Science Together

KNAUER

AZURA

Mobile Control (Chrom) Version 5.0

Software Instructions

Document No. V6815-1

HPLC

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Table of contents

Table of contents

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

Manuel en français: Si jamais vous préfériez un manuel en français pour ce produit, veuillez vous contacter le support technique (Technical Support) par email ou par fax avec le no. de série. Merci beaucoup.

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The information in this document is subject to change without prior notice.
For latest version of the instructions, check our website:
www.knauer.net/knowledge

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 from KNAUER is safe: It ensures that device parameters can only be changed by authorized operators.

Features

- Program for hand-held devices which operates with Windows 10.
- Operates devices of the AZURA product line. As soon as devices are accessed through other software, they cannot be operated via Mobile Control. However, information like the flow rate or the device status continues to be displayed.
- Data transfer between the devices and the Mobile Control is usually realized via a WIFI router. Alternatively, the Mobile Control can also be installed on a computer with Windows 10 and access the devices via LAN.
- Automatic recognition and display of device-specific data and parameters of the connected devices
- Creation of different password-protected user accounts with limited authorization (possible, if no run is in progress)

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.

Fig. 1-1 Device card

① Serial number

② Article number

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.

Where is use of the device prohibited?

Never use the system in potentially explosive atmospheres without appropriate protective equipment. For further information, contact the Technical Support of KNAUER.

Opening the device

The device may be opened by the KNAUER Technical Support or any company authorized by KNAUER only.

2 Mobile Control

2.1 New features in version 5

- Block system overview, block programs
- New widgets design
- System check
- Additionally supports Autosampler AS 6.1L
- Additionally supports IFU 2.1 LAN
- Synchronous valves switching
- 5 days trial version for free
- Constant pressure/isobar mode

2.2 System requirements

Parameter	Requirement
Operating system	Microsoft Windows® 10
Display size	Minimum 10“
Display resolution	1024x768
RAM	1 GB without data collecting 2 GB with data collecting
CPU	1.33 GHz
Processor	Dual-Core
Disc space	50 MB without data collecting 200 MB with data collecting

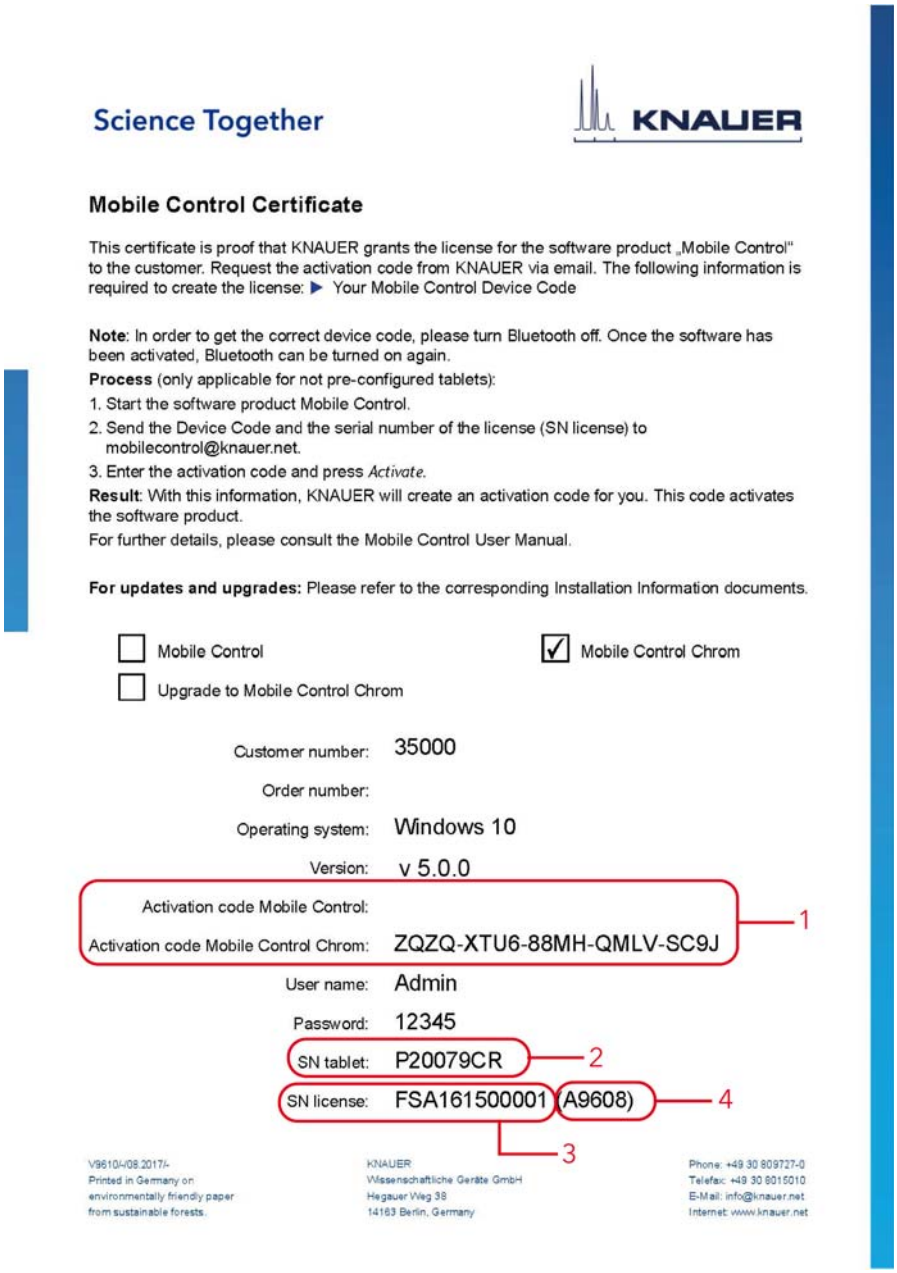
2.3 Supported devices

Device type	Type	Minimum required firm-ware version
Assistant	AZURA® ASM 2.1L	V 01.13
Autosampler	AS 3950	V 01.17
	AS 6.1L	V 01.17
Column thermostat	AZURA® CT 2.1	V 01.06

Device type	Type	Minimum required firmware version
Detector	AZURA® RID 2.1L	V 01.15
	AZURA® UVD 2.1L	V 02.06
	AZURA® DAD 6.1L	V 01.23
	AZURA® DAD 2.1L	V 01.10
	AZURA® MWD 2.1L	V 01.10
	AZURA® UVD 2.1S	V 01.11
Interface box	IFU 2.1 LAN	V 01.05
Pump	AZURA® P 6.1L	V 01.05
	AZURA® P 2.1L	V 01.09
	AZURA® P 2.1S	V 01.37
	AZURA® P 4.1S	V 01.37
Valve	AZURA® V 2.1S	V 05.01

2.4 Mobile Control certificate

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



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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. Request the activation code from KNAUER via email. The following information is required to create the license: ▶ Your Mobile Control Device Code

Note: In order to get the correct device code, please turn Bluetooth off. Once the software has been activated, Bluetooth can be turned on again.

Process (only applicable for not pre-configured tablets):

1. Start the software product Mobile Control.
2. Send the Device Code and the serial number of the license (SN license) to mobilecontrol@knauer.net.
3. Enter the activation code and press *Activate*.

Result: With this information, KNAUER will create an activation code for you. This code activates the software product.

For further details, please consult the Mobile Control User Manual.

For updates and upgrades: Please refer to the corresponding Installation Information documents.

☐ Mobile Control ☑ Mobile Control Chrom

☐ Upgrade to Mobile Control Chrom

Customer number:	35000
Order number:	
Operating system:	Windows 10
Version:	v 5.0.0
Activation code Mobile Control:	
Activation code Mobile Control Chrom:	ZQZQ-XTU6-88MH-QMLV-SC9J
User name:	Admin
Password:	12345
SN tablet:	P20079CR
SN license:	FSA161500001 (A9608)

1 2 3 4

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Fig. 2-1 Software certificate

① Activation Code Mobile Control /Chrom

② Serial number tablet

③ Serial number Mobile Control license

④ Article number

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.

After the full version has been activated, the license is linked to the MAC address of the hand-held device 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.

You can use the activation code also to update your Mobile Control version. No need to ask for a new code. Please refer to the installation information update (included in the download folder).

2.5 Monitor mode

The Mobile Control is automatically set to monitor mode, if a monitor mode supported KNAUER chromatography data system (software) accesses the connected HPLC devices. In monitor mode, the run parameters of the connected devices can be monitored, but no entry can be made. The Monitor Mode is quit automatically, when OpenLAB CDS/ClarityChrom/ClarityChromPrep is quit.

The latest version of Mobile Control is supported by:

- OpenLAB CDS EZChrom Edition from KNAUER driver package
- ClarityChrom/ClarityChromPrep from KNAUER driver package. Please check release note regarding version compatibility

Please refer to the Release Notes (see picture below) for information which sets of driver are working with Mobile Control.

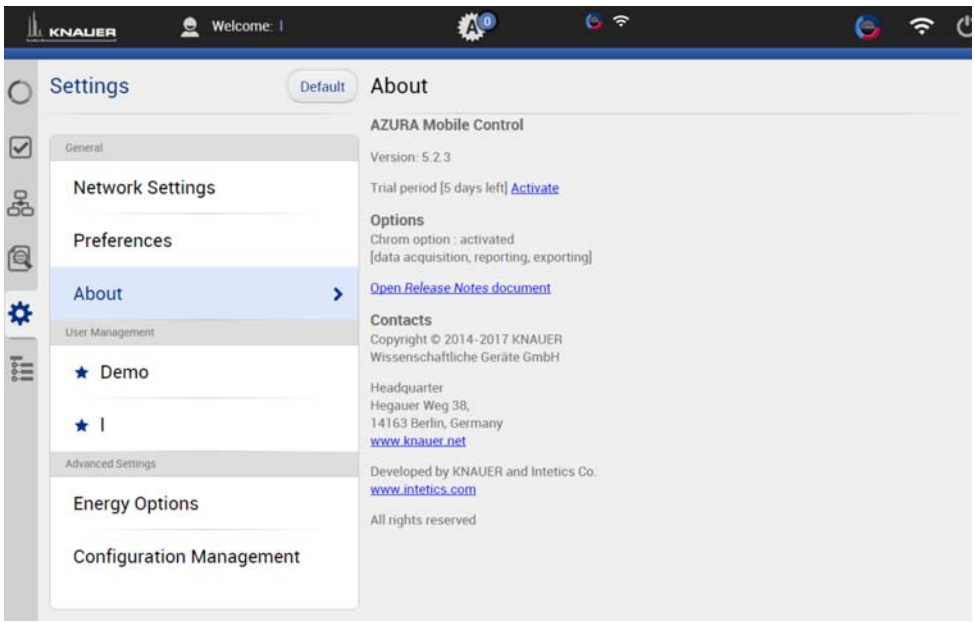


Fig. 2-2 Link to the Release Notes

3 Installation

3.1 Download and installation

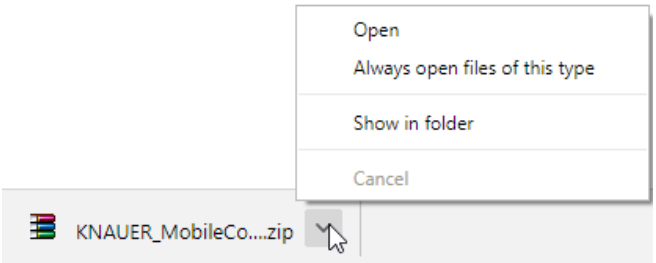
Three types of modes are available:

1. Demo tour
   - offers an overview of the MC functionalities
   - operation of virtually connected devices is possible
   - simulation of programs, sequences and data aquisition
   - free of charge
2. Trial version
   - full functionality (like full version) for 5 days
   - free of charge
3. Full version
   - full functionality (please refer to chapter 2.1 for functions)
   - every update is free of charge

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. Please refer also to the installation information included in the download folder.

If you have a previous version, deinstall it. Delete also the created data base after securing of the data. The system configuration and all programs must be created new. Please refer also to the update information included in the download folder.

Please download the latest installation information from our website:
Link: http://www.knauer.net/knowledge/downloads/software.html

Process	Figure
1. Go to: http://www.knauer.net/en/products/software/mobile-control.html or www.knauer.net/mobilecontrole. 2. Choose the Mobile Control tab.	
3. Click the „Mobile Control License“ link to download the software.	
4. A zip-file will be downloaded. After successful download, open the file.	 Fig. 3-1 Open the zip-file

5. For full functionality you need to install 2 times *.exe files and 1 time *.msi file. Unzip the folder.
6. Run the file „AZURA_MC_5.2.X.exe“. An install wizard is opening.

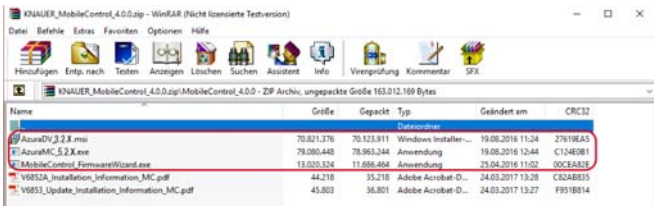


Fig. 3-2 Extraction of the zip-file

7. Select <Next>.
8. Select <Install>.

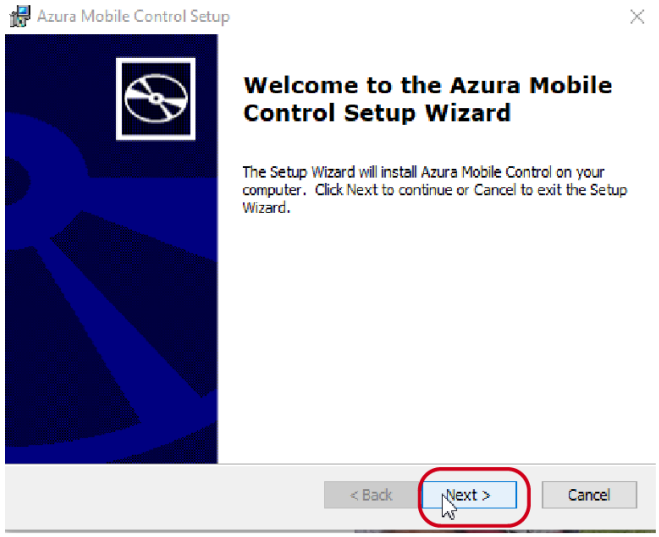


Fig. 3-3 Installation of the software

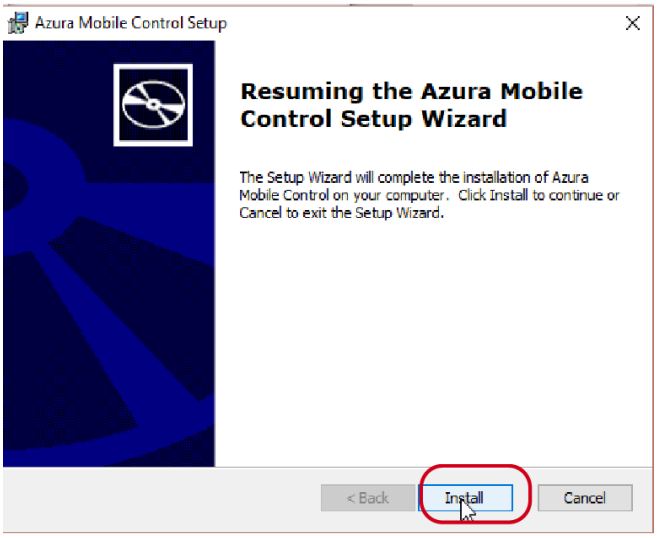


Fig. 3-4 Installation of the software

9. The software will be installed on your computer.
10. Complete the installation by selecting <Finish>. A desktop icon will be created

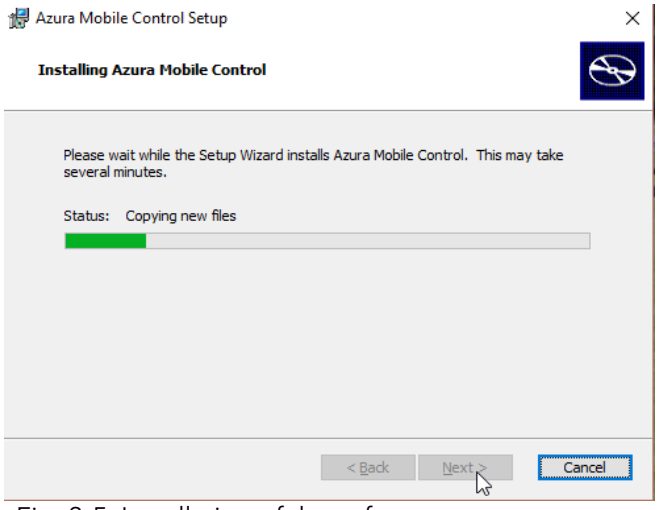


Fig. 3-5 Installation of the software

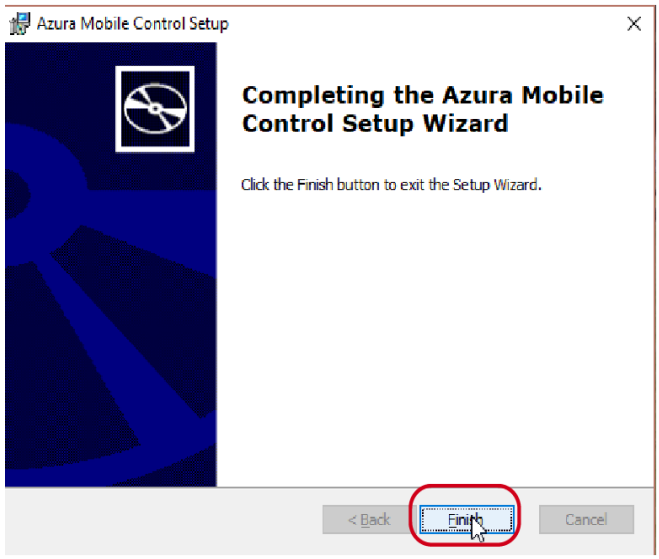


Fig. 3-6 Installation of the software

11. Double-click the Mobile Control icon to open the software.

Fig. 3-7 Desktop icon

3.2 Activation of the software

3.2.1 Start screen

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

Make sure on your hand-held device that the WLAN is switched on before entering the activation code. Ensure your Bluetooth connection is off, while activating the software.

3.2.2 License activation

Fig. 3-8 Software Mobile Control

After the installation is finished, 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 which you have installed the Mobile Control (see below).

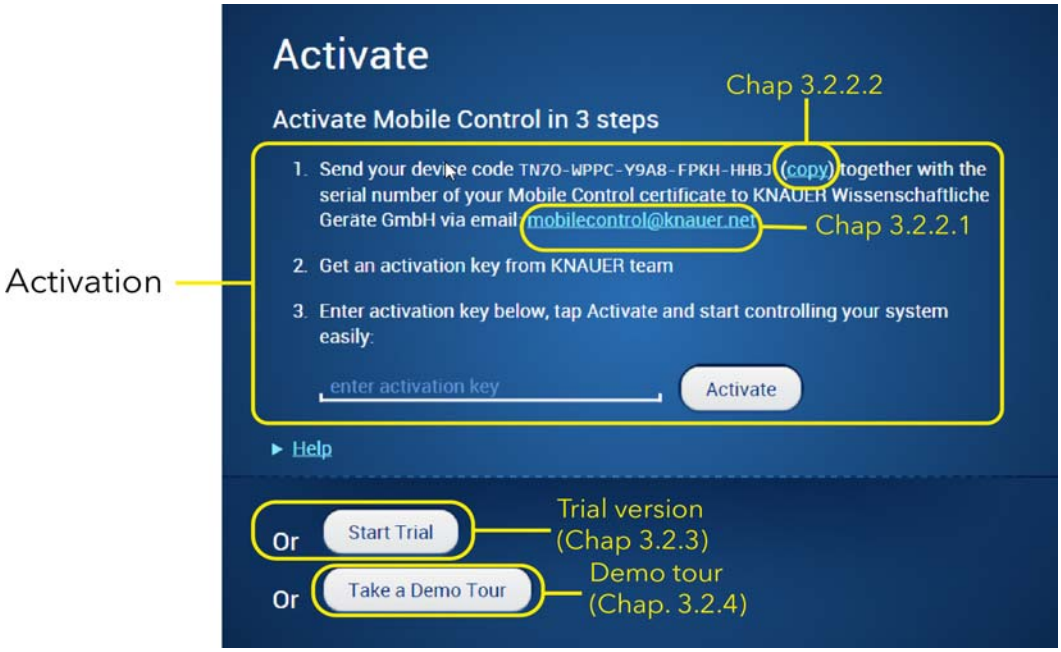
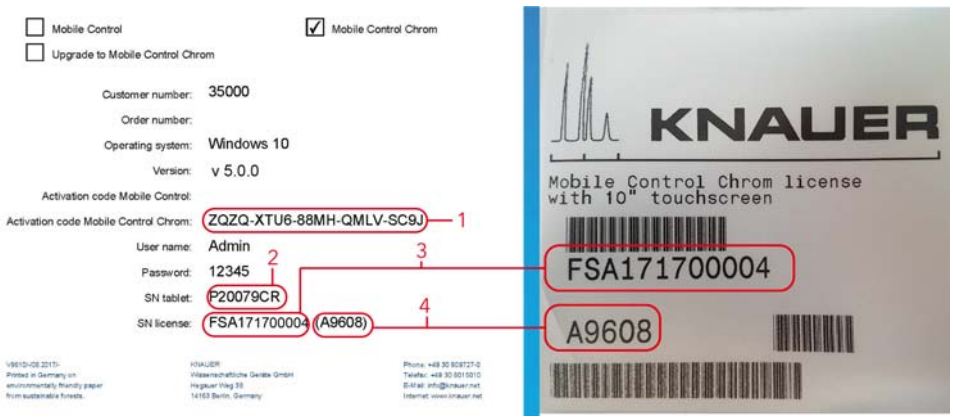


Fig. 3-9 Activation of the Mobile Control

Before activation, the mobile control will generate a new device code every time the Mobile Control is started. 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.

3.2.2.1 Activation via automatically generated e-mail

1. Press onto 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...).



① Activation code Mobile Control/Chrom ② Serial number tablet

③ Serial number MC license ④ Article number

Fig. 3-10 Mobile control certificate (left) and device card (right)

3. Send the mail.

It may take some time till you get the activation code. But no need to wait, just start the trial version with full functionality until the code is sent to you.

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 before sending. You find it on the device card, delivered with your order. It begins with FSA (please refer to Fig. 3-10).

Send a mail to mobilecontrol@knauer.net

Until the activation code is provided, just start the trial version with full functionality.

3.2.2.3 Activation via trial version

Go to SETTINGS > ABOUT. Start the Activate Link. A new window is opened. You can activate your Mobile Control via activation code (please refer to chapter 3.2.2.1).

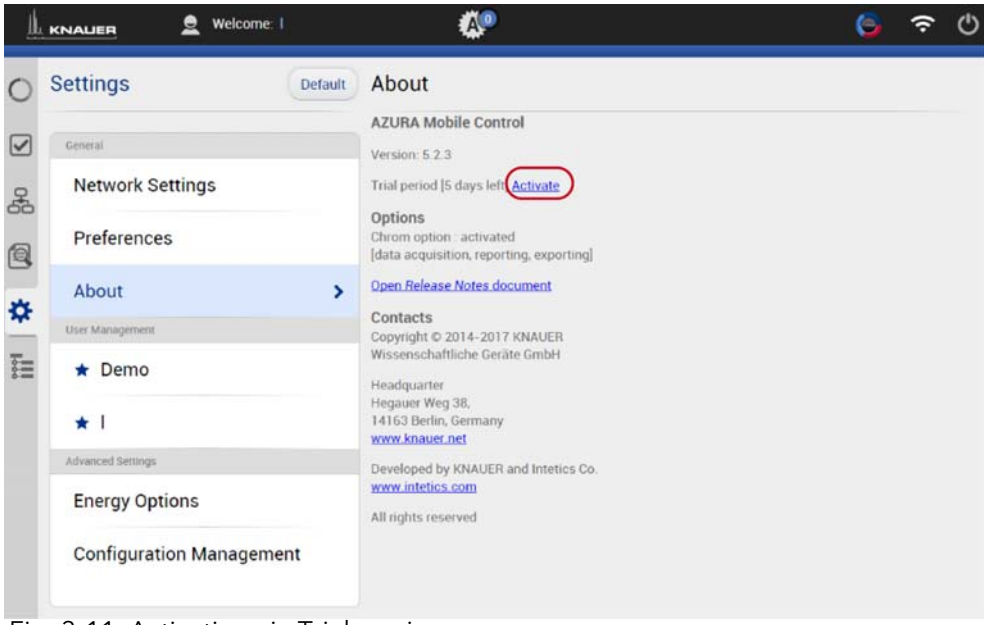


Fig. 3-11 Activation via Trial version

3.2.3 Selecting the trial version

Press the <Start Trial> button to activate the software with full functionality for 5 days.

3.2.4 Selecting the demo tour

1. Press the <Take a Demo Tour> button to activate the software in the demo mode

   or

2. Log in directly.

   Username: Demo

   Password: Demo

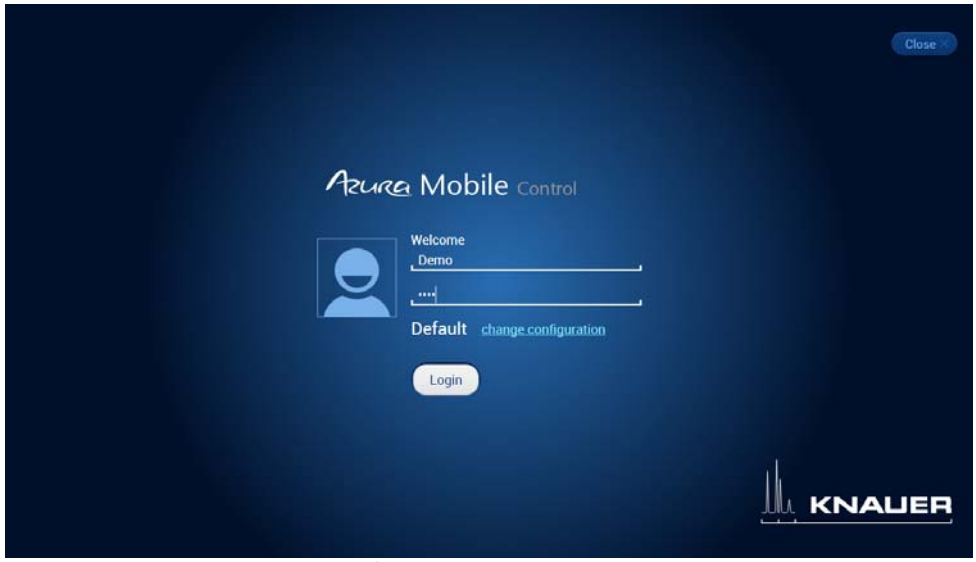


Fig. 3-12 Log into Demo Mode

3.2.5 Updating the Mobile Control

Mobile Control updates are announced on the website. 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.

Please deinstall the previous version of the mobile control (including data base), before installing the updated version.

The latest update information is included in the download folder. You can also download this file from our website:

Link: http://www.knauer.net/knowledge/downloads/software.html

3.2.6 License validity

After activation, the license is linked to the MAC address 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.

Phone: +49 30 809727-111

Fax: +49 30 8015010

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/mobilecontrol

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

4 Starting the Mobile Control

4.1 First steps

4.1.1 Integration of a network to PC/notebook/tablet

To operate the devices with the Mobile Control, a LAN connection has to be established to the same WLAN router which the Mobile Control communicates with. All devices which are logged into the same network are displayed under SETTINGS> ADVANCED SETTINGS> CONFIGURATION MANAGEMENT.

Process	Figure
On the lower left part of your tablet display. The marked symbol shows the state of network connection. 1. Click on the symbol, to enter the network settings on your tablet. Mobile control will be supported for tablets/PC/ notebooks running with operating system Microsoft Windows 10.	 Fig. 4-1 W-LAN icon on the tablet
2. Click the network you want to connect to.	 Fig. 4-2 Network overview

3. Select <Connect> to connect with network.
   You can activate the checkbox, to automatically get connect with this network.

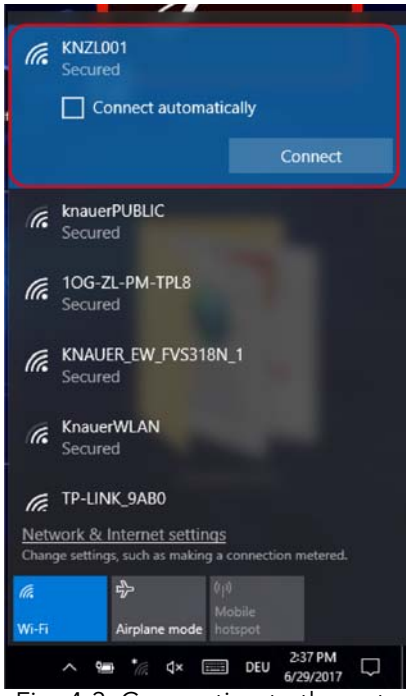


Fig. 4-3 Connection to the network

4. If required, enter the password.
5. Click <Connect>.
6. After successful check of the network requirements, the computer is connected.

Fig. 4-4 Network connection

7. If the network symbol on the lower left side has changed, your network connection is functioning.

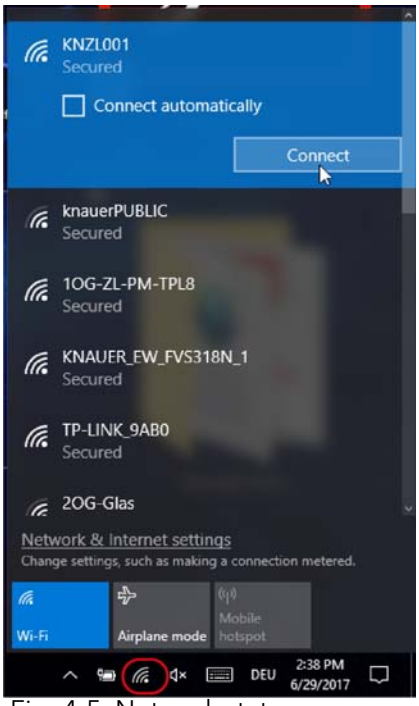


Fig. 4-5 Network status

8. You can also check or edit your network connection in the Mobile Control app: SETTINGS > CONFIGURATION MANAGEMENT.

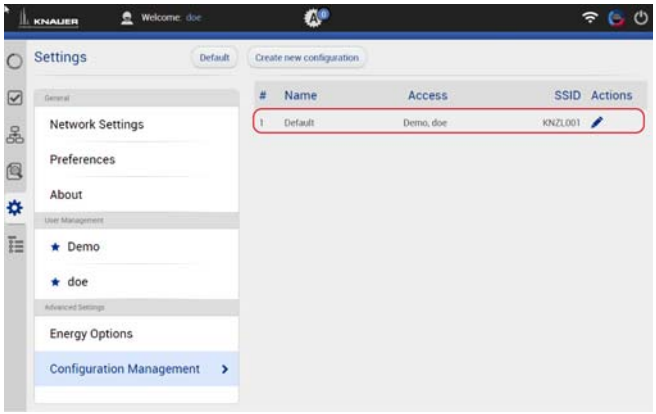
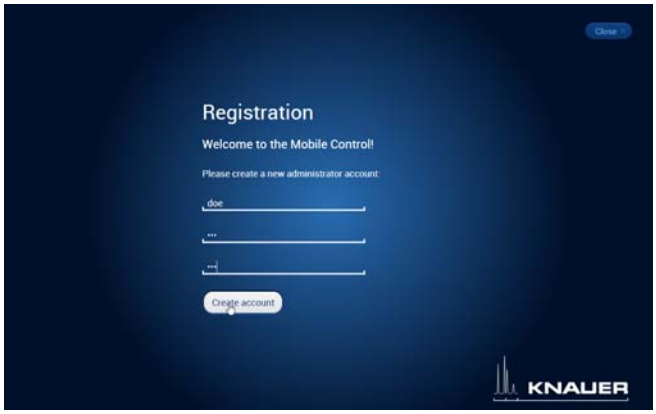


Fig. 4-6 Configuration list in the software

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 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 (please refer to chapter 9.3).

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

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 (please refer to chapter 9.3).

5. Click <Close> to close the program.

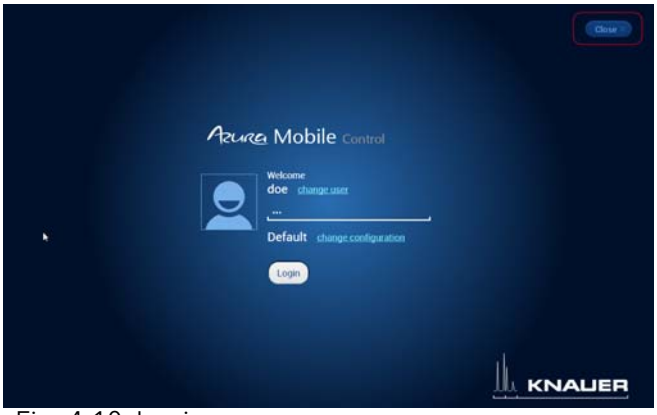


Fig. 4-10 Login screen

Practical Tip If more than one configuration is defined, it is necessary to select the required configuration. For more information please read the chapter on configurations (see chapter 9.3).

4.2 General user interface

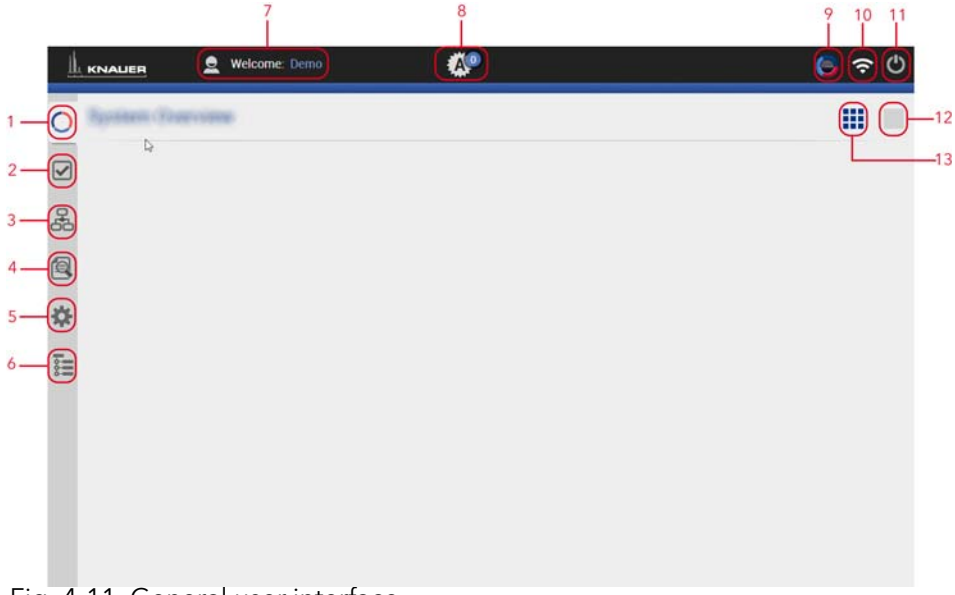
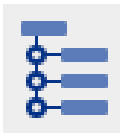
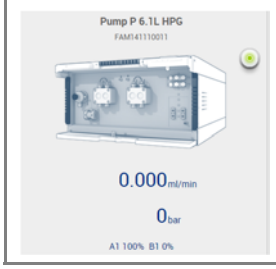
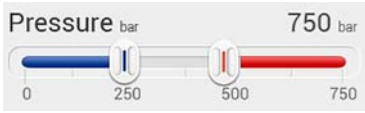


Fig. 4-11 General user interface

① System Overview
② Checks &Tests
③ Programs and Sequences
④ Logs and Errors
⑤ General
⑥ Run Queue
⑦ Logged user
⑧ Error Messages
⑨ Data Viewer
⑩ W-LAN Reception
⑪ User logout
⑫ Detail view
⑬ Tiles view

Control element	Explanation
	**System Overview** Shows an overview of all connected devices.
	**Checks & Tests** Displays GLP data for the selected device. Performs a system check.
	**Programs & Sequences** List of all saved programs and sequences. Create programs or sequences.
	**Logs & Errors** Lists all errors, system logs, and communication logs.
	**Settings** **General** Network Settings shows an overview of network settings. Preferences displays basic settings of the devices. About displays version, activation code, contact info and a link to release notes. **User Management** Demo displays settings. User name displays settings. **Advanced Settings** Energy Options displays standby mode settings and wakes up devices from standby mode. Configuration management shows an overview of available devices and all devices which are connected.
	**Run Queue** Overview of processable programs and sequences
	**Program** Graphical display of the program.
	**System Overview, Detail View** Toggles between System Overview and Detail View.
	**Device Widget** Displays different sets of data depending on the device. Button displays Detail View.

Control element	Explanation
	**Error messages** Displays error messages. Click on the icon to read them.
	**Stop** Stops the run.
	**Logout** Logs out the user and displays the login screen.
	Button with different functionalities, e.g. Run, Stop, or Standby.
	**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

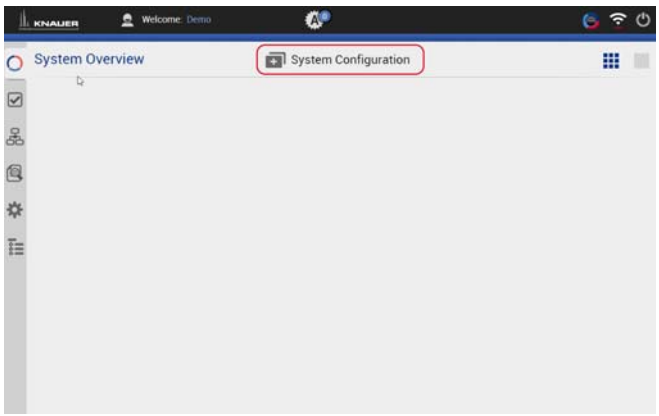
5.1 System configuration

5.2 Categorization of the functional blocks

Only one multiposition valve can be addressed as fraction collection valve.

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	

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

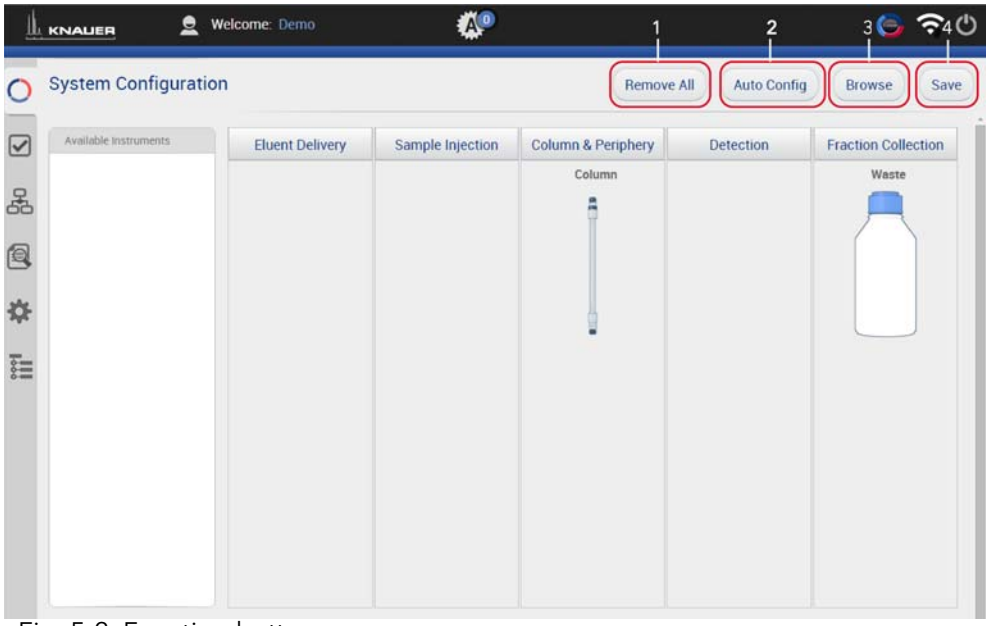


Fig. 5-2 Function buttons

① This function deletes the actual system configuration.

② The software makes an automatic configuration with connected devices in the network.

③ The software searches for all devices in the connected network and displays them on the left side (available instruments).

④ Always select <Save > to confirm your selection.

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

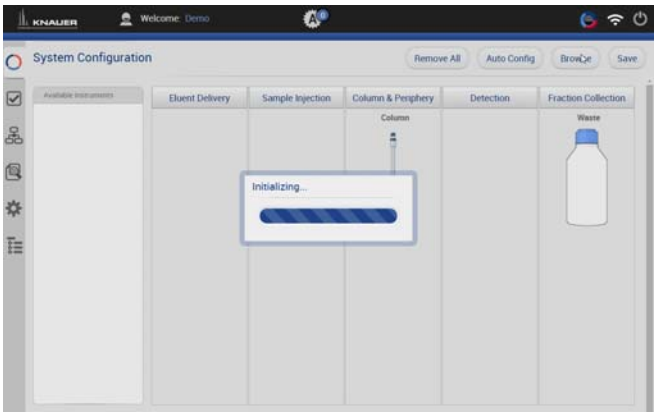


Fig. 5-3 Loading process of System Configuration

3. On the left side all connected devices are shown.

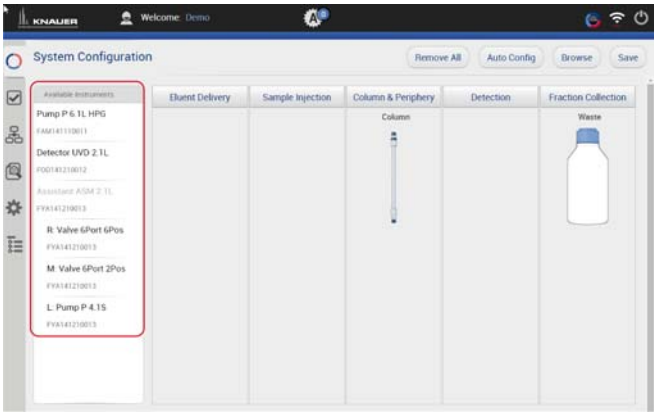


Fig. 5-4 Connected devices

4. Select <Browse>.
5. Drag and Drop to shift the device into the block.

Fig. 5-5 Drag and drop of the devices

6. Press the „Settings“ symbol or on the device to enter the device settings.

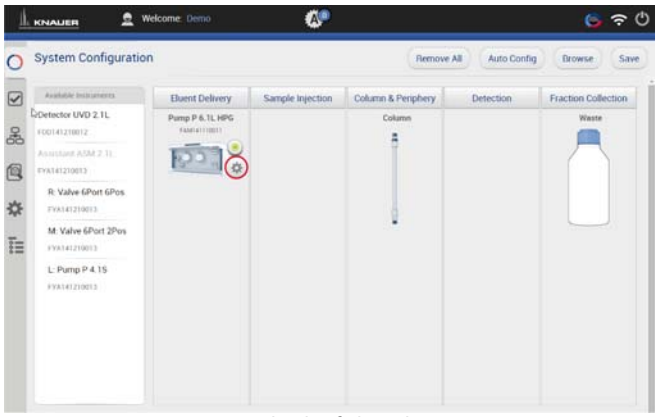


Fig. 5-6 Settings symbol of the devices

7. Here general device settings are shown. Please refer to Chap. 9 for further information.

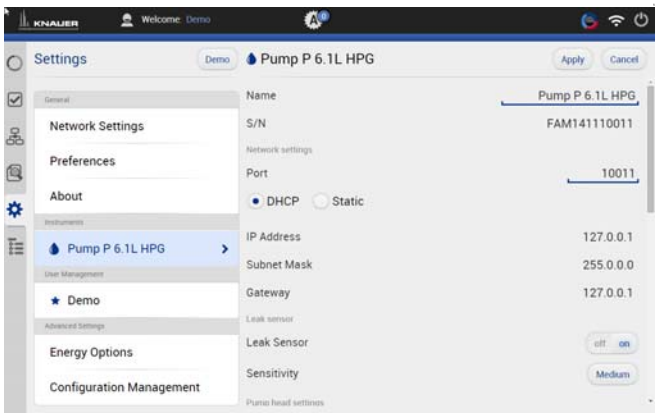


Fig. 5-7 Device settings

8. If you tap <Autoconfig>, the devices will be configured automatically. After successful connection of the device, a message is shown in the lower part ofthe screen.

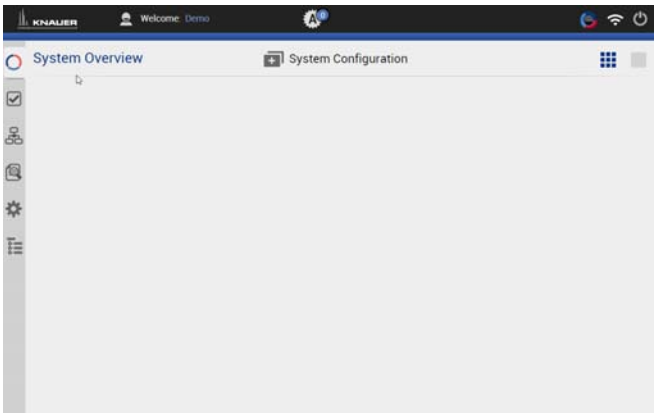
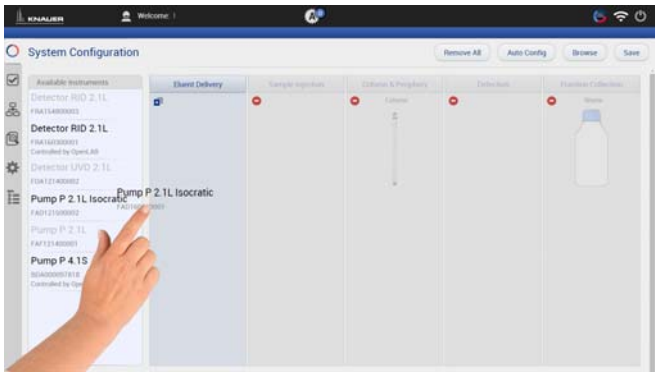
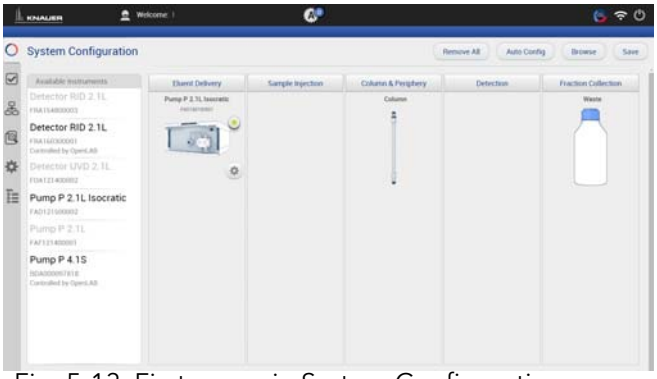
Fig. 5-8 Status message after connection

9. 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. 5-9 Overview connected devices

Process	Figure
1. Go to SYSTEM OVERVIEW. 2. You see the system configuration with most important device specific parameters below the widget. 3. Click on device status button or the device to enter the detail view.	 Fig. 5-10 System Overview listed devices

If you want to face more than one system configurations, please add new configurations in configuration management (please refer to Chap. 9.4.1).

5.2.1 Binary HPG configuration of AZURA® P 2.1L pumps

Process	Figure
1. Go to SYSTEM OVERVIEW > SYSTEM CONFIGURATION.	 Fig. 5-11 Overview - System Configuration
2. Touch the device with your finger and shift it into the block.	 Fig. 5-12 Drag and drop first pump
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. Please refer to Chap. 9.2.8.	
3. You see the pump in the system configuration overview.	 Fig. 5-13 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. Switch the second pump into the violett „Synchro“ frame.
6. Confirm your action with <Save>.

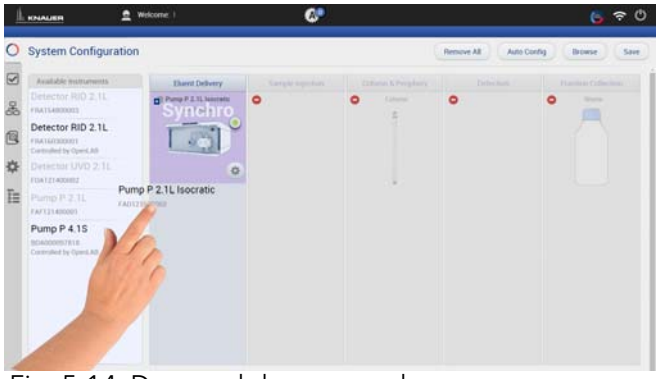


Fig. 5-14 Drag and drop second pump

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

7. Synchronization is finished after display of the status message.

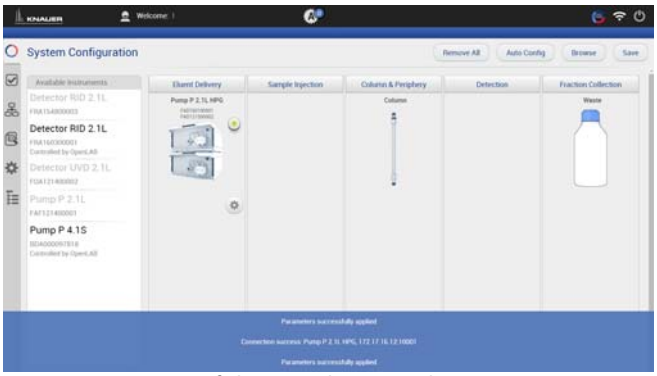


Fig. 5-15 View of the synchronized pumps

8. Go to SETTINGS to edit/view the device settings of the synchronized pumps (please refer also to Chap. 9.2.8).

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

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

Process	Figure
1. Go to SYSTEM OVERVIEW > SYSTEM CONFIGURATION. 2. Click <Browse> to get a list of all connected devices.	 Fig. 5-16 Enter System Configuration
3. Drag and drop the first valve in the appropriate column.	 Fig. 5-17 Addition of a valve

4. You see the valve in the system configuration overview.

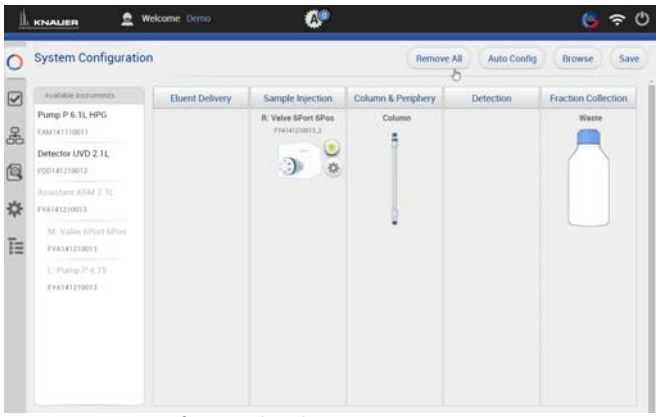


Fig. 5-18 Configured valve

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. 5-19 Drag and drop of the second valve

If you want to add 2 independent valves, drag and drop the second valve below the „synchro“ widget.

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

Fig. 5-20 View of the synchronized valves

7. Always confirm your settings with <Save>.

5.3 Device status

Device Status Light Color	Ready	Busy	Error	Standby
				

5.4 Detail View

5.4.1 User interface

Process	Figure
1. Go to SYSTEM OVERVIEW. 2. Click on device status button or the device to enter the detail view.	 Fig. 5-21 System Overview - listed devices

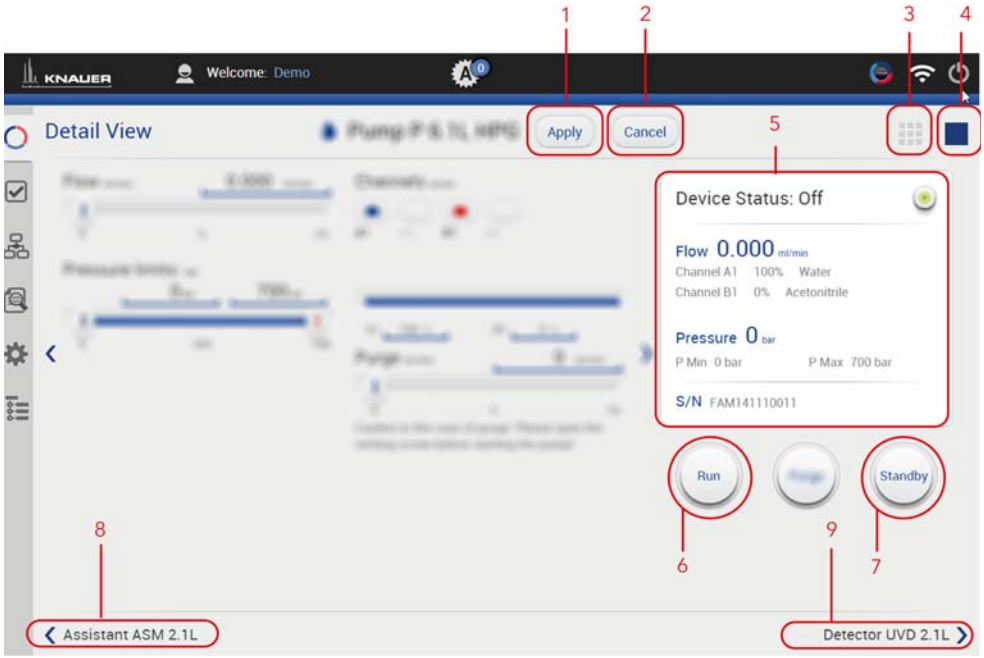


Fig. 5-22 Overview - Detail view - general interface

① Apply
② Cancel
③ Return to System Overview
④ Refreshes the data
⑤ Device status and important parameters directly send by the device
⑥ Run
⑦ Standby
⑧ Shifts to previous device
⑨ Shifts to next device

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

Always confirm your settings with <Apply>.

5.4.2 Assistent

Picture below is an example for configuration of an assistant.

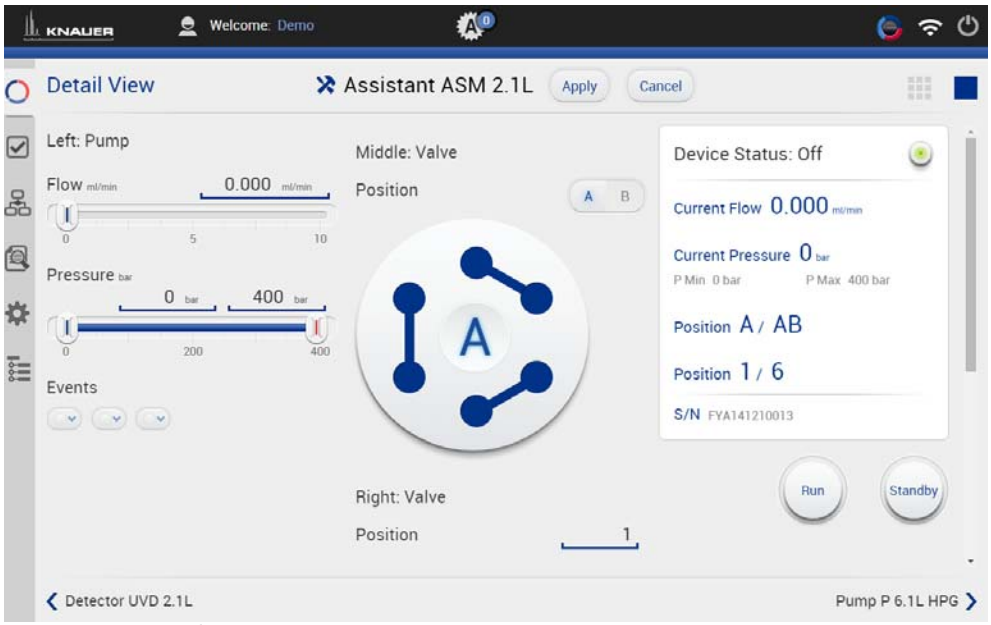


Fig. 5-23 Detail View - Assistant

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 programmed or manually activated. They operate external devices (please refer to the instructions of the respective device for more information)
	Choose between ON, Pulse or OFF.

5.4.3 Autosampler

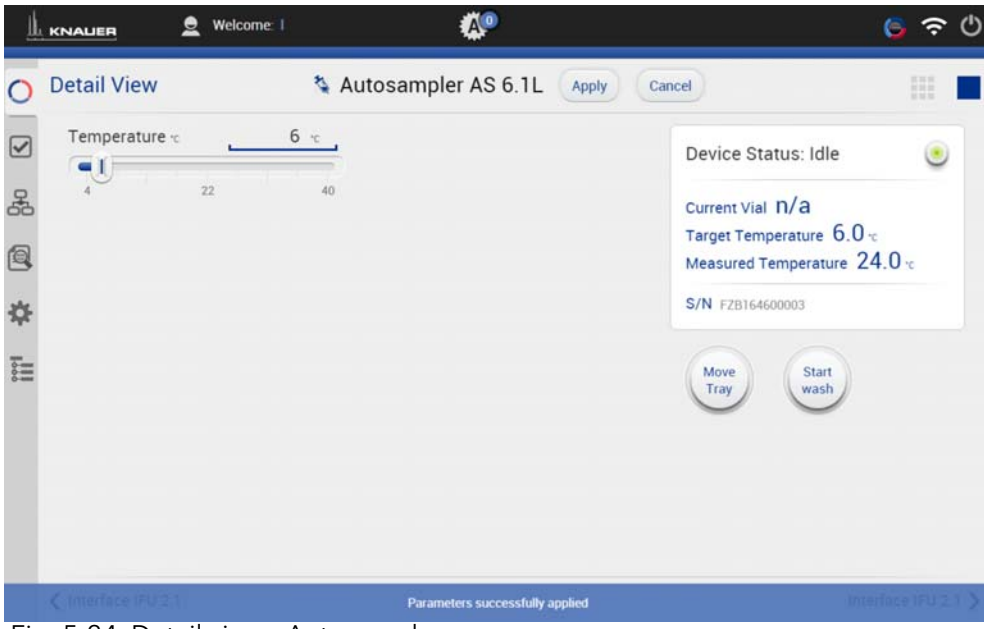


Fig. 5-24 Detail view - Autosampler

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.

5.4.4 Column Thermostat

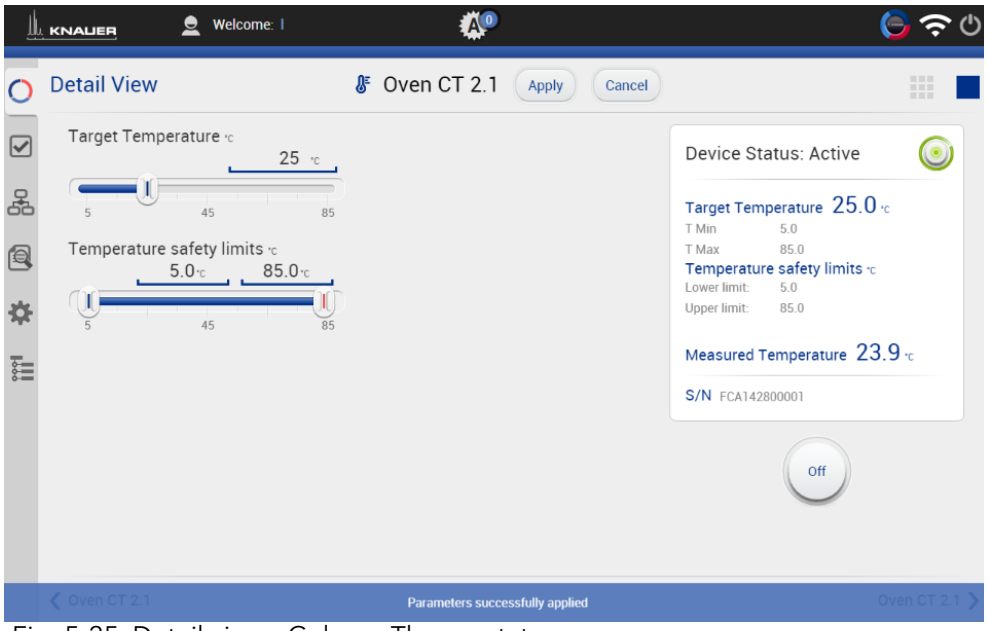


Fig. 5-25 Detail view - Column Thermostat

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.

5.4.5 Detector

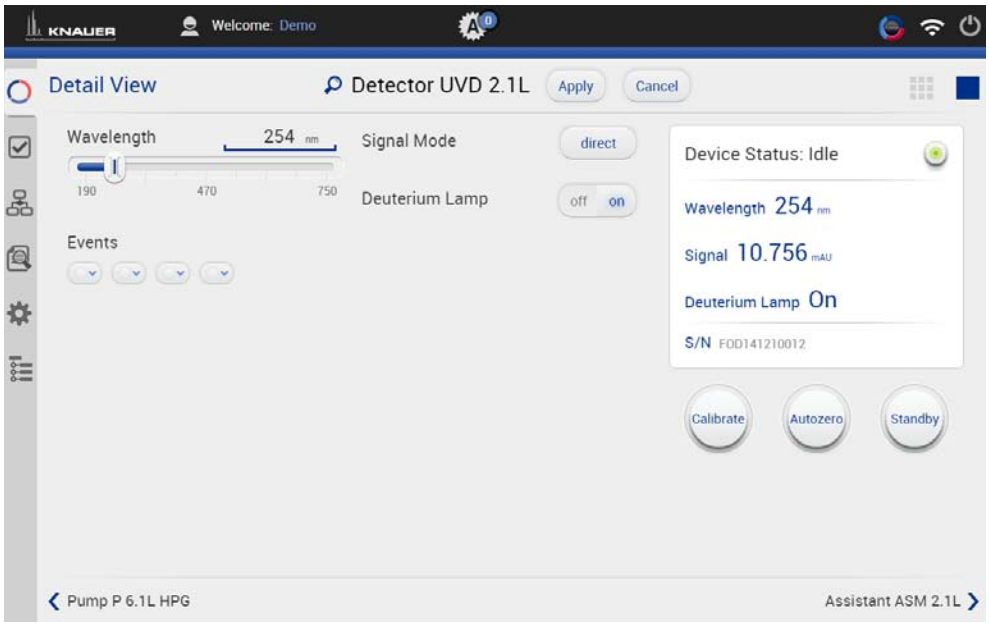


Fig. 5-26 Detail View - Detector

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 (please 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.
Deuterium lamp	Choose between ON/OFF.
	If the device is in standby mode, the lamp is switched off.

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.
Calibrate	The detectors starts an automatic calibration.
Autozero	The detector performs an autozero.
	By default, all detectors perform an autozero before start of the run.

5.4.6 Interface Box IFU 2.1 LAN

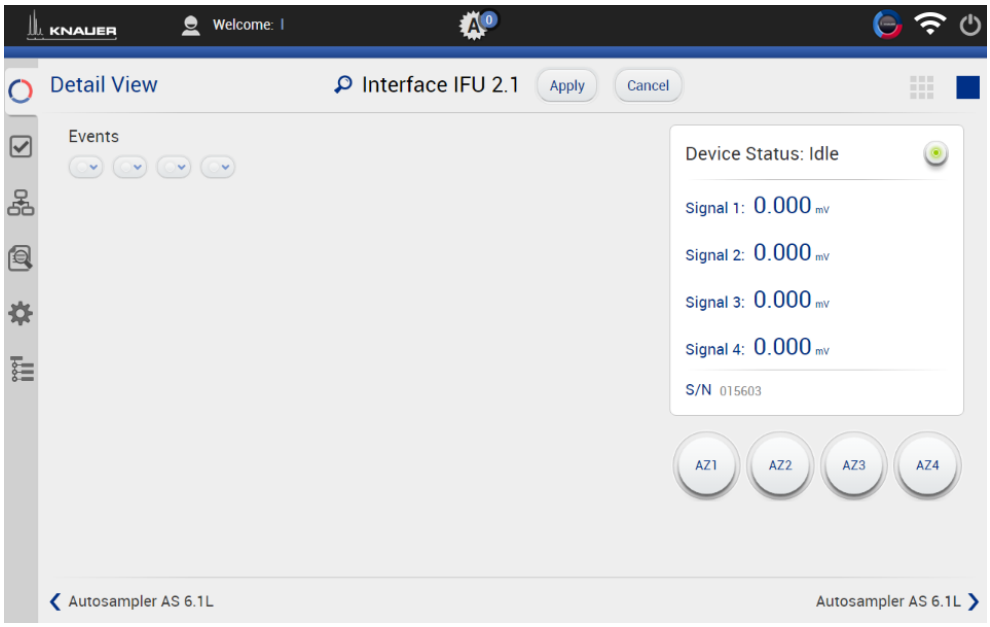


Fig. 5-27 Detail View - Interface Box IFU 2.1 LAN

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 (please refer to the instructions of the respective device for more information)

Choose between ON, Pulse or OFF.

5.4.7 Pump

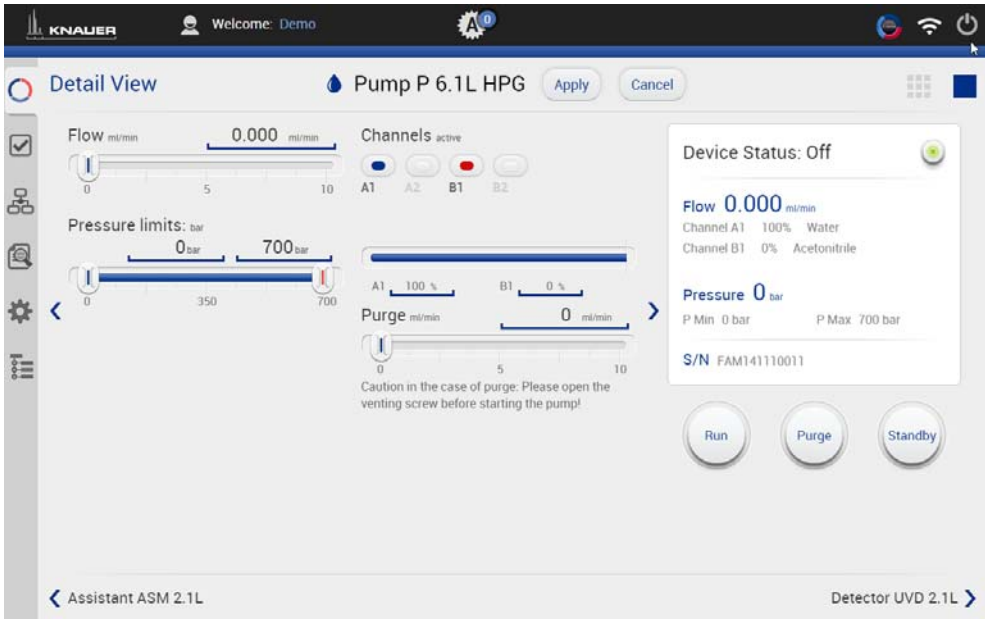


Fig. 5-28 Detail View - Pump

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 (please refer to Chap. 9.2.7).

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>.

Please refer to the corresponding pump instruction for further informations.

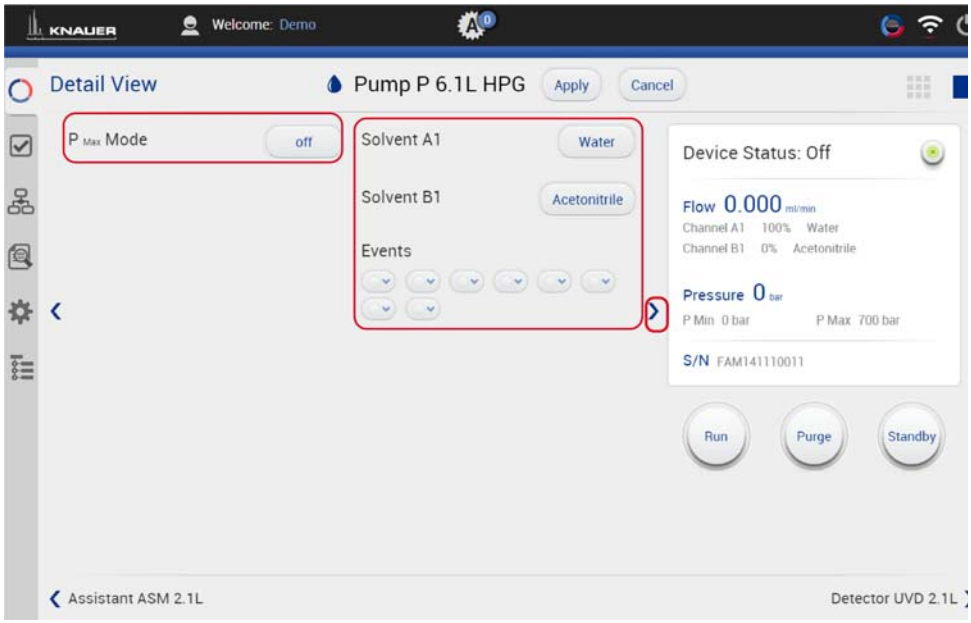


Fig. 5-29 Detail View - PMax Mode and Solvent Factor

Solvent factor

Use the blue arrow on the middle right side of the screen 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.

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>.

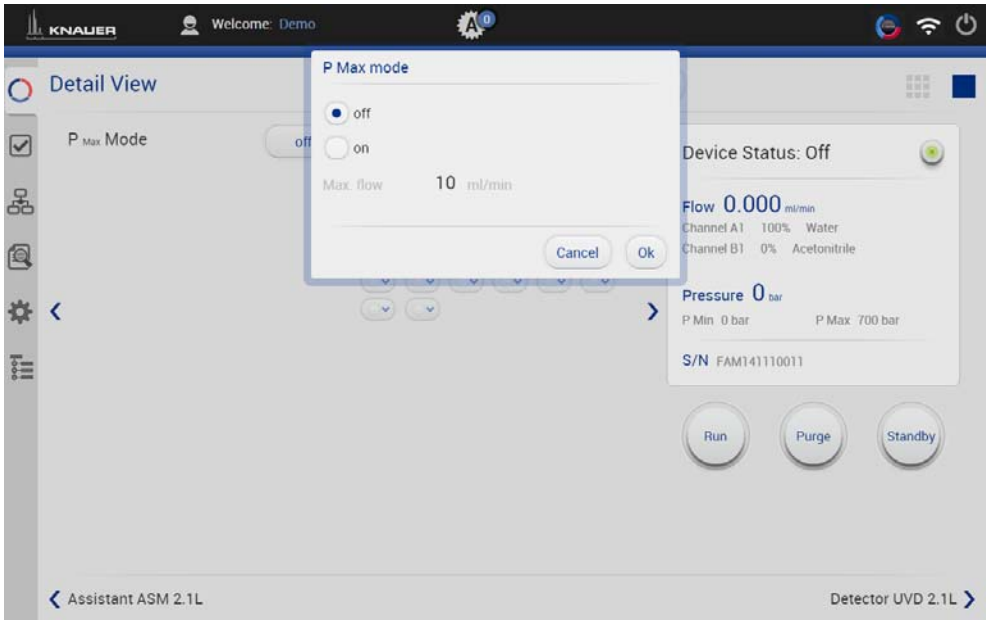


Fig. 5-30 Activation of PMax mode

Events
(from supported devices)

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

Choose between ON, Pulse and OFF.

5.4.8 Valve

5.4.8.1 2 position

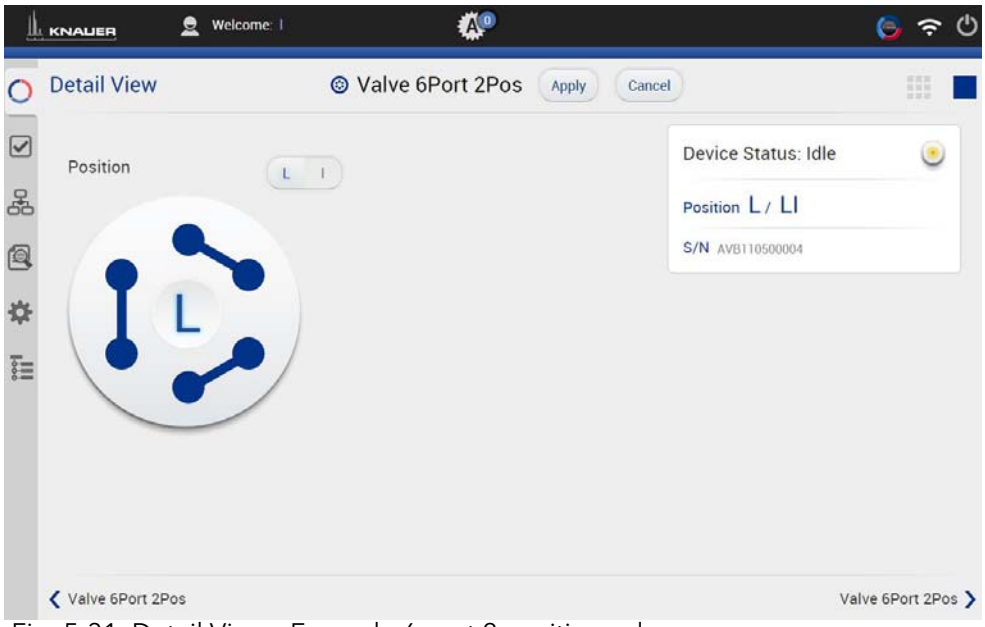


Fig. 5-31 Detail View - Example 6 port 2 position valve

Position

Choose between Load and Injection.

Confirm your setting with <Apply>.

You can also touch the valve and change the position.

5.4.8.2 Multiposition

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

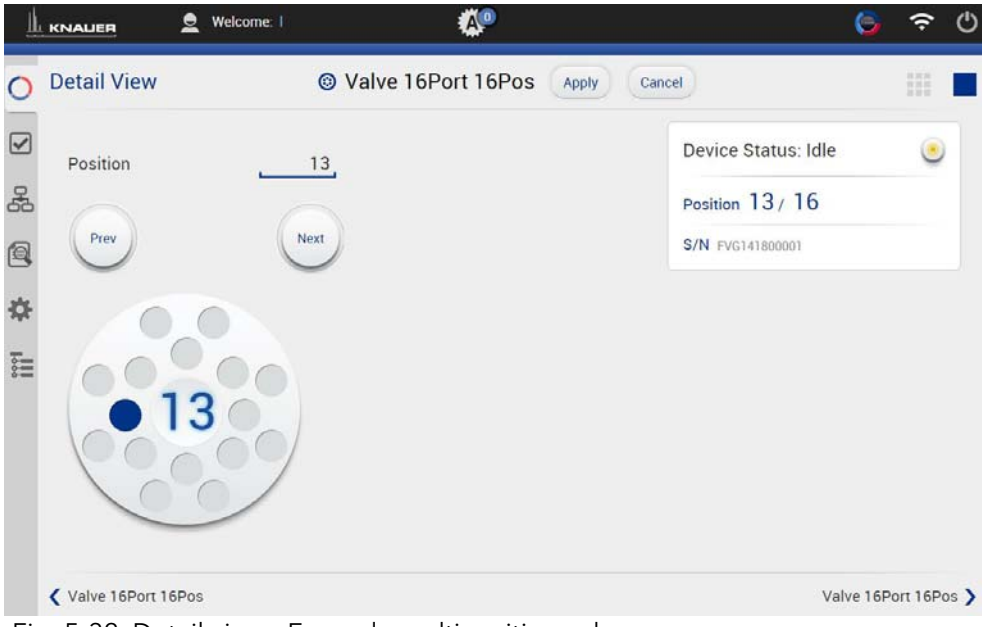


Fig. 5-32 Detail view - Example multiposition valve

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.

5.4.9 Synchronized switching

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

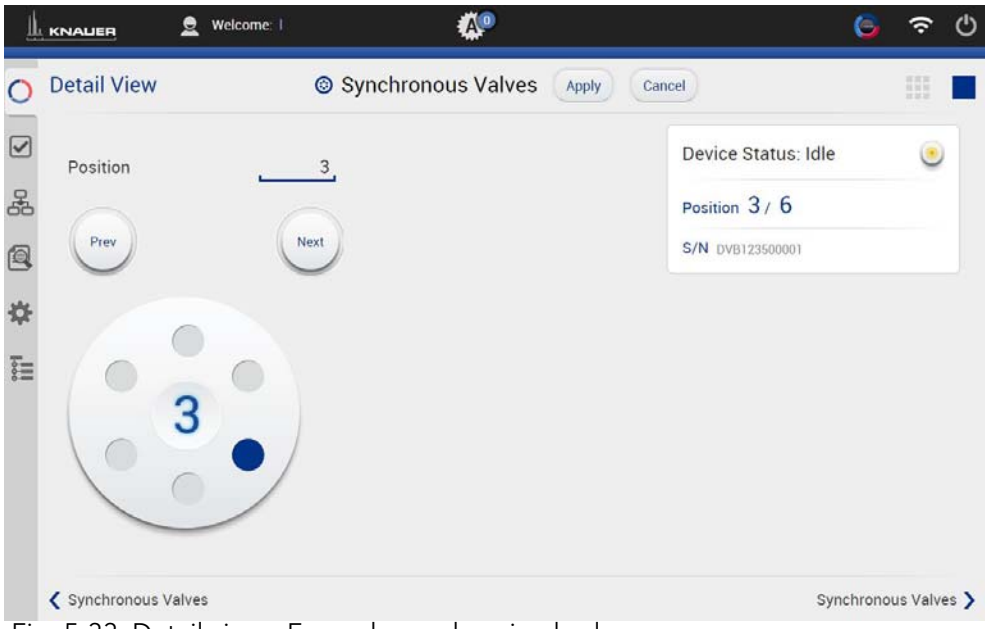


Fig. 5-33 Detail view - Example synchronized valves

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.

For synchronization of the valves, please refer to Chap. 5.2.2.

6 Program & Sequences

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

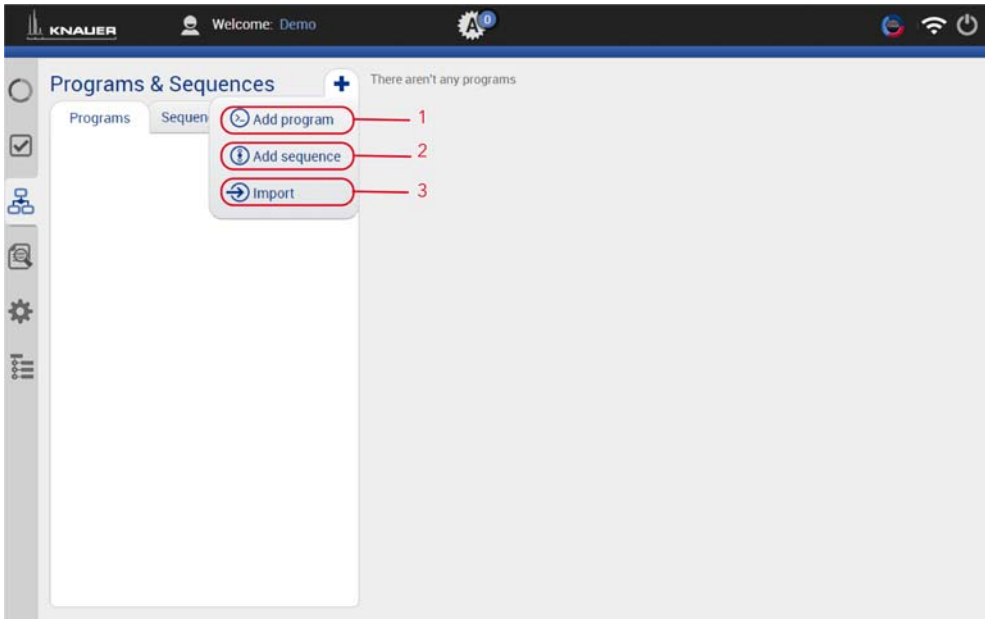


Fig. 6-1 Program & Sequences - Overview

① Add program	Create your own program and edit all settings.
② Add sequence	Create a sequence by adding programs.
③ Import	Import Mobile Control programs. Data format is *.mcp.

If you import a program from another Mobile Control, please ensure that the configuration of your system is identical.

6.1 General interface

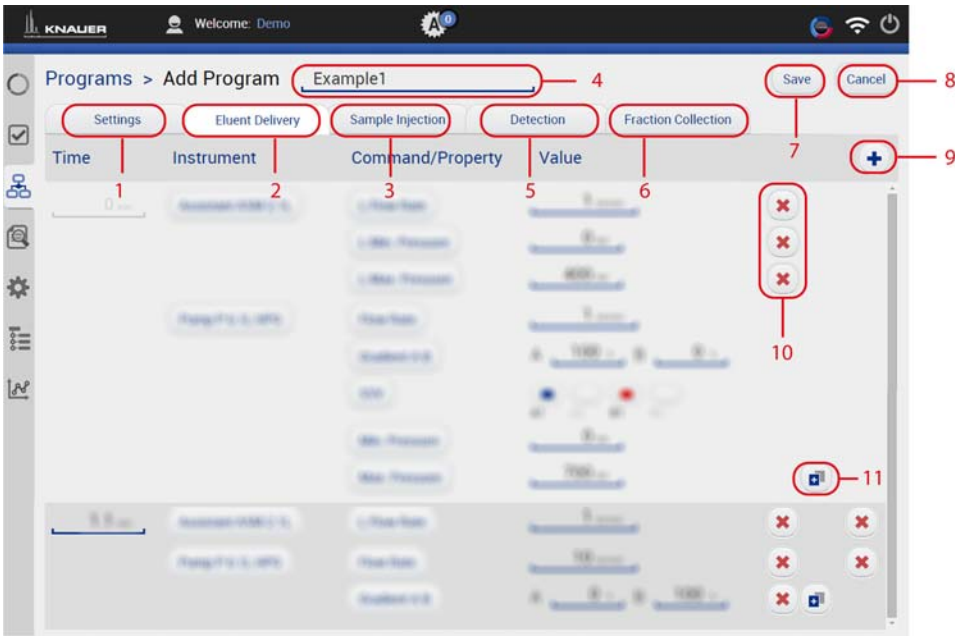


Fig. 6-2 General interface

① Settings
(please refer to Chap. 6.2)

② Eluent Delivery
(please refer to Chap. 6.3)

③ Sample Injection
(please refer to Chap. 6.4)

④ Name the program

⑤ Detection
(please refer to Chap. 6.5)

⑥ Fraction Collection
(please refer to Chap. 6.6)

⑦ Save the program

⑧ End input without saving

⑨ Add a program line, it is always a copy of the previous line.

⑩ Delete program line.

⑪ Add device or event.

Practical Tip For easier handling, all device components in the menu „Programs“ are arranged in the same way as the tabs in menu „System Overview“. Before you add a programm we recommend to ensure correct system configuration.

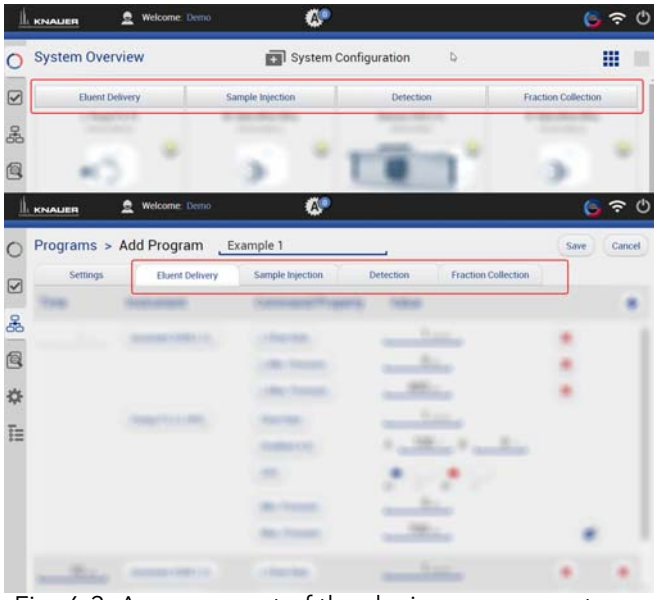


Fig. 6-3 Arrangement of the device components

6.2 Settings

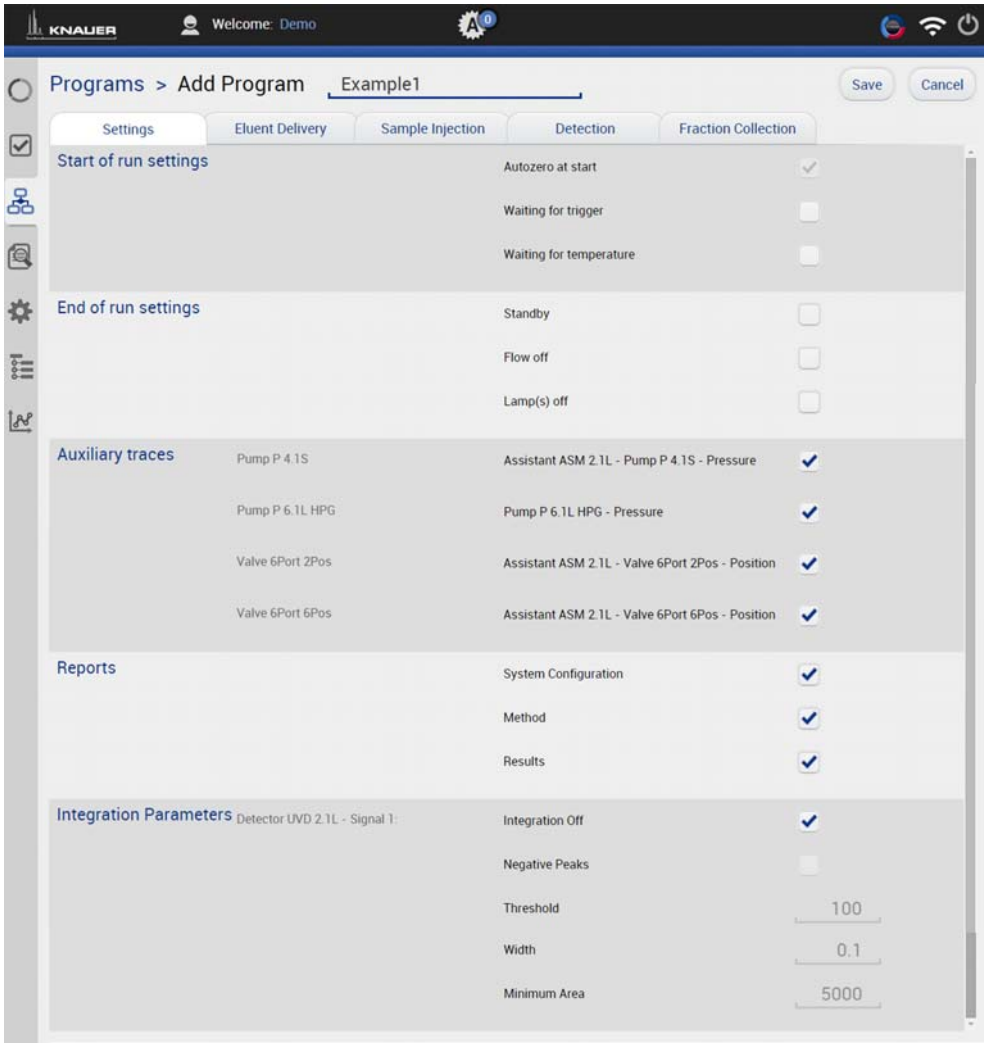


Fig. 6-4 Add a program - Example for Settings

Start of run settings

Autozero at start	by default
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.

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

Autosampler - Temperature
Column Thermostat - Temperature
Detector (AZURA®RID 2.1L, DAD 2.1L/6.1L) - 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	
Results	

Integration parameters

Integration off	Activate the checkbox to edit integration parameters.
Negative Peaks	
Treshold	
Width	
Minimum area	

6.3 Eluent Delivery

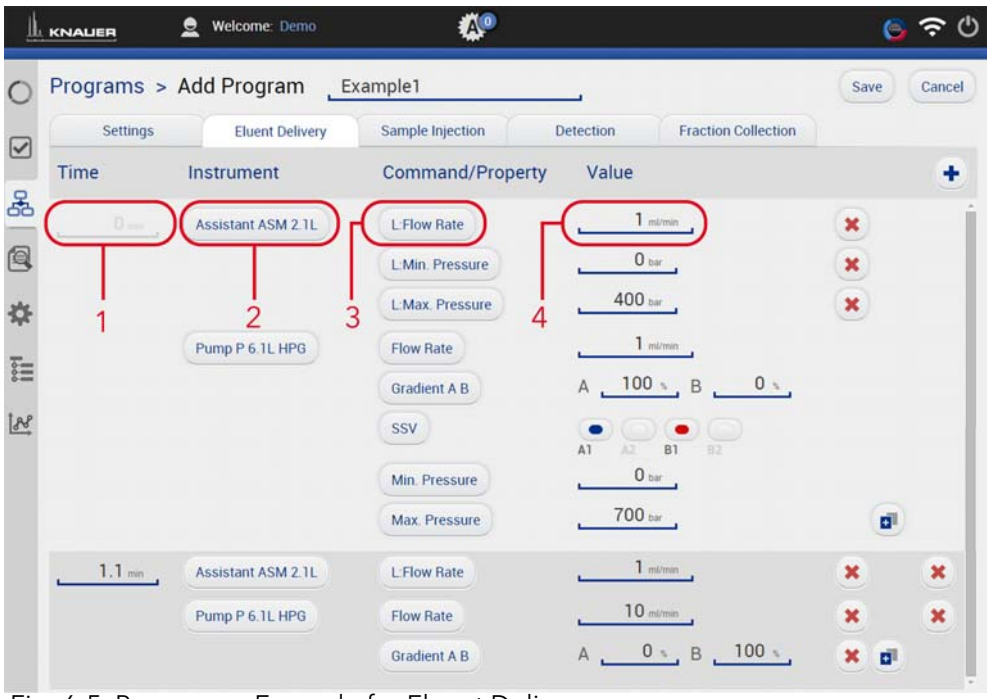


Fig. 6-5 Programs - Example for Eluent Delivery

① Time	Enter point of time
② Instrument	Select device
③ Command/Property	Select parameter
④ Value	Enter value.

6.4 Sample Injection

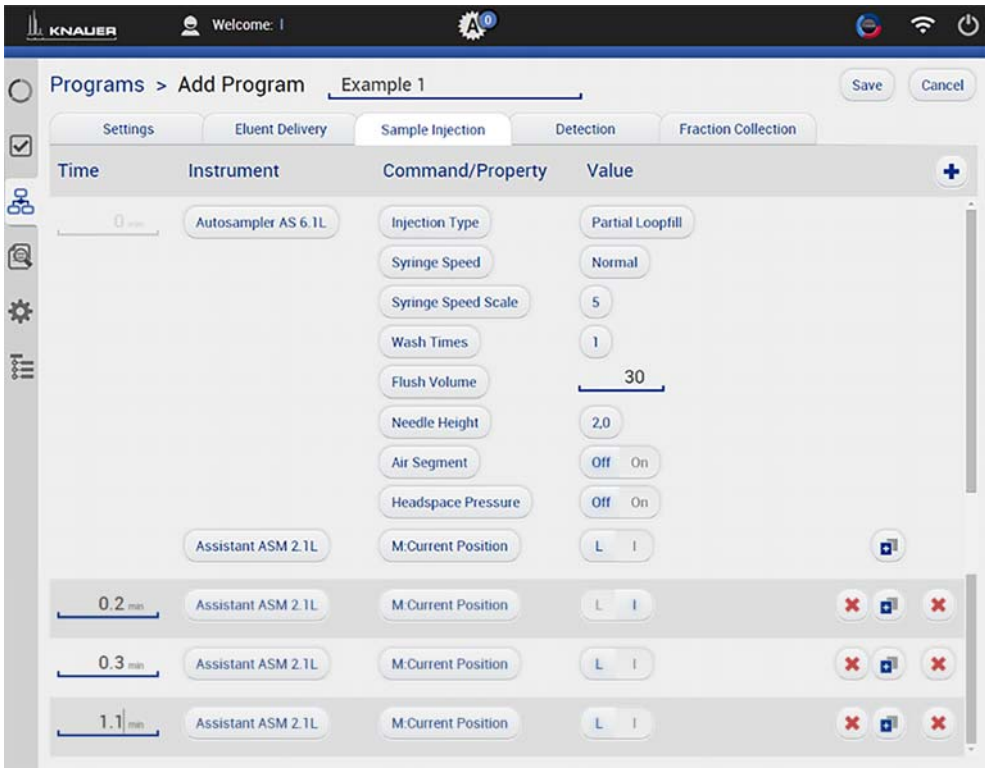


Fig. 6-6 Programs - Example for Sample Injection

6.5 Detection

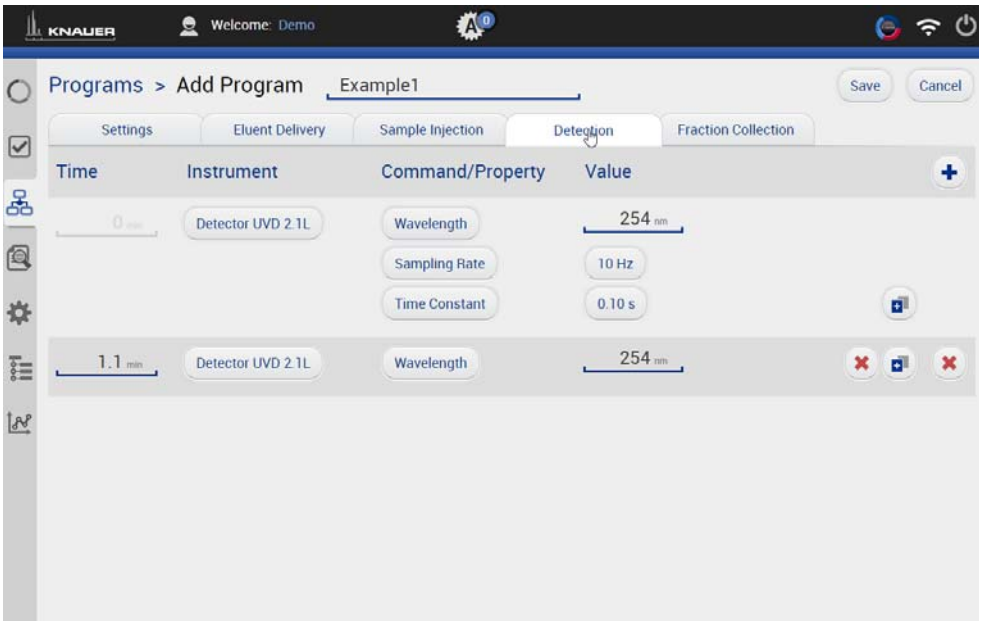


Fig. 6-7 Programs - Example for Detection

6.6 Fraction Collection

Only one multiposition valve can be addressed as fraction collection valve. Cascading of several valves is not supported.

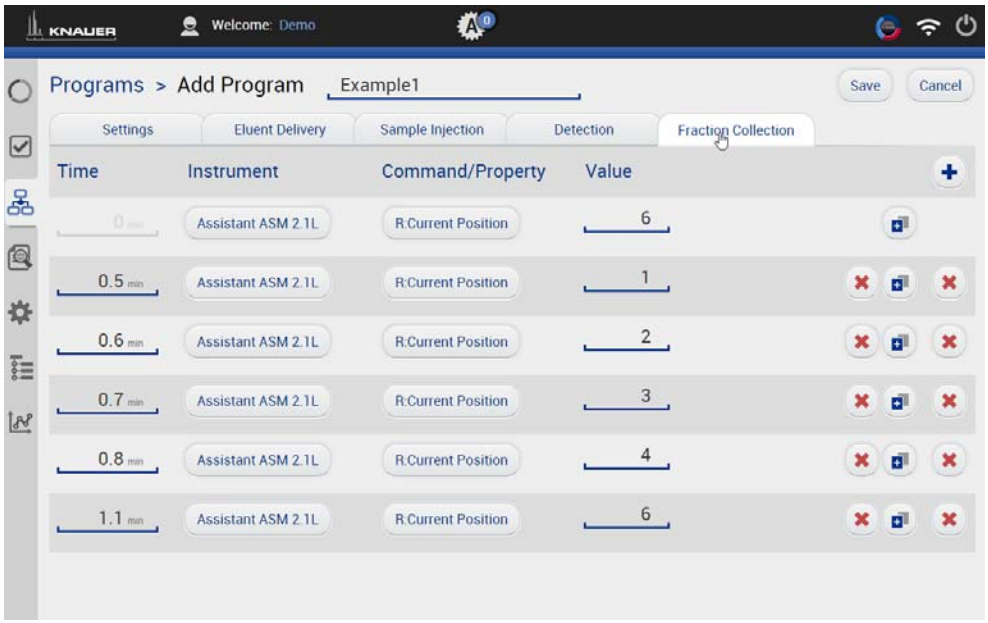
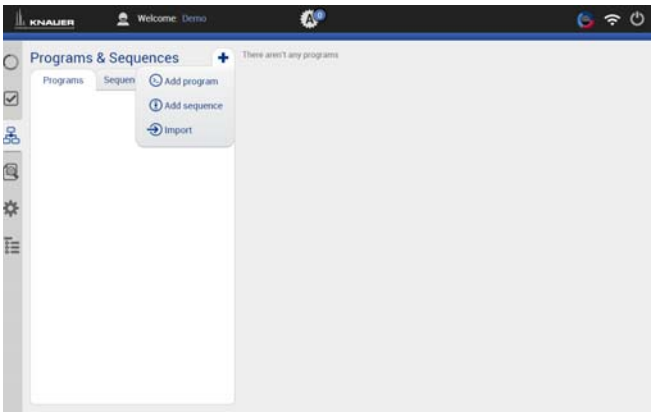


Fig. 6-8 Programs - Example for Fraction Collection

6.7 Add a program

Process	Figure
1. Go to PROGRAM & SEQUENCES. 2. Select <+> and tap „Add a program“.	 Fig. 6-9 Add a program

3. Name your program.
4. Begin with „Settings“ and set all required parameters (please refer to Chap. . till Chap. 6.6 for correct adjustment).
5. Confirm your settings with <Save>.
6. You will be directed to the overview page.

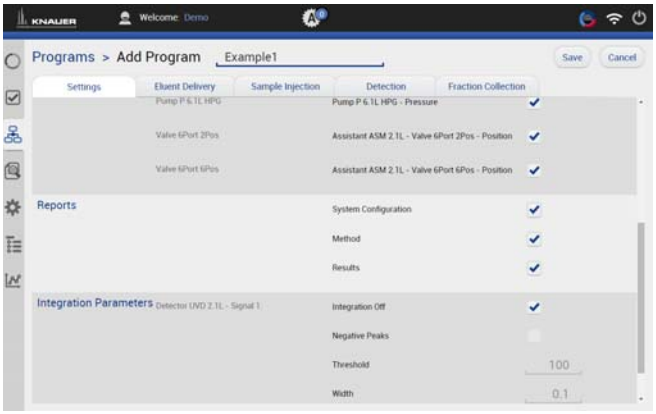


Fig. 6-10 Settings

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>.

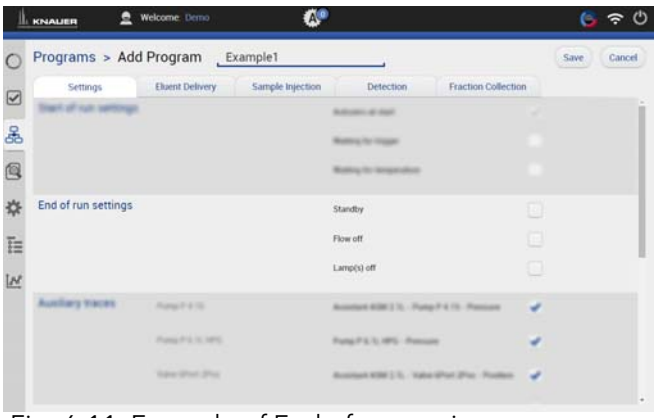


Fig. 6-11 Example of End of run settings

If a number of programs follow, we recommend to deactivate the checkboxes for switching off the flow and lamp in „End of run settings“. If no program follows, then you can switch off flow and lamp by activating the checkboxes.

8. Add the „End of run “ program to your sequence and place it at the end. You see the order of programs in the sequence list (for programming a sequence, please refer to Chap. 6.10)

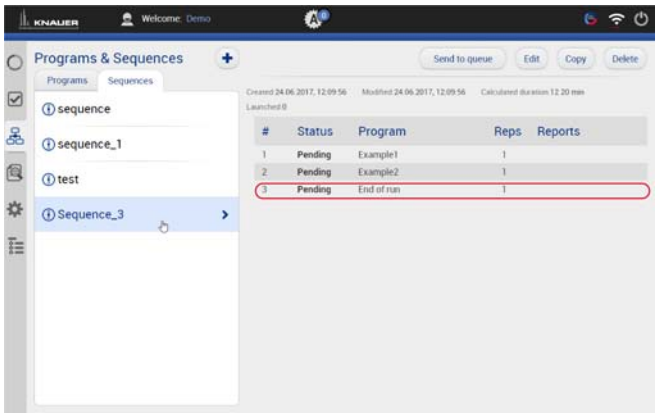


Fig. 6-12 Sequence list

9. You can finally check all important device settings you made.
10. To start the program, please refer to Chap. 6.8.

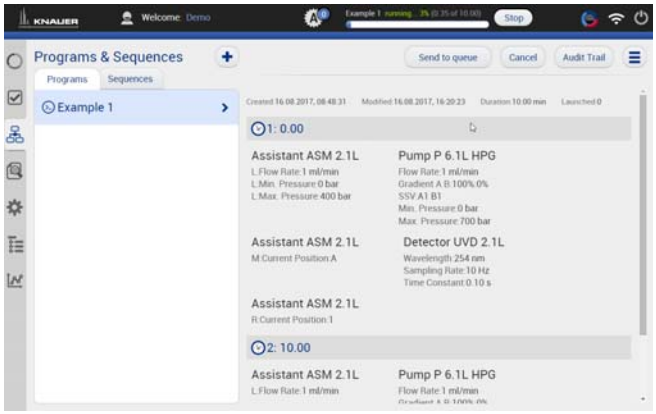


Fig. 6-13 Program - overview

6.7.1 Program list

After setting of the program parameters you see a summary list.

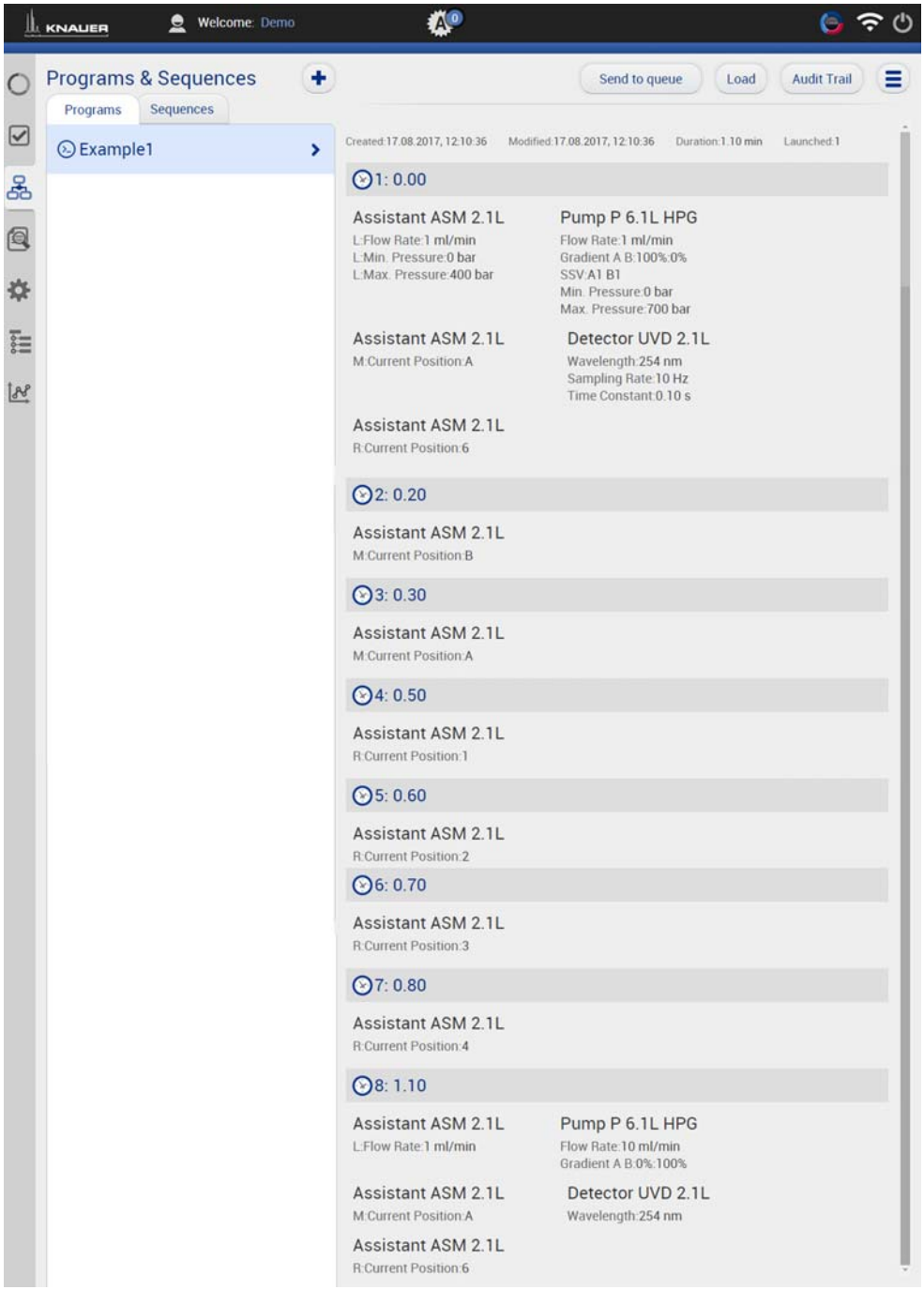
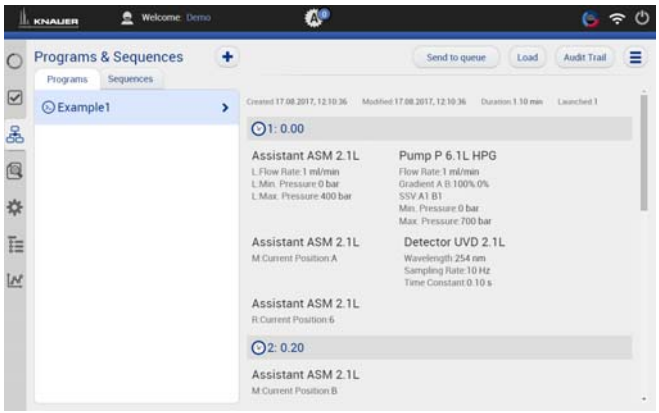
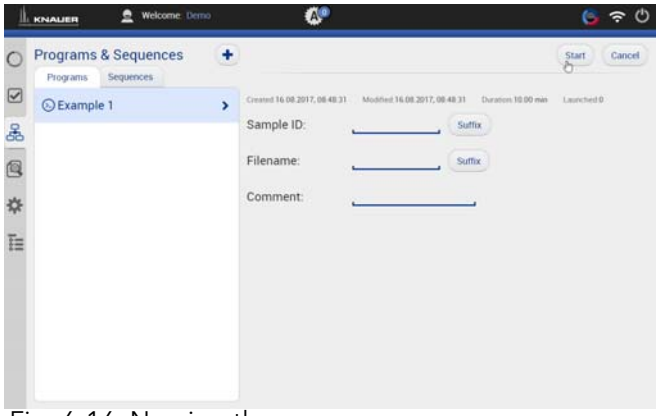
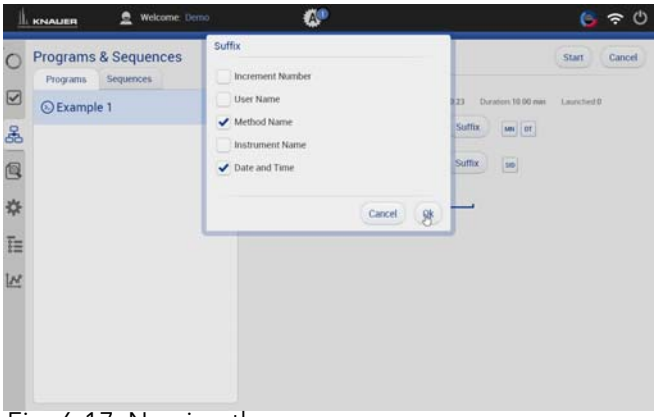


Fig. 6-14 Program list

6.8 Start a program

Process	Figure
You can select: a) Send to queue b) Load c) Audit Trial (please refer to Chap. 6.9)	 Fig. 6-15 Start the program
11.If you select <Load> you will be directed to a new tab. 12.Select <Suffix> to name the measurement.	 Fig. 6-16 Naming the program
13.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“. 14.Confirm your selection with <Apply>.	 Fig. 6-17 Naming the program

15. Select Filename.

To avoid same filename, naming of the run must be individually. We recommend to select „Sample-ID“.

16.Confirm your selection with <Apply>.

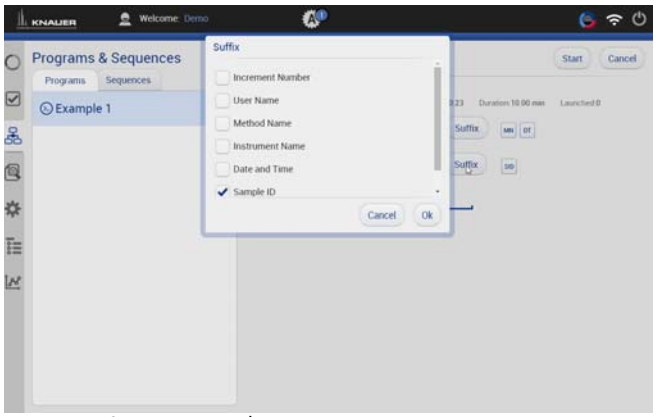


Fig. 6-18 Naming the program

17. After creation of a new program or modification of an existing program a preview run can be started. In this run the first program line of all devices will be executed. This allows to check if all devices are running as expected or can be used for monitoring the equilibration of the HPLC system. The preview runs for an infinite time and must be stopped manually. During a preview run signals from detectors or auxiliary traces will be acquired. This data cannot be stored and is only available until a new preview or program/sequence is started.

18.If you want to change the program, select <edit>.

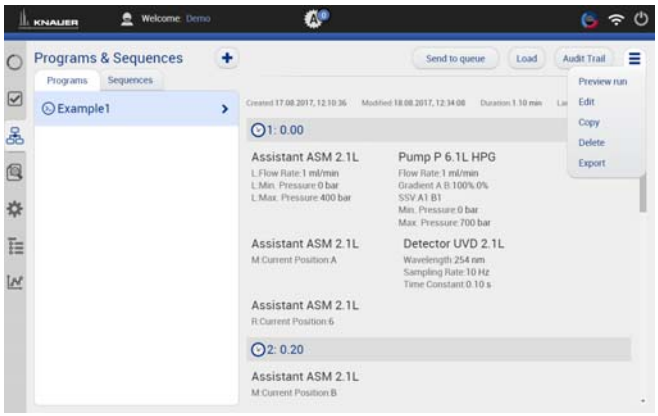


Fig. 6-19 Preview run

19.To start the run you can select:

- <Start> from menu program & Sequences
- <Start queue> from menu Run Queue.

If you select <Start>, a new display is shown on the upper part of the screen. It shows the temporal process of the run (please refer to Fig. 6-23). You can disrupt the run by pressing <Stop>.

20.You can select <Send to queue>

21.If you select <Send to queue> you have further options, you can send with high priority or send to the end. If you send with high priority, the program is at the beginning of Run queue. If you send the program to the end it will be added in the last line in menu Run Queue.

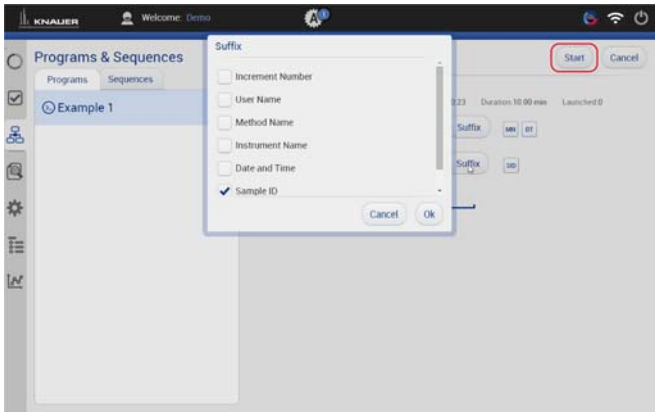


Fig. 6-20 Start a run from menu Program & Sequences

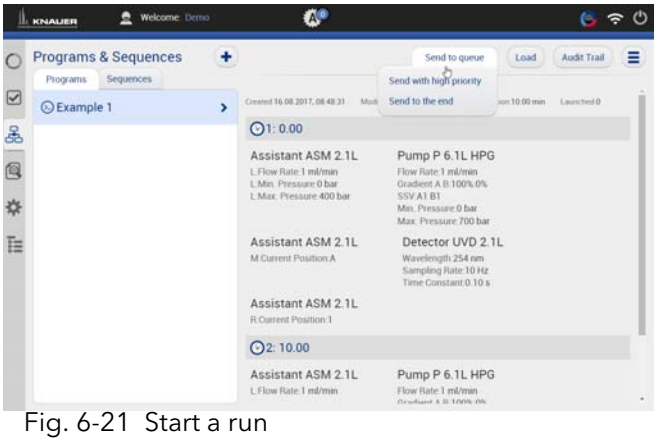


Fig. 6-21 Start a run

22. Select menu RUN QUEUE. You see the loaded run. If you want to delete the run, click on the red cross symbol.
23. Press <Start queue> to start the run.

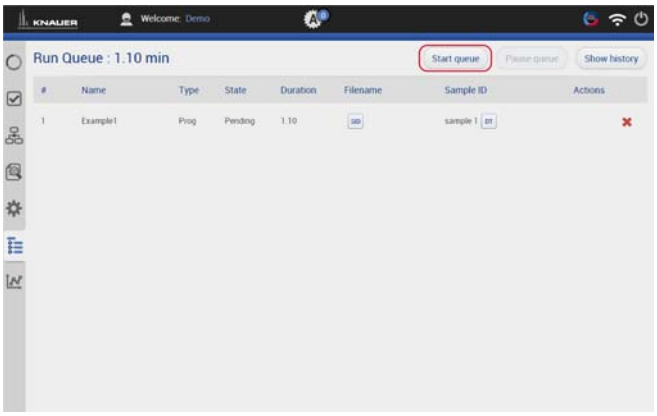


Fig. 6-22 Start a run from menu Run Queue

24. A new display is shown on the upper part of the screen. It shows the temporal process of the run. You can abort the run by pressing <Stop>.

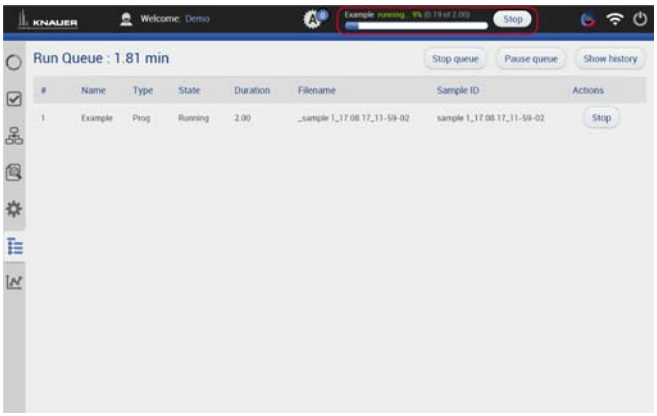
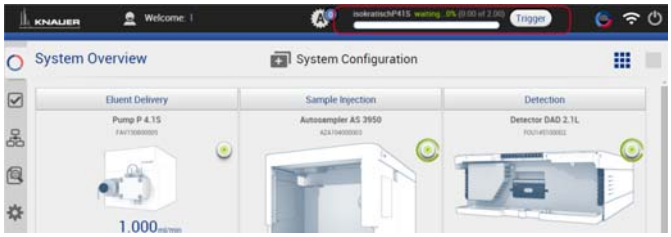


Fig. 6-23 Program start

25. If you set a start with external trigger, measurement starts if you press <Trigger> or by release of the signal from a device (e.g. release of manual injection valve.)



After successful run, a status message is shown.

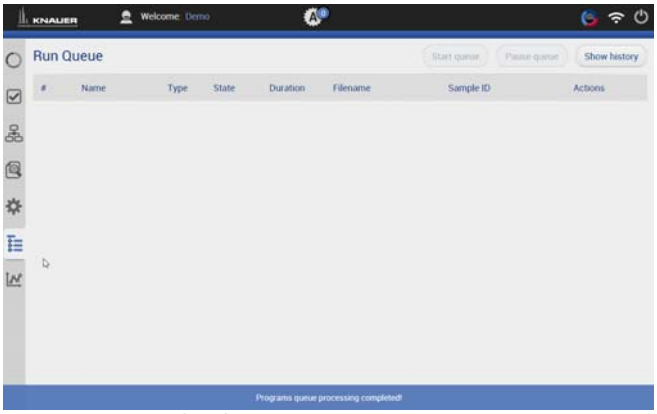
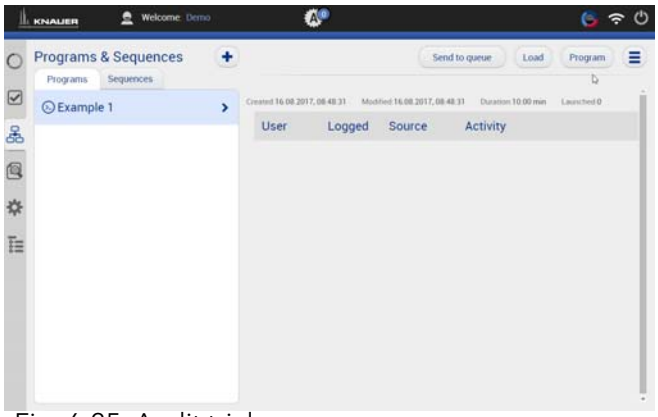
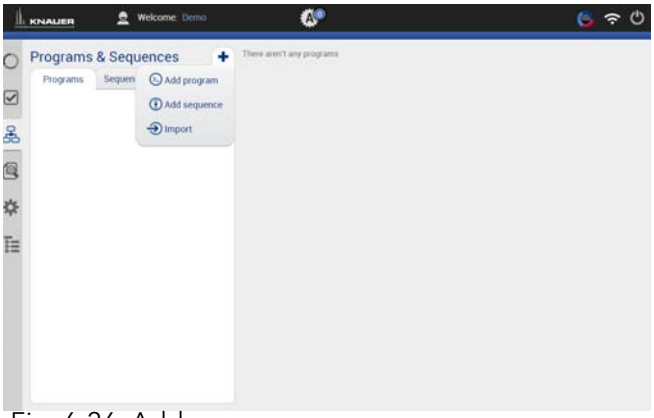
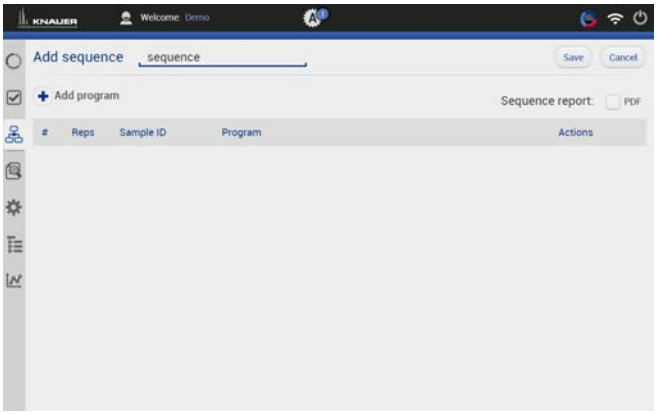


Fig. 6-24 Finished program

6.9 Audit trial

Process	Figure
You will be directed to a new window where a summary list is shown. The list displays which user performed a meaurement. If you press <Program> you return to the window with Programs and Sequences.	 Fig. 6-25 Audit trial

6.10 Add a sequence

Process	Figure
1. Go to PROGRAM & SEQUENCES. 2. Select <+> and tap „Add a sequence“.	 Fig. 6-26 Add a sequence
3. Name your sequence. 4. Click on the <+> Add program to add a program. A new window is opened.	 Fig. 6-27 Name a sequence

5. Select the program you want to run first. You can change order of programs also at the end.
6. Confirm with <OK>.

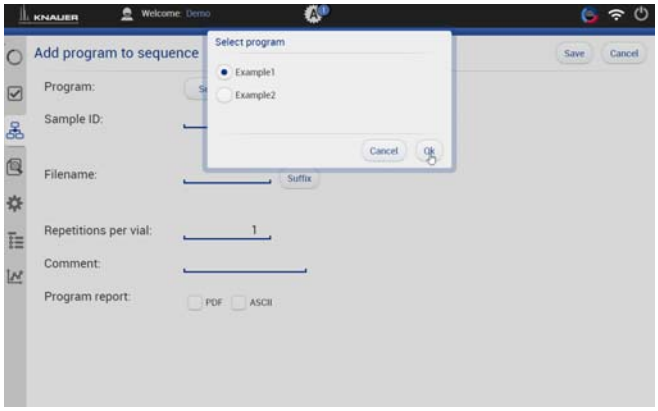


Fig. 6-28 Add program to sequence

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

You can choose between:

- Increment Number
- User Name
- Method Name
- Instrument Name
- Date and Time

We recommend to choose „Increment number" and „Date and Time".

8. Confirm with <.OK>.

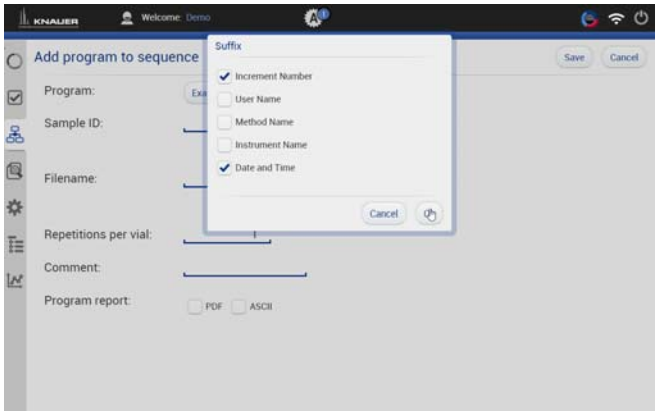


Fig. 6-29 Sample ID

9. Name the Filename and select <Suffix>.

You can choose between:

- Increment Number
- User Name
- Method Name
- Instrument Name
- Date and Time
- Sample-ID

We recommend to choose „ISample-ID".

10.Confirm with <.OK>.

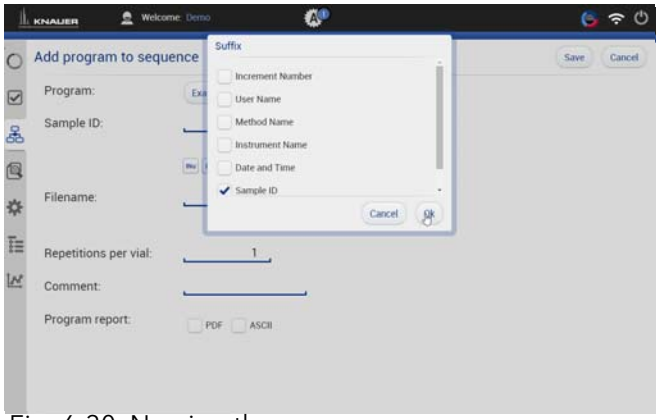


Fig. 6-30 Naming the program

11. Select the repetitions per vial.
12. If you want a report as PDF-file and ASCII-file, actovate the checkboxes´.
13. Confirm your settings with <Save>. You will be directed to a new window.

14. You see a list of sequences.
15. Click on the pen symbol to edit the sequence. Click on the red cross to delete the program.
16. Press <Save> to save the sequence.
17. Select the <+> symbol to add the next program.Add the next program.

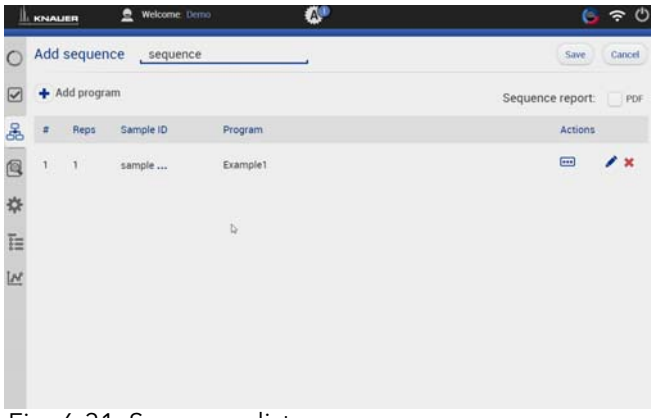


Fig. 6-31 Sequence list

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

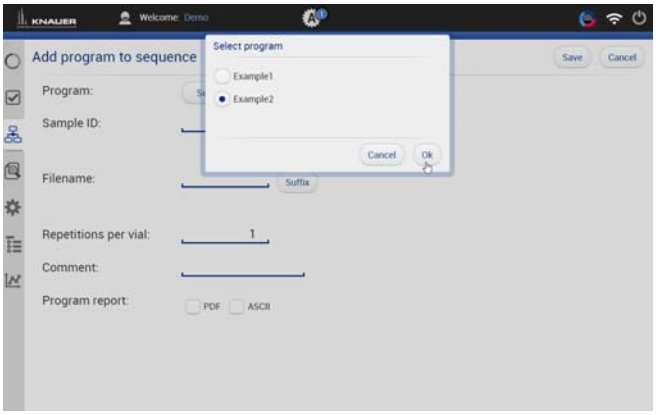


Fig. 6-32 Preview run

20. You see both programs in the list.
21. You can change the order by selecting the arrow on the right side of each row.

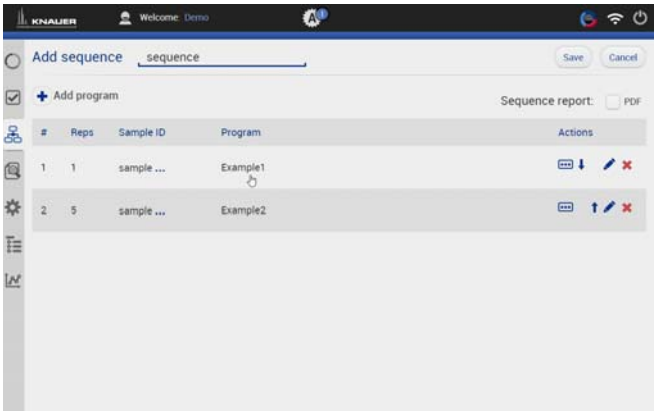


Fig. 6-33 Arranging the programs

22. Select <Save>. You will be directed to the homescreen of menu Program&Sequences.

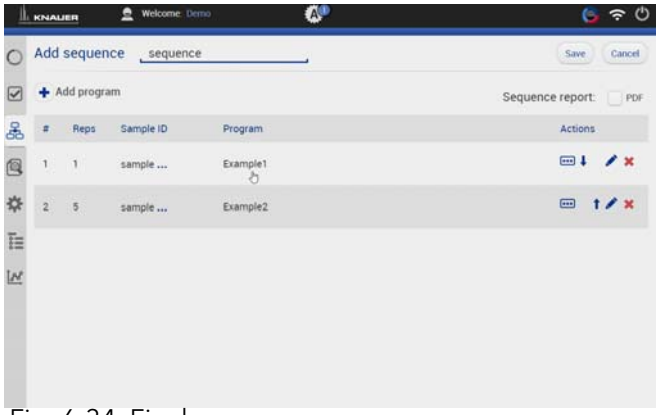


Fig. 6-34 Final sequence

23. You see a summary of your created sequence.
24. To start the sequence, select <Send to queue>. Further options are available:

a) send with high priority

b) send to the end

If you want to run more sequences you can arrange them an decide in which order they run.

Option a) means the sequence will start at first.

Option b) means the sequence will start at the end.

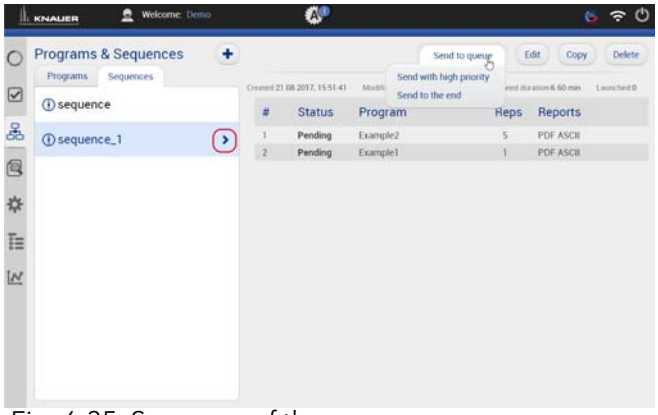


Fig. 6-35 Summary of the sequence

25. Go to RUN QUEUE.
26. Select the blue arrow, to view all programs in the sequence.
27. To start the sequence, select <Start queue>.

Fig. 6-36 Run Queue

28. On the upper side of the screen a new scale is displayed. It shows time course of the run. You can stop the program by pressing the <Stop> button. If you want to disrupt the measurement, you can also select <Pause Queue>. To see the chromatogram, please refer to Chap. 8.

Fig. 6-37 Program starts

7 Run Queue

The run queue is used to manage and schedule programs and sequences. Once a sequence or program 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 program 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:

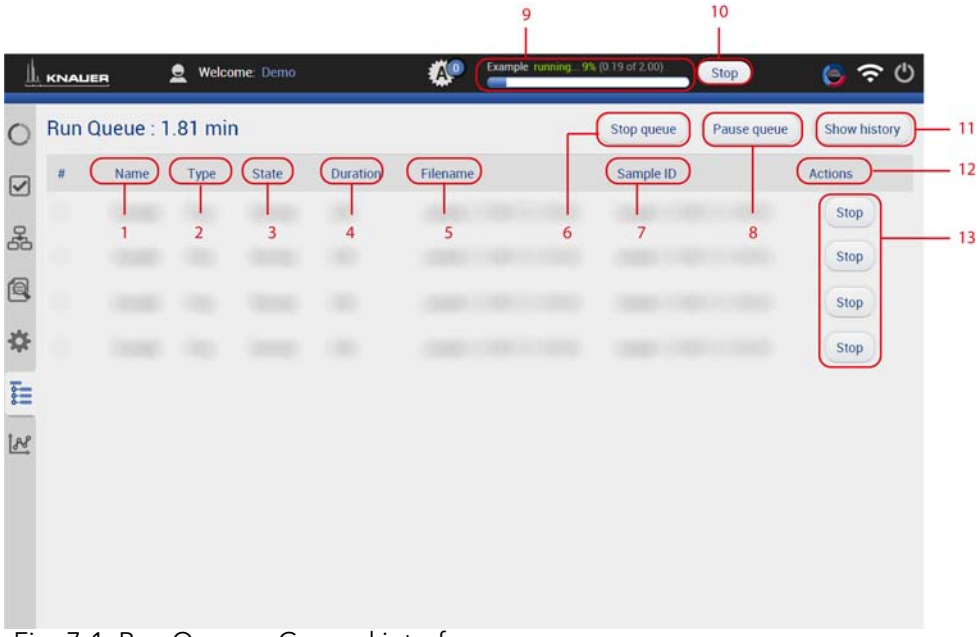


Fig. 7-1 Run Queue - General interface

① Name of the program/sequence

② Type of the program/sequence

③ State - Pending, Running, Completed

④ Duration of the program/sequence

⑤ Filename of program/sequence (please refer to Chap. 6.8)

⑧ <Pause queue> will pause the run queue as soon as one run is completed and wait for your action. You do not have to wait for the entire sequence to be completed. You can decide of the flow also should be stopped.

⑨ Process of the program/ sequence.

⑩ <STOP> aborts the actual program/ sequence

⑪ *<Show History>* allows to see all already processed programs or sequences.

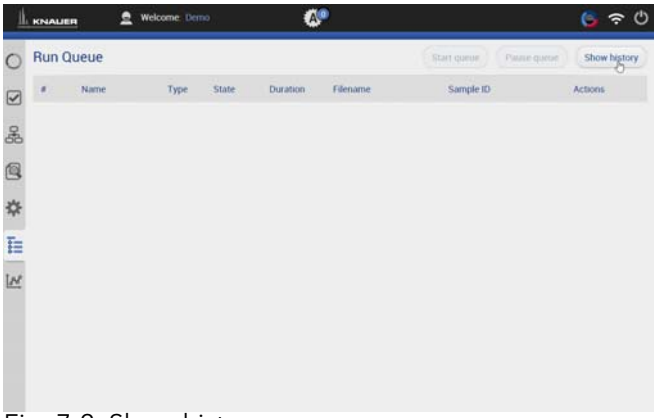
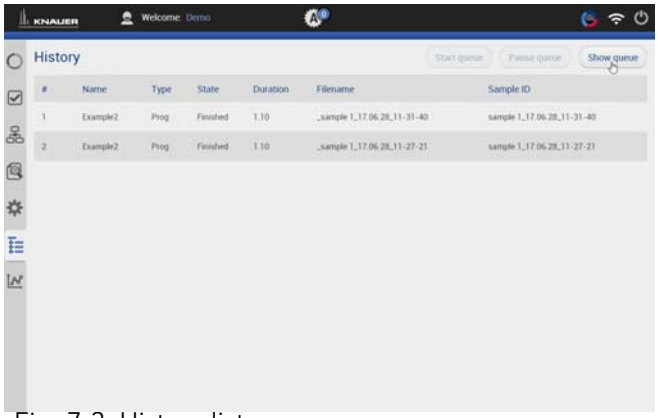
⑫ Actions - you can stop programs/ sequences

⑥ <Stop queue>

⑬ <Stop> will immediately terminate the item currently running in the queue and pause the sequence.

⑦ Sample ID
(please refer to Chap. 6.8)

7.2 Show History

Process	Figure
1. You can view all previous performed programs/sequences. 2. Select <Show History>.	 Fig. 7-2 Show history
3. You see a list with important data of the program/sequence. ▪ Name ▪ Type (program/sequence) ▪ State ▪ Duration ▪ Filename ▪ Sample ID 4. To return, select <Show queue>.	 Fig. 7-3 History list

8 Chromatogram window

With the start of data acquisition at the beginning of a program or sequence, a new icon appears on the left side of the screen. By clicking on it the chromatogram window opens which shows the detector signal, auxiliary and method traces.

8.1 Showing/hiding traces

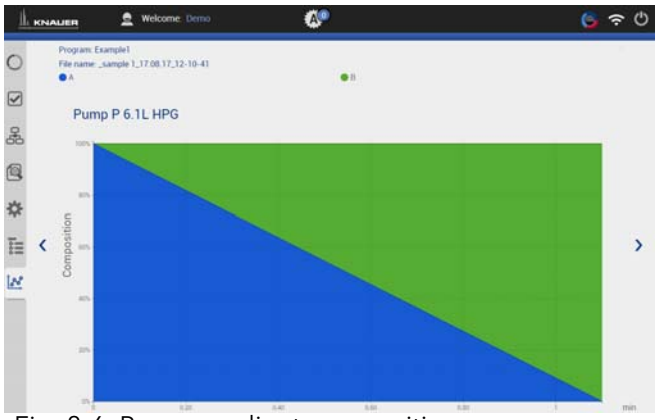
In the list of traces all available data traces, auxiliary traces and program parameters are shown. Program parameters highlighted in grey cannot be selected. Parameters highlighted in black can be selected.

Process	Figure
1. You can activate the traces during or after a measurement. 2. To show or hide the traces, select <Traces>. A new window is opened.	 Fig. 8-1 Show traces
3. Activate the boxes to display the traces. 4. Confirm with <OK>.	 Fig. 8-2

8.2 Set y-axis

Process	Figure
1. You can change the y-axis during an active measurement. 2. Select the trace and switch on the trace which should be displayed. 3. Confirm with <OK>.	 Fig. 8-3 Set y-axis
4. Touch the trace name and the dimensions of the trace is shown as y-axis. Font of the selected trace changes into bold. 5. Confirm with <OK>.	 Fig. 8-4 Set y-axis

8.3 Show gradient composition

Process	Figure
1. On the right side of the screen a blue arrow is displayed. 2. Click on the right arrow.	 Fig. 8-5 Set y-axis
3. You see the composition change of the pump during the measurement.	 Fig. 8-6 Pump gradient composition

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 (please refer to Fig. 8-7).

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.

Fig. 8-7 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.

By left double click the data trace will be fully unzoomed.

9 Settings

9.1 General

9.1.1 Network settings

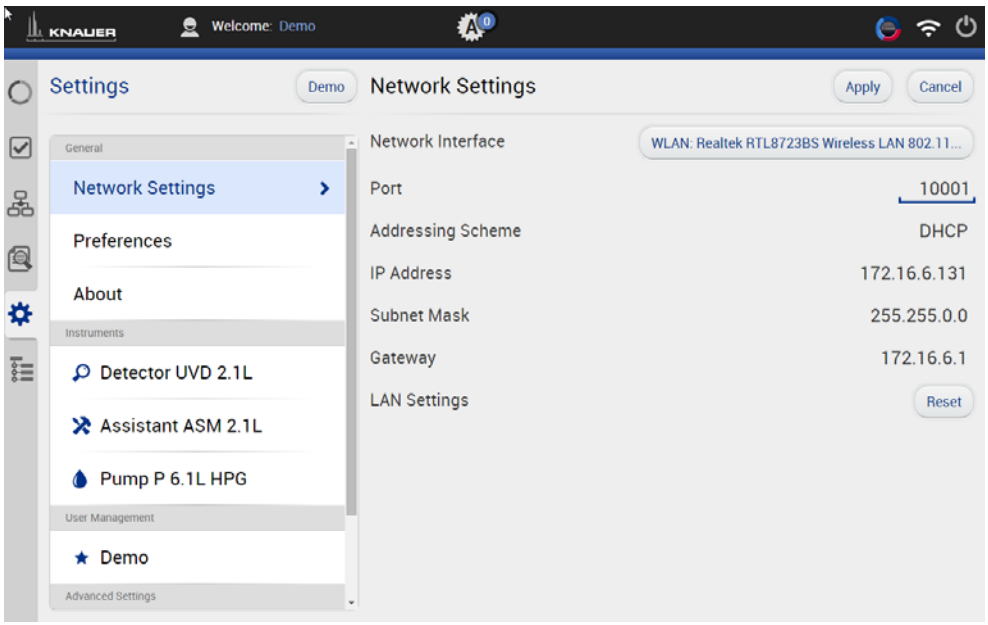


Fig. 9-1 Networks settings

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 Choose between DHCP and Static in Setup > General for each device.

DHCP: automatically setting of IP-address

STATIC: manual entry of IP-address

IP Address Displays the IP address of the device.

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. You can also set LAN settings of the device with Firmware Wizard (please refer to Chap. 13.1).

Communication in LANs is realized via ports. 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.

9.1.2 Reset of LAN settings to DHCP

In the mobile control you can set the device on DHCP.

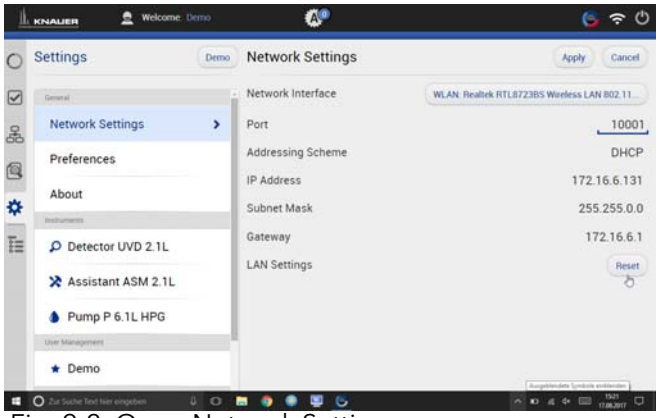
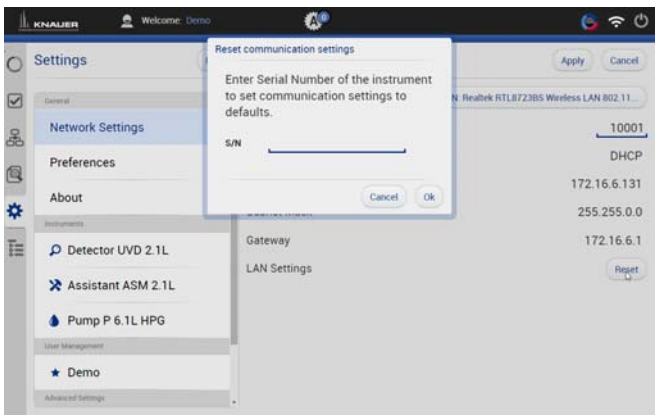
If you lost a device, since you do not know the static IP address you change the network setting to DHCP.

This function can be carried out by:

1. Mobile Control
2. Firmware Wizard of Mobile Control

In the following, the first approach is explained. For the second, please refer to Chap. 13.1.

A static IP address can be set in the setting section of each interface (please refer to Chap. 9.2.1) or by the Firmware Wizard (please refer to Chap. 13.1).

Process	Figure
1. Go to SETTINGS > NETWORK SETTINGS.	 Fig. 9-2 Open Network Settings
2. Press <Reset>. A window is opened.	 Fig. 9-3 Reset LAN Settings

3. Enter serial number of the missing device.
4. Confirm with <OK>. The device is now set to DHCP.

Here, you can only change from Static (fixed IP address) to DHCP. With Firmware wizard you can change from Static (fixed IP address) to DHCP and vice versa (please refer to Chap. 9.1.2).

5. We recommend a restart of the devices, to accept new LAN settings.

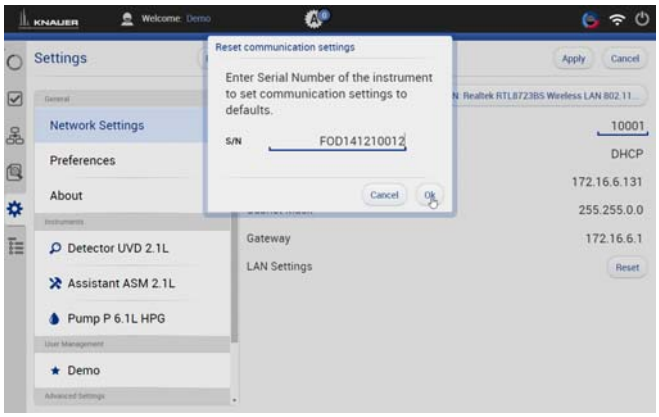


Fig. 9-4 Reset LAN Settings

9.1.3 Preferences

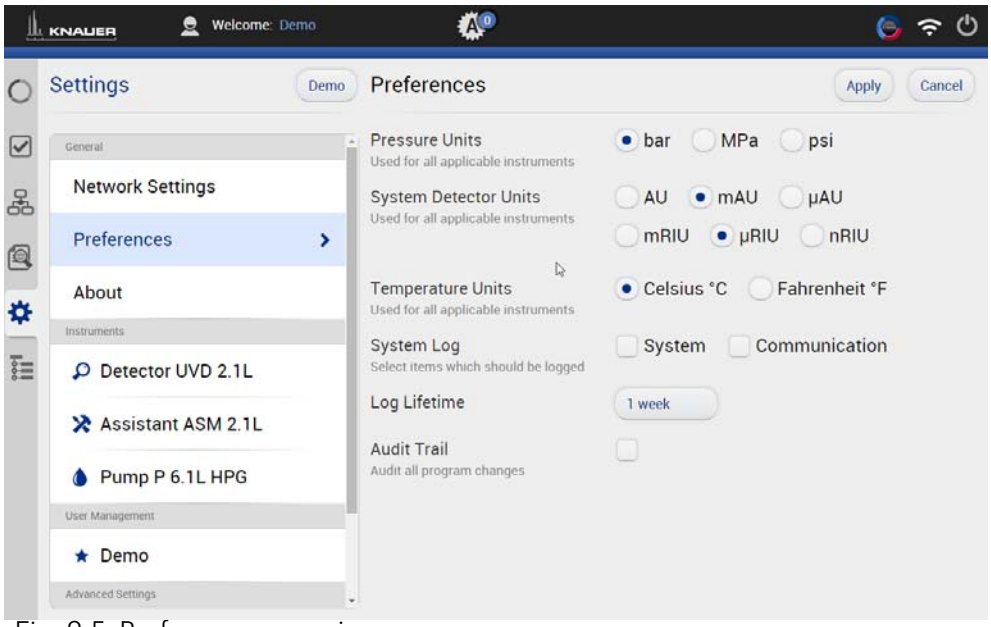


Fig. 9-5 Preferences overview

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 Celsius °C and Fahrenheit °F.

System Log Choose between system and communication. The Mobile Control logs the system protocol/ System logs and the communication protocol/Communication logs. The messages are listed under Logs & Errors.

Log Lifetime Log lifetime: duration the log data are stored

Choose between 1 week, 2 weeks, and 1 month.

Audit Trial Records all program changes. You can view the protocol under Program & Sequences (please refer to Chap. 6.9).

9.1.4 About

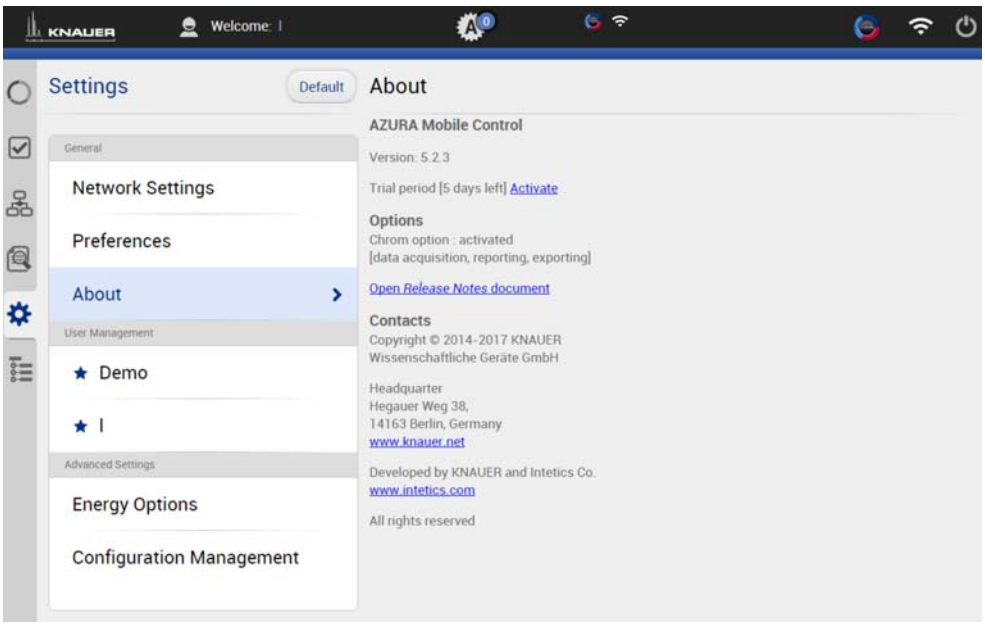


Fig. 9-6 About

Software-specific informations as version number are displayed. Open the release notes to learn more about:

- Supported instruments
- Computer requirements
- Operating the Mobile Control
- Notes on the use of Mobile Control

Please consider also the known issues on Mobile Control in this document.

9.2 Instruments

You see the devices from the configured system. The right part shows the device settings. For detailed information, please refer to Chap. 9.

9.2.1 General interface

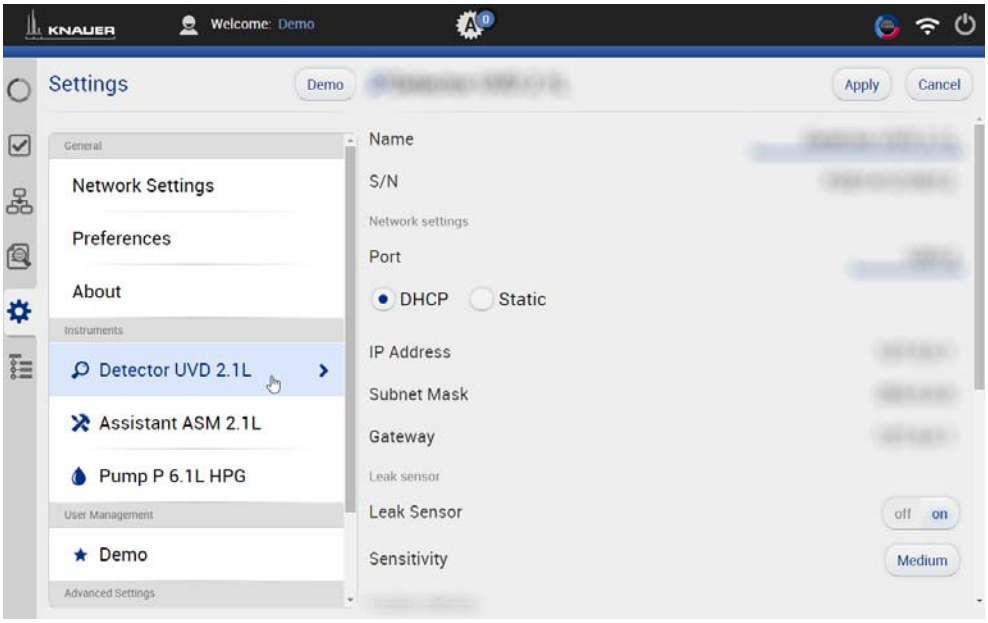


Fig. 9-7 Device settings - general interface

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.

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 port is set to 10001 by default. 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.

DHCP/Static — DHCP 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).

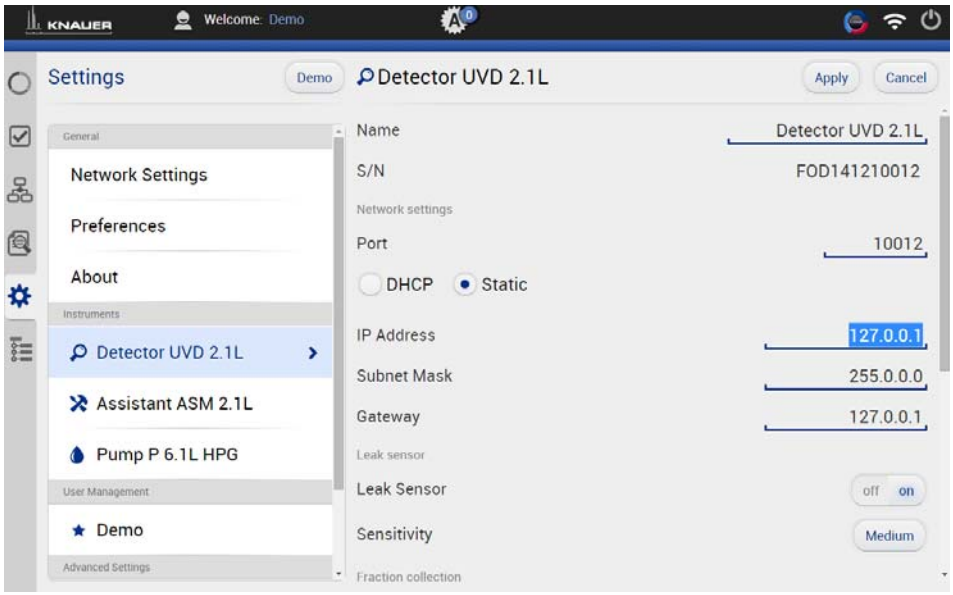


Fig. 9-8 Static IP-address

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.

9.2.2 Assistant

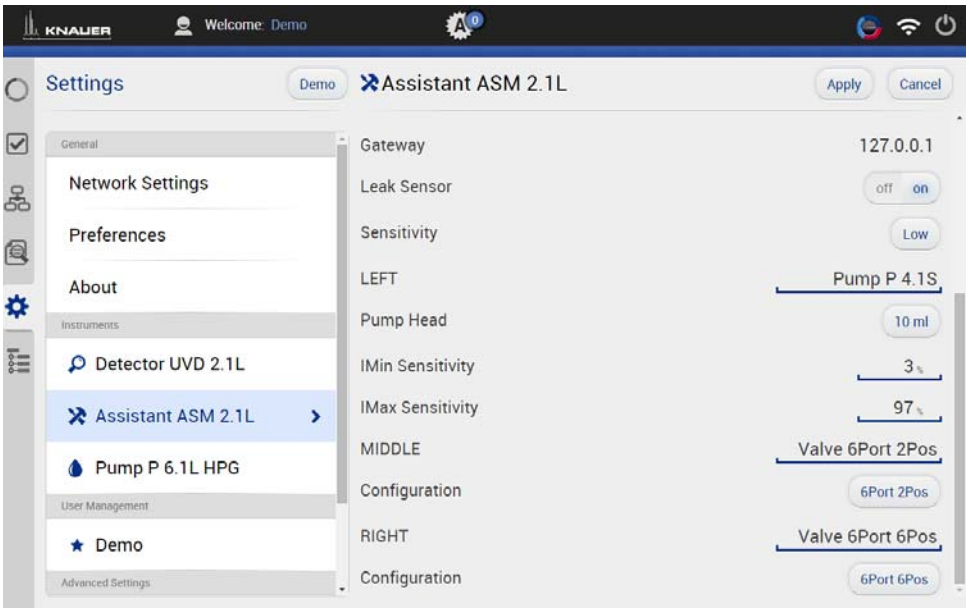


Fig. 9-9 Device settings - Assistant

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 valves is displayed. Choose between 6 Port MPos (multi-position valve), 8 Port MPos, 12 Port MPos, 16 Port MPos, 6 Port 2 Pos (2 position valve), 8 Port 2 Pos.

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) 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.

9.2.3 Autosampler

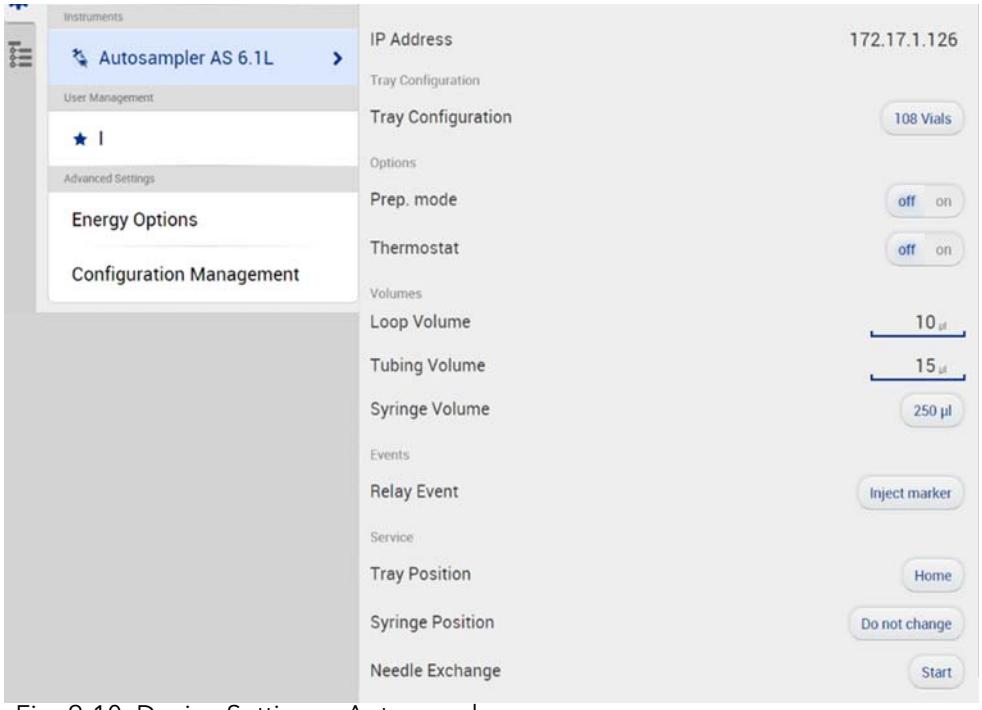


Fig. 9-10 Device Settings - Autosampler

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.

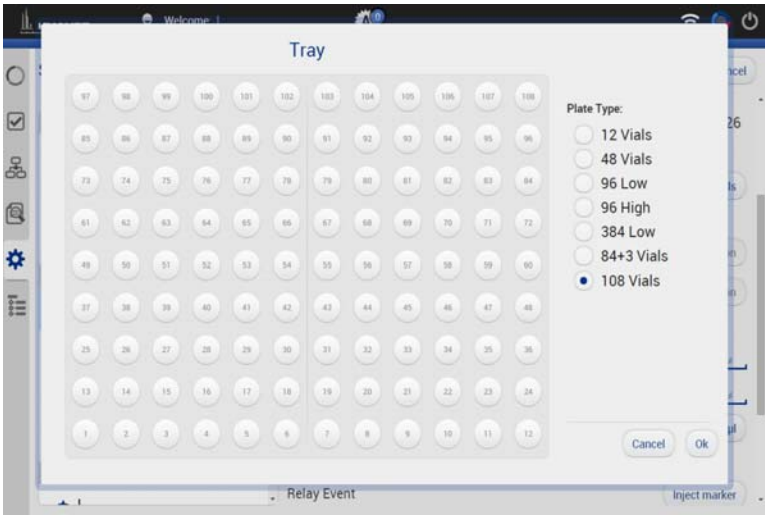


Fig. 9-11 Tray configuration

Prep. Mode Turn on, if autosampler uses Prep Mode

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 (please see picture below) Select position of tray. Home: backside of tray cabinet, Front: frontside of tray cabinet to change vials

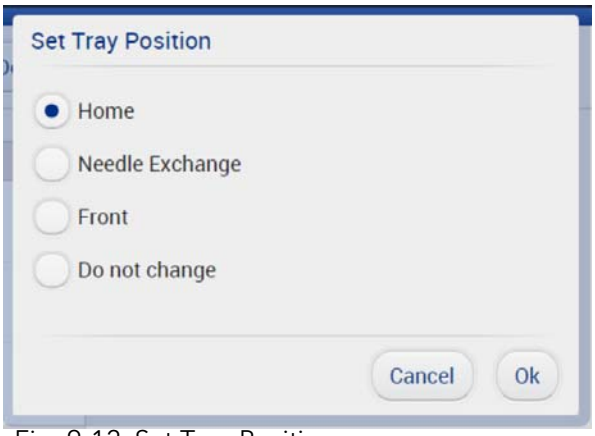


Fig. 9-12 Set Tray Position

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

9.2.4 Column Thermostat 2.1

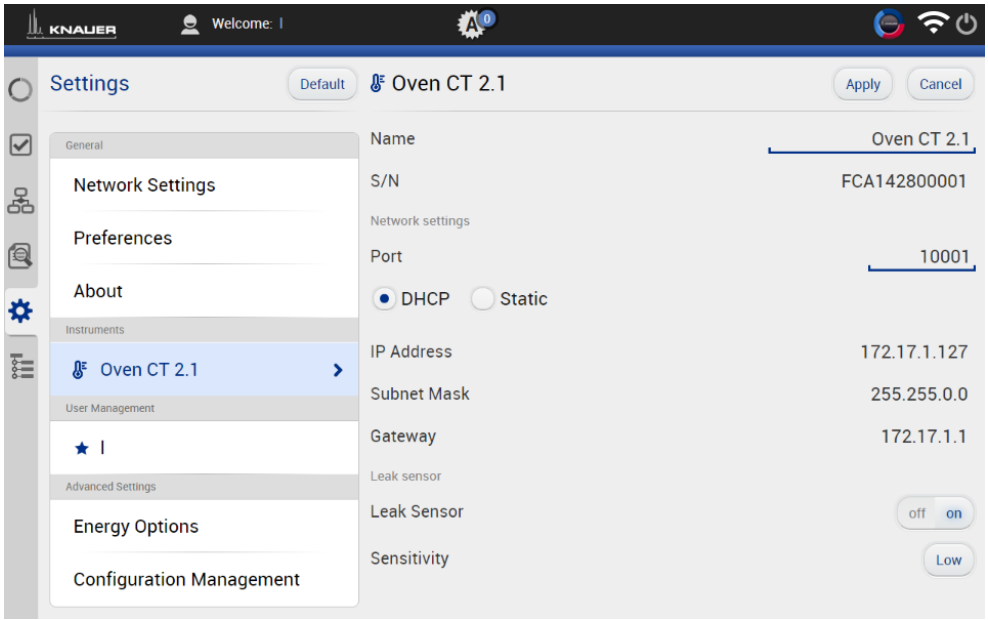


Fig. 9-13 Device Settings - Column Thermostat

9.2.5 Detector

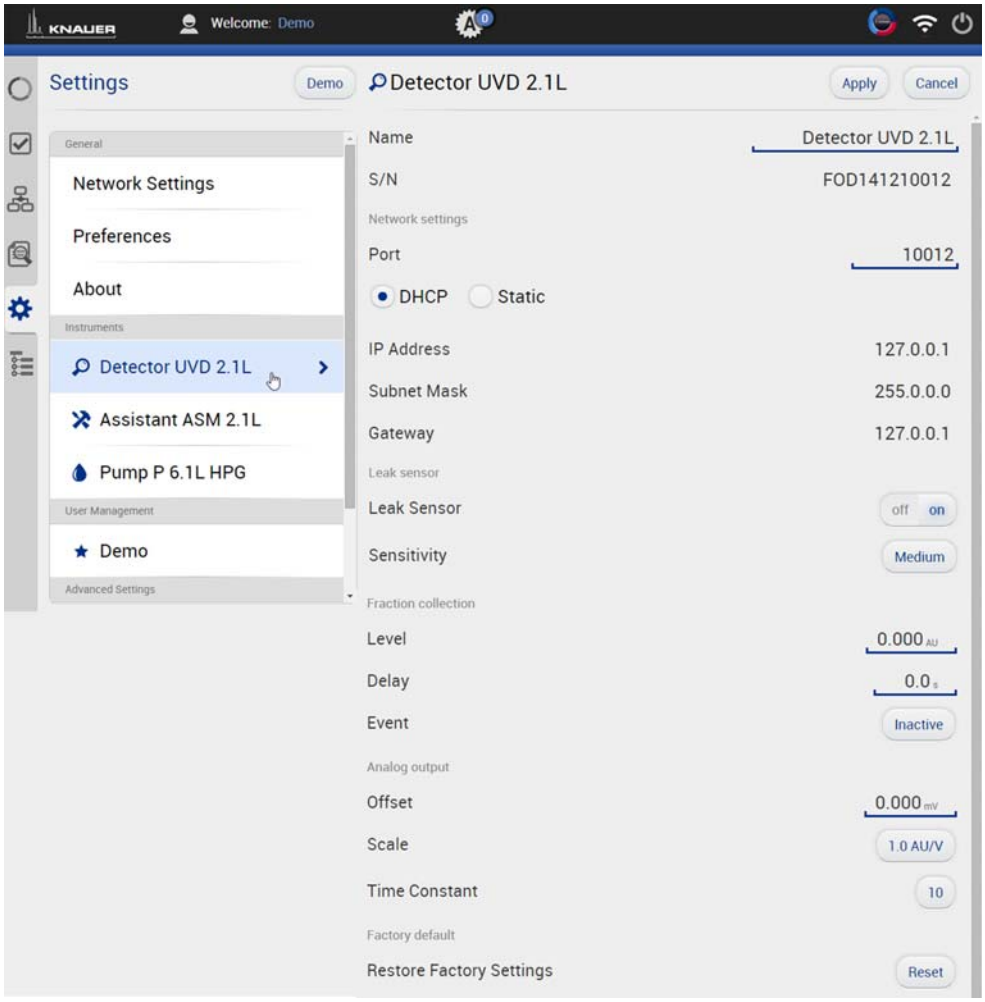


Fig. 9-14 Device Settings - Detector

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.

Event
Choose between inactive, Event 1 (relay contact) and Event 2 (TTL compatible output).
(please 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.

Restore Factory Settings
This function enables your to re-set the device to its default settings.

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

Activate the button <optimal> and the optimal integration time will be calculated by the program. The maximum sampling rate fr the integration time is also calculated and displayed.

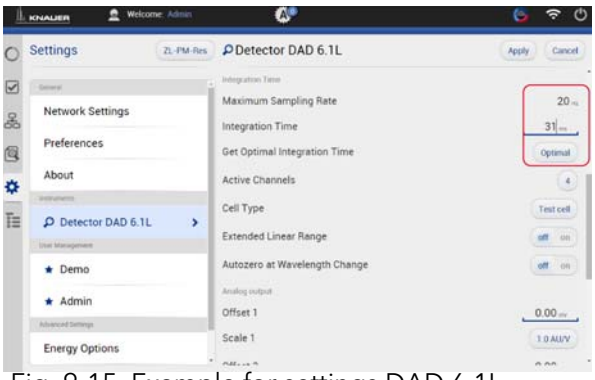


Fig. 9-15 Example for settings DAD 6.1L

9.2.6 Interface Box IFU 2.1 LAN

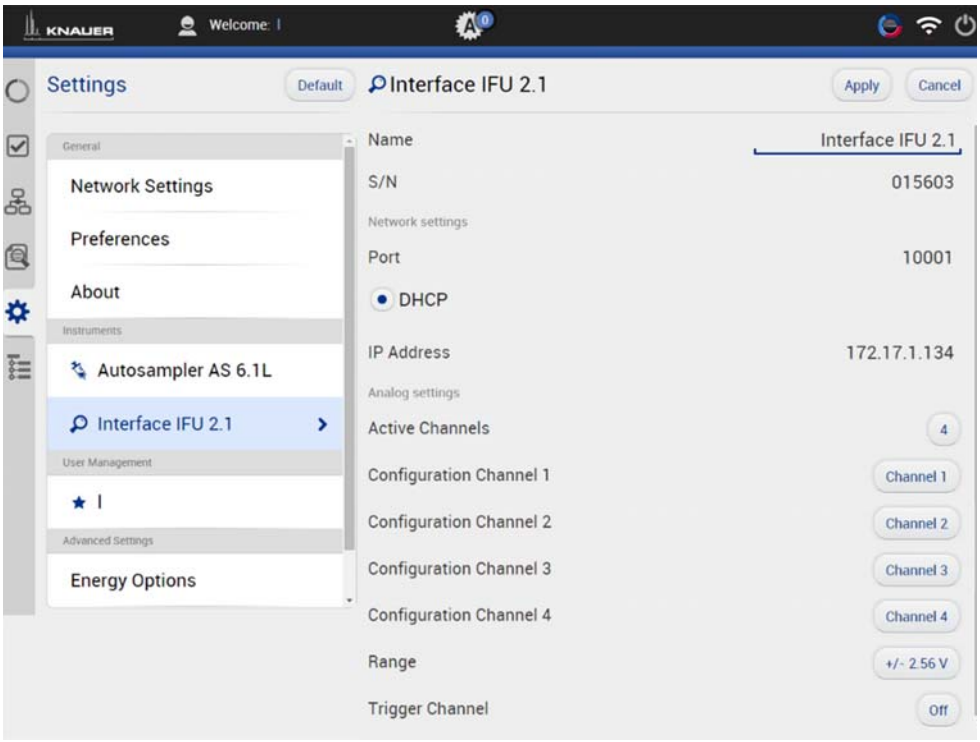


Fig. 9-16 Device Settings - Interface Box IFU 2.1 LAN

Please note that 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 (please refer to the picture below).

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

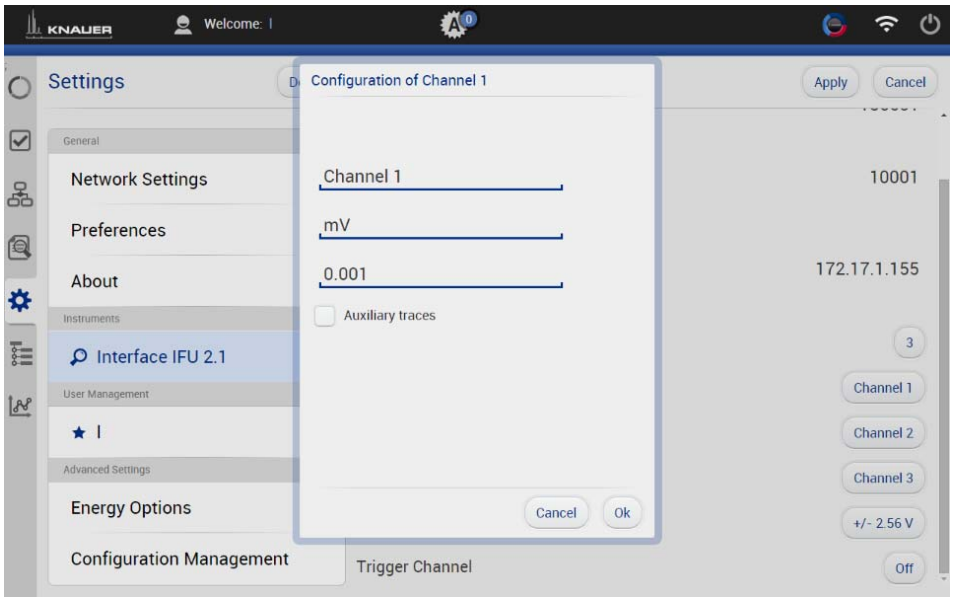


Fig. 9-17 Channel configuration

Range

The voltage range can be adjusted to the expected signal to get a higher resolution (please see the picture below). One of the following ranges can be selected:

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

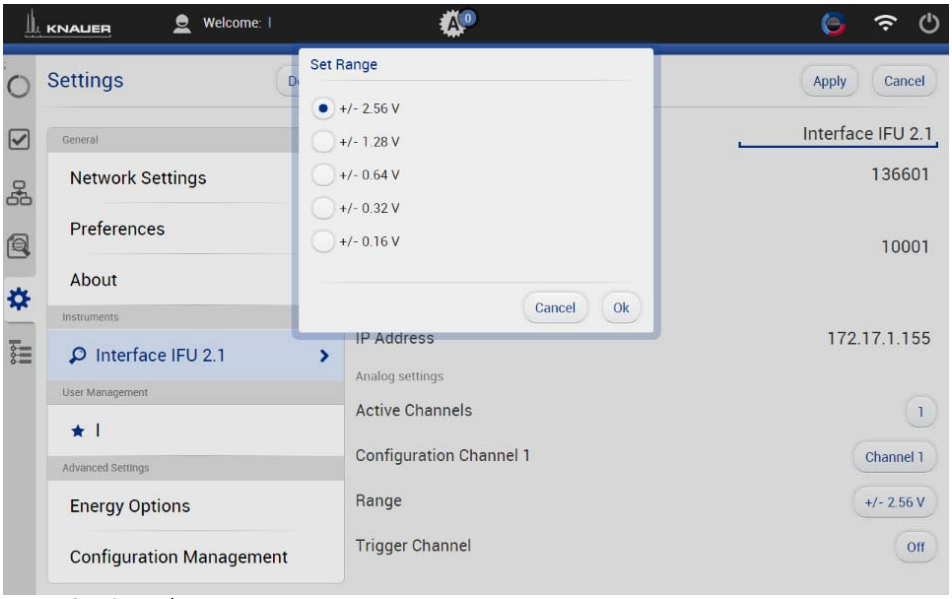


Fig. 9-18 Voltage Range

Trigger Channel

If a program 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.

9.2.7 Pump

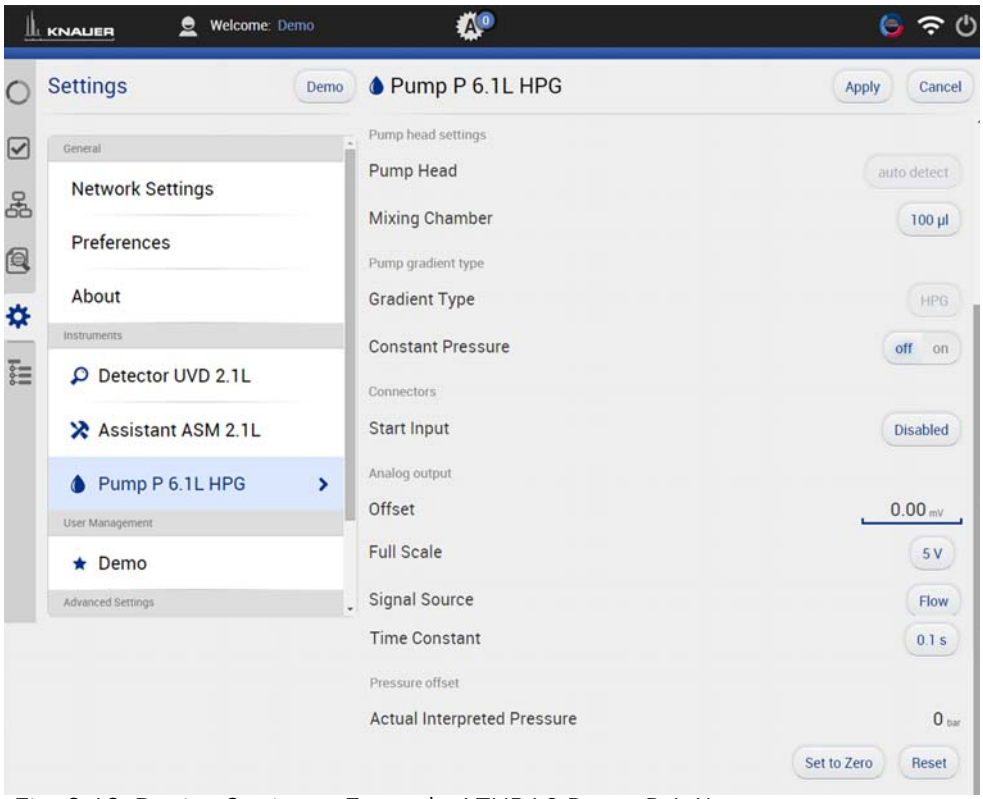


Fig. 9-19 Device Settings - Example AZURA® Pump P 6.1L

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 50µl, 100 µl, 200 µl, 250 µl or enter a value. Please 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 (please see below).
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.

Please 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 program. For more information about analog control, please 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.

9.2.8 Binary HPG configuration of AZURA® P 2.1L pumps

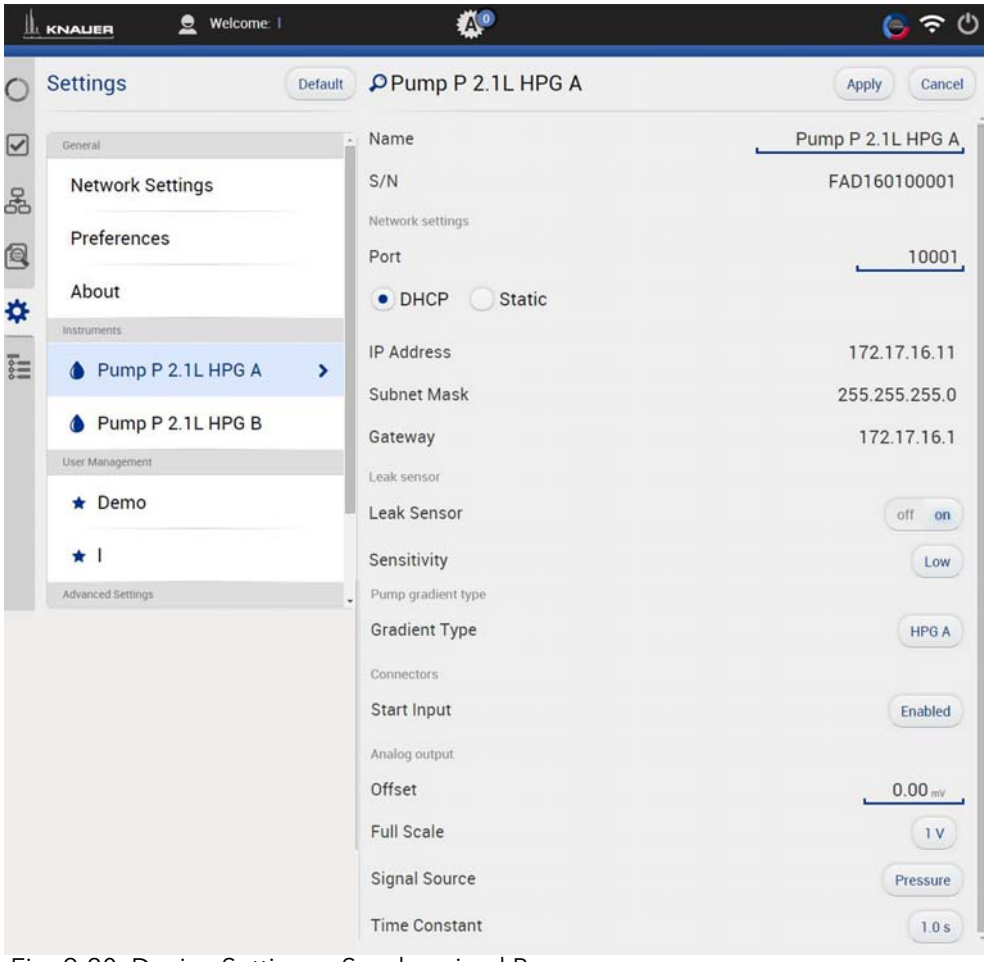


Fig. 9-20 Device Settings - Synchronized Pumps

Gradient Type
(only available for AZURA® P 2.1L)

Choose between:

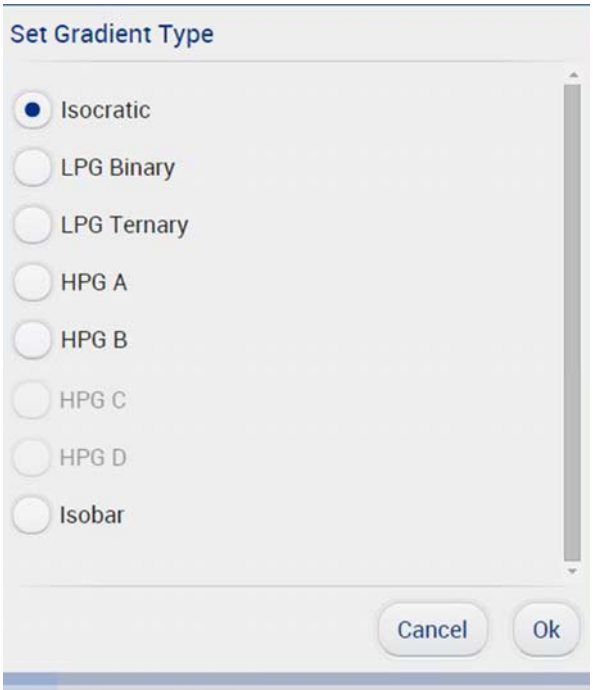


Fig. 9-21 Set gradient type

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 program. 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.

9.2.9 Valve

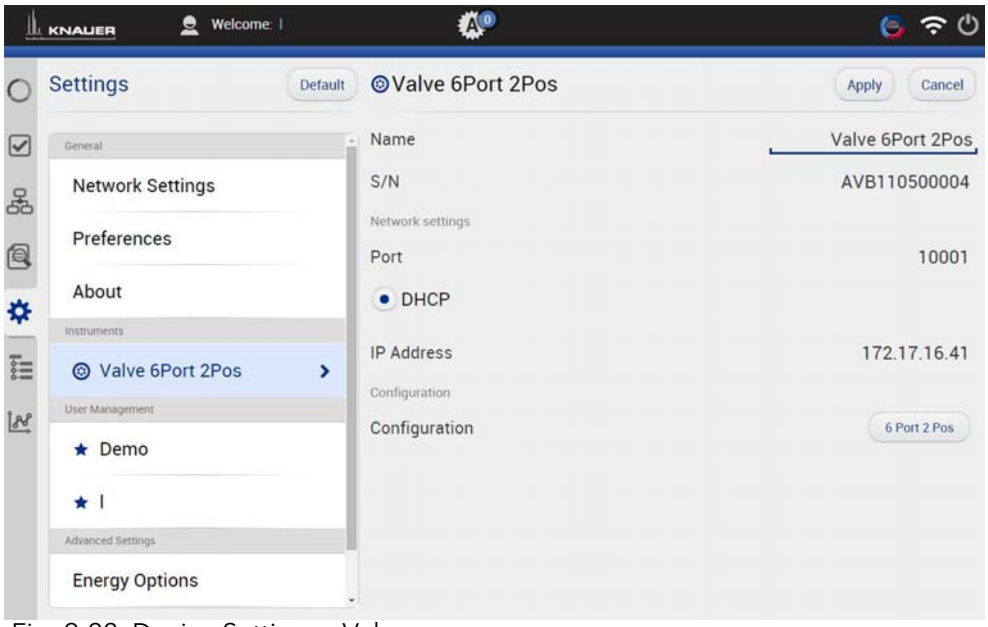


Fig. 9-22 Device Settings - Valve

Configuration
A list field with different valves is displayed. Choose between multiposition valves and 2-position valves: 6 Port MPos (multi-position valve), 8 Port MPos, 12 Port MPos, 16 Port MPos, 6 Port 2 Pos (2 position valve), 8 Port 2 Pos.

9.3 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.

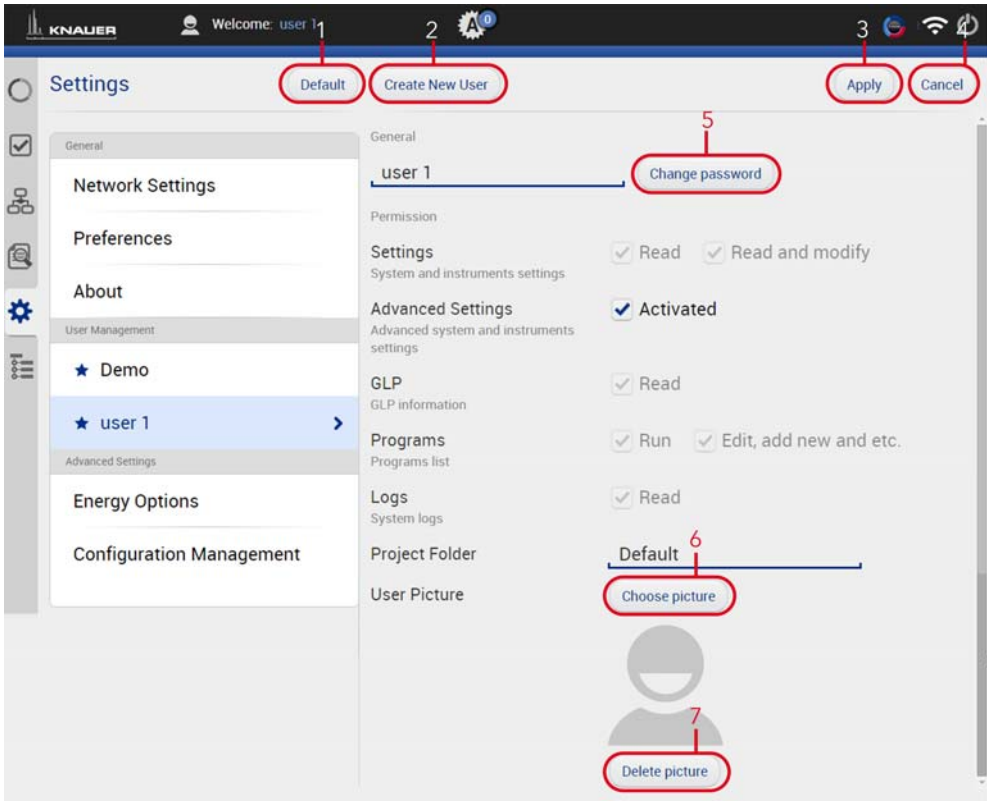


Fig. 9-23 User management overview

① Default	Choose a configuration.
② Create New User	Create a new user.
③ Apply	Confirm your entry.
④ Cancel	Cancel your entry.
⑤ Change password	Change your password.
⑥ Choose picture	Upload a picture.
⑦ Delete picture	Delete a picture.

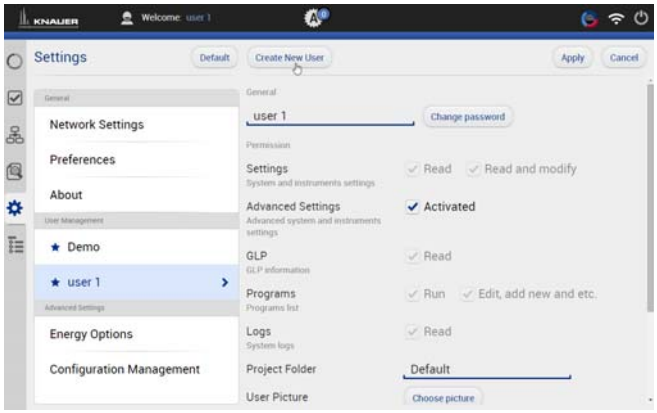
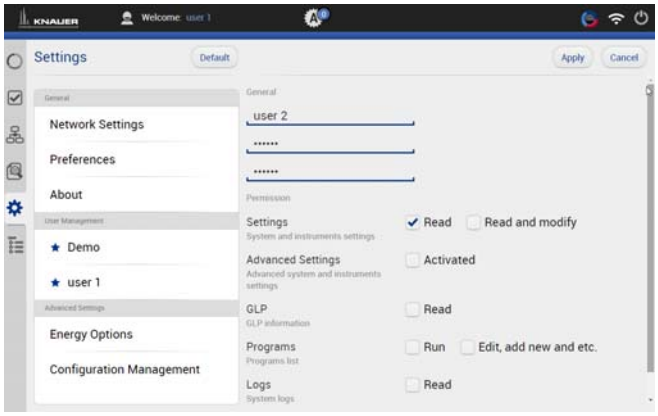
Settings	Choose between „Read“ and „Read and modify“.
Advanced Settings and instrument settings	Activate the checkbox to give the user authorization for advanced settings and instrument settings.
GLP	Activate the checkbox to give user authorization for read the GLP data.
Programs	Choose between • Run • Edit, add new and more

Logs	Activate the checkbox to give the user authorization 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.

The user specific files will be saved in folder C: KNAUER > Mobile Control > Projects on the tablet.

9.3.1 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. 9-24 Create new user
3. Activate the checkboxes depending on the authorization you want to give. 4. Always confirm your settings with <Apply>.	 Fig. 9-25 Settings - user account

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

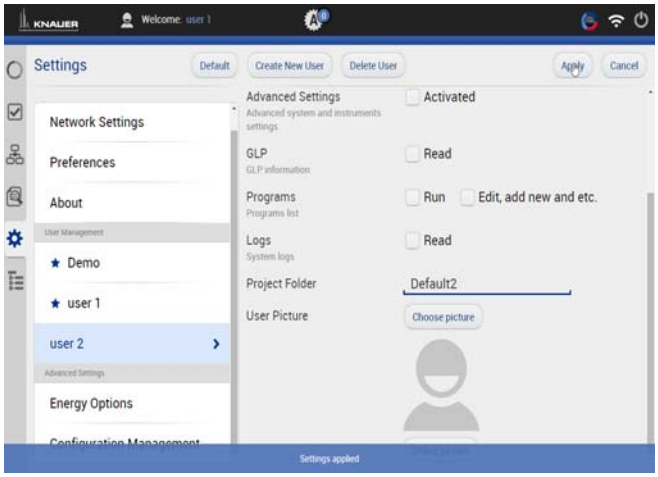


Fig. 9-26 Settings - user account

On the left side you see the menu with restricted authorization. The menu bar on the left side is limited.

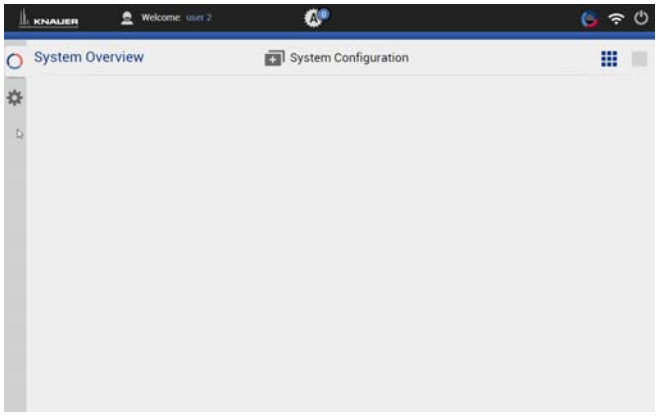


Fig. 9-27 Restricted authorization

Options which cannot be changed are displayed in grey out.

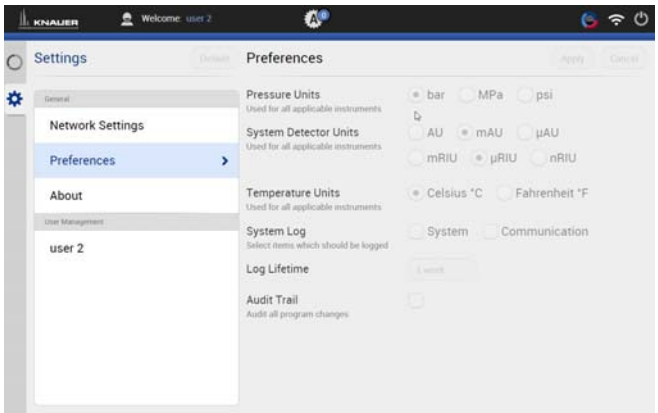
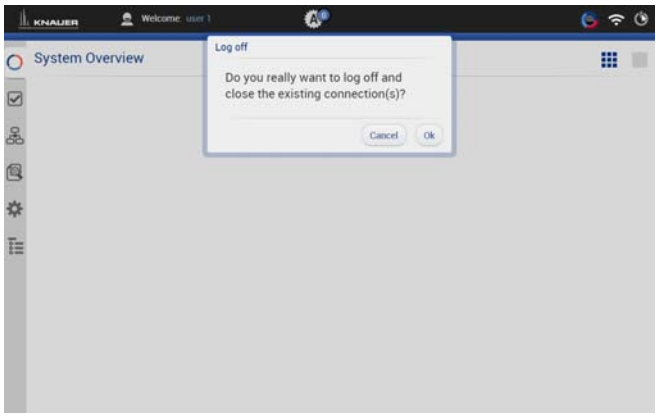
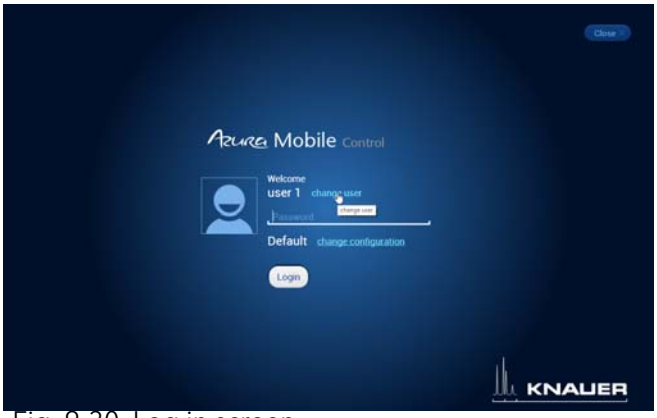
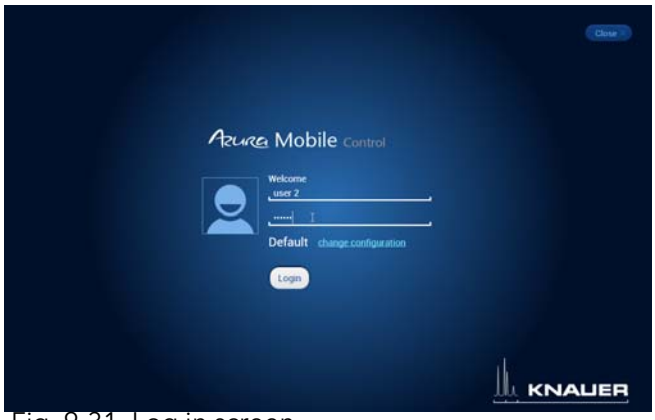


Fig. 9-28 Restricted authorization

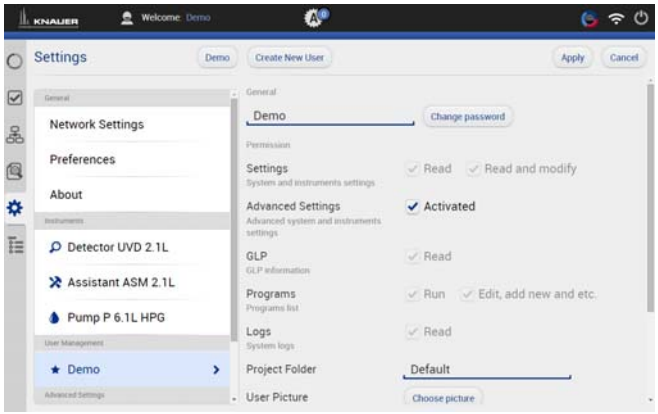
9.3.2 Change user account

The user must have the respective permissions to do so (*SETTINGS > READ AND MODIFY*).

Process	Figure
1. Log off. 2. Confirm with <OK>.	 Fig. 9-29 Log off
3. Select <Change User>.	 Fig. 9-30 Log in screen
4. Enter the user name and the password. 5. Press <Login>.	 Fig. 9-31 Log in screen

9.3.3 Changing own password

Each user can change their own password, if they got the respective permissions from the administrator. 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. 9-32 Change own password
4. Enter the current password, and two times the new password. 5. Confirm with <OK> and <Apply>.	 Fig. 9-33 Change own password

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

9.4 Advanced Settings

9.4.1 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.

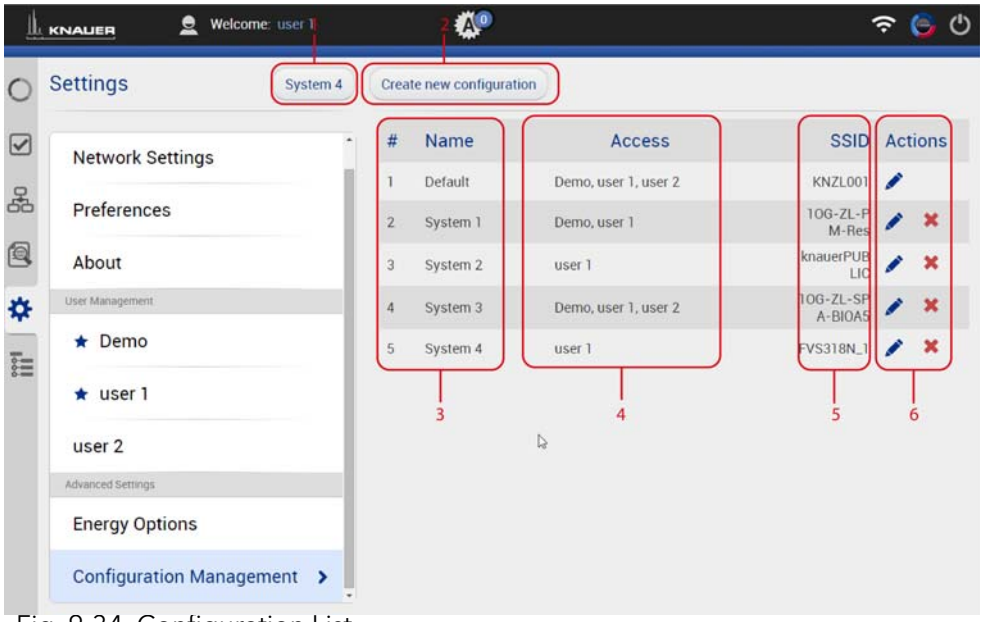


Fig. 9-34 Configuration List

① Shows the actual configuration.

② Click on the button to create a new configuration.

③ Lists the name of the configuration.

④ Lists the user which have access to this configuration.

⑤ Lists the name of the service set identifier (network).

⑥ Possible edit actions:

Click on the red cross to delete a configuration.

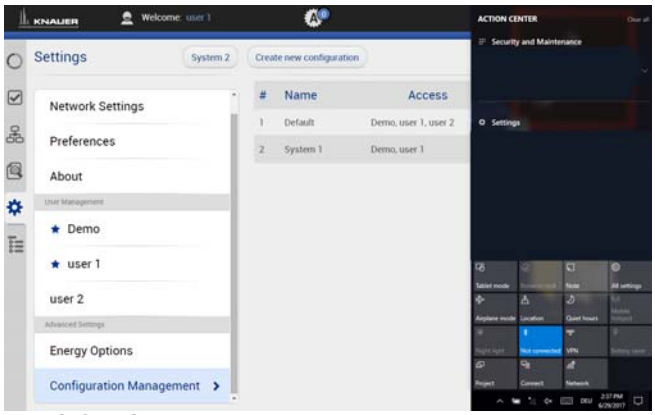
Click on the pen symbol to edit the settings.

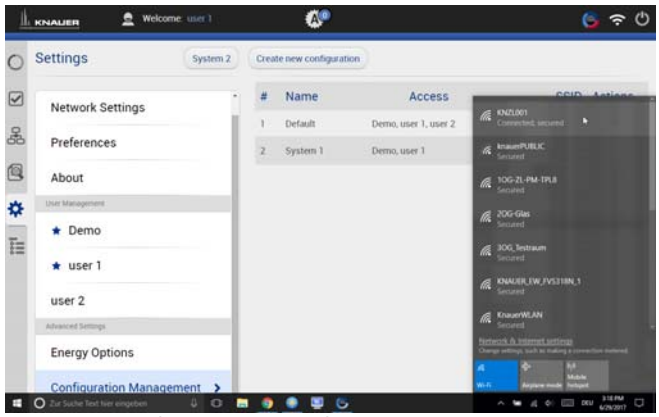
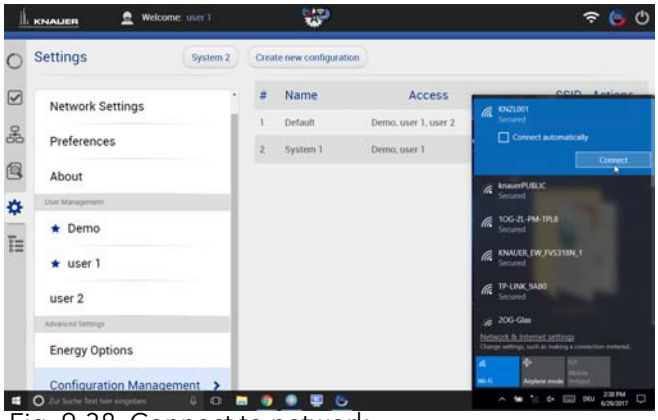
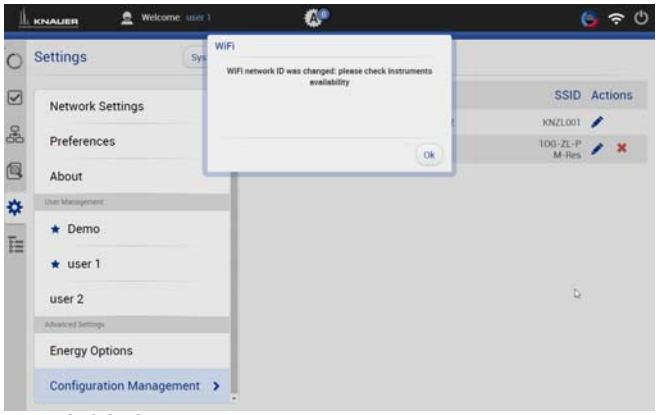
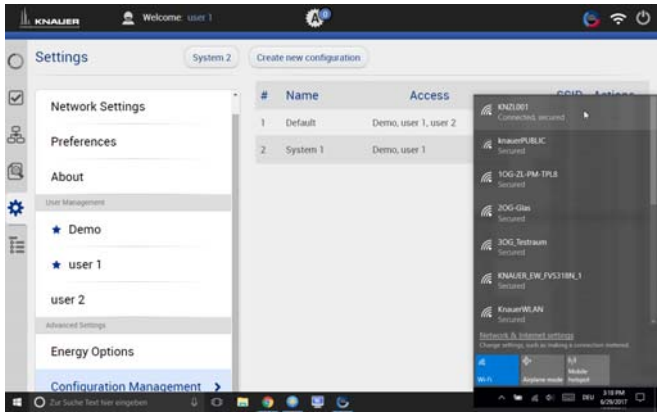
Fig. 9-35 Connection of different systems to Mobile Control

There are 2 possibilities to create a configuration:
a) in menu configuration management (please refer to Chap. 9.4.1.1)
b) via Log in (please refer to Chap. 9.4.1.2)
Both ways are explained in the following chapters.

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

9.4.1.1 Configuration via menu Settings

Process	Figure
1. Open the info center in your tablet software. 2. Select network.	 Fig. 9-36 Open WLAN connection

3. Select the network, you want to connect to.	 Fig. 9-37 Choose network
4. Press <Connect>.	 Fig. 9-38 Connect to network
5. A warning message is displayed.	 Fig. 9-39 Status message
6. Select <Create new configuration>.	 Fig. 9-40 Create configuration

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

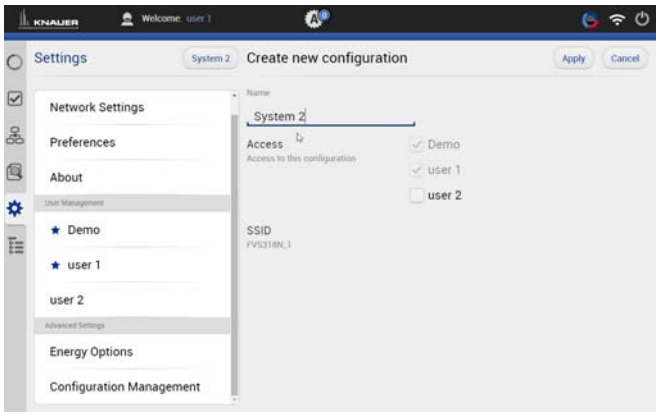


Fig. 9-41 Edit new configuration

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

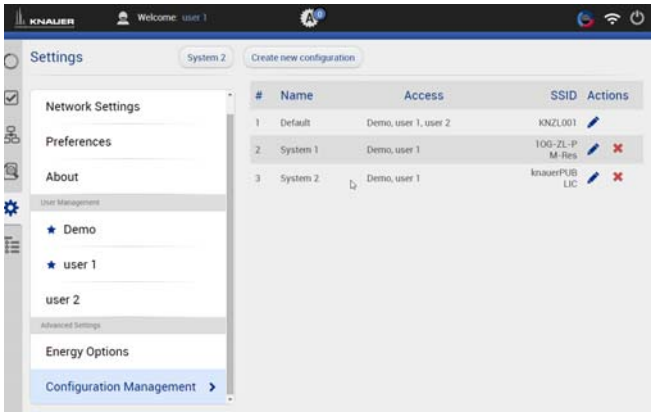


Fig. 9-42 Configuration List

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

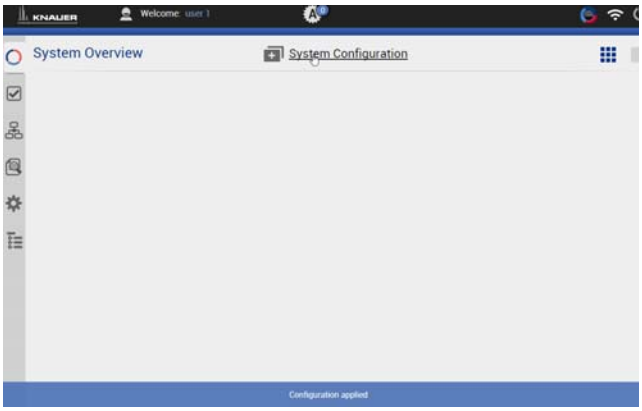
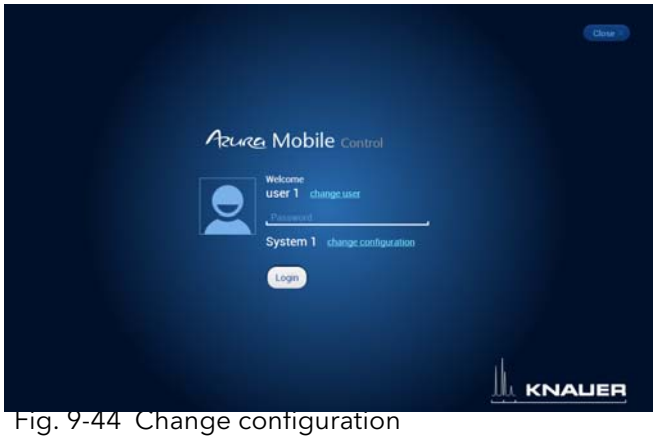
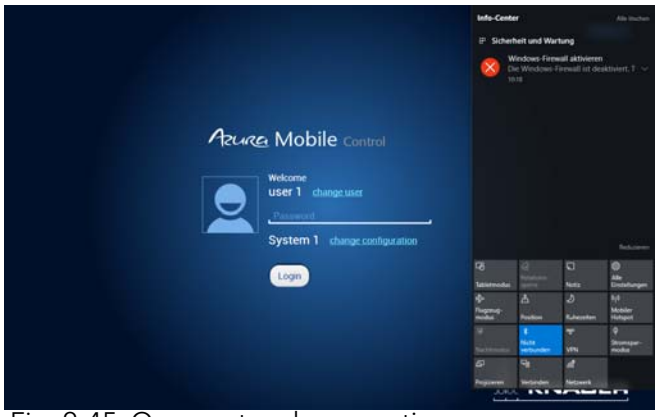
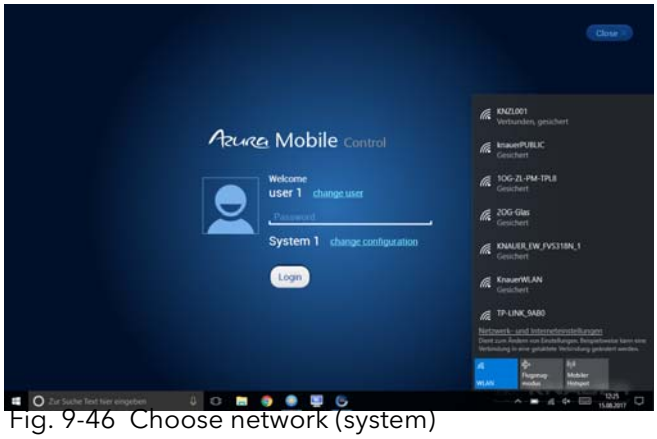


Fig. 9-43 System Configuration

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

9.4.1.2 Configuration via Log in

Process	Figure
1. Start screen of the software. Select the info center of your tablet software.	 Fig. 9-44 Change configuration
2. Select network.	 Fig. 9-45 Open network connections
3. Select the network you want to connect to.	 Fig. 9-46 Choose network (system)

4. Select <Connect>.

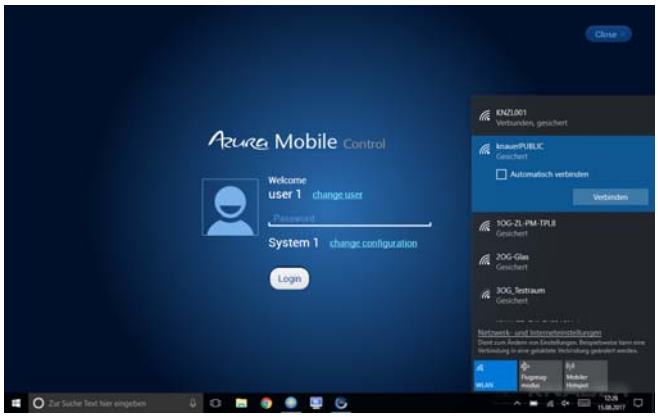


Fig. 9-47 Connect with network (system)

5. Select <Change configuration>. A window is opened.

Fig. 9-48 Change configuration

6. If the configuration was already used before, select the programed configuration.

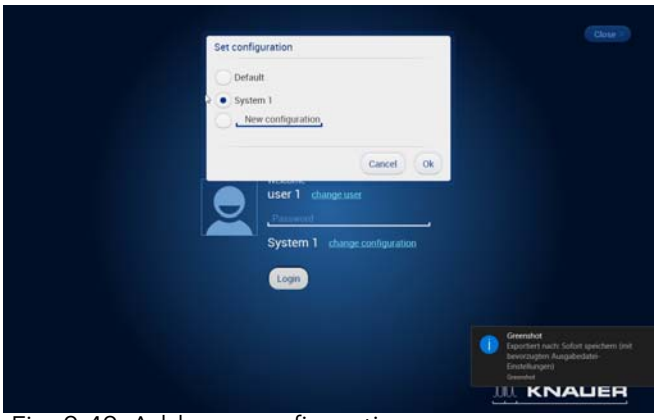


Fig. 9-49 Add new configuration

7. If the configuration is new, enter a name for it.

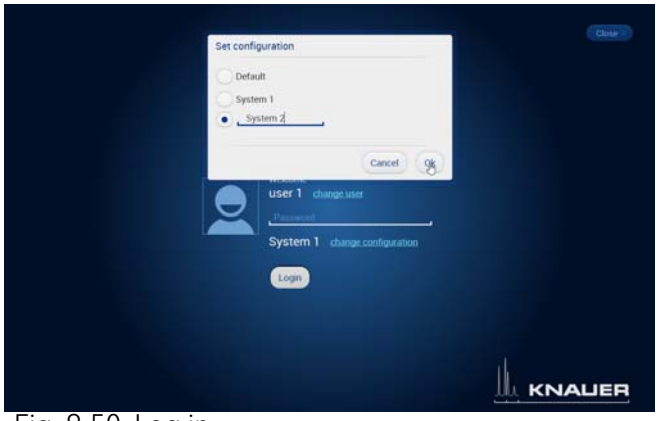


Fig. 9-50 Log in

8. A warning message is displayed.

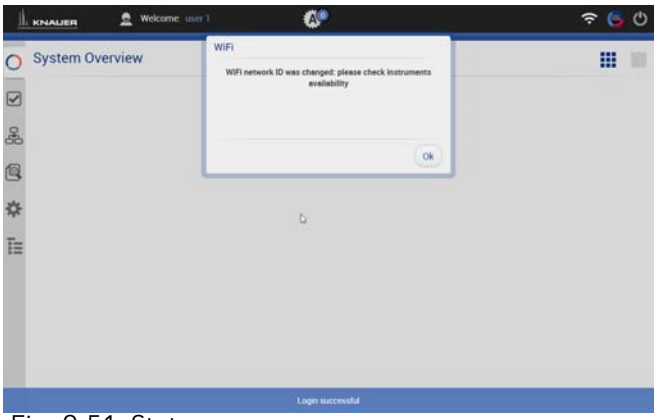


Fig. 9-51 Status message

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

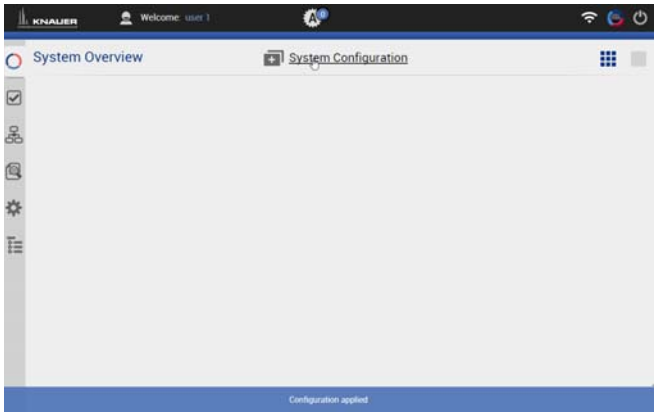


Fig. 9-52 System Configuration

10. Go to SETTINGS > CONFIGURATION MANAGEMENT. You see the new configuration in the list with name, access and SSID. You can edit or delete the configuration.

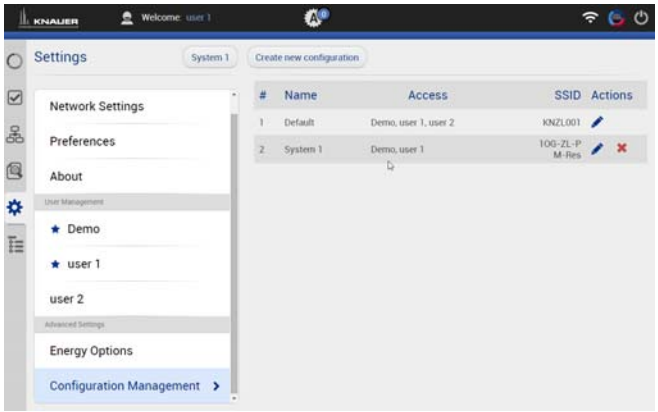


Fig. 9-53 Configuration list

11. After selecting a configuration, the application connects automatically to the corresponding router and enables the communication with AZURA® devices. Also the system configuration related to the configuration will be active again.

Fig. 9-54 Stored system configuration

9.4.2 Energy Options

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

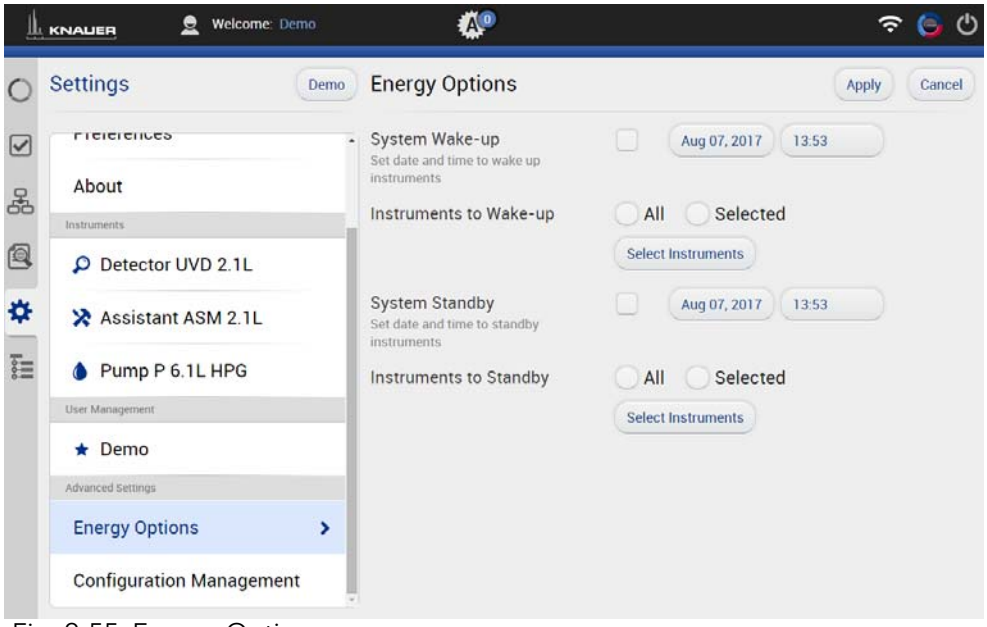


Fig. 9-55 Energy Options

9.4.2.1 Putting devices into standby mode manually

To put the device into standby mode manually, go to *DETAIL VIEW* and tap the button *STANDBY*.

9.4.2.2 Putting devices into standby mode automatically

To put the system or single devices into standby mode automatically, go to *SYSTEM SETUP > 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.

9.4.2.3 Waking up devices from standby mode manually

To wake up the device from standby mode, tap *DETAIL VIEW >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.

9.4.2.4 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.

10 Checks & Tests

10.1 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.

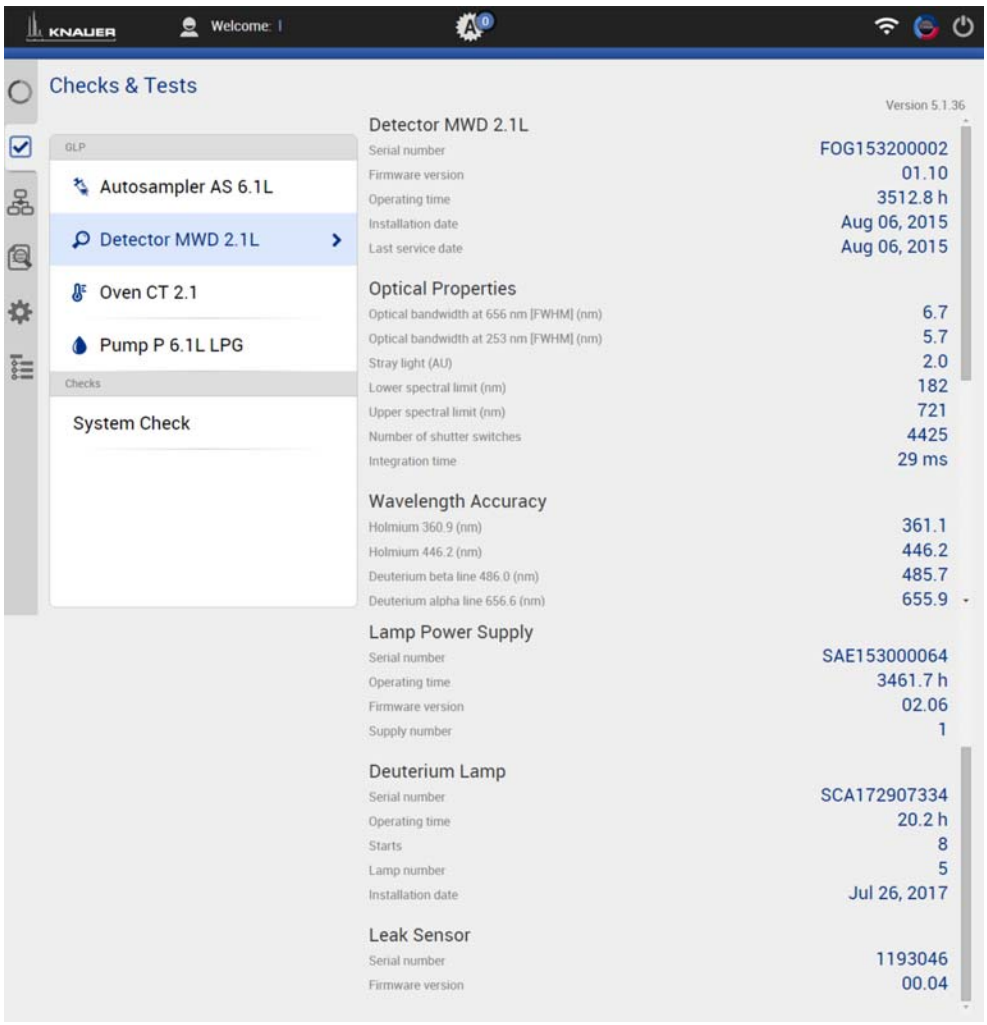


Fig. 10-1 Checks & Tests - Overview

General

All Devices	Serial number
	Firmware version
	Operating time
	Installation date
	Last service
Leak sensor	Serial number
	Firmware version

AZURA® Autosampler AS 6.1L

Serial number

Firmware version

Injector valve cycles
Syringe valve cycles
Syringe cycles

Leak sensor
Serial number
Firmware version

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

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® UVD2.1S/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 UVS 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

Interface Box IFU 2.1 LAN
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	Piston cycles
Volume	Total volume conveyed to date
P-index	Unit for the current strain of the pump
Head type	Pump head type

Leak Sensor
Serial number
Firmware version

AZURA® Pump P 4.1S
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

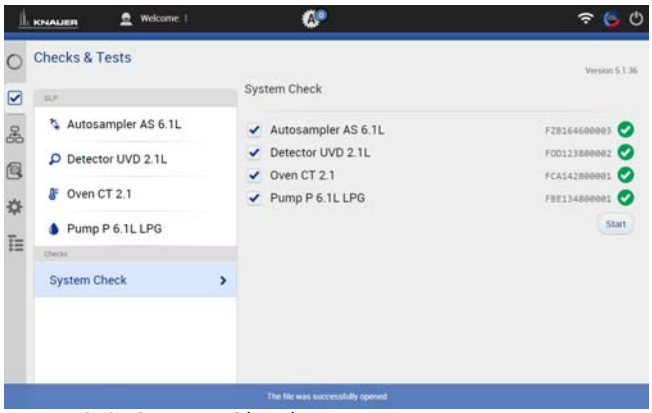
Installation date
Last service date

Leak Sensor
Serial number
Firmware version
Motor
Operation time

Valve
Firmware version
Switching cycles

10.2 Checks - System Check

The system check is based on the GLP check list below and its results are a recommendation. If the system check is either passed, no further action is needed. If the system check indicates further actions, please refer to the GLP check list below.

Process	Figure
1. Go to Checks & Tests and select Checks. 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. 10-2 System Check - overview
When the system check is finished a summary of the test is shown (pdf file shown below). You can print it or send via mail.	

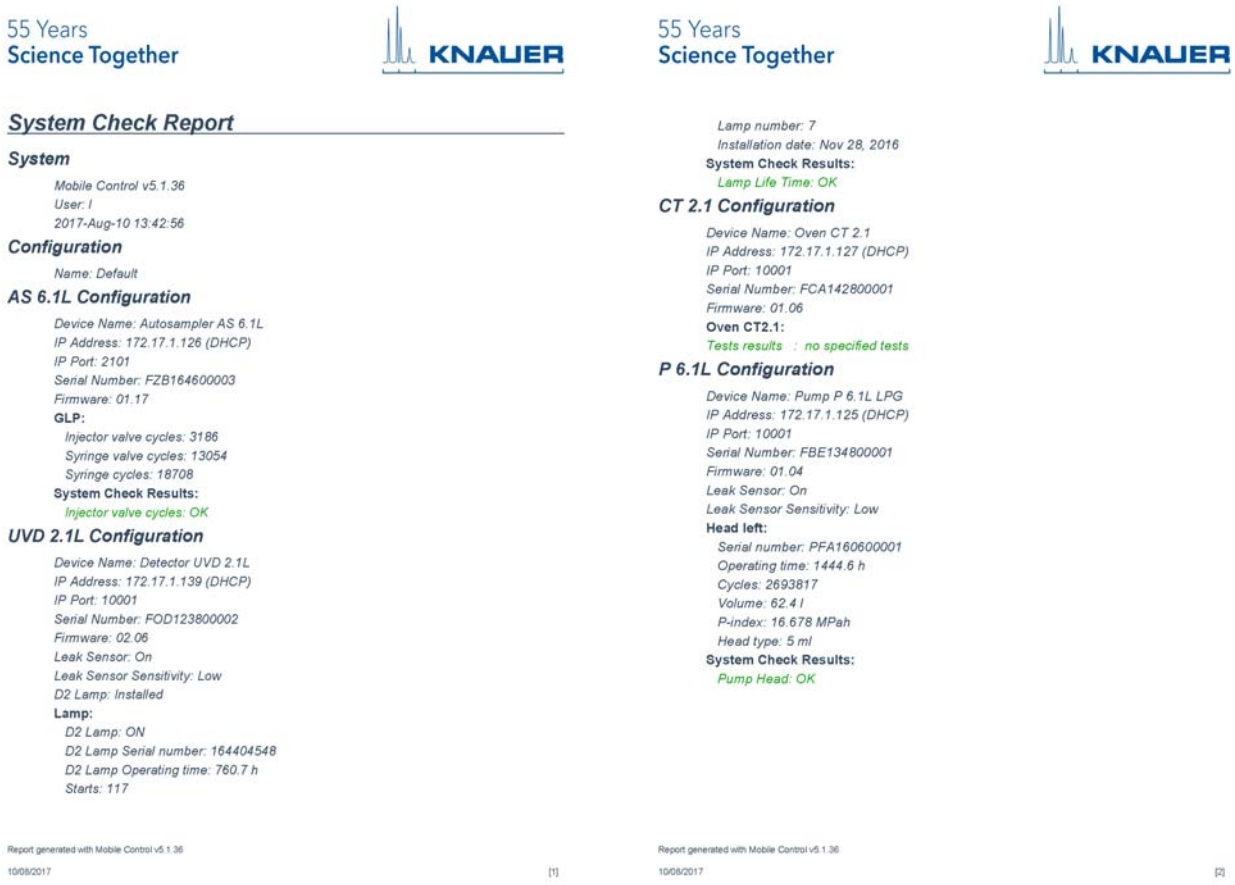
10.2.1 GLP check list

ASM 2.1L
UVD 2.1S: After 2000 hours lamp operating time, the deuterium lamp should be replaced.
P 4.1S: After 1000 hours, the pump heads should be maintained.
V 2.1S/VICI: After 50000 switching cycles, the rotor seal should be replaced.

AS 3950/AS 6.1L
After 12500 injector valve cycles, a preventative maintenance procedure should be carried out.

DAD 6.1L	After 2000 hours deuterium lamp operating time, the deuterium lamp should be replaced. After 1000 hours halogen lamp operating time, the halogen lamp should be replaced.
RID 2.1L	After 20000 hours lamp operating time, the LED lamp should be replaced. After 1 year, the span should be checked.
UVD 2.1S & L MWD 2.1L/DAD 2.1L	After 2000 hours lamp operating time, the deuterium lamp should be replaced.
P 4.1S	After 1000 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/ P2.1L	After 7000000 cycles, the pump heads should be maintained.
V 2.1S or VICI	After 50000 switching cycles, the rotor seal should be replaced.

10.2.2 Result list


55 Years
Science Together
KNAUER

System Check Report

System

Mobile Control v5.1.36
User: I
2017-Aug-10 13:42:56

Configuration

Name: Default

AS 6.1L Configuration

Device Name: Autosampler AS 6.1L
IP Address: 172.17.1.126 (DHCP)
IP Port: 2101
Serial Number: FZB164600003
Firmware: 01.17
GLP:
Injector valve cycles: 3186
Syringe valve cycles: 13054
Syringe cycles: 18708
System Check Results:
Injector valve cycles: OK

UVD 2.1L Configuration

Device Name: Detector UVD 2.1L
IP Address: 172.17.1.139 (DHCP)
IP Port: 10001
Serial Number: FOD123800002
Firmware: 02.06
Leak Sensor: On
Leak Sensor Sensitivity: Low
D2 Lamp: Installed
Lamp:
D2 Lamp: ON
D2 Lamp Serial number: 164404548
D2 Lamp Operating time: 760.7 h
Starts: 117

Report generated with Mobile Control v5.1.36
10/08/2017 [1]

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Lamp number: 7
Installation date: Nov 28, 2016
System Check Results:
Lamp Life Time: OK

CT 2.1 Configuration

Device Name: Oven CT 2.1
IP Address: 172.17.1.127 (DHCP)
IP Port: 10001
Serial Number: FCA142800001
Firmware: 01.06
Oven CT2.1:
Tests results : no specified tests

P 6.1L Configuration

Device Name: Pump P 6.1L LPG
IP Address: 172.17.1.125 (DHCP)
IP Port: 10001
Serial Number: FBE134800001
Firmware: 01.04
Leak Sensor: On
Leak Sensor Sensitivity: Low
Head left:
Serial number: PFA160600001
Operating time: 1444.6 h
Cycles: 2693817
Volume: 62.4 l
P-index: 16.678 MPah
Head type: 5 ml
System Check Results:
Pump Head: OK

Report generated with Mobile Control v5.1.36
10/08/2017 [2]

Fig. 10-3 System Check - Example printout of the system check

11 Logs & Errors

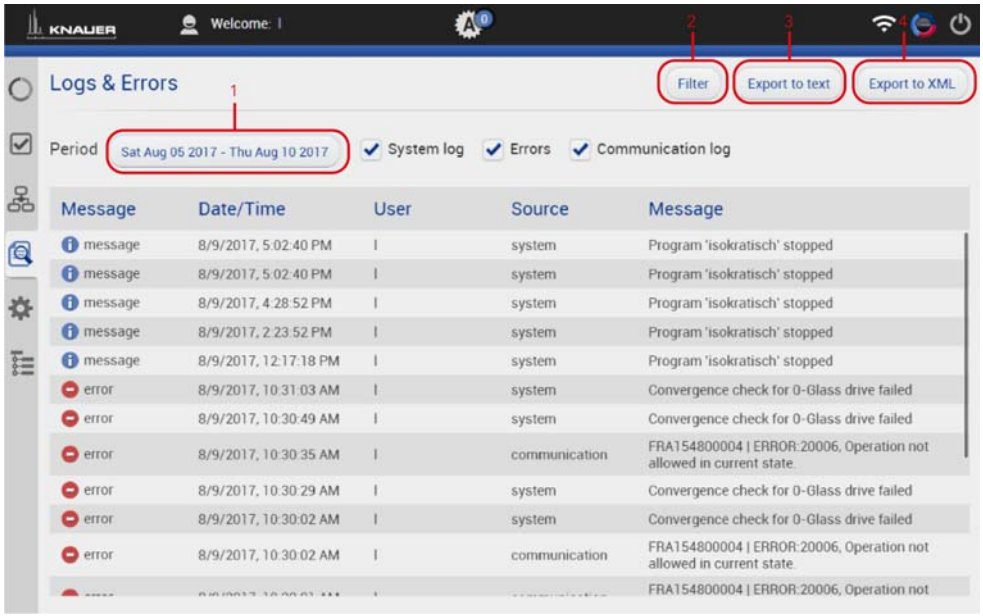


Fig. 11-1 Logs & Errors

① Period: Define a time distance for record of logs and errors. Click on the button, and enter the time distance in the calendar.

② Filter: Filters the results dependent on the user and the source.

③ Export to text: Exports a textfile. To open the file, go to folder Mobile Control > Logs.

④ Export to XML: Exports a XML file. To open the file, go to folder Mobile Control > Logs.

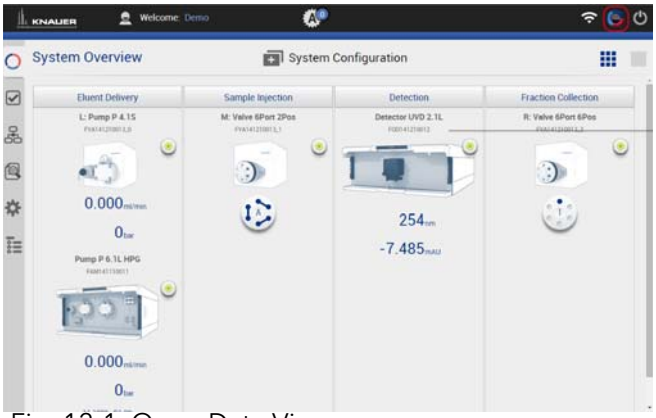
Activate the required checkboxes to record the log file you want.

In case of any error caused by a device, the pump will be stopped and the column thermostat will be switched off.

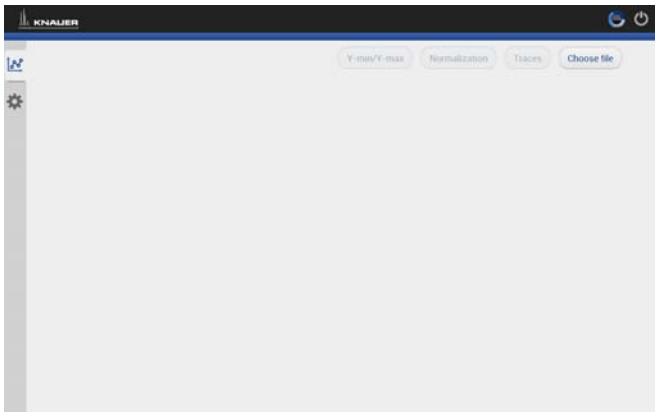
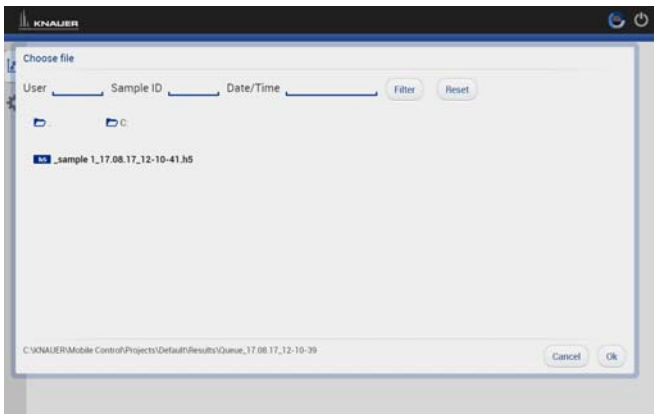
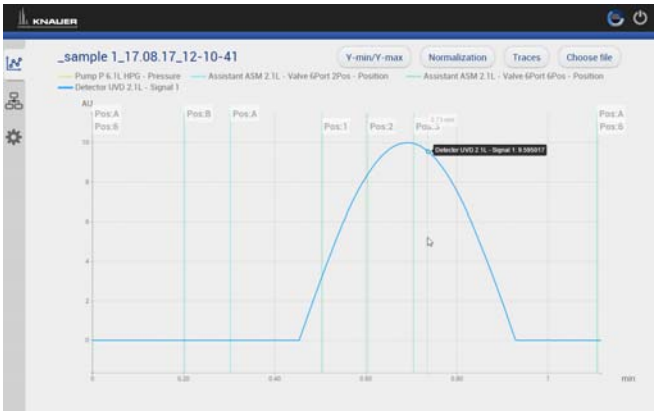
In order to not overwrite the file, change the name of the existing file before you save the new file.

12 Data Viewer

Installation of the Data Viewer is similar to installation of Mobile Control. Activation of the software is not necessary

Process	Figure
1. Press the second button on the upper right side of the screen 2. A new window is opened.	 Fig. 12-1 Open Data Viewer
3. Data Viewer is loading.	 Fig. 12-2 Data Viewer - Start screen

12.1 Load a chromatogram

Process	Figure
4. The interface is similar to Mobile Control Interface. 5. Select <Choose> to load a measurement into the Data Viewer.	 Fig. 12-3 Data Viewer - Overview
6. By default all runs are saved in C:\KNAUER\Mobile control\Projects\user. 7. Select the measurement and confirm with <OK>.	 Fig. 12-4 Data Viewer - Select run
8. The chromatogram is displayed.	 Fig. 12-5 Data Viewer - Chromatogram

12.2 Chromatogram window

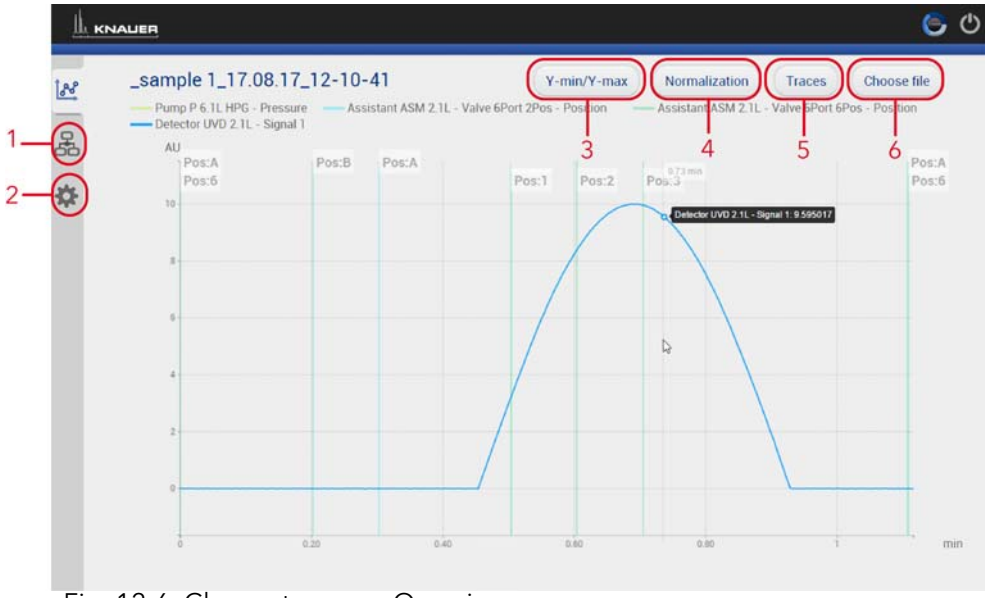
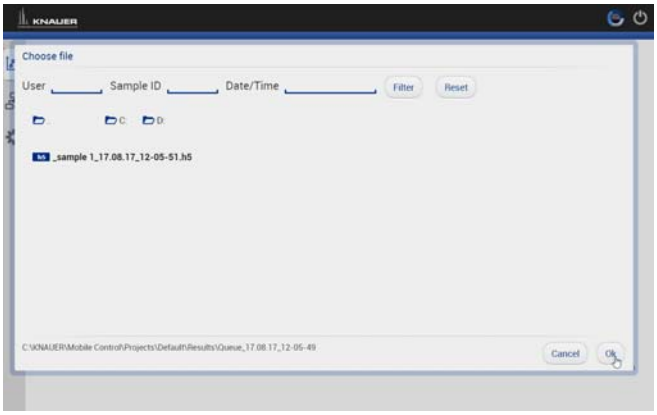
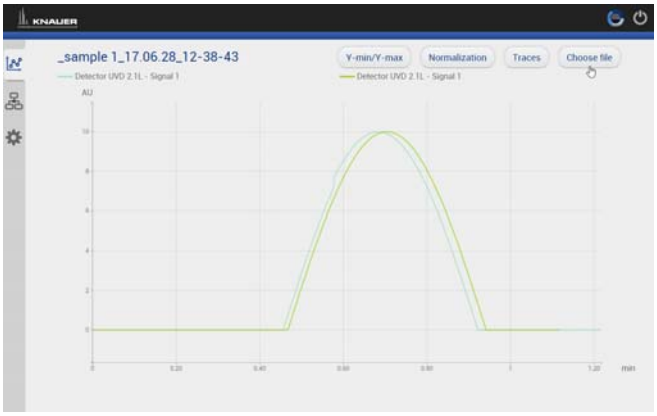


Fig. 12-6 Chromatogram - Overview

① Programs	Displays the program conditions and the integration parameters for calculation of the peaks.
② Settings	Displays settings for the view of chromatogram.
③ Y-min/Y-max	Scale your diagram.
④ 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
⑤ Traces	Displays different traces: • Detector signal • Auxiliary traces • Method traces
⑥ Choose file	Load a chromatogram.

12.2.1 Overlay of two measurements

Process	Figure
1. Select <Choose file>.	 Fig. 12-7 Data Viewer - Overlay
2. Select the second measurement file. Data format is *.h5. 3. Confirm with <OK>.	 Fig. 12-8 Data Viewer - Overlay
4. Both measurements are displayed in the chromatogram window.	 Fig. 12-9 Data Viewer - Overlay

5. If you want to close one measurements go to Programs.
6. Choose the measurement, you want to delete.
7. Select <Close>.

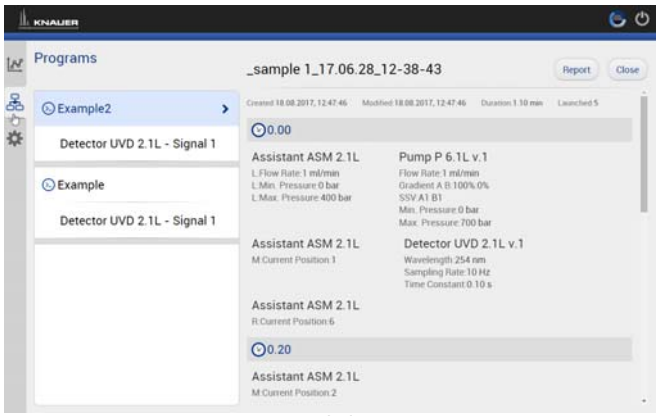


Fig. 12-10 Data Viewer - delete measurement

12.3 Settings

12.3.1 Appearance

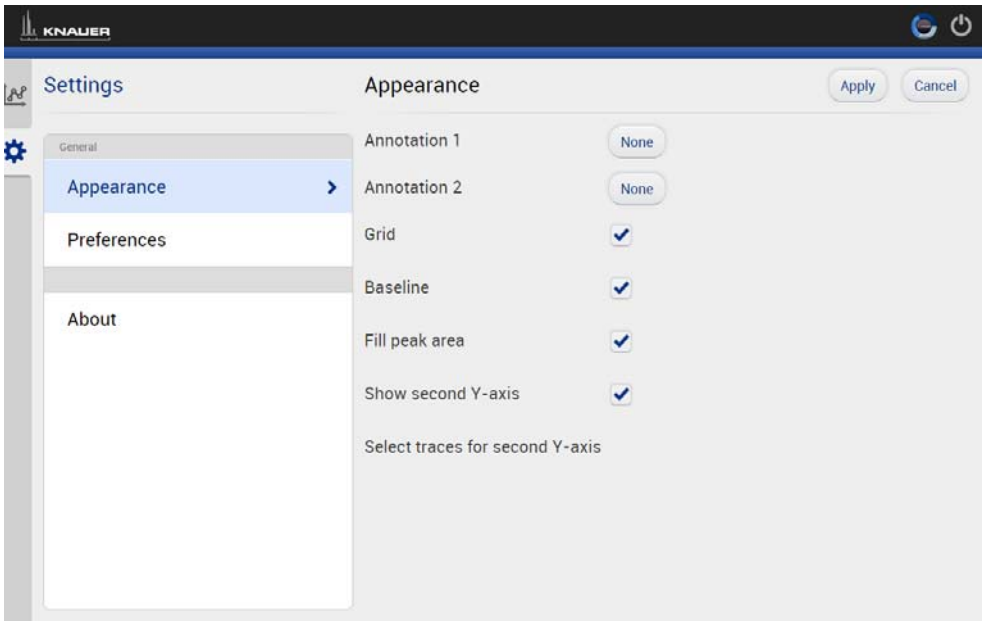


Fig. 12-11 Data Viewer - Settings - Appearance

The appearance of the chromatogram can be adapted in the settings window. The following check boxes are available:

- Grid: Activate or deactivate
- Baseline: Hide or unhide
- Fill peak: The area below the integrated peak can be filled with solid color
- Show second Y-axis: Define an additional axis on the right side of the chromatogram

12.3.2 Preferences

This menu is similar to the „Preferences“ menu in Mobile Control.

Please refer to Chap. 9.1.3.

12.3.3 About

This menu is similar to the “About“ menu in Mobile Control.
Please refer to Chap. 9.1.4.

12.4 Programs

12.4.1 Integration Parameters

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

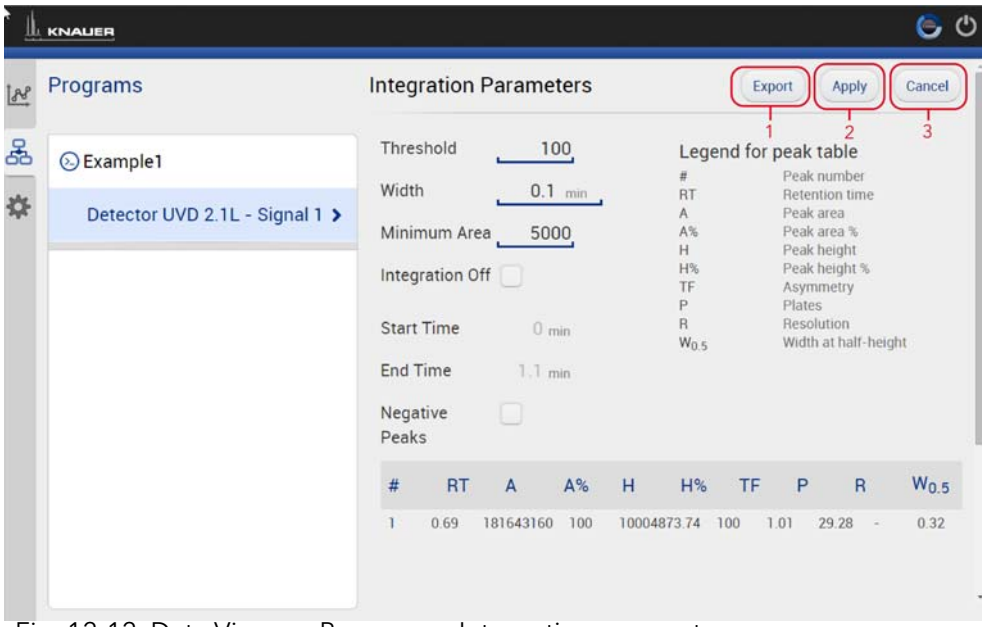


Fig. 12-12 Data Viewer - Programs - Integration parameters

① Export	Exports the file. Data format is ASCII. The file is stored in C:\Users\USER-NAME\AppData\Local\Azura\Knauer\Export.
② Apply	Starts the calculation of the measurement.
③ Cancel	the calculation is aborted.

For each peak two different annotations can be defined. The following annotations are available:

- Peak number
- Retention time
- Peak Area
- Peak Area [%]
- Height
- Height [%]
- Asymmetry
- Platen numbers
- Resolution
- Width

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.

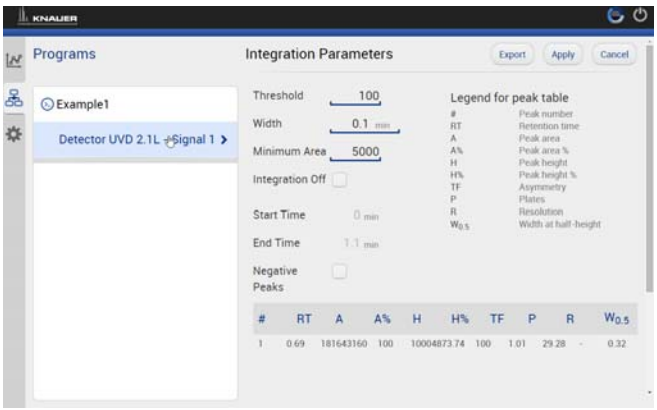
Threshold

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. 1000 will omit all peaks with an area of smaller than 1000.

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

Process	Figure
1. Load a measurement. 2. Go to PROGRAMS. 3. Deactivate the checkbox „Integration off“. 4. Set the parameter. 5. Confirm with <Apply>. 6. All results are displayed below the integration parameters. 7. You can export the results by pressing <Export>. data format is ASCII.	 Fig. 12-13 Integration parameters

12.5 Analysis of the chromatogram

Select the trace you want to analyze. After selecting the active trace this trace will be automatically analyzed. The limits for the y-axis for each trace can be adapted.

1. Select the chromatogram window.
2. You can:

- Scale the chromatogram
- Normalize the data
- Display different traces
- Zoom into the graph with fingers (please refer also to Chap. 8.4)
- Zoom out by double tap on the screen

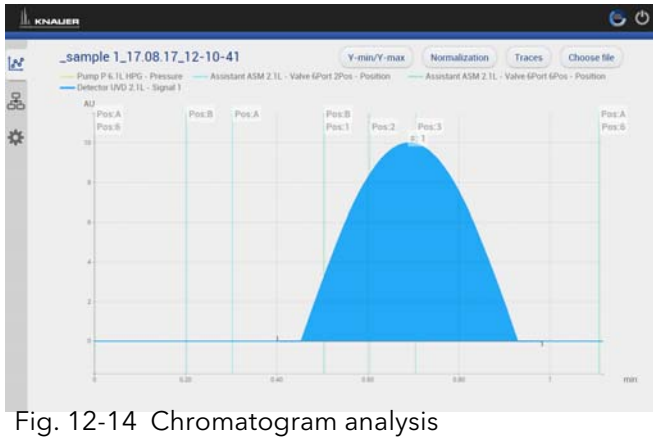
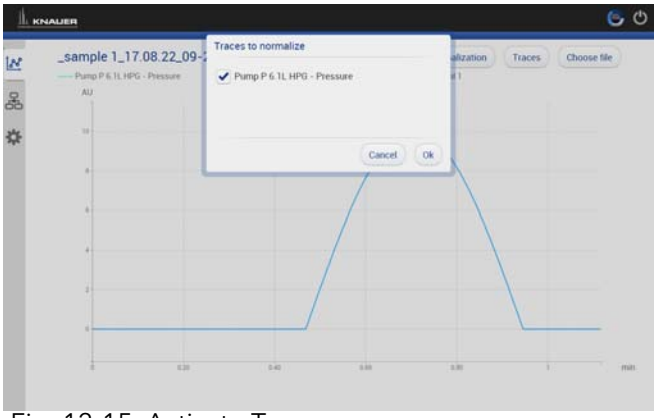
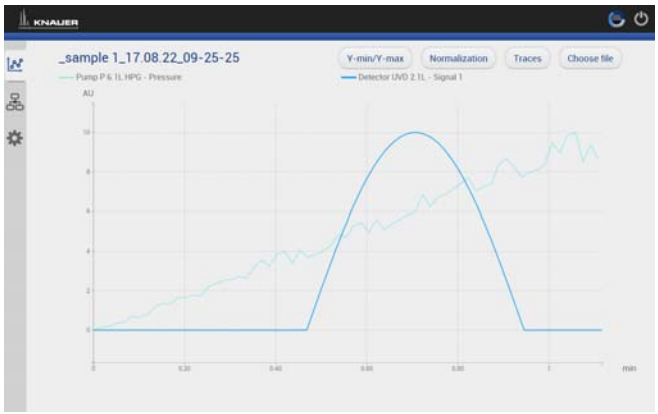


Fig. 12-14 Chromatogram analysis

12.5.1 Normalize data

Process	Figure
1. Load a measurement. 2. Select <Traces>. 3. Activate the wanted trace. 4. Confirm with <OK>.	 Fig. 12-15 Activate Trace
5. Select <Normalize>. 6. Measurement is normalized to the wanted trace.	 Fig. 12-16 Normalized measurement

13 Firmware Wizard

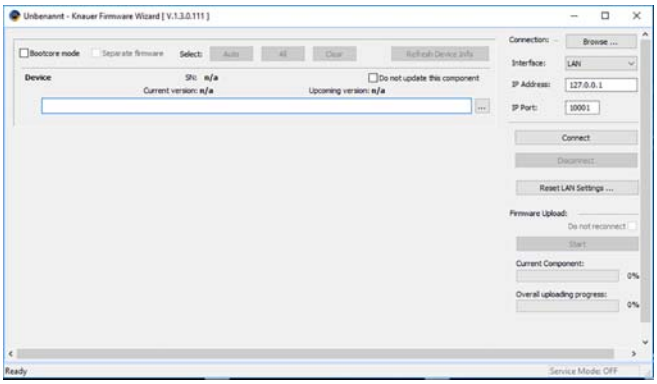
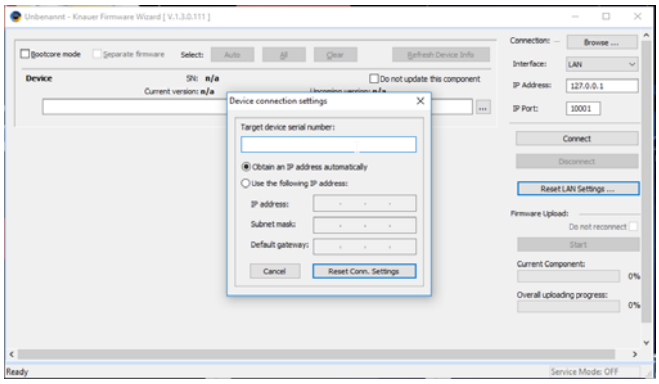
Installation of the Firmware Wizard is similar to installation of Mobile Control. Activation of the software is not necessary

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.

13.1 Reset LAN settings

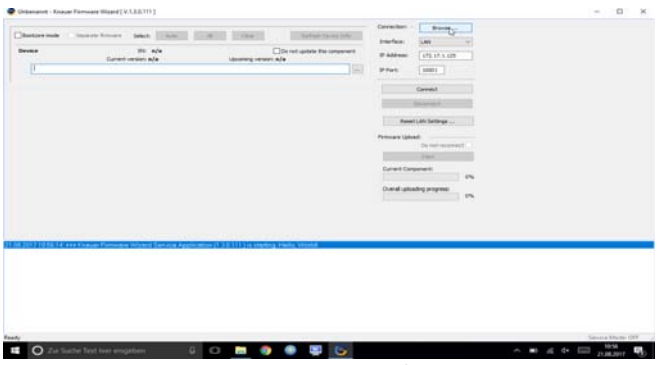
Process	Figure
1. Open the software. 2. Select <Reset LAN Settings...>. 3. A new window is opening.	 Fig. 13-1 Menu Firmware Wizard
4. Enter serial number of the AZURA® device. 5. Select ▪ fixed IP address (enter IP address, subnet mask, and default gateway) or ▪ DHCP (obtain an IP address automatically). 6. Press <Reset Conn. Settings>. 7. We recommend a restart of the devices, to accept new LAN settings.	 Fig. 13-2 Change LAN Settings

13.2 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.

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

Device type	Type	Firmware upload via LAN	Minimum required firmware version	Change LAN settings
Assistant	AZURA® ASM 2.1L	LAN	V1.13	✓
Column Thermostat	AZURA® CT 2.1	only via RS-232	V1.06	-
Detector	AZURA® RID 2.1L	LAN	V1.15	✓
	AZURA® UVD 2.1L	LAN	V2.05	✓
	AZURA® DAD 6.1L	LAN	V1.23	✓
	AZURA® DAD 2.1L	LAN	V1.10	✓
	AZURA® MWD 2.1L	LAN	V1.10	✓
	AZURA® UVD 2.1S	LAN	V1.11	✓
	AZURA® CM 2.1S	only via RS-232	V1.06	-
Pump	AZURA® P 6.1L	LAN	V1.05	✓
	AZURA® P 2.1L	LAN	V1.09	✓
	AZURA® P 2.1S	only via RS-232	V1.37	-
	AZURA® P 4.1S	only via RS-232	V1.37	-

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>.

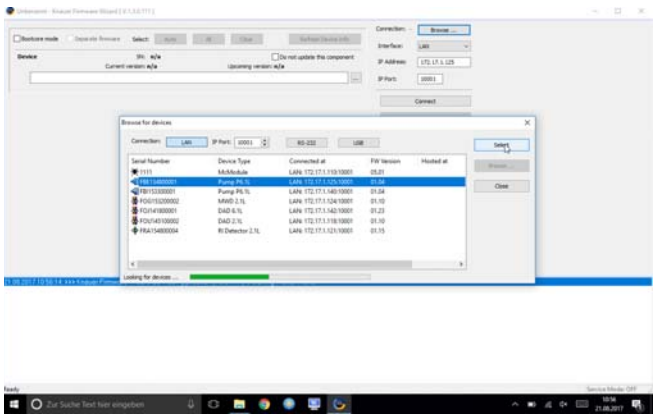


Fig. 13-4 Select device

6. Press <Connect>.

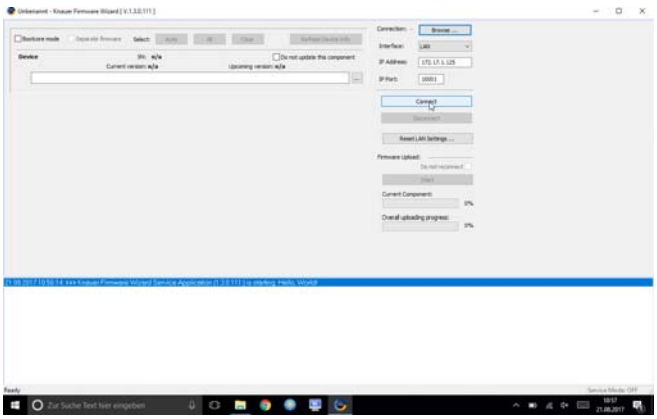


Fig. 13-5 Connect with device

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.

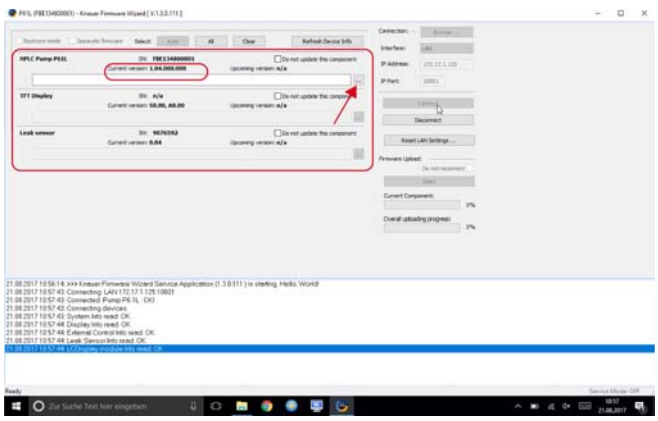


Fig. 13-6 Import the update file

11. Import the update file.

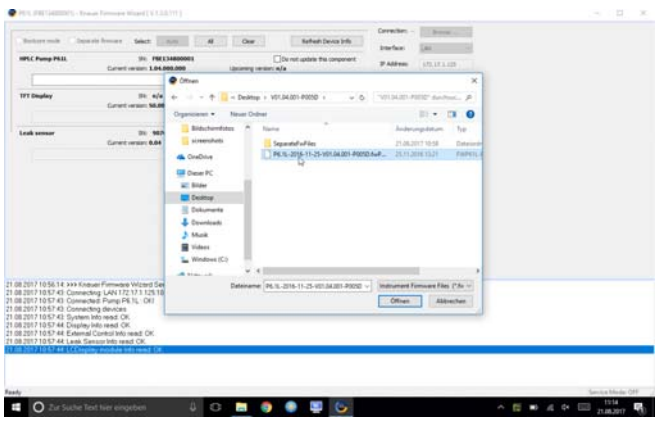


Fig. 13-7 Import the update file

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.

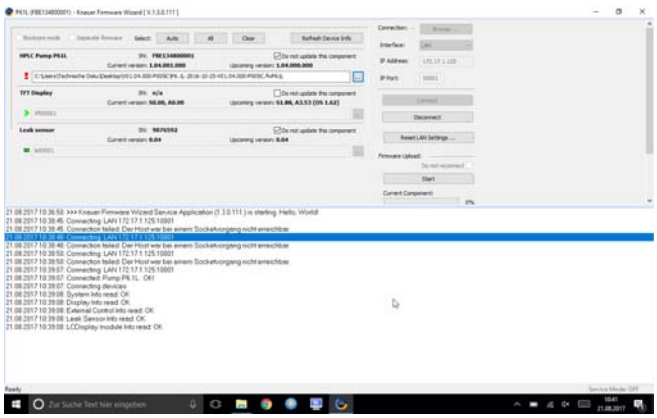


Fig. 13-8 Check the imported version

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>.

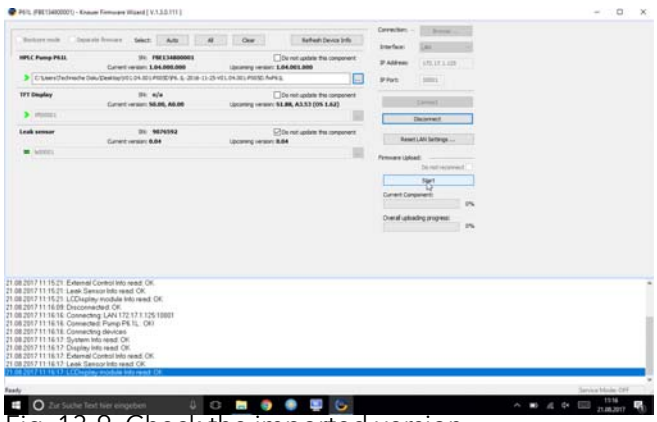


Fig. 13-9 Check the imported version

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

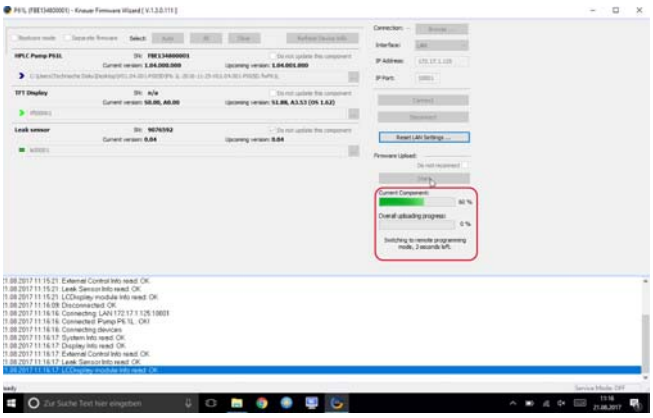


Fig. 13-10 Start update process

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.

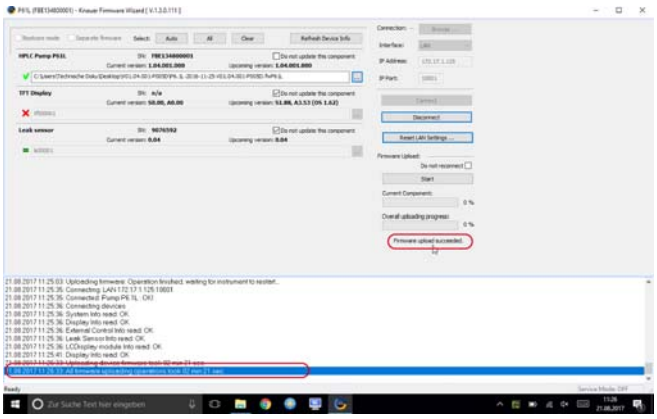


Fig. 13-11 Finished update process

14 Troubleshooting

	Error message	Cause	Solution
1.	$Flow_{max}$ in the program is not compatible with the current pump head	$Flow_{max}$ of the pump is higher than $flow_{max}$ of the pump head.	Reduce $flow_{max}$.
2.	p_{max} in the program is not compatible with the current pump head.	p_{max} of the pump is higher than p_{max} of the pump head.	Reduce p_{max}.
3.	Setpoint in the program is not compatible with the current PH (pump head) p_{max}.	Target pressure is higher than p_{max} of the pump head.	1. Reduce the target pressure. 2. Use a pump head with higher maximum pressure.
4.	Unable to attain pressure setpoint.	Leakage	1. Check for leakage and repair. 2. Check if the minimum pressure of your system is lower than the set minimum pressure.
5.	Unable to attain min. flow setpoint.	Blockage	1. Check for blockage and repair. 2. Check if the $flow_{min}$ is set too high and change it.
6.	Maximum pressure reached: system stopped	1. Blockage 2. Overshooting of the pressure/ Target pressure is too close to maximum pressure	1. Check for blockage and repair. 2. Check if the maximum pressure of the system is lower than the set pressure setpoint and change it. 3. Reduce the $flow_{max}$ to avoid overshoot of the pump.
7.	Minimum pressure: System stopped	Leckage	1. Check for leakage and repair. 2. Check if the minimum pressure of the system is lower than the set pressure setpoint and change it.

15 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	Instructions EN	V6851
Mobile Control	Mobile Control Chrom license without data acquisition, including 10" tablet, power supply and tablet mount	A9607
	Mobile Control Chrom license with data acquisition, including 10" tablet, power supply and tablet mount	A9608
	Mobile Control Chrom license without data acquisition	A9610
	Mobile Control Chrom license with data acquisition	A9612
	Upgrade license Mobile Control to Mobile Control Chrom	A9614
Tools	Mobile Control Mount flexible tablet mount for 7"-10" tablets	A9617
	USB-LAN ADAPTER Network adapter USB 2.0 <->10/100 Ethernet for tablets	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

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

What's new? With the actual version of mobile control it is possible to obtain a constant pressure by varying the flowrate.

A 1.1 Minimum flow rate and maximum flow rate

Minimum flow rate
Risk of damage

➜ When the flow rate decreases below the minimum value, following error message is displayed: Unable to attain min. flow setpoint. the software program will stop, but the pump is continuing to work.
For safety reasons, stop the pump manually.

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

Target pressure

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

NOTICE

Risk of damage

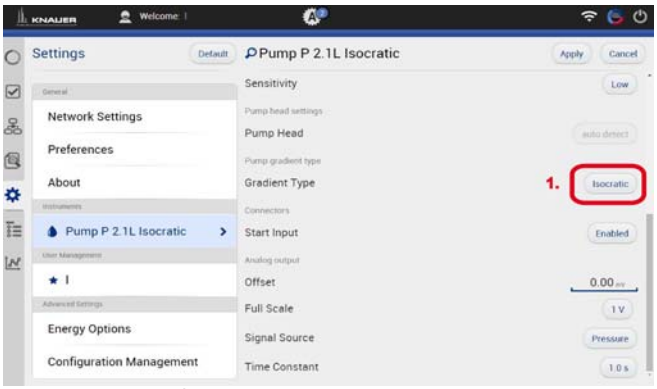
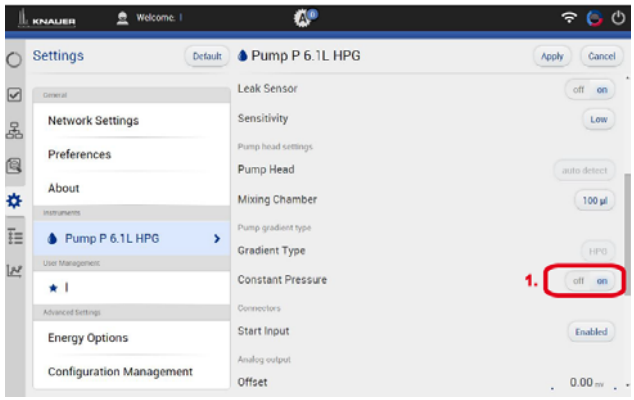
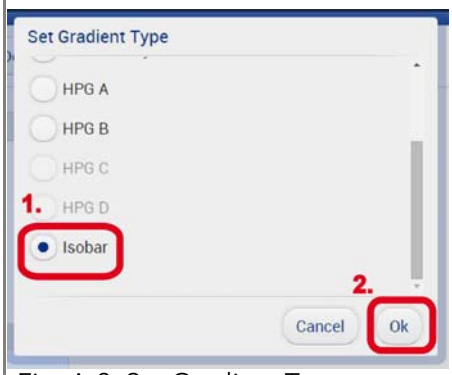
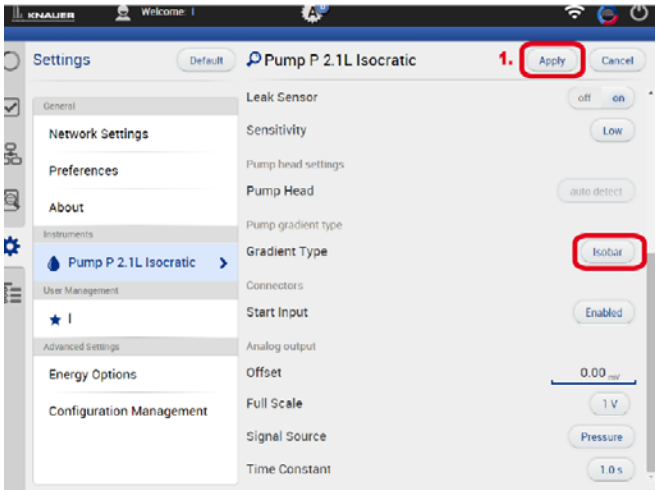
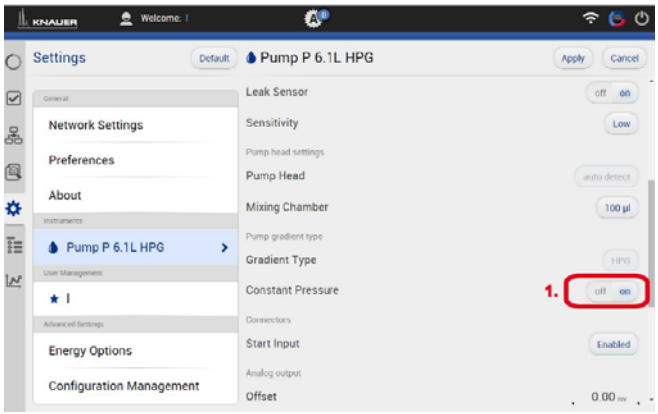
➜ When the pressure falls below/exceeds the target pressure following error message is displayed: Unable to attain pressure setpoint. The software programs stops, but the pump is continuing to work.
For safety reasons, stop the pump manually.

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 pumps 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	AZURA® P 6.1L
19. Select „Settings > Gradient Type“. A new window is opened.	1. Select „Settings“. Activate the Constant pressure button.
 Fig. A-1 Gradient Type	 Fig. A-2 Constant Pressure
2. Select „Isobar“ and confirm with <OK>. The window is closed.	2. No action
 Fig. A-3 Set Gradient Type	
3. The gradient type „isobar“ is displayed. Always confirm your selection by pressing <Apply>.	3. The Constant Pressure button is activated. Always confirm your selection by pressing <Apply>.
 Fig. A-4 Confirm selection	 Fig. A-5 Confirm selection
3. A message on the bottom of the screen is shown „Parameter successfully applied“.	

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

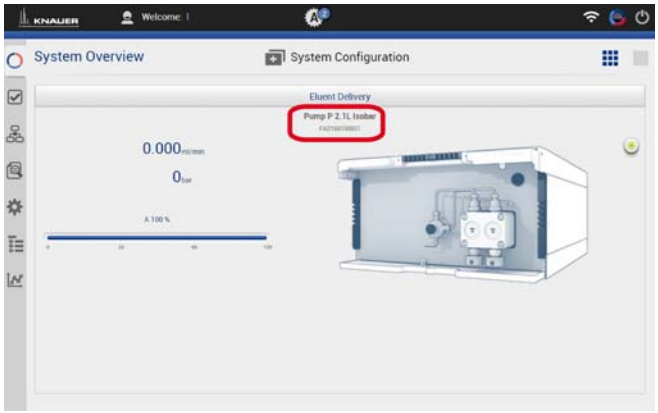


Fig. A-6 System Overview

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

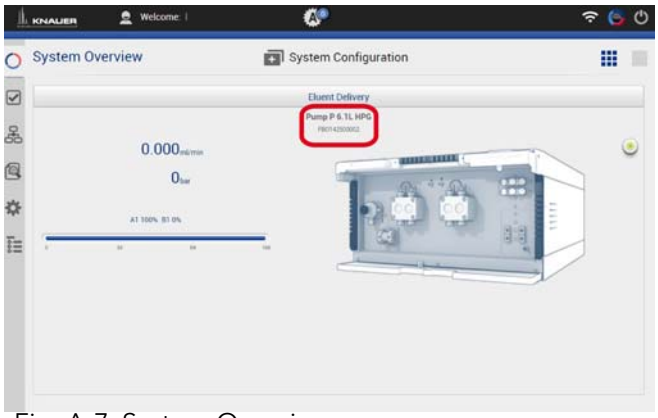


Fig. A-7 System Overview

Next steps Set the required parameters.

There are two different possibilities, explained in the next chapters (please refer to Chap. 1.2.1 or Chap. 1.2.2).

A 1.2.1 Direct control

AZURA® P 2.1L	AZURA® P 6.1L
1. Select „Overview“ and click on the pump picture to enter the Detail View menu.	1. Select „Overview“ and click on the pump picture to enter the Detail View menu.

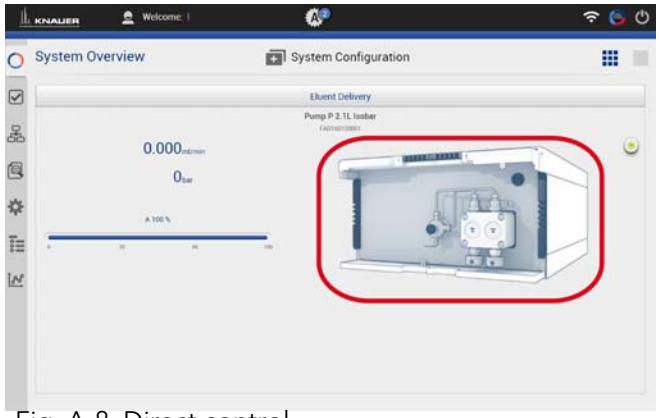


Fig. A-8 Direct control

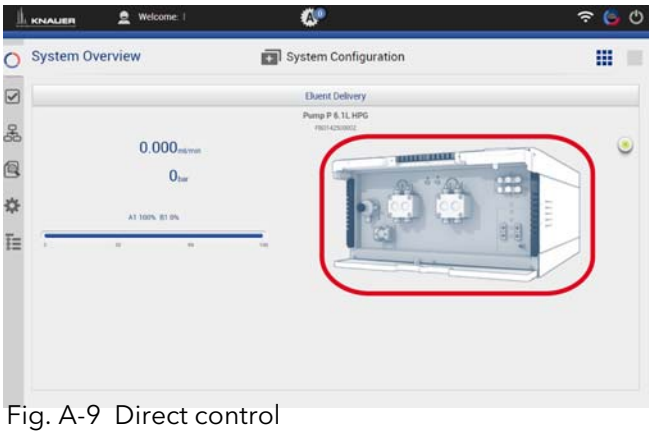
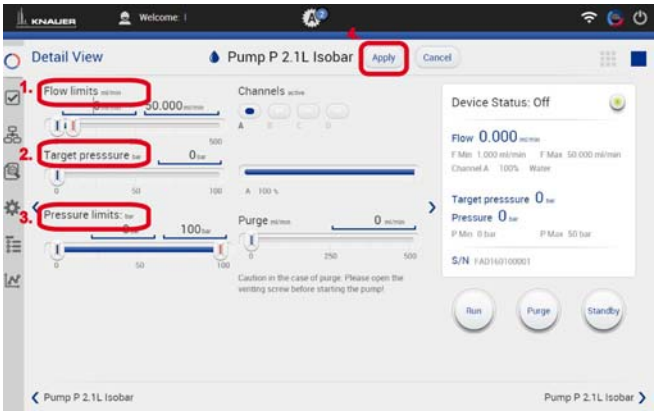
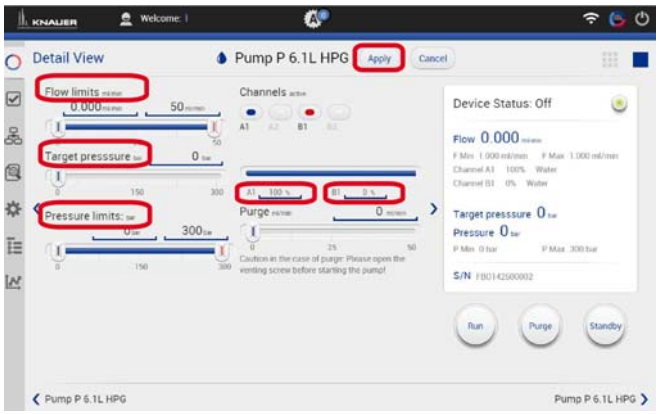
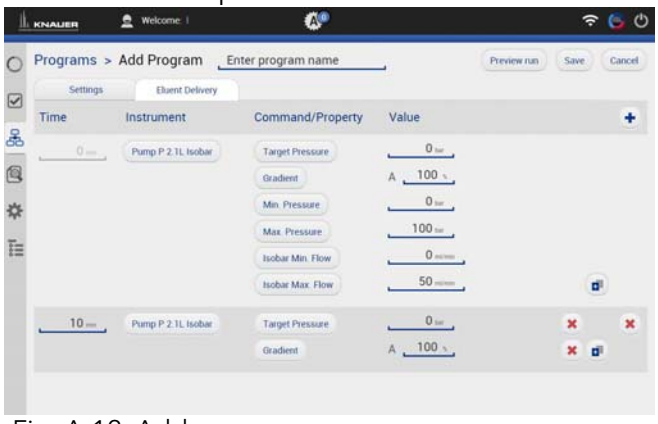


Fig. A-9 Direct control

2. Set: ▪ flow limits (min and max) ▪ target pressure and ▪ pressure limits (min and max) 3. Confirm your settings with <Apply>.	2. Set: ▪ flow limits (min and max), ▪ target pressure ▪ pressure limits (min and max) ▪ eluent composition 3. Confirm your settings with <Apply>.
 Fig. A-10 Set parameter	 Fig. A-11 Set parameter
The pumps starts with selected configuration.	
Practical Tip In this method you cannot monitor pressure and flow. Use the program sequence to monitor pressure and flow (explained below).	

A 1.2.2 Control via program sequence

AZURA® P 2.1L	**AZURA® P 6.1L**
Practical Tip With this method, you can monitor pressure and flow rate.	
1. Select „Programs > Add a program“.	1. Select „Programs > Add a program“.
Parameters are preset as default.  Fig. A-12 Add a program	Parameters are preset as default.  Fig. A-13 Add a program

2. Activate the checkboxes to monitor pressure and flow.

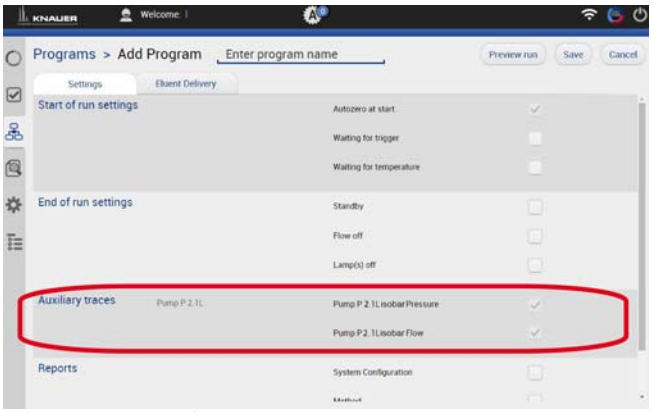


Fig. A-14 Auxiliary traces

2. Activate the checkboxes to monitor pressure and flow.

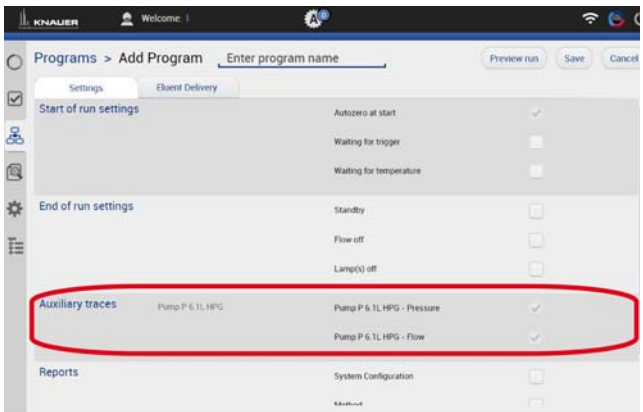


Fig. A-15 Auxiliary traces

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Science Together

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

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