
- flow limits (min and max)
- target pressure and
- pressure limits (min and max)

3. Confirm your settings with <Apply>.

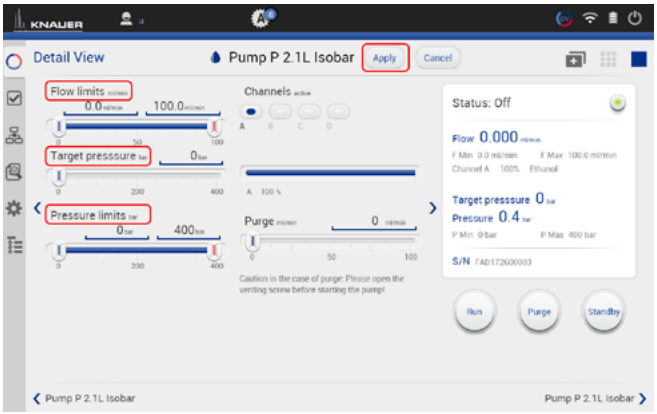


Fig. A-10 Set parameter

2. Set:
- flow limits (min and max),
- target pressure
- pressure limits (min and max)
- eluent composition

3. Confirm your settings with <Apply>.

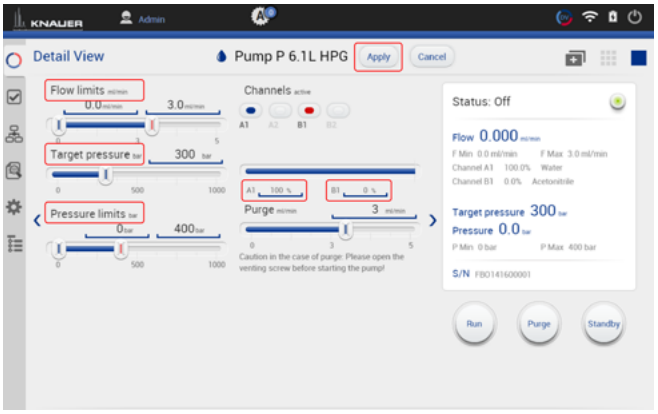


Fig. A-11 Set parameter

4. The pumps start with selected configuration.

Note: In this method you cannot monitor pressure and flow. Use the program sequence to monitor pressure and flow (explained below).

A1.2.2 Control via program sequence

AZURA® P 2.1L	AZURA® P 6.1L

Note: With this method, you can monitor pressure and flow rate.

1. Select “Programs > Add a program“.

Parameters are preset as default.

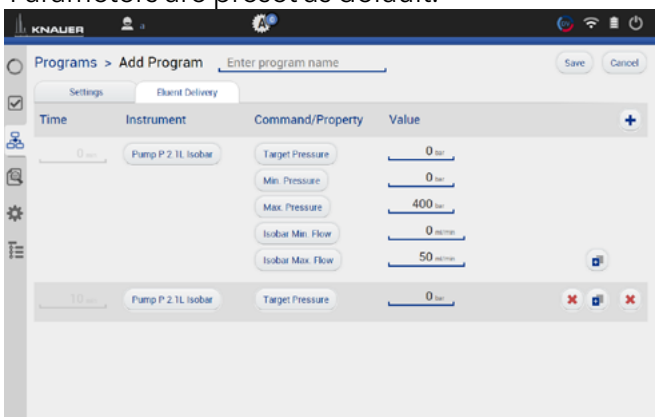


Fig. A-12 Add a program

1. Select “Programs > Add a program“.

Parameters are preset as default.

Fig. A-13 Add a program

2. Activate the checkboxes to monitor pressure and flow.

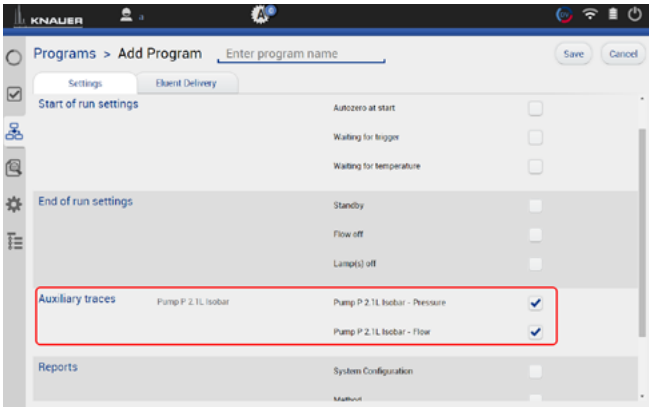


Fig. A-14 Auxiliary traces

2. Activate the checkboxes to monitor pressure and flow.

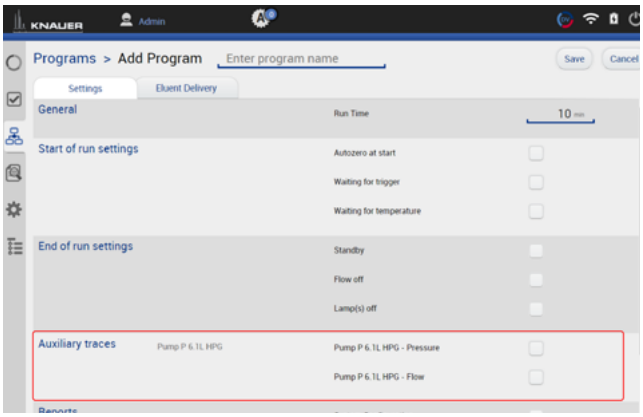


Fig. A-15 Auxiliary traces

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Latest KNAUER instructions online:
www.knauer.net/library

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