

# ALIAS autosampler for ÄKTA pure and ÄKTA avant

## CHROMATOGRAPHY SYSTEM ACCESSORIES

ALIAS™ autosampler for ÄKTA™ pure and ÄKTA avant (Fig 1) is a dedicated autosampler for your protein purification system allowing samples from 1 µL up to 10 mL to be automatically injected. The injection technology used allows fast injection and wash cycles in less than a minute. Efficient needle wash virtually eliminates carryover. ALIAS handles microwell plates and sample vials, either open or sealed, and provides sample cooling down to 4°C. The compact, stackable design and robust performance make the ALIAS autosampler a good fit for ÄKTA pure and ÄKTA avant.

ALIAS autosampler offers the following benefits:

- Automatic injection of up to 108 samples for existing or new ÄKTA pure and ÄKTA avant protein purification systems
- Reliable operation with 30 000 autosamplers installed across the globe
- Synchronization with UNICORN™ control software using our external equipment interface, I/O-box E9
- The autosampler design allows stacking of a fraction collector or sample pump placed on top to save bench space

## Product overview

The autosampler is available in two different versions: ALIAS Bio and ALIAS Bio PREP. ALIAS Bio is intended for microscale and analytical applications. ALIAS Bio PREP for larger sample volumes is used in preparative protein purification. Both versions can be delivered with an optional Peltier cooling module providing forced air cooling in the sample compartment down to 4°C.



**Fig 1.** ALIAS autosampler enables ÄKTA pure and ÄKTA avant chromatography systems with fast, unattended autosampling of samples from 1 µL up to 10 mL.

The autosampler is connected to the ÄKTA protein purification system using our external equipment user interface (I/O-box E9) and can be triggered and synchronized from UNICORN control software of the ÄKTA system. A fraction collector or sample pump can be stacked on top of ALIAS autosampler up to a total load of 65 kg.

## ALIAS Bio

ALIAS Bio autosampler for ÄKTA pure and ÄKTA avant is intended for microscale and analytical applications. This autosampler is equipped with a bio-inert flow path consisting of a metal-free injection valve and sample loop combined with a coated sample needle. The installed sample loop of 100 µL permits injection of up to 108 samples of 1 to 100 µL volumes. A wide range of sample loops is available to optimize the injection range to the applications.

## ALIAS Bio PREP

ALIAS Bio PREP is designed for large volume injections used in preparative protein purification. ALIAS Bio PREP holds 24 vials of 10 mL and uses a 2.5 mL syringe. Needles, tubing, and sample loop are biocompatible and allow rapid injection of sample volumes up to 10 mL.

## Control using UNICORN software

ALIAS autosampler is controlled with the included SparkLink PC control software. Synchronization with UNICORN software, used to control ÄKTA pure and ÄKTA avant, takes place via the external equipment interface, I/O-box E9 (product code 29011361, Fig 2)<sup>1</sup>. All necessary cables and connectors are included with the autosampler. The instruction manual 29040429 *Connect autosampler ALIAS to ÄKTA pure or ÄKTA avant* provided with the instruments describes how to connect the ALIAS autosampler to ÄKTA pure or ÄKTA avant.

<sup>1</sup> I/O-box E9 is required to connect ALIAS autosampler to ÄKTA pure and ÄKTA avant chromatography systems.



**Fig 2.** Synchronization with UNICORN software, used to control ÄKTA pure and ÄKTA avant takes place via the external equipment interface, I/O-box E9. The I/O-box is required for connection of the autosampler to ÄKTA chromatography systems.

## Reliable operation

ALIAS autosampler has been used in laboratories globally with more than 30 000 installed units. The reliable design of the autosampler includes the Pressure Assisted Sample Aspiration (PASA™) concept that includes an integrated compressor to facilitate sample intake and ensure no sample-syringe contact and air bubbles in automatic injection.

Cleanability and avoiding cross-over between samples is key for trusted results. Two wash solvents — one weak and one strong — may be used allowing for thorough needle cleaning.

# Technical specifications

	<b>ALIAS Bio and Bio Cool versions</b>	<b>ALIAS Bio PREP and Bio PREP Cool versions</b>
Injection modes	Full-loop Partial loop-fill, µL-pick-up Pressure Assisted Sample Aspiration using 0.07 MPa (0.7 bar, 10.2 psi) sample headspace pressure to avoid air bubbles in sample lines	Partial loop-fill
Injection volume	Programmable from 0 to 5000 µL Max. injection volume depends on installed sample loop and injection mode	Programmable from 0 to 19 999 µL, 1 µL increments Injection volume depends on sample loop
Sample loop	Default 100 µL	10 mL
Injection precision	Full-loop injection < 0.3% RSD  Partial loop-fill < 0.5% RSD µL pick-up < 1.0% RSD For injection volumes > 5 µL	< 1% RSD for injection volumes ranging from 10 µL up to 50% of sample loop volume
Sample viscosity	0.1 to 5 cP	0.1 to 5 cP
Injections per vial/well	Max. 9	Max. 9
Syringe volume	500 µL standard 2500 µL optional	2500 µL
Needle wash <sup>1</sup>	1 solvent Programmable volume from a 250 mL wash reservoir	1 solvent Programmable volume from a 250 mL wash reservoir
Injection cycle time	< 20 s, with typical 10 µL injection (loop fill with rinse buffer)	< 20 s, with typical 10 µL injection (loop fill with rinse buffer)
Valve switching time	60 ms	60 ms
Wetted parts	PEEK, PTFE, Tefzel™, Vespel™, PCTFE, glass. Needle coated with silica on stainless steel SS316 (inside and outside)	PEEK, PTFE, Tefzel, Vespel, PCTFE, glass. Needle coated with silica coating on SS316 (inside and outside)
Carry-over	< 0.05% with standard wash, typically < 0.01% with extra wash	< 0.1% using standard needle wash
Injection valve	1/16" PEEK valve 6 port 2 position with 0.25 mm i.d. bore	1/16" PEEK Valco™ valve, 6 port 2 position, with 0.75 mm i.d. bore
Sample capacity	Vial rack with 108 positions for (1.5 mL) Microplates according to SBS standards. 96-well (deep-well and standard) as well as 384-well	Two vial racks of 12 vials each for 10 mL vials Maximum vial height 47 mm Minimum vial height 32 mm
Maximum vial/MTP height	47 mm including cap	47 mm including cap
Sample cooling (factory installed option [Peltier technology])	Minimum: 4°C ± 2°C Maximum: ambient temp -3°C Measured as air temperature in sample compartment for maximum ambient temperature 25°C and maximum humidity 80%.	Minimum: 4°C ± 2°C Maximum: ambient temp -3°C Measured as air temperature in sample compartment for maximum ambient temperature 25°C and maximum humidity 80%.
Dimensions	300 × 360 × 510 mm (W × H × D) 300 × 360 × 575 mm for ALIAS Bio Cool	300 × 360 × 510 mm (W × H × D) 300 × 360 × 575 mm for ALIAS Bio PREP Cool
Weight	19 kg 21 kg for ALIAS Bio Cool	19 kg 21 kg for ALIAS Bio PREP Cool
Max load on top cover	65 kg	65 kg
Power requirements	95 to 240 Volt AC ± 10%; 50 to 60 Hz; 200 VA	95 to 240 Volt AC ± 10%; 50 to 60 Hz; 200 VA
Sound pressure level	LeAq < 70 dB	LeAq < 70 dB
Working temperature	4°C to 40°C Indoor use only	4°C to 40°C Indoor use only
Storage temperature	-25°C to 60°C	-25°C to 60°C
Humidity	20% to 80% RH	20% to 80% RH

<sup>1</sup> Inside and outside needle wash with drying. Wash can be programmed between injections and between vials/wells.

## Instrument control

PC interface	RS 232
	RS 232 to USB can be used but this is not provided by Cytiva
Software	SparkLink PC control (included)

## Safety

Door-opening sensor	Needle movement speed reduction if door is open
Missing vial/well plate sensor	User programmable response to missing vial: skip vial or stop run
Compliance/safety	CE, cMETus, EU ROHS, China ROHS

## Ordering information

Product	Description	Product code
ALIAS Bio	Autosampler with biocompatible flow path, 100 µL sample loop and 500 µL syringe. Includes vial rack of 108 positions for 1.5 mL vials and vial startup kit.	29347718
ALIAS Bio Cool	Autosampler with biocompatible flow path, sample compartment cooling, 100 µL sample loop and 500 µL syringe. Includes vial rack of 108 positions for 1.5 mL vials and vial startup kit.	29347719
ALIAS Bio PREP	Autosampler with biocompatible flow path for large volume sampling, 10 mL sample loop and 2.5 mL syringe. Includes 2 vial racks of 12 positions for 10 mL vials and vial startup kit.	29347720
ALIAS Bio PREP Cool	Autosampler with biocompatible flow path for large volume sampling, sample compartment cooling, 10 mL sample loop and 2.5 mL syringe. Includes 2 vial racks of 12 positions for 10 mL vials and vial startup kit.	29347721
I/O-box E9	External equipment interface (required to connect ALIAS autosampler to ÄKTA systems).	29011361

## Accessories

Product	Product code
48 Vial adapter	29359926
12 Vial adapter, 10 mL vials	29359927
PEEK loop 100 µL, Valco	29359928
PEEK loop 250 µL, Valco	29359929
PEEK sample loop 1 mL, Valco	29359930
PEEK loop 5 mL, Valco	29359931
PEEK sample loop 10 mL, Valco	29359932
PEEK loop 2 mL, Valco	29359933
Male nut 1/16", blue	29359934
Flangeless ferrule 1/16", blue	29359935
PEEK fingertight nut, Valco	29359937
PEEK ferrule, Valco	29359939
PEEK nut flangeless short 1/8"	29359940
Flangeless ferrule 1/8", natural	29359941
Air needle 50 mm, yellow	29359942
Air needle 62 mm, natural	29359943
Sample needle with Valco connections	29359944
Syringe, 500 µL	29359945
Syringe, 2.5 mL	29359946

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