

# **Software**

Mobile Control App User Manual

V6851



# HPLC

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For your own safety, read the manual and always observe the warnings and safety information on the device and in the manual.

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The Mobile Control, version V 4.0 or higher, is a program for hand-held devices which operate with Windows 10 or higher. The Mobile Control is used to operate devices of the AZURA product line. As soon as devices are accessed through other software, they cannot be operated via Mobile Control. However, information like the flow rate or the device status continues to be displayed.

Data transfer between the devices and the Mobile Control is usually realized via a WIFI router. Alternatively, the Mobile Control can also be installed on a computer with Windows 10 and access the devices via LAN.

The devices to be operated, the device-specific data as well as the run parameters are recognized and displayed automatically. Different user accounts can be created. It is only possible to switch between users if no run is in progress. Every user profile is password-protected.

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

| System requirements                                 | Supported instruments    |
|---|--------------------------|
| Windows 10  | Pump P 6.1L              |
| <ul><li>Display size: minimum 7", 10" for</li></ul> | Pump P 2.1L              |
| Data Acquisition                                    | Pump P2.1S               |
| <ul><li>Display resolution: 1024 x 768</li></ul>    | Pump P4.1S               |
| RAM: 1 GB without data collecting,                  | Detector RID 2.1L        |
| 2 GB with Data collecting                           | Detector UVD 2.1L        |
| CPU: 1.33 GHz                                       | Detector DAD 6.1L        |
| Processor: Dual-Core                                | Detector DAD 2.1L        |
|   | Detector MWD 2.1L        |
| Disc space: Windows: 50 MB with-                    | Detector UVD 2.1S        |
| out data collecting, 200 MB with                    | Assistant ASM 2.1L       |
| data collecting                                     | Column thermostat CT 2.1 |
|   | Autosampler AS 3950      |

# Certificate

After a Mobile Control license is purchased, KNAUER provides a certificate containing information about the activation code, serial number of the license and other relevant data relating to your Mobile Control. Please keep the certificate in save custody.

# **Installing the Mobile Control**

After installing the Mobile Control on your device it can be operated in demo mode or be activated.

#### Demo Mode

The demo mode offers an overview of the Mobile Control functionalities. You can operate virtual devices with the demo version. After having been downloaded, the Mobile Control can be started by pressing the TAKE A DEMO TOUR button.

#### **Full Version**

If a tablet PC is delivered, the Mobile Control is installed and activated already. To use your own tablet PC, download the full version from the KNAUER website and install it on your tablet PC.

In order to use the entire range of features of the Mobile Control, a full version has to be purchased and installed.

Please keep in mind that previous license codes (Version 1.x) are not longer valid. For Version 2.x, a new license code must be purchased from KNAUER.

# **Installing the Mobile Control**

Deinstall a previous version of the mobile control, if applicable and delete the data base after storing the previous data at a safe place.

**Note:** The installer is provided in *DownLoads · Software · AZURA Mobile Control*.

#### **Process**

- Download the installer from the KNAUFR website.
- Execute the installation.

Next steps: Start the Mobile Control and activate the full version.

#### **Activating the Full Version**

After the installation is finished, a 20-digit device code is generated. This device code is linked to the MAC address of the network adapter of the hand-held device on which you have installed the Mobile Control.

**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.

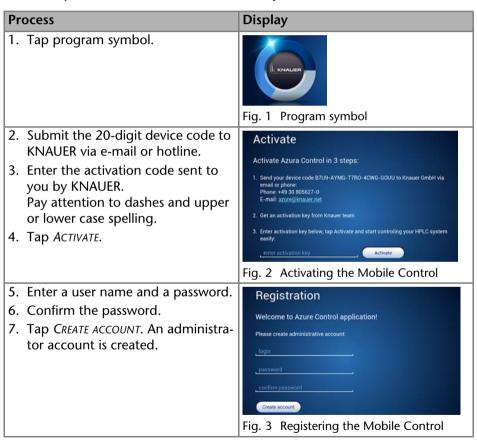
KNAUER generates a license for the device code, which is activated with an activation code. After purchasing a license, KNAUER sends a certificate to you, containing the activation code and all relevant information. Please keep the certificate in safe custody.

If you order a Mobile Control license together with a tablet, KNAUER deliver the configured tablet with activated Mobile Control with certificate. Please keep the certificate in safe custody. If you order a Mobile Control without preconfigured Tablet you will get the Mobile Control certificate with the serial number, but without activation code.

When entering the activation code, include dashes and note the upper and lower case spelling. It might be necessary to switch off the automatic correction of your hand-held device. Store the activation code carefully.

**Note:** Make sure on your hand-held device that the WLAN is switched on before entering the activation code.

**Note:** Keep the activation code in safe custody.



Next steps: Start the Mobile Control.

## **License Validity**

After the full version has been activated, the license is linked to the MAC address of the hand-held device and cannot be transferred to another device. If the device goes out of operation, one more license may be generated for a new hand-held device. Contact the KNAUER technical support for a new license.

Phone: +49 30 809727-111

Fax: +49 30 8015010

E-mail: mobilecontrol@knauer.net

You can make your requests in English and German.

Re-installing the operating system on the same device has no effect on the validity of the license because the license is linked to the hardware of the device.

#### **Mobile Control manual**

The manual is provided on the KNAUER website. When you order a Mobil Control with a tablet, the tablet carries the manual as PDF file.

# Integration into the Network

To operate the devices with the Mobile Control, a LAN connection has to be established to the same WLAN router which the Mobile Control communicates with. All devices which are logged into the same network are displayed under System Setup · Instrument Lookup · Disconnected.

# **Starting the Mobile Control**

The Mobile Control is started by tapping the icon. The user is prompted to enter the user name and password. If more than one configuration is defined then it is necessary to select the required configuration. For more information please read the chapter on configurations (see "Configuration Management" on page 21).

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 (see chapter *User Management*).

# **Exiting the Mobile Control**

#### **Process**

- 1. Log out the current user.
- 2. Tap CLOSE ① on the start screen.



Fig. 4 Closing the Mobile Control

# **Updating the Mobile Control**

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

Please deinstall the antecessor version of the mobile control before installing the updated version.

# Changing/Logging-Out User

With LOGOUT, the user leaves the Mobile Control and all devices are disconnected. The start screen displays the user login. All set data is stored. After that, proceed as described in "Installing the Mobile Control" on page 7.

## Monitor Mode

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

The latest version of Mobile Control is supported by:

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

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It is recommended to tap on the BROWSE button under INSTRUMENTS LOOKUP after changing from Mobile Control mode to monitor mode and after quitting the monitor mode, to refresh the connection of the Mobile Control to the devices.

# **Operation**

APPLY: Numerical input or settings are confirmed with APPLY.

CANCEL: Cancels the current process.

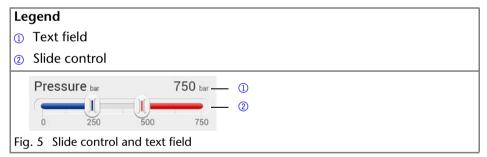
The text color indicates the status of the buttons. On active buttons, the text color is blue, on inactive buttons the text color is gray.

# **Prerequisites**

- Hand-held device with Windows 8 (see "System requirements" on page 6)
- WLAN router or LAN router
- The devices are not operated by any other software.
- The full version license has been purchased.
- The Mobile Control has been installed.

# **Entering Values**

Enter values via a slide control ② or via the text input field ① above the slide control. Change the value by tapping the text field/value. If the entered value is above the maximum or below the minimum value, it is corrected to the maximum or minimum value automatically.



#### **Buttons**

The Mobile Control is operated via the touchscreen of a tablet computer or via a personal computer with Windows 8. Submit the set parameters to the respective device with APPLY. The following buttons are available:

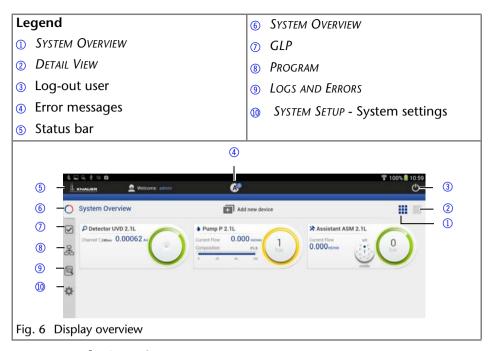
12 Operation

| Control element | Explanation:   |
|-----------------|--|
|                 | <ul><li>SYSTEM OVERVIEW</li><li>Shows an overview of all connected devices.</li></ul>  |
|                 | GLP  Displays GLP data for the selected device.  |
|                 | PROGRAMS AND SEQUENCES  List of all saved programs and sequences.  Create programs or sequences.  LOGS AND ERRORS  Lists all errors, system logs, and communication logs.  |
|                 | <ul> <li>SYSTEM SETUP</li> <li>NETWORK SETTINGS shows an overview of network settings.</li> <li>PREFERENCES displays basic settings of the devices.</li> <li>ENERGY OPTIONS displays standby mode settings and wakes up devices from standby mode.</li> <li>INSTRUMENT LOOKUP shows an overview of available devices and all devices which are connected.</li> <li>USER MANAGEMENT displays settings and user accounts.</li> </ul> |
| <b>=</b>        | RUN QUEUE  Overview of processable programs and sequences  |
|                 | PROGRAM ■ Graphical display of the program.  |

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| Control element                             | Explanation:   |
|---|--|
|   | SYSTEM OVERVIEW, DETAIL VIEW  Toggles between SYSTEM OVERVIEW and DETAIL VIEW.   |
| Assistant ASM21L  Current Flow 0.000 mt/min | <ul> <li>Displays different sets of data depending on<br/>the device.</li> <li>Button displays DETAIL VIEW.</li> </ul>   |
| A   | Error messages  Displays error messages.   |
| Stop  | STOP  Stops the run.   |
|   | LOGOUT ■ Logs out the user and displays the login screen.  |
| Run   | Button with different functionalities, e.g. RUN, STOP, or STANDBY.   |
| Pressure bar 750 bar 0 250 500 750          | <ul> <li>TEXT FIELD AND SLIDE CONTROL</li> <li>Slide control sets values. The set value is displayed in the text field.</li> <li>Enter the numeric value by tapping the text field.</li> </ul> |

The figure displays an overview of the general buttons:



# **Network Settings**

All Instruments Lookup Broadcast Port, Ip Address, Subnet Mask, and Gateway data is read-in automatically and does not have to be modified.

NAME: Name of the network.

INSTRUMENTS LOOKUP BROADCAST PORT: Communication in LANs is realized via ports which are part of the network address. If more than one HPLC system is connected to the same LAN and you plan on controlling them separately, you can use different ports to avoid interference. To do so, the port number of every device has to be changed to the same port number in the device configuration of the chromatography software or Mobile Control. We recommend to use the same port number for all devices in the same system.

**Note:** The port is set to 10001 at the factory. Use identical port numbers in the device configuration of the chromatography software or Mobile Control and in the device, otherwise the connection cannot be established.

ADRESSING SCHEME: The coice between DHCP and STATIC is made under SETUP > GENERAL for each device. DHCP reads-out data like IP ADRESS automatically. If STATIC is activated, data is entered manually.

IP ADDRESS: Displays the IP address of the device.

SUBNET MASK: Displays the subnet mask.

GATEWAY: Displays the gateway.

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RESET LAN SETTINGS: used to rest communication settings of KNAUER devices for factory defaults (DHCP, 10001 port). A device you want to reset should be on and connected to the same router. To run command you should enter the serial number of the device.

# **Preferences**

SET DATE, SET TIME: The date and time settings refer to the system setups of the hand-held device on which the Mobile Control.

PRESSURE UNITS: The unit for pressure is displayed under PRESSURE UNITS. Choose between bar, MPa and psi.

SYSTEM DETECTOR UNITS: The unit for absorption is selected under SYSTEM DETECTOR UNITS. Choose between AU, mAU,  $\mu$ AU (UV detectors), mRIU,  $\mu$ RIU, nRIU (RI detectors).

TEMPERATURE UNITS: The unit for temperature is selected under TEMPERATURE UNITS. Choose between Celsius °C and Fahrenheit °F.

WAIT FOR TEMPERATURE: Choose between START IMMEDIATELY and WAIT. Here is defined, whether a program starts immediately or after reaching of a programmed target temperature.

SYSTEM LOG: Choose between SYSTEM and COMMUNICATION. The Mobile Control logs the system protocol/SYSTEM LOGS and the communication protocol/COMMUNICATION LOGS. The messages are listed under LOGS AND ERRORS.

LOG LIFETIME: Choose between 1 week, 2 weeks, and 1 month. LOG LIFETIME displays the duration for which the system log or communication log data is stored.

EMERGENCY MODE: This setting specifies how the HPLC devices behave, if the WLAN connection is disrupted. This may happen if the tablet leaved the operating distance of the WLAN router, or the display is switched off. If the setting is set to CONTINUE, the devices keep on running. Programs that may run at that moment will continue to the end. If the setting is set to STOP, the pumps will stop upon disruption of the WLAN connection, and programs will be canceled.

SHOW VIRTUAL KEYBOARD: This setting is only available with a Windows operating system. The virtual keyboard appears every time a text field is tapped, to make an entry. For tablets without hardware keyboard this setting should always be active. Switching off leads to deactivation of the virtual keyboard not only in the Mobile Control, but for all areas of the tablet. For entries in text fields the virtual keyboard will not appear anymore. If the Mobile Control is installed on a desktop PC with a hardware keyboard, though, it is advisable to switch off the virtual keyboard. Otherwise the virtual keyboard appears each time a text field is clicked on to make an entry, and will overlay the text field, so that the entry is hampered. In addition, all buttons must be clicked on twice to get a reaction.

# **Instrument Lookup**

INSTRUMENT LOOKUP lists all devices which are connected to the router.

BROWSE: Checks all devices which are connected to the router and are available for a configuration.

: Lists all devices under CONNECTED.
: Lists all devices under DISCONNECTED.

# Selecting an device

The Mobile Control is able to connect to one or more devices.

**Prerequisite** 

The Mobile Control has been connected to a router.

All devices which are connected to the selected router, are displayed under  $SYSTEM SETUP \cdot INSTRUMENTS LOOKUP$ .

- 1. Tap System Overview and ADD NEW DEVICE or select System Setup · Instru-MENTS LOOKUP. DISCONNECTED displays all devices which are connected to the router, but not to the Mobile Control. Active devices are displayed in black. Inactive devices, e. g. an device in standby, are displayed in gray.
- 2. Tapping the button adds the device to CONNECTED.
- 3. Tap *APPLY* to save the settings.

Selected devices are displayed under SYSTEM SETUP · GENERAL and under SYSTEM OVERVIEW.

# **Removing Devices from Selection**

- 1. The button removes devices from the configured system.
- 2. Tap APPLY to save the settings.

# **Device Settings**

If a device is connected to the Mobile Control under INSTRUMENT LOOKUP, it is displayed under SYSTEM SETUP · GENERAL .



*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.

S/N: The serial number of the device is read out automatically.

PORT: Communication in LANs is realized via ports which are part of the network address. If more than one HPLC system is connected to the same LAN and you plan on controlling them separately, you can use different ports to avoid interference. To do so, the port number of every device has to be changed to the same port number in the device configuration of the chromatography software or Mobile Control. We recommend to use the same port number for all devices in the same system.

**Note:** The port is set to 10001 at the factory. Use identical port numbers in the device configuration of the chromatography software or Mobile Control and in the device, otherwise the connection cannot be established.

DHCP: DHCP allocates IP ADDRESS and SUBNET MASK automatically.

STATIC: Static enables you to enter IP ADDRESS AND SUBNET MASK manually.

IP ADDRESS: Displays the IP address of the device.

SUBNET MASK: An IP address consists of two parts. One part of the IP address designates the network address of the device. The other part designates the distinct address of an device inside of a network. The subnet mask defines which part of the IP address is the network address of an device. It determines which other devices the respective device can communicate with, namely all devices with the same network address. This network is called subnet. This means that all devices of a system and the computer have to operate in the same subnet,

using the same network address. Devices in other networks can only be communicated with via a router.

*GATEWAY*: If communication has to be established with devices in other networks, a gateway is used. The gateway routes all network requests, which are not directed towards its own network (subnet) to another network (subnet). This task is usually performed by routers which communicate with subnets via IP protocols.

# **Setting the 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).

## Switching the Leak Sensor On/Off

- 1. Select device in menu SYSTEM SETUP.
- 2. Under LEAK SENSOR, activate the button ON or OFF.
- 3. The sensitivity of the leak sensor can be adjusted.

## Adjusting the Sensitivity of the Leak Sensor

- 1. Select device in menu SYSTEM SETUP.
- 2. Under Sensitivity, activate the button Low, Medium, or High.

#### Detector

INTEGRATION TIME (DAD): Displays the set integration time in ms.

CELL TYPE (DAD): To enter the installed flow cell choose between 3 mm/2  $\mu$ l, 10 mm/2  $\mu$ l, 10 mm/10  $\mu$ l, 50 mm/6  $\mu$ l; TEST CELL and FIBER OPTICS.

AUTOZERO AT WAVELENGTH CHANGE (DAD): If the function is ON, the autozero is carried out automatically at every wavelength change.

ACTIVE CHANNELS (DAD): Activates 1,2,3 or 4 channels.

PORT: Analog output for the signal that triggers e.g. the fraction collection. Choose between Inactive, EVENT 1, EVENT 2 and EVENT 3 depending on the type of detector.

Offset: Transfers the analog output signal in mV.

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 (DAD): Smoothes measuring values. Measuring points of a set time interval are combined and the mean value is displayed as a measuring point. A broader interval increases the smoothing proportionally. Choose between 0.00 s, 0.01 s, 0.02 s, 0.05 s (DAD), 0.1 s, 0.2 s, 0.5 s, 1.0 s, 2.0 s, 5.0 s, and 10 s.

RESTORE FACTORY SETTINGS: This function enables your to re-set the device to its default settings.

# **Pump**

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

PUMP HEAD: Displays the conveying volume of the pump head.

GRADIENT TYPE: Some pumps are pre-configured as isocratic, HPG or LPG pump. In this case, the configuration cannot be changed. For pumps that are not pre-configured, you can select ISOCRATIC, LPG BINARY or LPG TERNARY, HPG A or HPG B.

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 programm.

for the analogue input of the pump.

OFFSET (ANALOG OUTPUT): Offsets the analog output signal in V.

FULL SCALE (ANALOG OUTPUT): Choose between 1 V, 2 V, and 5 V.

SIGNAL SOURCE: Choose between PRESSURE, HPG/LPG - A, HPG/LPG - B, DISABLED, and FLOW.

TIME CONSTANT (Analog output): 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.

RESTORE FACTORY SETTINGS: This function enables your to re-set the device to its default settings.

#### Configuring the Pump for High-Pressure Gradient

For the pumps, which are not configured as HPG automatically, the following settings are made under System Setup · Pump:

- 1. Set one of the two pumps to HPG A.
- 2. Set the other pump to HPG B.

#### **Configuring the Pump for Low-Pressure Gradient**

For pumps, which are not configured as LPG automatically, the following settings are made under System Setup · Pump:

Set the gradient to LPG BINARY or LPG TERNARY.

#### **Setting the Mixing Chamber**

The mixing chamber can be set under SYSTEM SETUP  $\cdot$  PUMP  $\cdot$  MIXING CHAMBER. Choose between 50, 100, 200, 350  $\mu$ l, and a custom size.

#### **Assistant**

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

D2 LAMP (detector): The lamp can be switched on and off.

PUMP HEAD: Select the size of the pump head. Several sizes are available.

*IMIN SENSITIVITY* (pump): The motor current is a measure for the current load of the pump and therefore the system pressure for pumps which do not have a pressure sensor. The pump switches off when the current falls below the entered value. Setting for the minimum motor current permitted before the pump switches off (in %).

*IMAX SENSITIVITY* (pump): The pump switches off when the current exceeds the entered value. Setting for the maximum motor current permitted before the pump switches off (in %).

CONFIGURATION (valve): A list field with different valves is displayed. Choose between 6 PORT MPOS (multi-position valve), 8 PORT MPOS, 10 PORT MPOS, 12 PORT MPOS, 16 PORT MPOS, 6 PORT 2 POS, 8 PORT 2 POS, and 10 PORT 2 POS.

# **Autosampler**

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

TRAY CONFIGURATION: Opens menu to select used autosampler tray. Choose according to your installed trays

PREP. MODE: Turn on, if autosampler uses Prep Mode

LOOP VOLUME: Enter Volume of installed sample loop volume TUBING VOLUME: Enter Volume of installed tubing volume SYRINGE VOLUME: Enter Volume of installed syringe volume

RELAY EVENT: Choose relay event if needed

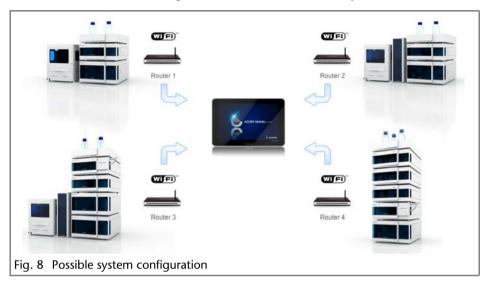
TRAY POSITION: Choose position of tray. "Home" = backside of tray cabinet,

"Front" = frontside of tray cabinent to change vials

SYRINGE POSITION: Choose if syringe needs to be changed NEEDLE EXCHANGE: Press start to exchange sample needle

# **Configuration Management**

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



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

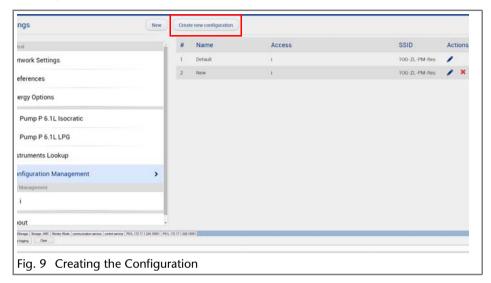
**Note:** Before adding a new configuration the required router must be connected to the application.

## **Connecting the Router to the Mobile Control**

#### Process **Figure** 1. To access the list of available net-\*... ·o: 1(1) works from the Start screen, move your cursor to the bottom right corner of the screen and open the (l) **ENG** charms. Keyboard On a device with touchscreen, swipe from the right side of the Change PC settings screen. 2. Click or tap Settings and then Net-3. Click or tap on the name of the Networks network you wish to connect to. View Connection Settings 4. Select "Connect automatically" if Airplane mode you use this network regularly. Windows will automatically connect to the network any time you Wi-Fi are within range. CNC Network Connect automatically Connect Cuibul Neagu

## **Creating the Configuration**

A new configuration can be created with the "Create new configuration" button under Settings > Configuration Manager. Adding a configuration name and defining the user permission will complete this process.



| Name    | name of configuration                                 |                           |  |
|---------|---|---------------------------|--|
| Access  | users that have permission for controlling the system |                           |  |
| SSID    | Service Set IDentifier of connected router            |                           |  |
| Actions | edit existing configuration:                          | delete new configuration: |  |
|         |   | ×                         |  |

# **System Overview**

The system overview offers an overview of all devices which are connected to the Mobile Control at the moment.

Every button displays information about the respective device. The view of an assistant depends on the configuration of the assistant.

| Detector | Device name, connection status, wavelength, signal                               |
|----------|--|
| Pump     | Device name, connection status, flow, pressure, the current gradient composition |
| Valve    | Device name, valve position  |

Column Thermostat Device name, connection status, target temperature,

lower and upper temperature safety limit

Autosampler Device name, connection status, vial, temperature

Settings like flow or valve position are made in the *Detail View* of the respective device. If a degasser is integrated into an assistant, it is not displayed as a device. The degasser cannot be operated with the Mobile Control.

#### **Device Status**

The connection status of the device is indicated in SYSTEM OVERVIEW with four different colors:

|                                      | green  | yellow   | red                                  | blue                           |
|--------------------------------------|--|--|--------------------------------------|--------------------------------|
| Detector                             | The detector is now ready to operate.  | The lamp is turned off or the detector starts.                                   | The device transmits an error.       | The device is in standby mode. |
| Pump                                 | The pump conveys.  | The pump is ready for operation.   | The device transmits an error.       | The device is in standby mode. |
| Assistant with detector and/ or pump | The detector is ready and/ or the pump conveys.  | The lamp is<br>turned off or<br>starts or the<br>pump is ready<br>for operation. | The device transmits an error.       | The device is in standby mode. |
| Column thermostat                    | The column<br>thermostat is<br>heating or<br>cooling or has<br>reached the<br>target tem-<br>perature. | The column<br>thermostat is<br>ready for<br>operation.                           | The device<br>transmits an<br>error. |                                |
| Autosampler                          | The Autosampler is ready for operation.  |  | The device transmits an error.       |                                |

## **Detail View**

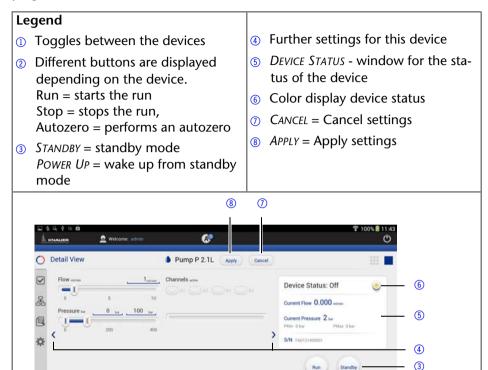
Via SYSTEM OVERVIEW · DETAIL VIEW or by tapping on the widget in the SYSTEM OVER-VIEW you can access the DETAIL VIEW. Information and settings for the current device are displayed here.

Some devices provide additional settings on further pages. To browse to the next page, tap the < or > (arrow) (4) in the center of the screen.

(2)

Assistant ASM 2.1L > (1)

If more than one device is installed, you can browse through the devices by tapping the arrows < and >  $\bigcirc$ , at the bottom.



## **Events - Setting Short-Circuit Bridges**

Events are short-circuit bridges which can be programmed or manually activated. They operate external devices.

Short-circuit bridges are set under DETAIL VIEW · EVENTS.

**Note:** Note the information about events in the user manual of the respective device.

1. Tap the drop-down list for ON, PULSE, or OFF.

#### **Detector Settings**

✓ Detector UVD 2.1L

Fig. 10 Detailed view of the pump

The following section describes the detector settings.

#### **Entering the Wavelength**

The wavelength is entered under DETAIL VIEW · WAVELENGTH.

- Tap the text field and enter the value or adjust the value with the slide control.
- 2. Save data with APPLY.

#### **Entering Reference Correction**

A baseline correction can be activated for channels 1 and 2 under *Detail View* · *Reference Correction*.

#### Signal Mode

Touch DIRECT or INVERTED to change the signal.

DIRECT SIGNAL(+): Displays the signal without modifications.

INVERTED SIGNAL (-): Inverts the signal.

#### Switching the Lamp On/Off

The lamp of the detector can be switched on and off.

DEUTERIUM LAMP ON/OFF, HALOGEN LAMP ON/OFF: The lamp is switched on or off using ON oder OFF. The text color displays the current status of the lamp. On an active button, the text color is blue.

#### **Checking the Wavelength Accuracy**

By touching VALIDATE or CALIBRATE the device checks the wavelength accuracy.

#### Performing an Autozero

Tap AUTOZERO. The DEVICE STATUS displays 0.00000 AU after an autozero.

If the function  $DEVICE\ SETTINGS \cdot AUTOZERO\ AT\ WAVELENGTH\ CHANGE\ is\ activated,$  the device is carried out an autozero at every wavelength change. By default all detectors carry out an autozero at the start of a run.

## Flushing the Detector

RID 2.1L only. The flush function activates the reference cell valve enabling this cell to be purged with eluent. The flush valve can be switched on and off immediately either via software or via analog command; alternatively via software a flush time program can be selected, whereby the valve is switched on and after a selected time span (30 s, 60 s, 120 s, 400 s) the valve is automatically switched off. The flush time program can be interrupted at any time with the off command.

#### Target temperature

RID 2.1L only. It is possible to select the temperature of the optical unit in the range 30-55 °C in 1 °C steps via software. It is recommended to set the temperature 5-10 °C above the ambient conditions, in order to improve and ensure baseline stability.

#### **Pump Settings**

The following section describes the pump settings.

#### **Setting the Flow Rate**

Set the flow under FLOW and confirm with APPLY. The pump starts running. The pump can be stopped again with the STOP-button in DETAIL VIEW.

#### **Setting the Pressure**

Set the minimum and maxium pressure under PRESSURE and confirm with APPLY.

Minimum and maximum pressure is set with 2 slide controls or via the text field.

Minimum pressure: The pump switches off after 30 seconds, if the pressure goes below the minimal pressure limit. This may be the case, if a leak is detected or air bubbles are in the system.

Maximum pressure: To protect the column, the pump switches off immediately, if the pressure excesses the maximum pressure limit, e.g. in case of clogging or an excess flow rate.

#### Gradients

If a gradient-compatible pump or pump combination has been connected, the gradient can be set under *Detail View*. Some pumps have to be configured as gradient pump under *System Setup* > *Pump* first (see chapter *Device settings* > *Pump*).

#### **Setting the High-Pressure Gradient**

Under DETAIL VIEW, the settings for the composition of the gradient are made.

Some pumps offer a solvent selection option. For these pumps, a selection can be made for every channel between two different solvents.

Pump A: Channel A1 or A2

Pump B: Channel B1 or B2

- 1. Select the required channels by tapping.
- 2. Tap the text field to enter the amount of solvent in %. The channel's share of the gradient is indicated by the color of the bar.

# **Setting the Low-Pressure Gradient**

Under *Detail View*, the settings for the composition of the gradient are made. The active channels are shown as colored dots. For pumps, that are pre-configured as LPG pump, channels can be activated or deactivated here separately by tapping. For pumps, that are not pre-configured as LPG pump, this setting can be made under *System setup* > *Pump* by choosing between *LPG BINARY* or *LPG Ter-NARY*.

Tap the text field to enter the amount of solvent in %. The channel's share of the gradient is indicated by the color of the bar.

#### Choosing the solvent factor

Use the arrow > in *DETAIL VIEW* to switch to further settings. Select the solvent for each channel from the drop-down list under *SOLVENT A, B, C*, or *D*. The factors of compressibility for the listed solvents are provided. For other solvents tap the text field in last row of the list and enter the factor of compressibility for a user defined solvent.

#### **Purge**

To remove air from the pump head or to change the solvent, purge the pump with *Purge*.

- 1. Open the venting screw at the pressure sensor to prevent a pressure surge and damage to the column.
- 2. Use the arrow > to move to other settings.
- 3. Enter the flow under PURGE.
- 4. Tap the button ON and confirm with APPLY.

#### **PMax Mode**

The  $P_{\text{Max}}$  Mode is available for some pumps and enables settings which determine how the pump reacts when maximum pressure is reached.

If the  $P_{\rm Max}$  Mode is activated, the pump continues to run with the set pressure. The flow is adjusted in order to keep the pressure. A maximum flow can be set under  $P_{\rm Max}$  MODE · MAX. FLOW.

At the end of a run, the flow is gradually decreased to prevent a sudden drop in pressure.

- 1. Use the arrow > to move to other settings.
- 2. Tap the button  $P_{Max}$  MODE. A window is opened.
- 3. Tap ON, enter a value for MAX.FLOW and confirm with OK.
- 4. Confirm with APPLY.

#### Isobar Mode

The Isobar Mode will be available in a later version.

#### **Starting Pump**

To start the device, open the DETAIL VIEW and tap RUN.

#### Valve Settings

The following section describes the valve settings.

#### Choosing a Valve

The valve head is recognized automatically and displayed in the menu SYSTEM SETUP · ASSISTANT · CONFIGURATION. For 6-port valves, the valve has to be set as a 2-position valve or a multi-position valve under SYSTEM SETUP · DEVICE SETTINGS.

#### **Changing the Valve Position**

| Process                            | Figure                              |
|------------------------------------|-------------------------------------|
| 1. Select DETAIL VIEW.             | O Detail View                       |
| 2. Insert the corresponding valve  |                                     |
| position ① . The selected valve    | Valve                               |
| position is displayed as a number  | ①                                   |
| in the center of the graphic.      |                                     |
| 3. Tap APPLY to save the settings. | Fig. 11 Changing the Valve Position |

## Column thermostat settings

The following section describes the column thermostat settings.

#### Setting the target temperature

Set the target temperature under TARGET TEMPERATURE and confirm with APPLY.

#### Setting temperature safety limits

Set the minimal and maximal allowed temperature under *Temperature Safety LIM-ITS* and confirm with *Apply*.

## **Autosampler settings**

The following section describes the autosampler settings.

#### Start Wash

The autosampler will start a wash cycle to wash the cycles.

## Setting the target temperature

Set the temperature under TARGET TEMPERATURE and confirm with APPLY.

## **Move Tray**

Move tray to front or to back to enter or remove vials.

#### **Device Status**

Under *DEVICE STATUS*, the most important information about the device is displayed. Depending on the device, the type of information may differ.

#### General

S/N, the serial number of the device. For the assistant, the serial number of the assistant is displayed and not the serial number of the installed devices. The serial number of the installed devices is displayed under GLP data.

#### Detector

Wavelength

#### Pump

Current Flow

- Current Pressure (valid for devices with pressure sensor)
- Minimum and maximum pressure (valid for devices with pressure sensor)

#### Valve

Current valve position

#### Assistant

Depending on the configuration of the assistant, information about the respective device, as described above, will be displayed.

#### **COLUMN THERMOSTAT**

- Target temperature, the entered target temperature
- T Min, the minimum selectable temperature for this thermostat
- T Max, the maximum selectable temperature for this thermostat
- Temperature safety limits
- Measured temperature, the current temperature of the column thermostat

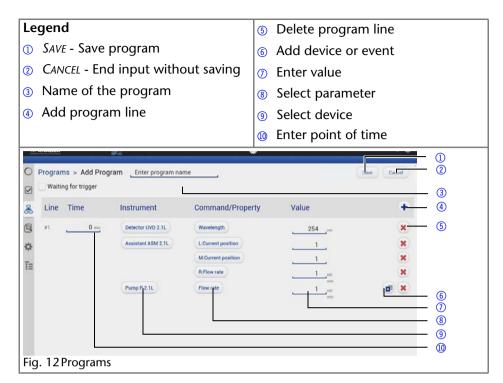
#### **AUTOSAMPLER**

- Device Status
- Current Vial
- Serial Number
- Target Temperature
- Current Temperature

# **Programs and Sequences**

Under *PROGRAMS AND SEQUENCES*, a list of saved programs and sequences is displayed. Programs and sequences can be saved, loaded, edited, copied, or deleted.

Tap the program or sequence to display the settings.



+ ADD: Adds a new program or sequence.

LOAD: Loads the highlighted program or sequence and starts running the first line of the program to adjust the devices to the starting parameters. Pumps start running.

EDIT: Enables editing of the program.

COPY: Copies the program. This program or sequence can only be saved under a new name.

DELETE: Deletes the highlighted program or sequence.

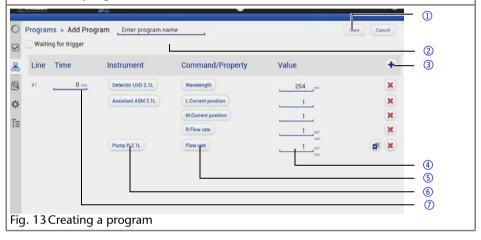
# **Creating the Program**

Open the window for creating programs under PROGRAMS and + ADD. Which input can be entered into list fields or text fields depends on the device and is displayed accordingly.

**Note:** If "Waiting for trigger" is activated, the program can be started with an external trigger.

#### **Process**

- 1. Enter the name of the program into the text field ②.
- 2. Set the time under *TIME*. To change the time, tap the text field ① and enter the time. The first program line always begins with 0 min.
- 3. Under INSTRUMENT, tap the button 6 and select an device.
- 4. Under COMMAND/PROPERTY, tap the button ⑤ and select a parameter.
- 5. Enter a value into the text field 4. The displayed value depends on the selected device.
- 6. Add further program rows 3.
- 7. Save the program with SAVE ①.



# Starting the Program

- 1. Select program.
- 2. Tap *LOAD* to load the program. The first row of the program is executed immediately and settings are kept until the program is started.
- 3. Tap START in the status bar to start the program.

# Stopping the Program

Tap *STOP* in the status bar to end the program. Pumps keep running and must be stopped manually under *DETAIL VIEW*.

# **Creating the Sequence**

Open the window under PROGRAMS and + ADD. Which input can be entered into list fields or text fields depends on the device and is displayed accordingly.

Note: Tapping the button CANCEL ends the input without saving.

#### Process

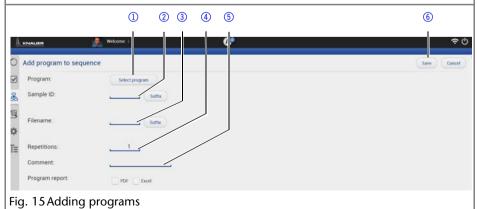
- 1. Enter the name of the sequence into the text field ②.
- 2. Add a program ①.
- 3. To save the sequence, tap the SAVE button 3.



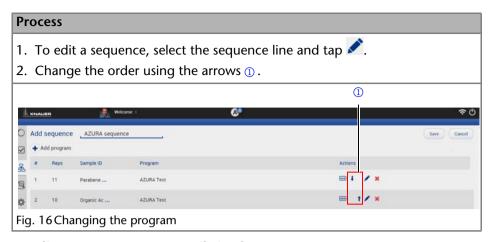
# **Adding Programs to the Sequence**

#### Process

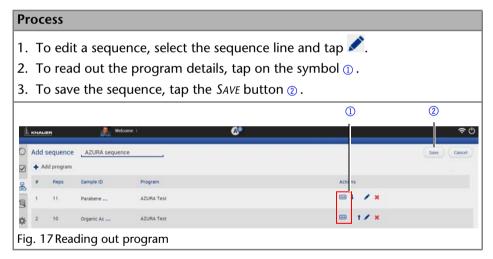
- 1. To edit a sequence, select the sequence line and tap  $\checkmark$ .
- 2. Tap the + ADD button14.
- 3. Tap the SELECT PROGRAM ① button.
- 4. Select the required program and press OK.
- 5. Enter a Sample ID ② and add the appropriate suffix (e. g. increment number, user name, method name, instrument name, date and time).
- 6. Enter a Filename 3 and add the appropriate suffix.
- 7. Enter the number of repetitions 4.
- 8. Enter a required comment 5.
- 9. To save the sequence, tap the SAVE button 6.



#### Changing the Program Order in the Sequence



#### **Reading Out Program Details in the Sequence**



# Data acquisition

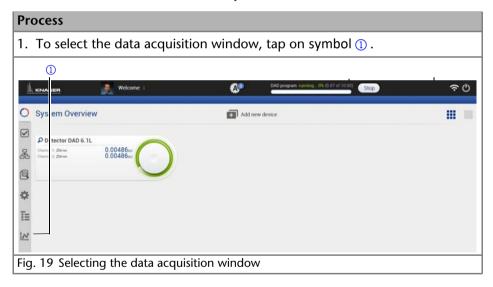
The data acquisition tool allows to acquire online data of detectors. Besides detector signals auxiliary traces from AZURA devices can be acquired. Auxiliary traces can be pressure signals from pumps, temperature traces from detectors, autosamplers and column thermostats.



Fig. 18 The data acquisition pool

# **Showing the Data Acquisition Window**

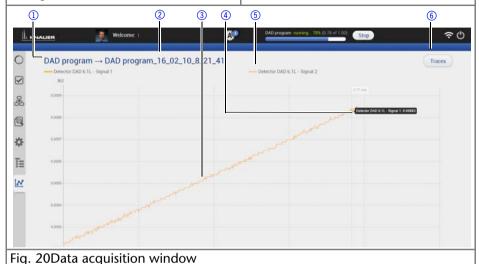
After loading and starting a program the data acquisition window is available. At the end of the program the data file will be stored in the project folder. All data will be stored in C:\Knauer\Project folder\Result\Data



# Legend

- Program name
- ② Program name with creation time
- 3 Signal trace

- 4 Current signal level
- 5 Legend of channels
- 6 Selection of visible traces

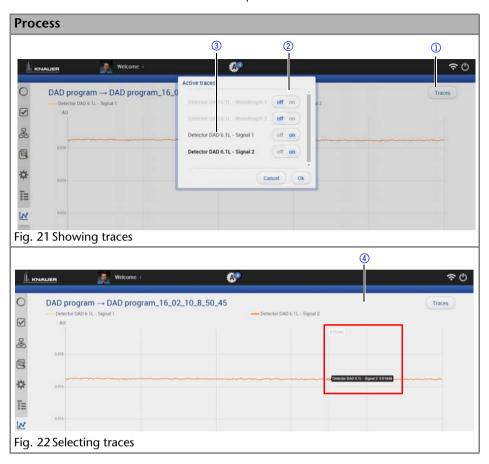


# **Showing or hiding Traces**

During a running program or at the end traces can be shown or hided. In the list of traces all available data traces, auxiliary traces and program parameters are shown. Program parameters are marked with light grey. This indicates that these traces can be not selected as active trace. The active trace can be selected.

#### **Process**

- 1. To show or hide the traces, tap the TRACES button ①.
- 2. To make this trace visible or hided, tap the OFF/ON button ②.
- 3. To select the active trace, press the trace name. The active trace is highlighted with bold face ③.



# Zooming by using the Touchpad

### Process

- 1. To move the data traces, touch the surface with one finger and moving the finger in the required direction.
- 2. Use gesture ① to zoom in into the x-axis of the data trace.
- 3. Use gesture ② to zoom out of the signal trace.
- 4. By double click on the screen the data trace will be fully unzoomed.



rig. 23 Zooming

# Zooming by using the Mouse

#### Process

- 1. The data trace can be moved by moving the mouse with pressed left mouse button.
- 2. Scroll wheel up/down + ALT: Zoom in/out y-axis
- 3. Scroll wheel up/down + CNTR: Zoom in/out X-axis
- 4. By left double click the data trace will be fully unzoomed.

### **Preview Run**

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



### **Data Viewer**

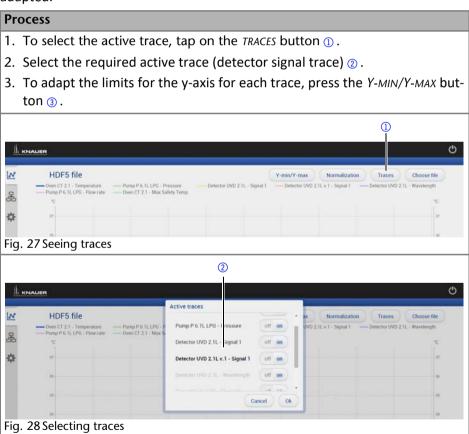
For reviewing acquired data and analysing chromatograms Data Viewer program must be started. After opening all the available traces are overlayed.

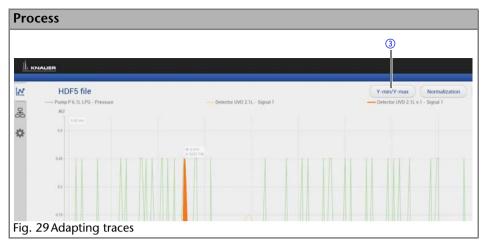




## **Analysing Traces**

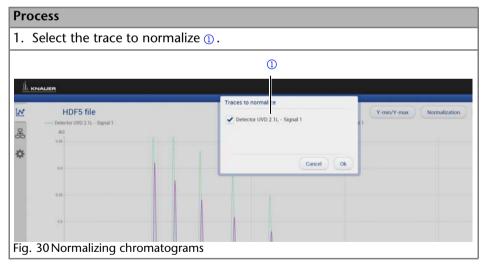
Select the trace you want to analyse. After selecting the active trace this trace will be automatically analysed. The limits for the y-axis for each trace can be adapted.





## **Normalizing Traces**

Traces can be normalized to other traces. This function allows you to normalize one or more chromatograms to the first chromatogram, adjusting the heights such that the apex height of a selected peak matches that of the peak selected on the first trace.

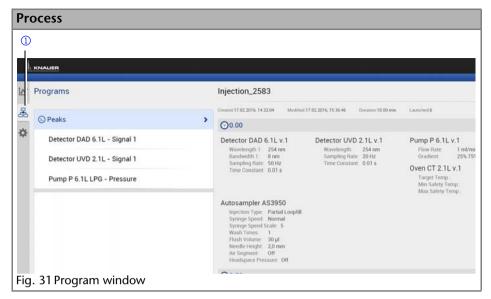


## **Reviewing Program**

After opening of a data file the method which is related to this program can be reviewed by clicking program symbol.

### **Process**

1. To review a method, tap on symbol ①.



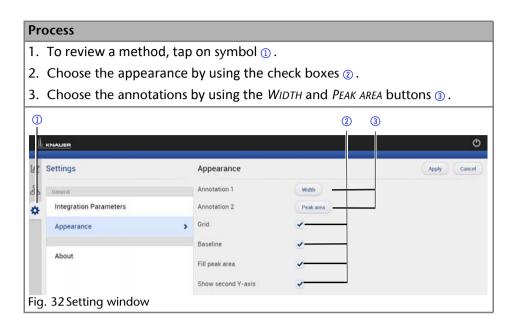
## **Appearance**

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

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

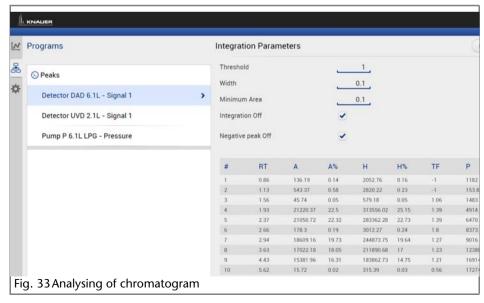
For each peak two different annotations can be defined. The following annotations are available:

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



# **Analysing of Chromatogram**

Each detector signal can be analysed. It is possible to define separate integration parameters for each trace. The Data Viewer will determine values for Peak number, Retention time, Peak Area, Peak Area, [%], Height, Height [%], Asymmetry, Plate numbers, Resolution, Width.



## **Integration Parameters**

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

### Width

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

#### Threshold

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

### Minimum Area

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

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

## Export

The result table for all traces can be exported into an ASCII-file. The file is stored in

## C:\Users\USERNAME\AppData\Local\Azura\Knauer\Export

This file can be used to create a calibration curve for calculation the amount of an analyte in a sample.

In case of changing the integration parameters and re-analysing the chromatogram, the new resulting values will be added to this ASCII-file.

## **KNAUER Firmware Wizard**

This chapter contains detailed information on how to perform an update of all possible firmware components for the various devices using either RS-232 or LAN interface.

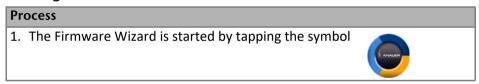
## **Installing the Mobile Control**

De-install a previous version of the Firmware Wizard, if applicable.



Note: After the installation a re-start of the computer or tablet is recommended.

## Starting the Firmware Wizard



The Firmware Wizard supports the firmware update of the following AZURA devices:

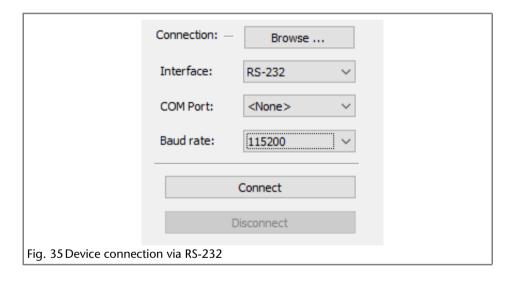
- 1. AZURA RID 2.1L
- 2. AZURA ASM 2.11
- 3. AZURA DAD 6.1L
- 4. AZURA DAD 2.1L
- 5. AZURA MWD 2.11
- 6. AZURA UVD 2.1L
- 7. AZURA UVD 2.1S
- 8. AZURA P 6.1L
- 9. AZURA P 2.1L
- 10.AZURA P 2.1S/P 4.1S
- 11.CT 2.1

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

### RS-232

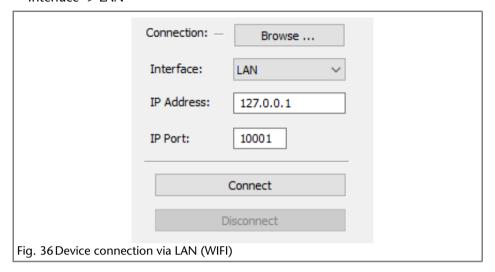
This chapter contains information on how to browse for the various devices using either RS-232 or LAN interface and how to establish connection with a particular device.

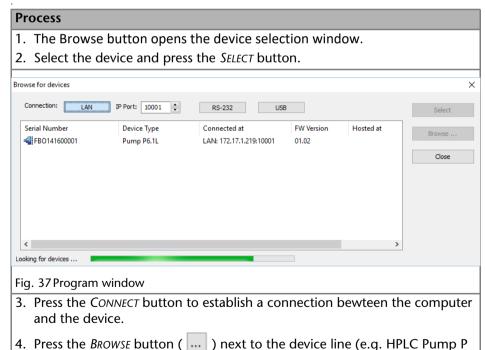
- Interface -> RS-232
- COM Port -> Select the COM-port to which the device is physically connected
- Baud rate -> Select the baud rate (has to correspond with the baud rate in the device)
- Connect -> Connects the device with the Firmware Wizard
- Disconnect -> Disconnect the device from the Firmware Wizard



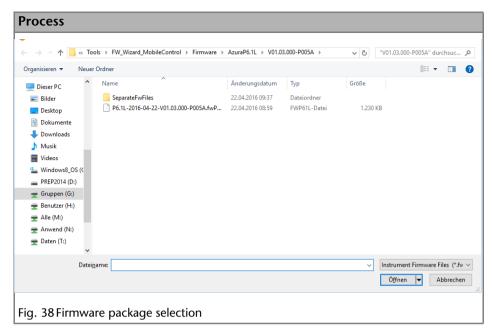
### LAN (WIFI)

Interface -> I AN

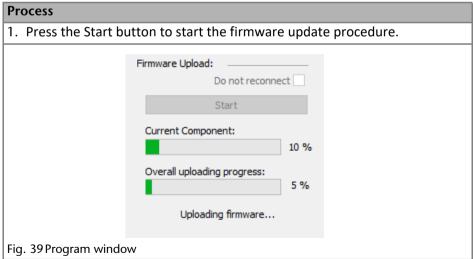




6.1L) to select the firmware package file. The file has the suffix .fwxxx.

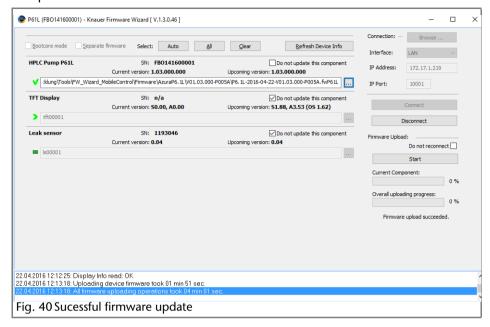


**Note:** The The Service Tool automatically ticks the checkbox next to "Do not update this component" if the chosen firmware of the component is older than the firmware in the device. In this case the firmware of this component will not be updated.



Run Queue 49

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.



# **Run Queue**

The run queue is used to manage and schedule programs and sequences. Once a sequence or program is initiated, it is entered into the run queue automatically.



To view the current run queue, select the RUN QUEUE button. Each row in the run queue represents a program or sequence that is in process or waiting. From the run queue, you can view details about each run or sequence in the queue, including the following:

- Type program run or sequence
- Name name of resulting data file
- State Pending, Running, Completed
- Duration
- Started
- left time

If you are running a sequence, the Status shown in the sequence spreadsheet displays the status of an individual run in the sequence.

When there are items in the run queue, buttons at the top of the window will become available:

- START will start the run queue again after the PAUSE button has been pressed.
   This button is disabled when a sample is running or if the run queue is empty.
- PAUSE will pause the run queue as soon as one run is completed and wait for your action. You do not have to wait for the entire sequence to be completed.
- ABORT will immediately terminate the item currently running in the queue and pause the sequence.
- Show History allows to see all already processed programs or sequences.

# **Logs and Errors**

Under LOGS AND ERRORS, all errors, system logs and communication logs are displayed.

SYSTEM LOGS are commands and signals which comprise the settings of an device. COMMUNICATION LOGS are control commands.

PERIOD: Changes the display period.

SYSTEM LOG, ERRORS, COMMUNICATION LOG: Activate the check box to display corresponding entries.

FILTER: Filters by user or source.

EXPORT TO TEXT, EXPORT TO XML: Saves all displayed messages to a text or XML file. The file is saved under the following path:

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

 Windows 8: Users/YourUserName/AppData/Local/Azura/tmp Saving the file overwrites the existing file.

# **Energy Options**

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

# **Putting Devices into Standby Mode Manually**

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

# **Putting Devices into Standby Mode Automatically**

To put the system or single devices into standby mode automatically, tap SYSTEM SETUP · ENERGY OPTIONS · SYSTEM STANDBY.

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

# Waking Up Devices from Standby Mode Manually

To wake up the device from standby mode, tap  $DETAIL\ VIEW \cdot POWER\ UP$ . 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.

## Waking Up Devices from Standby Mode Automatically

To put the system or single devices into standby mode automatically, tap  $SYSTEM SETUP \cdot ENERGY OPTIONS \cdot SYSTEM WAKE-UP$ .

- 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.

# **User Management**

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



CREATE NEW USER (for administrator only): Creates a new user.

CHANGE PASSWORD: Changes the password of the user. The user must have the respective permissions to do so (SETTINGS > READ AND MODIFY).

SETTINGS: SETTINGS refers to device and system settings. Select between READ and READ AND MODIFY.

GLP: Assigns reading rights for GLP data to the user.

PROGRAMS: The user may start programs/RUN or create programs, change or start them/EDIT, ADD NEW AND ETC.

LOGS: If checked, allows the reader to read the messages under LOGS AND ERRORS.

# **Creating User**

If you execute 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.

- 1. Log in as administrator.
- 2. Select administrator under SYSTEM SETUP.
- 3. Tap CREATE NEW USER.
- 4. Enter a user name under LOGIN.
- 5. Tap PASSWORD and enter a password.
- 6. Tap CONFIRM PASSWORD and confirm password.

# **Changing the Password**

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

### **Changing Own Password**

- 1. Select user under SYSTEM SETUP.
- 2. Tap CHANGE PASSWORD.
- 3. Tap Current password and enter the current password.
- 4. Tap NEW PASSWORD and enter the new password.

GLP Data 53

- 5. Tap CONFIRM NEW PASSWORD and confirm the new password.
- 6. Confirm with OK and set with APPLY.

## Changing the Password of Another User

- 1. Log in as administrator.
- 2. Under SYSTEM SETUP, select the user whose password shall be changed.
- 3. Tap CHANGE PASSWORD.
- 4. Tap NEW PASSWORD and enter the new password.
- 5. Tap CONFIRM NEW PASSWORD and confirm the new password.
- 6. Confirm with OK and set with APPLY.

## GIP Data

Under GLP, you find a list of all devices for which GLP data can be displayed. Tap the respective device to display GLP data.

### General

| All Devices | Serial number    |
|-------------|------------------|
|             | Firmware version |
|             | Operation time   |

Operation time Installation date Last service

Leak sensor Serial number

Firmware version

#### **Detector**

**Optical Properties** Optical bandwidth at

> 656 nm FWHM Stray light (AU)

Light intensity I-Sig at UV-maximum (nW)

Light intensity of the signal channel at UV-maxi-

mum (nW)

Light intensity I-Ref at

Light intensity of the ref-UV-maximum (nW) erence channel at UV-

maximum (nW)

Number of filter wheel

switches

Lamps - Power Supply Serial number

> Operation time Firmware version

54 GLP Data

Supply number

Lamps - Deuterium

Lamp

Deuterium serial number

Operation time

Starts

Displays how often the lamp has been switched

on.

Light Source (RID 2.1L)

Operating time-Installation date-Light source

number

Optical Cell (RID 2.1L)

Validation Data (RID 2.1L)

Cell batch number

Last measured span Last measured span date

**Pump** 

Head left/right Serial number

Operation time

Cycles Piston cycles

Volume Total volume conveyed

to date

P-index Unit for the current

strain of the pump Pump head type

Pump Operation time

Assistant

Left, Middle, Right

device

Valves

Serial number

Head type

Pump Firmware version

Operation time

Head type Configuration

Switching cycles

Displays how often the

Pump head type

valve has been switched.

Firmware version Detector

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Operation time

Starts

Displays how often the lamp has been switched on.

The view of the assistant depends on the installed devices.

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Version 3.1

Last manual update: 2016-08-22

Printed in Germany on environmentally friendly paper

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