eppendorf

One for All

SciVario® twin – One bioprocess controller for all your needs

Working with You Together. Now, and in the Future

A new bioprocess controller that evolves together with you.
Planning a laboratory means investing a lot of money. Working with solutions that grow with you and adapt to your needs reduce additional capital expenses due to investments in a new bioprocess controller. In a fast-changing field like the modern biotechnology, working with a system that supports your needs now – and in the future – is indispensable.
The SciVario twin bioreactor control system for small and bench-scale bioreactors is customizable as well as easily upgradable after installation and therefore adaptable to changing requirements.
Experience an intuitive user-interface and innovative hardware and software which enables flexibility for process optimization and a readiness for the digital age.

Innovative

> Adapt your system with the modular bay-drawer system.

> Flexible for the future with upcoming features and extensions.

Intuitive

> Experience efficient process set-up with step-by-step guidance.

> A user-friendly touch screen with intuitive software.

Intelligent

> Configurable with automated identification of connected accessories.

> Smart software guidance through the workflows and consistency checks help to reduce risk.

Future Proof

Stay flexible, wherever your research focus will take you in the future.

With the knowledge and expertise of our modular systems, we have created a future proof solution, for your current, and future research. The SciVario twin ensures easy upgrades for hard- and software. The innovative bay-drawer concept provides the highest variability through standardized functional modules. The system can be initially delivered with custom configurations and easily upgraded with additional modules whenever needed to support the changing needs in R&D. This concept is the key technology to support you as a user to avoid additional capital investments into instruments to match future requirements. Our solution serves today's as well as future needs in one device.

Plug-In and install

> Easy installation of new software without a service technician.
> Just download the update on a USB-drive and plug it into the USB-port.
> The SciVario twin guides you automatically step-by-step through the installation process.

Benefit from the bay-drawer concept

> Flexibly adapts to your needs.
> Highest customization through standardized functional modules
> Four bays for each cultivation unit can be equipped with different pumps, optical pH sensor connection or other upcoming modules.
> The customizable and flexible drawers support today’s as well as future needs.

Compact Design

A system that was designed to fulfill all your needs.

It does not matter with which organism you are working now, or in the future. The SciVario twin is our intelligent solution for your changing needs. The innovative bay-drawer system allows for the flexible adaption to your requirements. The integrated improved TMFCs and pumps allow the individual or parallel control of up to two bioreactors in a range of 0.2 L up to 40 L. Cables for sensors and gas tubes are easily fixed in the cable guide to support efficient vessel connection and cleanup of your bench for an unobstructed workspace.

Intuitive:
Easily set-up your process with the integrated touch screen software.

User-friendly:
Fast and easy software updates and data export via the USB-port.

Intelligent:
Automated detection and recognition of plugged-in accessories.

Wide range:
Precise and reliable addition of small volumes up to 6.0 L/h.

Powerful:
Improved, intelligent heating connectors with increased power output.

Universal:
Sensor connectors for digital and analog sensors with automated detection.

Streamlined:
Minimal cable clutter with cable channel.

Precise:
Individual TMFC control of gases for submerged and overlay gassing.

Configurable:
Flexible arrangement of bay-drawers.

Application Efficiency

Flexibility for different bioreactor applications and workflow strategies.

Designed to control one or two bioreactors individually or in parallel in any combination of type and size. In addition to the bioreactor variability, the hardware of each base unit can run both, cell culture or microbial fermentation processes. All critical process parameters such as temperature, aeration, nutrients, and others to stimulate the growth of your cells are precisely controlled and recorded by the base unit.

Advanced process monitoring, control, and data logging with DASware® control 6.

> Configurable views and user-defined functions
> Each function can be individually controlled by the SCADA software or the device
> Execute scripts and add automation to your process
> The control mode is visualized on the process screen for each setpoint tile
> Individually decide, if all or just selected functions are controlled by the device or DASware control 6

DASware® control

For more information on DASware control, visit our website.
www.eppendorf.group/dasware-control

Drawer flexibility:
8 drawers for maximum flexibility

Process control:
Remote monitoring, SCADA control

Bioreactor size:
0.2 L – 40 L

Process variability:
Cell culture or microbiology

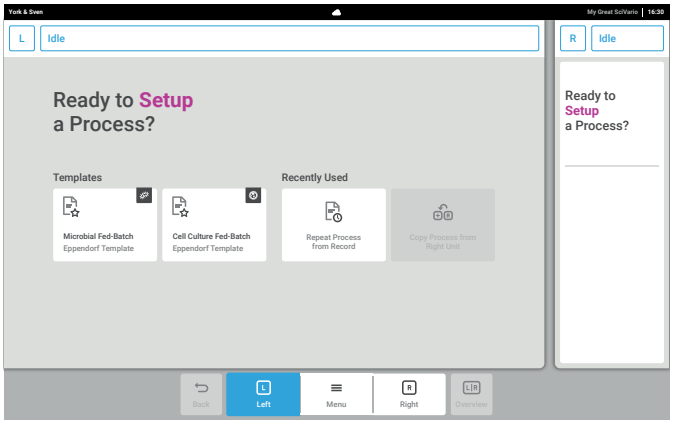
Bioreactor material:
Glass or single-use bioreactors

Process mode:
Batch or fed-batch

Ease-of-Use

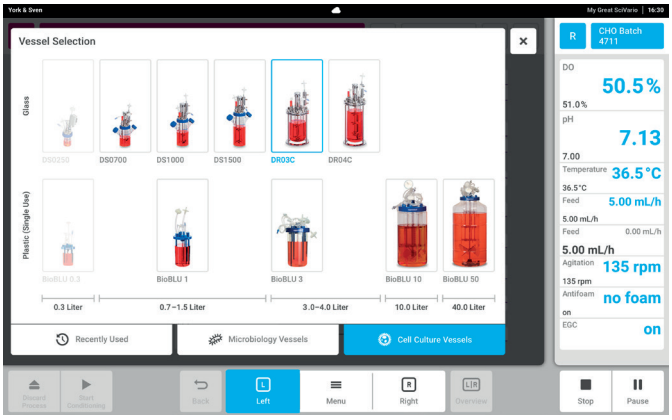
Designed by our user-experience specialists and validated with customer feedback.

The software combines simplicity with professional capabilities to satisfy beginners and experienced users. With the intuitive user-interface, setting up a process was never so easy. No complex user training is required, thanks to the guidance of the intelligent workflows, that assist you through your processes.

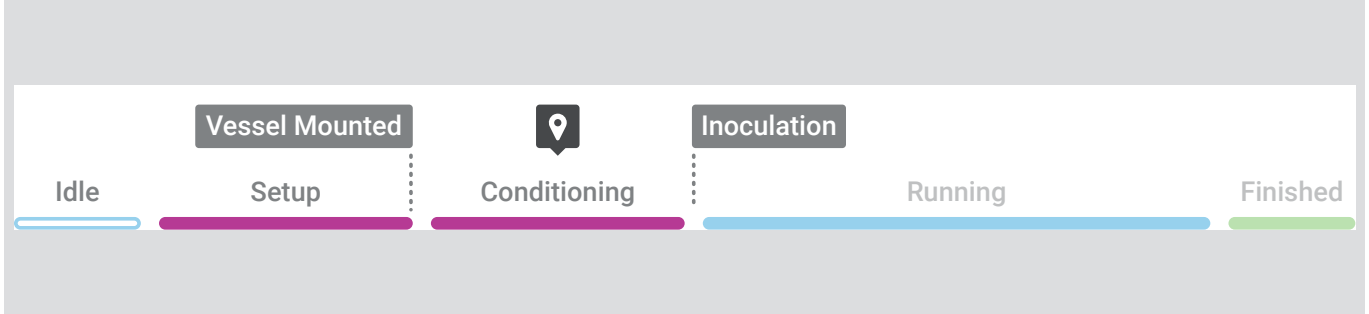


> Start your process
> Select a vessel
> Configure the process
> Follow the guidance through each phase
> Perform calibrations
> Let your cells grow
> Finish and export data

> The touch screen software focuses on user's daily work for monitoring and reproducible control of critical process parameters on one or both units in parallel.
> The touch screen is structured in several shells in order to present the current state of all running processes.
> Intelligent wizards ensure an easy and reproducible execution of error prone procedures like calibrations or setting up control logic.



Never lose track of your process status when you are running several processes in parallel. The interactive roadmap always keeps you updated and lets you know what step will come next.



Risk Mitigation

Increased reproducibility control of critical process parameters.

Automated detection of devices, the intuitive touch screen software, and the possibility to monitor your experiments remotely with BioNsight® cloud software - All features were designed to mitigate the risk of failures during the whole process from the first step to the end.

> The structured touch screen presents the current state for all critical process parameters.
> Sparklines and event logs enable the operator to keep track of his process performance.
> Comprehensive information is displayed when needed to report the current status at a glance to identify any upcoming risk and take measures.
> Fast reporting based on process records including data tracks, events, templates, and meta-information
> With BioNsight cloud, remotely connect to your device to get information on your process

BioNsight®
cloud

Your Data, Always Available with BioNsight® cloud

BioNsight cloud is a cloud-based software solution for bioprocess monitoring and analysis. It is fully integrated into the Eppendorf bioprocess control software DASware control 6 and enables you to consolidate your bioprocess data in one central location for easy access and effective analysis.

Find out more at www.eppendorf.group/bioNsight

Access & Trust:

> Remotely monitor whether your runs are performing as expected or require adjustments.
> See deviations or expected behavior compared to past runs
> Based on state-of-the-art technology (Microsoft® Azure).

Integration & Collaboration:

> Transfer your data to the cloud in treal-time.
> Collaborate on data from multiple devices with colleagues across labs and countries.
> Generate insights across different scales and various runs.

Contextualize & Analyze:

> Contextualize for easy and meaningful comparisons.
> Add data from external devices for deeper insights into your cultivation.
> Seamlessly transfer your data to DataHowLab for artificial intelligence-based analysis.

Technical Data

SciVario twin Specifications			
Control Station			
Dimensions (W x D x H)	306 x 340 x 750 mm		
Net weight	41.6 kg		
Touchscreen diagonal size	308 mm / 12.1 inch		
Communication	3 x USB 2.0 (software updates, serial communication) data export/import		
	2 x Ethernet (RJ45, 100 Mbit/s)		
	4 x RS232 (D-SUB9 male connector) per unit		
	2 x RS485 (D-SUB9 female connector) per unit		
	6 x universal connector (AK9, VP8, Type82)		
Utility			
Electrical	100 - 240 VAC, 50/60 Hz		
Water	max. 2.0 bar		
Gas supply (Air, O_2, N_2, CO_2)	max. 3.0 bar		
Agitation			
Direct/magnetic drive	**MD30 drive**	**MD40 drive**	**TB200**
Range	± 25 rpm – 1250 rpm	± 60 rpm – 1600 rpm	± 25 rpm – 1900 rpm
Temperature			
For 0.7 - 1.8 L vessels	Temperature control block or heat blanket with cooling finger (5 K above coolant – 70°C)		
For 2.7 - 3.8 L vessels	Heat blanket with cooling finger		
For 10 and 40 L vessels	Heat blanket only		
Gas supply			
Submerged	Parallel mixing, 14x TMFCs (7x per unit), 0.1 – 1200 sL/h, air and O_2 wide range, N_2 and CO_2 low range		
Overlay	Sequential mixing, 0.1 – 12 sL/h		
Exhaust	Peltier/liquid		
Sensors	**Communication**	**Control range**	
pH	analog, digital (ARC, ISM®)	0 – 14 [pH]	
pH-optical	non-invasive, PreSens® spots	5.5 – 8.5 [pH]	
DO	analog, digital (ARC, ISM®)	0 – 500 %DO	
Functional Modules/Drawers			
Pumps for acid, base, antifoam, and 2 feeds	**Variable Speed**		
Small pump	± 0.033 – 100 rpm / 0.01 – 500 mL/h (depending on tubing)	depending on the configuration	
Big pump	± 3.5 – 52 rpm / 415 – 6000 mL/h (depending on tubing)	depending on the configuration	

Specifications subject to change.

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