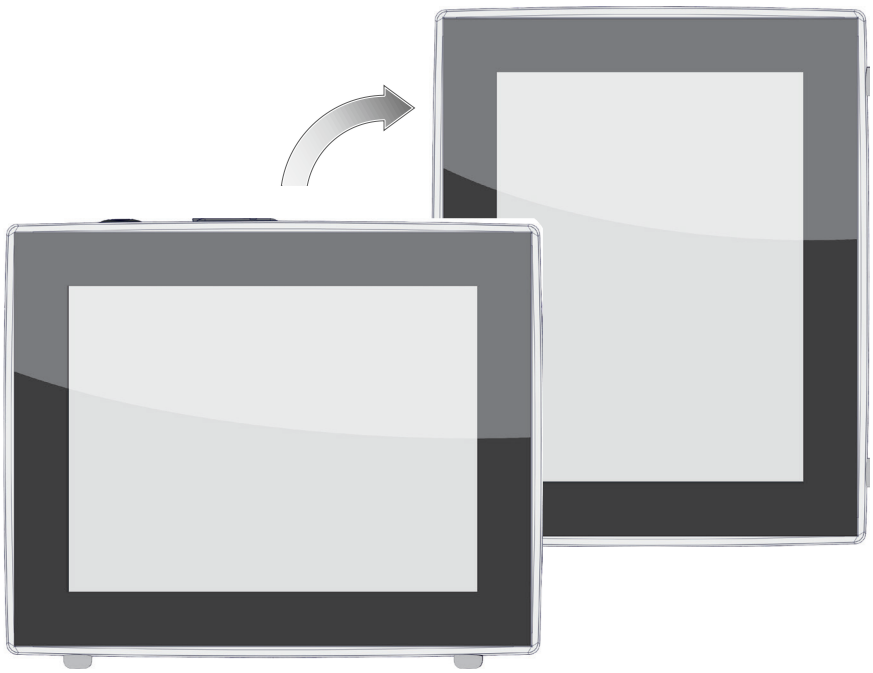
VACUUBRAND®

VACUUM CONTROLLER

VACUU·SELECT®



User Manual

Original instructions EN

OI No.: 20901059

Original user manual
Keep for future use!

This document may be used and distributed only in its complete and original form. It is the user's responsibility to ensure the validity of this document with respect to the product.

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*Thank you for purchasing this product from **VACUUBRAND GMBH + CO KG**. You have chosen a state-of-the-art, high-quality product.*

TABLE OF CONTENTS

1 Introduction

This manual is part of your product.

1.1 User information

Safety

Instructions for use and safety

- Read the user manual before using the product.
- Keep this manual in an easily accessible location.
- Correct use of the product is essential for safe operation. Observe all safety information!
- In addition to this manual, adhere to the accident prevention regulations and industrial safety regulations applicable in the country of use.

General

General information

- For easier readability, the general term ***controller*** is used as an equivalent to and instead of the product name ***VACUU·SELECT***.
- If passing the product on to a third party, also give them this manual.
- The figures and drawings are examples and are intended only to assist in comprehension.
- We reserve the right to make technical and design changes in the course of continuous device improvement.

Copyright

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Contact

Contact us

- If your user manual is incomplete, you can request a replacement. Alternatively, you can use our download portal: www.vacuubrand.com
- When contacting our Service Department, please have the serial number and product type at hand; → see ***Rating plate*** on the product.
- You are welcome to contact us at any time in writing or by telephone if you would like more information, have questions about our products or wish to share feedback with us.

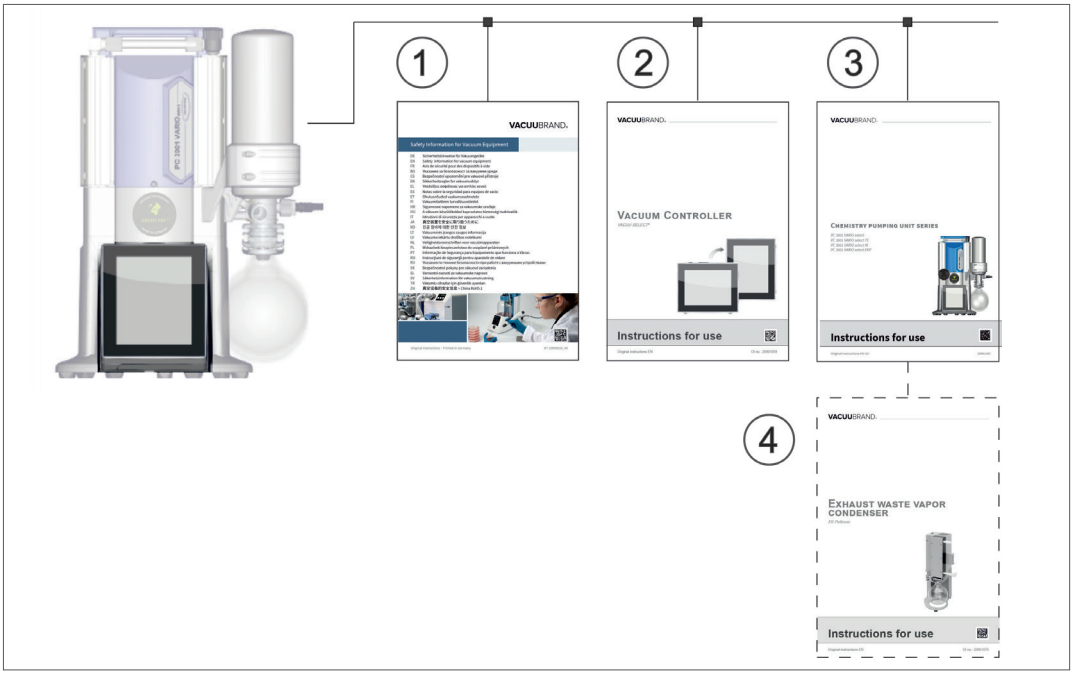
1.2 Manual structure

Modular instructions for use

The user manuals have a modular structure with separate instruction modules for the controller, vacuum pumps, pumping units, and any accessories.

Instruction modules

→ Example Breakdown of the manual



1	Safety instructions for vacuums
2	Description: Vacuum controller – control and operation
3	Optional description: pumping unit or vacuum pump – connection, operation, maintenance, mechanics
4	Optional description: Accessories

1.3 About this document

1.3.1 Display conventions

Warning messages

Display conventions

DANGER

Warns of an imminent hazard.

Disregarding the situation will result in serious and even fatal injury or death.

⇨ Take appropriate action to avoid dangerous situations!

WARNING

Warns of a potentially hazardous situation.

Disregarding the situation could result in serious, even fatal injury or massive damage to property.

⇨ Take appropriate action to avoid dangerous situations!

CAUTION

Indicates a potentially hazardous situation.

Disregarding the situation could result in slight or minor injury or damage to property.

⇨ Take appropriate action to avoid dangerous situations!

NOTE

Reference to a potentially harmful situation.

Non-observance may result in material damage.

Additional instructions

IMPORTANT!

⇨ Description that you must adhere to when performing actions.

⇨ Important information for the proper operation of your product.

⇨ Tips + tricks

⇨ Helpful information

1.3.2 Symbols and pictograms

This manual uses symbols and icons. Safety symbols indicate specific risks associated with handling the product. Symbols and pictograms are designed to help you identify risks more easily.

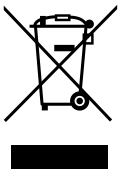
Safety symbols

Explanation of safety symbols

	General warning sign.		Danger: electricity.
	Danger: hot surface.		General prohibition symbol.
	General mandatory sign.		Disconnect power plug.
	Electrostatically sensitive components ESD.		Cadmium-free

Other symbols and pictograms

Additional symbols

	Positive example – **Do this!** Result – **OK**		Negative example – **Don't do this!**
	Refers to content in this manual.		Refers to content in other supplementary documents.
	Electric/electronic devices and batteries may not be disposed of in the domestic waste at the end of their service life.		
	Message: warning		Message: fault
	Acoustic signal – signal sound/warning sound.		
	Frequency of beeping, frequency of acoustic signal		

Symbols and gestures for operation

→ *see chapter: 5.3 Display and control elements on page 45*

⇨ Additional detailed descriptions of symbols (icons) and signals on the display can be found in chapter *5.3 Display and control elements*.

1.3.3 Action instructions (operating steps)

Action instructions (easy)

Operating steps displayed as text

⇨ You are requested to take action.

☑ Result of the action

Action instructions (multiple steps)

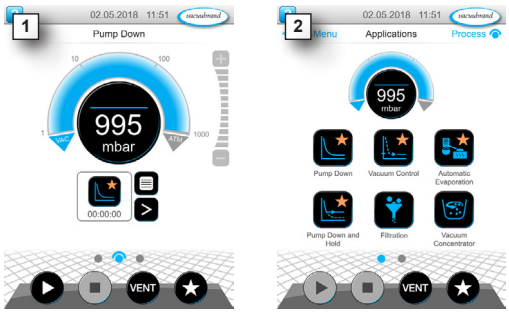
1. First action step
2. Next action step

☑ Result of the action

Action instructions that require several steps must be followed in the order described.

Action instructions (presented graphically)

Principle display graphical operating steps



1. First step
2. Next action step

☑ Result of the action

1.3.4 Abbreviations

Abbreviations

abs.	Absolute
AK	Separator flask
ATM	Atmospheric pressure (pressure graphic, program)
d_i (di)	Interior diameter
DN	Diameter nominal
FPM	Fluoropolymer rubber
FC	Frequency converter
Gas type ind.	Gas type independent
GB	Gas ballast
hh:mm:ss	Time in hours/minutes/seconds
hPa	Pressure unit, hectopascal (1 hPa = 1 mbar = 0.75 Torr)
IN*	Inlet
KF	Small flange
max.	Maximum value
min.	Minimum value
mbar	Pressure unit, millibar (1 mbar = 1 hPa = 0.75 Torr)
OUT*	Outlet
PA	Polyamide
PBT	Polybutylene terephthalate
PC …	Chemistry pumping unit with type identification number
PE	Polyethylene
resp.	responsible (supervising)
RMA no.	Return Merchandise Authorization number
SW	Wrench size (tool)
Torr	Pressure unit (1 Torr = 1.33 mbar = 1.33 hPa)
USB	Universal serial bus
VAC	Vacuum (pressure curve)
VMS-B	Vacuum management system – module

^ *Labeling on the vacuum pump*

1.3.5 Term definitions

Product-specific terms

Fine vacuum	Pressure measuring range in vacuum technology: 1–0.001 mbar (0.75–0.00075 Torr)
Rough vacuum	Pressure measuring range in vacuum technology, from: atmospheric pressure to 1 mbar (atmospheric pressure to 0.75 Torr)
PC 3001 VARIO select *	Vacuum pumping unit with variable speed motor for precise vacuum control including **VACUU·SELECT** controller and **VACUU·SELECT Sensor**.
PC 510 select **	Vacuum pumping unit with valve-controlled vacuum regulation with **VACUU·SELECT** controller and **VACUU·SELECT Sensor**.
VACUU·BUS	Bus system from **VACUUBRAND** for communication between peripheral devices with **VACUU·BUS** enabled gauges and controllers. The maximum permissible cable length is 30 m.
VACUU·BUS address	Address that enables a clear assignment of the **VACUU·BUS** client in the bus system (e.g., for the connection of several sensors of the same measurement range).
VACUU·BUS client	Peripheral device or component with **VACUU·BUS** port, which is integrated in the bus system (e.g., sensors, valves, level indicators).
VACUU·BUS configuration	Assign a different **VACUU·BUS** address to a **VACUU·BUS** component using a gauge or controller.
VACUU·BUS connector	4-pin round connector for the bus system from **VACUUBRAND**.
VACUU·LAN	Local area vacuum network.
VACUU·SELECT	Vacuum controller, controller with touchscreen; consisting of operating panel and vacuum sensor.
VACUU·SELECT Sensor ***	External vacuum sensor ▸ for **VACUU·SELECT** ▸ separately as an independent vacuum sensor.

** Valid also for: PC 3002 VARIO select, PC 3003 VARIO select, PC 3004 VARIO select*

*** Also valid for: PC 510 select, PC 511 select, PC 520 select, PC 610 select, PC 611 select, PC 620 select*

**** Available with and without venting valve*

2 Safety instructions

The information in this chapter must be observed by all persons who work with the device described here.

The safety instructions are valid for the complete life cycle of the product.

2.1 Usage

The device may be used only in perfect technical condition.

2.1.1 Intended use

Intended use

The *VACUU·SELECT* vacuum controller is a laboratory instrument that, with appropriate peripheral devices[1], is intended to regulate absolute pressure in the area of rough and fine vacuum.

The device may be used only indoors in a non-explosive atmosphere. It is designed for continuous operation at 10–40°C.

Intended use also includes:

- follow the instructions in the document **Safety information for vacuum equipment**
- observing the user manual,
- observing the manual of connected components,
- using only approved accessories and replacement parts.

Any other use is considered improper use.

2.1.2 Improper use

Improper use

Improper use or any use that does not correspond with the technical data can lead to personal or material damage.

1 For vacuum pumps, sensors and accessories from VACUUBRAND
*→ see also **3.3 VACUU·BUS peripheral devices on page 26***

Improper use

Improper use includes:

- use that contradicts the proper use
- operation in unauthorized ambient and operating conditions,
- vacuum control of potentially explosive atmospheres that do not correspond to the ATEX certification of the sensor → *see sensor rating plate*
- operation despite obvious faults or defective safety devices,
- usage despite incomplete assembly,
- pulling plug-in connections on the cable out of the socket,
- use in mining or underground

2.1.3 Foreseeable misuse

In addition to improper use, there are types of use that are prohibited when handling the device:

Possibly foreseeable misuse

- set-up and operation in a potentially explosive environment
- unauthorized extensions or conversions, in particular when these impair safety,
- fully exposing the device to the vacuum, immersing it in liquids, exposing it to water spray or steam jets,
- vacuum control of hot, unstable, or explosive media
- operation with sharp-edged objects,
- switching the device on/off with tools or one’s foot
- operating the controller by remote control without knowledge of the connected vacuum system.

2.2 Target group description

IMPORTANT!

Users of the competence areas listed in the ***Responsibility matrix*** must have the appropriate qualifications for the activities listed.

2.2.1 Personnel qualification

Meaning Personnel qualification

Operator	Laboratory staff (e.g., chemists, laboratory technicians)
Specialist	Person with professional qualification in mechanics, electrical equipment or laboratory devices
Responsible specialist	Person such as specialist only with additional specialist, departmental, or divisional responsibility

2.2.2 Responsibility matrix

Responsibility matrix and competency areas

Activity	Operator	Specialist	Responsible specialist
Installation	x	x	x
Initial operation	x	x	x
Network integration			x
Updates		x	x
Data import/export		x	x
Data logger download	x	x	x
Troubleshooting	x	x	x
Operation	x	x	x
Advanced operation		x	x
Error report	x	x	x
Troubleshooting	(x)	x	x
Changing circuit board fuse		x	x
Repair order			x
Cleaning, simple	x	x	x
Sensor cleaning*		x	x
Sensor calibration*		X	x
Shutdown	x	x	x
Decontamination**		x	x

* *Optional*

** *Alternatively, arrange for decontamination by a qualified service provider*

2.2.3 Personal responsibility

Work safely

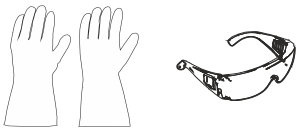
The safety and protection of individuals has top priority. Activities and processes that represent a potential safety hazard are not permitted.

Always be conscious of safety and work in a safe manner. Observe instructions issued by the operator, and national regulations on accident prevention and industrial safety.

⇨ Use the controller only if you have understood its function and this manual.

Protective clothing

⇨ In the case of activities that require protective clothing, personal protective equipment specified by the operator must be worn.



2.3 Safety precautions

Quality standards and safety

Products from **VACUUBRAND GMBH + CO KG** are subject to stringent quality testing with regard to safety and operation. Each product undergoes a comprehensive test program prior to delivery.

2.3.1 Safety precautions, general

⇨ When handling contaminated parts, follow the relevant regulations and safety precautions.

⇨ Repairs are to be carried out only by the manufacturer's Service Department.

IMPORTANT!

Prior to any service, contamination from hazardous substances must be excluded.

⇨ Please note that residual process media may pose a danger to people and the environment. Take suitable decontamination measures.

⇨ Before sending devices to our Service Department, you must fill out a Health and Safety Clearance form, sign it to confirm the information, and return it to us.

2.3.2 Awareness of potential dangers

Vacuum control of critical processes

Risk of explosion during critical processes

DANGER

Risk of explosion through control of critical processes.

Depending on the process, an explosive mixture can form in systems.

⇨ The control of critical processes must always be supervised!

Damaged components

IMPORTANT!

Damaged components, especially those that impair safety, must be promptly replaced.

⇨ Ensure that you are not working with damaged components.

⇨ Immediately replace defective parts (e.g., a broken cable or faulty plug).

Dangers due to electrical energy

Electrical energy

After the controller has been switched off and disconnected from the power supply, there may still be dangers at the plug-in power supply because of residual energy:

⇨ Replace the plug-in power supply if there are any defects.

⇨ Never open the plug-in power supply.

Service shipments

Safety during servicing

Products that represent a potential safety hazard should be sent in, maintained, or repaired only if all hazardous contamination has been removed.

⇨ The form for confirming safety is available as a PDF on our website: Health and Safety Clearance form.

2.3.3 ATEX equipment category (sensor)

Installation and explosive environment

The installation and operation of the operating panel in areas where potentially explosive atmospheres can develop to a hazardous degree is not permitted.

ATEX certification[2] of vacuum sensors applies only to the **internal, wetted parts of the sensor**, not to its surroundings.

ATEX device marking

ATEX equipment category

Vacuum equipment labeled with  has ATEX certification in accordance with the ATEX marking on the rating plate.

⇨ Use the product only if it is in perfect working condition.

⇨ The devices are designed for a low level of mechanical stress and must be installed in such a way that they cannot sustain mechanical damage from the outside.

⇨ After any work on the device, check its leak rate.

ATEX certification

When using the device on equipment with potentially explosive atmospheres (in accordance with its approval), modifications to the device are not permitted and will invalidate the ATEX certification. Wetted parts attached to the device must have ATEX certification at least equivalent to that of the device itself and may not adversely affect the ATEX certification of the device, in particular the temperature in the wetted area.

Prevent explosive mixtures

The use of gas ballast and/or venting valves is permitted only if it is ensured that no explosive mixtures are normally generated in the interior of the device or only for a short time or rarely.

⇨ If necessary, ventilate with inert gas.

Information on the ATEX equipment category is also available on our website at: www.vacuubrand.com/ATEX

2 -> See rating plate: VACUU·SELECT Sensor, VACUU·VIEW (extended), VSK 3000

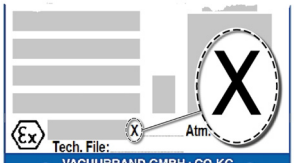
Restrictions on operating conditions

Meaning for devices marked with X:

Explanation of usage/operating conditions X

- The devices have a low mechanical protection and must be installed so that they cannot be mechanically damaged from the outside (e.g., installing pumping units with impact protection, attaching shatter protection for glass flasks because of potential implosion)

Rating plate example



- The devices are designed for an ambient and media temperature of 10–40 °C during operation. These ambient and media temperatures may never be exceeded. When conveying/measuring non-explosive gases, extended gas suction temperatures apply, see chapter: Technical information, media temperature

2.4 Disposal

NOTE

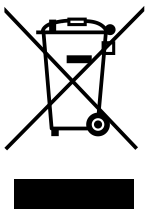
Electronic components and batteries may not be disposed of in the domestic waste at the end of their service life.

Used electronic devices and batteries contain harmful substances that can cause damage to the environment or human health. Discarded electronic equipment also contains valuable raw materials, which can be recovered if properly disposed of for recycling.

End users are legally obliged to take used electric and electronic devices to a licensed collection point and to return spent batteries.

⇨ It is your responsibility to save and delete any data before disposing of your electronic device.

⇨ If the device contains batteries: Remove spent batteries before disposal.



⇨ Correctly dispose of all electronic scrap and electric components at the end of their service life.

⇨ Observe the national regulations regarding disposal and environmental protection.

https://www.vacuubrand.com/compliance

3 Product description

3.1 VACUU·SELECT vacuum controller

Description of vacuum controller

VACUU·SELECT is a vacuum controller consisting of an operating panel and an external vacuum sensor (e.g., the *VACUU·SELECT Sensor*).

The controller was developed for applications that require a controlled vacuum. Various applications and menus are available for operation and vacuum control. The controller is operated using the touchscreen. The menus are designed to be user friendly.

Depending on the type of operation and peripheral devices connected, the controller regulates the process vacuum subject to demand.

As a component of the *VACUU·BUS* system, the controller offers numerous connection options for a wide variety of applications.

Vacuum processes are controlled via vacuum pumps, in-line solenoid valves and/or venting valves. If several valves of one type are connected, they switch simultaneously (e.g., multiple venting valves).

To control a vacuum, a minimum combination of the controller, a vacuum sensor, a valve, and/or a vacuum pump is needed.
The controller does not work without controllable valves/ vacuum pumps – only with a vacuum sensor.

3.2 Product views

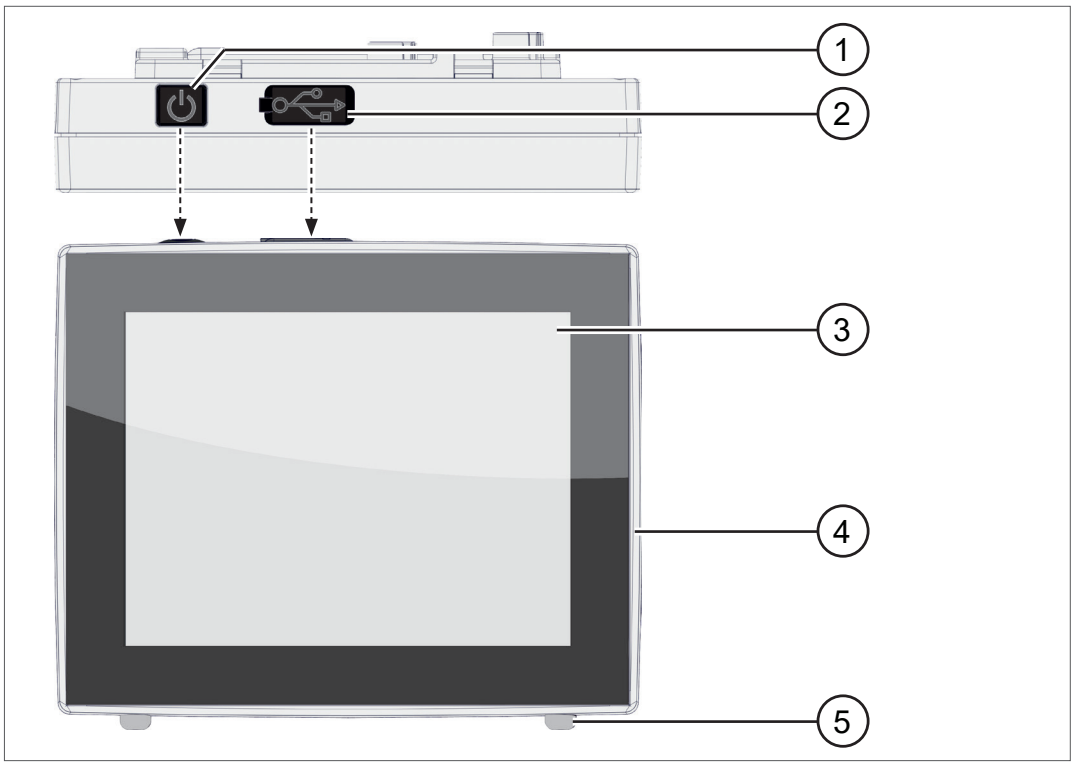
3.2.1 Operating panel

The operating panel has a color display with a touchscreen. Depending on the type of installation, the display can be rotated by 90°.

Top view + front view

Top view

Front view



Meaning

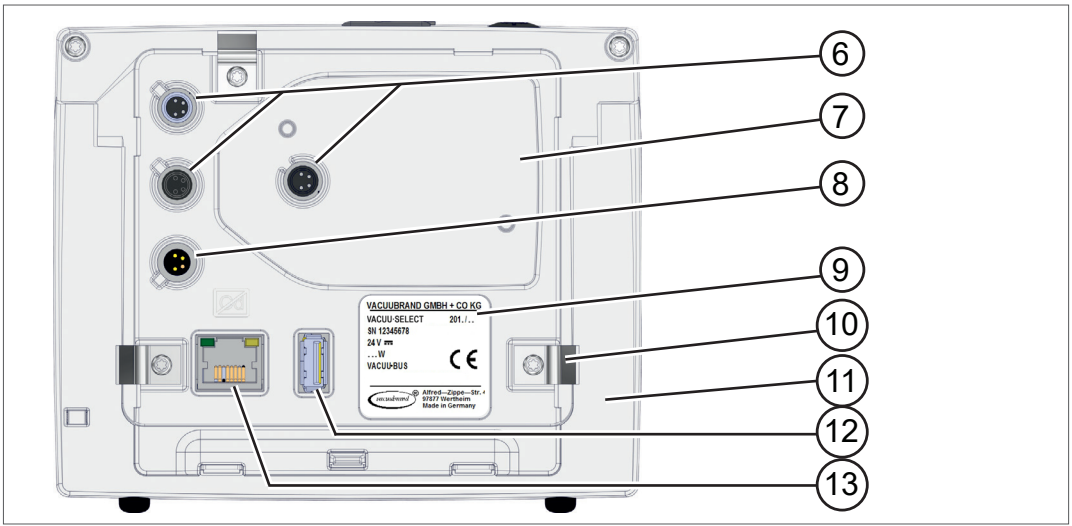
1	ON/OFF button
2	Cover of USB port, type A*
3	Screen
4	Chemically resistant plastic housing
5	Rubber feet

USB type A* is suitable only for connecting USB flash drives or WiFi USB dongles and not for connection to a USB master such as a computer.

3.2.2 Interfaces

Rear view

Interfaces at the back



Meaning

6	Three connection sockets for ***VACUU·BUS*** components
7	Recess for ***VACUU·SELECT Sensor***
8	Power supply via ***VACUU·BUS***, plug-in power supply connection, *or* vacuum pump/pumping unit
9	Rating plate
10	Optional: spring clip as fixing for built-in version
11	Stand for desktop version, foldable
12	USB port, type A
13	RJ45 socket – LAN connection (Ethernet)

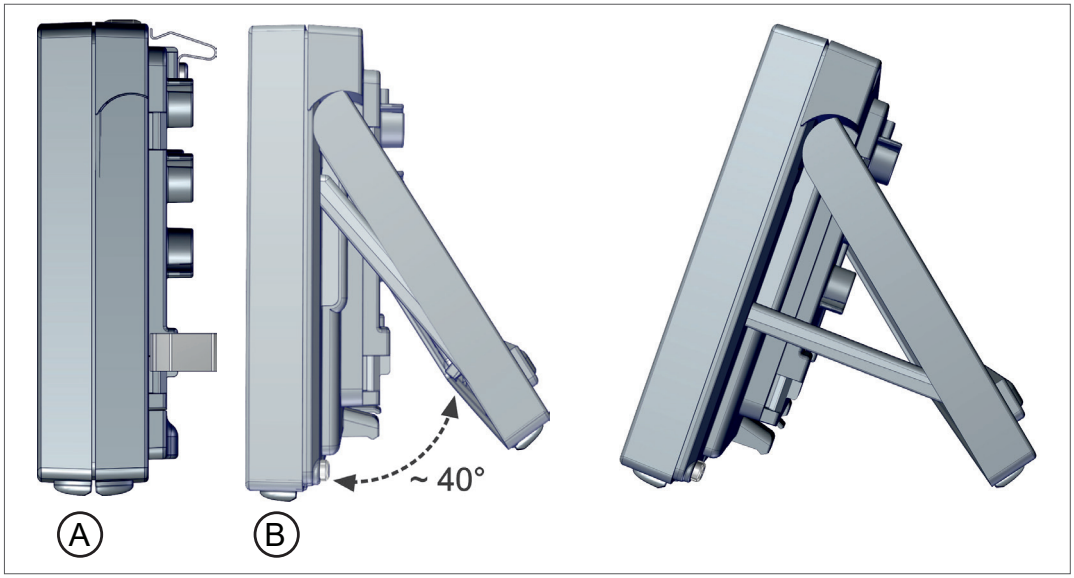
Note: The VACUU·BUS ports are each equipped with a guide slot as an anti-rotation device and connection coding for VACUU·BUS sockets and connectors.

IMPORTANT!

⇨ Do not use the USB ports as distributors except for USB hubs with their own power supply.

Side view

Side view



Meaning

A	Mounted spring clips – fixing for built-in version
B	Stand and brace extended for desktop version

3.2.3 VACUU·SELECT Sensor (optional)

Description of VACUU·SELECT Sensor

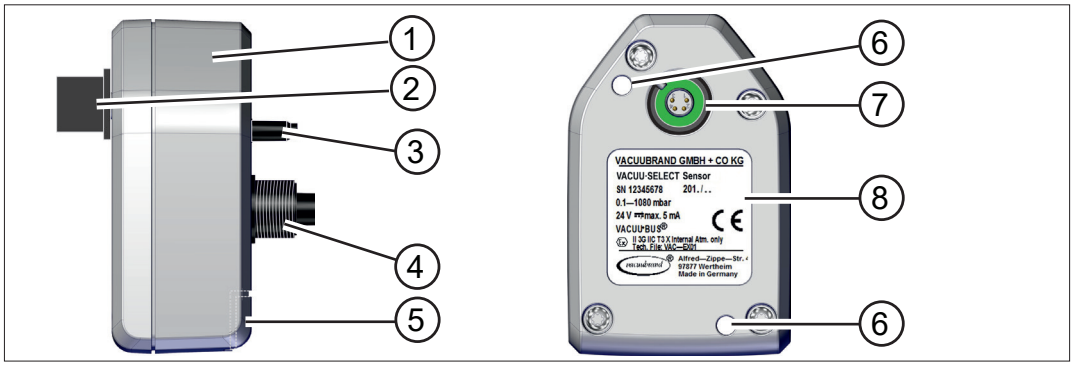
With the ***VACUU·SELECT*** product, the vacuum sensor is mounted externally (e.g., on the housing of the VACUU·SELECT, on the appliance, or in the pumping unit). Communication with the controller takes place via the ***VACUU·BUS***.

Two versions of the ***VACUU·SELECT*** Sensor are available – with or without venting valve.

The vacuum sensor with high chemical resistance is designed for measurements in the rough vacuum range. There are three options for the vacuum connection: small flange, hose nozzle or direct hose connection.

Top view, side view

Top view, side view

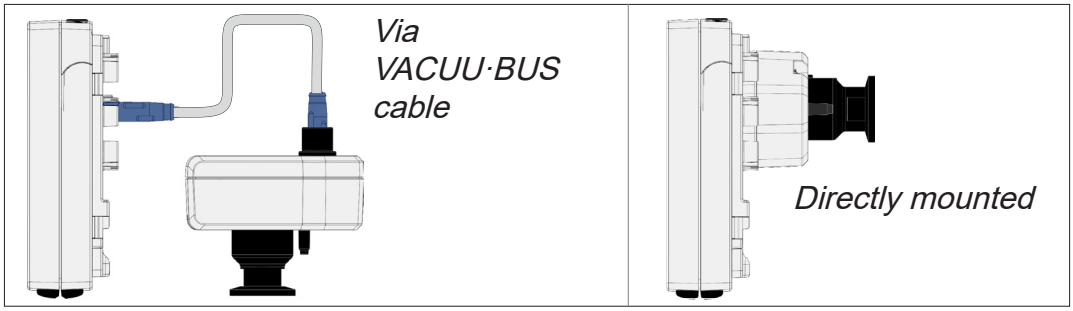


Meaning

1	***VACUU·SELECT Sensor***
2	***VACUU·BUS*** plug attachment, detachable (optional)
3	Venting valve (optional)
4	Vacuum screw connection
5	Slot for ***VACUU·BUS*** plug attachment (park position)
6	Hole for fixing screws
7	***VACUU·BUS*** port
8	Rating plate

Controller and VACUU·SELECT Sensor

→ Example VACUU·SELECT Sensor connection options



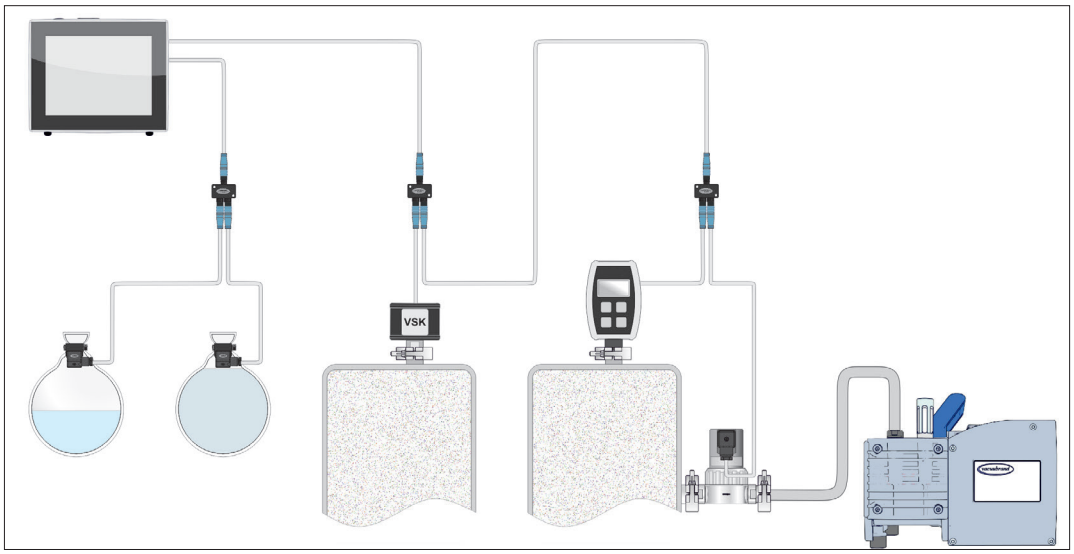
3.3 VACUU·BUS peripheral devices

External valves, level sensors, and vacuum sensors (up to the fine vacuum range) are components that can be connected via the ***VACUU·BUS*** directly to the controller.

VACUU·BUS components can be easily added or removed at any time via component detection. Component activation permits the activation or deactivation of connected components.

VACUU·BUS components[1] (Clients)

→ Example VACUU·BUS principle with different components



When the controller is switched on, it checks the current configuration. ***VACUU·BUS*** components are automatically detected and are used and monitored until the controller is switched off. If a previously connected component is no longer found, the controller displays an error message.

With ***VACUU·SELECT***, all ***VACUU·BUS*** components can be activated or deactivated individually without having to pull out the plug. ***The venting valve of a*** VACUU·SELECT Sensor can also be easily deactivated at the controller.

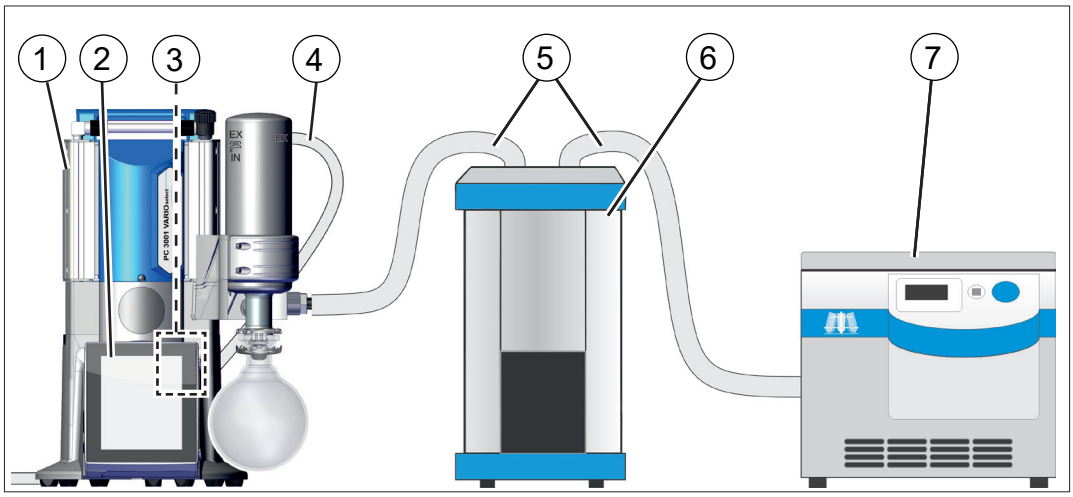
→ *See also Chapter: 7.1.10 Administration – VACUU·BUS*

1 → *See also table in chapter:* ***9.2 Ordering information on page 96***

3.4 Examples of use

Vacuum concentrator

→ Example Vacuum concentrator

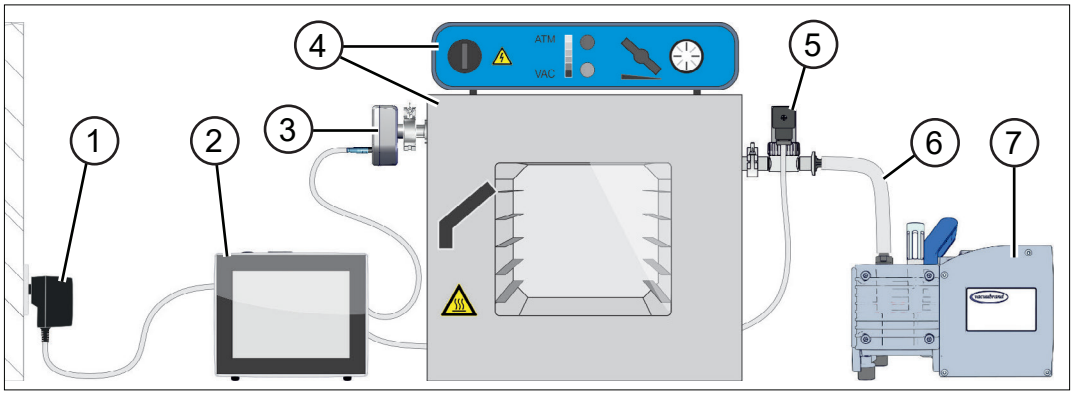


Meaning

1	**PC 3001 VARIO select** vacuum pumping unit
2	**VACUU·SELECT** operating panel, removable
3	**VACUU·SELECT Sensor** permanently mounted in the pumping unit
4	Exhaust gas hose (diverted into a fume hood)
5	Vacuum hose
6	Example: Cold trap
7	Example: Vacuum concentrator

Vacuum drying

→ Example Vacuum drying



Meaning

1	Plug-in power adapter
2	**VACUU·SELECT**
3	**VACUU·SELECT Sensor**
4	Application example: vacuum drying cabinet with control unit
5	Vacuum valve
6	Vacuum hose
7	Diaphragm pump, vacuum pump

3.5 Remote control and interfaces

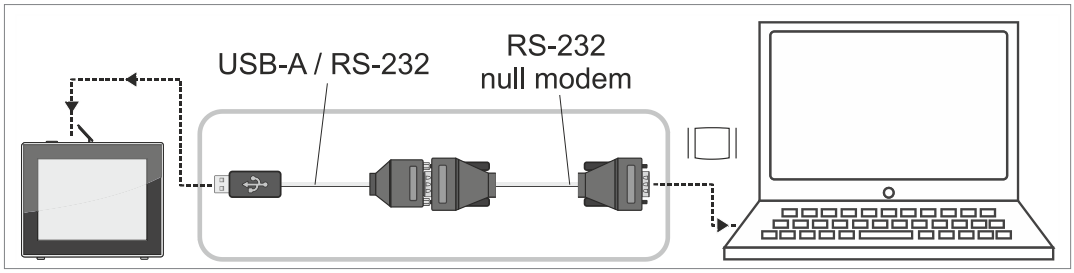
As of software version V1.04 / V1.00 of the ***VACUU·SELECT***, communication is supported via RS-232 as well as Modbus TCP. This enables you to remotely monitor and control the controller from a central location, for example with a PC or process control system.

For connections → *see chapter: 3.2.2 Interfaces on page 23*

3.5.1 RS-232 serial port

An RS-232 USB adapter can be connected to one of the USB ports of the controller, to act as a serial interface.

→ Example RS-232 port



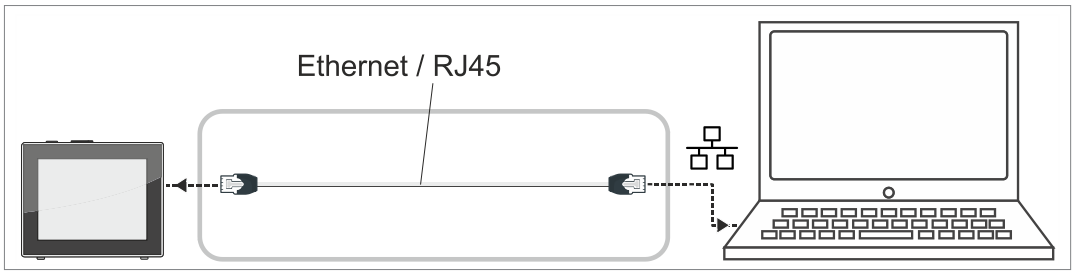
Required accessories

Adapter cable, USB to RS-232, 1 m	20637838
Null modem cable RS-232C, two sub-D 9-pin sockets, 1.5 m	20637837

3.5.2 Modbus TCP

For remote control via Modbus TCP, use the Ethernet connection RJ45 on the back of the controller.

→ Example Ethernet port



Detailed descriptions of the interfaces can be found here: Interface instructions for use.

4 Installation and connection

4.1 Transport

Products from **VACUUBRAND** are packed in sturdy, recyclable packaging.

The original packaging is accurately matched to your product for safe transport.

⇨ If possible, please keep the original packaging (e.g., for returning the product for repair).

Goods receipt

Check incoming goods

Check the shipment for transport damage and completeness.

⇨ Immediately report any transport damage in writing to the supplier.

⇨ Compare the scope of delivery with the delivery note.

4.2 Installation

Check installation conditions

Check installation conditions

- The device is acclimatized.
- Ambient conditions have been observed and are within the limitation of use.

Limitation of use		(US)
Ambient temperature	10 –40 °C	50–104 °F
Altitude, max.	2000 m über NHN	6562 ft above sea level
Relative humidity	30–85%,non-condensing	
Contamination level	2	
Protection class (IEC 60529)	IP 40	
Protection type (UL 50E)		Type 1
Avoid condensate or contamination from dust, liquids and corrosive gases.		

IMPORTANT!

⇨ Note the IP protection class of the controller.

⇨ IP protection is guaranteed only if the controller is appropriately mounted or installed.

NOTE

Condensate can damage the electronics.

A large temperature difference between the storage location and the installation location can cause condensation.

⇨ After goods receipt or storage, allow your vacuum device to acclimatize for at least 3–4 h before initial use.

Benchtop version

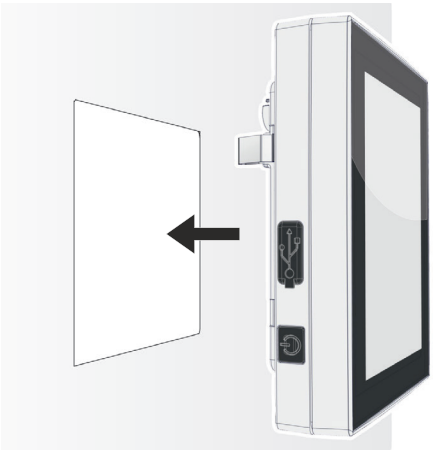
Use as desktop device

If the stand is extended backwards and secured with the brace, the controller can be set up directly on the work surface and connected on the lab bench.

Built-in version*

Use as built-in device

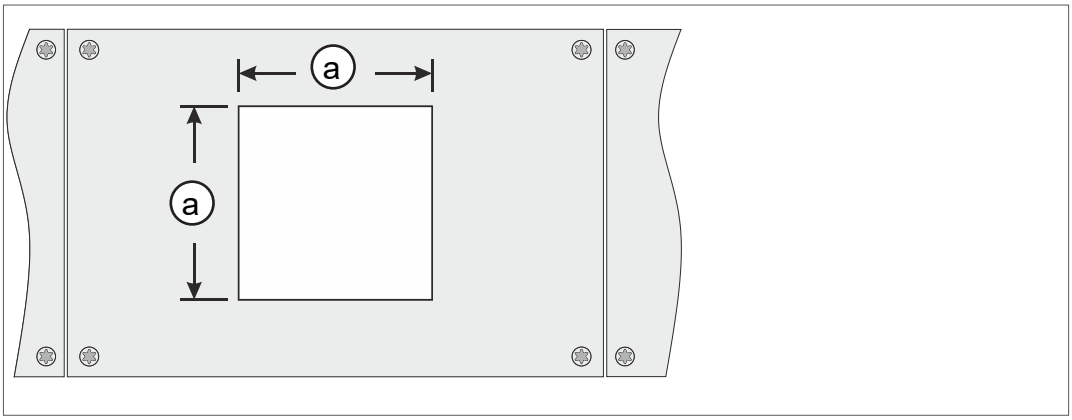
Holders are integrated in the controller or spring clips can be mounted for installation. The operating panel of the controller can then be directly clipped into a cut-out in a ***VARIO*** pumping unit, lab furniture, or a control cabinet.



** The stand is attached to the device (i.e., the built-in version can be extended at any time for use as a desktop version).*

Installation cut-out (in control cabinet, lab furniture, cable duct)

Cut-out dimensions

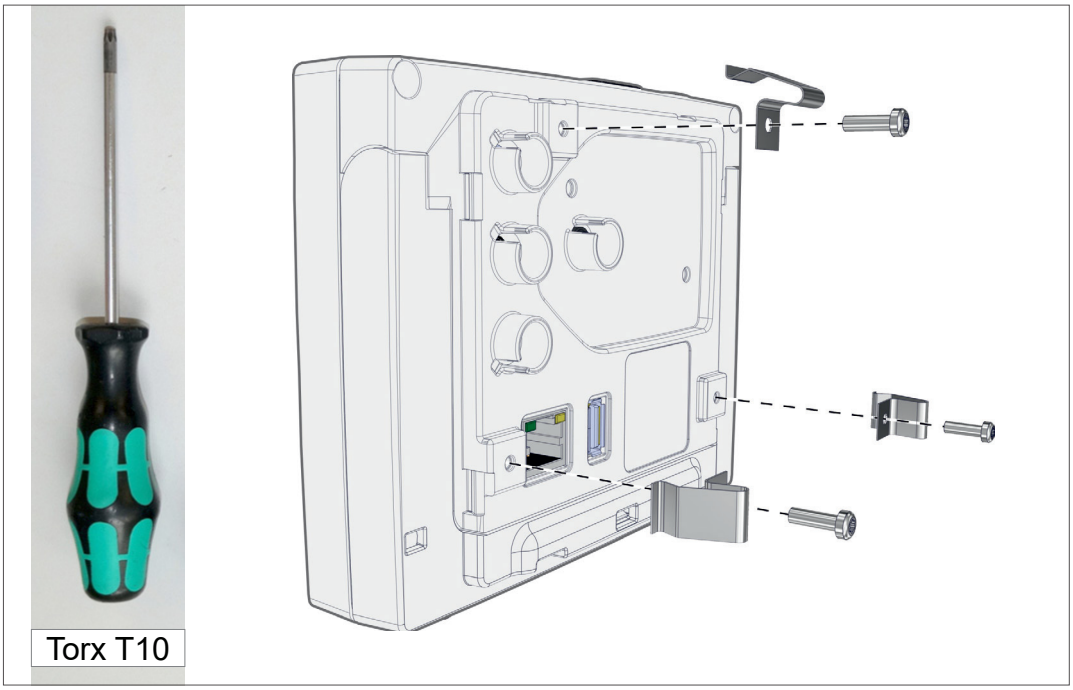


Wall thickness		Dimensions (a) for installation cut-out	
1 mm	0.04 in.	111.5 mm x 111.5 mm	4.39 in. x 4.39 in.
2 mm	0.08 in.	112 mm x 112 mm	4.41 in. x 4.41 in.
3 mm	0.12 in.	112.5 mm x 112.5 mm	4.43 in. x 4.43 in.

Depending on the thickness of the wall, appropriate tolerances should be allowed for the installation cut-out.

Mount spring clips

Mount spring clips

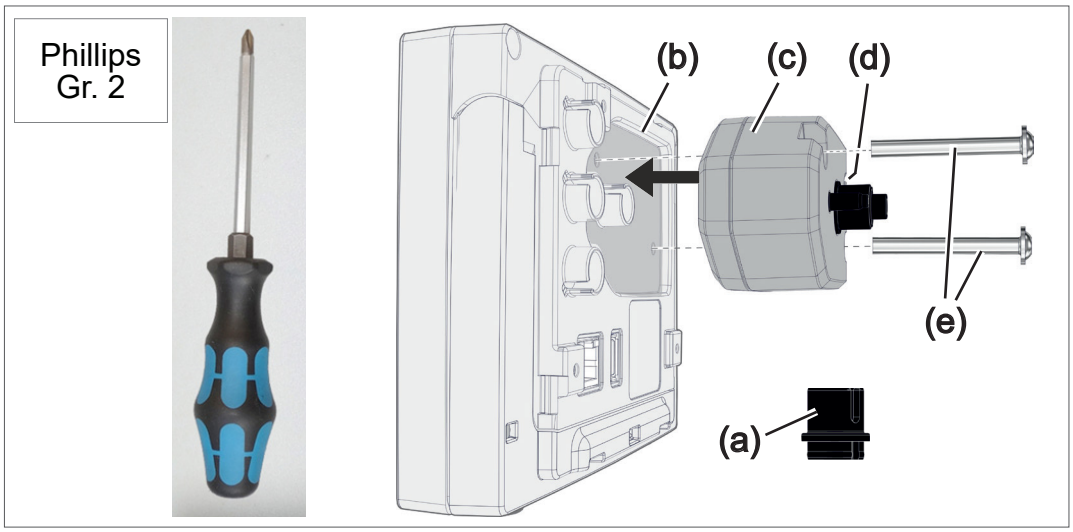


Spring clips + screws D3 × 10	20636593

4.3 Sensor connection

Connect and mount the VACUU·SELECT Sensor

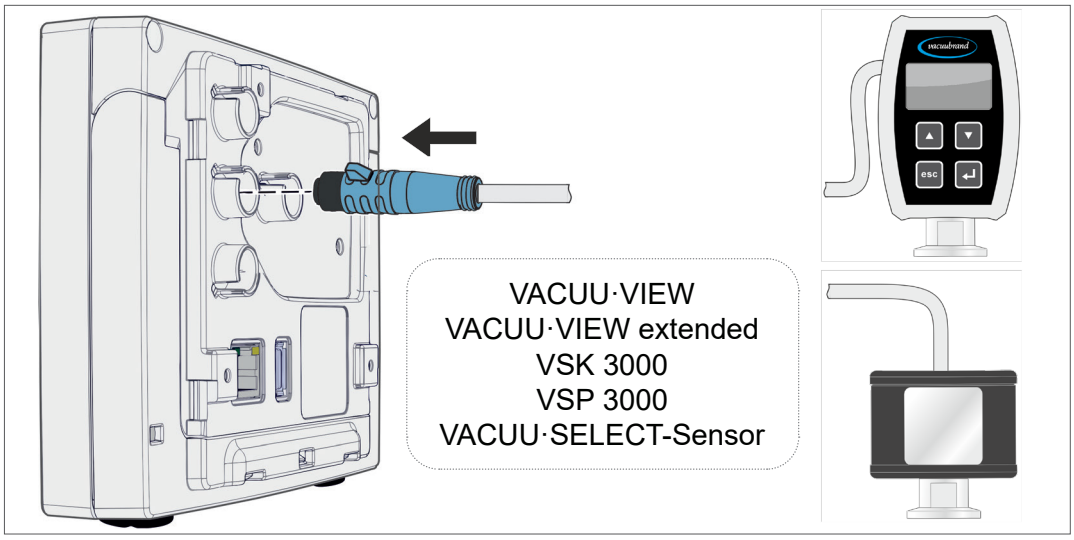
Mount and connect the VACUU·SELECT Sensor



1. Pull out the ***VACUU·BUS*** plug attachment **(a)** and insert it into **(d)**.
2. Insert the ***VACUU·SELECT Sensor*** **(c)** into the ***VACUU·BUS*** port of the controller **(b)** in the preformed recess.
3. Use the Phillips screwdriver to tighten the fixing screws **(e)** until hand-tight.

Connect other vacuum sensors (optional)

→ Example Connection of other vacuum sensors



Extension cable VACUU·BUS 2 m	20612552
VACUU·BUS Y adapter	20636656

4.4 Electrical connection

IMPORTANT!

⇨ Lay the connection cable so that it cannot be damaged by sharp edges, chemicals, or hot surfaces.

NOTE

The validity of the CE/UKCA mark and a certification for USA/Canada (see type plate) may expire if a VACUUBRAND power supply is not used.

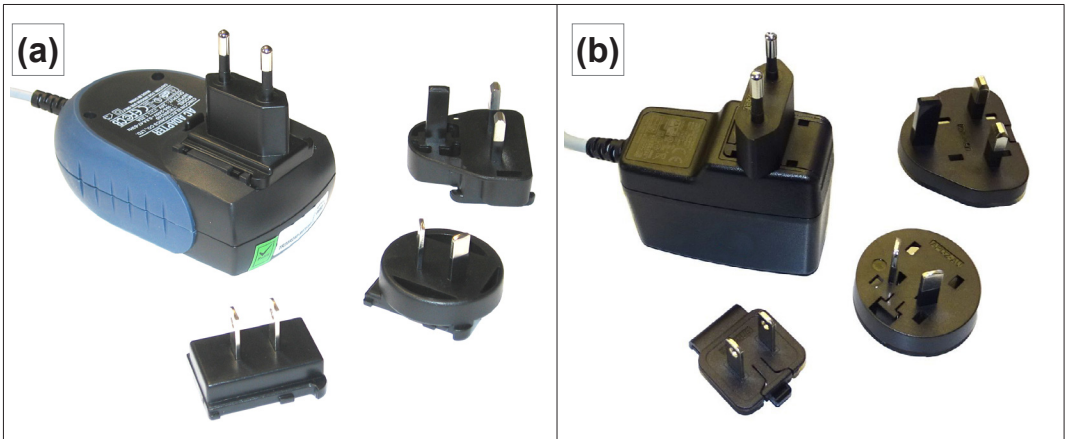
⇨ Use a VACUUBRAND plug-in power supply unit or another VACUUBRAND peripheral device (e.g., chemistry pumping unit PC 3001 VARIO select) for the power supply.

⇨ If the power supply is not provided via a VACUUBRAND plug-in power supply unit or via another VACUUBRAND peripheral device, the power supply must provide a stabilized 24 V DC voltage, which may not supply more than 6.25 A even in the event of an error.

⇨ If additional overcurrent protection devices (e.g., fuses) are used, these must interrupt the power supply at a maximum current of 8.4 A after 120 s at the latest.

Power supply via plug-in power supply*

Plug-in power supply



** Short-circuit-proof wide-range power supply unit with integrated overload protection and country-specific plug attachments: (a) until 11/2020 (b) from 12/2020*

Prepare plug-in power supply

Prepare connection

1. Take the power supply unit and the plug attachments out of the packaging.
2. Select the plug attachment that fits your socket.
3. Place the plug attachment onto the metal contacts of the power supply unit.
4. Push the plug attachment until it clicks into place.

Remove plug attachment

Remove plug attachment from power supply unit

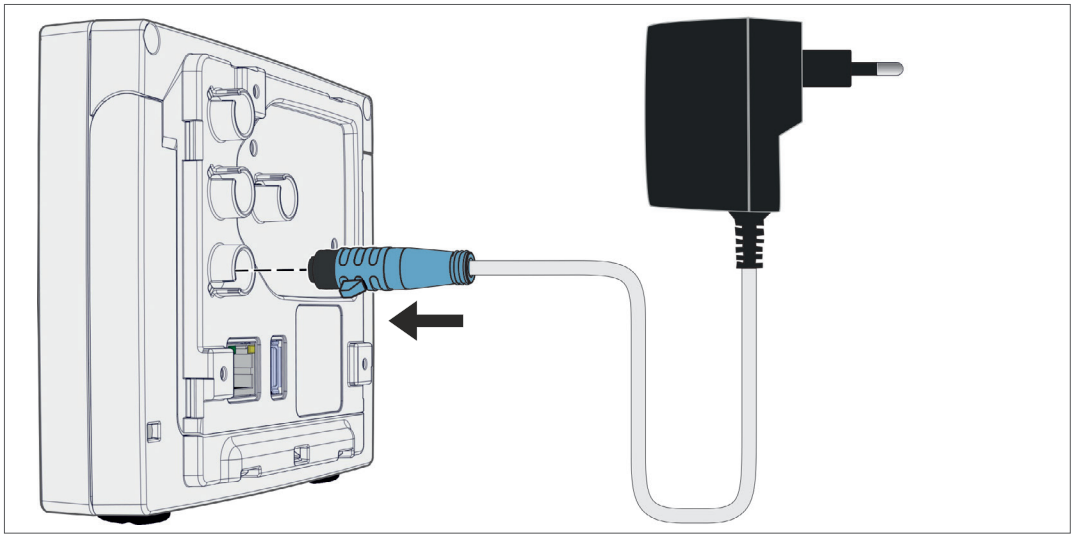
1. Press the locking button on the power supply unit.
2. Remove the plug attachment from the power supply unit.

☑ Another plug attachment can now be attached.

Connect plug-in power supply to the controller

⇨ Insert the *VACUU·BUS* cable of the plug-in power supply into the plug-in connection of the controller.

Power supply via plug-in power supply



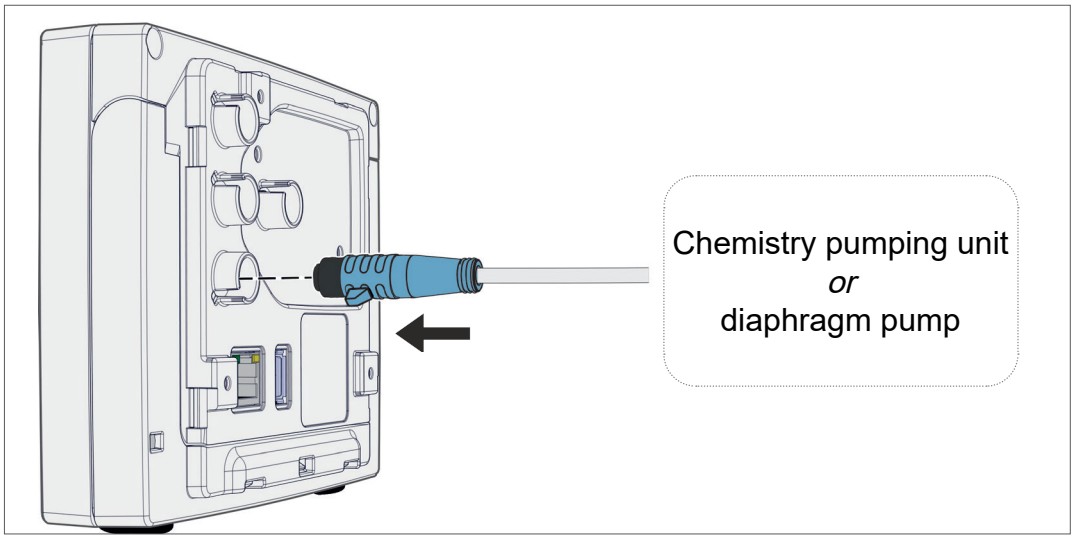
Connect power supply

⇨ Insert the plug-in power supply into the power outlet.

Connect power supply via peripheral device

⇨ Plug the *VACUU·BUS* cable of the peripheral device such as a *PC 3001 VARIO select* chemistry pumping unit into the plug-in connection of the controller.

Controller power supply via peripheral device



4.5 Vacuum connection

WARNING

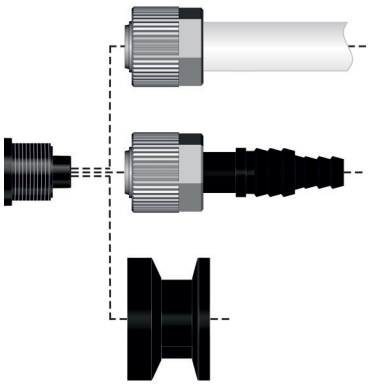
Risk of bursting due to overpressure

⇨ Prevent uncontrolled overpressure such as when connecting to a locked or blocked tubing system.

The vacuum connection is made at the connected vacuum sensor. The connection can be made in various ways.

Connection options

Connection options on the VACUU·SELECT Sensor



Connection via PTFE hose DN 8/10 (e.g., installed in the chemistry pumping unit)

or

Connection via hose nozzle DN 6/10 (e.g., desktop controller)

or

Connection via small flange KF DN 16 (e.g., physical applications)

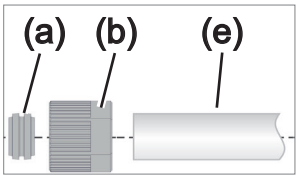
IMPORTANT!

⇨ Use a stable vacuum hose that is suitable for the required vacuum range.

⇨ Keep hose connections to the sensor as short as possible, or connect the sensor as close as possible to the application.

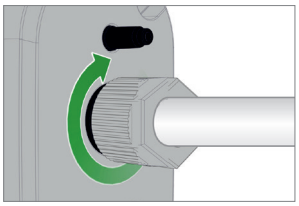
⇨ Dirt, hose kinks or damage to the sensor connection can impair the measurement.

Connect PTFE hose

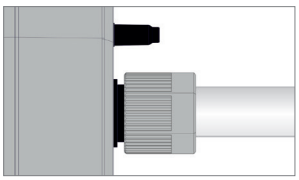


Required connection material: Union nut M14x1, sealing ring, PTFE hose.

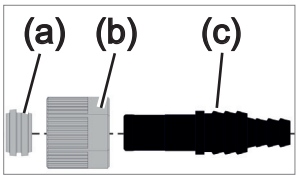
1. Connect the sealing ring **(a)**, the union nut **(b)**, and the PTFE hose **(e)** as shown.



2. Push the PTFE hose with the union nut into the vacuum connection of the sensor and tighten the union nut until hand-tight.

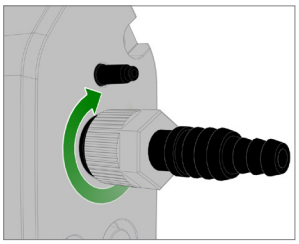


Connect sensor via hose nozzle to vacuum

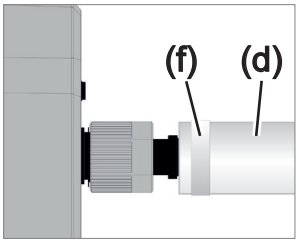


Required connection material: Hose nozzle DN 6/10 mm, union nut M14x1, sealing ring; optional: vacuum hose and appropriate hose clip.

1. Connect the sealing ring **(a)**, the union nut **(b)**, and the hose nozzle **(c)** as shown.



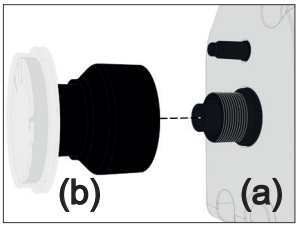
2. Push the hose nozzle with the union nut into the vacuum connection of the sensor and tighten the union nut until hand-tight.



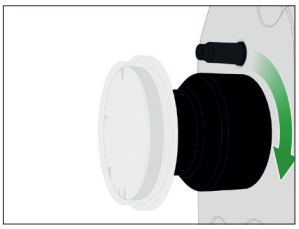
3. Push the vacuum hose **(d)** from the equipment onto the hose nozzle and secure the vacuum hose, for example, with a hose clip **(f)**.

Sensor connection via small flange

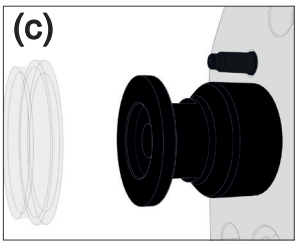
Required connection material: VACUU·BUS extension cable for connection to the controller (optional), clamping ring with universal centering ring or inner centering ring for KF DN 16 (tool: open-end wrench SW17).



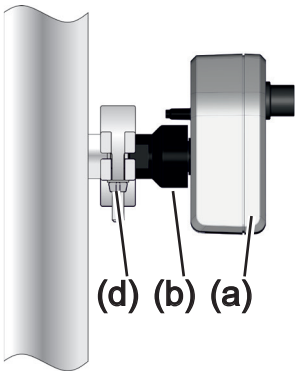
1. Remove the blind plug and place the small flange KF DN16 **(b)** on the vacuum connection of the sensor **(a)**.



2. Tighten the small flange KF DN 16 until hand-tight.



3. Remove the protective dust cap **(c)**.



4. Place the sensor with the centering ring on the connection of the equipment → small flange KF DN 16 **(b)**.

5. Secure the sensor **(a)** with the clamping ring **(d)** to the vacuum line, as shown in the illustration.

4.6 Venting connection (optional)

DANGER

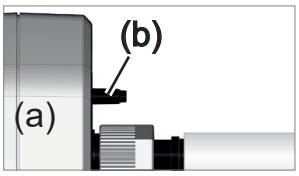
Explosion risk due to air ventilation.

Depending on the process, a potentially explosive mixture can form during ventilation, or other dangerous situations can occur.

⇨ Never ventilate processes with air in which a potentially explosive mixture can form.

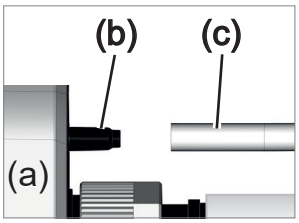
⇨ If necessary, vent with inert gas (max. 1.2 bar/900 Torr, abs.).

Venting with ambient air[1]



For venting **(b)** with ambient air, nothing needs to be connected to the sensor **(a)**.

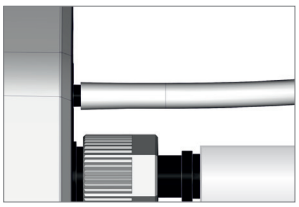
Venting with inert gas – connect venting valve[1]



Required connection material: Hose for hose nozzle (e.g., silicone tube 4/5 mm)

⇨ Attach the hose **(c)** to the connection of the venting valve **(b)**.

☑ Venting valve with hose for venting with inert gas[2].

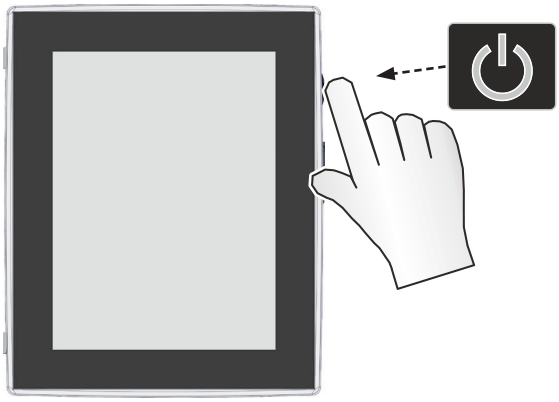


1 *Applicable only to sensors with an integrated venting valve.*
2 *Avoid overpressure.*

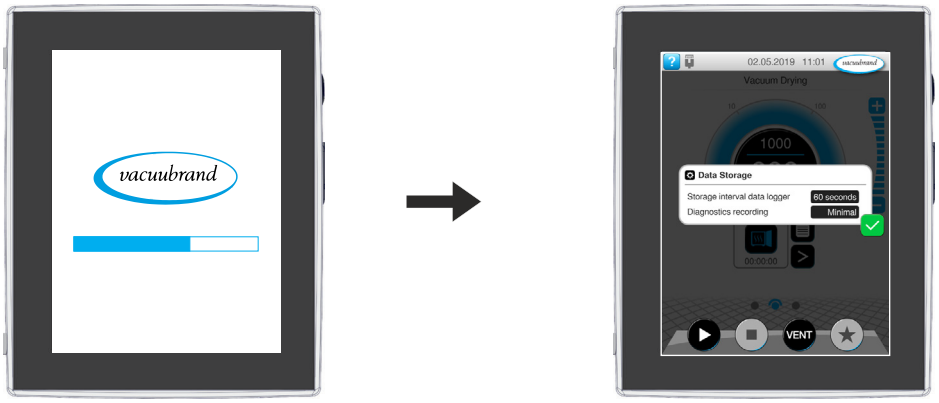
5 User interface

5.1 Switch on controller

Switch on device



⇨ Briefly press the ON/OFF button on the controller



☑ Device starts up.

☑ Information is displayed

Functions of the ON/OFF button

ON/OFF button

ON/OFF	Meaning
	***Switch on controller*** ▸ Briefly press ON/OFF button ***Switch off controller*** ▸ Hold down ON/OFF button for ~3 s and confirm pop-up.
	Lock/unlock controller ▸ Briefly press ON/OFF button. ▸ Lock device against unintended operation (e.g., when cleaning the display).
	Restart controller (reboot) ▸ Hold down ON/OFF button for ~10 seconds.

5.1.1 Touchscreen

Touchscreen operation

The controller is a device operated via touchscreen. You can, for example, select, start, and stop an application by tapping the display.

NOTE

Accidentally touching the touchscreen can trigger unintended actions.

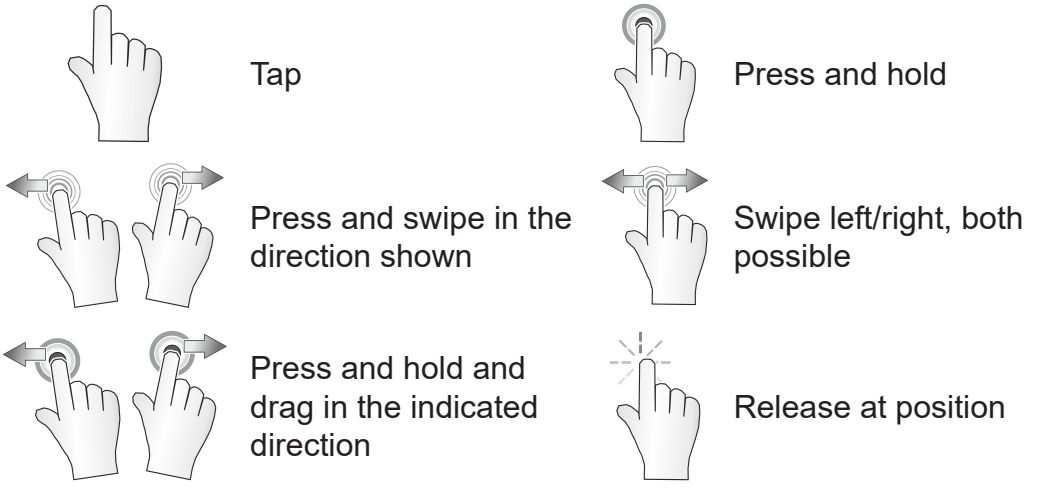
⇨ Lock the controller to prevent unintentional operation. Briefly press the ON/OFF key to lock/unlock.

⇨ Position the controller in such a way that the touchscreen cannot be touched accidentally.

By making various gestures, you can access advanced features: switch between views, edit applications, or use the help and context features.

5.1.2 Gestures for operation

Gesture symbols



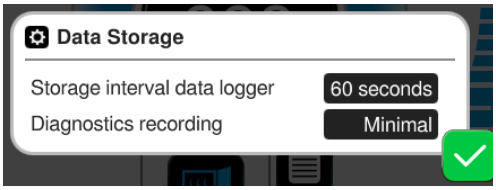
5.2 Set up device

To set up the device, follow the instructions on the screen when switching the device on for the first time or after restoring the factory settings.

5.2.1 Data storage message

Before the controller switches to the process screen, a pop-up window opens with information on current data storage.

→ Example
Info pop-up on data storage



Data storage
- Storage interval data logger
- Recording diagnostics data

⇨ Select your preferred settings and confirm the message.
In the delivered condition or following a reset to the factory settings, the data logger is switched off and recording of diagnostic data is preset to *Minimal*.

The message about data storage appears after every controller restart.

For subsequent adjustments to the data logger

→ *see chapter: 7.3 Data logger on page 83*

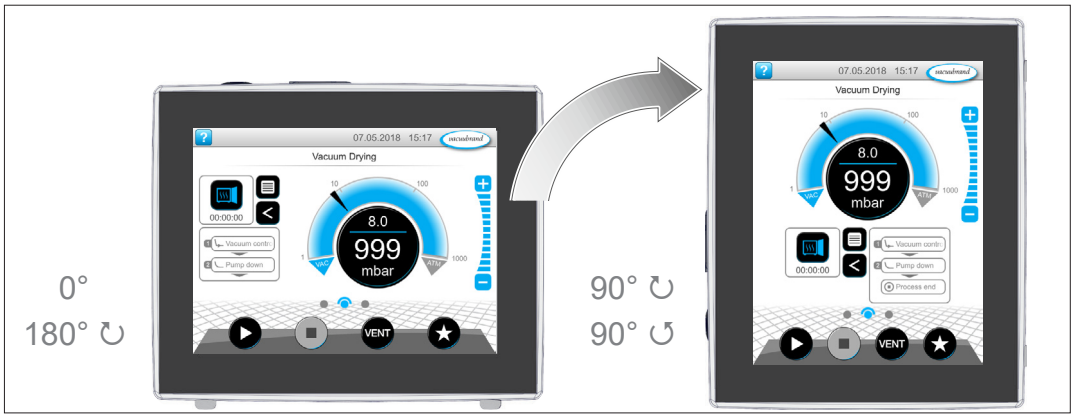
For subsequent adjustments to the diagnostic data

→ *see chapter: 7.4 Service on page 84*

5.2.2 Screen orientation

Supported screen orientations

→ Example
Landscape and portrait view



IMPORTANT! The following descriptions for operation and function are described in vertical format (portrait). The descriptions are also valid for horizontal format (landscape), even though the operating elements may be arranged slightly differently.

Change the screen orientation

→ *see chapter: 7.1.7 Settings on page 70*

5.3 Display and control elements

The display and operating elements of the controller are summarized and explained in this chapter.

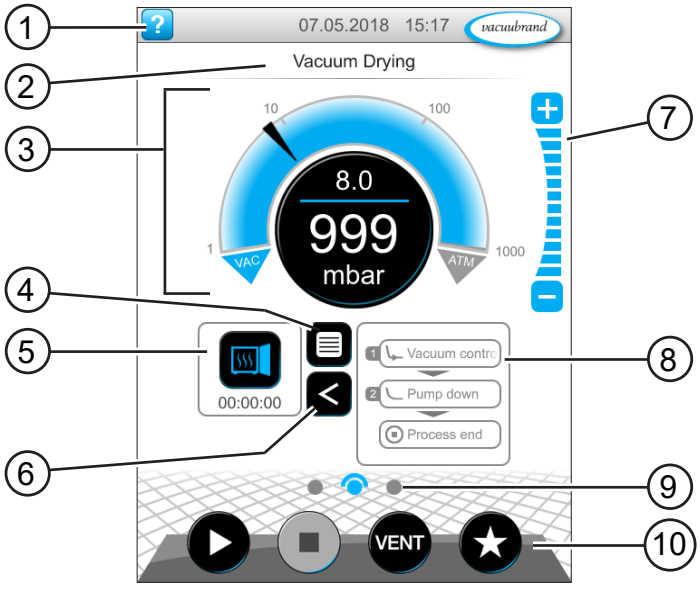
⇨ Refer to this chapter if you want to read about the meaning of a display or an operating element during operation.

5.3.1 Process screen (main screen)

After the device is switched on, the process screen appears. The process screen is the main screen of the controller. The display adapts to the selected application (e.g., by showing the name of the application, process steps, and set-points).

Elements of the process screen

→ Example
Process screen with display and operating elements



Meaning

1	Status bar with help button, date/time, error message
2	Title line: name of the application, display or menu
3	Analog and digital pressure display with target and actual pressure
4	Button to open the application menu
5	Application icon with process time; open parameter list
6	Open/close process step display
7	Step buttons, adjust pressure value during operation
8	Process step display
9	Screen navigation
10	Operating buttons = operating elements for control

5.3.2 Display elements

Status bar

Status bar color codes

Color	Meaning
Gray	*Standard*
Yellow	*Warning*
Red	*Error*

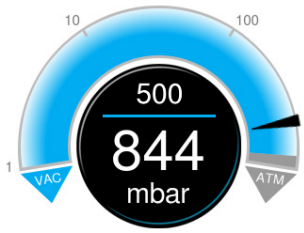
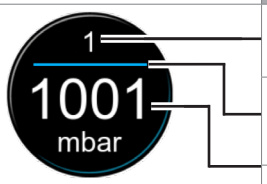
Sounds

Sounds

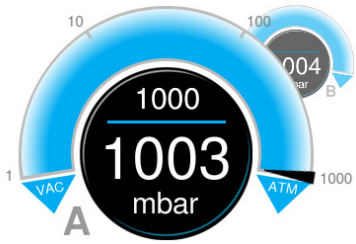
Sound	Meaning
	*Touch tone unless muted* ▸ Feedback entry
	*Warning or fault* ▸ Shows that a fault or warning is present. ▸ Active as long as the error status persists.

Pressure display

→ Example Standard pressure display

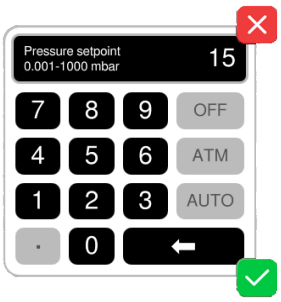
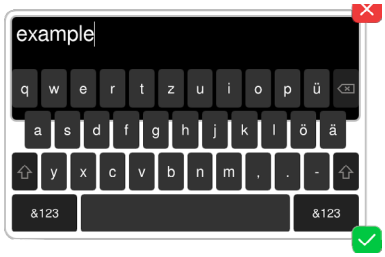
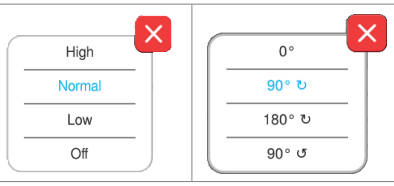
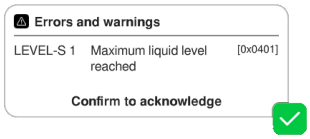
Symbol (icon)	Meaning
	*Pressure indicator default* ▸ Pressure curve – analog pressure display. ▸ Digital pressure display. **Blue** Actual pressure **Gray** Control range
	Pressure set-point Blue dividing line – animated during operation Actual pressure and pressure unit

→ Example Pressure indicator PC 520, PC 620

	*Pressure display for 2 vacuum connections* ▸ Analog and digital pressure display for 2 processes (A + B). ▸ Switch between the processes by tapping the symbol.

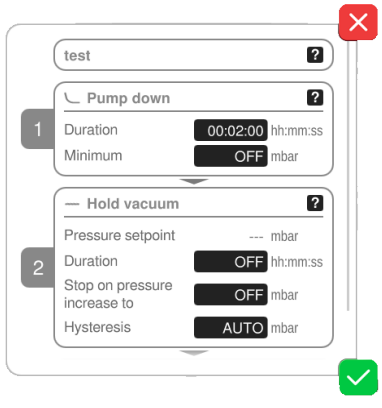
Pop-up windows (context menus)

→ Examples Pop-up window

Graphic	Meaning
	***Numeric keypad with special buttons*** ▸ Enter numerical values. ▸ Select a function using special buttons (OFF, ATM, AUTO). ▸ Min./max. values displayed. ▸ Values outside the permissible input range are not accepted.
	***On-screen keyboard*** ▸ Enter alphanumeric values in the input field. ▸ Automatic switching between QUERTY or QUERTZ.
	***Time picker*** ▸ Adjust the time by scrolling through the numbers.
	***Pop-up list*** ▸ Select a function or setting.
	***Message or error message*** ▸ Message, error message as plain text. ▸ Confirm message, acknowledge error.

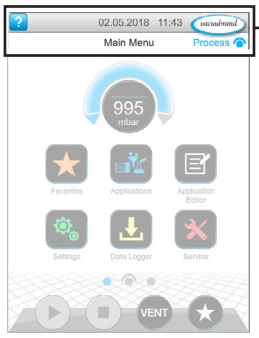
Parameter list

→ Example Parameter list

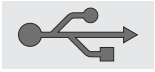
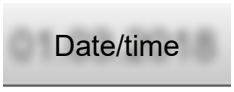
Graphic	Meaning
	***Parameter list with input fields*** ▸ Display and adjustment of application values. ▸ Display is divided into process steps. ▸ The parameter list display changes to reflect the selected application. **Blue** Active process step **Gray** Non-active process step

5.3.3 Operating elements and symbols

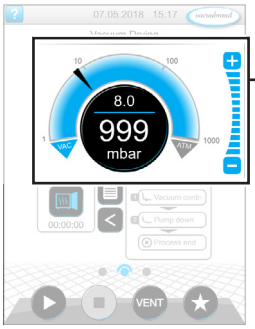
Status bar



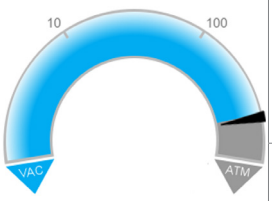
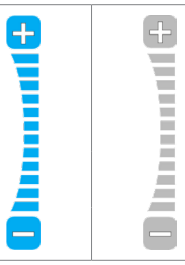
→ Example Main menu

Symbol (icon)	Meaning
	***Help*** ▸ *Tips for operation* can be accessed from any menu level.
	***USB connected*** ▸ Shows that a storage device is connected via USB.
	***Ethernet connected*** (optional) ▸ Shows that an Ethernet cable is plugged in.
	***RS-232 adapter connected*** (optional) ▸ Shows that an RS-232/USB converter is connected via USB.
	***WiFi active*** (optional) Indicates that a WiFi USB adapter is plugged in.
	***Date and time*** ▸ Shows the date and time in the preset format.
	***View process screen*** ▸ Switch back to the process screen from any menu level; process screen symbol:

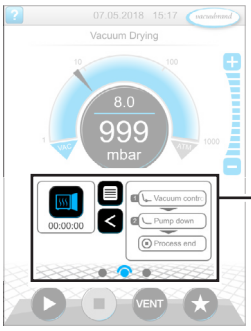
Operating elements – adjust pressure set-point



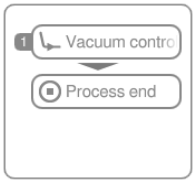
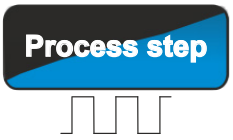
Process screen, adjust pressure set-point, even during operation

Symbol (icon)	Meaning
	***Pressure curve – analog pressure display*** ▸ Adjust the pressure set-point by moving the arrow marker.
	Arrow marker – pressure set-point
	***Digital pressure display*** ▸ Adjust the pressure set-point by tapping.
	***Step buttons*** (not a slider!) ▸ Adjust the pressure set-point by tapping.
	Blue Active
	Gray Locked

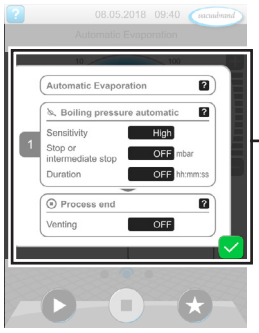
Operating elements – process steps



Process screen

Button or icon		Meaning
Active	Locked	
		***Application icon*** ▸ Tap briefly to open the parameter list. ▸ Press and hold to open the context menu.
		***Shortcut*** ▸ Open the applications menu.
		***Right/left arrow*** ▸ Open/close the process step display.
		***Process step display*** ▸ View the *parameter list*. ▸ Display of the process step **Blue** Active process step during operation **Gray** Non-active process step
		***Screen navigation*** ▸ Switch between the screens of a menu level. **Blue** Selected page **Gray** Additional pages in the level
		***Continue with [text on button] (if part of the process)*** ▸ By tapping on the button, start the next process step shown (e.g., hold vacuum).

Operating elements – parameter list



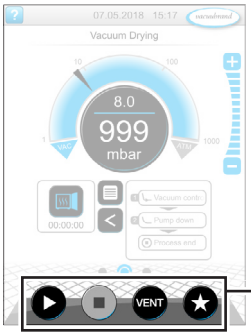
→ Example parameter list

Symbol (icon)	Meaning
	***Cancel*** ▸ Cancel entry or selection. ▸ Go back to the previous display. ▸ Exit the menu.
	***Help with process step*** ▸ Display information about the process step.
	***Confirm*** ▸ Confirm entry or selection. ▸ Exit the menu. ▸ Acknowledge an error.

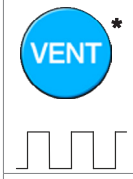
Parameter list

Txt/Num	***Input field or selection field*** ▸ Tap to open a pop-up window where you can enter values or select a function, even during operation.
Blue	Input field for active process
Black	Input field for inactive process

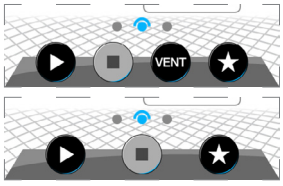
Operating elements for control



Process screen

Key		Function
Active	Locked	
		***Start*** ▸ Start application – available only on the process screen.
		***Stop*** ▸ Stop application – always possible.
		***VENT*** – vent the system (optional) ▸ Press button < 2 sec = vent briefly; control continues.
		▸ Press button > 2 sec = vent to atmospheric pressure; vacuum pump is stopped. ▸ Keystroke during venting = venting is stopped.
		***Favorites*** ▸ View *Favorites* menu.

** The key is displayed only if the venting valve is connected or activated.*



= venting valve connected and activated

= no venting valve connected or deactivated

Other icons and their functions

Icon	Meaning
	***Edit*** ▸ Enter description for new application in application editor.
	***Process step configuration*** ▸ Adjust process step details in application editor.

6 Operation

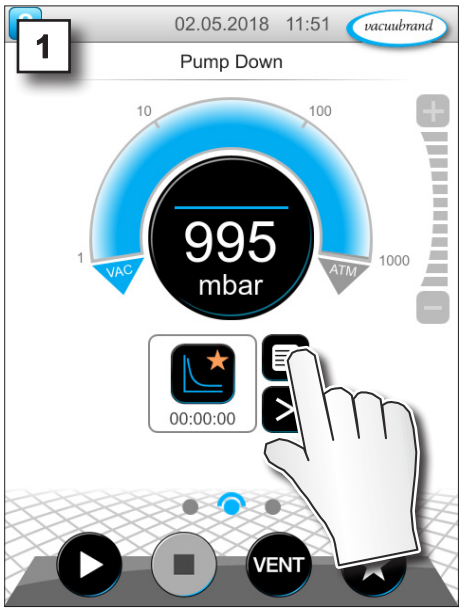
The controller has an application-based user interface. You can select, edit and start an application from a series of pre-defined applications. Fine adjustments for the selected application can be made at any time in the parameter list or directly via the *5.3.3 Operating elements and symbols on page 48*.

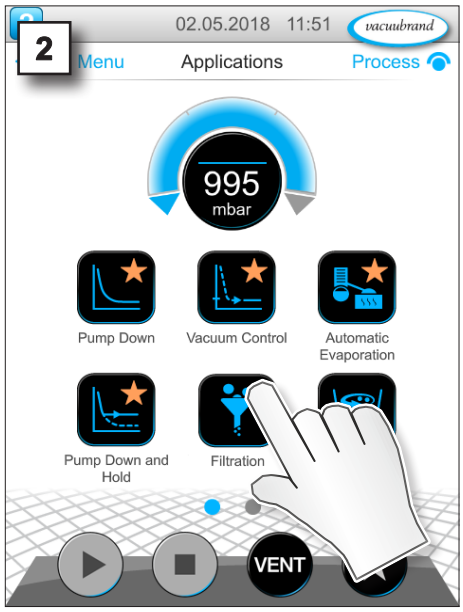
6.1 Applications

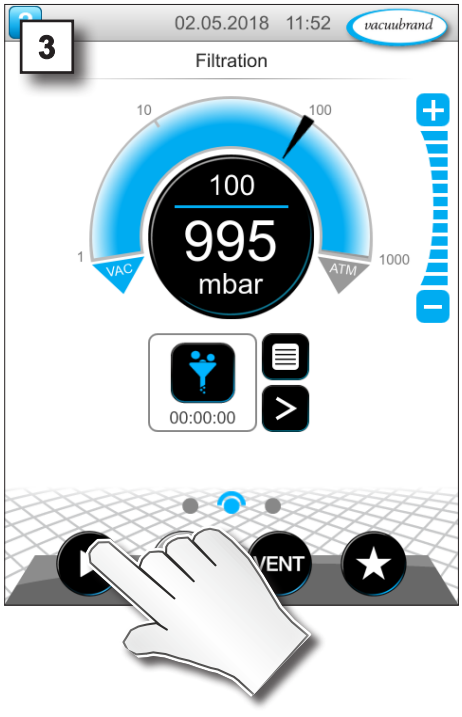
6.1.1 Select and start application

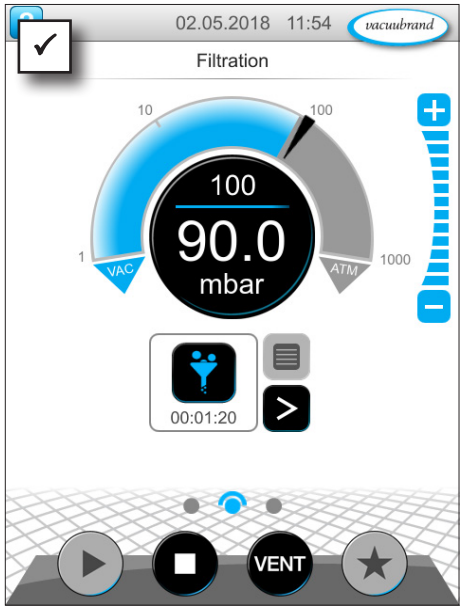
→ Example
Select and start application

Tap









☑ Vacuum control running.

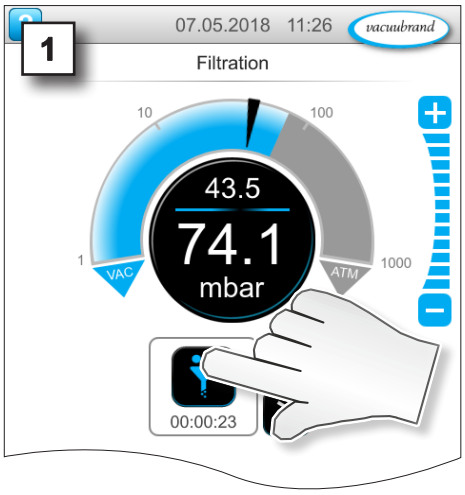
☑ Animated blue dividing line.

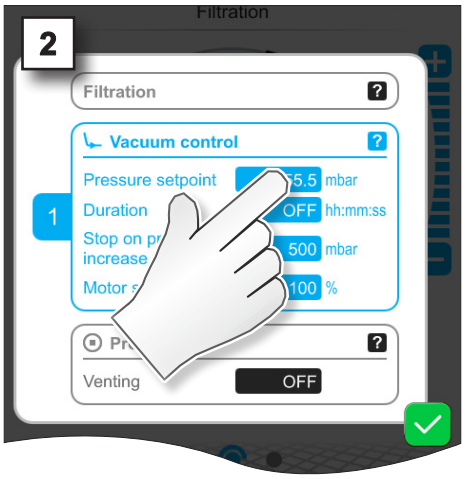
6.1.2 Adjusting the target pressure

The controller offers various options for adjusting the pressure set-point during operation.

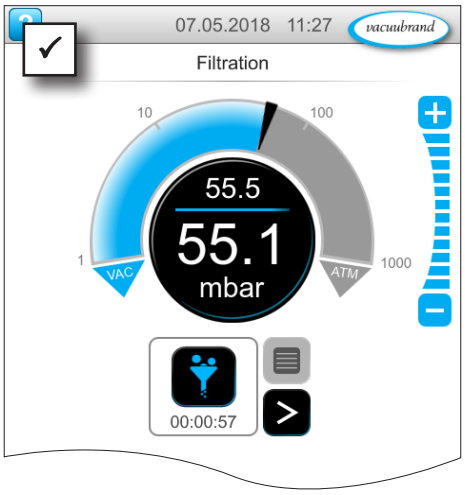
Change pressure set-point in the parameter list

Tap



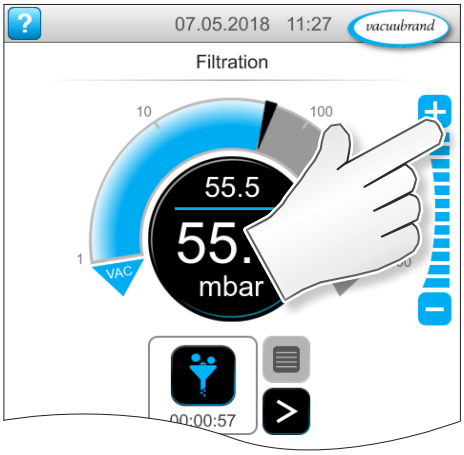


⇨ Enter a set-point in the pop-up and confirm the entry twice.



Fine adjustment via step buttons

Tap



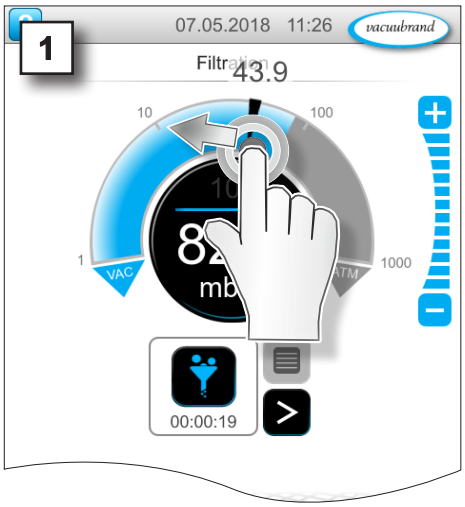
⇨  -Tap or hold down buttons = increase set-point

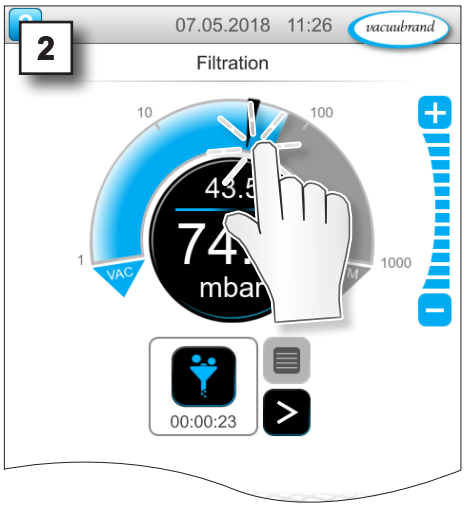
⇨  -Tap or hold down buttons = decrease set-point

Adjust pressure set-point using arrow marker

Press and hold and drag

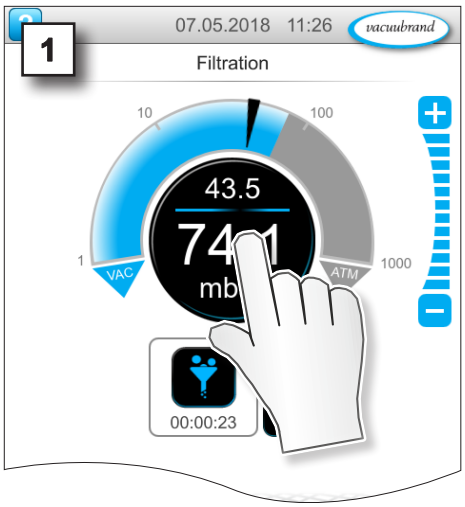
Release

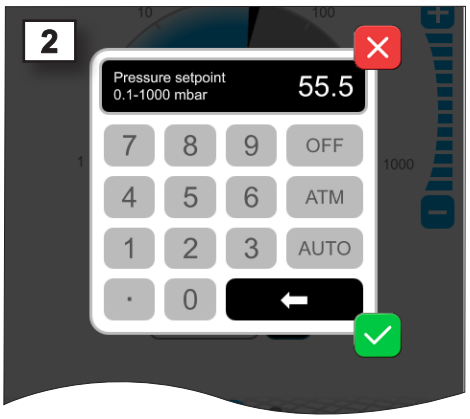




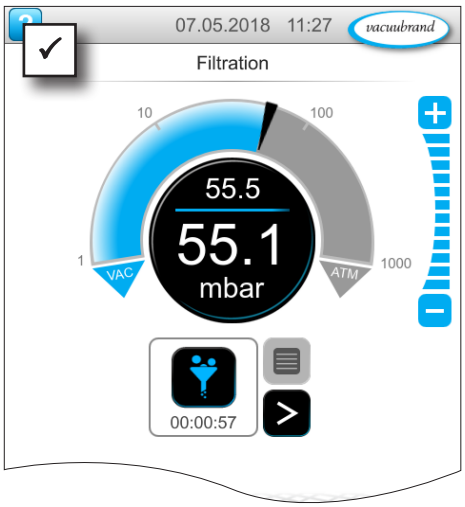
Adjust pressure set-point in digital pressure display

Tap





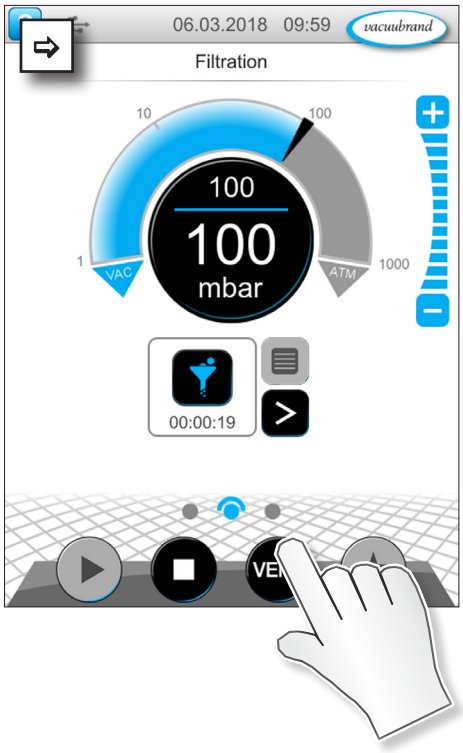
⇨ Enter a set-point in the pop-up and confirm the entry.



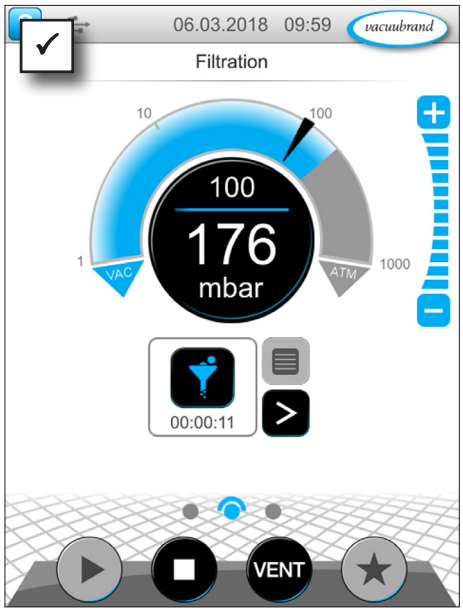
6.1.3 Ventilating

Brief venting

Brief venting



Tap

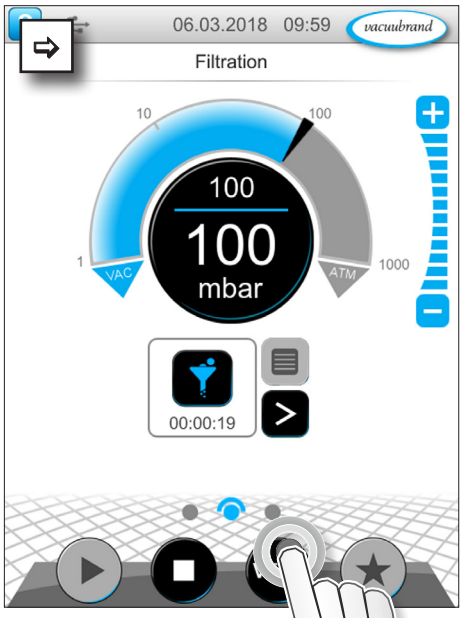


☑ Slight pressure increase.

☑ Vacuum control running.

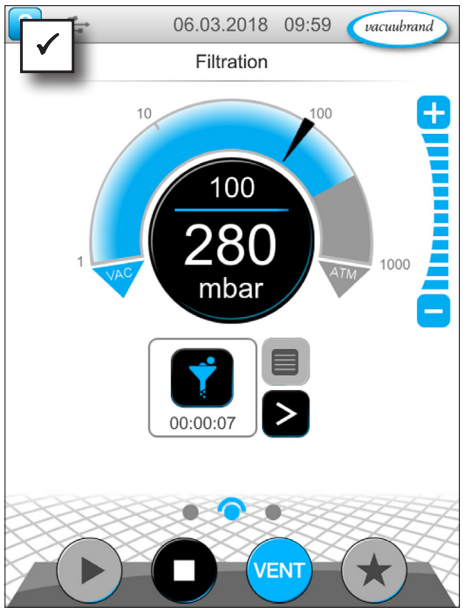
Vent to atmospheric pressure

Continuous venting



Press and hold

~ 3 sec



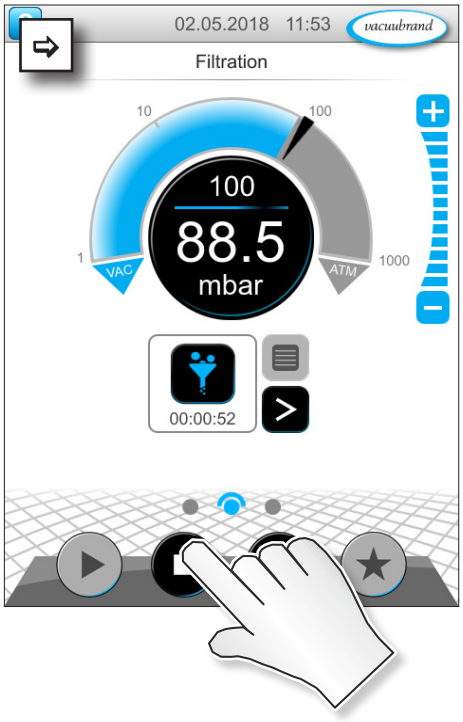
☑ Vacuum control stops.

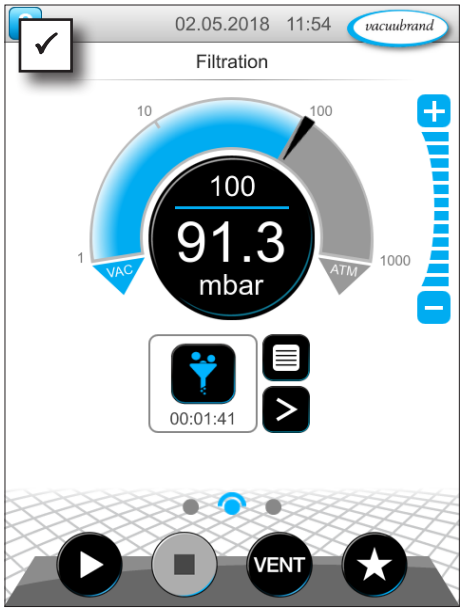
☑ Pressure increase until atmospheric pressure is reached.

6.1.4 Stopping an application

Stop application

Tap





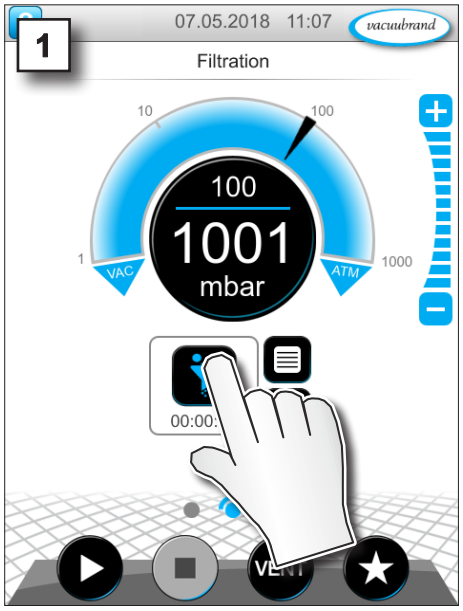
☑ Vacuum control stops.

6.2 Application parameters (parameter list)

In the parameter list, you can individually change and adapt various process-related values before and during operation.

Adjust parameters

→ Example
Adjust *speed*



1. View parameter list.

2. Tap on desired input field.

→ Example
Adjust *speed* parameter

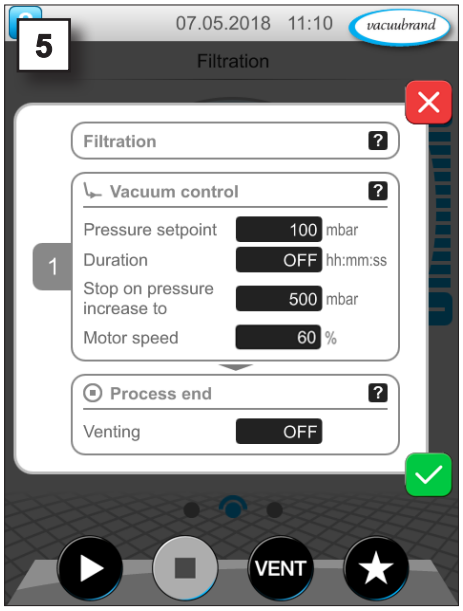
3. Enter the required speed in the pop-up.

4. Confirm entry.

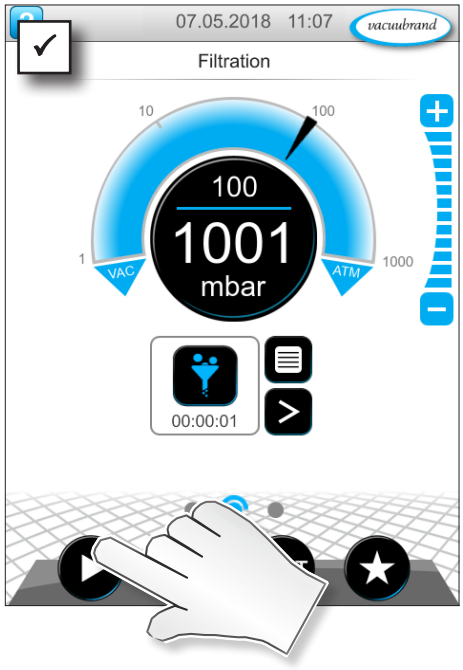
Cancel

Confirm

Tap

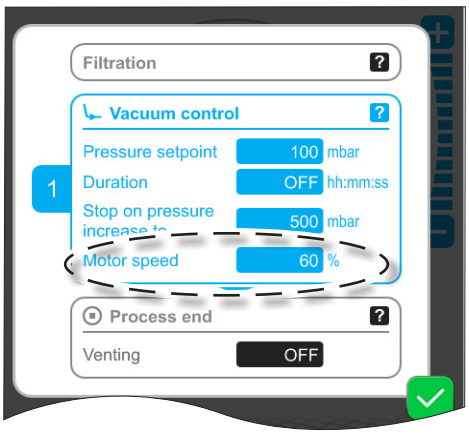


5. Confirm the change in the parameter list.



☑ Once the application starts, the motor runs at the adjusted speed.

→ Example
View of *speed* parameter during operation



⇨ You can make individual adjustments for your process in the parameter list at any time.

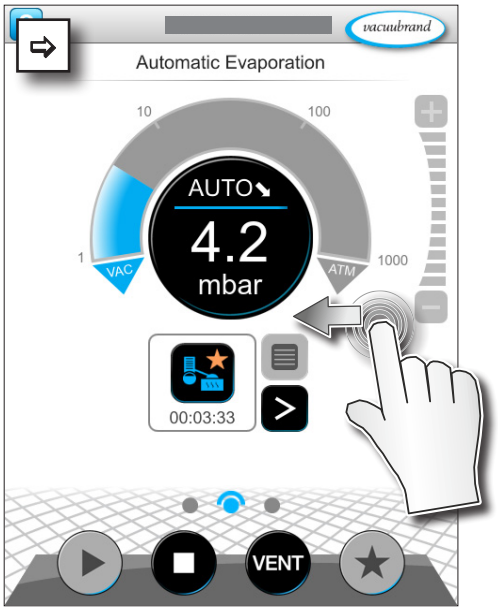
6.3 Pressure graph

The *pressure graph* is on the same level as the process screen. The menu shows pressure curves of measured vacuum values. The pressure curve is shown until a new application is started, at which point it is replotted.

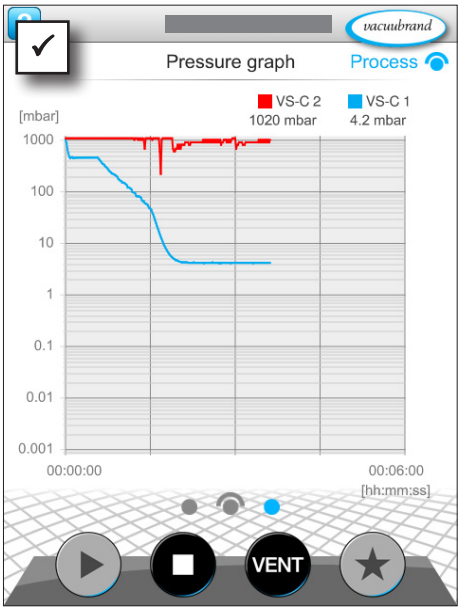
Call up pressure curve

→ Example
View pressure graph

Swipe left



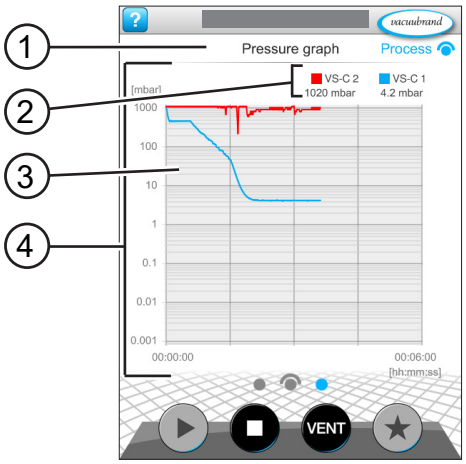
⇨ Swipe left on the display.



☑ Pressure graph display.

☑ Measurement curves of connected vacuum sensors.

Pressure graph display



1	Menu name
2	Color legend of vacuum sensor(s)
3	Measurement curve(s)
4	Pressure/time graph

■ VS-C 1 ■ VS-C 1
■ VS-C 2 ■ VS-C 2

⇨ Tap on the color legend of a vacuum sensor to display or hide individual measurement curves.

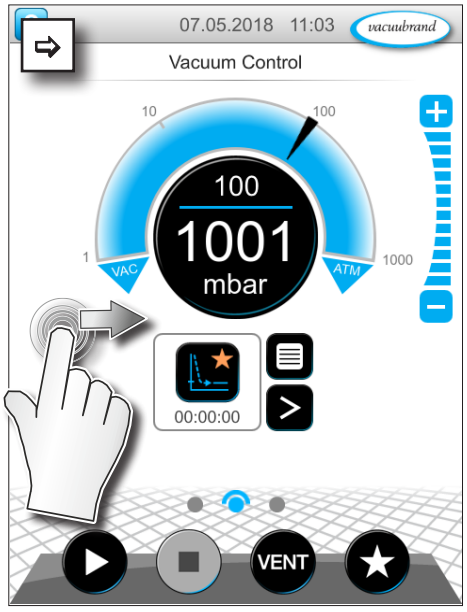
6.4 Main menu

The *main menu* is on the same level as the process screen. The sub-menus of the controller can be accessed from the main menu.

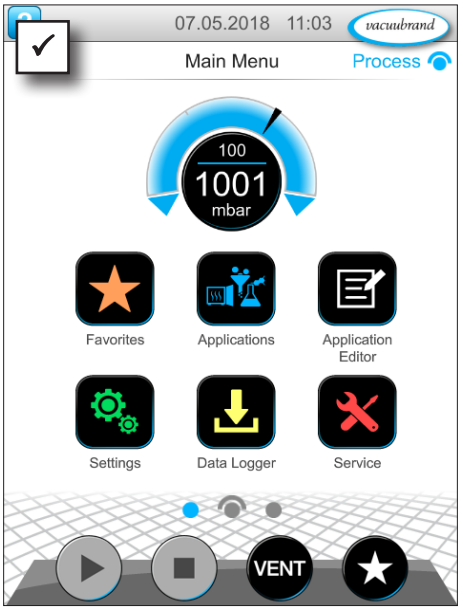
View main menu

→ Example
View main menu

Swipe
right

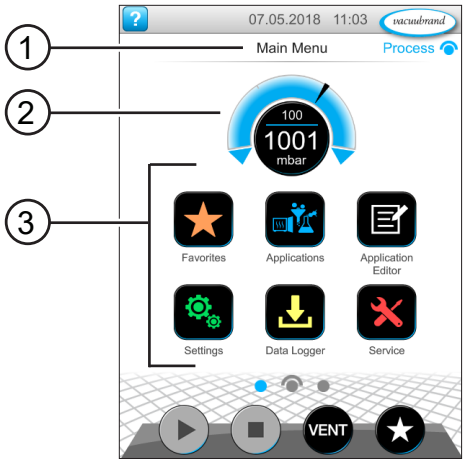


⇨ Swipe right on the display.



☑ Main menu display.

Main menu display



1	Menu name
2	Pressure display
3	Overview of sub-menus

The function of each sub-menu is shown by its icon and the text below it.

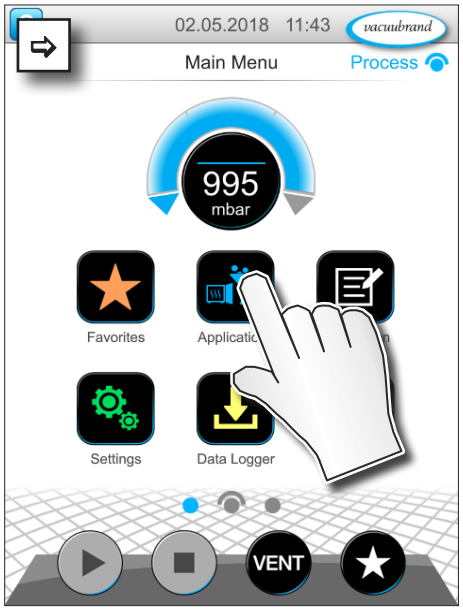
→ *See also Chapter: 7.1 Advanced operation*

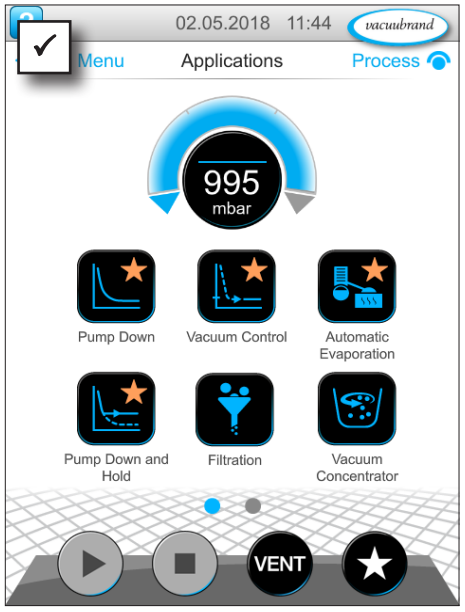
6.4.1 Applications

This menu lists all applications: standard applications, favorites, and newly created applications.

Call up application menu

View applications sub-menu



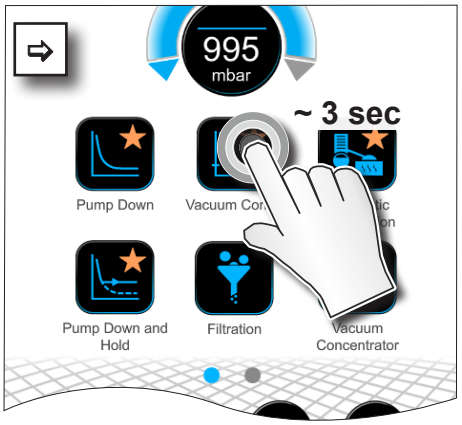


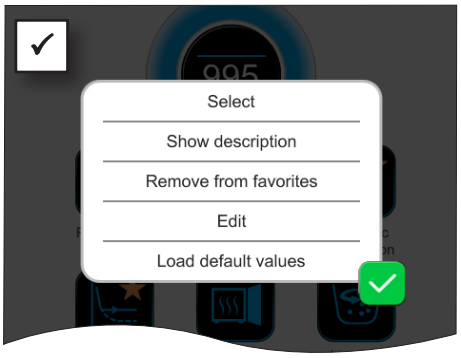
Tap

☑ Display the applications sub-menu.

Display context menu

→ Example
View context menu for applications





Press and hold

☑ The context menu appears.

⇨ Select the required function in the context menu.

Would you like to transfer your applications to another VACUU·SELECT?

⇨ Simply use the export function as described in chapter: *7.1.9 Administration – import/export*

6.4.2 Favorites

Applications marked as favorites are identified by a star on the button.

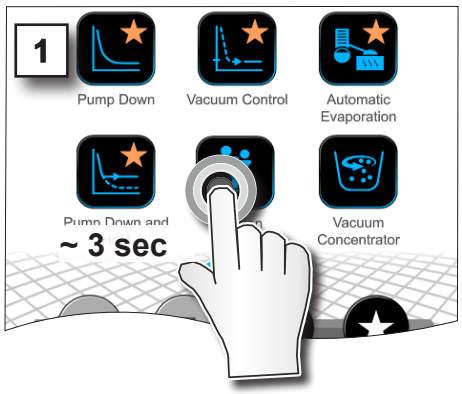
Add favorites

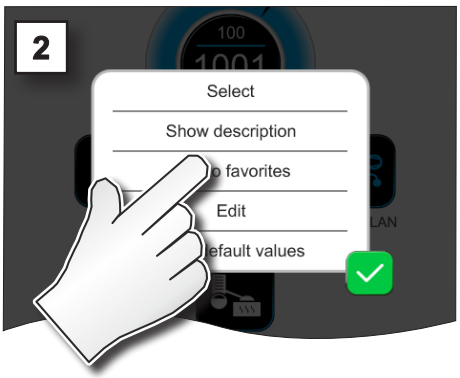
→ Example Add favorites

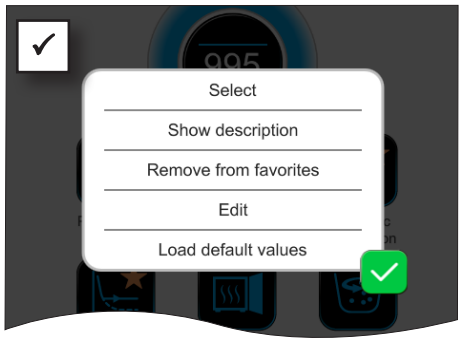
Press and hold

Tap

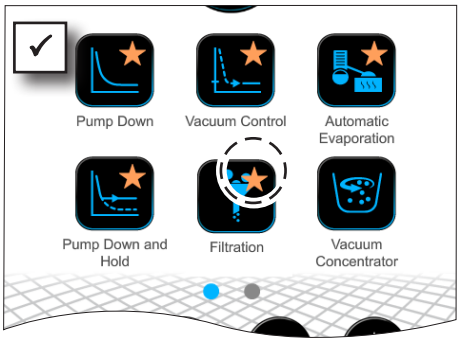
Confirm







☑ Text changed in the context menu.

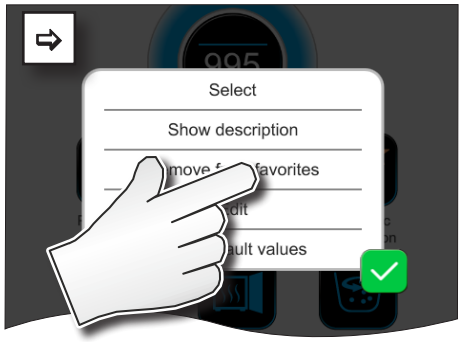


☑ Button with favorites star.

☑ Application listed in favorites menu.

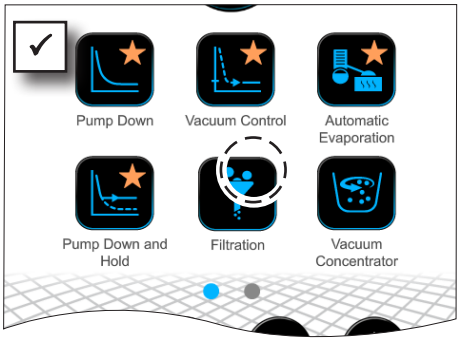
Remove favorites

→ Example Remove favorites



⇨ View the context menu.

⇨ Tap *Remove from favorites* and confirm.



☑ Button without favorites star.

☑ Application removed from favorites menu.

7 Main menu

7.1 Advanced operation

7.1.1 Application editor

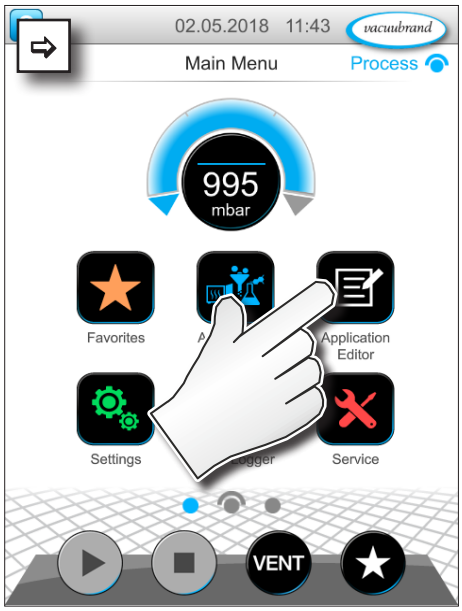
In the application editor, you can compile your own application using the building-block principle and save it with an appropriate name.

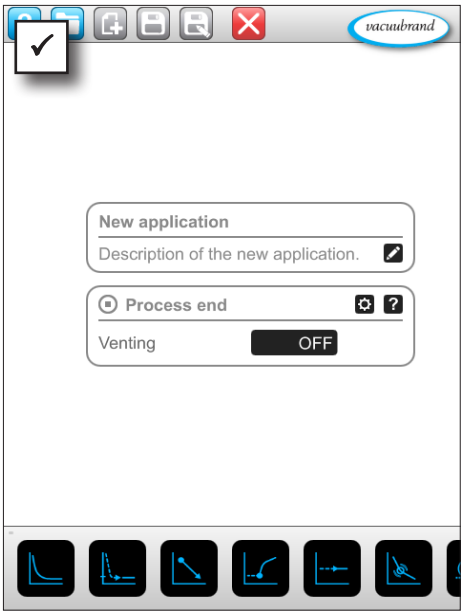
Existing applications can be used in the application editor as templates, and then saved with a new name.

In the case of lengthy applications, you can scroll through the overview of the process steps.

View application editor

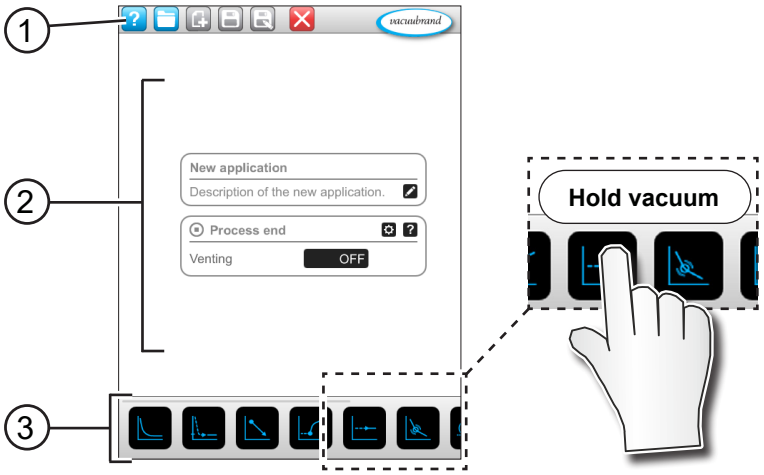
→ Example View application editor





Tap

Application editor display

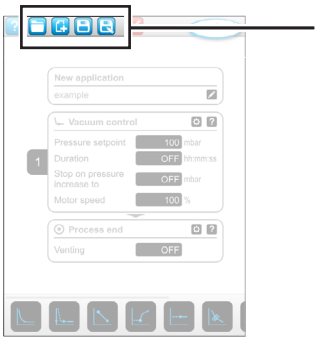


⇨ Tool tips help when selecting process steps.

1	Menu bar
2	Overview of process steps
3	Scrollable modular system with individual process steps to choose from.

7.1.2 Menu bar and description

Menu bar

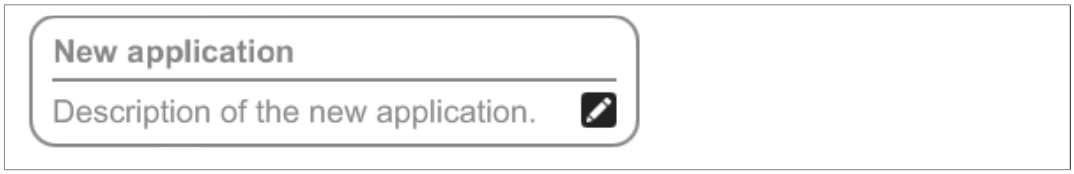


→ Example: Application editor

Icon keys		Meaning
active	Locked	
	- - -	***Application templates*** ▸ Search for an application for editing from a series of existing applications.
		***New*** ▸ Create a new application.
		***Save*** ▸ Save application.
		***Save as*** ▸ Name of the application.

Description of the application

→ Example: Application editor



New application: this name is automatically changed as soon as you give your application an appropriate name using *Save as*.

Description of the new application: here, you can enter a brief description of your application. This description appears later in the parameter list. Custom descriptions are shown only in the language of the creator.

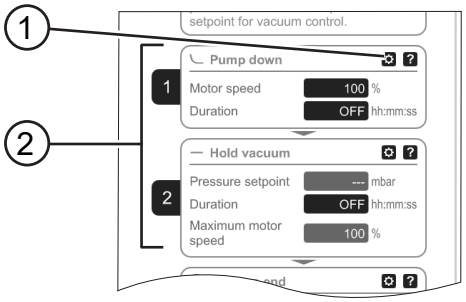
⇨ Open the context menu to enter a description by tapping on:

7.1.3 Overview of process steps

Individual process steps can be added or removed by dragging and dropping. If a process step is dragged onto the editor screen, the image changes. The process step is shown as a numbered process step section.

Meaning of process step module(s)

→ Example Process step sections



1	Process step configuration
2	Process step section, numbered.

Using the **process step configuration**, you can specify which parameters will later be displayed in the parameter list and which are available for editing.

Each **process step section** represents a process step. By holding down and moving the numbers, process step sections can be (re)arranged as desired.

As a visual aid to help you rearrange the process step sections, a **blue bar** appears at the point where they can be placed.

The process step sections are **numbered** from top to bottom, from 1 to n. If a process step section is added, shifted or removed, the numbering is adjusted automatically.

7.1.4 Process end

Process end means the defined end of an application. Process steps can be placed only above this.

7.1.5 Edit application

Create a new application

→ Example
Create a new application

Tap

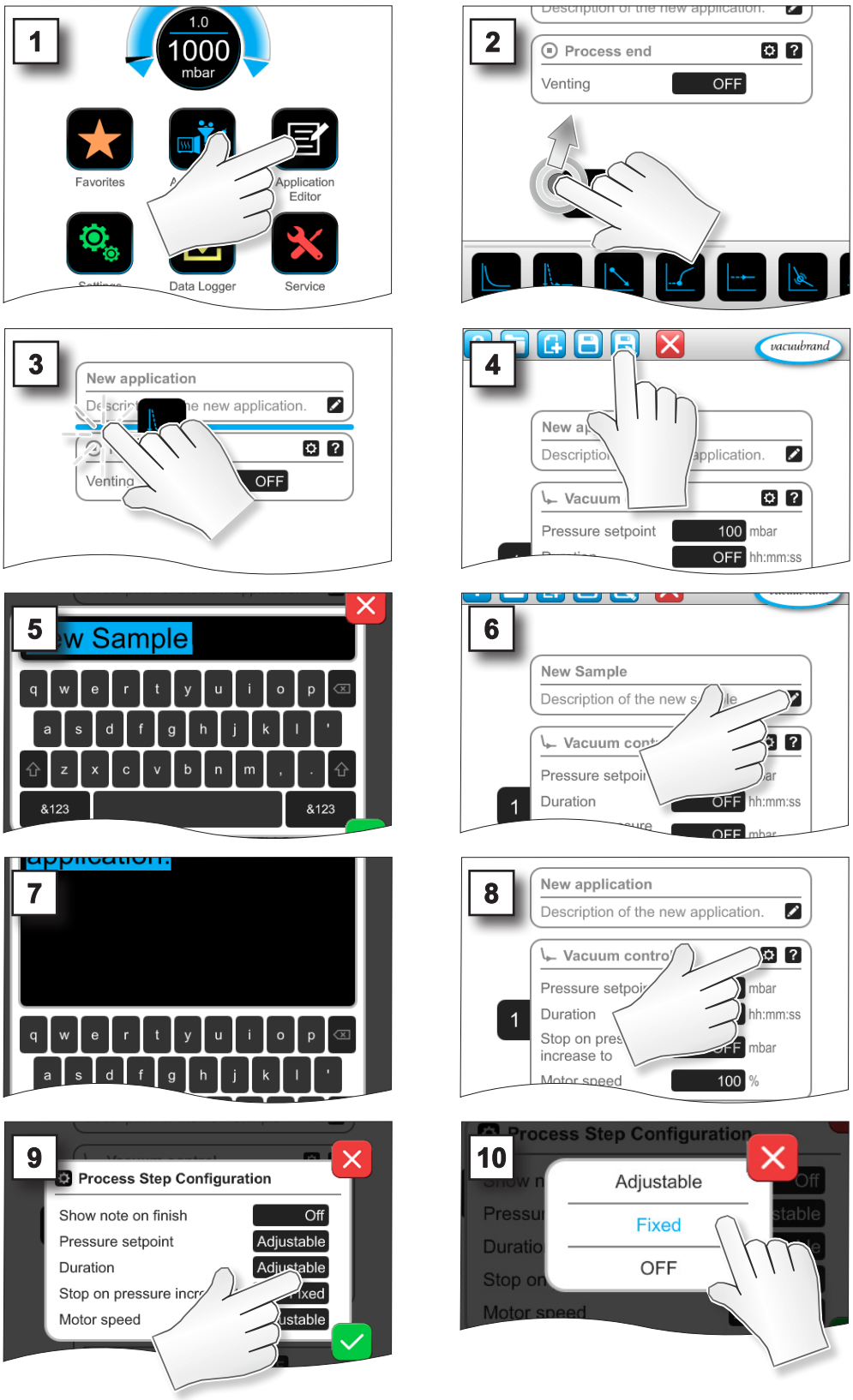
Press and hold and drag

Release

Save as

Confirm

Exit menu



→ Example
Edit new application

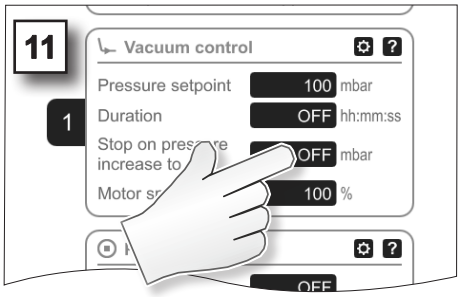
Tap

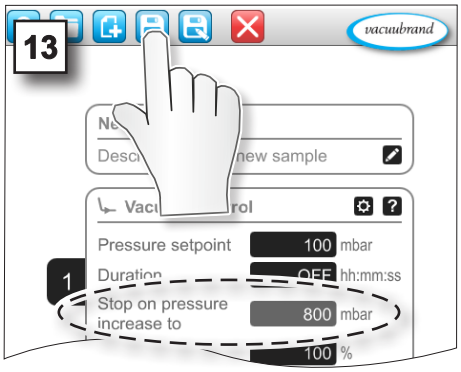
Press and hold

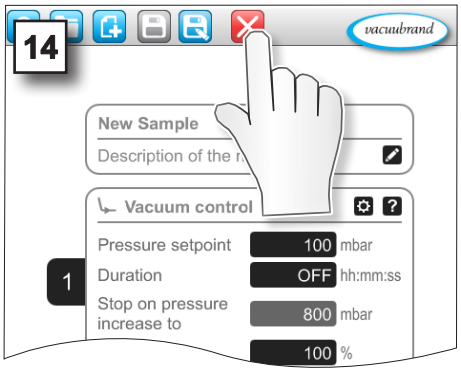
Save

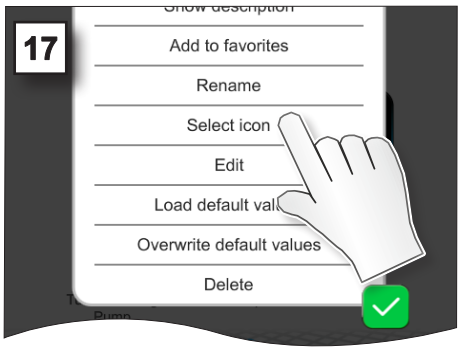
Confirm

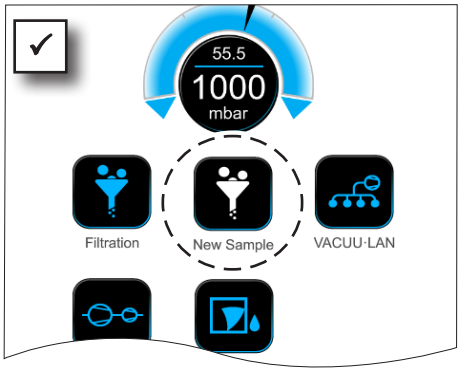
Exit menu











☑ New application listed with white symbol in applications sub-menu.

7.1.6 Remove process step

Change application

→ Example
Edit existing application


Press and hold

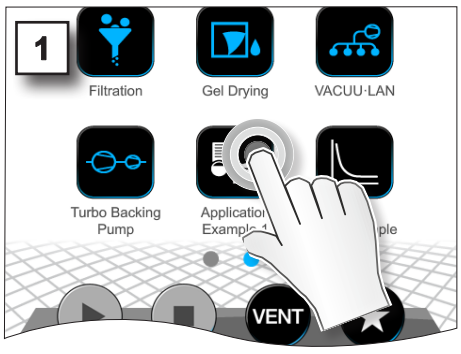

Tap

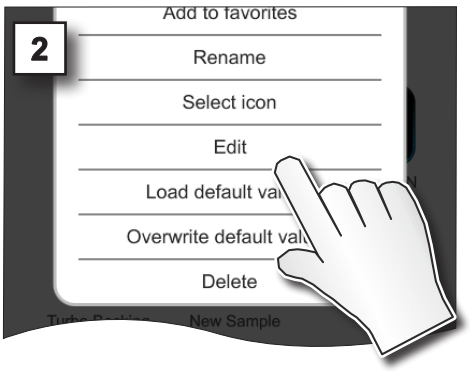

Press and hold and drag

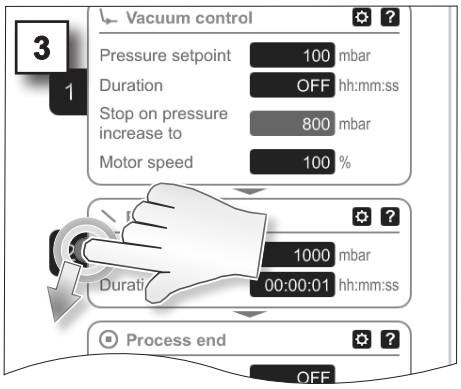

Release

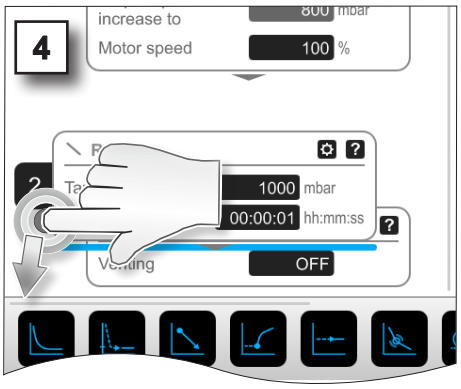

Save

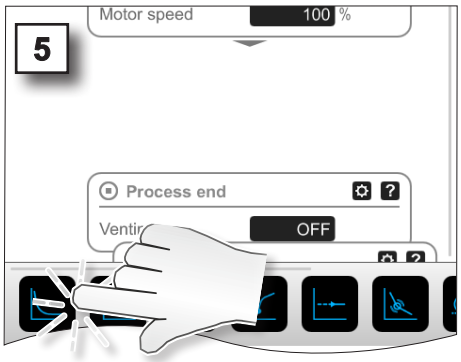

Exit menu

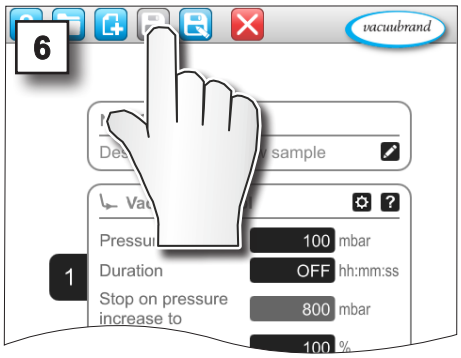


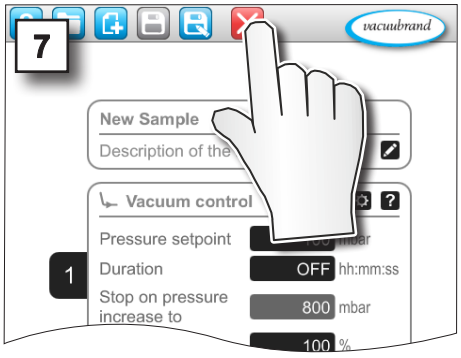












☑ The removed process step is no longer displayed in the parameter list of the application.

7.1.7 Settings

In this sub-menu you can adjust the display, switch to another language, and make pre-settings for connected *VACUU·BUS* peripheral devices.

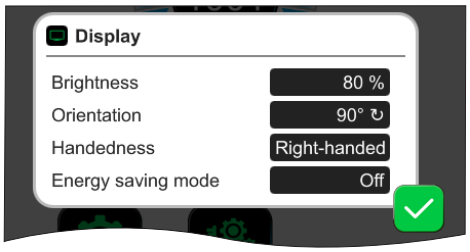
Call up settings sub-menu

→ Example
Main menu \ Settings \ Basic settings

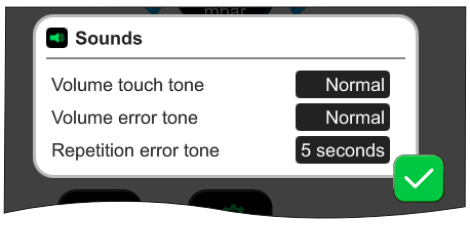
Tap

Meaning of the context menus

→ Example
Overview of the Settings context menu



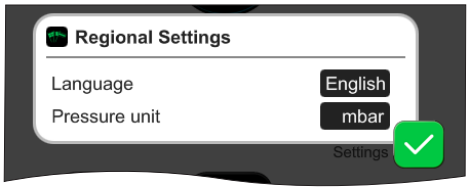
Under **Display**, you can specify various presettings for the screen.



Under **Sounds**, the volume of the acoustic signals for warnings and haptics can be set or switched off.

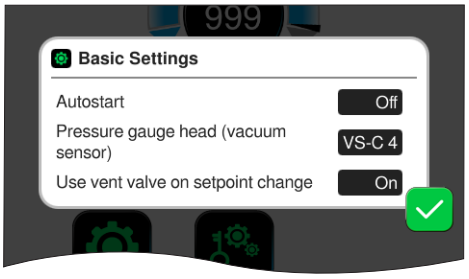
Cancel

Confirm



In **Regional Settings**, you can change the language and pressure unit.

→ Example
Overview of the Settings context menu



You can specify presettings for your process in **Basic Settings**:

Description of basic settings

Overview of possible basic settings

Function	Setting	Meaning
Autostart*	Off / On	Off: The controller remains on Stop when the power supply is switched on. On: A started application is continued after the power supply has dropped off (switch off or failure) and is subsequently switched on again. Recommended, for example, when an external switch in the lab furniture is to be used to start up a previously running controller.
Vacuum sensor	VS-C _ / VS-P _	Vacuum sensor selection for the controller, provided more than one is connected. VS-C _: Rough vacuum, VS-P _: Fine vacuum
Use venting valve when set-point changes	Off / On	Off: venting valve does not respond when set-point changes. On: Venting valve responds if required for set-point adjustment.
Coolant valve(s) run-on time**	Off / hh:mm:ss	Specified time for coolant run-on time.
Level sensor(s) delay time**	Off / hh:mm:ss	Delay time for switching off after full status indication

** To use the autostart function, an additional autostart extension kit (#20683250) is required for the following pump types with the designation **VARIO select**: ME 16, ME 16C, MD 12, MD 12C, MV 10, MV 10C, PC 3010, PC 3012, PC 3016. The above pump types with the designation **NT VARIO select** do not require an extension kit for the autostart function.*

*** Optional: Shown if component is connected and recognized.*

The *Basic Settings* context menu adapts to the connected ***VACUU·BUS*** components (e.g., a level sensor is connected and activated via the *component recognition.* ⇨ Entry for delay time is listed in the context menu.

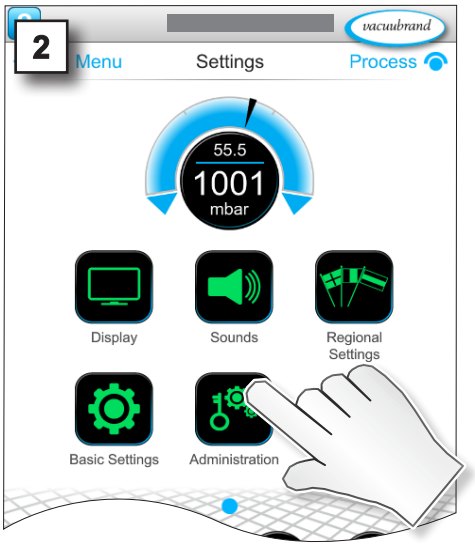
7.1.8 Settings/administration

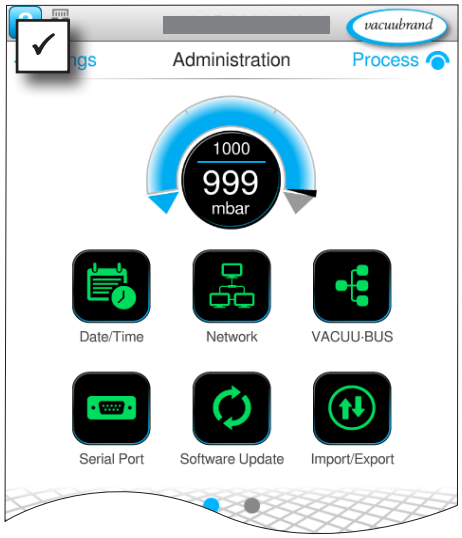
Admin area of the controller – for authorized personnel only.

Call up administration sub-menu

→ Example
Main menu \ Settings \ Adminis-tration

Tap

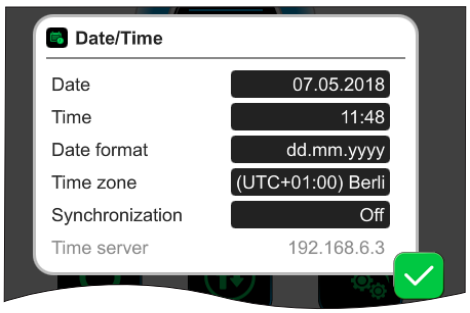




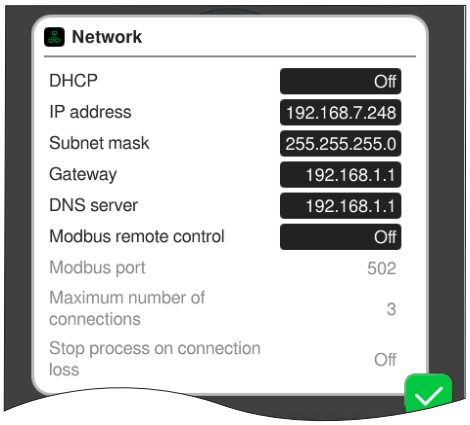
☑ Sub-menu with buttons for administrative submenus.

Meaning of the context menus

→ Example
Overview of the Administration context menu

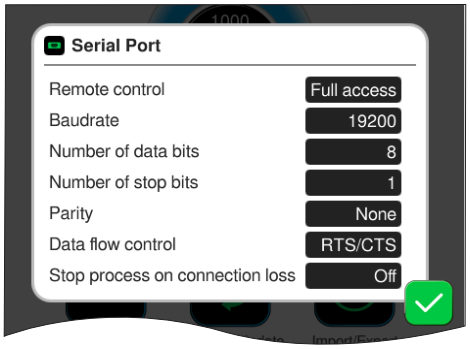


Adjustments for **date and time.**



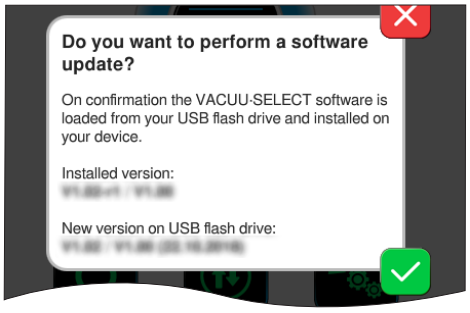
Presettings for adding the controller to your **network**.

Activate/deactivate remote control via Modbus.

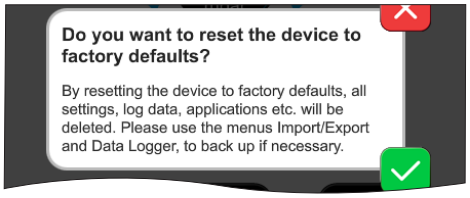


Default settings for **serial interface** and alignment of the communication settings (COM) for RS-232.

Activate/deactivate remote control via RS-232.



Install **software update** from connected USB flash drive.



Reset the controller to the **factory settings**.

IMPORTANT!

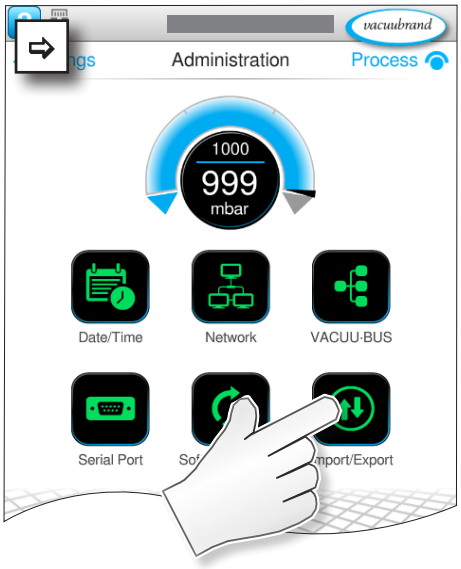
Restoring the factory settings deletes all data, settings, and applications. The data logger is switched off and recording of diagnostic data is set back to *Minimal*.

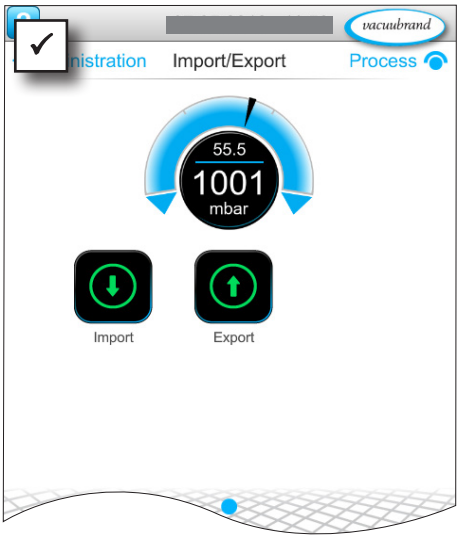
⇨ Back up your settings, applications and data beforehand; see chapter: *7.1.9 Administration – import/export*
7.3 Data logger

7.1.9 Administration – import/export

Call up the Import/Export sub-menu

→ Example
Main menu \
Settings \ Administration \ Import/Export

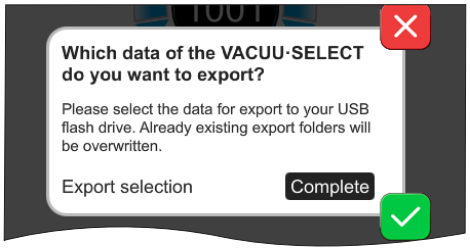




Tap

Meaning of the context menus

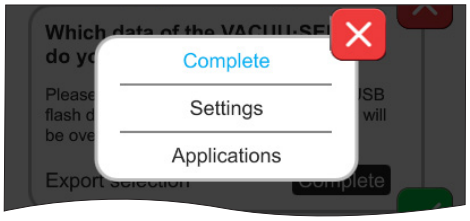
→ Example
Overview of the Import/Export context menu



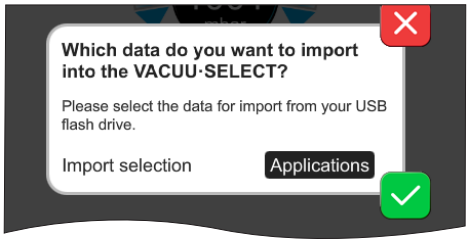
Cancel

Confirm

You can use the **export function** to transfer data such as applications you have created to other controllers via USB flash drive.



You can customize the data export by tapping **Complete**, **Settings**, or **Applications**.



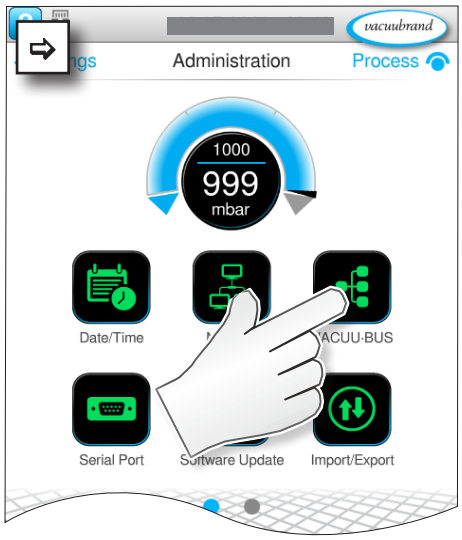
You can use the **import function** to transfer data from another external controller to this controller.

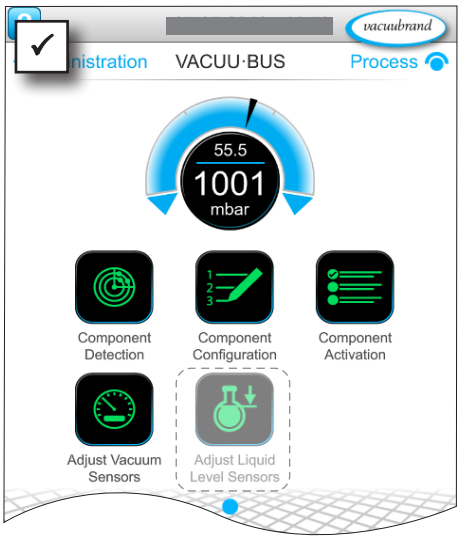
7.1.10 Administration – VACUU·BUS

The *VACUU·BUS* sub-menu simplifies the detection and management of *VACUU·BUS* components.

Call up the VACUU·BUS sub-menu

→ Example
Main menu \ Settings \ Administration \ VACUU·BUS



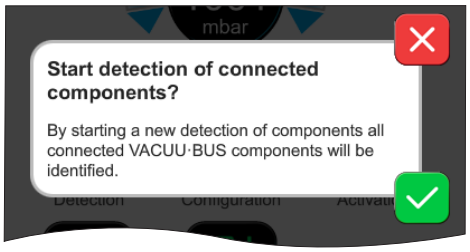


Tap

The buttons retrieve context menus. The context menus facilitate the use of presettings for *VACUU·BUS* components (e.g., address configuration, detection of connected components). Vacuum sensors and level sensors, amongst others, can be calibrated in this sub-menu.

Meaning of the context menus

Overview VACUU·BUS context menu



Cancel

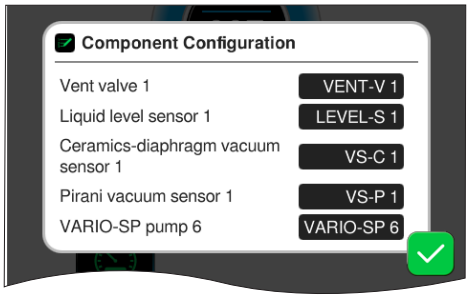
Confirm

Component recognition
scans all connected components and updates the list of connected VACUU·BUS peripheral devices in the controller.
Example: if a level sensor is removed and the component recognition is executed, the level sensor is no longer listed in the component configuration afterwards.

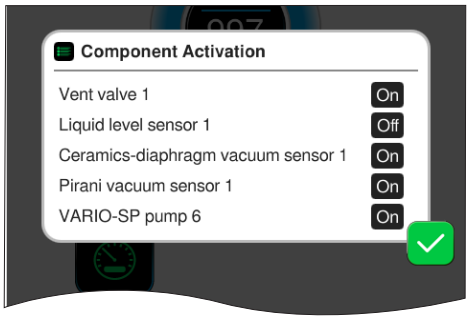
Overview VACUU·BUS context menu

Cancel

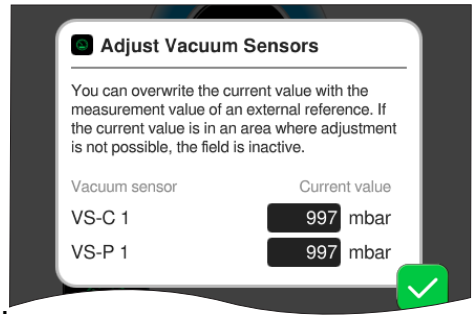
Confirm



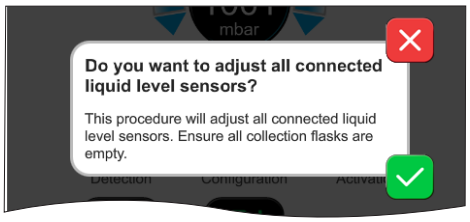
With **component configuration**, the addresses of connected components can be easily changed or reassigned.



Using **component activation**, connected VACUU·BUS components can be individually activated or deactivated (i.e., the components can remain connected but are switched on or off at the controller as required for the ongoing process).



Control panel for the **adjustment** of connected **vacuum sensors** at ambient pressure and under vacuum; → *see chapter: 7.2 Adjustment of vacuum sensor*.



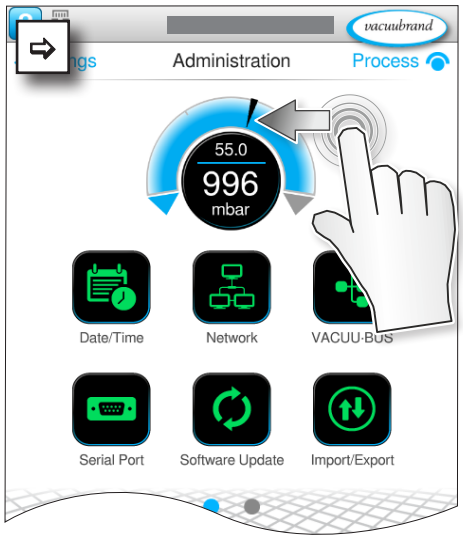
OPTIONAL
Control panel for the calibration of connected **level sensors.**

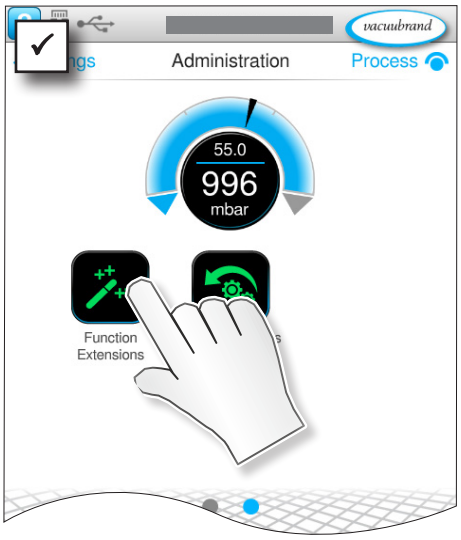
7.1.11 Administration/Function Enhancements

The *Functional Enhancements* sub-menu is provided for the activation of additional functions. To activate additional functions you must have a USB stick with a valid license file or enter a license code via the on-screen keyboard.

Call up the Functional Enhancements sub-menu

→ Example
Main Menu \ Settings \ Administration \ Function Extensions



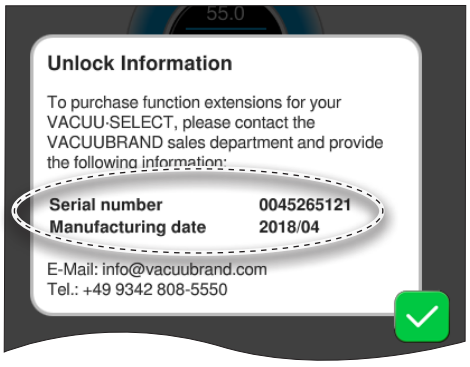


Press and swipe in the direction shown

Tap

Meaning of the context menus

Overview VACUU·BUS context menu



Activation Information shows you the contact details and the information that you need for your device. To order a license for activating additional functions, please always specify the serial number and manufacturing date of your device.

Cancel

Confirm

Function activation
If you have a valid license, please follow the user prompts that appear once you have inserted the USB stick with the license file. Alternatively, you can enter the license code using the on-screen keyboard.

https://www.vacuubrand.com/20901536

7.2 Adjustment of vacuum sensor

Vacuum sensors of the type *VACUU·SELECT Sensor*, *VACUU·VIEW*, *VACUU·VIEW extended*, *VSK 3000,* and *VSP 3000* from VACUUBRAND can be adjusted with the controller.

⇨ Observe the user manual for the vacuum sensor.

7.2.1 Sensor adjustment, general

Adjustment is not part of everyday operation. The adjustment should be carried out only if the measured values deviate from a reference standard or if irregularities in the pressure display occur.

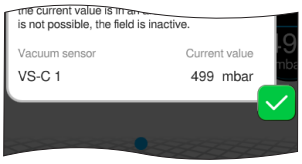
If the vacuum system is contaminated (e.g., with oil, particles, or moisture), impurities in the vacuum sensor can falsify the adjustment.

⇨ Clean dirty vacuum sensors before adjustment → see user manual for the vacuum sensor.

NOTE

When re-adjusting, the reference pressures must be known precisely.
The uncertainty in the determination of the reference pressure is directly included in the measurement uncertainty of the sensor.

⇨ Carry out an adjustment in two steps: under atmospheric pressure and under vacuum.



⇨ If the current pressure value is in a range in which adjustment is not possible, the field for entering the pressure value is inactive.

⇨ If possible, check the vacuum with a calibrated reference gauge. If the adjustment is performed under vacuum to the final vacuum of a vacuum pump and the pressure is not determined with an accurate vacuum gauge, a measurement error may occur under certain circumstances, especially if the vacuum pump no longer reaches the final vacuum (e.g., because of condensate, failure, contamination, or leakage).

⇨ If the atmospheric pressure at the location of the device is not known exactly (take height above sea level into account), the adjustment at atmospheric pressure should be omitted.

NOTE

A *VACUU·VIEW extended* or a *VSP 3000* can be re-adjusted only when it has warmed up.
No adjustment can be performed during the warm-up time.
⇨ Wait at least 20 minutes after connecting the power supply before adjusting the sensor.

Adjustment range of vacuum sensor

Adjustment range of vacuum sensor

The vacuum sensor can be adjusted in the following pressure ranges:

VACUU·SELECT sensor, VACUU·VIEW, VSK 3000	
Atmospheric pressure	> 700 mbar (525 Torr)
Vacuum	< 0.1 mbar (Torr)
Reference pressure	0.1–20 mbar (0.1–15 Torr)
VACUU·VIEW extended, VSP 3000	
Atmospheric pressure	> 700 mbar (525 Torr)
Vacuum	< 0.001 mbar (Torr)

7.2.2 Adjustment of atmospheric pressure

Sensor adjustment under atmospheric pressure

Perform sensor adjustment under atmospheric pressure

Adjustment to atmospheric pressure is possible only at a pressure > 700 mbar.

1. Ventilate the vacuum sensor.
2. Make sure that atmospheric pressure is actually applied to the vacuum sensor.
3. Determine the exact air pressure for your location (e.g., contrabarometer, inquiry at the weather office or airport).

IMPORTANT!

⇨ *VSP 3000:* Wait 20 minutes with atmospheric pressure applied before adjusting the sensor.

4. Select the context menu **Adjustment of vacuum sensors**: *Settings\Administration\VACUU·BUS\Adjust Vaccum Sensors*
5. Tap on the *Current value* field of the sensor to be adjusted.
6. Enter the current pressure value in the pop-up. The possible range of values is displayed in the pop-up.
7. Confirm the entry

   ☑ Vacuum sensor adjusted under atmospheric pressure.

7.2.3 Adjustment under vacuum (zero point)

Sensor calibration under vacuum

Adjustment of VACUU·SELECT sensor, VACUU·VIEW, VSK 3000

Adjustment under vacuum is possible only at a pressure < 20 mbar.

1. To adjust the zero point, evacuate the vacuum sensor to a pressure < 0.1 mbar.

IMPORTANT!

If possible, check the vacuum with a calibrated reference gauge. If the actual pressure during adjustment is < 0.1 mbar, the adjustment error is negligible. If the pressure during adjustment is > 0.1 mbar, the device is not optimally adjusted and must be adjusted to a reference pressure; → see chapter: *7.2.4 Adjustment under vacuum (reference pressure point) on page 81*.

2. Select the context menu **Adjustment of vacuum sensors**: *Settings\Administration\VACUU·BUS\Adjust Vaccum Sensors*
3. Tap on the *Current value* field of the sensor to be adjusted.
4. Enter 0 (null) in the pop-up.
5. Confirm the entry

   ☑ Vacuum sensor adjusted under vacuum.

Adjustment of VACUU·VIEW extended, VSP 3000

NOTE

Adjustment under vacuum of a *VACUU·VIEW extended* or a *VSP 3000* is always carried out to the measuring range end value 0 mbar.

Adjustment to a different reference vacuum value is not possible.

⇨ Pump to the lowest possible vacuum.

1. Evacuate the vacuum sensor to a pressure < 10^{-3} mbar.

IMPORTANT!

⇨ Wait 20 minutes with pressure <10^{-3} mbar before adjusting the sensor.

2. Select the context menu **Adjustment of vacuum sensors**: *Settings\Administration\VACUU·BUS\Adjust Vaccum Sensors*
3. Tap on the *Current value* field of the sensor to be adjusted.

⇨ The pressure value is automatically set to 0 mbar. This value cannot be changed.

4. Confirm the entry

☑ Vacuum sensor adjusted under vacuum.

7.2.4 Adjustment under vacuum (reference pressure point)

Sensor adjustment to reference pressure

Adjustment of VACUU·SELECT sensor, VACUU·VIEW, VSK 3000

Instead of adjustment under vacuum to a pressure < 0.1 mbar (zero point), calibration can be carried out to a reference pressure in the range of 0.1–20 mbar.

1. Evacuate the vacuum sensor to a pressure of 0.1–20 mbar.

IMPORTANT!

If possible, check the vacuum with a calibrated reference gauge.

2. Select the context menu **Adjustment of vacuum sensors**: *Settings\Administration\VACUU·BUS\Adjust Vaccum Sensors*
3. Tap on the *Current value* field of the sensor to be adjusted.
4. Enter the current pressure value in the pop-up. The possible range of values is displayed in the pop-up.
5. Confirm the entry

   ☑ Vacuum sensor adjusted to reference pressure.

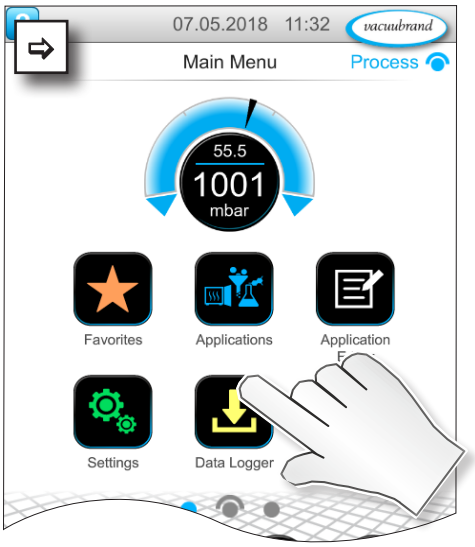
7.3 Data logger

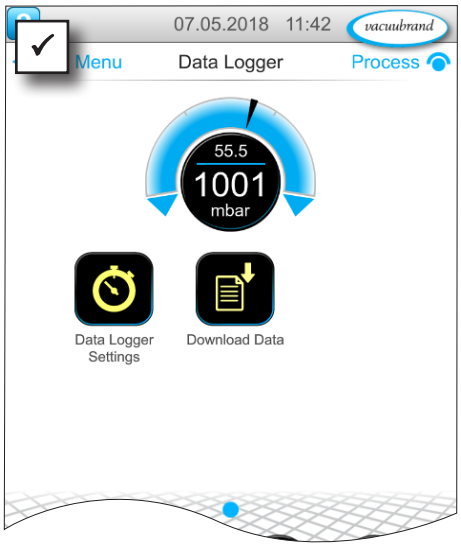
If the function is switched on, the data logger records time/pressure curves and saves these at specified intervals for up to 30 days. A separate data file is saved for each process, from start to stop.

Call up data logger sub-menu

→ Example
Main menu \ Data logger

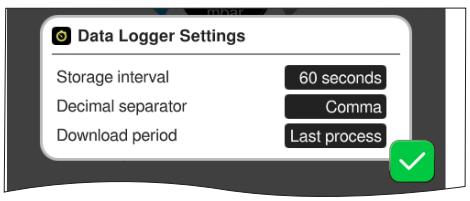
Tap





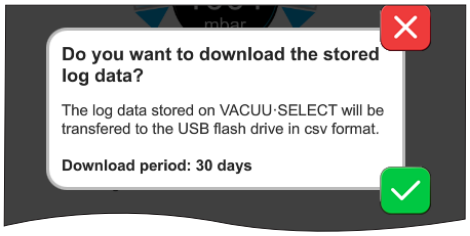
Meaning of the context menus

Overview of the Data logger context menu



Cancel

Confirm



The **Data Logger Settings** enable you to select the storage interval, decimal separator and download period. Logging can be switched off under *Storage interval*.

If a USB flash drive is connected, the **log data** for the preset time period can be downloaded here.

Loading the factory settings will reset all settings of the data logger, switch logging off, and delete all recorded data.

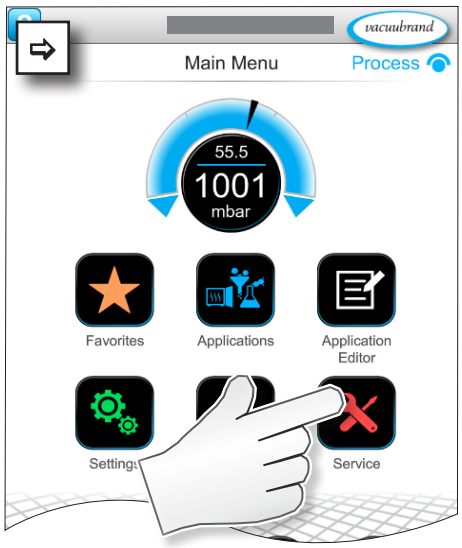
7.4 Service

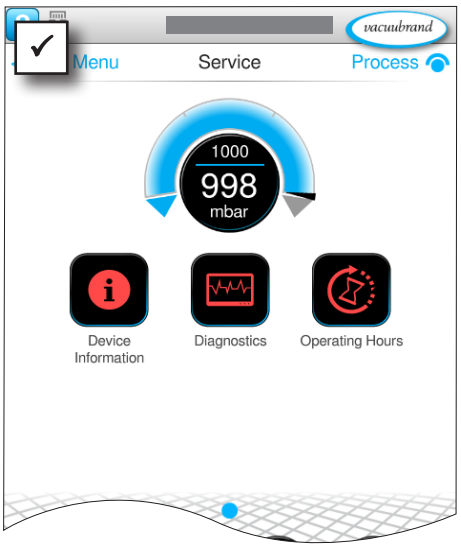
In this menu, you can find or download information about the device. In the event of an error, please forward this information to our Service Department.

7.4.1 Service information

Call up service sub-menu

→ Example
Main menu \ Service

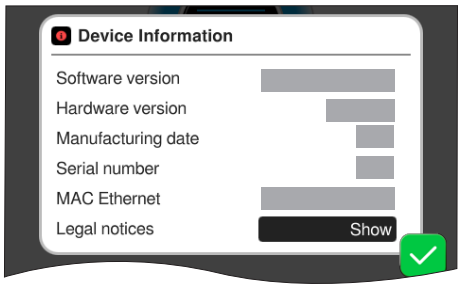




Tap

Meaning of the context menus

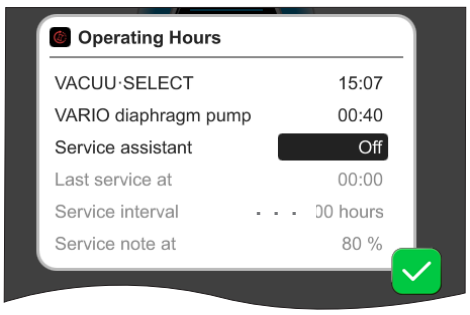
Overview of the Service context menu



This menu displays information **About the device**.
The *Legal notices* contain licensing information.

Cancel

Confirm



Counter for **operating hours** with optional maintenance wizard.

Off: No reminder message.
On: Reminder message for maintenance after specified hours of operation have elapsed.

7.4.2 Diagnostic data

To improve the diagnostics of the device condition in the event of an error or service, diagnostic data is stored on the device. The data can be downloaded onto a USB flash drive via the service menu and sent to our Customer service for evaluation.

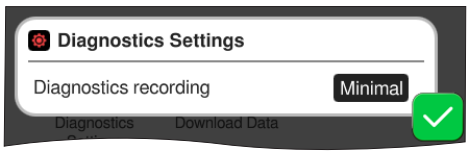
Call up the diagnostic data sub-menu

→ Example
Main menu \ Service \ Diagnostic data

Tap

Meaning of the context menus

Overview of the Diagnostic data context menu

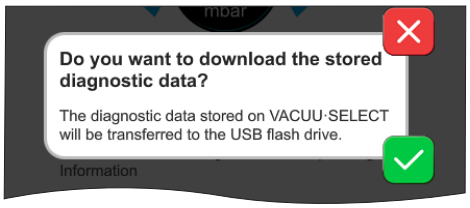


The **Diagnostic data settings** enable the extent of data recording to be adjusted.

- Minimal: Recording of appliance data and component faults, without overpressure and full status indication.
- Complete: Same as minimal, plus parameters input by the operator and adjustment of settings.

Cancel

Confirm



If a USB flash drive is connected, the **diagnostics** can be downloaded here.

8 Troubleshooting

Technical support

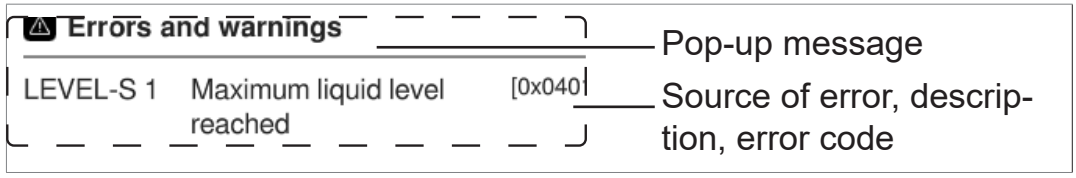
For troubleshooting and fault rectification, use table *Error – Cause – Remedy*.

For technical assistance or errors for which you require additional support, please contact your local distributor or our Service Department[1].

8.1 Error messages

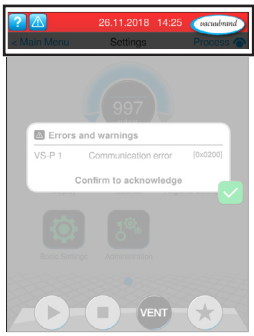
Errors are indicated immediately by the controller as plain text in a pop-up message. The status line provides a visual indication of the extent of the error. In addition, an acoustic signal is emitted while the error persists.

→ Example Error message pop-up



8.1.1 Fault indicator

Fault indicator



→ Example error

Icon	Meaning
	*Fault indicator* ▸ Indication in the case of error or warning. ▸ Tap to display text and acknowledge the error.

Color	Meaning
Yellow	*Warning* ▸ Indicates persisting error; process continues to run. ▸ Warnings are automatically reset after remedy.
Red	*Error* ▸ Indicates persisting error; process stops. ▸ The process can be restarted only after the error has been remedied and the error message has been acknowledged.

Sound	Meaning
	*Warning or fault* ▸ Shows that a fault or warning is present. ▸ Active as long as the error status persists.

1 -> Phone: +49 9342 808-5660, fax: +49 9342 808-5555, service@vacuubrand.com

8.1.2 Acknowledge error message

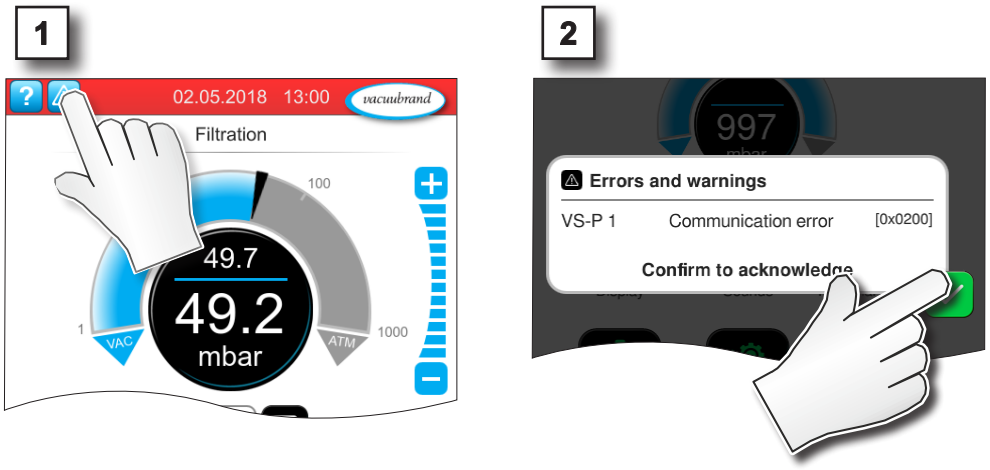
Error messages must be acknowledged after the error has been remedied.

Call up and acknowledge error message

View message

Acknowl-edge

Tap



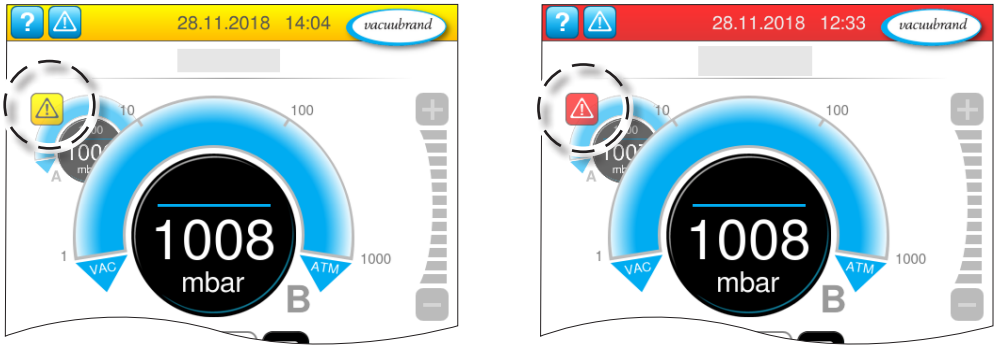
☑ Error message reset.

8.1.3 Fault message PC 520/ PC 620

Warning

Error

Tap



Warnings and/or faults are displayed in the flashing pressure curve. If this pressure curve is tapped, the process can be called up with fault. The process continues without fault. If both processes are affected by the fault, both processes stop.

The same rule applies to faults as for the controller with a pressure curve: eliminate the fault and acknowledge the fault message.

8.2 Error – Cause – Remedy

8.2.1 Pop-up message

Troubleshooting

Error	▸ Possible cause	✓ Solution	Personnel
Communication error	▸ One or more VACUU·BUS components were removed.	✓ Deactivate relevant VACUU·BUS components. ✓ Perform component recognition.	Specialist
Frequency converter (FC) error	▸ Address incorrectly configured. ▸ Temperature too high. ▸ FC defective.	✓ Configure correct address. ✓ Replace defective components.	Technician
Error affecting control	▸ Valve defective.	✓ Check address. ✓ Replace defective components.	Specialist
Error at pump	▸ Check VMS-B (switching device).	✓ Send in defective device.	Technician
Error at digital I/O module	▸ No power supply at IN of I/O module. ▸ Plug pulled out. ▸ An error occurred in the system and the I/O module relayed it to the controller.	✓ Connect power supply. ✓ Check plug-in connection. ✓ Remedy cause of external error.	Specialist, resp. specialist
Error at analog I/O module	▸ No power supply.	✓ Connect power supply.	Specialist
Error affecting Peltronic	▸ Ambient temperature too high, device overheating. ▸ Very high condensing capacity. ▸ Device defective.	✓ Eliminate reason for Peltronic overheating. ✓ Send in defective device for repair. ✓ Replace defective device.	Specialist
Error at vacuum sensor	▸ Vacuum sensor defective.	✓ Send in defective component.	Technician
Overpressure	▸ Pressure too high. ▸ Measuring range exceeded.	✓ Acknowledge warning. ✓ Eliminate cause of overpressure.	Operator, specialist
Underrange	▸ Pressure below measuring range. ▸ Vacuum sensor calibration incorrect.	✓ Calibrate vacuum sensor correctly.	Specialist

Troubleshooting

Error	▸ Possible cause	✓Solution	Personnel
Maximum liquid level reached	▸ Full status indicator of a level sensor. ▸ Level sensor removed. ▸ Level sensor improperly calibrated. ▸ Component defective.	✓ Empty the glass flask or container in question. ✓ Connect level sensor. ✓ If removed for a prolonged period, perform VACUU·BUS component recognition. ✓ Recalibrate level sensor. ✓ Replace defective component.	Operator

8.2.2 General errors

Troubleshooting

Error	▸ Possible cause	✓Solution	Personnel
No display	▸ Power plug or plug-in power supply not correctly plugged in or pulled out. ▸ Pumping unit switched off. ▸ VACUU·BUS plug-in connection or cables defective or not connected. ▸ Controller switched off or defective. ▸ Device fuse tripped.	✓ Check power connection or plug-in power supply and cables. ✓ Check VACUU·BUS plug-in connection and cables to the controller. ✓ Replace defective components.	Operator
Display frozen	▸ Controller in undefined state. ▸ Controller has frozen.	✓ Restart of the controller: Hold down ON/OFF key for more than 10 s until device reboots.	Operator
Circuit board fuse defective	▸ Short circuit on the circuit board. ▸ Defective accessory connected. ▸ Power consumption too high.	✓ Remedy cause of the short circuit and replace circuit board fuse. ✓ Send in.	Technician

Troubleshooting

Error	▸ Possible cause	✓Solution	Personnel
Transfer failed	▸ No USB flash drive connected. ▸ Not enough storage space on the USB flash drive.	✓ Connect a USB flash drive with sufficient storage space.	Specialist
Venting valve does not operate	▸ No voltage applied. ▸ VACUU·BUS plug-in connection or cables defective or not connected. ▸ Venting valve dirty. ▸ Venting valve in sensor defective. ▸ Venting valve deactivated.	✓ Check VACUU·BUS plug-in connection and cables to the controller. ✓ Clean venting valve. ✓ If necessary, use another external venting valve. ✓ Activate venting valve in the controller.	Specialist
No operation possible	▸ Interface connected: Ethernet and/or RS-232. ▸ Operation from external terminal.	✓ Have operation enabled from external terminal. ✓ Disconnect interface connection.	Technician
Autostart does not work	▸ Autostart not switched on. ▸ Fault indicator on the controller ▸ One of the following pump types connected to VARIO select: ME 16, ME 16C, MD 12, MD 12C, MV 10, MV 10C, PC 3010, PC 3012, PC 3016.	✓ Acknowledge fault message on the controller. ✓ Autostart is currently supported only with the accessory *extension kit #20683250*. ✓ Connect an extension kit.	Technician
No license file found	▸ No USB stick inserted. ▸ USB stick inserted without valid license.	✓ Insert a USB stick with a valid license.	Technician

8.3 Device fuse

There is a device fuse, type: Nano fuse 4 A/t, on the circuit board of the controller. If tripped, the fuse can be replaced under ESD conditions after the cause has been remedied.

NOTE

Damage possible if work is performed incorrectly.

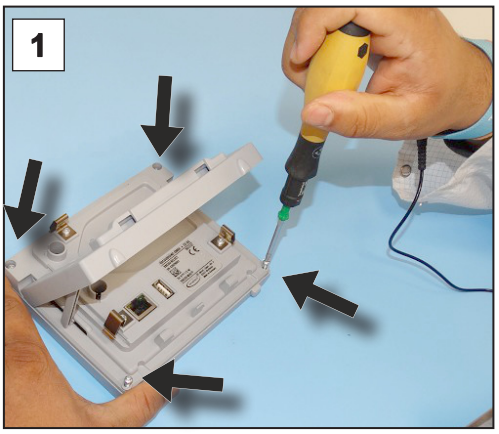
⇨ Have maintenance work performed by a trained electrician or at least by a person with electrotechnical expertise.

⇨ Ensure ESD safeguards when working with the circuit board.

Replace device fuse

ESD tools required: Grounding armband, flat-head screwdriver, Gr. 1, Torx screwdriver with torque of TX10, tweezers.

Change device fuse



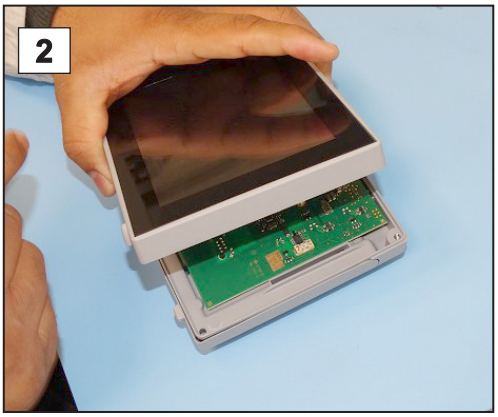
Preparation:

⇨ Have the tools ready (see image).

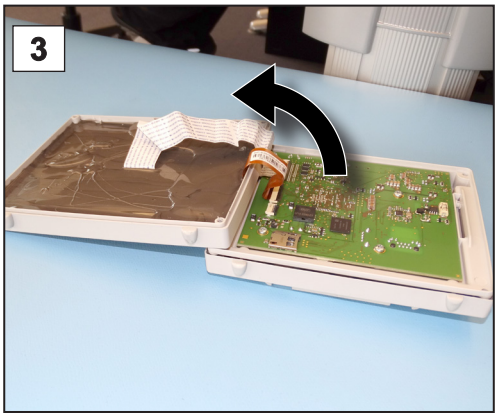
⇨ Disconnect the controller from the power supply.

1. Lay the controller carefully face down and unscrew the 4 screws in the housing.

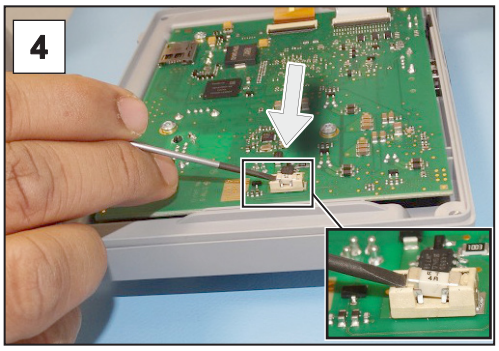
Change device fuse



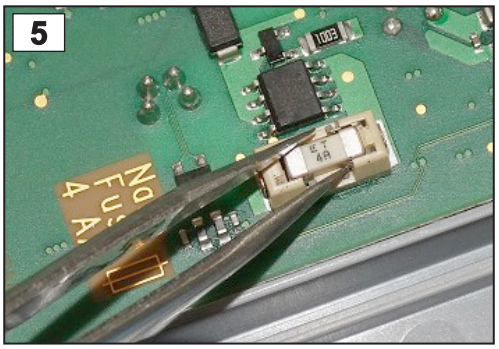
2. Carefully lift the display.



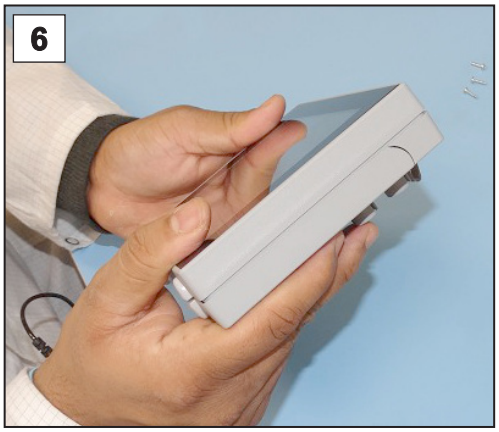
3. Carefully pivot back the display.



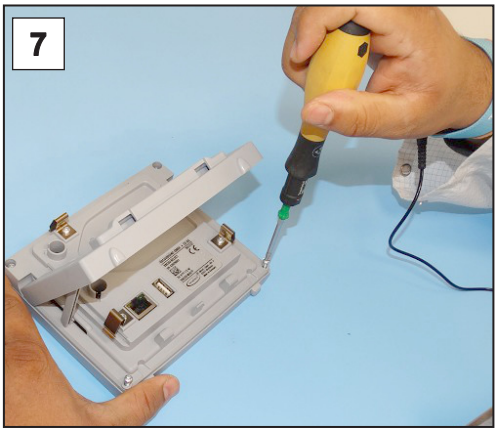
4. Lever the fuse out of the base.



5. Insert the new fuse in the base.



6. Close the housing tightly.



7. Tighten the housing screws with the Torx screwdriver; torque 1.1 Nm.

Nano fuse 4 A/t	20612952

9 Appendix

9.1 Technical information

9.1.1 Technical data

Technical data

Ambient conditions		(US)
Operating temperature	10–40 °C	50–104 °F
Storage/transport temperature	−10–60 °C	14–140 °F
Altitude, max.	2000 m über NHN	6562 ft above sea level
Contamination level	2	
Protection class (IEC 60529)	IP 40	
Protection class (IEC 60529), front side	IP 41	
Protection type (UL 50E)		Type 1
Protection class (UL 50E), front side		Type 2
Relative humidity	30–85%, non-condensing	
Prevent condensation or contamination from dust or liquids		

Electrical data	
Rated voltage	24 VDC
Controller output	5 W
Power supply via	VACUU·BUS
Device fuse on circuit board	Nano fuse 4 A/t

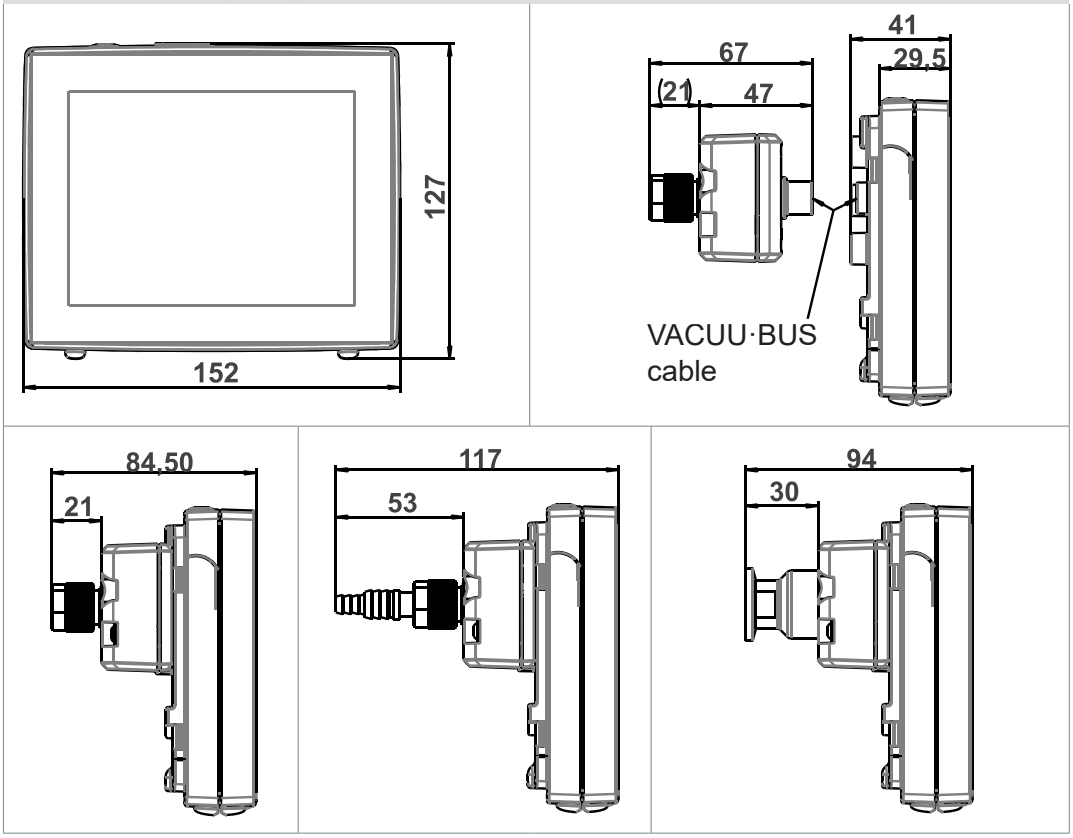
Interfaces	
Plug-in connector	VACUU·BUS
Ethernet (LAN)	Patch cable min. Cat.5e RJ45
USB port (1.0–2.0)	Two USB-A 2.0, max. 0.5 A per port

Connections	
VACUU·SELECT Sensor	Small flange KF DN 16 Hose nozzle DN 6/10 PTFE hose DN 8/10
Venting valve (optional)	Silicone tube DN 4/6

Weights		(US)
Controller with sensor	745 g	1.64 lb
Controller without sensor	590 g	1.3 lb
Plug-in power supply, approx.	250 g	0.55 lb

Dimensions

Dimensions (mm)



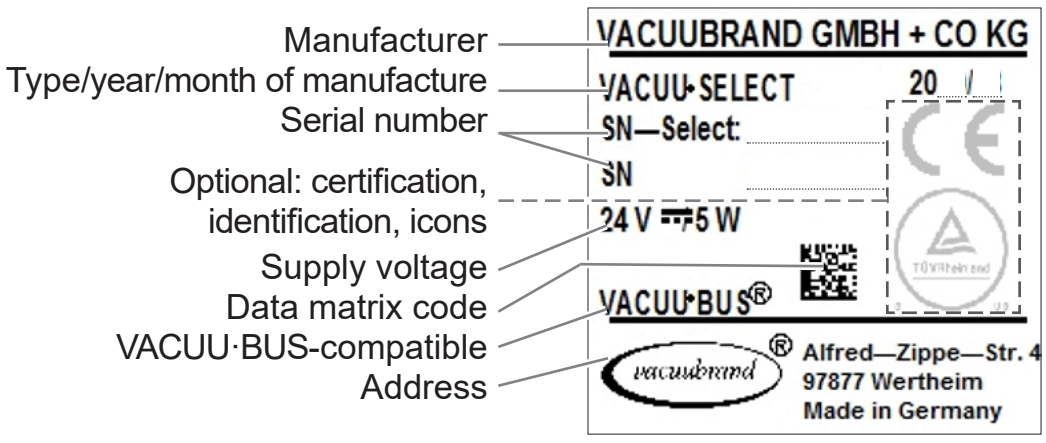
9.1.2 Rating plate

⇨ In the event of an error, make a note of the type and serial number on the rating plate.

⇨ When contacting our Service Department, please provide the type and serial number from the rating plate. This will allow us to provide you with specific support and advice for your device.

VACUU·SELECT rating plate, general

Data on rating plate



9.1.3 VACUU·SELECT Sensor (optional)

Materials affected by media

Wetted materials

Components	Materials affected by media
Sensor	Aluminum oxide ceramic, gold-coated (if applicable)
Measurement chamber	PPS
Small flange	PP
Sealing ring at the sensor	chemically resistant fluorelastomer
O-ring inside small flange	FPM
Hose nozzle	PP
Venting valve seal	FFKM
Optional: blind plugs without venting valve	Epoxy resin

Vacuum data

Vacuum data

Values		(US)
Measuring range (absolute)	1060 – 0.1 mbar	795–0.1 Torr
Measurement accuracy	±1 mbar/hPa/Torr, ±1 digit with VACUU·SELECT vacuum controller (after adjustment, constant temperature)	
Measuring principle	Ceramic diaphragm (aluminum oxide, gold-coated), capacitive, gas type independent, absolute pressure	
Temperature coefficient	< ±0.15 mbar (hPa)/K	< ±0.11 Torr/K
Maximum admissible pressure, abs.	1.5 bar	1125 Torr
Maximum permissible media temperature (gas) of non-explosive atmospheres:		
Short term (< 5 min)	80 °C	176 °F
Long-term operation	45 °C	113 °F
ATEX certification with ATEX marking on the rating plate Interior (conveyed gases)	II 3/- G Ex h IIC T4 Gc X Internal atm. only Tech. file: VAC-EX02	
Maximum admissible media temperature (gas) ⟨Ex⟩ atmosphere:		
Short-term	40 °C	104 °F
Long-term operation	40 °C	104 °F

9.2 Ordering information

Ordering information

Vacuum controller	Order No.
VACUU·SELECT with power supply unit, with sensor	20700000
VACUU·SELECT without power supply unit, without sensor	20700040
VACUU·SELECT with power supply unit, without sensor	20700050

Accessories	Order No.
Vacuum hose DN 6 mm (l = 1000 mm)	20686000
PTFE hose KF 16	20686031
Silicone rubber hose 3/6 (vent with inert gas)	20636156
VACUU·BUS wall duct	20636153
Initial calibration (DAkkS accredited)	20900214
Re-calibration (DAkkS accredited)	20900215
Adapter cable, USB to RS-232, 1 m	20637838
Null modem cable RS-232C, two sub-D 9-pin sockets, 1.5 m	20637837
Autostart extension kit	20683250

Overview of possible VACUU·BUS components (optional)

VACUU·BUS peripheral devices		Order No.
Vacuum sensor	VACUU·SELECT Sensor	20700020
	VACUU·SELECT Sensor without venting valve	20700021
	VSK 3000	20636657
	VSP 3000	20640530
Vacuum gauge	VACUU·VIEW	20683220
	VACUU·VIEW extended	20683210
Vacuum valve (in-line solenoid valve)	VV-B 6	20674290
	VV-B 6C	20674291
	VV-B 15C, KF 16	20674210
	VV-B 15C, KF 25	20674215
Coolant valve	VKW-B	20674220
Venting valve	VBM-B	20674217
	VACUU·SELECT Sensor	20700020
Module for switching a vacuum pump	VMS-B	20676030
Digital I/O module	IN: 5–75 VDC / OUT: 60 VDC (2.5 A) IN: 5–50 VAC / OUT: 40 VAC (2.5 A)	20636228
Analog I/O module	IN: 0–10 V / OUT: 0–10 V	20636229
	IN: 4–20 mA / OUT: 0–10 V	20635425
Vapor condenser	Peltronic	20699905
Level sensor	for 500 ml round bottom flask	20699908

Ordering information for spare parts

Spare parts		Order No.
Hose nozzle DN 6/10		20636635
Small flange KF 16 PP Protective cap DN 10/16 O-ring		20635008
Extension cable	VACUU·BUS 0.5 m	20612875
	VACUU·BUS 2 m	20612552
	VACUU·BUS 10 m	22618493
VACUU·BUS Y adapter		20636656
Plug-in power supply 30 W 24 V; with mains adapters		20612090
Plug-in power supply 25 W 24 V; with mains adapters		20612089
Safety instructions for vacuums		20999254
User Manual		20901057

Supply sources

International sales offices and distribution

Purchase original accessories and original replacement parts from a branch location of **VACUUBRAND GMBH + CO KG** or from your local specialist shop.

⇨ Information on the complete range of products can be found in the current product catalog.

⇨ For orders, questions concerning vacuum control and suitable accessories please contact your local distributor or your nearest **VACUUBRAND GMBH + CO KG** sales office.

9.3 Licensing information and data protection

Legal notices and diagnostic data

⇨ This product contains open source software. The associated licensing information can be found in the VACUU·SELECT, in the service menu → ***About the device*** under the heading ***Legal notices***

⇨ The controller records data for diagnostic purposes. The recording of ***Diagnostic data*** can be minimized. Restoring the factory settings will cause this data to be deleted.

To display *Legal notices* or adjust *Diagnostic data*

→ *see chapter: 7.4 Service on page 84*

9.4 Services

Service offer and service range

Take advantage of the comprehensive range of services available from **VACUUBRAND GMBH + CO KG**.

Services in detail

- Product consultation and practical solutions
- Fast delivery of spare parts and accessories
- Professional maintenance
- Immediate repairs processing
- On-site service (on request)
- Calibration (DAkkS-accredited)
- With Health and Safety Clearance form: return, disposal

⇨ Visit our website for further information: www.vacuubrand.com.

Service handling

Meet terms of service

1. Contact your local distributor or our Service Department.
2. Request an RMA no. for your order.
3. Clean the product thoroughly or if necessary, decontaminate it professionally.
4. Download the Health and Safety Clearance form.
5. Fill out the Health and Safety Clearance form in full.

Return (reshipment)

6. Send us your product together with your:
   - RMA no. and description of the error
   - Repair or service order,
   - Health and Safety Clearance form
   - Attach everything to the outside of the package

⇨ Reduce downtime, speed up processing. Please keep the required data and documents ready when contacting our Service Department.

- Your order can be quickly and easily processed.
- Hazards can be prevented.
- A brief description, photos or diagnostic data will help locate the source of the error.

9.5 Index

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9.6 EG Declaration of conformity

EC declaration of conformity

EG-Konformitätserklärung für Maschinen
EC Declaration of Conformity of the Machinery
Déclaration CE de conformité des machines

CE

Hersteller / Manufacturer / Fabricant:
VACUUBRAND GMBH + CO KG · Alfred-Zippe-Str. 4 · 97877 Wertheim · Germany

Hiermit erklärt der Hersteller, dass das Gerät konform ist mit den Bestimmungen der Richtlinien:
Hereby the manufacturer declares that the device is in conformity with the directives:
Par la présente, le fabricant déclare, que le dispositif est conforme aux directives:

- 2014/30/EU
- 2014/35/EU
- 2011/65/EU, 2015/863
- 2009/125/EG, (EU) 2019/2021

Vakuum- Controller/ Vacuum controller / Regulateur de vide:
Typ / Type / Type: **VACUU·SELECT**

Artikelnummer / Order number / Numéro d'article: **20700000, 20700040, 20700050, 20700061, 20700100, 20700101, 20700110, 20700111, 20635118**

Seriennummer / Serial number / Numéro de série: Siehe Typenschild / See rating plate / Voir plaque signalétique

Angewandte harmonisierte Normen / Harmonized standards applied / Normes harmonisées utilisées:
EN IEC 61326-1:2021 (IEC 61326-1:2020)
EN 61010-1:2010 + A1:2019 + A1:2019/AC:2019 (IEC 61010-1:2010 + COR:2011 + A1:2016, modifiziert / modified / modifié + A1:2016/COR1:2019
EN IEC 63000:2018 (IEC 63000:2016)

Bevollmächtigter für die Zusammenstellung der technischen Unterlagen / Person authorised to compile the technical file / Personne autorisée à constituer le dossier technique:
Dr. Constantin Schöler · VACUUBRAND GMBH + CO KG · Germany

Ort, Datum / place, date / lieu, date: Wertheim, 06.05.2024

(Dr. Constantin Schöler)
Geschäftsführer / Managing Director / Gérant

ppa.
(Jens Kaibel)
Technischer Leiter / Technical Director / Directeur technique

VACUUBRAND GMBH + CO KG
Alfred-Zippe-Str. 4
97877 Wertheim

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Fax: +49 9342 808-5555
E-Mail: info@vacuubrand.com
Web: www.vacuubrand.com

9.7 UKCA Declaration of Conformity

Declaration of Conformity

Manufacturer:
VACUUBRAND GMBH + CO KG · Alfred-Zippe-Str. 4 · 97877 Wertheim · Germany

Hereby the manufacturer declares that the device is in conformity with the directives:

- Electromagnetic Compatibility Regulations 2016
  (S.I. 2016 No. 1091, as amended by S.I. 2019 No. 696)
- Electrical Equipment (Safety) Regulations 2016 (S.I. 2016 No. 1101, as amended by S.I. 2019 No. 696)
- The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (S.I. 2012 No. 3032)
- The Ecodesign for Energy-Related Products and Energy Information Regulations 2021 (S.I. 2021 No. 745)

Vacuum controller:
Type: **VACUU·SELECT**

Order number: **20700000, 20700040, 20700050, 20700061, 20700100, 20700101, 20700110, 20700111, 20635118**

Serial number: See rating plate

Designated standards applied:
EN 61326-1:2013
EN 61010-1:2010+A1:2019, EN 61010-1:2010/A1:2019/AC:2019-04
EN IEC 63000:2018

Person authorised to compile the technical file:
Dr. Constantin Schöler · VACUUBRAND GMBH + CO KG · Germany

Place, date: Wertheim, 06.05.2024

(Dr. Constantin Schöler)
Managing Director

ppa.
(Jens Kaibel)
Technical Director

VACUUBRAND GMBH + CO KG
Alfred-Zippe-Str. 4
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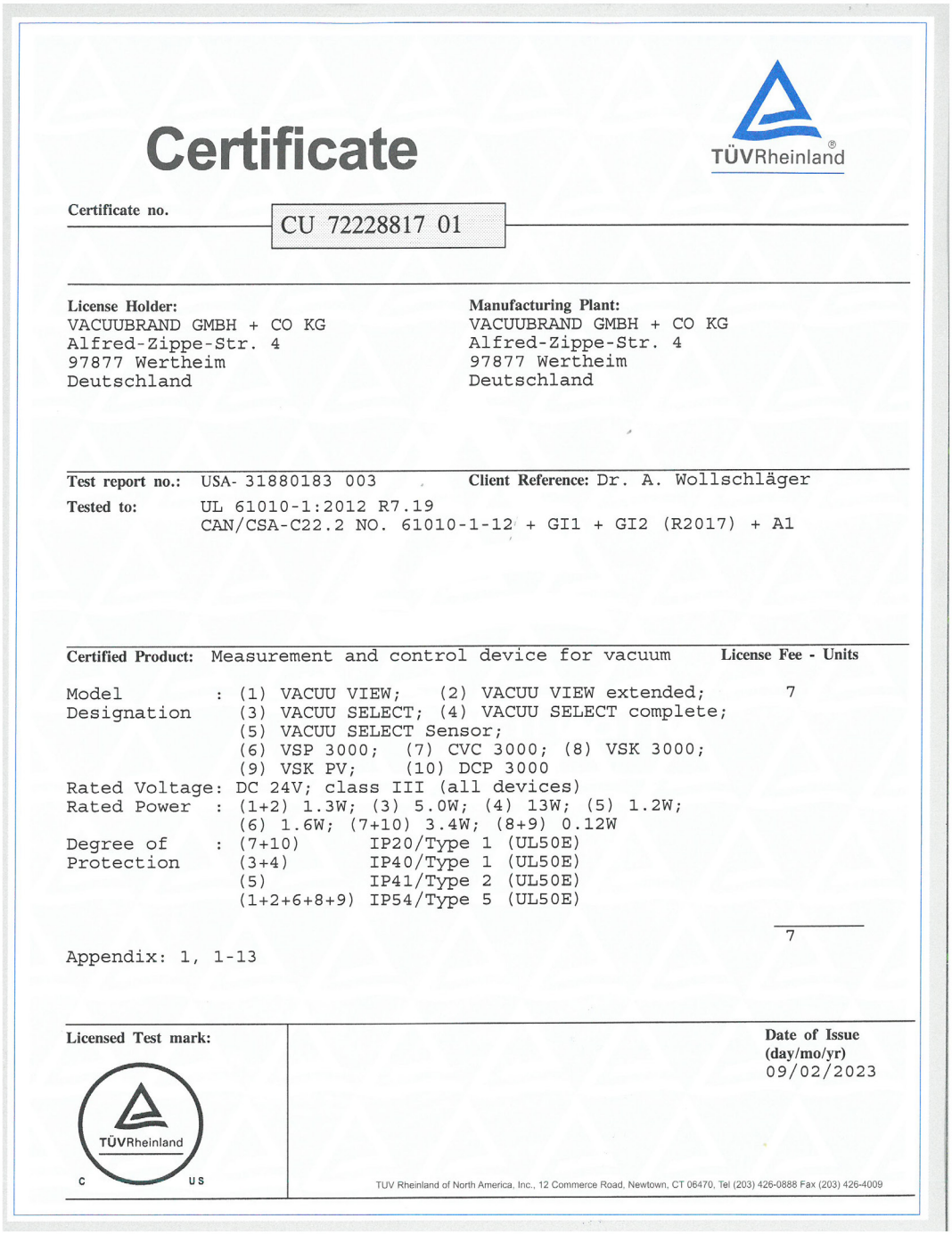
E-Mail: info@vacuubrand.com
Web: www.vacuubrand.com

9.8 CU certificate



Certificate

TÜVRheinland®

Certificate no. CU 72228817 01

License Holder:
VACUUBRAND GMBH + CO KG
Alfred-Zippe-Str. 4
97877 Wertheim
Deutschland

Manufacturing Plant:
VACUUBRAND GMBH + CO KG
Alfred-Zippe-Str. 4
97877 Wertheim
Deutschland

Test report no.: USA- 31880183 003 **Client Reference:** Dr. A. Wollschläger

Tested to: UL 61010-1:2012 R7.19
CAN/CSA-C22.2 NO. 61010-1-12 + GI1 + GI2 (R2017) + A1

Certified Product: Measurement and control device for vacuum **License Fee - Units**

Model Designation	: (1) VACUU VIEW; (2) VACUU VIEW extended; (3) VACUU SELECT; (4) VACUU SELECT complete; (5) VACUU SELECT Sensor; (6) VSP 3000; (7) CVC 3000; (8) VSK 3000; (9) VSK PV; (10) DCP 3000	7
Rated Voltage:	DC 24V; class III (all devices)	
Rated Power	: (1+2) 1.3W; (3) 5.0W; (4) 13W; (5) 1.2W; (6) 1.6W; (7+10) 3.4W; (8+9) 0.12W	
Degree of Protection	: (7+10) IP20/Type 1 (UL50E) (3+4) IP40/Type 1 (UL50E) (5) IP41/Type 2 (UL50E) (1+2+6+8+9) IP54/Type 5 (UL50E)	

7

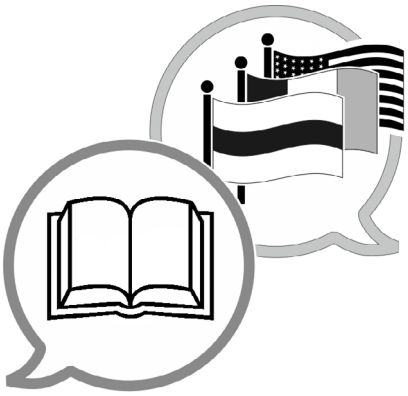
Appendix: 1, 1-13

Licensed Test mark:

TÜVRheinland
C US

Date of Issue (day/mo/yr)
09/02/2023

TUV Rheinland of North America, Inc., 12 Commerce Road, Newtown, CT 06470, Tel (203) 426-0888 Fax (203) 426-4009



www.vacuubrand.com/manuals

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GERMANY

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Service: +49 9342 808-5660

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E-mail: info@vacuubrand.com
Web: www.vacuubrand.com

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