## **Science with Passion**



## **Mobile Control** Version 6 Software instructions

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O Widget			running 27% (2.80 of 10.00)		<b>- *</b>	<u>ں</u> ا
*	Pump P 6.1L HPG FAM141110011	۷ ک	L: Pump P 4.1S	ه ()	Valve 6Port 2Pos	$\bigcirc$
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Compositie					1	
	in in in	100				
I	Valve 8Port 4Pos FVH200810029	<b>()</b> I	M: Valve 6Port 6Pos FVH200810022	<b>O</b> I	R: Valve 6Port 6Pos FVH200810024	<b>O</b>
Q	Manual load		్ర		٢	
*			Position 1		Position 1	
I	Valve 6Port 6Pos	0	Column Sel. Valve	0	Valve 16Port 16Pos PvH200810031	$\bigcirc$

Document no. V6851-4



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



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

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

#### **International Support:**

Contact your local KNAUER partner for support:

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

#### Support in Germany

(Austria & Switzerland on case-to-case basis):
Phone: +49 30 809727-111 (workdays 9-17h CET)
Fax: +49 30 8015010
E-mail: support@knauer.net

Publisher:	KNAUER V	Vissenschaftliche Geräte GmbH
	Hegauer V	Neg 38
	14163 Bei	rlin
	Germany	
	Phone:	+49 30 809727-0
	Fax:	+49 30 8015010
	Internet:	www.knauer.net
	E-mail:	info@knauer.net

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#### **Product information** 1.

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

Display - without data acquisition

#### Licenses and **Operating modes**

- Data with data acquisition
- FRC with data acquisition and fraction collection option
- Upgrade to Data
- Upgrade to FRC
- LNP control of IJM NanoScaler systems (more information in chapter13.2)



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

#### Identification

Legend

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



#### **Target groups**

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

The following knowledge is required:

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

## What must be taken into account?

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



2.

## Mobile Control

## 2.1 New features in version 6.0

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

### 2.2 System requirements

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

#### Supported devices 2.3

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

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

X = A-Z

## 2.4 Mobile Control Certificate

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

#### Legend

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

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Mobil	e Control Certificate
	ficate is proof that KNAUER grants the license for the software product "Mobile Control" to the
custome	
	n of Mobile Control (not required for pre-configured tablets):
	tall Mobile Control software
	art Mobile Control software
	splay license: Press the start button to enter the display operation mode.
Se	ta or Fraction Collection or LNP license: The entry of an activation key is required. nd the Device Code and the serial number of the Mobile Control license arts with FSA) to <u>mobilecontrol@knauer.net</u> .
Th Th of	te: The device code does not include 0 and 1, but Q and I. e device code is linked to the network adapter. Do not deactivate the network adapter. e device code will change every time the software is started. This does not influence the validity the activation code. The activation code is hardware-bound and cannot be transferred to another plet, laptop or desktop PC.
	NAUER will send you an activation code. This code activates the software product. Until the activa- e is provided, use the trial version of Mobile Control with full functionality.
	are instructions, installation, updates and upgrades refer to the corresponding information docu- ae: <u>www.knauer.net/mobile-control-downloads</u> → tab: Information).
License	/ Operating Mode
Dis	splay - without data acquisition
🖌 Da	ta - with data acquisition
FR	C - with data acquisition and fraction collection option
🗌 Up	igrade to Data
∪ □_∪	grade to FRC
	P - with data acquisition and formulation user interface *
* The LN or 6.3.X	IP license of Mobile Control requires an own installer of version 6.2.X. Do not execute the installer version 6.0.X which is used for the Mobile Control licenses Display, Data, Fraction Collection. Please contact the KNAUER er support to obtain the installer.
	Operating system Windows 10
	Software version v6.0.3
	Activation code YQOM-LPAL-OJI4-ZS7D-GOGA
	User name Admin
	Password 12345
	Serial number tablet e93kl39672
	Article number A9608
Serial nu	mber Mobile Control license FSA225000001
V9610 Mc	bile Control Software Certificate, 12/2023 Page 1 of 1

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

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



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



3.

## Installation

## 3.1 Download and installation

Four types of modes are available:

#### 1. Demo Mode

- offers an overview of the MC functionalities
- operation of virtually connected devices is possible
- simulation of methods, sequences and data acquisition
- free of charge

#### 2. Trial Period

- full functionality (like fraction collection license) for 30 days
- free of charge

#### 3. Display Version

- full functionality without data acquisition
- every update is free of charge

#### 4. Licenses that require activation

- full functionality with data acquisition (refer to chapter 2.1 for functions)
- various functionality depending on the license full or fraction collection
- every update is free of charge

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



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



Note: If you have a previous version, deinstall it.

Delete **C:/Mobile Control** after securing of the data. The system configuration and all programs have to be recreated. Refer also to the installation information included on the document website (see below).

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

Pro	ocess	Figure
1.	Download the zip-folder including the installer of Mobile Control and Firmware Wizard from the website: www.knauer.net/mobile-control-downloads.	
2.	A zip-file will be downloaded. After successful download, extract the content of the zip-folder and run the files "Mobile Control vX.X.X.exe" and "Firmware Wizard v.X.X.X.exe".	
3.	An install wizard opens.	
4.	Select <next>.</next>	🔄 Mobile Control Setup — 🗆 🗙
5.	Enter customer information. Select <next>.</next>	Mobile Control
		Fig. 3-1 Installation of the software
6.	Select <install>.</install>	Mobile Control Setup – – × Mobile Control
		Fig. 3-2 Installation of the software
1.	The software will be installed on your computer.	Mobile Control Setup – • × Mobile Control Setup Progress Processing: Mobile Control

Process	Figure
8. Complete the installation by selecting <finish>. A desktop icon will be created.</finish>	Mobile Control Setup Completed the Mobile Control Setup Wizard Cick the Finish button to exit the Setup Wizard. Bac Finish Cancel Fig. 3-4 Installation of the software
<ol> <li>Double-click the Mobile Control icon to open the software.</li> </ol>	
	Fig. 3-5 Desktop icon



1

## 3.2 Activation of the software

#### 3.2.1 Start screen

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

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

#### 3.2.2 License activation

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

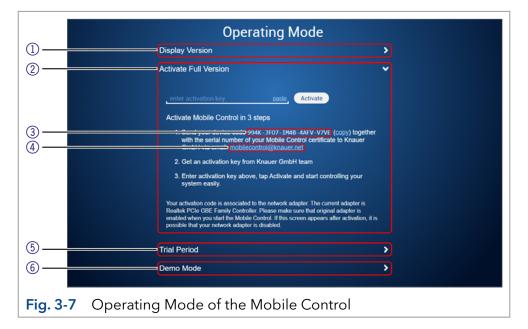


#### Fig. 3-6 Software Mobile Control

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

#### Legend

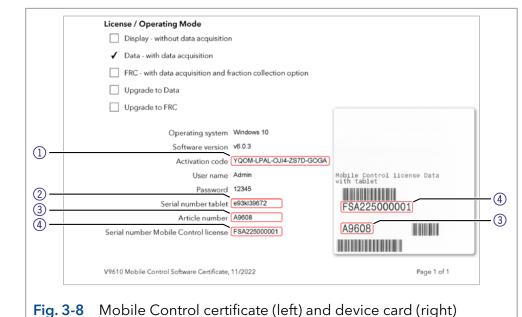
- 1 Display Version
- 2 Activate Full Version (currently selected)
- ③ Device code (see also section 3.2.2.2)
- ④ E-mail address: (see also section 3.2.2.1)
- Trial Period
   (see also section
   3.2.3 Trial period)
- 6 Demo Mode(see also section3.2.4 Demo mode)



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

#### 3.2.2.1 Activation via automatically generated e-mail

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



#### 3.2.2.2 Activation via copy of the device code

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

Send a mail to mobilecontrol@knauer.net.

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

#### 3.2.2.3 Activation via trial version

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

#### Legend

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

Settings	About	
Concil Configuration Management Network Settings Preferences About Instruments Frac. Collector Vario User Management * a Advanced Settings	Mobile Control     5.8.110       Version     5.8.110       Activation     UGPY-645Y-645Y-645Y-645Y-645Y-645Y-645Y-645	\$ *

Fig. 3-9 Activation via Trial version

#### 3.2.3 Selecting the trial version

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

#### 3.2.4 Selecting the demo tour



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

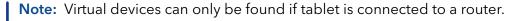
 Press the <Demo Mode> button to activate the software in the demo mode

or

2. Select Demo as user during the Login.



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



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

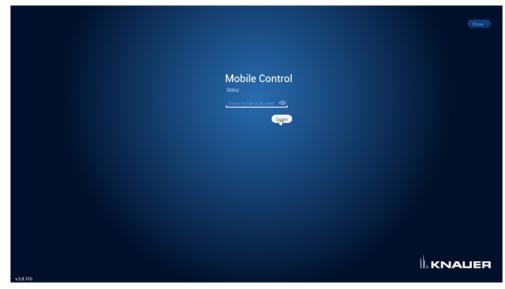


Fig. 3-10 Log into Demo mode

#### 3.2.5 Updating the Mobile Control

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

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

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

#### 3.2.6 License validity

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

**KNAUER** Technical Support:

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

You can make your requests in English and German.

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

#### 3.2.7 Mobile Control manual

The manual is provided for download on the KNAUER website <a href="http://www.knauer.net/en/Support/User-manuals/Software">www.knauer.net/en/Support/User-manuals/Software</a>.

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



#### **Starting Mobile Control** 4.

#### 4.1 **First steps**

#### Connecting the PC/notebook/tablet to a network 4.1.1

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

Process	Figure
The highlighted icon in the lower left of your display indicates the status of the network con- nection.	
1. Click on the symbol to enter the network set-	2:36 PM
tings on your tablet.	∧ 🔄 (*) (1× 📰 DEU 6/20/2017 🜄
Mobile control will be supported for tablets/	0/23/2017
PCs/notebooks running with operating system Microsoft Windows 10.	Fig. 4-1 Open the zip-file
2. Select the network you want to connect to.	

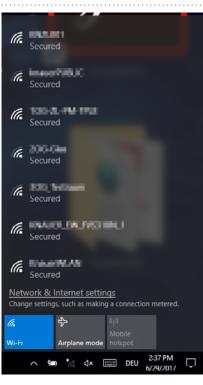


Fig. 4-2 Network overview

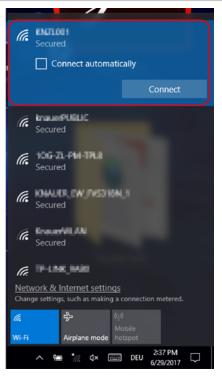
#### Process

3. Select <Connect> to connect to the network.

You can activate the checkbox to connect automatically to this network.

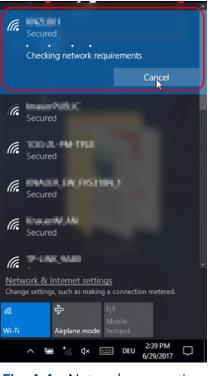
**4.** If required, enter the password.

#### Figure



#### Fig. 4-3 Connecting to the network

Click <Connect>.
 After successfully checking the network requirements, the computer is connected.



#### Fig. 4-4 Network connection

#### Process

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

#### Figure



#### Fig. 4-5 Network status

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

1

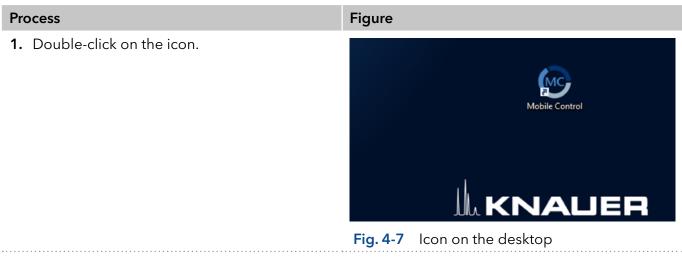
ii.	KNALIER 🚨 🚥 🛛 🕼							₽∎⊜Х
0	Settings		System Co	digu ation	)			Assty
&	General				Name	Access	SSID	Actions
Ē	Configuration Management	•	۲	1	Demo	Demo		
w.	Network Settings							
	Preferences				5			
I	About							
1	User Management							
ß.	Demo							
•	Advanced Settings							
-	Ebergy Options							

Fig. 4-6 Configuration list in the software

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

#### 4.1.2 Create a user account

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



2. The start screen of the software opens.

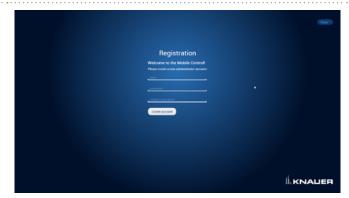




- 3. Enter user name and password.
- 4. Repeat entering the password.

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5. Click <Create Account>.





**Note:** If you received a tablet with a pre-installed Mobile Control, KNAUER has set up a user account for you already. In this case, the **user name** is 'Admin' and the **password** is '12345'. You can find this information on the provided certificate as well. The user name and the password can be changed (refer to chapter 12.3). 6. Log in by entering the user name and password or click <Close> to close Mobile Control.

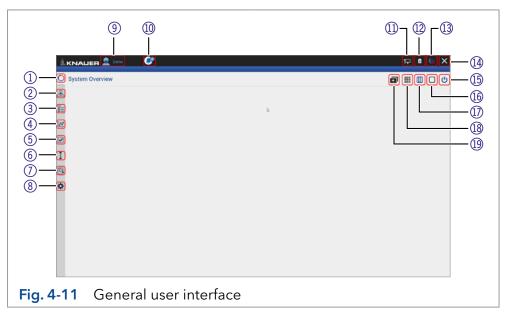
i





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

## 4.2 General user interface



#### Legend

- (1) System Overview
- ② Methods and Sequences
- 3 Run Queue
- ④ Chromatogram View
- ⑤ Checks & Tests
- 6 Column Management (excluded in LNP version)
- 1 Logs and Errors
- 8 Settings
- 9 Logged User

- ① Error Messages
- (1) LAN Connection
- 12 Battery Status
- (13) Data Viewer
- ① Exit/Logout
- (15) Standby/Power up
- 16 Detail View
- ① System Overview
- 18 Widgetview
- (19) System Configuration

**Control element** 

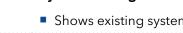
8

4.2.1	Control elements
Expla	nation
Syste	m Overview
	ows an overview of all connected devices with the most important ameters.
Meth	ods & Sequences
<ul> <li>List</li> </ul>	of all saved methods and sequences.
Run C	Ωueue
	erview of processable methods and sequences.
Chro	natogram View
	Chromatogram shows the live data of detectors, pumps and valves. <b>ks &amp; Tests</b>
Dis	plays GLP data for the selected device.
Per	forms a system check.
Colur	nn Management (excluded in LNP version)
	ate a column library. Individual columns can be given a maximum ssure and the number of injections is tracked.
Logs	& Errors
<ul> <li>List</li> </ul>	s all errors and system logs.
Settir	igs
Gene	ral
def	nfiguration Management: Create new or edit existing configurations an ine the system configuration, summarizes all configurations with the ro iSID and authorized users.
Net	work Settings shows network interfaces and LAN settings.
Pre <sup>-</sup>	ferences displays basic settings in the software.
	out: The section lists the software version number, activation code, cor s, release notes and installation information with troubleshooting hint
Instru	iments
	st of all connected devices is displayed. You can change the settings o h device.
User	Management
	er accounts or the Demo account for the Demo Mode can be created o ted.
Adva	nced Settings

Energy Options displays standby mode settings and wakes up devices from standby mode.

#### **System Configuration**

Shows existing system configuration.



Control element	Explanation		
ж m С	Widget View, System Overview, Detail View		
	Toggles between Widget View, System Overview and Detail View.		
Pump P 6.1L HPG FAM141110011	Device Widget		
	<ul><li>Displays most important parameters depending on the device.</li></ul>		
All and the	Push the widget to enter the Detail View of the device.		
0.000ml/min			
O <sub>bar</sub> A1 100% B1 0%			
	Error messages		
	<ul><li>Displays error messages. Click on the icon to read them.</li></ul>		
Stop	Stop		
	Stops the run.		
$\sim$	Exit/Logout		
$\sim$	<ul> <li>Exit closes the application.</li> </ul>		
	Logout logs out the current user and displays the login screen.		
ch	Standby/Power up		
V	Sent into standby or power up single, all or a selection of devices		
Run	<ul> <li>Button with different functionalities, e.g. Run or Stop.</li> </ul>		
Pressure tax 750 tax	Text field and slide control		
0 250 500 750	<ul><li>Slide control sets values. The set value is displayed in the text field.</li></ul>		
	Enter the numeric value by tapping the text field.		

# **()** 5. System Overview

## 5.1 System configuration

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

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

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

## 5.2 Categorization of the functional blocks

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

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

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

#### Process

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

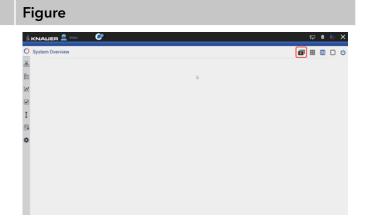
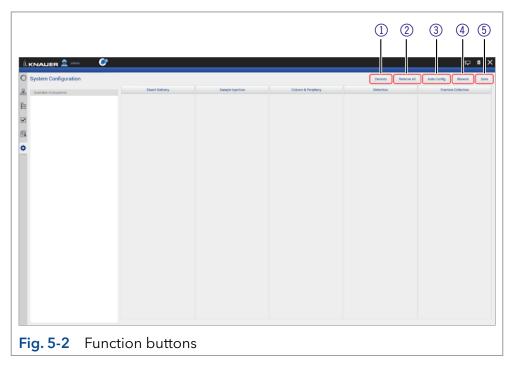


Fig. 5-1 System Configuration overview



#### Legend

- ① Use **Devices** to manually configure Virtual detector, Foxy and Vario-4000 fraction collectors.
- ② **Remove All** deletes the actual system configuration.
- ③ **Auto Config** performs an automatic configuration with connected devices in the network.
- ④ **Browse** searches for all devices in the connected network and displays them on the left side (available instruments, does not apply to fraction collector Foxy and Vario-4000).
- (5) Always use **Save** to confirm your selection.

#### Process

i

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

NAUER 🚨 🚥 💕		₽ <b>8</b> (
ystem Configuration		Denne Menne Al Antechnig Brown
Manual setup		
Instrument Type	Name	Virtual UVD 2.1L
Virtual Detector UVD 2.10	> Titua Tapa Tite	
Fraction Collector Fory	No für selected.	here
Fraction Collector Vario	The set of the second second	

#### Fig. 5-3 Manual Configuration

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

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

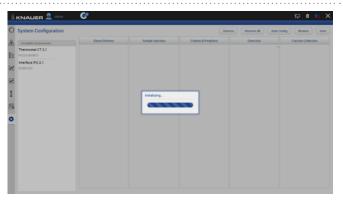
LKNAUER 🚨 🕼		🖓 🗎 😡
System Configuration		(Dentess) (Amountail (Amountail) (Boostar) (B
Terrane me Searce et al. Visual d'acteurs (VD-23), Fastanc Calderon Fory Fastanc Calderon Varia	bors See sunter Protects Prot	Enc. (others in eq.41, 
		Canel (B)

#### Fig. 5-4 Manual Configuration

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

5. On the left side all available/online devices

are shown.



#### Fig. 5-5 Loading process of System Configuration

					to Config Browsey Sa
Available instruments	Eluent Delivery	Sample Injection	Column & Periphery	Detection	Fraction Collection
Detector 50D					
DNA204100001					
Thermostat CT 2.1					
PCC211810077					
Interface IFU 2.1					
P3051171	J				

#### Fig. 5-6 Connected devices

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



#### Fig. 5-7 Drag and drop of the devices

8. Press the "Settings" symol 🔹 or on the device to enter the device settings.

Fraction Collection	Detection	Column & Perghery	Sample Injection	Eluent Delivery Pump P-6.15, UPG Tel:struest	Available Instruments Detector 50D
					Anternov 600
				FBC1075081	
					Investment of the second secon
				12-1 × 1	1002118810077
			5	0	menface IFU 2.1
				U U	Pu051100

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

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

configured automatically.

#### Fig. 5-8 Settings symbol of the devices

Settings	Pump P 6.1L LPG			Apply Ca
General	Name	Pump P 6.1L LPG	Connectors	
Configuration Management	Serial number	FBE133700001	Start input	End
Network Settings	Network Settings		Analog Output	
	IP Port		Offset	
Preferences	DHCP      Static		Full scale	
About	IP address	172.16.5.248	Signal source	Dena
Instruments	Subnet mask	255.255.255.0	Time constant	6
Pump P 6.1L LPG	Gateway	172.16.5.1	Pressure Offset	
User Management	Leuk Sensor			
🔹 admin	Sensitivity	Low	Actual interpreted pressure	Set to Zero
Demo	Pump Head Settings		Factory Settings	Serie 200
Advanced Settings	Pump head	auto detect	Restore defaults	
Energy Options	Mixing chamber	100 pt.	Eluent control	
	Pump Gradient Type		Enders Constant	
	Gradient type		P Max	





Fig. 5-10 Autoconfigured system configuration



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

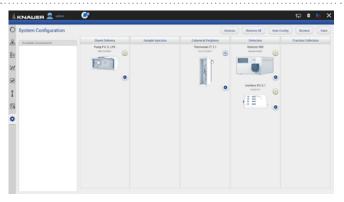


Fig. 5-11 Overview connected devices

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



Fig. 5-12 System Overview listed devices

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

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

Process	Figure
<ol> <li>Go to System Overview &gt; System Configura- tion.</li> </ol>	Introducernice       Image: Constraint of the second
	Fig. 5-13 Overview - System Configuration

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

System Configurati	on			Devices Remove Al	Auto Config Browse Save
Available Instruments Pump P 2.1L Isocratic PA0132190001	Duent Delivery	Sample Injection	Column & Periphery	Defection	Fraction Collection
2 2 3	Pump P 2 - Isecratic Factor				
	m				
	119				

Fig. 5-14 Drag and drop first pump

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

**3.** The pump is part of the system configuration.

4. Drag and drop the second pump.

**6.** Confirm your action with <Save>.

frame.

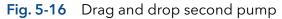
5. The first pump will be highlighted, indicating you can synchronize both pumps. Drop

the second pump into the violet "Synchro"

System Configuration		Device	Devices (Remove All (Auto Config (Browner) (S		
Available Instruments	Eluent Delivery	Sample Injection	Column & Periphery	Detection	Fraction Collection
Pump P 2.1L Isocratic	Pump P 2.1L losoratis				
	1000				
	۰				
	6				

Fig. 5-15 First pump in System Configuration





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

1

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

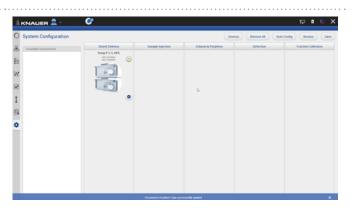


Fig. 5-17 View of the synchronized pumps

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

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

#### 5.2.2 Synchronous switching of two valves

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

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

Synchronization of valves works for block:

- Sample Injection
- Column & Periphery



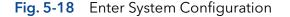
**Note:** You can synchronize valves inside an assistant or stand-alone valves, but you cannot synchronize a valve inside an assistant with a stand-alone valve.

Figure

#### Process

- Go to System Overview > System Configuration.
- 2. Click <Browse> to get a list of all connected devices.

0	System Configuration			Devices	Remove Al Auto Cont	lg Bowse Save
8	Available Instruments	Eluent Delivery	Sample Injection	Column & Perphery	Detection	Fraction Collection
-	Pump P 6.1L LPG PBE133700001					
N	Valve 6Port 6Pos rvmrs4700005					ь
2	Valve 6Port 6Pos PVH794700008					
I	Thermostat CT 2.1 F02211610077					
8						
¢						



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

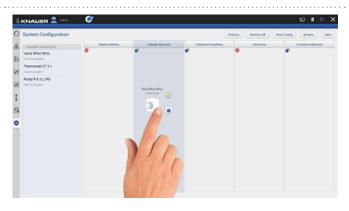


Fig. 5-19 Addition of a valve

- CONCLUER & week Configuration
   Configura
- 4. The valve is part of system configuration.

**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. 5-20 Configured valve



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

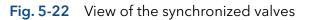
**Note:** If you want to add 2 independent valves, drag and drop the second valve below the "synchro" widget.

6. Always confirm your settings with <Save>.

i

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

0	System Configuration			Device	s Benove Al A	to Config Browse Save
8	Available instruments	Eluent Delivery	Sample Injection	Column & Periphery	Detection	Fraction Collection
	Thermostat CT 2.1 PCC211810077			Synchronous Valves		
N	Pump P 6.1L LPG P00133700001			2.2		
2				۰		
I						
9						
¢				6		



## 5.3 Device status

Device Status	Ready	Running	Busy	Error	Standby
Color of the light	$\bigcirc$	$\bigcirc$	0	0	$\bigcirc$

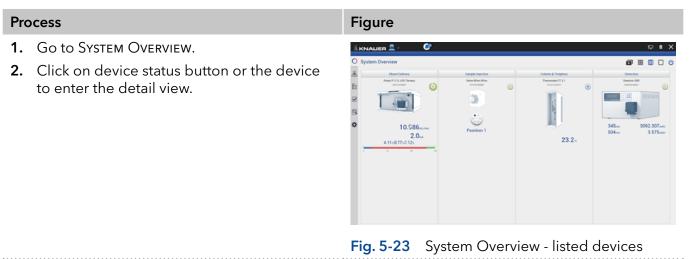
## 5.4 Widget View

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

## 5.5 Detail View

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

#### 5.5.1 User interface



#### Legend

- Apply
- Cancel
- ③ Device status and important parameters
- ④ System Configuration
- 5 Widget View
- 6 System Overview
- Detail View
- 8 Standby/Power up
- (9) Shifts to next device
- 1 Purge
- 🕕 Run
- Toggle between 1<sup>st</sup> and 2<sup>nd</sup> page of Detail View
- Shifts to previous device

i

	Dens 🚱	Pump P 6.1L HPG Channels area	1 2 Apply Cancel	3	
	25 50	A1 005	;	Status: Off           Flow 0.000 wine           Charled 101 007 Will           Charled 101 005 Action           Pressure 0.0 w           PMR 0.0 w           S/N FAMIA110011	
13	(	2		1)	10 9
Fig. 5-24	Overview - De	etail view - gei	neral inte	rface	

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

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

#### 5.5.2 Assistant ASM 2.2L

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

#### 5.5.3 Assistant ASM 2.1L

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

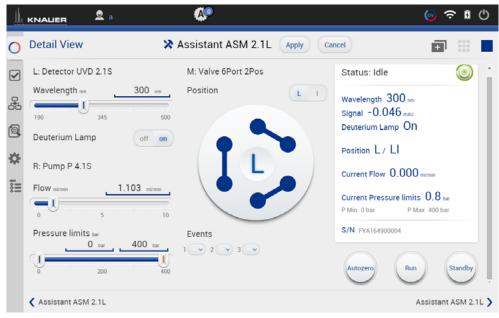


Fig. 5-25 Detail View - Assistant

#### Possible devices of an assistant:

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

#### 5.5.4 Autosampler

Detail View	Autosampler AS 6.1L Apply Cancel	•	000		
SSV	b	Status: Idle Current Vial II/A Target temperature II/A c Measured Temperature 99.0 c Ssv 1 / 6 SrN FEREZISCOOM	Tranwa	nsp. ssh	٠

Fig. 5-26 Detail View - Autosampler

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

#### 5.5.5 Column thermostat

KNAUER 👱 admin 🛛 🥙			P	8	6	×
Detail View	F Thermostat CT 2.1 Apply Cancel	ø	000	▥		Ċ
Target Temperature :		Status: Off Target temperature			۲	
Thermostat CT 2.1			Th	ermost	tat CT 2	1
Fig. 5-27 Detail view - Co	olumn thermostat					
		e within the rar		• • • •	•••••	• •

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

#### 5.5.6 Detector

Detail View	Detector DAD 6.1	Apply Cancel	+ 888	▥	
Channels: Weivelength / Bandwidth	Signal Mode ca	direct Status: Id	le		(
Ch1;254,	Signal Mode on		/ Signal an/mau		
190 595 Ch2: <u>254</u>	Signal Mode on	direct Ch1:254 en -1 Ch2:254 en -1 Ch2:254 en -1 Ch2:254 en -1	04.682 mAu 04.682 mAu		
190 595	1000 Signal Mode cu	direct Deuterium	.amp On		
Ch3: 254	8 m, Reference Correction cm	off on Halogen La	mp Off		
190 595 Ch4: 254m,	Reference Correction cm2	on on	erature 49.63 %		
190 595	Deuterium Lamp	off on	500001		
Ref1	Halogen Lamp	no Tio	Autozero		
190 595	1000		0		
Events	12				
1 2 3 3					

Fig. 5-28 Detail view - Detector

Tap the text field and enter the required value. You can also adjust the value by slide control.
Events can be programmed or manually acti- vated. They operate external devices (refer to the instructions of the respective device for more information) Choose between ON, Pulse or OFF.
Choose between Direct Signal and Inverted Signal. Direct Signal (+): Displays signal without modifications. Inverted Signal (-): Displays the inverted signal.
In order to minimize baseline drift due to re- fractive index effects, a reference wavelength can be set in order to correct the baseline. The reference should be set in the same spec- tral region as the signal wavelength (UV or Vis) but at a wavelength at which the analyte has no absorbance.
Choose between ON/OFF. If the device is in standby mode, the lamp is switched off.
Choose between ON/OFF. LED of the device can be switched off to pro-

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

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

#### 5.5.7 Interface Box IFU 2.1 LAN

Detail View	P Interface IFU 2.1 Apply Cancel		<b>₽</b> 888	
Events		Status: Idle		
1 2 3 4 4		Signal 1: 0.223		
		Signal 2: 0.111		
		Signal 3: 0.084 m		
		Signal 4: 0.125 ==		
		S/N IFU061101		
			₽.	

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

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

#### 5.5.8 Pump

0		戸 0 () )				
O Detail View	Pump P 6.1L LPG     Apply     Cancel	<b>■</b> *** @ <b>○</b> (				
Elow autors	Oricina, Channels anne	Status: Off				
Pressure limits by 0 by 7	10 700	Flow 0.000 m/min Channel A 100.0% Acetonitrile				
		Channel B 0.0% Channel C 0.0%				
		Pressure 1.3 ar				
I		PMin Obar PMax 700 bar				
@ <		> S/N FEE133700001				
*		Run Purge				
		0 0				
4						
✔ Interface IFU 2.1		Detector DAD 6.1L				
Fig. 5-30 Detail viev	w - Pump					
	i i anip					
Flow	Sot the flow words - r					
FIOW		Flow by entering the value				
		or with slide control. The pump starts running The pump can be stopped again with the				
	Stop-button in Deta	AIL VIEVV.				
Pressure limits		nd maximum pressure un-				
	der Pressure limits a	der Pressure limits and confirm with <apply>.</apply>				
	Minimum and maxi	Minimum and maximum pressure is set with 2				
		1110111 pressure is set with a				
	slide controls or via					
	slide controls or via	the text field.				
	slide controls or via Minimum pressure:	the text field. The pump switches off				
	slide controls or via Minimum pressure: after 30 seconds, if	the text field. The pump switches off the pressure goes below				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressu	the text field. The pump switches off the pressure goes below re limit. This may be the				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occi	the text field. The pump switches off the pressure goes below				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system.	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column,				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t limit, e.g. in case of	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure				
	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure				
Gradient	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t limit, e.g. in case of rate. If a gradient-compa	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure clogging or an excess flow atible pump or pump com				
Gradient	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t limit, e.g. in case of rate. If a gradient-compa bination has been c	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure clogging or an excess flow atible pump or pump com				
Gradient	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t limit, e.g. in case of rate. If a gradient-compa bination has been of can be set under De	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure clogging or an excess flow atible pump or pump com connected, the gradient etail View. Some pumps				
Gradient	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t limit, e.g. in case of rate. If a gradient-compa bination has been of can be set under De have to be configur	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure clogging or an excess flow atible pump or pump com connected, the gradient etail View. Some pumps red as gradient pump				
Gradient	slide controls or via Minimum pressure: after 30 seconds, if the minimal pressur case, if a leak is occu the system. Maximum pressure the pump switches pressure excesses t limit, e.g. in case of rate. If a gradient-compa bination has been of can be set under De have to be configur	the text field. The pump switches off the pressure goes below re limit. This may be the ured or air bubbles are in : To protect the column, off immediately, if the he maximum pressure clogging or an excess flow atible pump or pump com connected, the gradient etail View. Some pumps				

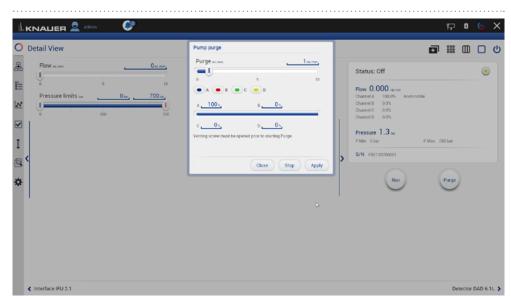
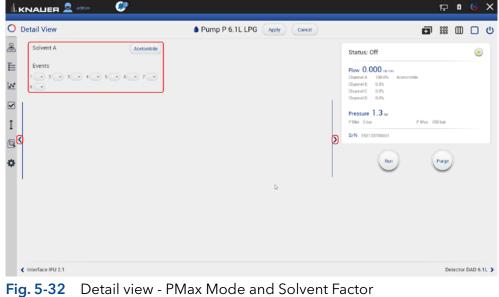
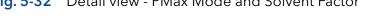


Fig. 5-31 Detail view - Pump purge

-		-
Purge		e this function, to remove air from the mp 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>.</purge>
		er to the corresponding pump instruction

for further informations.





Sc	lvent factor	Use one of the blue arrow buttons () to switch to further settings. Select the solvent channel A,B,C or D and the solvent. For other solvents than listed, select the text field in las row of the list and enter the factor of com- pressibility for a user defined solvent. In LPG mode, you can only select one sol- vent factor, even the eluent consists of more than one solvent.					
		i N P	<b>lote:</b> Solvent ntered for th 6.1L and P 2	: factor can o e AZURA® pເ .1L.	nly be umps		
PN	Лах Mode	pump P & mine how pressure If PMax W to run wit in order t flow shou current ta eluent co Switch th	tion is only su 5.1L. It enable v the pump re is reached. Iode is activa h set pressur o keep the pr arget flow to p onsumption d e PMax Mode w. Confirm yc	s settings wh eacts when m ted, the pum e. The flow is essure. The n ly in the rang prevent enorr uring leakage e on and ente	ich deter- aximum p continues adjusted naximum le of your mous e. er the max-		
the second					🖓 🖞 🖓 X		
	Settings	P Max mode			Apply Cancel		
1111 830	General Configuration Management	Na off On Sk Max flow	1 <u>L LPG</u> , 700001	Connectors Start input Analog Output	Enabled		
2°	Network Settings Preferences About	IP DHCP Static	Cancel Ok 10001,	Offset Full scale Signal source	3.00=r		
Ι	Instruments	IP address Subnet mask	255.255.255.0	Time constant	Disabled		
	Pump P 6.1L LPG	Gateway	172.16.5.1	Pressure Offset	0.15		
۵	Detector DAD 6.1L	Leak Sensor		Actual interpreted pressure	1		
	Interface IFU 2.1	Sensitivity	Low		Set to Zero Reset		
	User Management	Pump Head Settings Pump head	auto detect	Factory Settings			
	* admin	Mixing chamber	100 µl.	Restore defaults	Reset		
	Demo Advanced Settings	Pump Gradient Type		Eluent control	off on		
	Energy Options	Gradient type Constant pressure	LPG off on	Рмах	off		

#### Fig. 5-33 Activation of PMax mode

<b>Events</b> (from supported devices)	Events can be programmed or manually acti- vated. They operate external devices (refer to the instructions of the respective device for more information)
	Choose between ON, Pulse and OFF.

#### 5.5.9 Valve

#### 5.5.9.1 2 position valve

	admin 🚱	P	8	6	×
O Detail View	⊘ Valve 6Port 2Pos Apply Cancel	000	▥		ወ
Position	1 2 Status: Idle				
Ξ	Position 2				
12	S/N 19415470000				
	2				
I	2				
Q					
		Du	mo P 6		
		Pu	mp P 6		~G 👂
Fig. 5-34	Detail View - Example 6 port 2 position valve				
Position	Choose between Load and Injection.				
	Confirm your setting with <apply>.</apply>				
	You can also touch the valve and char	nge	e t	he	è

#### 5.5.9.2 Multiposition valve

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

position.

	admin 🥙			F	8	6	×
O Detail View		Valve 6Port 6Pos Apply Cancel Cancel	ø	000	▥		ሀ
Position	4.		Status: Idle			۲	
			Position Position 4				
N Prev	Next		S/N FVH194700005				
¢	4		Q				
< Pump P 6.1L LPG		I be the second		Pi	ump P	6.1L LP	G 🕽
< Pump P 6.1L LPG Fig. 5-35	Detail View - Ex	ample multiposition val	ve	Pi	ump P	6.1L LP	G )

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

#### 5.5.10 Synchronized switching

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

Valve 6Port 6Pos     Apply     Cancel	
. a.	Status: Idle
	Position Position 3
, J	5/N / / ///////////////////////////////
ew - Example synchronized v	Pump P & 1 L LPG
·····	
port of valve and cha	ange the position.
	hed to the previous or
	Next

# 5.6 Eluent Control

i

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

Ŀк					<b>∻</b> ۵	© >
) :	Settings	Pump P 6.1L HPG			Apply	Cancel
3		Name	Pump P 6.1L HPG	Connectors		
	Instruments	Serial number	FAM141110011	Start input		Enabled
	Pump P 6.1L HPG	Network Settings		Analog Output		
	③ Valve 6Port 2Pos	IP Port	10011_	Offset		0.00
	Valve 8Port 4Pos	DHCP Static		Full scale		5V
	Valve 6Port 6Pos	IP address	192.168.1.109	Signal source		Flow
	Column Sel. Valve	Subnet mask	255.255.128.0	Time constant		0.1 s
	Column Sel. Valve	Gateway	192.168.1.109	Pressure Offset		
	Valve 16Port 16Pos	Leak Sensor		Actual interpreted pressure		0
	Detector UVD 2.1L	Sensitivity	Low		Set to Zero	Reset
	Assistant ASM 2.2L	Pump Head Settings		Factory Settings		
	Assistant ASM 2.2L	Pump head	auto detect	Restore defaults		Reset
	X Assistant ASM 2.2L	Mixing chamber	250 µL (bio.)	Hestore deladits		neset
	User Management		soo he (oro.)	Eluent control		off o
	Demo	Pump Gradient Type		P Max mode		of
	Advanced Settings	Gradient type	HPG			
	Energy Options	Constant pressure	off on			

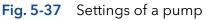
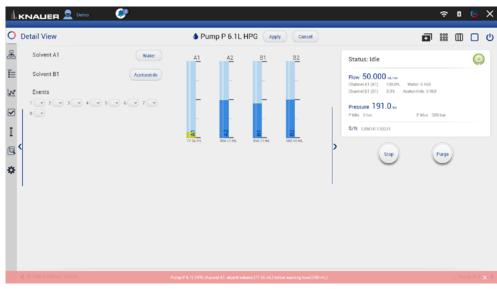




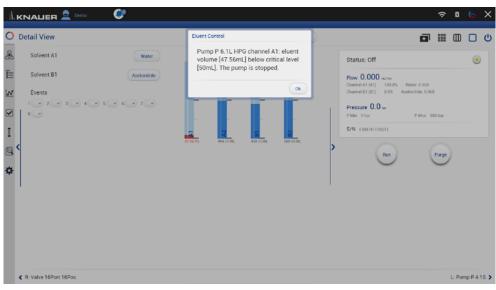
Fig. 5-38 Detail View of a pump showing the level indicator of Eluent Control

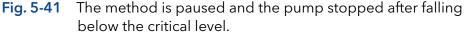


Fig. 5-39 System Overview of a pump showing the level indicator of Eluent Control









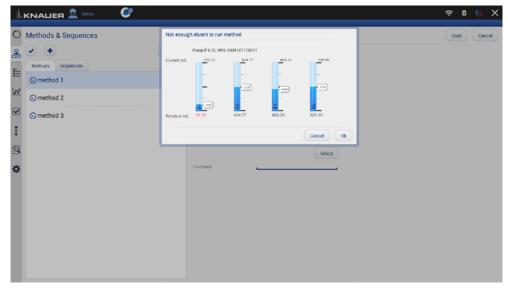
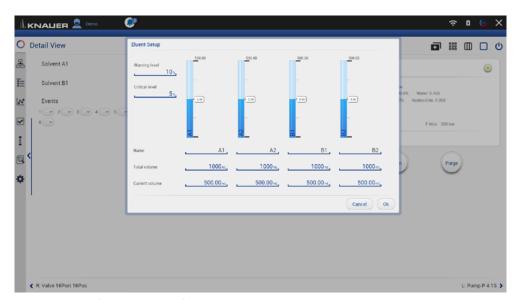


Fig. 5-42 A method is not started if there is too little eluent.





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



# 6. Methods & Sequences

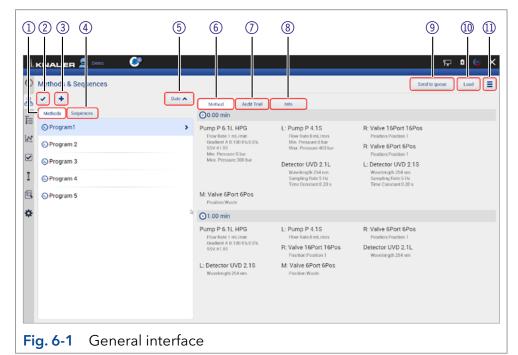
In this menu you can create your individual methods and add them up to a complete sequence.



Note: Mobile Control saves by default all result files in

C:\Mobile Control\Projects\Project folder\*\Results\Queue\_date\_time. \* The project folder is named default or can be renamed in Mobile Control settings > user management.

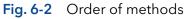
# 6.1 General interface



#### Legend

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

ıl.	KNALIER 👤 Demo  🥙					Ð	8 😔	×
0	Methods & Sequences					Send to queue	Load	
器	• •	Date A	Method Audit Trail	linfo				
≣	Methods Sequences	Date	🕑 0.00 min					
	S Program1	Date	Pump P 6.1L HPG Flow Rate:1 mL/min	Valve 6Port 2Pos Position Position 1	L: Pump P 4.1S Flow Bate 0 mL/min			
<u>In</u>	🕟 Program 2		Gradgent A B:100.0%:0.0% SSV.A1 B1	Postor Column	Min. Pressure:0 bar Max. Pressure:400 bar			
	🕓 Program 3		Min. Pressure:0 bar Max. Pressure:300 bar	M: Valve 6Port 6Pos Position Position 1	Detector UVD 2.1L Wavelength:254 nm Sampling Rate:5 Hz			
I	O Program 4		R: Valve 6Port 6Pos		Time Constant 0.20 s			
	O Program 5	>	Position.Waste					
⇔			⊙10.00 min					
			Pump P 6.1L HPG Flow Bate:1 mL/min	Valve 6Port 2Pos Position:Position 1	L: Pump P 4.1S Flow Rate:0 mL/min			
			Gradient A B 0.0% 100.0% SSV:A1 B1	M: Valve 6Port 6Pos Position Position 1	Detector UVD 2.1L Wavelength: 254 nm			
			R: Valve 6Port 6Pos Position Waste					



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

1					F 🛛 🕤	×
I S R W	Methods & Sequences	Audit Trail     Audit Trail     Output     Devine P 6.1L HP6     Prime Rater 1 nd min     Orderer A B 100 0% 0%     SSYA1 B     Min: Pressure 0 bar     Max: Pressure 0 bar	Valve 6Port 2Pos Position Position 1 M: Valve 6Port 6Pos Position Position 1	Send to queu L: Pump P 4.15 How fate 0 mi / mm Max Pressure 0 bar Max Pressure 0 bar Detector UVD 2.1L Warelengh 254 cm Sampleo flate5 12 Time Constant 0.20 s	e Load Preview Edit Delete Save As Export	un ک
@ *	O Program 5	R: Valve 6Port 6Pos Position Waste				
*		Pump P 6 1L HPG Flow Rate:1 teL/min Gradent A B 0 0% 100 0% SSVA1 00 R: Valve 6Port 6Pos Position Waste	Valve 6Port 2Pos Position Position 1 M: Valve 6Port 6Pos Position Position 1	L: Pump P 4.18 Flow flate 0 mL/min Detector UVD 2.1L Wavelength 254 nm		



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

#### Legend

- Add method: Create your own method and edit all settings.
- ② Add sequence: Create a sequence by adding methods.

#### 3 Import:

Import Mobile Control methods. Data format is \*mcp.

i

Methods & Seguinces			Send to queue	Load
B Add method	Method Audit Trail	Info		
Program 2     OProgram 4	Pump P 6.1L HPG Flow Kate 1 mi/min Gradient A B 100 0% 0% 0% SSV 41 B Min. Pressure D bar Min. Pressure 300 bar	Valve 6Port 2Pos Position Position 1 M: Valve 6Port 6Pos Position Position 1	L: Pump P 4.1S Flow Rate 0 mL Ann Mm. Pressure 8 bar Marx Pressure 300 bar Detector UVD 2.1L Wenefatigh 254 on Sampling Rate 3 for Time Constant 0.20 s	
© Program 5	R: Valve 6Port 6Pos Position.Waste			
¢	C 10.00 min Pung P 6.1 L HPG Tow Rate: Individ Gastra II R: Valve GPort GPos Postnon Waste	Valve 6Port 2Pos Position Position 1 M: Valve 6Port 6Pos Position Position 1	L: Pump P 4.1S Flow Rusc 0 mL/min Detector UVD 2.1L Wavelength 254 nm	

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

# 6.2 Add a method

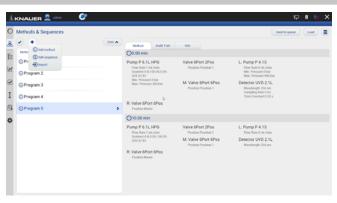
#### Process

i

1

- **1.** Go to Methods & Sequences.
- 2. Select <+> and tap "Add method".

#### Figure



#### **3.** Name your method.

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

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

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

7. Confirm your settings with <Save>.

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

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

Methods > Add Method J	xample 1		Save Oose
Settings Duent Deliver General	y Sample Injection Detection Fraction Collection		
General	Rut Time	10 min	
Start Of Run Settings			
	Autopero at start 5		
0	Waiting for trigger		
	Waiting for temperature		
3	Skp autosampler injection		
End Of Run Settings			
1	Standby		
	Flow off		
	Lampici off		
Auxiliary Traces			
Pump P 6.1L UPG	Pump P.6.15, LPG - Pressure	~	
Autosamplier AS 6, 11,	Autosampler AS 6.1% - Tray Temperature	×	
Yalve 6Port 2Pos	Value 6Port 2Pos - Position	~	

#### Fig. 6-6 Settings

Fig. 6-5 Add a method

	KNALIER 🚨 🚈 🛛 🥑			🖓 🖬 🤤 🕻
2	Methods > Add Method Example	1		Save Class
	Settings Duent Delivery S	ample Injection Detection Fraction Collection		
		Waiting for trigger		
		Waiting for temperature		
		Skip autosampler injection		
	End Of Run Settings			
		Standay	*	
		Films off	8	
		Lamp(-) off		
	Auxiliary Traces			
	Pump P 6.1LLPG	Pump P.6.%, LPG - Pressure		
	Autosampler AS 6.1L	Autosampler AS 5.1% - Tsay Temperature	2	
	Yahe-Mart 2Pos	Value 6Port 2Pos - Position	×	
	Detector DAD 6.15,	Detector DAD 6.1L - Lamp Temperature	2	
	Frae. Collector Forg III	Fraz. Collector Foxy R1 - Position	2	
	Reports			
		System Configuration		

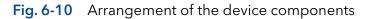
#### Fig. 6-7 Example of End of run settings

C	Methods & Sequences					Send to game Load
Ł.	<ul> <li>•</li> </ul>	Date A	Method Audit Trail	Info		
-	Methods Sequences		⊙0.00 min			
× m 1 2 1	© Program1 © Program 2 © Program 3 © Program 4 © Program 5 © Exemple 1	,	Pump P 6.1L LPG Too Role 1 at Jan Mar Pressure 700 har Mar. Pressure 700 har Frac. Collector Foxy R1	Autosampler AS 6.1L Injection Type Parall copill Sympt Special Monal With A Copiling Systems (Source State With Times 3 Paral Natures 3) (A Cardie Hospitz 2,0 mm Art Seymen 201 Hospitapace Pressure Off Thampart Volume 1	Valve GPort 2Pos Poston Poston Detector DAD 6.1L Wareiength 1254 on Wareiength 2254 on Wareiength 2254 on Wareiength 2254 on Bandwalth 28 on B	
			Position Waste			
			⊙10.00 min			
			Pump P 6.1L LPG Flow Rate 1 mL/min Gradient 100 0% 0 0% 0 0% 0 0%	Valve 6Port 2Pos Position Position 1	Detector DAD 6.1L Wavelength 1.254 nm Wavelength 2.254 nm Wavelength 3.254 nm Wavelength 4.254 nm	



# 6.3 Method interface

I Construction  Method: > Add Method Entermethod wine  Sentropy  Method: > Add Method Entermethod wine  Sentropy  Pump P6 ILLPG  Pump P6 ILLPG  Pump P6 ILLPG	5 6 column & Pergbery Detection Command/Property Flore Rate Gradient Min: Pressure Max Pressure Conduction Flore Rate Gradient	Value A	
Ú.			
Fig. 6-9 General inter	face		
<ol> <li>Legend         <ol> <li>Settings (refer to chapt</li> <li>Eluent Delivery (refer to</li> <li>Sample Injection (refer to chapter 6.6)</li> <li>Name the method</li> <li>Detection (refer to chapter 6.6)</li> <li>Fraction Collection (refer to chapter 6.8)</li> <li>Save the method</li> </ol> </li> </ol>	o chapter 6.5)	<ul> <li>8 End input without s</li> <li>9 Add a method line, copy of the previou</li> <li>10 Delete whole method</li> <li>11 Add a command/pi</li> <li>12 Delete method para</li> <li>13 Set a variable for the parameter</li> <li>14 Select an instrument</li> </ul>	it is always a is line. od line roperty ameter e method
O System Overview			<b>四 III 〇 〇</b>
Eluent Delivery Pump P 2.1L LPG Ternary	Sample Injection Valve 6Port 6Pos	Column & Periphery Thermostat CT 2.1	Detection Detector 500
	PWDH750208	PC2311810877	
Methods > Add Method _Enter method name Settings	Column & Periphery Detection		Save Close
Time Instrument 0.00 m, Pump P 6.1L LPO		Value	+ (x) (B)
	Flow Rate Oradient Min. Pressure Max. Pressure	A B C D D  	x x
Pump P 6 11 LP0	Flow Rate Gradient	1, A0, B0, C0, D0,	x (1)

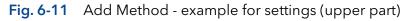


**Practical tip:** For easier handling, all device components in the menu "Methods" are arranged in the same way as the tabs in menu "System Overview".

¢

# 6.4 Settings

l.	KNALIER 👤 admin 🧲	¢		F 🛚 🕞 🗙
С	Methods > Add Method Enter m	ethod name		Save Close
2	Settings Eluent Delivery	Sample Injection Column & Periphery Detection		
	General	Run Tame	10 min	
¥	Start Of Run Settings	Autozero at start		
		Waiting for trigger		
I		Waiting for temperature		
3		Skip autosampler injection		
5	End Of Run Settings			
•		Standby		
		Flow off		
		Lamp(s) off		
	Auxiliary Traces			
	Pump P 6.1L LPG	Pump P 6.1L LPG - Pressure	· · · · · ·	1
	Valve 6Port 2Pos	Valve 6Port 2Pos - Position		
	Thermostat CT 2.1	Thermostat CT 2.1 - Temperature	~	



ıi.	KNALIER 👤 🚥 🕐		₽ ● <b>×</b>
0	Methods > Add Method Enter method name		Save Close
&	Settings Duent Delivery Sample Injection Column & Peript	ery Detection Fraction Collection	
& 11 22	R Valve 16Pos	Valve 16Port 16Pos - Position	2
N.	Reports	System Configuration	
		Method	
I		Synteen logs	
0		Results	
\$	Exports	Cute Rate traces	
		XY Takes	
		s/TML graph	
	Fraction Collection		
		Signal	Detector UVD 2.15 - Signal
		Few	Pump P 6 1L HPG
		After last vial	Waste & Continue method & Stop gueae
		Reset rack on start	*
	Integration Parameters Detector UVD 2.1L - Signal	Integration off	2
		Negative peaks	
		Thevaluoid	0.1
		Wath	0.1
		Misimum area	5,



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

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

# 6.5 Eluent Delivery

#### Legend

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

	2	3	( <u>4</u> )	
Methods > Add	Method Enter n ethod name Eluent Delivery Sample Injection	Column & Periphe r Detection		Save
Time	Instrument	Comm ind/Property	Value	+
≝ <u></u> ≮	Pump P 6 1L LPG	Flow Rate Gradient Min. Pressure Max. Pressure	ABB, CB D, D	x x
1 3 <u>10.00</u> , *	Pump P 61LLPG	L. Flow Rate Gradient	 A05_ B5, C5 D5,	x 8
Fig. 6-13	Methods - E	xample for Sam	ple Injection	

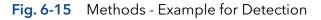
# 6.6 Sample Injection

Settings	Eluent Delivery Sample Injection	Detection Fraction Collection		
Time	Instrument	Command/Property	Value	
	Autosampler AS 6 11	Injection Type Synrige Speed Sould Wash Tenes Flash Volume Nevdle Henght Air Segment Hendsace Pressure	Pertial Loopfit Normal 5 1 30 g. 20 011 On 5	ø
<u>0.10</u> m, x	Valve 6Port 2Pos Valve 6Port 2Pos	Transport Volume Position Position	None 1 2 1 2	x x x ø

Fig. 6-14 Methods - Example for Sample Injection

# 6.7 Detection

	d Method Program 5			Save
Settings	Eluent Delivery Sample Injection	Detection Fraction Collection Command/Property	Value	
0.00min	Detector DAD 6.1L	Wavelength 1	254	x Ø
		Wavelength 2	254	
		Wavelength 3	254	x x x
		Wavelength 4	254m	x
		Bandwidth 1	8.m.	
		Bandwidth 2	8	4
		Bandwidth 3	8 m.	
		Bandwidth 4	8 m.	
		Sampling Rate	5 Hz	
		Time Constant	0.20 s	
10.00 mm	Detector DAD 6.1L	Wavelength 1	254am,	x Ø



# 6.8 Fraction Collection

1

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

Settings         Elaent Delivery         Sample Injection         Detection         Fraction Collection           Time         Instrument         Command/Property         Value           0.00ms         Fract Collector Forg RI         Position         Visite	
	a.
10.00ms Frac Collector Fory R1 Position Waste	
4	

Fig. 6-16 Methods - Example for Fraction Collection

# 6.9 Export and import methods



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

#### Process

#### Export

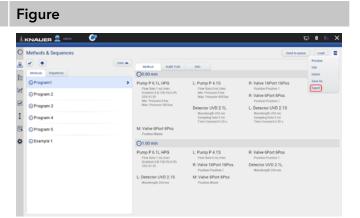
- **1.** Go to METHODS & SEQUENCES and choose the tab "Methods".
- 2. Select the method to be exported and tap <Export> in the upper right menu.

3. The method is exported and saved in

C:\Mobile Control\Export:



**Note:** To export more than one method refer to chapter 6.10.



#### Fig. 6-17 Exporting a method

Methods & Sequences				Send to gue	ue Lood 🔳
. 🕑 🛨	Date 🔺	Method Audit Trail	Info		
Methods Sequences		00.00 min			
Program1     Program 2     Program 3     O Program 4     O Program 5     O Example 1	<b>`</b>	Pump P 6.12, HPG Res fairs 1 million on 0h SXX 318 Min. Pressure 5 har Min. Pressure 5 har Min. Yalve 6 Port 6 Pos Position Water () 1.00 min	L: Pump P 4.15 Flow Rate find, Pain Mer, Pressare Bain Main Pressare 40 blar Detector UVD 211, Wavelength 214 an Sangling Trans 5 fit Time Constant 0.20 s	R: Valve 16/Post 16/Pos Postbox Postbox R: Valve 6/Post 6/Pos Postbox Postbox 1 L: Detector V/VD 2.15 Warwhood; 5/t no Sampling faite 5/t Time Constant 0.29 s	b
		Pump P6.1L HPG Then Intel: 1=0.0min Badeet A R 100 0% 0 0% SIVA 1 B1 L: Detector UVD 2.1S Waselength 254 nm	L: Pump P 4.1S Tow Rate I not /non R: Valve 16Port 16Pos Position Position 1 M: Valve 6Port 6Pos Position Wester	R: Valve 6Port 6Pos Position 1 Detector (V/D 2.1L Marcleright 254 nm	

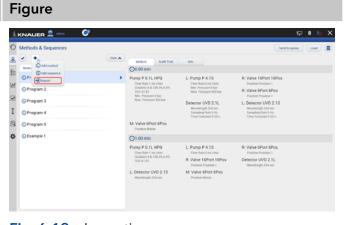
#### Fig. 6-18 Exporting one method

#### Process

#### Import

By selecting more than one program several programs can be imported.

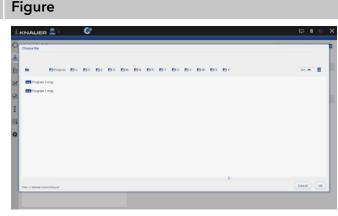
- **1.** Go to METHODS & SEQUENCES and choose the tab "Methods".
- 2. Tap <+> and choose <Import>.



#### Fig. 6-19 Importing a program

#### Process

**3.** A folder opens. Select the method or several methods to be imported.



#### Fig. 6-20 Choosing a file

4. The methods are imported.

1 **	fethods & Sequences				Send to gurue	Laad 🔳
6	e 🔹	Date 🔺	Method Audit Trail	anto .		
	Methods Sequences		30.00 min			
	⊙ Program1 ⊙ Program 2	>	Pump P 6.1L HPG Flow Rate 1 mL/min Gradient A B 100 0% 0.0%	L: Pump P 4.1S Flow Rate 8 mL/min Mm. Pressure 8 bar	R: Valve 16Port 16Pos Poston Poston 1 R: Valve 6Port 6Pos	
	O Program 4		SSV AT E1 Min. Pressure 0 bar Max. Pressure 300 bar	Max. Pressure 400 bar Detector UVD 2.1L	Position Position 1 L: Detector UVD 2.15	
1	O Program 5			Wavelength 254 nm Sampling Pate 5 Hz Time Constant 0 20 s	Wavelength 254 nm Sampling Rate 5 Hz Time Constant 0 20 s	
1	S Example 1	ple 1	M: Valve 6Port 6Pos Position Waste			
			⊙1.00 min			
		Pump P 6.1L HPG Flow Rate 1 mL/min Gradient A 8 100 (%) 0 %	L: Pump P 4.1S Flow Rate B mL/min	R: Valve 6Port 6Pos Position Position 1		
		SSVATET	R: Valve 16Port 16Pos Position Position 1	Detector UVD 2.1L Wavelength 254 nm		
			L: Detector UVD 2.15 Wasslength 254 nm	M: Valve 6Port 6Pos Position Waste		

Fig. 6-21 Importing several programs

# 6.10 Edit, export or delete multiple methods

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

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

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



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

Figure

#### Process

#### Edit multiple programs

- **1.** Go to METHODS & SEQUENCES and choose the tab "Methods".
- 2. Tap the multi select button v to selcet multiple methods.

O Methods & Sequences	Date A	Method Audit Trail	ato	ta	Delete	Diport
Methods Sequences		(0.00 min				
OProgram 1     OProgram 2     OProgram 4     OProgram 5     OProgram 5	>	Pump P. 6.12, HPG Flow Rate I inclutes Galaeria AIN DOPA Day Star All Star All Max. Pressure Day Max. Pressure 300 birs Mr. Valve 6/Port 6/Pos Postoro Watch	L: Pump P 4.15 Flow Rate I on J Yean Mery Pressure 9 bar Mery Pressure 90 bar Detector UVD 2.14 Reselector UVD 2.14 Reselector 2.17 and Earlying Trans 5.14 Time Constant 0.20 s	R: Valve 16Port 16Pos Position Position 1 R: Valve 6Port 6Pos Position 1 L: Detector UVD 2.15 Micrology 251 on Sangling State 510 Time Constant 0.20 s		
		Pump P.6.1L, HPS From Rate 1 mc/man Goddent A 8100 PL 0 PL SSIV-J1 83 L: Detector UVD 2.1S Wavelength 254 fm	L: Pump P 4.1S Flow Retc1 etc./ven R: Valve 16Port 16Pos Posttor Valve 6Port 6Pos Posttor Wester	R: Valve 6Port 6Pos Produce Position 1 Detector UVD 2.1L Wavelength 234 am		

#### Fig. 6-22 Select multiple methods

**3.** Select several methods that you want to edit and press <Edit>.

Methods & Sequences	Date			Ede Delete D
B Methods Sequences		0.00 min	into	
OProgram1     OProgram 2     OProgram 4	<i>b</i>	Pump P 6.1L HPG Flow Rate 1 mL/mm Gradient A 8 100 0h 0.0h SSV A1 85 Mm. Pressure 0 har Max. Pressure 300 har	L: Pump P 4.15 Flow Rate I mL/min Min. Pressure 0 bar Max. Pressure 400 bar Detector UVD 2.1L	R: Valve 16Port 16Pos Position Position 1 R: Valve 6Port 6Pos Position Position 1 L: Detector UVD 2.15
I © Program 5	Ū	M: Valve 6Port 6Pos Position Waste	Wavelength 254 nm Sampling Rate 5 Hz Time Constant 0.20 s	Wavefength 254 nm Sampley Rates 14t Teme Constant 0.20 s
		Pump P 6.1L HPG Plane Mate 1 et / Jmm Godent A 8 100 PL 0 DN SDV A1 83 L: Detector UVD 2.15 Wassingth 254 on	L: Pump P 4.1S Rev Rate I etc/res R: Valve 16Port 16Pos Position Position 1 M: Valve 6Port 6Pos Position Waste	R: Value SPort SPos Present version 1 Detector UVD 2.1L Warehough 204 res

**4.** To select the insruments you want to edit tap <All instruments>.

#### Fig. 6-23 Edit multiple methods

Image         Instrument         Common Of Property           1         0.00 min         21 statements         mm           2         1.00 min         Amments         mm	New Value
1 0.00 min Al instruments Time	
	0.00,
2 1.00 min Al instruments Time	
3 2.00 min All instruments Time	2.00,
4 3.00 min All instruments Time D	3.00,
5 7.50 min Al instruments Tree	7.50

#### Fig. 6-24 Select instruments

5. Choose the instruments you want to edit and press <Ok>.



#### Process

6. Change the time of the program line you want to adjust. If you enter a suffix the program will be copied with program name + suffix. If nothing is entered the program is overwritten.

7. Confirm your settings with <Save>.

Fig	gure			
≜ KN	AUER 💄 🗠	- 💞		<b>₽ ● 6</b> X
O Me	thods > Edit mu	Itiple	(1),	Saw Carol
	Time	Instrument	Command/Property	New Value
Ē	0.00 min	All instruments	Time	
2	1.00 min	Al instruments	(Inc.)	
× ,	2.00 min	All instruments	Time	soi
¥ 4	3.00 min	Al instruments	Test (	
I s	7.50 min	Al instruments	Tex	7.50,
œ.				
÷				
<b>-</b>				

#### Fig. 6-26 Enter a suffix and adjust the time

- Image: Second Second
- **8.** The methods with modified time points have been saved as a copy with the filename + suffix.

#### Fig. 6-27 Updating

Constrained as Sequences
 Constrained

Fig. 6-28 The original method is selected.

to 5 minutes.	Program line three has been changed from 2		JIER 👤 🕬 🛛 🕻	y					무	8 6	×
OI 80 mm Prung P 4.1 LP30 Valve 6Ford 3Pvis Factor 2A0 5.1 L Restored and the second s	to 5 minutes.	E OPri	Separation     S	) (1977) (1977)	CO.00 min Pump P 6.1L I Flow Rate 1 m Gradem 100 Max Pressure Max Pressure Frac. Collector	LPG Jmm to Dr. o Dr. o Dr. o Dar 200 bar r Foay R1	Autosampler AS 6.1L Insection Type Paratal Loopfill Sympy Speed Social 5 Work Typered Normal Sympy Speed Social 5 Work Typered Social 5 Parata Violance 30 pt. Recedie Hopfile 2.2 mg Aa Segnered Citt Headspace Citt	Position Position 1 Detector DAD 6.1L Wavelength 1.254 km Wavelength 2.254 km Wavelength 2.254 km Bandwidth 1.8 km Bandwidth 2.8 km Bandwidth 2.8 km Bandwidth 3.8 km Bandwidth 4.8 km			
					O1.00 min Pump P 6.1L I Flow Rate 1 mi Gradient 100 0	.PG /min hotPhotPhotPh		Wavelength 1:254 nm Wavelength 2:254 nm Wavelength 3:254 nm			

#### Process

#### Delete multiple programs

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

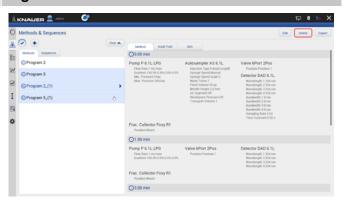


**Note:** Export of several programs works the same way. Instead of delete use the export button.

5. Confirm your selection with <Ok>.

6. The selected programs have been deleted.

#### Figure



**Fig. 6-30** Delete multiple programs

Methods & Sequences	Delete method			Edt Delet	e) Export
Date A	Are you sure you want to selected methods?	delete all			
O Program 2		Cancel CA S 6.1L	Valve 6Port 2Pos		
O Program 5	Flow Rate 1 mi, /min Gradient 110 (% 0 0% 0 0% 0 0% Min. Pressure 0 bar Max. Pressure 300 bar	Insection Type Partial Loophil Syringe Speed Normal Syringe Speed Scale 5 Wash Tenes 1	Position Position 1 Detector DAD 6.1L Wavelength 1.254 ram		
© Program 2_(1) →	Mail Pressure Journal	Flush Volume 30 pl. Needle Height 2,0 mm	Wavelength 2 254 nm Wavelength 3 254 nm		
OProgram 5_(1)		Air Segment-Off Headspace Pressure Off Transport Volume 1	Wavelength 4 254 nm Bandwidth 1 8 nm Bandwidth 2 8 nm		
			Bandwidth 3.8 nm Bandwidth 4.8 nm Sampling Rate 5 Hz Time Constant 0.29 s		
	Frac. Collector Foxy R1 Position Waster				
	©1.00 min				
	Pump P 6.1L LPG Flow Rate 1 mL/mm Gradient 100 PL-0 PL-0 PL-0 PL	Valve 6Port 2Pos Position:Position 1	Detector DAD 6.1L Wavelength 1.254 nm Wavelength 2.254 nm Wavelength 3.254 nm Wavelength 4.254 nm		
	Frac. Collector Foxy R1 Position Waster				
	()3.00 min				

#### Fig. 6-31 Confirm selection

Methods & Sequences	Date 🔺				Send to queue	Load	
	Lose A	Method Audit Trail	otel				
Methods Sequences		0.00 min					
O Program 2	,	Pump 9 6.1L LPG The Rule II. (Vinit Goldent 190 05, 016 016 016 016 Mar. Pressure 200 bar Mar. Pressure 200 bar Frac. Collector Foxy R1 Pudtor Water	AutocampSyr AS 6.1. Insection Type Parkal Logibl Syrings Speed Maximal Syrings Speed Solard 5 Mach Trans 1 Mach Trans 1 Headplace AC and A Soynest Cit Thanpart Voltaria 1	Valve (F)ort 2Pos Position Position 1 Detector (PAD 6.1L Wavelength 1254 em Wavelength 2254 em Wavelength 2254 em Wavelength 2254 em Bandaddh 2.8 em Bandaddh 2.8 em Bandaddh 3.8 em Samgleing Kart 510 Time Constant-0.20 s			
		©1.00 min					
		Pump P 6.1L LPG Row Rate 1 mL/min Gradient 100 0% 0 0% 0 0% 0 0%	Valve 6Port 2Pos Position Position 1	Detector DAD 6.1L Wavelength 1.254 nm Wavelength 3.254 nm Wavelength 4.254 nm			
		Method Program 2,(1) was	deleted				;

**Fig. 6-32** Programs have been deleted.

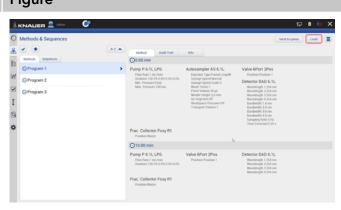
# 6.11 Start a method

#### 6.11.1 Starting a single method

#### Process

#### Figure

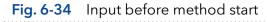
- 1. Go to Methods & Sequences and choose the tab "Methods".
- 2. Press <Load>.



#### Fig. 6-33 Load the method

- **3.** By clicking you will be directed to a new tab with input fields to enter a sample ID, file name and comment. All entries are saved in the result file and part of the report.
- **4.** Select <Suffix> to name the measurement.
- 5. Select the subfolder which was created in Settings/User Management

0	Methods & Sequences					Stat Cancel
8	<ul> <li>•</li> </ul>	#2 A				
r	Methods Sequences		Column:	No Column		
E Z	O Program 1		Start Options			
N	O Program 2		Sample ID.	Suffa		
2	O Program 3		File Name.			
I				Sulla		
6			Sublide:		6	
				Select		
¢			Autosampler Options			
			Vot	Na		
			Injection Volume:	5		



#### You can choose between:

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

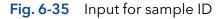
We recommend to choose "Method Name" and "Date and Time".

- 6. Confirm your selection with <Ok>.
- 7. Select <Filename> to name the file.

To avoid same filename, naming of the run has to be individually. We recommend to choose "Method Name" and "Date and Time".

8. Confirm your selection with <Ok>.

		ତ ∎ କ କାର
Methods & Sequences	AZ A BAR HADR	m) m)
	Annexe Applications Annexe Applications Annexe Applications Applicatio	



Methods & Sequences	AZ A	2400	Suet Cancel
Methods Sequences	Instrument Name     Date and Time     Sample D	Sumx )	
© Program 3	Concert Actoampler Options	Canot ge Salar	
	) species Walawe	<u>5</u> ,	

Fig. 6-36 Naming the method

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

KNAUER	👱 orro 🔗	Renting 14 (5.17			FP 🖬 🕒
Program 1	Program 1_2022.10.11_09	-37-30	Resume	Waste Collect (1)	Net (2)
nAU 4					
15					
3		6			
2.5					
2					
1.6					
	Selecter VHD 2 %. Repret 420				
0.5-					
0					
-0.5					

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

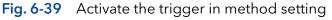
#### Fig. 6-37 Start the run

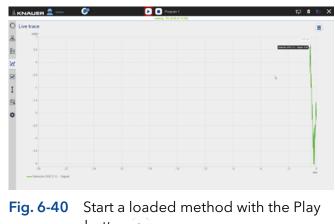
Queue : 00.09.05				Stop queue Pa	une queue
Progress History					
# Name	Type	State Duratio	n File Name	Sample ID	Actions
1 Program.1	Method	Dunning 9.10	Program 1,2022.10.11,19-37-30	Program 1, 2022 10 11, 09-37-30	<b>State</b>
		6			
		4			

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

#### Fig. 6-38 Method in run queue

Methods > Ad	d Method Program	1		Save Close
Settings	Duent Delivery 1	ample Injection Column & Periphery Detection Fr	action Collection	
General		Run Treas	10 mm	
Start Of Run Settin	igs.	D		
		Autopero at start		
2		Mailing for trigger	~	
		Waiting for temperature		
3		Skip autocampler injection		
End Of Run Settin	ps .			
1		Standby		
		Fices off		
		Lampici eff		
Auxiliary Traces				
Pump P 6.1LHPG		Pump P.S. 10PG - Pressure	~	
L Pump P.4.15		Pump P 4.15 - Pressure	<u> </u>	





#### 6.11.2 Starting several programs/sequences

**-**•

#### Process

- 1. Go to METHODS & SEQUENCES and choose the tab "Methods" or "Sequences"
- 2. Choose the program or the sequence.
- **3.** Select <Send to queue>.

	KNALIER 👤 🚥  🧭				P • 0
0	Methods & Sequences				Send to queue
惫	<ul> <li>•</li> </ul>	A2 A	Method Audit Trail	anto	
Ē	Methods Sequences		0.00 min		
	O Program 1	>	Pump P 6.1L HPG Flow Rate 1 mL/min	L: Pump P 4.1S Flow Rate 3 mL/min	R: Valve 16Port 16Pos Position Position 1
2			Gradient A B 100 0% 0.0% SSV A1 81 D Min. Pressure 0 bar	Min. Pressure 0 bar Max. Pressure 400 bar	R: Valve 6Port 6Pos Position Position 1
I			Mas. Pressure 300 bar	Detector UVD 2.1L Wavelength 254 nm Sampling Rate 5 Hz Time Constant 0.20 s	L: Detector UVD 2.15 Wavelength 254 nm Sampling Trate 5 Hz Time Constant 0.29 s
6			M: Valve 6Port 6Pos Position Waste		
¢			()10.00 min		
			Pump P 6.1L HPG Flow Rate 1 mL/min	L: Pump P 4.1S Flow Rate I mL/min	R: Valve 16Port 16Pos Position Position 1
			Gradient A B 100.0% 0.0% SSV A1 B1	R: Valve 6Port 6Pos Position Position 1	Detector UVD 2.1L Wavelength 254 nm
			L: Detector UVD 2.15 Wavelength 254 nm	M: Valve 6Port 6Pos Position:Waste	

# Fig. 6-41 Send a method or sequence into the run queue

**4.** If you select <Send to queue> you have two further options:

a) <Send with high priority> means the sequence will start at first or next if a method is already running.

b) <Send to the end> means the sequence is inserted at the last position of the run RUN QUEUE.

5. Select the menu RUN QUEUE which shows a list of all added methods and sequences. You can delete or rearrange the order of

6. Press <Start queue> to start the run.

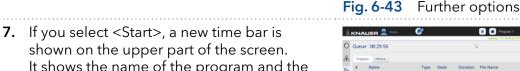
methods/sequences.

 Image: Control of the second secon

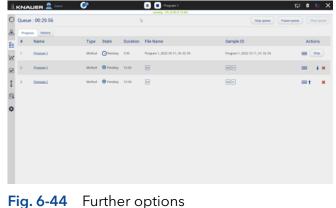
#### Fig. 6-42 Further options

6

22 2 2292ml Method 0 Presiding 10.00 ⊡ ⊡C 0011 4	0	Queue	00:30:00					Start queue	Passe quese Oran quese
Image: Second	&	Propes	History						
March         Descent         Descent <thdescent< th=""> <thdescent< th=""> <thdes< th=""><th>Ē.</th><th>•</th><th>Name</th><th>Type</th><th>State</th><th>Duration</th><th>File Name</th><th>Sample ID</th><th>Actions</th></thdes<></thdescent<></thdescent<>	Ē.	•	Name	Type	State	Duration	File Name	Sample ID	Actions
2         Dargamini.         Matchine of Pressing 10.00         Matchine of The State         Matchineof The State         Matchine of The State<	N.	1	Program.1	Method	O Pending	10.00		W IT	📼 🕴 🗙
I 2 Desert Method Ørnolog 1000 m mm mm mm m m m m m m m m m m m m		2	Program.1	Method	O Pending	10.00		an er	
•		3	Doyun.1	Method	Pending	10.00		W II	⊟t ×
	¢								



- It shows the name of the program and the progress of the run.
- 8. You can abort the run by pressing <Stop>.



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

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

0	Queue	: 00:02:00						Stop queue Passe que		Orar q	
8	Proper	a Hotory									
n.	•	Name	Type	State	Duration	File Name		Sample ID	A	tions	
N.	1	Program.1	Method	Otherwing	0.01	Program 1,2022.10.11,10-38-43		Program 1, 2022 10 11, 10-38-43	•	Stop	
	2	Program.1	Method	0 Pending	1.00					4	×
I	3	Doyan1	Method	Pending	1.00	80			<b>=</b> 1	ł	×
¢							b.				

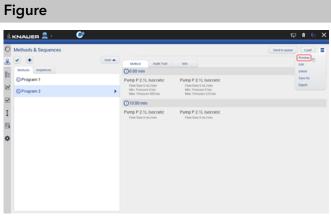
Fig. 6-45 Method is finished and status lines are shown.

#### 6.11.3 Preview run

#### Process

#### **Preview run**

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





0	Methods & Sequences				Send to queue	and ) (
8	<ul> <li>•</li> </ul>	AZ .	Method Audit Trail	anto .		
-	Methods Sequences		0.00 min			
	O Program 1		Pump P 6.1L HPG	L: Pump P 4.1S Flow Rate I mi./min	R: Valve 16Port 16Pos Position Position 1	
2	O Program 2	>	Flow Rate 1 mL/min Gradient A B 100.0% 0.0% SSV A1 B1 Min. Pressure 0 bar	Flow Rate II mL/min Min. Pressure II bar Max. Pressure 400 bar	Position Position 1 R: Valve 6Port 6Pos Position Position 2	
I			Max. Pressure 300 bar	Detector UVD 2.1L Wavdength 254 nm Sampling Rate 5 Hz Time-Canotat 0.20 s	L: Detector UVD 2.15 Wavelength 254 nm Sampling Rate 5 Hz Time Constant 0.20 s	
3			M: Valve 6Port 6Pos Position Waste			
¢			00.10 min			
			R: Valve 16Port 16Pos Position Position 2	R: Valve 6Port 6Pos Position Position 3	M: Valve 6Port 6Pos Position Collect to 1	
			(0.20 min			
			R: Valve 16Port 16Pos Position Position 3	R: Valve 6Port 6Pos Position Position 4	M: Valve 6Port 6Pos Position Collect to 4	
			0.30 min			
			M: Valve 6Port 6Pos Position Next			
			On in whe			

Fig. 6-47 Preview run is started

# 6.12 Audit trial

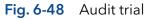
#### Process

The audit trial records all changes in methods/ sequences. A list summarizes all altered commands by a user with a timestamp. The audit trial can be activated in the settings of Mobile Control (refer to chapter 12.1.4 Preferences).

If you press <Method> you return to the window with Methods and Sequences.

#### Figure

Methods & Sequences						Send to queue	Load	۳
<b>€ ⊘ ●</b>	A-2 ¥	-	od Audit Trail	anto				
Methods Sequences		User	Logged	Source	Activity			
O Program 7		admin	13.10.2022, 15.05.17	P 2.1L, UVD 2.15	New method created			
Program 6		admin	13.10.2022, 15.06.01	P21LWD215	2 line(s) added Fain time (min) of line 2 changed from For instrument Detector UVD 2.15 at 8	18:00 to 0.10 me 2 Wavelength: 254 nm d	elected	
Program 5								
© Program 4								
Program 3								
1								
Program 2								
Program 2								
Program 2								
Program 2     Program 1								
© Program 2 © Program 1 © example 4								
Program 2     Program 1     example 4     example 3								



### 6.13 Add a sequence

# Process Figure 1. Go to METHODS & SEQUENCES. Image: Control of the sequence". 2. Select <+> and tap "Add a sequence". Image: Control of the sequence 3. Name your sequence. Fig. 6-49 Add a sequence 3. Name your sequence. Image: Click on the <+> Add method to choose one of the existing methods. Further you can add the sample ID, file name, a comment or set the number of repetitions.

Fig. 6-50 Name a sequence

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

O Add method to sequence	Select method	Save Carce
& Method	Program 1	
	Program 2 Program 3	
Column type	No Columna Program 4	
Repetitions per stat Start Options		
Swith D	( sau )	
Fite Name		
¢ hanner.		
	(Select	

#### Fig. 6-51 Add method to sequence

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


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

#### You can choose between:

- Increment Number
- User Name
- Method Name
- Instrument Name
- Date and Time
- **10.** Confirm with <Ok>.

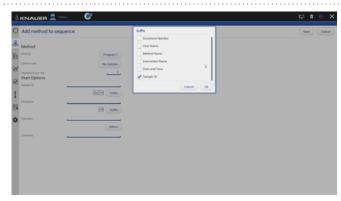


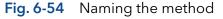
#### Fig. 6-53 Sample ID

**11.** Name the Filename and select <Suffix>.

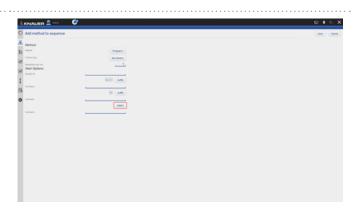
#### You can choose between:

- Increment Number
- User Name
- Method Name
- Instrument Name
- Date and Time
- Sample-ID
- **12.** Confirm with <Ok>.





**13.** Tab <Subfolder> to select a subfolder.



#### Fig. 6-55 Select a subfolder

0

#### **14.** Select the repetitions per vial.

**15.** Confirm your settings with <Save>. You will be directed to a new window.

• •	• •	• •	• •	٠	•			*	٠	• •	. *	٠	• •	*	•	• •	*	•	• •	• •	٠	•	• •	•	٠	٠	• •	•	٠	• •	٠	• •	•	٠	• •	•	•	• •	٠	• •		• •	٠	• •	*
1	6	).	ŀ	7	l	i	S	st		s	ι	J	n	n	r	n	lá	a	r	iz	Z	e	2	5	ć	Э			p	)	~(	C	S	J	ſ	Э	n	n	S	;	t	h	е	•	
			S	ie	e	С	1	u	•	Э	r	۱¢	2	e	5	5.																													

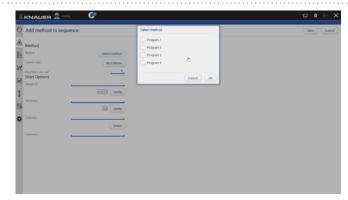
- **17.** Click on the pen symbol to edit the sequence. Click on the red cross to delete the program.
- **18.** Press <Save> to save the sequence.
- **19.** Select the <+> symbol to add the next program. Add the next program.
- 20. Select the program.
- 21. Proceed in the same way as done with first program (Sample naming).

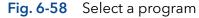


#### Fig. 6-56 Set repetitions



#### Fig. 6-57 Overview of sequence





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

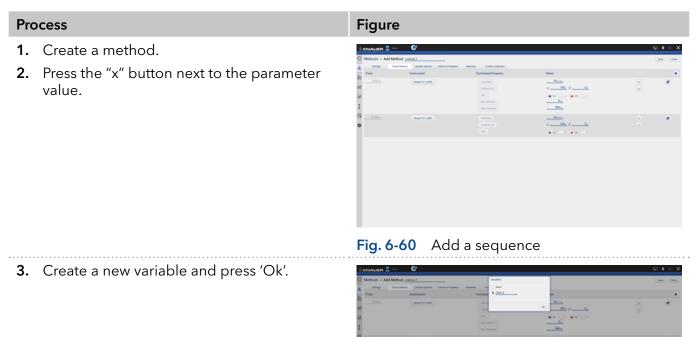
1	ĸN	AUEF	👤 temo	<u>e</u>		🖓 🖬 🖓
0	Add	sequer	ice <u>Enter seque</u>	nce name		Save Cancel
&	+	ldd meth	od			Sequence report: Po
Ē		Peps	Sample ID	Method	Actions	
N.	1	2	-	Program 1	🖂 🗶 🗶 🕴	
	2	1	-	Program 2	🖂 🖊 🗶 🕇	
I						
ß						
¢						
					b	

Fig. 6-59 Overview of sequence

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

# 6.14 Variables

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





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

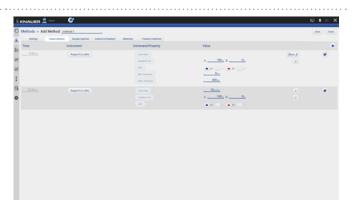


Fig. 6-62 Create more or select existing varaiables and save the method

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

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KNAUER 🖴 🛛 💞					
Methods & Sequences					and Gene
emethod 1     Comethod 2     Comethod 3	Date A				
Metoda Segences		Column.	Netsteen	Variables	
Omethod 1	,	Start Options		Name II.	Herea
() method 2		beye 0			
©method 3		File Name			
			9 mm		
		Sublisher.			
		(means)	Select.		
		1.000.000	·		

Fig. 6-63 Select a column

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

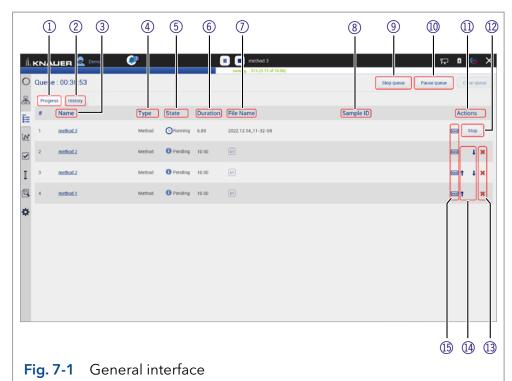
# 8

# 7. Run Queue

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

# 7.1 General interface

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



# Legend

- ① Tab <Progress> shows the sequences that still have to be processed.
- ② Tab <History> shows the sequences that have already been processed.
- ③ Name of the method/sequence
- ④ Type of the method/sequence
- (5) State Pending, Running, Completed, Aborted
- 6 Duration of the method/sequence
- (7) File name of method/sequence (refer to chapter 6.11)
- (8) Sample ID (refer to chapter 6.11)
- (9) <Stop Queue> aborts the actual method/sequence
- (1) <Pause Queue> immediately pauses the run. You can decide whether the flow is off or kept on.
- (1) Actions you can stop methods/sequences.
- Stop> will immediately terminate the item currently running in the queue and pause the sequence.
- (1) Delete method/sequence from run queue
- (A) Rearrange order of methods/sequences
- (15) Show comments

# 7.2 Show progress and history

Figure

# Process

#### Tab <Progress>

1. You can view all queued methods/sequences.

h,		ER 👤 Demo	٢			Program 2 running 15 (0.12 of 10.00)		🖓 🖻 🖓 🔪
0	Queue : 0	00.21:52					Stop queue	Passe quese
8	Progress	History						
n.	# N	lame	Type	State	Duration	File Name	Sample ID	Actions
N	1 0	ogram 2	Mikod	Offering	9.00	2,2022.10.11,12-33-05	2,20221011,12-33-05	<b>B</b>
2	2 <b>)</b> - 10	njuence.]	Sequence	O Pending	12.00			×
I								
8								
¢								

#### Fig. 7-2 Show progress

- Select <Pause Queue> to hold the flow with the following options:
   Hold
  - Hold with flow off

ji.	KNAI	uer 👤 🚥	6		🔳 🔳 Program 2		🖓 🖻 🛱
0	Queue	: 00.21:08			Stop Flow	Stop queue	Passe queue Ocor queue
æ	Proper	ss History			• Hold		
ΤΞ		Name	Туре	State	Hold with flow off	Sample ID	Actions
2	1	Program.2	Method	Ofurning	Canot (R	2,29221011,12-33-05	<b>Stab</b>
	2.3	sequence.1	Sequence	O Pending			×
I							
œ.							
¢							

Fig. 7-3 Pause Queue

### Process

#### Tab <History>

**1.** You can view all previous performed methods/sequences.

F	ig	ure						
ii.	KNA		6,				<del>प</del> ्र	∎ G X
0	Queu	e : 00:12:00					Start queue Passe queue	Chear querue
æ	Prop	Holory						
Ē	۰.	Name	Type	State	Duration	File Name	Sample ID	
W.	1	Program.2	Method	O Aborted	10.00	2,20221011,12:35:05	2,2022.10.11,12-33-05	•
	2	Program.1	Method	O Finished	1.00	1_2022 10 11 12 31 52	1,2022.10.11,12-31-52	
I	3	Daguan.1	Method	O Aborted	1.00	Proyram 1.2022.10.11.11.19.24	Program 1.2822.10.11.31-19-24	
ß	4	Program.1	Method	O Finished	1.00	Program 1.2022.10.11.10-62-12	Program 1.2022.10.11,10-42-12	-
¢	5	Crossen.1	Method	0 Finished	1.00	Program 1.2022.10.11.10.29.51	Program 1.2022.10.11,10-39-51	-
	6	Program.1	Method	O Finished	1.00	Program 1, 2022.10.11, 10-36-43	Program 1, 2022.10.11, 10-38-43	
	r	Program.1	Method	O Canceled	10.00	Program 1, 2022, 10, 11, 10, 38, 63	Program 1_2022.10.11_10-38-03	-
	•	Program.1	Method	O Aborted	10.00	Program 1.2022.10.11.10.37.38	Program 1.2022.10.11,10-37-38	-
	,	Program.1	Method	O Aborted	10.00	Program 1.2022.10.11.10-36-52	Program 1.,2022,10.11,10-36-52	-
	14	Personal I	11-0-1	0	10.00	Received & 4999 1411 14 14 14	Parameter & MONTON TO THE ME	-

## **Fig. 7-4** Show history

- 2. You see a list with important data of the method/sequence.
  - Name of method/sequence which is linked to the corresponding entry in Methods & Sequences
  - Type (method/sequence)
  - State
  - Duration
  - Filename which is linked to the folder which holds the result file, reports and exports
  - Sample ID
  - Comments
- 3. To return, select < Progress>.

O Outore: 00.11.49         Stop pear         Pear queet         Outore           R         Property         Marte         Type         State         Duration         File Name         Sample1D         Actions	I KNALER 💂 🚥	Phogram 1 controls		두 8 🤤
# Name     Type     State     Duration     File Name     Sample 10     Actions       1 > assassa1     treporter     Offering     12.00     me       2	O Queue : 00:11:49		Stop queue	Passe queue Onar queue
g 1> mammal. Separat Observing 1220	B Propess Hotory			
g 1> mammal. Separat Observing 1220	# Name	Type State Duration File Name	Sample ID	Actions
L L	1 > aspanos.)	Sequence Offunning 12.00		Shop
3	8			
, ,	1			
,	8	ů.		
	>			

#### Fig. 7-5 History list

#### --



# 8. Chromatogram view

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

# 8.1 Live traces

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

KNALIER 👤 🕬 🤎			🖓 🖣 🖓
Settings	Preferences		Apply Canc
General	Pressure Units Used for all applicable instruments	• bar MPa psi	
Configuration Management	System Detector Units	AU • mAU µAU	
Network Settings	Used for all applicable instruments	mRIU • µRIU nRIU	
Preferences	Temperature Units Used for all applicable instruments	Celsius *C     Fahrenheit *F	
About	System Log Select items which should be logged	System	
Pump P 6.1L HPG	Log Lifetime	Tweek	
Valve 6Port 2Pos	Audit Trail Audit all method changes		
O Valve 8Port 4Pos	Duplicate Input Show additional input		
Valve 6Port 6Pos	Do not stop pumps In case of disconnection		
O Column Sel. Valve	Do not abort method Drivelopment state - no claim to function		
Valve 16Port 16Pos	System Pressure Max. Pressure for whole system	0.0,	
Detector UVD 2.1L	Live Trace Duration	30 min	
Assistant ASM 2.2L	Displayed segment when Live Trace started		
Assistant ASM 2.2L			
User Management			
Demo			
Advanced Settings			
Energy Options			



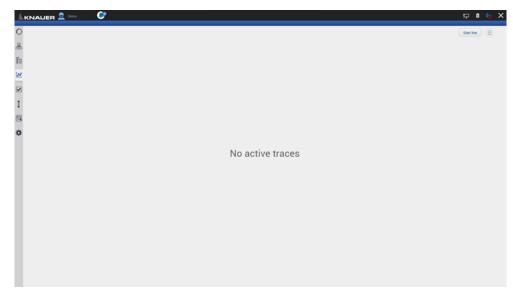


Fig. 8-2 Chromatogram View with Start live button



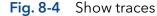


#### Showing/hiding traces, defining left y-axis 8.1

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

ocess	Figure
You can activate the traces during or after a measurement.	KNALIER         Image: Second Sec
To show or hide the traces, select <traces> which is part of the multi function button. A new window is opened.</traces>	
	¢

KNAUER 🚊 🚥  🥙	🕨 🔳 Program S		무 🌢 😏
Program 5   1_2022.10.11_12-43-51	percent 32% (2.30 of	18.00)	=
mAU 45			Traces
			Normalization Second Y-anis
Mar Mark			
2.5			
3			
25			
2			
15			
,			
0.5			
C.5			
45			8 79



**3.** Activate the boxes to display the traces.

#### **4.** Confirm with <Ok>.

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Process

1. You can

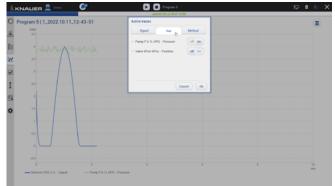
2. To show which is

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

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

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







**5.** Define left y-axis.

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

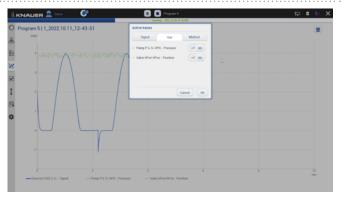
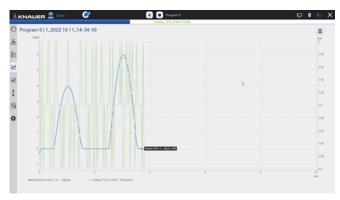
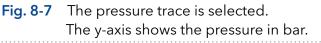


Fig. 8-6 The UV trace is selected. The y-axis shows the absorbance in AU.



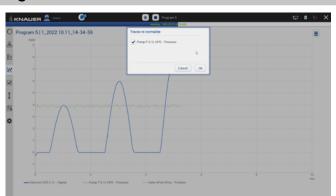


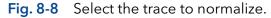
# 8.2 Normalize traces

#### Process

## Figure

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





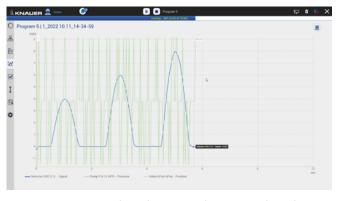


Fig. 8-9 Normalized traces shown in the chromatogram.

# 8.3 Add Second y-axis

#### Process

For one of the active traces a 2nd y-axis can be added. The 2nd y-axis on the right shows the unit and the scale for the selected trace. The trace is automatically normalized.

**1.** Chromatogram shows two traces, the UV signal and gradient composition.

#### Figure



# Fig. 8-10 Chromatogram shows UV signal and gradient composition

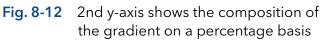
2. For one of the active traces a 2nd y-axis can be added. Select the gradient/ desired trace after pushing <Second y-axis>.



# Fig. 8-11 Select second y-axis for pump gradient

**3.** The 2nd y-axis on the right shows the unit and the scale for the selected trace (gradient composition of pump). The trace is normalized automatically.





# 8.4 Zoom into the screen

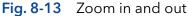
### 8.4.1 Via hand

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

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

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





#### 8.4.2 Via mouse

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

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

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



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



# 9. Checks & Tests

# 9.1 GLP

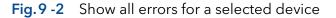
In menu GLP, you find a list of all devices for which GLP data can be displayed. Choose the respective device to view GLP data. By pressing the button "Show all errors" the device errors of each device are displayed.

IALIER 👤 admin 💽 ecks & Tests				FP 🕻 🕞 🗙 Version 5.8.110
P Pump P 6.1L LPG Valve 6Port 2Pos	Detector RID 2.1L Secial number Plan number Plan number Demains secial contains secial contain	FRB200400004 EDD31 01.24 6698.2 h 22.01.2020 22.01.2020 1 22.01.2020 1 5946.0 h 22.01.2020 1 20.04.2020 QC.100264.001	Leak Sensor Senal number Fitmaate version Log Entries Show all instrument enters	Verson 8.8.110 4279383126 00.04 Show all errors

#### Fig. 9 -1 Checks & Tests - Overview

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

Checks & Tests	Detector RID 2.1L Errors		Version 5.8
GLP	17.03.2020, 00:00:00 14:49 Zero glass malfunction. Position overrun.	20002 sor	4279383
Pump P 6.1L LPG	16.03.2021, 00.00.00 18.09 Zero glass malfunction. Position overrun.	20002	00
Valve 6Port 2Pos	17.03.2021, 00:00:00 18:09 Zero glass malfunction. Position overrun.	20002 ement errors	Show all error
Detector RID 2.1L	25.03.2021, 00:00 00 11:49 Zero glass malfunction. Position overrun.	20002	
Checks	25.03.2021, 00:00:00 15:19 Leak detected.	416	
System Check	25.03.2021, 00:00 00 15:20 Leak detected.	416	
	26.03.2021, 00.00.00.11.52 Zero glass malfunction. Position overrun.	20002	
	31.03.2021, 00:00 00 17:30 Low light intensity. Minimum exceeded.	20015	
	31.03.2021, 00:00.00 17:30 Low light Intensity, Minimum exceeded.	20015	
	31.03.2021, 00:00:00 17:30 Low light intensity, Minimum exceeded.	20015	
	31.03.2021, 00:00.00 17:30 Low light intensity. Minimum exceeded.	20015	
	31.03.2021, 00:00 00 17:30 Low light intensity. Minimum exceeded.	20015	
	31.03.2021, 00.00.00 17:30	20015	
		OK	



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

#### AZURA® Column Thermostat CT 2.1

Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	

## AZURA<sup>®</sup> Assistant ASM 2.1L

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

## AZURA<sup>®</sup> Assistant ASM 2.2L

The view of the assistant depends on the installed devices.

Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	

	Leak sensor
	Serial number
	Firmware version
devices. The	iew of the assistant depends on the installed GLP data of the assistant modules resemble the e standalone devices.
Detector AZURA® M	IWD 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® U	VD 2.1S/UVD 2.1L
Serial number	
Firmware version	
Operating time	
Instrument's power	cycles
Installation date	
Last service date	
	Optical Properties
	Optical bandwidth at 656 nm (FWHM)
	Light intensity I-Sig at UV-maximum
	Light intensity I-Ref at UV-maximum
	Number of filter wheel switches (only UVD 2.1L)
	Integration time
	Lamp Power Supply
	Serial number
	Operating time
	Firmware version
	Supply number
	Deuterium Lamp
	Serial number
	Operating time
	Starts
	Lamp number

## Detector AZURA® DAD 2.1L/DAD 6.1L

Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Optical Properties
	Optical bandwidth at 656 nm (FWHM)
	Optical bandwidth at 253 nm (FWHM)
	Stray light (AU)
	Lower spectral limit [nm]

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

# Detector AZURA® RID 2.1L

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

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

# AZURA<sup>®</sup> Pump P 8.1L

Serial number
Firmware version
Installation date
Last service date
Operating time
Flow delivery time
Total volume
Number of SSV
Degasser present
Manual purge valve
Pressure sensor
Туре

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

## AZURA® Pump P 4.1S, P 2.1S

Serial number
Firmware version
Operating time
Installation date
Last service date
Motor operating time

## AZURA® Pump P 2.1L

Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
	Leak Sensor
	Serial number
	Firmware version
	Motor
	Operation time

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

8	3

## BlueShadow 40D

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

#### BlueShadow 40P and 80P

Serial number	
Firmware version	
Operating time	
Installation date	
Last service date	
Motor operating time	
	Head
	Serial number
	Operating time
	Cycles
	Volume
	Volume P-index
	P-index

Interface Box IFU 2.1 LAN			
Serial number			
Firmware version			
Valve V2.1S			
Firmware version			
Switching cycles			
Serial number			
Valve Drive VU 4.1			
Serial number			
Part number			
Operating times			
Power cycles			
Drive revolutions			
Firmware version			
Installation date			
Last service date			

#### Valve V 4.1

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

## Foxy & Vario-4000

IP poi	t					
IP add	dress	 	 	 	 	
Serial	number	 	 	 	 	
Firmv	are version	 	 	 	 	
Rack	суре	 				
Vial c	ount	 		 	 	
Vial v	olume	 		 	 	
Instal	ation date	 		 	 	
Oper	ating time			 	 	

# 9.2 System Check

$\frown$	
$\checkmark$	

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

#### Process

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

Checks & Tests	former films	Version 5.8
GLP	System Check	
Pump P 6.1L LPG	Pump P 6.1L LPG	F8E133700001
Pump P 2.1L LPG Ternary	Pump P 2.1L LPG Ternary	FAD132180081
	<ul> <li>Autosampler AS 6.1L</li> </ul>	F28221900004
Autosampler AS 6.1L	<ul> <li>Valve 6Port 2Pos</li> </ul>	FVH134700005
Thermostat CT 2.1	Thermostat CT 2.1	FCC211810877
Valve 6Port 2Pos	<ul> <li>Detector DAD 6.1L</li> </ul>	P03132000001
	Stat	Court Destern Check Folder
Detector DAD 6.1L		
Checks		
System Check 👌	>	

#### Fig. 9 - 3 Logs & Errors

	I
$\sim$	

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

### 9.2.1 GLP check list

ASM 2.1L	UVD 2.1S: After 2000 hours lamp operating time, the deuterium lamp should be replaced. P 4.1S: After 1000 hours, the pump heads should be maintained. V 4.1S/VICI: After 50 000 switching cycles, the rotor seal should be replaced.
AS 3950/AS 6.1L	After 12500 injector valve cycles, a preven- tative 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 20 000 hours lamp operating time, the LED lamp should be replaced. After 1 year, the span should be checked.
UVD 2.1S & 2.1L MWD 2.1L/DAD 2.1L	After 2 000 hours lamp operating time, the deuterium lamp should be replaced.
P 4.1S	After 1 000 hours, the pump heads should be maintained (saved only in data base, this means only valid for one tablet; no check is carried out if the pump head has been changed or maintained).

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

# 10. Column Management and System Pressure

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

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

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

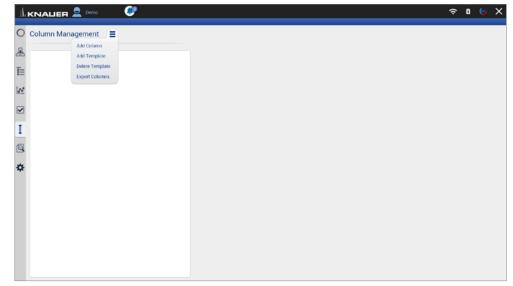
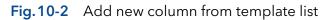
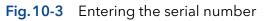


Fig. 10-1 Menu of the column management

1		(ŗ	۵	6	×
0	Select Column				1
æ	Filter				
Ī	25VE126548				
	25VE218784				
	2100156183 2100146161				
	2100187687				
I	2100147668				
2	2100146785				
*	template				
	8 item(c) shown / 8 items / 8 items overall	Cance		Ok	

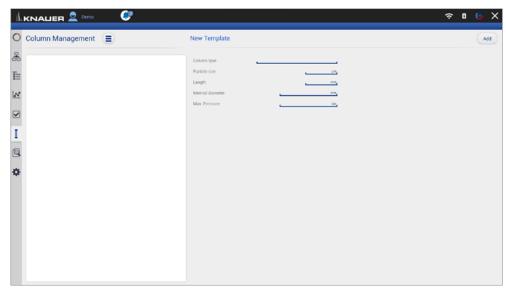


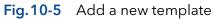
			≈ 0 6 X
O Column Management	New Column		Add
æ	Column type	21DD146785	
Ē	Particle size	5 µm Serial number	
100	Length x ID Max. Pressure	150 mm x 5 mm Comment 500 bar	
<b>v</b>			
I			
- Q			
¢.			

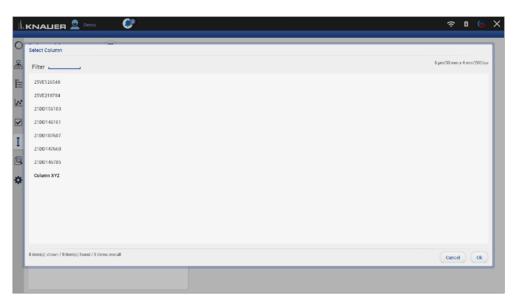


1					≈ 0 © X
0	Column Management 📃				Activate Delete
	2100146785 1267464553	Particle size Length x ID Max Pressure	150 mm x 5 mm	Setial number Comment Injections	1267464553 special 0
Q					
*					

Fig.10-4 Activate column







#### Fig. 10-6 New template

Ŀ				
)	Settings	Preferences		Apply Cancel
5	Preterences >	Pressure Units Used for all applicable instruments	• bar MPa psi	
	About	System Detector Units	_ AU . ● mAU _ μAU	
	Instruments	Used for all applicable instruments	mRIU • µRIU nRIU	
	Pump P 6.1L HPG	Temperature Units	Celsius *C     Fahrenheit *F	
	Valve 6Port 2Pos	Used for all applicable instruments		
	O Valve 8Port 4Pos	System Log Select items which should be logged	System	
	Valve 6Port 6Pos	Log Lifetime	1 week	
	Column Sel. Valve	Audit Trail Audit all method changes		
	Valve 16Port 16Pos	Duplicate Input Show additional input		
	Detector UVD 2.1L	Do not stop pumps In case of disconnection		
	🔀 Assistant ASM 2.2L	Do not abort method Development state - no claim to function		
	Assistant ASM 2.2L	System Pressure	✓200.0 isr,	
	User Management	Max. Pressure for whole system		
	Demo	Live Trace Duration Displayed segment when Live Trace started	30 min	
	Advanced Cattions			

Fig. 10-7 System pressure in Setting/Preferences

# 😫 11. Logs & Errors

L		👤 admin	y		्र ब्राह्म
)	Logs & Errors				Show logs in folder Export to text Export to X
5					
	Level 7	Date/Time 🖓	User V	Source 7	Message
	1 message	13.10.2022.09:46:13	admin	FCC211810077	Thermostat CT 2.1   Connection success 172.16.5.244.10001
1	🚺 message	13.10.2022, 09:46:11	admin	FZB221900004	Autosampler AS 6.1L   Connection success 172.16.5.242.2101
1	1 message	13.10.2022, 09:18.57	admin	FVH194700005	Valve 6Port 2Pos   Connection success 172.16.5.253.10001
	🕤 message	13.10.2022, 09:18.39	admin	FVH194700005	Valve 6Port 2Pos   Disconnecting 172.16.5.253.10001
3	message	13.10.2022, 09:18:29	admin	FRB200400004	Disconnecting 172.16.5.243:10001
	message	13.10.2022, 09:18.12	admin	F0J132000001	Detector DAD 6.1L   Connection success 172.16.5.241:10001
	message	13.10.2022, 09.17.06	admin	FAD132100001	Pump P 2.1L LPG Ternary   Parameters Gradient Type successfully applied.
	1 message	13.10.2022, 09:16:45	admin	FAD132100001	Pump P 2.1L LPG Ternary   Connection success 172.16.5.237:10001
Ļ	<ol> <li>message</li> </ol>	13.10.2022, 09:14:22	admin	F0J132000001	Detector DAD 6.1L   Disconnecting 172.16.5.241:10001
1	1 message	13 10 2022, 09 14 18	admin	FR8200400004	Connection success 172.16.5.243.10001
ł	👩 message	13.10.2022, 09:13.42	admin	FZB221900004	Autosampler AS 6.1L   Connection error Autosampler AS 6.1L: 172.16.5.242.2101, FZB221900004
	message	13.10.2022, 09:13:37	admin	FVH194700005	Valve GPort 2Pos   Connection success 172.16.5.253:10001
	message	13.10.2022, 09:13.37	admin	FBE133700001	Pump P 6.1L LPG   Connection success 172.16.5.248.10001
	1 message	13 10 2022, 09 13 37	admin	F0J132000001	Detector DAD 6.1L   Connection success 172.16.5.241:10001
	message	13.10.2022.09:13:37	admin	system	Login successful
	<ol> <li>message</li> </ol>	13.10.2022, 08:13:44	admin	system	Logout
	<ol> <li>message</li> </ol>	13.10.2022, 08.13.44	admin	F0J132000001	Detector DAD 6.1L   Disconnecting 172.16.5.241:10001
	👩 message	13.10.2022, 08:13.44	admin	FVH194700005	Valve 6Port 2Pos   Disconnecting 172.16.5.253.10001
	message	13.10.2022, 08:13:44	admin	FZB221900004	Autosampler AS 6.1L   Disconnecting 172.16.5.242:2101
	1 message	13.10.2022, 08.13.44	admin	FBE133700001	Pump P 6 1L LPG   Disconnecting 172.16.5.248:10001
	1 message	13 10 2022, 08 10 01	admin	FZB221900004	Autosampler AS 6 1L   Connection success 172 16 5 242 2101
L					

#### Legend

#### (1) Show logs in folder:

Opens the folder C:\Mobile Control\Logs.

#### ② Export to text:

Exports a text file in the C:\Mobile Control\Logs.

#### ③ Export to XML:

Exports a XML file in the C:\Mobile Control\Logs.

#### **④** Period:

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

#### **5** Filter:

i

1

Filters the results dependent on the user and the device.

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

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

# 11.1 Activation of communication log

#### Process Figure 1. Start the ConfigEditor.exe to set the Mobile Control Config Editor [saved] communication logs. The separate tool is ~ Columns located in C:\Program Files (x86)\Mobile Column.Database C:\Mobile Control\ColumnParameters.x Control\ConfigEditor.exe. KnauerA4 Column.Reports Developer 2. Select "Debug" and press apply. Activate Mo-Dev.Demo.LNP False bile Control before selecting the logs. Dev.Tabs.Memory 0 $\sim$ Dev.Tools False × Log Driver.FileLog False Javascript.FileLog False LogLevels Driver.AdapterService False Driver.CommErrors False Driver.ControlService False Driver.Database False Driver.FractionCollection True Driver.License False Driver.Misc False Driver.MonitorMode False Driver.WatchDog False Javascript.Communication False Settings DD.MM.YYYY Date.Format Display.Dim 30 Dev.Tools Enable developer console [Win+F12]. 2 O Default O Debug O Custom Apply Close Fig. 11-2 Log files Note: Log files are saved in C:\Mobile Control\Logs. Mind the hard disk space if logs are i activated.



# 12. Settings

# 12.1 General

## 12.1.1 Configuration management

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

# 12.1.2 Network settings

ıl.	KNALIER 👱 Demo 💔			🕀 🛚 🕞 X
0	Settings		Network Settings	Apply Cancel
1 S II	Configuration Management Network Settings Preferences About Instruments	>	Network Interface IP Port Addressing Scheme IP address Subnet mask Gateway	LAN: Realitek PCIe 08E l'amily Controller 
©. ≎	<ul> <li>Pump P 6.1L HPG</li> <li>Detector UVD 2.1L</li> <li>Assistant ASM 2.2L</li> </ul>		LAN Settings	Reset
	User Management Demo Advanced Settings Energy Options		ş	

#### Fig. 12-1 Networks settings

List of the network adapter.
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.
Shows the LAN settings of the tablet, laptop or desktop PC. DHCP: automatically setting of IP address STATIC: manual entry of IP address
Displays the IP address.
Displays the subnet mask.
Displays the gateway.
Reset communication settings of KNAUER devices to DHCP.
A device you want to reset should be switched on and connected to the same router. Enter the serial number of the device and click the <reset> button. Restart the device. The device is now set to DHCP. You can also set LAN settings of the device with Firmware Wizard (refer to chapter 15.1).</reset>

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

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

#### 12.1.3 Reset of LAN settings to DHCP

In Mobile Control you can set the device on DHCP.

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

This function can be carried out by:

- 1. Mobile Control
- 2. Firmware Wizard

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

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

	-	•	
Process	Figure		
<b>1.</b> Go to Settings > Network Settings.			
5 5	O Settings Network Settings	Apply Cancel	
	Configuration Management     IP hort       Performance     IP hort       Network Statings     Addressing Scheme       Performance     Subserving       Network Statings     Addressing Scheme       Particular Statings     Subserving       Network Statings     Addressing Scheme       Particular Statings     Addressing Scheme       Particular Statings     Subserving       Detector VAD 2.1L     Assistant ASA 2.2L       Detector VAD 2.1L     Assistant ASA 2.2L       Detector VAD 2.1L     Energy Options	LAR North Circ Circ Fund ( Consum) UNC 12 14 5 203 15 25 25 25 25 25 17 21 83 1 Image 2	
<ul><li>2. Press <reset>. A window is opened.</reset></li></ul>	Fig. 12-2 Open Network Setting	S	

- **3.** Enter the serial number of the device.
- **4.** Confirm with <Ok>. The device is now set to DHCP.

Here, you can only change the LAN settings to DHCP. With the Firmware Wizard you can change from Static (fixed IP address) to DHCP and vice versa (refer to chapter 12.1.2).

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

) se	rttings	N Reset communication settings	Apply Cancel
6 1	Seneral	Enter Serial Number of the instrument to set communication settings to	LAN: Realted: PCIe GBE Family Controller
1	Configuration Management	defaults.	1000
	Network Settings	A 5/NF00141210012,	DHC
	Preferences	P	172.16.5.20
		s Cancel (Ca	255 255 255
	About	Gateway	172.16.5
P	Pump P 6.1L HPG	LAN Settings	Reset
1	-		
F	Detector UVD 2.1L		
	Assistant ASM 2.2L		
	Duer Management		
	Demo		
	Advanced Settings		
	Energy Options		



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

#### 12.1.4 Preferences

**Note:** Always confirm your selection with <Apply>.

JI.	KNALIER 👤 Admin	<b>(</b> )	奈 û ⊚ X
0	Settings	Preferences	Apply Cancel
뮲	General	Pressure Units	MPa 💿 bar 💿 psi
000	Configuration Management	System Detector Units	O AU ● mAU O μAU
1.00	Network Settings		mRIU 💿 µRIU nRIU
	Preferences >	Temperature Units	• Celsius °C Fahrenheit °F
•	Security	Chromatogram Orientation Used for exports and reports	Landscape     Portrait
Ι	About	Log Lifetime	1 year
	Instruments	Audit Trail	
¢	💸 Assistant ASM 2.2L	Audit all method changes	_
*	User Management	Duplicate Input Show additional input	
	Demo	Do not stop pumps	
	📥 Admin	in case of disconnection	

Fig.12-5 Preferences overview (upper section)

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

i

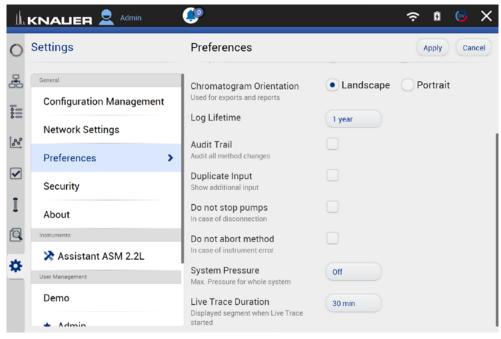


Fig. 12-6 Preferences overview (lower section)

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

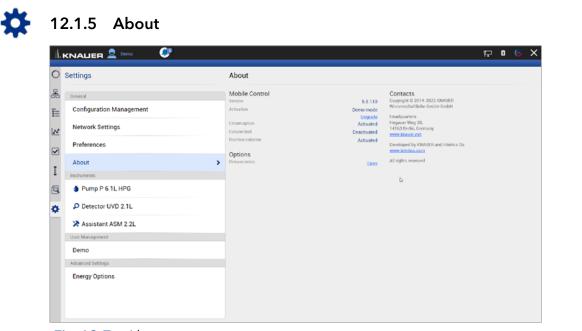


Fig.12-7 About

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

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

Open the Installation information to learn more about:

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

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

## 12.2 Instruments

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

## 12.2.1 General interface

ettings	Pump P 6.1L LPG			Apply C
General	Name	Pump P 6.1L LPG	Connectors	
Configuration Management	Serial number	FBE133700001	Start input	Đ
Network Settings	Network Settings		Analog Output	
Hettok settings	IP Port	10001_	Offset	
Preferences	DHCP      Static		Full scale	
About	IP address	172.16.5.248	Signal source	Dis
Instruments	Subnet mask	255.255.255.0	Time constant	
Pump P 6.1L LBG	Gateway	172.16.5.1		
User Management	Leak Sensor		Pressure Offset	
★ admin	Sensitivity	Low	Actual interpreted pressure	
Demo	Pump Head Settings			Set to Zero
Advanced Settings	Pump head	auto detect	Factory Settings	
Energy Options	Mixing chamber	100 µl.	Restore defaults Eluent control	
	Pump Gradient Type			C
	Gradient type	LPG	P Max	

Fig. 12-8 Device Settings - general interface

Name	By default, the device designation is used as device name. Tap the name to change it. Change the name if more than one device of the same type is configured in the system.		
Serial number S/N	The serial number of the device is read out automatically.		
IP Port	Communication in LANs is realized via ports which are part of the network address. If more than one HPLC system is connected to the same LAN and you plan on controlling them separately, you can use different ports to avoid interference.		
	To do so, the port number of every device has to be changed to the same port number in the device configuration of the chroma- tography software or Mobile Control. We recommend to use the same port number for all devices in the same system.		
<b>i</b> Note: The factory 10001. Use identi the chromatograp vice, otherwise th	y settings for the port of AZURA devices is cal port numbers in the device configuration of ohy software or Mobile Control and in the de- e connection cannot be established.		
<b>Note:</b> There are sport number (AS	some instruments that do not allow to change 6.1L, Foxy, IFU 2.1 LAN, CT 2.1).		
DHCP/Static	In DHCP mode the router allocates IP address and Subnet mask automatically. Static enables you to enter IP address and Subnet mask manually. Activate checkbox "Static" and enter the re- quired network parameters (see Fig. 9-8).		

KNALIER 👤 admin 🛛 🦃				F 🛛 🕤 🖒
Settings	P Detector DAD 6.1L			Apply Cancel
General	Name	Detector DAD 6.1L	Active channels	4
Configuration Management	Serial number	F0J132000001	Cell type	Test cell
Network Settings	Network Settings	, 10001,	Extended linear range	no no
Preferences	DHCP Static		Autozero at wavelength change	off on
About	IP address	172.16.5.227	Analog Output	
Instruments	Subnet mask	255.255.255.0	Offset 1	0.00-
Pump P 6.1L LPG	Gateway	172.16.5.1	Scale 1	1.0 AU/V
Ø Valve 6Port 2Pos	Leak Sensor		Offset 2	_0.00=
Detector DAD 6.1L	Sensitivity	Low	Scale 2	1.0 AU/V
User Management	Integration Time		Offset 3	0.00
\star admin	Maximum sampling rate	10 Hz	Scale 3	1.0 AU/V
Demo	Integration time	77=,	Offset 4	.0.00
Advanced Settings	Get optimal integration time	Optimal	Scale 4	1.0 AU/V
Energy Options			Time constant	0.2 5
			Factory Settings	

Fig. 12-9 Static IP address

IP addess	Displays the IP address of the device.
Subnet mask	An IP address consists of two parts. One part of the IP address designates the network address of the device. The other part desig- nates the distinct address of an device inside of a network. The subnet mask defines which part of the IP address is the network ad- dress of an device. It determines which other devices the respective device can communi- cate 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 re- quests, 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.</on>
Sensitivity	Choose between Low, Medium, or High .
Restore Factory Settings	This function enables your to re-set the de- vice to its default settings.

## 12.2.2 Assistant

Settings	🔀 Assistant ASM 2.2L			Apply Cano
General	Name	Assistant ASM 2.2L	LEFT	Valve 0Port 0
Configuration Management	Serial number	FYC200400003	Configuration	
Network Settings	Network Settings	10001_	Position labels	Chan
Preferences	DHCP      Static		Replace seal	Repla
About	IP address	172.16.5.232	Rehome	Reho
Instruments	Subnet mask	255.255.255.0	MIDDLE	Pump P 4
Assistant ASM 2.2L	Gateway	172.16.5.1	Pump head	101
User Management	Leak Sensor		IMin sensitivity	
\star admin	Sensitivity	Low	IMax sensitivity	
Demo	Analog Settings		Eluent control	Ito
user1	Analog inputs	Settings	RIGHT	Detector UVD 2
Advanced Settings	Analog outputs	Settings	Calibration	Calibr
Energy Options				

Fig. 12-10 Device Settings - Assistant

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

During Line al	
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. Set- ting 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.
<b>Configuration</b> (valve)	A list field with different valve types is displayed. Choose the setting according to your valve: 6, 12, 16.
<b>Scale</b> (detector)	Choose between 0 AU/V, 0.5 AU/V, 1 AU/V, 1.5 AU/V 2 AU/V, 2.5 AU/V, 3 AU/V, 3.5 AU/V, 4 AU/V, 4.5 AU/V and 5 V.
Time Constant (detector)	Smooths the measured values. Measuring points of a set time interval are combined and the mean value is displayed as a measuring point. A broader interval increases the smoothing proportionally. Choose between 0.00 s, 0.01 s, 0.02 s, 0.05 s (DAD), 0.1 s, 0.2 s, 0.5 s, 1.0 s, 2.0 s, 5.0 s, and 10 s.

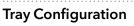
99

## 12.2.3 Autosampler

Settings	🂐 Autosampler AS 6.1L			Apply Ca
General	Name	Autosampler AS 6.1L	Volumes	
Configuration Management	Serial number	FZB221900004	Loop volume	
Network Settings	Network Settlings		Tubing volume	
	IP Port	2101	Syringe volume	25
Preferences	DHCP		Events	
About	IP address	172.16.5.202	Relay event	Aux
Instruments	Tray Configuration		Service	
Nutosampler AS 6.1L	> Tray configuration	108 Vials	Tray position	•
User Management	Options		Syringe position	Do not ch
\star admin	Prep. mode	off on	Needle exchange	
Demo	Thermostat	off on	Needle exchange	
Advanced Settings	Transport solvent scheme			
Energy Options	rransport solvent scheme	Wash bottle left		
			C;	

Fig. 12-11 Device Settings - Autosampler

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



Opens menu to select used autosampler tray configuration.

Choose according to your installed trays.

KNALIER 👤 🕫		Apply Canc
Settings	Tray	Apply Cano
General Configuration Ma	N7 99 99 109 101 102 103 104 199 199 107 109 Plate Type:	1(
Configuration Ma	12 Vials	
Network Settings	15 85 17 18 19 99 17 11 12 19 19 19 19 19 19 19 19 19 19 19 19 19	2501
Preferences	n         n         n         n         n         n         n         n         96 High 384 Low         384 Low         384 Low	
About	• 108 Vials	Auxilia
Instruments	61 62 63 64 65 66 67 68 78 70 71 72 0105 Vials	
🏷 Autosampler /		Hor
User Management		Do not chan
* admin		St
Demo	4	
Advanced Settings		
Energy Options		
		5

## Fig.12-12 Tray configuration

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

Tray Position	Push the button to select position of the tray A new window is opened (see fig. 9-12)		
	Select position of tray.		
	Home: backside of tray cabinet,		
	Front: frontside of tray cabinet to change vials		
	Set Tray Position		
	• Home		
	Needle Exchange		
	Front		
	Do not change		
	Cancel Ok		
	Fig.12-13 Set Tray Position		
Syringe Position	Choose, if syringe needs to be changed.		

Press start to exchange sample needle.

12.2.4	Column Thermostat 2.1	

Needle Exchange

Settings	🖑 Thermostat CT	2.1	Apply Cancel
General	Name	Thermostat CT 2.1	
Configuration Management	Serial number	FCC211810077	
Network Settings	Network Settings	10001 _	
Preferences	DHCP      Stati	ic	
About	IP address	172.16.5.204	
Instruments	Subnet mask	255.255.255.0	
Thermostat CT 2.1	Gateway	172.16.5.1	
User Management	Leak Sensor		
ŧ admin	Sensitivity	Low	
Demo			
Advanced Settings			
Energy Options			

Fig. 12-14 Device Settings - Column Thermostat

### 12.2.5 Detector

Settings	Detector UVD 2.1L			Apply Can
General	Name	Detector UVD 2.1L	Fraction Collection	
Configuration Management	Serial number	F0D141210026	Level	0.00
Network Settings	Network Settlings		Delay	
Network Settings	IP Port	10026	Fraction event	Inact
Preferences	DHCP Static		Analog Output	
About	IP address	172.16.5.203	Offset	0.00
Instruments	Subnet mask	255.0.0.0	Scale	104
Pump P 6.1L HPG	Gateway	172.16.5.203	Time constant	0.
Detector UVD 2.1L	> Leak Sensor		Factory Settings	
Assistant ASM 2.2L	Sensitivity	Medium	Calibration	Calibra
User Management	Autozero at wavelength change	ott on	Restore defaults	Re
Demo			Virtual Signal File	
Advanced Settings			No file selected.	Brow
Energy Options				

Fig. 12-15 Device Settings - Detector

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

#### Integration Time

(only available in AZURA® DAD 2.1L, DAD 6.1L and MWD 2.1L) Activate the <optimal> button and the program calculates the optimal integration time. The maximum sampling rate for the integration time is also calculated and displayed.

Settings	Detector DAD 6.1L			Apply Canod
General	Name	Detector DAD 6.1L	Active channels	
Configuration Management	Serial number Network Settings	10313200001	Cell type	Test off
Network Settings Preferences	IP Port	10001	Extended linear range	off an
About	DHCP Static		Autozoro at wavelength change	off on
Instruments	IP address Subnet mask	172.16.5.227 255.255.255.0	Officet 1	60.00-
P Detector DAD 6.1L	 Gateway	172.16.5.1	Scale 1	18.40/
Uuer Management	Sensitivity	(Lew)	Offset 2 Scale 2	0.00-
Demo	Integration Time		Offset 3	0.00-
Advanced Settings	Maximum sampling rate	10	Scale 3	LEANY
Energy Options	Integration time Get optimal integration time	 Optimal	Offset 4	0.00-
	an quart any soon and	operat	Scale 4	18 40/1
			Time constant	821

Fig.12-16 Example for settings DAD 6.1L

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

#### 12.2.6 Interface Box IFU 2.1 LAN

				🛱 🛯 🕞 X
O Settings	P Interface IFU 2.1			Apply Cancel
General	Name	Interface IFU 2.1	Analog Settings Active channels	
E Configuration Management	Serial number Network Settings	IFU051101		<u> </u>
Network Settings	IP Port	10001	Configuration Channel 1	Channel 1
Preferences	DHCP		Range	+/- 2.56 V
About	IP address	169.254.43.205	Trigger channel	Off
I Instruments				
P Interface IFU 2.1				
User Management				D;
🌣 \star admin				
Demo				
Advanced Settings				
Energy Options				

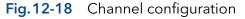
Fig. 12-17 Device Settings - Interface Box IFU 2.1 LAN

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

Active Channels	Choose the number of active channels (1-4).
Configuration Channel	Individual configuration of each channel. Select a channel and a new window is opened (see fig. 9-17).
	<ul> <li>1<sup>st</sup> line: Channel name. You can name the channel individually, e.g. with the name of the connected device.</li> </ul>
	<ul> <li>2<sup>nd</sup> line: Displayed Unit of the recorded signal. Default setting is mV.</li> </ul>

 3<sup>rd</sup> 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

Settings General Configuratio Network Set Preferences About Instruments P Interface User Management		Ni si Ni IP	nfiguration of Char	nnel 1 Channel 1 , mV , 0.001 , Cancel Ok	erface IFU 2.1, IFU051101 10001	Analog Settings Active channels Configuration Channel 1 Range	
Configuration Network Set Preferences About Instruments P Interface	ttings	St. NP		mV . 0.001 .	IFU051101	Active channels Configuration Channel 1	
Network Set Preferences About Instruments	ttings	IP IP		0.001		Configuration Channel 1	a
Preferences About Instruments P Interface					10001		
About Instruments	5			Cancel Ok	10001	Rance	
Instruments							+/
P Interface			dress	,	69.254.43.205	Trigger channel	
		IP do	aress		09.204.40.200		
How Managemen	e IFU 2.1	>					
User managemen	nt						
\star admin							
Demo							
Advanced Setting	gs						
Energy Optic	ions						



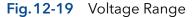
Range

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

One of the following ranges can be selected: +2 56 V +1 28 V +0 64 V +0 32 V and +0 16 V

	-	÷	~	••	-	'C	,	v	ı	-	-		•	_	C	,	v	1	-	- '	U	• •	<u> </u>	1		v,	, ·	÷	U	· •	J	2	•	v	<i>'</i> '	u		C			- '	J	•		J	v	
• •	• ••	• •	*	• •	*	• •	• •	• •	• •	• •	•	• •	•	• •	•	• •	• •	• •	• •	• •	• •	*	• •	•	• •	*	• •	• •	•	• •	• •	*	• •	• •	•	• •	• •	*	• •	*	• •	*	• •	• •	•	• • •	• •
																																							-			•		$\sim$		$\sim$	

Settings	🖍 Set Range		Apply Cance
General	Ni • +/- 2.56 V	FU 2.1 Analog Settings	
Configuration Management	St +/- 0.64 V	051101 Active channels	
Network Settings	Ne +/- 0.32 V	Configuration Channel 1	Channel
Preferences	IP +/-016V	10001 Range	4/- 2.56
About	Cancel Ok	43.205 Trigger channel	G
Instruments		0.200	
P Interface IFU 2.1	>		
User Management			
🖈 admin		6	
Demo			
Advanced Settings			
Energy Options			



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

## 12.2.7 Pump

Settings	Pump P 6.1L LPG			Apply Can
General	Name	Pump P 6.1L LPG	Connectors	
Configuration Management	Serial number	FBE133700001	Start input	Enab
Network Settings	Network Settings		Analog Output	
netron octango	IP Port	10001_	Offset	3.
Preferences	DHCP      Static		Full scale	1
About	IP address	172.16.5.248	Signal source	Disab
Instruments	Subnet mask	255.255.255.0	Time constant	0
Pump P 6.1L LPG	Gateway	172.16.5.1	Pressure Offset	( v
Detector DAD 6.1L	Leak Sensor		Actual interpreted pressure	
User Management	Sensitivity	Low		Set to Zero Re
🖈 admin	Pump Head Settings		Factory Settings	Secto zero
Demo	Pump head	auto detect	Restore defaults	Be
Advanced Settings	Mixing chamber	100 µL	Eluent control	
Energy Options	Pump Gradient Type		Eldent control	Ilo
	Gradient type	LPG	P Max	

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

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

Pump head	Displays the volume of the pump head.
Mixing Chamber	Choose between 50 µl, 100 µl, 200 µl, 250 µl or enter a value. Change only the volume if a different mixing chamber is installed.
Gradient Type	Some pumps are pre-configured as isocratic, HPG or LPG pump. In this case, the config- uration cannot be changed. For pumps that are not pre-configured, you can select (see below).
	For AZURA P 4.1S pumps, HPG mode is not supported.
<b>Constant Pressure</b> (only available for AZURA® P 6.1L)	Constant Pressure mode allows you to define a desired back pressure and a gradient com- position. 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.
<b>Note:</b> Refer to "APF configure pumps in	PENDIX A" for detailed instruction how to isobar or constant pressure mode.
<b>Isobar mode</b> (only available for AZURA® P 2.1L)	Isobar mode allows you to define a desired back pressure. The flow rate will adapted until selected pressure is reached. Use 'Minimum' and 'Maximum Control Flow' in Detail Overview to set the minimum and maximum flow rates.

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

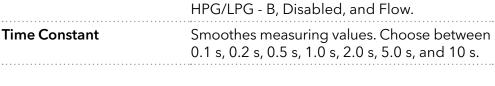
## 12.2.8 Gradient Typ

Settings	Pump P 2.1L HPG	A		Apply Ca
General	Name	Pump P 2.1L HPG A	Pump Head Settings	
Configuration Management	Serial number	FAC122800001	Pump head	100
Network Settings	Network Settlings		Pump Gradient Type	
-	IP Port	10001_	Gradient type	н
Preferences	DHCP      Static		Connectors	
About	IP address	172.16.5.247	Start input	Disa
Instruments	Subnet mask	255.255.255.0	Analog Output	
Pump P 2.1L HPG A	Gateway	172.16.5.1	Offset	2
Pump P 2.1L HPG B	Leak Sensor		Full scale	
User Management	Sensitivity	Low	Signal source	Pres
\star admin			Time constant	G
Demo			Eluent control	b off
Advanced Settings			Libert control	H OII
Energy Options				

Fig.12-21 Device Settings - Synchronized Pumps

1	0	7

Gradient Type	Choose between
(only available for AZURA® P 2.1L)	Set Gradient Type
Equal pump heads are rec- ommended for HPG mode. When using different pump heads (e.g. 500 and 1000 ml), maximum pressure val- ues have to be considered. First, the pump with the lower maximum pressure has to be selected, then the second pump can be added to activate HPG mode.	<ul> <li>Isocratic</li> <li>LPG Binary</li> <li>LPG Ternary</li> <li>HPG A</li> <li>HPG B</li> <li>HPG C</li> </ul>
	Fig. 12-22 Set Gradient Type
	Choose Disabled, if you want to deactivate the analogue input. Choose between Start pump and Stop pump, if the pump should start or stop running upon receiving the trigger signal. Select Enabled, if the trigger signal shall be used to start a method for the analogue input of the pump.
Offset	Offsets the analog output signal in V.
Full Scale	Choose between 1 V, 2 V, and 5 V.
Signal Source	Choose between Pressure, HPG/LPG - A,





## 12.2.9 Valve

Settings	Valve 6Port 2Pos			Apply Cano
Configuration Management Configuration Management Network Settings Preferences About Instruments Valve 6Port 2Pos User Management * admin Demo Advanced Settings Energy Options	Name Serial number Network Settings IP Port DHCP Static IP address Subnet mask Gateway	Valve 6Port 2Pos FVH194700005 	Configuration Configuration Position labels Replace seal Rehome	Chan Pige Chan Right Refor

Fig. 12-23 Device Settings - Valve

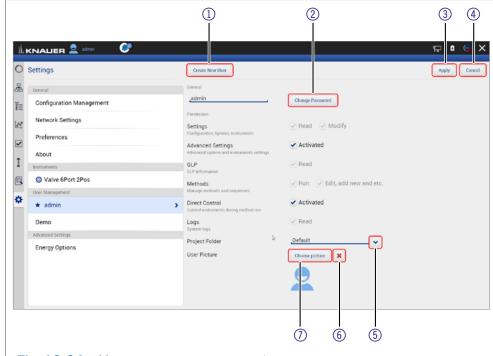
Configuration	The RFID chip of the valve V 4.1 is read out and the valve type is automatically displayed.
Position labels	Each position of the valve can be given its own designation.
Replace seal	When replacing the rotor seal, the GLP spec- ification Seal swichting cycles is set to zero and the number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

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



## 12.3 User management

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



#### Fig. 12-24 User management overview

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

#### Legend

- ① Create New User account
- ② Change Password
- ③ **Apply** Confirm your entry
- ④ Cancel Cancel your entry
- Choose a configuration.
- 6 Delete picture
- ⑦ Choose picture Upload a picture

108

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

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

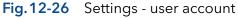
#### 12.3.1 Create a new user

This option is only available for administrators.

Process	Figure
<ol> <li>Go to Settings &gt; User management.</li> <li>Select <create new="" user="">.</create></li> </ol>	Instruction & and the second secon

- **3.** Activate the checkboxes depending on the authorization you want to give.
- **4.** Always confirm your settings with <Apply>.

			9 <b>•</b> 9
Settings	Create New User		groty Cano
General	General		
Configuration Management	_user1		
Network Settings			
Preferences	Permission.		
About	Settings Configuration, Tyrotem, Instruments	Read Modify	
Instruments	Advanced Settings	Activated	
Valve 6Port 2Pos	Advanced system and instruments settings	Read	
User Management	GLP GLP information	Read	
* admin	Methods Manage methods and sequences	Run Edit, add new and etc.	
Demo	Direct Control	Activated	
Advanced Settings	Control instruments during method run		
Energy Options	Logs System logs	✓ Read	
	Project Folder	Juser1	

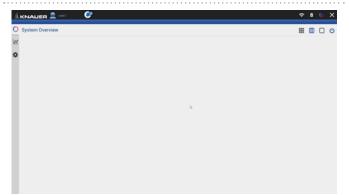


**5.** After successful creation of the new user account a status message is displayed.

Settings	Create New User Delete User		Apply Cano
General	General		
Configuration Management	Admin	a Change Password	
Network Settings	Permission		
Preferences	Settings Configuration, System, Instruments	Read Modify	
About	Advanced Settings Advanced system and instruments setting	Activated	
Instruments	GLP G. F. Information	✓ Read	
Valve 6Port 2Pos	Methods	Run Edit, add new and etc.	
User Management	Manage methods and sequences		
★ admin	Direct Control Control instruments during method run	<ul> <li>Activated</li> </ul>	
Demo	Logs by System logs	✓ Read	
Admin	Project Folder	test	
Advanced Settings	User Picture	Choose picture	
Energy Options			

### Fig. 12-27 Settings - user account

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



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

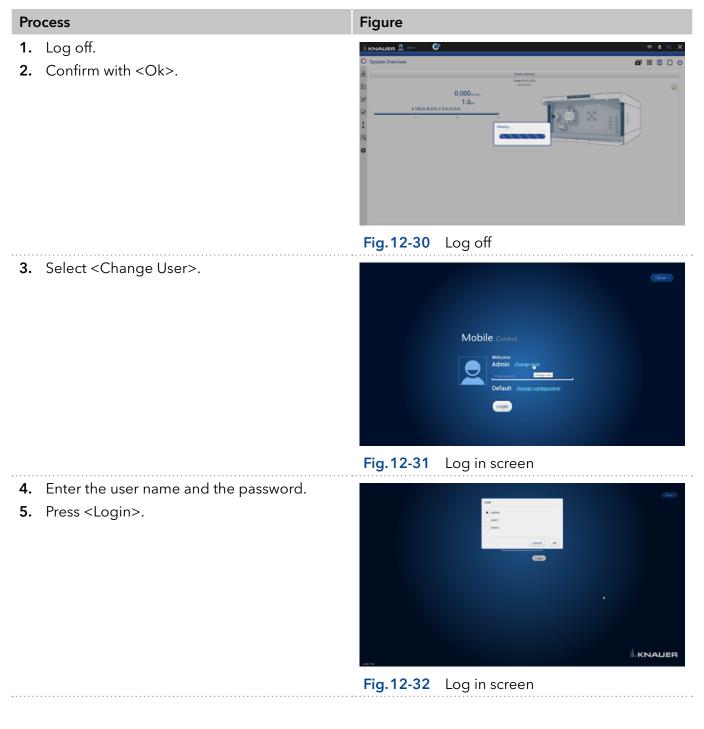
## Fig.12-28 Restricted authorization

C	Settings	Preferences		
£	General Configuration Management	Pressure Units Used for all applicable instruments	● barMPapsi	
ŧ		System Detector Units Used for all applicable instruments	AU e mAU µAU	
	Network Settings		_mRIU ●µRIUnRIU	
	Preferences	<ul> <li>Temperature Units Used for all applicable instruments</li> </ul>	Celsius 'C     Fahrenheit 'F	
	About User Management	System Log Select items which should be logged	🗹 System	
	user1	Log Lifetime		
		Audit Trail Audit all method changes		
		Duplicate Input Show additional input		
		Do not stop pumps in case of disconnection	- ·	
		Do not abort method In case of instrument error		
		System Pressure Max. Pressure for whole system	0.0 w	
		Live Trace Duration Displayed segment when Live Trace st		

Fig.12-29 Restricted authorization

## 12.3.2 Change user account

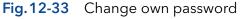
The user has to have the respective permissions to do so Settings > READ AND MODIFY).



## 12.3.3 Changing own password

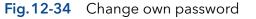
Each user can change their own password, if provided with the respective permissions. The administrator can change the password of every user, without knowing their current password.

Process	Figure	
<ol> <li>Log in with your user account.</li> <li>Go to SETTINGS &gt; USER MANAGEMENT.</li> <li>Select <change password="">. A new window is opened.</change></li> </ol>	Settings Configuration Management Configuration	Image: Construction       Image: Const



- **4.** Enter the current password, and two times the new password.
- 5. Confirm with <Ok> and <Apply>.

1	Settings	Change Password		Apply Cance
	General	current pass	word .	
	Configuration Management	e new pass	word . Password	
ε	Network Settings	confirm new pass	word .	
	Preferences		Cancel Ok Jated	
	About	Advanced system and instruments set		
	Instruments	GLP GLF schemeters	Read	
ε.	Pump P 6.1L LPG	Methods	Run Edit, add new and etc.	
	User Management	Manage methods and sequences		
	★ admin	Direct Control     Control instruments during method run	<ul> <li>Activated</li> </ul>	
	Demo	Logs System logs	Read	
	user1	Project Folder	Default	
	Advanced Settings	User Picture	Choose picture	
	Energy Options			



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



## 12.4 Settings

## 12.4.1 Configuration management

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

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

## Legend

- Click on the button to create a new configuration.
- Shows the current configuration.
- ③ Apply
- 4 Lists the name of the configuration.
- (5) Lists the users which have access to this configuration.
- 6 Lists the name of the service set identifier (network).
- Possible edit actions: Click on the red cross symbol 🗶 to delete a configuration. Click on the pen symbol 🖍 to edit the settings.

		(	1) 	2			3
					2	5	2 8 6 ×
O Settings		Create New	Configuration	System Configuration	- 		Apply
General			#	Name	Access	SSID	Actions
Configuration Management	>		1	Default	admin, user1		1
Network Settings			2	system 2	admin, user1		/ ×
Defense			3	System 1	admin		/ ×
About		۲	4	System 3	admin, user1		1
About     User Management			<u> </u>				
🗟 🔹 admin							
Demo							
user1							
Advanced Settings							
Energy Options							
				4	5	6	$\overline{O}$
Fig.12-35 Configurat	tio	n list					

System 1	X	System 2	
<b>F</b>			
System 3		System 4	

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

There are 2 possibilities to create a configuration:

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

b) via Log in (refer to chapter 12.4.1.2)

Both ways are explained in the following chapters.

i

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

## 12.4.1.1 Configuration via menu Settings

- 1. Open the info center in your tablet software.
- **2.** Select network.

LKNAUER 👤 🛛	C								
Settings		Create New	Configur	ation	System Configu				
General			1	Name	Access				
	>	۰	1	Default	1.1				
Network Settings			2	system3					
Preferences			3	system1			Å Postion	ф Storegar- rocks	8 Battori
About			4	system2			2 7	Ryf Mobiler Hotipot	P Flagonap modul
User Management	-11					d Ungebungs- twigster	O Ale Entréhonen	Al Notcourts	<b>9</b> 8 Verbinden
a ★ a						ø	-	ð	(j) Bildutiem
Demo						ingalanan Ar -		Nor Alarma	

## Fig.12-37 Change own password

3. Select the network, you want to connect to. C Settings 0 æ Configuration Manage Ē Network Settings N Preferences • About I ★ a Dem ð 🚍 🔒 💼 🖂 😔 Choose network Fig. 12-38 4. Press <Connect>. 0 × Settings 0 æ

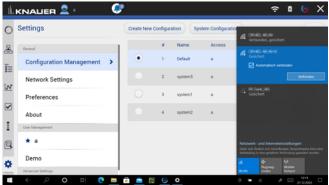
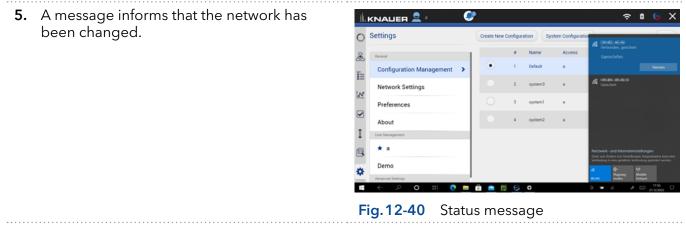


Fig. 12-39 Connect to network



Process

6. Select <Create new configuration>.

## Fig.12-41 Create configuration

## **7.** Name the configuration.

8. Confirm with <Apply>.

- Image: Configuration
   Image: Create New Configuration
   Image: Create New Configuration

   Image: Configuration Management
   Image: Configuration
   Image: Configuration

   Image: Configuration Management
   Image: Configuration
   Image: Configuration

   Image: Configuration Management
   Image: Configuration
   Image: Configuration

   Image: Configuration
   Image: Configuratio
- **9.** You see the new configuration in the list with name, access and SSID. You can edit or delete the configuration.

**10.** Go to SYSTEM CONFIGURATION and configure

your new system.

## Fig.12-42 Edit new configuration

ıi.	KNALIER 🚨 · 🛛 💞						5	2 <b>0 6 X</b>
0	Settings		Create New	Configuration	System Configuration			Apply
&	General			1.00	Name	Access	SSID	Actions
Ē	Configuration Management	>		1	Default	*		1
ie:	Network Settings			2	system 1			/×
2	Preferences			3	system 2			/×
I	About		۲	4	system 3			1
1	User Management					D		
ß	**							
۰	Demo							
	Advanced Settings							
	Energy Options							

## Fig. 12-43 Configuration List

 INNALLER
 Image: Constraint of the second second

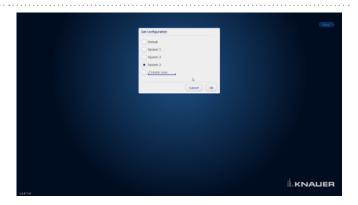
### Fig.12-44 System Configuration

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

Pro	ocess	Figure	
1.	Open network connection which is showing all available networks.		
2	Select and connect to the desired network.	Fig. 12-45	Open network connections
Ζ.	Select and connect to the desired network.		<complex-block></complex-block>
3.	The tablet/laptop/PC is now connected to		Core ?)
	another network.	■ ← ⊅ <b>0</b>	Mobile Control   Present   Present   Corr
		Fig.12-47	Connect with network (system)
4.	Select <change configuration=""> and enter the name of the new configuration.</change>	-1110	
		Fig.12-48	Change configuration
•••••			

## 12.4.1.2 Configuration via Log in

## 5. Log in Mobile Control



## Fig. 12-49 Add new configuration

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

delete the configuration.

	Set configuration	(thur )	
	Default		
	System 1		
	System 3		
	System 2 System 5		
	Cancel Ok		
+5.8.110			

## Fig.12-50 Log in

7. Go to Settings > Configuration Manage-MENT. The new configuration is listed with name, access and SSID. You can edit or Ē≣ Network Set ₩ Ø Prefe About © ¢ \* admir Demo user1 Energy Option

#### Fig.12-51 Configuration list



## 12.4.2 Energy Options

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

		E		
) :	Settings	Energy Options		Apply Cano
	General	System Time	12.10.2022, 16:05	
	Configuration Management	System Wake-up Set date and time to wake up instru-	off on 12.10.2022 16.05	
	Network Settings	Instruments To Wake-up	All Selected	
	Preferences		Select Instruments	
	About	System Standby Set date and time to standby instrum	off on 12.10.2022 16.05	
	Instruments	Instruments To Standby	All Selected	
	Pump P 6.1L LPG		Select Instruments	
	Pump P 2.1L HPG A			
	Pump P 2.1L HPG B			
	User Management			
	\star admin			
	Demo			D.
	user1			
	Advanced Settings			
	Energy Options	>		

**Fig. 12-52** Energy Options

#### 12.4.2.1 Putting devices into standby mode manually

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

#### 12.4.2.2 Putting devices into standby mode automatically

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

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

#### 12.4.2.3 Waking up devices from standby mode manually

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

#### 12.4.2.4 Waking up devices from standby mode automatically

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

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

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

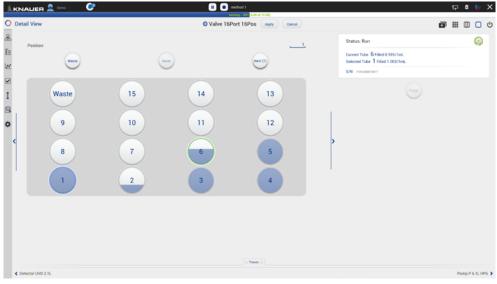
## 13. Special Features

## 13.1 Fraction Collection

Settings	Frac. Collector F	oxy R2		Apply Cano
General	Name	Frac. Collector Foxy F	Rack Configuration	
Configuration Management	Serial number	F0X00000000	Rack type	25 mm, 36 tub
Network Settings	Network Settings	23	Vial count Vial volume	
Preferences	• Static		Volumetric Delay	
About	IP address	172.17.78.111	Fixed time	
instruments			Tubing volume	
Frac. Collector Foxy R2	>		Capillary length0,	ID
User Management				
*1				
Advanced Settings				
Energy Options				

#### Fig. 13-1 Settings of fraction collector Foxy

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



13.1.1 Detail View



	JER 👤 🕫	~~ <b>@</b> ?			unning 45% (4.59 of 10.00)		₽	_
Detail	View				Port 16Pos Apply Cancel		₩	
	Vial	Reason	Start Time	Stop Time	Volume (mL)	Status: Run		6
	od Start Time: 14.12							
1	1	TIME	0.10	1.11	1.002	Current Tube 6 Filled 0.136/1mL		
2	2	SLICES	1.11	1.43	0.323	Selected Tube 1 Filled 1.003/1ml.		
3	3	MANJAL SLICES	1.43	2.43	1.004	S/N PVK200E10017		
5	4	SLICES	2.43	3.44	1.002			
5	,	9,615	3.44	4.44	1.004			
						1		
						>		
						1		
						1		
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					1000	Ţ		

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

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

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

#### 13.1.2 Method

1

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

	0	<b>P 0 0</b> 1
Methods > Add Method _metho	od 1	Save Close
Settings Eluent Delivery	Sample Injection Column & Periphery Detection Fraction Collection	
R. Valve 16Port 16Pos	Valve 16Port 16Port - Position	✓
Reports		
	System Configuration	
	Method	
	System loga	
	fesults	
Exports		
	Cuta Rate traces	
	XY 1968	
	HTML graph	
Fraction Collection		
	Signal	Detector UVD 2.15 - Signal
	Fee	Pump P 6 1L HPG
	After last vial	Waste & Continue method & Stop queue
	Reset rack on start	×
Integration Parameters		
Detector UVD 2.1L - Signal	imagization off	~
	Negative peaks	
	Threahold	0.1
	Width	
	Misimum area	<u> </u>

Fig. 13-4 Method settings for fraction collection

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

			) a न
lethods > Add Method _method 1		After last vial	Save (
Settings Duent Delivery Sample Injecto Valve 16Port 16Pos	on Column & Periphery Detection Fra Value 15Port 16Pos - Position	Pause & Reset tack     Peset & Restart collection     Waste & Continue method & Stop queue	2
leports	System Configuration Method	Waste & Continue method and queue     Stop method & Continue queue     Stop method and queue	
	System loga Results	Cancel	
xports	Data Rara tsacas XY tsacas HTML graph		
raction Collection	Signed From After base chal Menore calabians son start		Develop (100 2.11 - Signel Pung F & 11, 149) Waste Contrase method & This power
ntegration Parameters weeken UVD 2.1L - Signal	integration off Negative peaks		័
	Threshold Wath Missinger gaves		<u>01</u> <u>01</u> <u>5</u>

Fig. 13-5 Choice of After last vial settings

#### 13.1.2.1 Programming fraction collection in the method

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

Instrument         Comme         Part Monophie         R           0.00-         R. Vales Härvet Härve         Posters         Notes         RE           0.10-         R. Vales Härvet Härve         Posters         Rese         X
Billion:         X         R Value 16Purt 16Pus         Position         Waster         X           10.00
10.00

Fig. 13-6 Choice of fraction collection modes

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

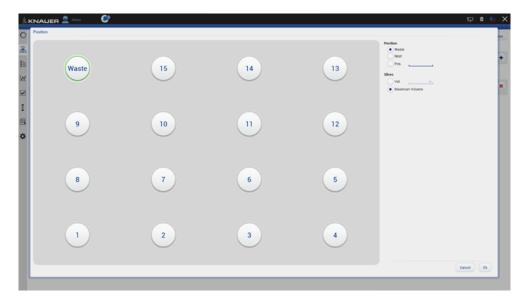


Fig.13-7 Fraction collection mode position in method

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

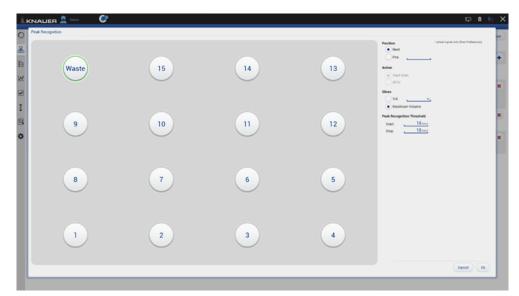


Fig. 13-8 Fraction collection mode peak recognition for valves in method

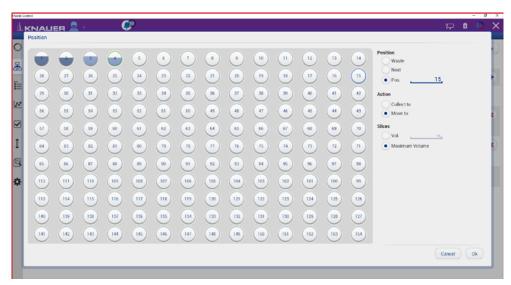
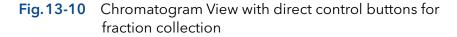


Fig.13-9 Fraction collection mode peak recognition for fraction collectors in method

#### 13.1.2.2 Direct control during a running method

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

me	ethod 2   2022.12.14_11-27-18		Resume	Collect (1) Next (2)
	mAU		Resurre Waste	Collect (1) Next (2)
	14			
	12			
	14			
	1			
	0.0			
	0.5			
	0.4			
	0.4			
	0.2			
	0 Center UK23 % : Spear -0.00			
	42			
	-0.4			
	-0.6			
	4.8			
	4			
	-12			
	-1.4			
	-1.6	 		



## 13.2 LNP License - Control of IJM NanoScaler

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

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

Special LNP features:

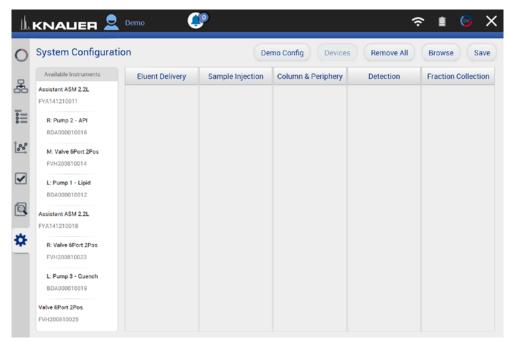
- Modified user interface of method writing in menu Method & Sequences (renamed: Lipid Nanoparticles)
- Predefines method structures for Pre/Aftercare and Formulation methods
- All methods in the LNP license use waiting for trigger, the end of run setting flow off and start with flow off for all pumps

## 13.2.1 Configuration of IJM NanoScaler

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

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

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





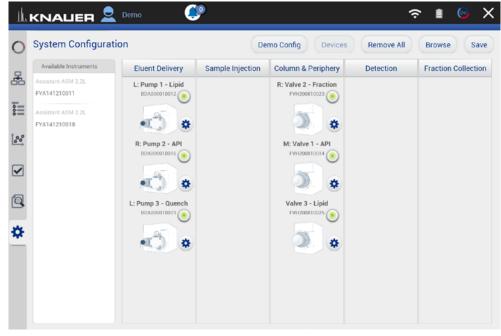


Fig.13-12 Configuration of devices in the IJM NanoScaler system

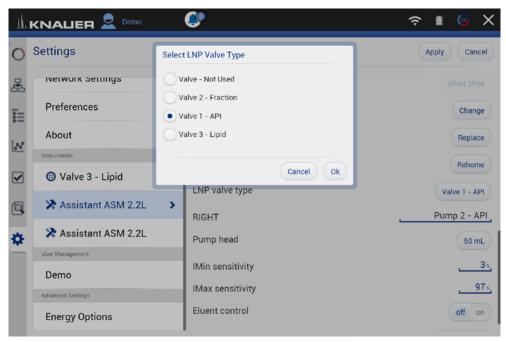


Fig. 13-13 Changing the LNP function of a device

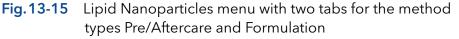
h			<b>C</b> ?	奈∎ © X
0	Settings	Select	t LNP Pump Type	Apply Cancel
뮲	Network Settings		ump - Not Used	Change
	Preferences		ump 1 - Lipid ump 2 - API	Replace
1.00 0.00	About	P	ump 3 - Quench	Rehome
	Instruments			
	log Valve 3 - Lipid		Cancel Ok	Valve 1 - API
	🔀 Assistant ASM 2.2L	>	RIGHT	Pump 2 - API
*	🔀 Assistant ASM 2.2L		Pump head	50 mL
	User Management		IMin sensitivity	<u>3</u> ×
	Demo		IMax sensitivity	97%_
	Advanced Settings		Eluent control	off on
	Energy Options		LNP pump type	Pump 2 - API

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

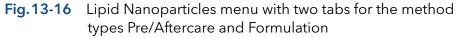
### 13.2.2 Writing methods for formulation

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

1h.		<del>؟</del> \$	• 🗈 💿 🗙
0	Lipid Nanoparticles	Send to queue	Edit LNP
몲	<ul> <li>✓</li> <li>▲-Z</li> <li>✓</li> </ul>	LNP Method Audit Trail Info	
_	Pre/Aftercare Formulation	Mode	R&D+
	🕟 Recipe 3	Volume API	1 mL
<b>8</b>	<b>OA</b> 1 <b>A</b>	Volume Lipid	0.33 mL
	Recipe 2	Volume Quench	5.67 mL
	🕟 Recipe 1	Use Quench	<ul><li>✓</li></ul>
	<b>-</b>	Ratio API(P2)/Lipid(P1)	3:1
		Ratio API+Lipid(P2+P1)/Quench(P3)	1:2
		Flow Rate Undiluted LNP	3 mL/min
*		Injection Delay	0.5 min
		Waste Volume Start	0.5 mL
		Collected LNP Volume	3.50 mL
		Customize Volume	
		Flow Rate API	2.25 mL/min



h	KNAUER 👤 Demo		٩	Ŷ	1 🞯 X
0	Lipid Nanoparticles			Send to queue	Edit LNP
놂	<ul> <li>+</li> </ul>	Date 🔺	LNP	Method Audit Trail Info	
_	Pre/Aftercare Formulation		Mode		R&D+
	🐼 Running-In	>	Flow Rate API		5 mL/min
<b>8</b>			Flow Rate Lipid		5 mL/min
00	😣 Standby		Flow Rate Quench		5 mL/min
	Rinsing		Run Time		2.02 min
6			Standby		
	🕟 Cleaning		Volume API		10.00 mL
☆			Volume Lipid		10.00 mL
			Volume Quench		10.00 mL



#### 13.2.2.1 Pre/Aftercare methods

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

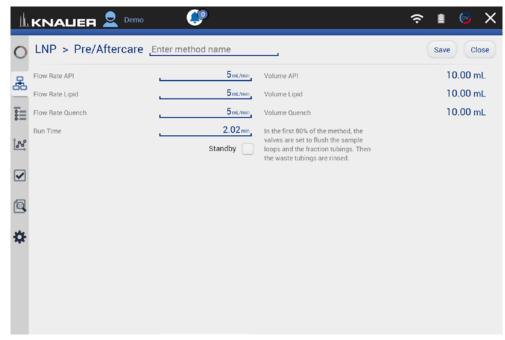


Fig. 13-17 Input screen of Pre/Aftercare method

#### 13.2.2.2 Formulation methods

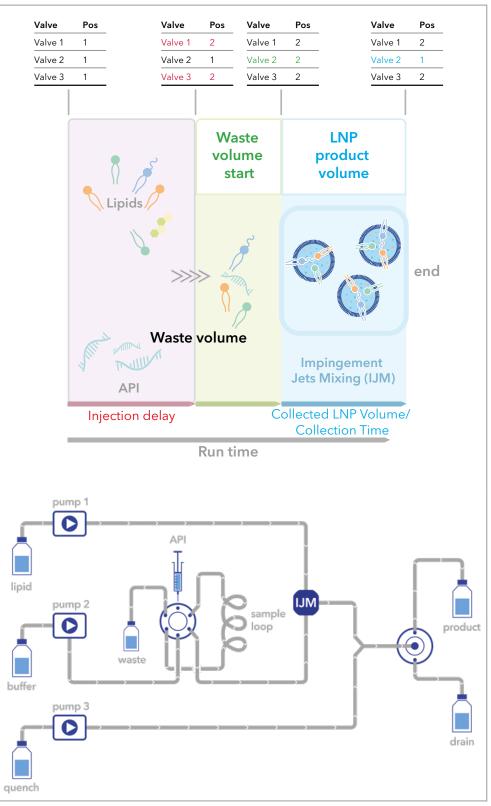
Depending on the system composition, different formulation workflows are executed by the software. For each mode the LNP user interface shows the input fields, the calculated parameters, a flow scheme of the system configuration and a schematic representation of the method structure. The input is volume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

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

#### R&D Mode

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

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

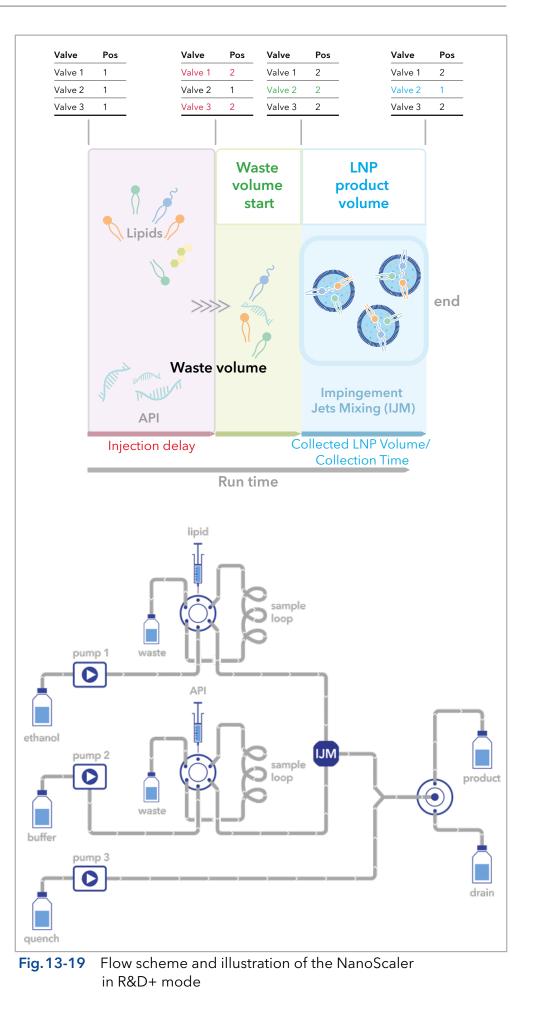




#### R&D+ Mode

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

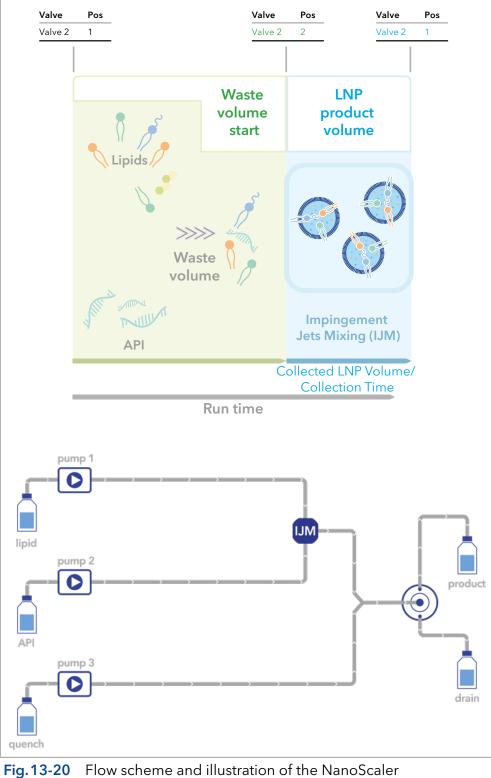
The R&D mode of the standard IJM NanoScaler can be upgraded to the R&D+ (see Fig. 13-19). The upgrade features a second loop in an additional valve to apply small volumes of lipids via a sample loop (see Fig. 13-22).



#### **Production configuration**

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

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



in production mode

#### 13.2.2.3 Formulation parameters

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

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

μ		٢		奈 ∎ 💿 X
0	LNP > Formulation _Re	cipe 1	Volume Flow Rate	Save Close
몷	Flow Rate API	2.25 mL/min	Volume API	10.25 mL
66	Flow Rate Lipid	0.75 mL/min	Volume Lipid	3.42 mL
	Flow Rate Quench	6 mL/min	Volume Quench	27.33 mL
		Use Quench 🕑		
<u>`</u> ₽₽			Ratio API(P2)/Lipid(P1)	3:1
			Ratio API+Lipid(P2+P1)/Quench(P3)	1:2
•			Flow Rate Undiluted LNP	3.00 mL/min
	Injection Delay	0.5 min	Calculated LNP Volume	36.00 mL
_	Waste Volume Start	0.5mL	Volume Waste	5.00 mL
*	Collection Time	4 min,	Total Flow Rate	9.00 mL/min
			Run Time	4.58 min
	R&D+ Mode		Illustration	
		iple p	Value         Pes         Value         Pes         Value         Pes           Value 1         1         Value 2         Value 3         Val	Valve 2 1

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

μ		٢			奈 ∎ 💿 X
0	LNP > Formulation _Reci	pe 1	Volume Flow	w Rate	Save Close
몷	Volume API	1 mt,	Flow Rate API		2.25 mL/min
66	Volume Lipid	0.33 mL	Flow Rate Lipid		0.75 mL/min
	Volume Quench	5.67 mL	Flow Rate Quench		6.00 mL/min
		Use Quench 🕑			
<u></u>	Ratio API(P2)/Lipid(P1)	3,: 1,			
	Ratio API+Lipid(P2+P1)/Quench(P3)	1; 2,			
	Flow Rate Undiluted LNP	3 mL/min			
	Injection Delay	0.5 min	Calculated LNP Volume		3.50 mL
	Waste Volume Start	0.5mL	Volume Waste		5.00 mL
*	Collected LNP Volume	3.50 mL	Total Flow Rate		9.00 mL/min
		Customize Volume	Run Time		0.96 min
	R&D+ Mode		Illustration		
			Valve Pos Valve 1 1 Valve 2 1 Valve 3 1	Value         Pos         Value         Pos           Value 1         2         Value 1         2           Value 2         1         Value 2         2           Value 3         2         Value 3         2	Valve Pos Valve 1 2 Valve 2 1 Valve 3 2

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

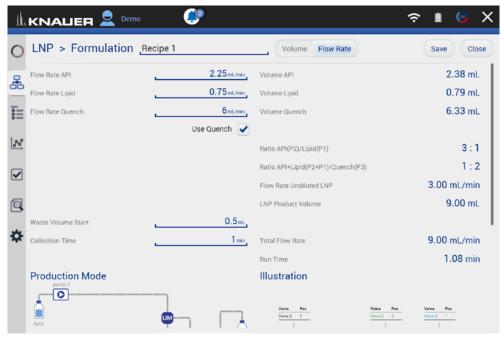


Fig.13-23 Input screen of flow rate mode in Production configuration

μ		٢		Ŷ	🗈 🞯 🗙
0	LNP > Formulation	Recipe 1	Volume Flow Rate		Save Close
몷	Volume API	1 mL	Flow Rate API		2.25 mL/min
62	Volume Lipid	0.38 mL	Flow Rate Lipid		0.75 mL/min
8	Volume Quench	3.00 mL	Flow Rate Quench		6.00 mL/min
		Use Quench 🕑			I
<b>~</b>	Ratio API(P2)/Lipid(P1)	3; 1			I
	Ratio API+Lipid(P2+P1)/Quench(P3)	1; 2			I
Ū.	Flow Rate Undiluted LNP	3 mL/min			I
			LNP Product Volume		4.00 mL
	Waste Volume Start	0.5mL			1
₽			Total Flow Rate		9.00 mL/min
			Run Time		0.52 min
	Production Mode		Illustration		
		]			
	lipid		Valve Pos Valve 2 1	Valve Pos Valve 2 2	Valve Pos Valve 2 1
	- Burn	T I I C			1

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

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

i.

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

Output	Output						
Parameter	Description	Mode					
Volume	Volumes conveyed by API, Lipid and Quench pumps	Flow rate					
Ratio API/Lipid	Ratio of API to lipid resulting from the en- tered flow rates of API, Lipid and Quench pumps.	Flow rate					
Ration API + Lipid/Quench	Ratio of sum of API and lipid to quench resulting from the entered flow rates of API, Lipid and Quench pumps.	Flow rate					
Flow Rate Undiluted LNP	Flow rate of undiluted formulation. Sum of flow rates of API and lipid pump.	Flow rate					
LNP product volume	Volume that is collected starting from the Valve 2 - Fraction switching event (defined by waste volume start) until the end of the method.	Flow rate, Volume,					
Total flow rate	Sum of flow rates of API, Lipid and Quench pumps	Flow rate, Volume					
Run time	Run time of the method. At the end of the method the Valve 2 - Fraction switches from fraction to waste.	Flow rate, Volume					
Flow rate	Flow rates of the pumps API, Lipid and Quench	Volume					
Volume waste*	Volume that is discarded during the method. The position of Valve 2 - Fraction is set to waste.	Volume, Flow rate					
* Injection Delay configuration.	* Injection Delay and Volume waste are not included in production						



## 14. Data Viewer

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

#### Process

 Press the button on the upper right side of the screen or open the software via the desktop icon. A new window opens.

### Figure





**2.** Data Viewer is loading.

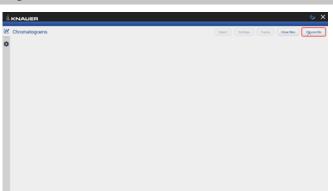


## 14.1 Load a chromatogram

# **3.** The interface is similar to Mobile Control Interface.

4. Select <Choose file> to load a measurement into the Data Viewer.

#### Figure



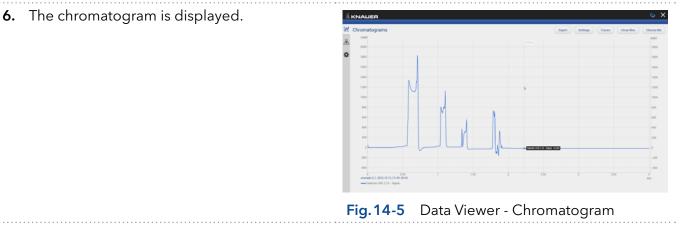
 Select a result file (.h5) and confirm with <Ok>. By default, Mobile Control saves all result files in C:\Mobile Control\Projects\ Project folder\*\Results\Queue\_date\_time.

\* The project folder is named default or can be renamed in Mobile Control settings > user management.

## Fig. 14-3 Data Viewer - Overview

KNAUER		0
Choose file		
User Semple ID From:To:Film Film		
D. DRIVER DO DO DE DO DA DA DA DE DU DA DA DA	-	≣
C (1922 19 19 1), 16 - 6- 21 M		
Print (1988) (Contrading Strategiese 2013) 11 11 13 64 13	Cancel	19

### Fig.14-4 Data Viewer - Select run



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



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

Process

# 14.2 Chromatogram window



## Fig.14-6 Chromatogram - Overview

#### Legend

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



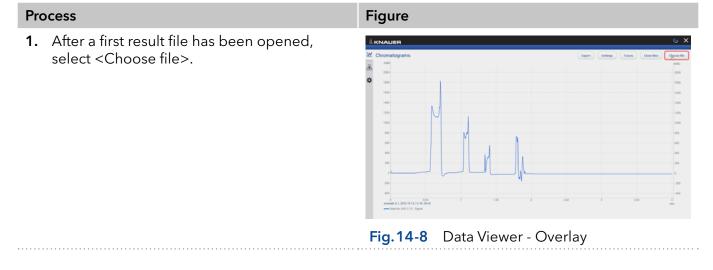
Fig. 14-7 Chromatogram - Overview - Settings

#### Legend

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

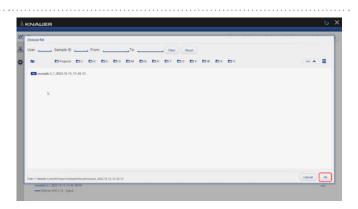
**Note:** The chromatogram window of Data Viewer is similar to Mobile Control. Regarding the functions of this view please refer to chapter 8.

#### 14.2.1 Overlay of two measurements



#### **2.** Select the second result file.

**3.** Confirm with <Ok>.



**4.** Both chromatograms are displayed in the diagram.

5. If you want to close chromatograms press

measurement.

6. Select <Close>.

"close files" and select one, all or a selection

of chromatograms. Confirm closing the files

grams in the method menu of the individual

by ok. Alternatively, close single chromato-

#### Fig.14-9 Data Viewer - Overlay



# Fig.14-10 Data Viewer - Overlay

Fig.14-11 Data Viewer - delete measurement

### 14.3 Methods

ц,			© X
N	Methods	example 2_1_2022.10.13_13-45-28.h5	Clase
윦	() example 2	Method Direct Control Info	Report
\$	Detector UVD 2.1S - Signal	Pump P 2.1L LPG Ternary Detector UVD 2.1S	
	ြှ example 2	Flow Rate: 1 mL/min Wavelength: 254 nm Gradient: 1006.0%.0%.0% Sampling Rate: 5 Hz Min: Pressure: 0 Dar Time Constant: 0 20 s Max. Pressure: 225 bar	
	Detector UVD 2.1S - Signal	⊙0.10 min	
		Detector UVD 2.1S Wavelength 354 nm	
		①4.00 min	
		Pump P 2.1L LPG Ternary Detector UVD 2.1S Flow Rate: 1 mL/min Wavelength: 254 nm Gradient 0% 100% 0% 0%	

Fig.14-12 Methods

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

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

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

#### 14.3.1 Integration Parameters

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

Ē I	Methods	l.	ntegra	ation				(	Auto Integra	tion	Manual Integra	tion	Sa
	(s) example 3		#	RT	k'	A	A%	н	H%	TF	W <sub>0.5</sub>	Ρ	F
			r.	0.53	0	-24.241	-3.56	0.588	0.06	0.02	0.1	-1	
	Detector UVD 2.1S - Signal		2*	0.99	0.85	-3.857	-0.57	0	0	0	0.02	-1	
	🕟 example 2		3,	1.1	1.08	-910.991	-133.67	1049.825	99.94	-1	0.07	-1	-
	Detector UVD 2.1S - Signal	>	5'	1.77	2.33	-62.111	-9.11	0	0	0	0	-1	
						Ŀ							

#### Legend

- Auto Integration
   Automatic configuration of the integration parameters
- ② Manual Integration Manual configuration of the integration parameters
- ③ **Save** the integration parameters.

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

The following result values are calculated during the analysis:

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

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

#### Width

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

#### Threshold

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

#### Minimum Area

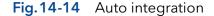
The Minimum Area parameter is used to reject unwanted peaks in the chromatogram. A value of e.g. 1000 will omit all peaks with an area of smaller than 1000.

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

#### 14.3.1.1 Auto integration

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

Methods	In Auto Integration			Auto Integra	stion _	Manual Integra	saon	0
🕒 example 3	Threshold		н	H%	TF	W <sub>0.5</sub>	Р	
	Width	0.1	0.588	0.06	0.02	0.1	-1	
Detector UVD 2.1S - Signal	Minimum area		0 1049.826	0 99.94	0.12	0.02	-1	
🕼 example 2	Integration off	~	0	0	-1	0.07	-1	
Detector UVD 2.1S - Signal		✓	0	0	0	0	-1	
Detector 070 2.13 - Signal	From							
	То	4.000mm,						
	Negative peaks							
		Cancel Ok						



#### 14.3.1.2 Manual Integration

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

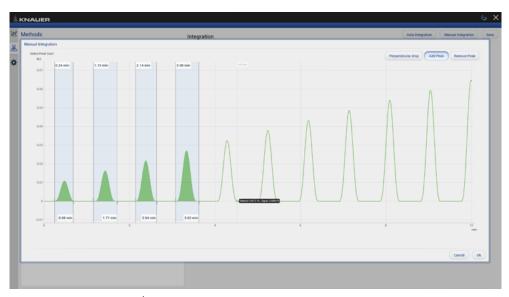
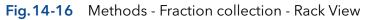


Fig.14-15 Manual integration

#### 14.3.1.3 Fraction collection

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

6	×
15     14     13       10     11     12       7     6     5       2     3     4	
	15     14     13       10     11     12       7     6     5



lethods	Fra	ction Col	lection					
						e: 16.12.2022, 13:56:24		
() test			Vial	Reason	Start Time	Stop Time	Volume (mL)	
Detector UVD 2.1L - Signal		1	1	MANUAL	0.08	0.20	0.127	
below of billing signal		2	2	MANUAL	0.34	0.46	0.118	
Detector UVD 2.1S - Signal		3	3	MANUAL.	1.23	2.23	1.000	
		4	4	OVERFILL	2.23	3.23	1.002	
Fraction Collection	>	5	5	OVERFILL	3.23	4.24	0.770	
	¢							

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

## 14.4 Settings

#### 14.4.1 Appearance

					e
1	Settings	Appearance			Apply Cano
5	General	Annotation 1	Peak area		
	Appearance >	Annotation 2	Peak number		
1	Preferences	Grid			
	the set	Baseline	<ul><li>✓</li></ul>		
	About	Fill peak area	✓		
				D.	

Fig. 14-18 Data Viewer - Settings - Appearance

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

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

#### 14.4.2 Preferences

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

Pressure Units Selection between bar, MPa and psi.

System Detector Units Selection between AU, mAU,  $\mu$ AU (UV detectors), mRIU,  $\mu$ RIU, nRIU (RI detectors).

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

#### 14.4.3 About

The version of the installed Data Viewer is shown.

# 15. Firmware Wizard

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

The Firmware Wizard can be used to:

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

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

# 15.1 Reset LAN settings

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

Process	Figure	
<ol> <li>Open the software.</li> <li>Select <reset lan="" settings="">.</reset></li> <li>A new window opens.</li> </ol>	Undersand - Kouer Finnuer Wizef [V.1.3.0.111]      Indexand - Kouer Finnuer Select: Auto Al Con Reference Select     Device SR. e/a Do not update this component     Correct version s/a     Update grant of the select selec	

- **4.** Enter the serial number or the MAC address of the AZURA<sup>®</sup> 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.



@ootcore mode	Separate firmware Select:	Auto 81 Gear	Befresh Device Info	Interface: LAN
Device	SN: n/a Current version: n/a	Device connection settings	Do not update this component	P Address: 127.0.0.1 P Port: 10001
		Target device serial number: © Obtain an IP address automatically O Lise the following IP address: P address: Subret madk: Default gateway:		Connect Disconnect Reset LAN Settings Pirmware Upload: Do not reconnect Start
		Cancel Reset Conn. Se	tings	Current Component:
		Canon Reset Come Se		Overall uploading progress



# 15.2 Update firmware version of connected devices

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



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

#### Firmware Wizard V1.03.000.419 or higher

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

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

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

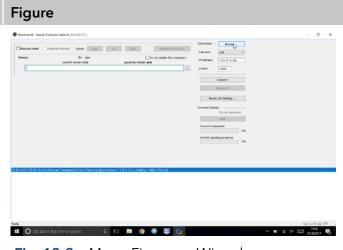


Note: Do not disconnet or disturb the connetion to the device during firmware upload.

**1.** Open the software.

Process

- 2. Ensure to be connected with the network which includes the device.
- **3.** Select <Browse>. A new window is opened.

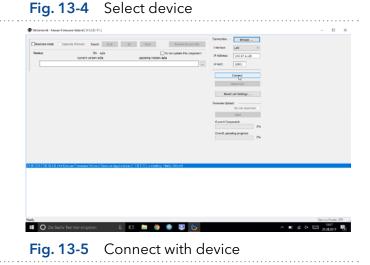


#### Menu Firmware Wizard Fig. 13-3

- 4. Select <Browse>. A list of connected devices is displayed.
- 5. Select the device you want to update and press <Select>.

Device         30:         All         Device the device of the	Distore reds	Separate themana	Al Cest	Refresh Device Solo	Connections Interlace:	- 91%e		
Devention         Devention         X           Connection         East         Print (min)         0         6.022         1.00           Fund Sensite         Devent Synt         Connection         Board         Summary           Fund Sensite         Devent Synt         Connection         Board         Summary           Fund Sensite         Devent Synt         Connection         Board         Summary           Fund Sensite         Print (Sint) 111 (Vinover)         Board         Summary         Summary           Fund Sensite         Print (Sint) 111 (Vinover)         Board         Summary         Summary           Fund Sensite         Print (Sint) 111 (Vinover)         Board         Summary         Summary           Fund Sensite         Print (Sint) 111 (Vinover)         Board         Summary         Summary           Fund Sensite         Develor 2.01         Last (VI VINOVER)         Board         Summary           Fund Sensite         Boards 2.01         Last (VI VINOVER)         Board         Boards 2.01         Summary	Device			ia				
Denselar:         Lat.         Pfant.         Intel Intel         Intel I						Convect		
Bend Rundar         Dever Type         Concentral at (1) 10 mm         Roward At (2) 10 mm         Roward At (2) 10 mm         Roward At (2) 10 mm         R			PPvs 1001 0	85-222 0.08				
QFR         Class         File         Lase 11713 calloster         File         Desc           SH01532222         MAD_2112         LM012111 calloster         FILE         EVEN         FILE         EVEN         FILE         EVEN         FILE         EVEN         FILE         FILE         FILE         FILE         FILE         EVEN         FILE         FILE         FILE         FILE         FILE         EVEN         FILE         FILE         FILE         EVEN         FILE         FILE<				Connected at		Hosted at		
Bit Operation         Bit Oper		FEE134800001	Pump Note	LAVE 172-17.1.125(10001	01.04		Cleve	
		5 POG15120902	MWD 2.1L DAD 5.1L	LANE 172-1731/024610001 LANE 172-1731/04210001	01.10			
pl 2/17/10/4.14.399 P/m-w Timmer Lading for devices		4				,		
	05 2017 10 56 14 393	Fortune Contract Looking for devices						

#### 6. Press <Connect>.



- **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.

Bostore node _ Se	parate fermane Selects Auto	Al Cear Refresh Device Srife	Connections - Browser	
HPLC Pump PSSL	St: FEE134800001	Do not update this component	Prierfece: Litr P Addrese: 172.17.1.125	
	Current version: 1.84.000.000	Opcoming version: in/fa	PPort 10001	
TTT Display	Shi: Aja Current version: 50,00, A0,00	Do not update this composed	Connecti,	
		/	Decenvent	
Leak sensor	SH: 9076592 Current version: 6.04	Do not update this component Upcoming version: #/#	Reset LAN Settings	
			Fermane Lakad	
			De ref.recernect	
			Current Component:	
			Overall uploading progress:	
			15	
8 2017 10 57 43 Conn	Insuer Firmware Wizard Service Applicate ecting: LAN 172:17.1.125.10001 ected: Pump-P6.1L : OKI	on (1.3.0.111.) is emining, Mella, World		
8 2017 10 57 43 Com 8 2017 10 57 43 Com	ecting devices en Into read. CK			
	eyinto reed: OK			

10.57 E

#### **11.** Import the update file.

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**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.

**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 up-

date this component".

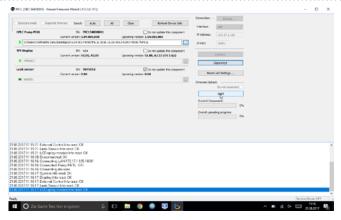
14. Press <Start>.

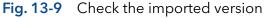
#### Fig. 13-7 Import the update file

Fig. 13-6 Connect with device

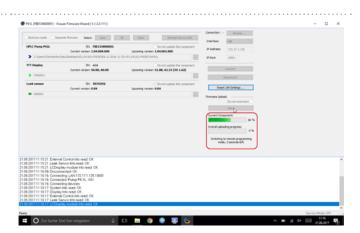
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Fig. 13-8 Check the imported version





**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.

Bostore mode Gap	ands females Selects Auto I	E Cear Refresh Device Sofe	Correctors - Bryane	
HPLC Pump PSSL	St: FEE134800001 Current version: 1.84.001.000	Donot update this component Opcoming version: 101.001.000	P Address: 172.17.1.125	
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¥ #60001			Decervent	
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Fig. 13-11 Finished update process

# 16. Troubleshooting

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

#### Steps

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

# 17. Repeat Orders

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

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

**Further information** Further information on spare parts and accessories can be found online: <u>www.knauer.net</u>

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

# APPENDIX A Configuration of flow and pressure



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

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

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

# A 1.1 Minimum flow rate and maximum flow rate

#### Time out

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

#### Minimum flow rate



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

#### NOTICE

#### **Device defect**

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

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

 $\rightarrow$  For safety reasons, stop the pump manually.

#### **Target pressure**

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

#### NOTICE

#### **Device defect**

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

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

 $\rightarrow$  For safety reasons, stop the pump manually.

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

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



Practical tip: If your column is very sensitive to pressure increase, you can lower the preset p<sub>max</sub>.

1. Select "Settings". Activate the Constant pres-

Pump P 6.1L HPG

۵.

Sensitivity

Pump Head

> Gradient Type

Start Input

Fig. A-2 Constant Pressure

Mixing Chambe

Constant Pressure

Target Pressure Tin

AZURA® P 6.1L

sure button. **2** M

Network Settings

Pump P 6.1L HPG

Preferences

About

\* Admin

2. No action

Advanced Settings

Energy Options

Configuration Management

O Settings

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#### A 1.2 Configuration

#### AZURA® P 2.1L

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



#### Fig. A-1 Gradient Type

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

- 11
- 11
- 11
*
Ok

#### Fig. A-3 Set Gradient Type

**3.** The gradient type "isobar" is displayed. Always confirm your selection by pressing <VlgqA>

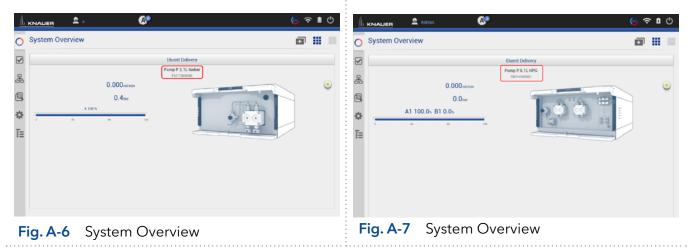
#### 3. The Constant Pressure button is activated. Always confirm your selection by pressing <VlgqA>

Apply>.			<a>ppiy&gt;.</a>		
	@°	( <sub>©</sub> ? ∎ ()		Q.	🎯 🗢 🙆
Settings	Pump P 2.1L Isocratic	Apply Cancel	Settings Default	Pump P 6.1L HPG	Apply Cancel
Ceneral	Sensitivity	Low	General	Leak sensor	
Network Settings	Pump head settings		Natural Sattings	Sensitivity	Low
	Pump Head	auto detect	6	Pump head settings	
Preferences	Pump gradient type	6	Preferences	Pump Head	auto detect
About	Gradient Type	Isobar	About	Mixing Chamber	100 µl
Instruments	Connectors		Instruments	Pump gradient type	
Pump P 2.1L Isocratic	> Start Input	Enabled	Pump P 6.1L HPG	Gradient Type	HPG
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* a	Offset	0.00 ===	\star Admin	Target Pressure Timeout	3.00 min
Advanced Settings	Full Scale	<b>v</b>	Advanced Settings	Connectors	0.00 m
Energy Options	Signal Source	Pressure	Energy Options	Start Input	Enabled
Configuration Management	Time Constant	105	Configuration Management	Analog output	
		<u> </u>		Officer	0.00

off on

3.00 ----

- **4.** The message "Parameter successfully applied" appears at the bottom of the screen.
- **5.** Select System Overview. You see a new tab called "Pump P 2.1L isobar".
- **5.** Select System Overview. You see a new tab called "Pump P 6.1L HPG (gradient type)".



**Next steps** Set the required parameters.

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

### A1.2.1 Direct control

#### AZURA® P 2.1L AZURA® P 6.1L 1. Select "Overview" and click on the pump 1. Select "Overview" and click on the pump picture to enter the Detail View menu. picture to enter the Detail View menu. A A ∎ © 00 O System Overview a II -0 System Overview • Eluent De mo P 6 1L P np P 2.1L I 욿 2 0.000 0.000 ۲ ۲ 2 2 0.0<sub>be</sub> 0.4tm A1 100 0s B1 0 0s ☆ ☆ Ξ E Fig. A-9 Direct control Fig. A-8 Direct control



ure 300

Target pressure Pressure 0.0 to P Min 0 bar S/N FB014160000

2. Set: 2. Set: flow limits (min and max) flow limits (min and max), target pressure and target pressure pressure limits (min and max) pressure limits (min and max) eluent composition 3. Confirm your settings with < Apply>. 3. Confirm your settings with <Apply>. A 2 0 0 **Detail View** Pump P 2.1L Isobar Apply a Pump P 6.1L HPG Apply Cancel Detail View Flow limits Channels and 0 2 Status: Off 100.0 æ Flow li Flow 0.000 memo Status: Off A2 B1 Target nel A 100% 暴 2 Flow 0.000 mm Target pres Target presssure 0 ar ☆ 2 < Pre Pressure 0.4 ter 00 % Min Other

Pump P 2.1L isobar >

4. The pumps start with selected configuration.

Set parameter

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Pump P 2.1L Isobar

Fig. A-10

i

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

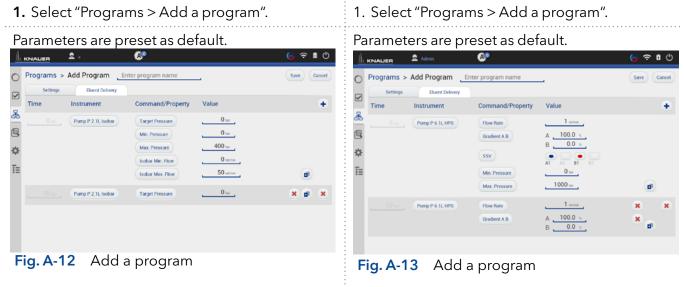
Fig. A-11

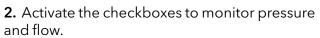
Set parameter

ð

# A1.2.2 Control via program sequence

<b>Note:</b> With this method, you can monitor pressure and flow rate.	AZURA® P 2.1L	AZURA® P 6.1L
	<b>Note:</b> With this method, you can monitor	pressure and flow rate.





# **2.** Activate the checkboxes to monitor pressure and flow.

6

10 min

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Programs > Add ProgramEnter pro     Settings	gram name	Sare Cancel	KNAUER Admin     KAUER     KAUER     KAUER     KAUER     KAUER     KENNY     Settings     Ebuert Delivery     General		
& ©	Waiting for trigger Waiting for temperature		Start of run settings	Autozero at start Waiting for trigger	
<ul> <li>End of run settings</li> <li>T =</li> </ul>	Standby Flow off Lamp(s) off		🔆 End of run settings	Waiting for temperature Standby	
Auxiliary traces Pump P 2 IL Isobar	Pump P 2.1L Isobar - Piessure Pump P 2.1L Isobar - Flow	* *	Auxiliary traces Pump P.6.1L.HPG	Flow off Lamp(s) off Pump P 6.1L HPG - Pressure	
Reports	System Configuration		Benotte	Pump P 6.1L HPG - Flow	0
Fig. A-14 Auxiliary	races		Fig. A-15 Auxiliar	y traces	

# **Science with Passion**



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KNAUER Wissenschaftliche Geräte GmbH Hegauer Weg 37-38 14163 Berlin

Phone: +49 30 8 Fax: +49 30 8 E-mail: info@kr Internet: www.kr

+49 30 809727-0 +49 30 8015010 info@knauer.net www.knauer.net