INTEGRA

VIAFLO ASSIST Operating instructions

127950_V00

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CE

Declaration of conformity | Konformitätserklärung | Déclaration de conformité | Declaración de conformidad | Dichiarazione di conformità

INTEGRA Biosciences AG – 7205 Zizers, Switzerland

declares on its own responsibility that the product | erklärt in alleiniger Verantwortung, dass das Produkt | déclare sous sa responsabilité exclusive, que le produit | declara bajo su propia responsabilidad que el producto | dichiara sotto la propria responsabilità che il prodotto

VIAFLO ASSIST	**Model: 4500**

in accordance with EC directives | gemäss der EU-Richtlinien | est conforme au terme directives CE | de acuerdo con las directivas CE | in conformità alle direttive CE

2006/95/EC	Low voltage equipment
2004/108/EC	Electromagnetic compatibility
2011/65/EC	Restriction of Hazardous Substances
2002/96/EC	Waste Electrical and Electronic Equipment

is in compliance with the following normative documents: | mit den folgenden normativen Dokumenten übereinstimmt: | aux documents normatifs ci-après: | cumple las documentos normativos: | soddisfa le normative seguenti:

EN 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.
EN 61326-1	Electrical equipment for measurement, control and laboratory use - EMC requirements.

Standards for Canada and USA

CAN/CSA-C22.2 No. 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.
UL Std. No. 61010-1	Safety requirements for electrical equipment for measurement, control and laboratory use - General requirements.
FCC, Part 15, Class A	Emission

Zizers, September 9, 2013

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Table of Contents

1 Introduction

These operating instructions contain all the information required for installation, operation and maintenance of the VIAFLO ASSIST. This chapter informs about the symbols used in these operating instructions, the intended use of the VIAFLO ASSIST and the general safety instructions.

1.1 Symbols used

The operating instructions specifically advise of residual risks with the following symbols:

WARNING

This safety symbol warns against hazards that could result in injury. It also indicates hazards for machinery, materials and the environment. It is essential that you follow the corresponding precautions.

CAUTION

This symbol cautions against potential material damage or the loss of data in a microprocessor controller. Follow the instructions.

NOTE

This symbol identifies important notes regarding the correct operation of the device and labour-saving features.

1.2 Intended use

VIAFLO ASSIST has been designed for use in a laboratory. With a VIAFLO II electronic multichannel pipette attached, it performs pipetting operations in microplates automatically.

NOTE

Only VIAFLO II multichannel pipettes (as of serial number 600 000 and firmware version 3.00 or higher) can be used with VIAFLO ASSIST. The VIAFLO pipette needs its own Bluetooth module, which can be ordered separately (part no. 4221).

VIAFLO Electronic Pipettes are microprocessor controlled and stepper motor driven pipettes. They are used for aspirating and dispensing liquids in the volume range of 0.5–1250 µl using GripTip pipette tips. Please refer to the VIAFLO II Electronic Pipettes operating instructions for more detailed informations on www.integra-biosciences.com.

1.3 Safety notes

VIAFLO ASSIST complies to the recognized safety regulations and is safe to operate. VIAFLO ASSIST can only be operated when in intact condition and while observing these operating instructions.

The device may be associated with residual risks if it is used or operated improperly by untrained personnel. Any person operating the VIAFLO ASSIST must have read and understood these operating instructions, and particularly, the safety notes, or must have been instructed by supervisors so that safe operation of the device is guaranteed.

Regardless of the listed safety notes, additional applicable regulations and guidelines of trade associations, health authorities, trade supervisory offices, etc. must be observed.

Do not open or modify the VIAFLO ASSIST in any way. Repairs may only be performed by INTEGRA Biosciences AG or by an authorised after-sales service member.

Parts may be replaced with original INTEGRA Biosciences parts only.

WARNING

Do not use the VIAFLO ASSIST near flammable material or in explosive areas. Also, do not pipette highly flammable liquids such as acetone or ether.

When handling dangerous substances, comply with the material safety data sheet (MSDS) and with all safety guidelines such as the use of protective clothing and safety goggles.

NOTE

Prolonged exposure of the VIAFLO ASSIST to UV-light can cause discolouration and/or yellowing. However, this will not affect the performance of the device in any way.

2 Description of the device

2.1 Scope of delivery

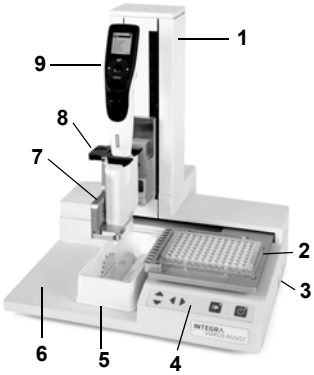
- VIAFLO ASSIST (VIAFLO II Electronic Pipette to be ordered separately)
- Mains adapter
- Sample pack 100 ml reagent reservoir

CAUTION

Verify the scope of delivery when unpacking the device and check for potential transportation damage. Do not operate a device that is damaged, instead contact your local dealer.

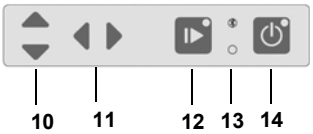
2.2 Overview of the VIAFLO ASSIST

2.2.1 VIAFLO ASSIST device



1 **Tower**
2 **Plate sledge**
3 **Power connection**
4 **Keypad**
5 **Reservoir position**
6 **Instrument base**
7 **Pipette holder** on sliding arm
8 **Gripper**, lever to release the pipette
9 **VIAFLO Electronic Pipette**

2.2.2 Keypad



10 ▲ **Up** and ▼ **Down** arrow keys move the pipette along the Z-axis to teach pipetting heights.

11 ◀ **Left** and ▶ **Right** arrow keys move the plate sledge along the X-axis to adjust the plate sledge position.

12 **Start/Pause key**, to start/stop operations.
Green LED blinks: press to start operation/homing
Green LED lights: operation performed

13 **Bluetooth control LED** (lights blue if connection is active) and **Error LED** (flashes red in case of error)

14 **On/Off key** (lights green if On)

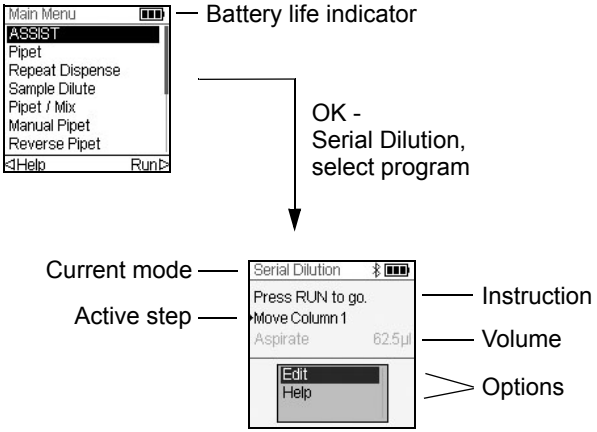
2.3 Overview of VIAFLO II Electronic Pipette

2.3.1 Pipette

15 **Display**
16 **Back button**, to navigate backward
17 **Touch wheel,** spin to scroll and move the cursor
18 **OK button**, to make a selection
19 **Left and right arrow buttons**, for selections
20 **Purge button**, to empty tips
21 **Run key**, to start operations
22 **Tip ejector**
23 **Finger hook**, facilitates easy operation
24 **Volume indicator label**, color matches GripTip box insert.

2.3.2 Display

The Display shows all pipetting options.



3 Installation

3.1 Operating environment

VIAFLO ASSIST has been designed for use in a laboratory. It shall be operated in a dry and dust-free location with a temperature of 5–40 °C and a maximal (non-condensing) relative humidity of 80 %, see “6.1 Environmental conditions” on page 25.

3.2 Turn on/off the VIAFLO ASSIST device

Connect VIAFLO ASSIST to the power supply with the supplied mains adapter. Turn on VIAFLO ASSIST by pressing the **On/Off key** (14), which is confirmed by the green LED lighting up.

To turn off VIAFLO ASSIST press the **On/Off key** two seconds. It’s LED switches off.

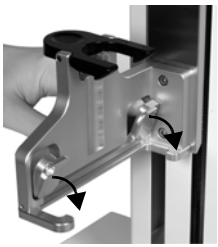
3.3 Turn on/off the VIAFLO II Electronic Pipette

Press and release the **Run key** (21) to turn on the pipette.

To turn off the pipette, press and hold the **Back button** (16) for 3 seconds.

3.4 Adapting the pipette holder

The pipette holder can be adapted to the type of the VIAFLO II Electronic Pipette.



To adapt the holder for an 8-channel pipette, push the silver lever down as shown beside. The width of the pipette holder is now reduced.

Lift the lever upwards, if a 12-channel pipette should be inserted.

3.5 Attaching and removing a VIAFLO II Electronic Pipette

Rotate the lower hosing of the VIAFLO II Electronic Pipette by 90 degrees as displayed in the picture.

To install a pipette, hold it at an angle and insert it into the pipette holder.

Then lift up until the black gripper snaps in place.

To release the VIAFLO II Electronic Pipette lift the black gripper by pushing down on one end.

3.6 Toolbox settings

3.6.1 Enabling ASSIST mode

The ASSIST mode is hidden from the Main Menu of the VIAFLO pipettes by default.

Use the **Touch wheel** to select Toolbox from the Main Menu and press **OK**.

Select Preferences and then Main Menu. Enable the ASSIST mode by pressing **OK** (green tick) and press ▷ to save your settings.

3.6.2 Setting tip type

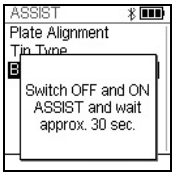
VIAFLO II Electronic Pipettes of 12.5 µl size can be used with standard or long GripTips. In order to teach the correct heights for VIAFLO ASSIST movements, the used tip type must be specified. Go to the Toolbox of the VIAFLO pipette, select ASSIST press **OK**.

Select Tip Type and press **OK**.

Use the **Touch wheel** to highlight Standard or Long. Press **OK** to select the correct tip type (green tick) and Save ▷ your settings.

3.6.3 Connection between VIAFLO ASSIST and pipette

The first time a specific VIAFLO pipette is going to be connected to the VIAFLO ASSIST, both instruments need to be paired. Scroll to the Toolbox and press **OK**.



From the ASSIST option select Bluetooth Pairing.

Switch OFF and ON the VIAFLO ASSIST device and wait approx. 30 sec. until the message “Pairing successful” is displayed. Press **OK**.

Select the ASSIST mode in the Main Menu of the VIAFLO pipette and press **OK**. The pipette establishes the Bluetooth connection.

When the blue Bluetooth symbol (✱) next to the battery indicator is displayed and the **Bluetooth control LED** (13) alights, both instruments are connected.

If the connection fails, press ◁ to retry the connection or refer to “4.4 Troubleshooting” on page 23. Alternatively, continue Offline ◁. During offline mode VIAFLO ASSIST cannot be operated. It is possible to create programs, however without teaching of active heights.

Press the **Start/Pause key** when it is blinking to home the VIAFLO ASSIST device.

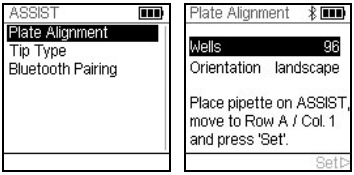
WARNING

Remove hands from VIAFLO ASSIST during homing.

After homing the LED of the **Start/Pause key** will turn off.

3.6.4 Adjusting the plate alignment

The Plate Alignment option is used to align the pipette's tips along the X-axis with the center of the wells in the first row/column of a microplate (depending on plate orientation). Select ASSIST on the Toolbox and press **OK**.



Select Plate Alignment and press **OK**.

Define the number of wells of your plate (e.g. 96 for a 96-well plate) and choose the plate orientation from either landscape or portrait. Use the **Touch wheel** to select an option and press **OK**.

With GripTips attached, install the VIAFLO pipette on the VIAFLO ASSIST and put a plate on the plate sledge. Use the ◀ **Left** arrow key to positon row A / column 1 below the tips. Press the arrow keys until the tips target the center of the wells. Press Set ▷ to save this position.

NOTE

Position alignments and pipetting with 384 well plates require a 16-channel VIAFLO II Electronic Pipette.

3.7 Charging the battery of the VIAFLO II Electronic Pipette

The battery indicator in the upper right corner of the pipette screen informs about the battery status. When it turns red, the pipette needs to be charged.

CAUTION

Use only the approved INTEGRA battery, power supply or charging stand. Use of an incompatible power transformer can damage the pipette.

The battery can be charged using either the Universal Voltage Power Supply (UPS) or a charging stand, see (“7.1 Accessories for VIAFLO Electronic Pipettes” on page 26).

Insert the UPS connector into the receptacle on the top back of the pipette. Plug the UPS into a wall outlet.

4 Operation

4.1 Running a program

From the ASSIST menu select the Pipetting mode and the stored program you want to run and press **OK**.

Press the **Run key** (21).

You are prompted to place the pipette on the VIAFLO ASSIST device, see "3.7 Charging the battery of the VIAFLO II Electronic Pipette" on page 12. When attached press the green blinking **Start/Pause key** (12) on the VIAFLO ASSIST device. It switches to solid green and the program will be performed automatically.

WARNING

Keep hands out of area of moving VIAFLO ASSIST parts during the run.

A program can be interrupted by pressing the **Start/Pause key** (12). Either press the **Start/Pause key** again to continue the program or press ◁ Abort on the pipette to abort the program.

4.2 Setting up a program

4.2.1 Overview pipetting modes

The table below shows pipetting modes which can be performed automatically in combination with VIAFLO ASSIST. All modes are accessed from the ASSIST Menu of a VIAFLO II Electronic Pipette. In each mode up to 10 different programs can be created and stored.

Pipetting mode	Description
Serial Dilution	Allows aspirating a transfer volume followed by a mix. Columns and Mix Cycles are tracked on the display.
Repeat Dispense	Allows dispensing multiple aliquots of the same volume without refilling the tips after each dispense for fast microplate filling and processing.
Variable Dispense	Allows dispensing multiple aliquots of different volumes.
Custom	Allows to create and store multi-stepped user-defined pipetting protocols.

Use the **Touch wheel** to scroll to your desired pipetting mode and press **OK**.

NOTE

If no Bluetooth connection is available, you can also use the offline mode to create a new program. Live teaching of pipetting heights is not possible in offline mode.

Press New ▷ to create a new program of the selected mode. Your are prompted to enter a name.

Use the **Touch wheel** to select characters and press **OK**. Once finished, press ▷ to save the name. The programs can later be renamed, see “4.3 Modify existing programs” on page 22.

Define all parameters of your program and press Save ▷.

To run the program, select the stored program and press **OK** on the VIAFLO Electronic Pipette, see “4.1 Running a program” on page 13.

4.2.2 General parameters of all pipetting modes

NOTE

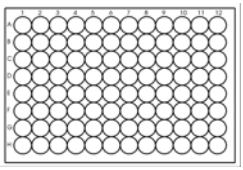
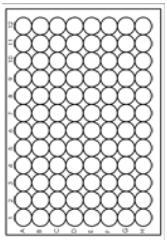
Perform all position settings with GripTips attached. For 12.5 µl volume pipettes the correct tip type needs to be defined first, see "3.6.2 Setting tip type" on page 11.

Plate setup

The following basic plate setup is part of every pipetting mode. Use the **Touch wheel** to select an option, define the required parameters and press **OK**. If a parameter is out of range, the VIAFLO pipette beeps. Press Error ▷ to read the error message.

NOTE

*Keep the **Arrow keys** (◀, ▶, ▲, ▼) pressed to increase the movement speed of the plate sledge or pipette holder during position teaching.*

Option	Description
Wells	Press **OK** and use the **Touch wheel** to choose the kind of well plate used (6-384). Press **OK**.
Orientation	Choose the orientation of the plate. Press **OK** to toggle between landscape and portrait:  Landscape Columns  Portrait Rows Note: Switching to portrait requires to adapt default parameters like "Rows", "Columns" or "Count".
Clear Height	The travel height at which the GripTips move from well to well. The tips must be above the plate. Press **OK** to display the setting dial showing the current selected height. • Use the ◀ **Left** and ▶ **Right** arrow keys of VIAFLO ASSIST to move the plate sledge under the pipette. Press the ▲ **Up** and ▼ **Down** keys to position the GripTips to the desired height above the plate. • Alternatively, use the **Touch wheel** to enter the height directly, if known (distance between **Plate sledge** (2) and Tip end). Press **OK** on the pipette to save current settings.

4.2.3 Serial dilution mode

Plate setup
See section “4.2.2 General parameters of all pipetting modes” on page 15.

Sample options

Option	Description
Location	Use the **Touch wheel** to choose one of the source containers where the initial sample is aspirated from: • **Reservoir**: reagent reservoir • **Tube Strip**: for PCR tubes • **Tip**: samples can be aspirated before the automatic program is started. • **Column 1-24** or **Row A-P**: the sample is in the selected column/row of the plate.
Height	This is the sample aspiration height of the source container. If Reservoir or Tube Strip are chosen as source container, the height is the distance between the Instrument base (6) and the end of the GripTip. For Column or Row the lower point of reference is the Plate sledge (2). • Adjust the tip height: - If the sample source container is located on the plate sledge, use the ◀ **Left** and ▶ **Right** arrow keys to move the sample aspiration spot underneath the GripTips. - If the sample is in the reservoir, use the ▶ **Right** arrow key to move the plate sledge out of the way. Press **OK** to display the setting dial. Press the ▲ **Up** and ▼ **Down** keys to position the GripTips at the correct aspiration height and press **OK**. • Alternatively, use the **Touch wheel** to enter the aspiration height directly, if known, and press **OK**.
Aspirate	Set the sample volume that will be transferred from well to well.
Asp Speed	Set speed uniquely for aspiration (1 = low, 10 = fast)
Mixing	Mixes the sample in the source container before the first aspiration. • Press **OK** to toggle between ON (green tick) and OFF (red X, default). • If ON, define Mix volume, Mix Speed and number of Mix Cycles.

Dispense/Mix options

Option	Description
First Column or First Row	Set the destination for the first transfer of the serial dilution (column 1-24 or row A-P).
Rows or Columns	Set the number of rows or columns to dilute (1-n, including the first row/column).

Height	This is the dispense height in the target container. It defines the dispense, mix, and aspiration height. • Use the ◀ **Left** and ▶ **Right** arrow keys to move the plate sledge into position, so that the pipette tips target above the center of any wells. Press **OK** to display the setting dial. Press the ▲ **Up** and ▼ **Down** keys to position the GripTips to the desired dispense height and Press **OK** on the pipette. • Alternatively, if the proper height is known, use the **Touch wheel** to enter it directly and press **OK**.
Mix	Set the mixing volume after dispensing. It does not affect the transfer volume.
Mix Speed	Set the mixing speed (1 = low, 10 = fast).
Mix Cycles	Set the number of mixes per well (1-30).

Last Dispense options

Option	**Description**
Location	Choose the destination where the last dispense should be purged: • **Reservoir**: the reagent reservoir serves as waste position • **Tube Strip**: for PCR tubes • **Tip**: last dispense remains in the GripTips and is purged manually • **Column 1-24** or **Row A-P**: the last dispense is dispensed in the selected column/ row of the plate.
Disp. Speed	Set speed uniquely for last dispense (1 = low, 10 = fast).
BlowOut at	The Blowout is following the last dispense and expels extra air to discharge residual liquid from the tips. It should be set below the liquid level for best results. • Adjust the blow out height: - If the last dispense is performed on a container located on the plate sledge, use the ◀ **Left** and ▶ **Right** arrow keys to move the dispense spot underneath the GripTips. - If the last dispense is performed in the reservoir, use the ▶ **Right** arrow key to move the plate sledge out of the way. While the setting dial is displayed, press the ▲ **Up** and ▼ **Down** keys to position the GripTips at the correct blow out height and press **OK**. • Alternatively, use the **Touch wheel** to enter the height directly, if known, and press **OK**.

Press ▷ to save your settings. This will return you to the list of Serial Dilution programs.

4.2.4 Repeat dispense mode

Plate setup
See “4.2.2 General parameters of all pipetting modes” on page 15.

Aspirate/Source options

Option	Description
Location	Use the **Touch wheel** to choose one of the source containers where the initial sample is aspirated from: • **Reservoir**: reagent reservoir • **Tube Strip**: for PCR tubes • **Tip**: samples can be aspirated before the automatic program is started. • **Column 1-24** or **Row A-P**: the sample is in the selected column/row of the plate.
Height Start	The VIAFLO ASSIST will automatically refill the GripTips if the number of dispenses exceeds the maximum volume of the pipette. The first aspiration will be at the start height and for consecutive aspiration steps the pipette will go lower until it reaches the end height. If Reservoir or Tube Strip are chosen as source container, the height is the distance between the Instrument base (6) and the end of the GripTip. For Column or Row the lower point of reference is the Plate sledge (2). Set the height for the first aspiration: • Use the ◀ **Left** and ▶ **Right** arrow keys to move the plate sledge into position, so that the GripTips target above the center of any wells. Press the ▲ **Up** and ▼ **Down** keys to position the GripTips to the desired dispense height and Press **OK** on the pipette. • Alternatively, if the proper height is known, use the **Touch wheel** to enter it directly and press **OK**.
Height End	Set the height for the last aspiration step.
Asp Speed	Set the aspiration speed (1 = low, 10 = fast).
Mixing	If required, set a mixing step before aspiration. • Press **OK** to toggle between ON (green tick) and OFF (red cross, default). • If ON, define Mix volume, Mix Speed and number of Mix Cycles.

Dispense options

Option	Description
First Dispense	The First Dispense is discarded back to the source immediately after aspiration. A First Dispense volume should be selected to improve accuracy and precision. Suggested volume: at least 5% of the pipette's maximum volume. • Press **OK** to toggle between ON (green tick, default) and OFF (red cross). • If ON, define the First Dispense volume.
Count	Set the total number of dispensing steps.
First Column or First Row	Define the column/ row where dispensing of the first volume should be started.
Dispense	Sets the volume to be dispensed in each well. The total aspiration volume is calculated automatically. The pipette cannot be overfilled.
Disp. Speed	Set speed of all dispensing steps (1 = low, 10 = fast).
Height	Set the height for the dispensing steps.
TipTouch	It is highly recommended to activate a tip touch after a dispensing step. It removes drops that may cling to the pipette tips. • Select where the tip touch should be performed. If set to “Liquid”, the tips will dip into the center of the wells. If set to “Side”, the tips will touch to the side of the wells. • Define the height for the tip touch.
Last Dispense	The Last Dispense is discarded back to the source container. A Last Dispense volume should be selected to improve accuracy and precision. Suggested volume: at least 5% of the pipette's maximum volume. • Press **OK** to toggle between ON (green tick, default) and OFF (red cross). • If ON, define the volume of Last Dispense and the blowout height. Set the Blowout height below the liquid in the wells for best results.

Press ▷ to save your settings. This will return you to the list of Repeat Dispense programs.

4.2.5 Variable dispense mode

Parameters

The settings remain the same as already described in section “4.2.4 Repeat dispense mode” on page 18. Only one dispense option is unique to variable dispense and not described in the previous section:

Option	Description
Dispense 1 to n	Set the different dispense volumes for every repeat dispense step.

Press ▷ to save your settings. This will return you to the list of Variable Dispense programs.

4.2.6 Custom program mode

The custom program allows for a step-based set up of individual pipetting protocols. Each program can contain up to 98 steps.

From the ASSIST Menu select “Custom”, press **OK** and define a name of your program.

The first line is highlighted. Press **OK**.

Use the **Touch wheel** to select a first step from the menu. Press **OK**, define the required parameters and press **OK** to add the step.

After adding the first step, the selection should now be on the second line. Press **OK** again to define the second step. Continue adding steps until your entire pipetting protocol is defined.

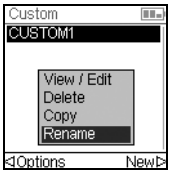
The individual steps based upon the following basic operations:

Step	**Description**
Aspirate	Sets an aspiration volume and speed.
Dispense	Sets a dispense volume and speed.
Mix	Performs a mixing cycle. Defines the number of mix cycles, mixing volume and mix speed.
Purge	Purges all remaining liquid currently in the GripTips with the selected purge speed.
Prompt	Pauses the program and displays a message. Three lines with a total of 30 characters are available. To continue the program, press the **Run key**.
Move X,Z	Moves the pipette in Z direction and the plate sledge in X direction to the selected coordinates. Then use the **Arrow keys** on VIAFLO ASSIST to teach the position or enter the coordinates manually on the pipette’s screen. To show the actual coordinates, tap any of the **Arrow keys** on the VIAFLO ASSIST device. Click ▷ on the pipette to set the coordinates.
Move X	The plate sledge travels the set distance in X-direction relative to the current position by X mm. Setting a negative value (mm) moves it to the left, setting a positive value (mm) moves it to the right. The distance from well to well for a 96 well plate is 9 mm and for a 384 well plate 4.5 mm.
Move Z	Moves the pipette in Z direction to the selected coordinates. Use the **Arrow keys** on VIAFLO ASSIST to teach the position or dial the height manually on the pipette’s screen. Press **OK** on the pipette to accept the settings.

BlowOut	Performs a blow out. A blow out needs to be performed after the last dispense to remove liquid that may cling to the tips. Note: When using “Purge” to empty the tips, a blowout/blowin is performed automatically and does not need to be programmed.
BlowIn	After a blow out, a blow in has to follow at some point. It does not have to follow immediately and can have steps in between. E.g. after the blow out a move step can be programmed to move the tips out of the liquid, and is then followed by the blow in.
Delay	A delay is a pause between the last and the next step. Define a delay time (in seconds) or a manual input (pressing the **Run key**) to continue.
Loop	A loop repeats the steps between the selected step and the loop command as many times as defined. E.g. if the program reaches the loop step, it goes back to step 3 and repeats the steps until there 2 times. The number of program steps can often be shortened by adding a loop. Note: Nested loops (loops inside loops) are not allowed.

When finished, press ▷ to save the Custom program. To run the program, press **OK**.

4.3 Modify existing programs



At any program display, use the **Touch wheel** to highlight an existing program.

Press ◁ Options, use the **Touch wheel** to select an option (View/Edit, Delete, Copy, Rename) to modify the program and press **OK**.

4.4 Troubleshooting

Problem	Probable cause	Remedy
The connection between pipette and ASSIST cannot be established.	• The two instruments have not been paired or the pairing was lost.	• From the main menu of the pipette go to Toolbox -> ASSIST and select Bluetooth Pairing. Follow the instructions on the pipette screen.
Error LED (14) blinks red	• VIAFLO ASSIST motor lost steps during movement • Pipetting heights were set wrong and the pipette crashed into the plate	• Follow the instructions on the pipette display.
After firmware update, the Error LED (14) blinks red and VIAFLO ASSIST cannot be started.	• No firmware installed.	• Contact service for VIALINK special firmware update.
GripTips are not aligned in X-position.	• Plate alignment not set.	• Perform plate alignment, see “3.6.4 Adjusting the plate alignment” on page 12
The tip height is not correct using 12.5 µl GripTips.	• Wrong tip type set.	• Enter the tip type used, see “3.6.2 Setting tip type” on page 11

5 Maintenance

WARNING

Always turn off power and disconnect the VIAFLO ASSIST from the mains when carrying out maintenance work.

5.1 Cleaning

The materials used on the exterior of the VIAFLO ASSIST support regular cleaning intervals. Clean the external components with a lint-free cloth lightly soaked with mild soap solution in distilled water or with a 70 % dilution of Isopropyl or Ethanol. Never use acetone or other solvents.

5.2 Decontamination

Decontamination is not required for the proper functioning of the VIAFLO ASSIST. Only if any surfaces have been in direct contact with biohazardous material, they must be decontaminated in accordance to good laboratory practice, e. g. with the following disinfectants:

- Ethanol 70 %
- Microcide SQ 1:64
- Glutaraldehyde solution 4%
- Virkon solution 1-3%

Follow the instructions provided with the reagents.

5.3 Servicing

For any service or repairs, please contact your local service technician.

WARNING

If working with infectious materials, e. g. human pathogens, VIAFLO ASSIST needs to be decontaminated before sending it to service and the declaration on the absence of health hazards must be signed. This is necessary to protect service personnel.

6 Technical Data

6.1 Environmental conditions

	Operation
Temperature range operation	5–40 °C
Temperature range storage	-10–50 °C
Humidity range	Max. rel. humidity 80 % for temperatures up to 31 °C, decreasing linearly to 50 % rel. humidity at 40 °C.

6.2 Specification of the device

Power supply	Input: 100–240VAC, 50/60Hz Output: 24 VDC, 3.0 A
Dimensions (H x D x W)	400 mm x 360 mm x 340 mm (with pipette attached: height 510 mm)
Weight	10 kg

7 Accessories

7.1 Accessories for VIAFLO Electronic Pipettes

Charging options and Bluetooth	Part No.
Universal voltage power supply	4200
Lithium ion battery, 3.7 V	4205
Single-pipette charging stand	4210
VIALINK programming stand	4211
4-pipette charging stand	4215
VIAFLO II pipette Bluetooth module	4221

General	Part No.
O-ring removal tool	130-00731-00

7.2 Accessories for VIAFLO ASSIST

VIAFLO II Electronic Pipettes	Part No.
8-channel pipette, 0.50–12.50 µl	4621
8-channel pipette, 5.0–125.0 µl	4622
8-channel pipette, 10.0–300.0 µl	4623
8-channel pipette, 50.0–1250 µl	4624
12-channel pipette, 0.50–12.50 µl	4631
12-channel pipette, 5.0–125.0 µl	4632
12-channel pipette, 10.0–300.0 µl	4633
12-channel pipette, 50.0–1250 µl	4634
16-channel pipette, 0.50–12.50 µl	4641
16-channel pipette, 5.0–125.0 µl	4642

7.3 Consumables

Reagent Reservoirs		Part No.
10 ml	Disposable reagent reservoirs, individually sealed, 30 reservoirs per case, sterile	4331
	Disposable reagent reservoirs, four sleeves of 50 reservoirs per case, sterile	4332
	Reservoir Base, 10 pack	4306
25 ml	Disposable reagent reservoirs, individually sealed, 30 reservoirs per case, sterile	4311
	Disposable reagent reservoirs, four sleeves of 50 reservoirs per case, sterile	4312
	Reservoir Base, 10 pack	4304
100 ml	Disposable reagent reservoirs, individually sealed, 30 reservoirs per case, sterile	4321
	Disposable reagent reservoirs, four sleeves of 50 reservoirs per case, sterile	4322
	Reservoir Base, 10 pack	4305

GripTips for all VIAFLO Electronic Pipettes		Part No.
12.5 µl LONG	Bulk pack, 1 bag of 1000 tips, non-sterile, LONG	4401
	5 inserts of 384 tips, non-sterile, LONG, GREEN CHOICE	4402
	5 boxes of 384 tips, non-sterile, LONG	4403
	5 boxes of 384 tips, sterile, LONG	4404
	5 boxes of 384 tips, sterile, filter, LONG	4405
	5 inserts of 384 tips, pre-sterilized, LONG, GREEN CHOICE	4406
12.5 µl	Bulk pack, 1 bag of 1000 tips, non-sterile	4411
	5 inserts of 384 tips, non-sterile, GREEN CHOICE	4412
	5 boxes of 384 tips, non-sterile	4413
	5 boxes of 384 tips, sterile	4414
	5 boxes of 384 tips, sterile, filter	4415
	5 inserts of 384 tips, pre-sterilized, GREEN CHOICE	4416
125 µl	Bulk pack, 1 bag of 1000 tips, non-sterile	4421
	5 inserts of 384 tips, non-sterile, GREEN CHOICE	4422
	5 boxes of 384 tips, non-sterile	4423
	5 boxes of 384 tips, sterile	4424
	5 boxes of 384 tips, sterile, filter	4425
	5 inserts of 384 tips, pre-sterilized, GREEN CHOICE	4426
300 µl	Bulk pack, 1 bag of 1000 tips, non-sterile	4431
	5 inserts of 96 tips, non-sterile, GREEN CHOICE	4432
	5 boxes of 96 tips, non-sterile	4433
	5 boxes of 96 tips, sterile	4434
	5 boxes of 96 tips, sterile, filter	4435
	5 inserts of 96 tips, pre-sterilized, GREEN CHOICE	4436
1250 µl	Bulk pack, 1 bag of 500 tips, non-sterile	4441
	5 inserts of 96 tips, non-sterile, GREEN CHOICE	4442
	5 boxes of 96 Tips, non-sterile	4443
	5 boxes of 96 Tips, sterile	4444
	5 boxes of 96 Tips, sterile, filter	4445
	5 inserts of 96 tips, pre-sterilized, GREEN CHOICE	4446

Imprint

This operating instruction manual has part number 127950, the version is V00. It applies to firmware version 1.0 or higher until a newer revision is released.

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