

## VACUUM GAUGE

VACUU·VIEW VACUU·VIEW extended



# Instructions for use

Original instructions N°: 999293\_EN



#### Original instructions Keep for further use!

This manual is only to be used and distributed in its complete and original form. It is strictly the users' responsibility to check carefully the validity of this manual with respect to his product.

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Thank you for purchasing this product from **VACUUBRAND GMBH + CO KG**. You have chosen a modern and technically high quality product.



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#### 1 Introduction

This manual is part of your product.

#### 1.1 User information

#### Safety

Instructions for use and safety

- Read this manual thoroughly and completely before using the product.
- Keep this manual in an easily accessible location.
- Proper use of the product is essential for safe operation. Comply with all safety instructions provided!
- In addition to this manual, adhere to any relevant local accident prevention regulations and comply with industrial safety regulations.

#### General

# General information

- Instead of the term VACUU-VIEW mostly the term Gauge or Vacuum gauge is used in this manual, in order to make the text more readable.
- The illustrations in this manual are provided as examples in order for a better understanding.
- They are intended to aid in your understanding of the proper use of the product.

#### **Contact**

#### Contact us

- Please ask for replacement in case of an incomplete manual or download instructions for use on our web page: www.vacuubrand.com
- Contact us regarding any questions about this product, if you need further information, or to provide us with feedback.
- When contacting our Customer Service Department, please be sure to have the correct type and serial number of your product at call→ see the Rating plate on the product.



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#### 1.2 About this document

## 1.2.1 Display conventions

#### Warning levels



#### **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 situation!

#### **NOTICE**

Notice for a potentially harmful situation.

Disregarding the notice could lead to material damage.

#### Additional notes

#### **IMPORTANT!**

- ⇒ Information or specific use recommendation, which must be observed.
- ⇒ Important information for the proper operation.



- ⇒ Helpful tips and tricks
- ⇒ Additional information



## 1.2.2 Handling instructions (action steps)

Presentation convention operating steps

## Action step (single step)

- ⇒ Do the described step.
  - ☑ Result of action

## **Handling instructions**(multiple steps)

- 1. first step
- 2. Next step
  - ☑ Result of action

Follow steps in the described order.

#### 1.2.3 Abbreviations

Used Abbreviations

abs.	absolute
ATM	Atmospheric pressure
$\mathbf{d}_{\mathbf{i}}$ (di)	Interior diameter
DN	Nominal diameter
Gr.	Size
hPa	Pressure unit, Hectopascal
	(1 hPa = 1 mbar = 0.75 Torr)
KF	Small flange
max	Maximum value
mbar	Pressure unit, millibar (1 mbar = 1 hPa = 0.75 Torr)
min	Minimum value
RMA-N°	Return Merchandise Authorization number
Torr	Pressure unit (1 Torr = 1.33 mbar = 1.33 hPa)
VAC	Vacuum

#### 1.2.4 Term definition

Product specific terms

VACUU-BUS®	Bus system by <b>VACUUBRAND</b>
CVC 3000	Vacuum controller, controller
DCP 3000	Vacuum gauge



## 2 Safety instructions

The complete information of this chapter must be observed by all persons working with the herein described product.

Use the product only when it is in proper working condition.

#### 2.1 Intended use

Intended use

**VACUU-VIEW** is a laboratory instrument for the measurement of absolute pressure in the range of rough vacuum or as **VACUU-VIEW extended** version for both measuring rough and fine vacuum.

The gauge may only be used in non-explosive areas.

Any other use is considered to be improper use.

## 2.2 Improper use

Improper use includes:

Improper use

- Using the product contrary to its intended use.
- Operation with obvious malfunctions.
- Operation at inadmissible operating conditions.
- Unauthorized modifications or repairs provided by the customer.



## 2.3 General safety instructions

## 2.3.1 Safety precautions

#### Safety precautions

- ⇒ Use the gauge only if you have understood its function and this manual.
- ⇒ Please note that adhering process media can pose danger to humans and the environment.
- ⇒ When handling with contaminated parts, follow the relevant regulations and safety precautions.
- ⇒ Repairs are only allowed by the Service Department or your local supplier.

## **IMPORTANT!**

# For all service works hazardous substances need to be excluded.

⇒ Fill in the form <u>Health and Safety Clearance</u> thoroughly and completely and confirm with your signature.

## 2.3.2 Personnel (Staff)

#### **IMPORTANT!**

It is the owner's responsibility to observe the proper use of the device.

- ⇒ Always be conscious of safety, and work in a safe manner.
- ⇒ Observe the owners' directives at work, the national accident prevention regulations and occupational safety provisions.



## 2.4 Proper disposal

## **NOTICE**

Risk of environmental damage due to incorrect disposal of the product.

⇒ Do not dispose your product in household trash! Electronic components are subject to hazardous waste treatment and must only be disposed of by certified specialists.



- ⇒ Observe the national regulations for safe disposal and environmental protection.
- ⇒ Receive detailed informationen for respective regulations from your competent administrative authority.





## 3 Product description

#### **Goods arrival**

#### Goods arrival

Check the shipment for transport damage and completeness.

⇒ Report any transit damage immediately to the supplier.

## **NOTICE**

## Condensate could damage the gauge.

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

⇒ Let the product acclimatise for 3-4 hours before using it.

#### **Included materials**

#### Scope of supply

Gauge	
VACUU·VIEW with 2 m connection cable	683220
or	
VACUU·VIEW extended with 2 m connection cable	683210

Hose nozzle 10/6 G1/4" with O ring	642474
Wall power supply plug* 30W 24V; with adapters and 2 m connection cable	612090
Instructions for use	999293
Safety Information for Vacuum Equipment	999254
Original packaging	

<sup>\*</sup> not required when connected to a VACUU·BUS® compatible gauge or controller.



## 3.1 VACUU·VIEW vacuum gauge

Gauge description and designs

The gauge as stand-alone version will be supplied with wall power supply plug. The gauge includes a vacuum sensor and is equiped with an illuminated display for pressure display. The gauge is highly, chemically resistant.

**VACUU-VIEW** completes the **VACUU-BUS**® accessories program. For more demanding tasks the gauge can be used as an external vacuum sensor when connected to a controller *CVC 3000* or the gauge *DCP 3000*.

When operating with a *DCP 3000* measured values can be stored (data logger) and graphically displayed. Via the RS 232 interface the pressure can be read by an external Computer.

## 3.1.1 Designs

#### **VACUU-VIEW**



With chemically resistant ceramic diaphragm sensor for precise measurings in the range of **rough vacuum**. VACUU·VIEW provides gas-independent pressure indication with precise capacitive readout.

The material of the connection flange of **VACUU-VIEW** consists of black PP and is therefore easy to distinguish from the extended design.

#### **VACUU-VIEW** extended



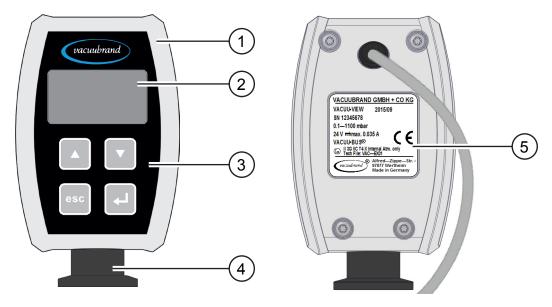
The heavy duty combination of ceramic diaphragm sensor and ceramic jacketed Pirani sensor ensures reliable readings in the wide range from atmosphere down to **rough until fine vacuum**. The gauge reliably measures in the complete measuring range.

The connection flange of **VACUU-VIEW extended** consists of aluminium and has at the interior a PPS coating.

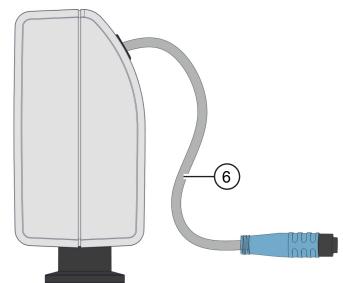


#### 3.1.2 Device view

Front and rear view



Side view



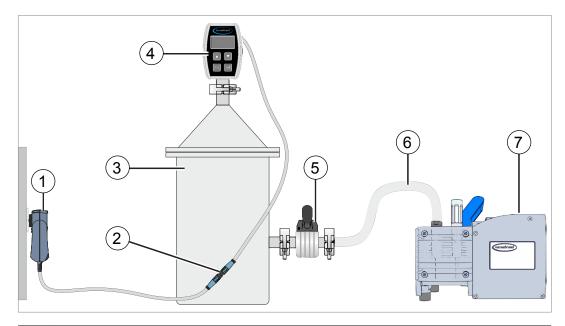
- 1 VACUU-VIEW
- 2 Display
- 3 Operating elements
- 4 Small flange KF DN16, inside thread G1/4"
  - ▶ Material: PP black ⇒ VACUU·VIEW
  - Material: Aluminium + PPS ⇒ VACUU·VIEW extended
- 5 Rating plate (here VACUU·VIEW)
- 6 Connection cable, 2 m
  - for connection to wall power supply plug
  - ▶ for **VACUU·BUS**® connection to CVC 3000 or DCP 3000



## 3.2 Application example

→ Example

VACUU·VIEW direct installation



- 1 Wall power supply, wall power supply plug
- 2 Plug connector, connection cable (each 2 m)
- 3 Vacuum chamber, tank, apparatus
- 4 VACUU·VIEW vacuum gauge (Stand-alone version including wall power supply plug)
- 5 Vacuum valve
- 6 Vacuum hose
- 7 Diaphragm pump, vacuum pump



Please observe the following points to get an optimal measuring result:

- ⇒ Connect the gauge as close as possible to the apparatus.
- ⇒ If possible use the small flange for connection.
- ⇒ Connect the vacuum line with a cross-section as wide as possible.



## 4 Connection and operation

#### 4.1 Connection

#### 4.1.1 Installation

The gauge is intended for assembly directly to the apparatus (application).

- ⇒ Observe all specifications for installation, connection and operation according to technical data,
  - → see chapter 9.1 Technical information.
- ⇒ Also observe rating plate data.
- ⇒ Compare the permitted limits which are described in this manual, with your actual application regarding operating media, pressures, forces, moments, temperatures and voltage.

#### Installation conditions

# Consider installation conditions

- The gauge has acclimatized.
- Ambient conditions are observed and are within the limitation of use.

Limitation of use		(US)	
Ambient temperature	10-40 °C	50-104 °F	
Altitude, max.	3000 m above sea level	9840 ft above sea level	
Relative humidity	30-85 %, non conde	ensing	
Protection type	IP 54		
Avoid condensation or contamination by dust or liquids.			



#### 4.1.2 Vacuum connection

#### **IMPORTANT!**

- → Maximum admissable pressure at vacuum sensor: 1,5 bar/ 750 Torr (absolute).
- ⇒ Pollution and damages, especially at the flange, could affect the measurement.
- ⇒ If possible assemble the vacuum gauge vertically; this prevents condensate accumulation.

#### Connection via small flange

**Required connection material:** Clamping ring, centering or centering ring for KF DN16.



- **1.** Remove dust cap.
- 2. Put the gauge with the centering onto the connection of the apparatus → small flange KF DN16.
- **3.** Fix the vacuum gauge with a clamping ring.

#### Connection via hose nozzle

**Required connection material:** Hose nozzle DN 6/10 mm G1/4" with O ring and compatible hose clip (option).



- **1.** Remove dust cap.
- **2.** Screw the hose nozzle plus the o ring hand-tight into the inside thread.
- **3.** Use the hose nozzle to assemble the gauge to a vacuum hose or directly at the apparatus.
- **4.** Fix the vacuum hose, e. g., with a hose nozzle.
- **5.** Fix the vacuum gauge.

## **IMPORTANT!**

- ⇒ Use a stable vacuum hose that is suitable for the required vacuum range. For fine vacuum range, flexible rubber hoses for example are not useful because of possible gas emission.
- ⇒ Connect hose tubes as short as possible.



#### 4.1.3 Electrical connection

## **NOTICE**

No wall power supply plug is required when connected as VACUU-BUS® component, to a controller CVC 3000 or gauge DCP 3000.

⇒ Power supply of the gauge via VACUU·BUS<sup>®</sup>.

#### Wall power supply plug\*

Wall power supply



\* short-circuit-proofed multi-voltage power supply with integrated overload protection and changeable mains plugs.

#### Prepare wall power supply plug

Prepare connection

- **1.** Take the wall power supply kit out of the packaging.
- 2. Select the mains plug that fits to your mains socket.
- **3.** Connect the mains plug to the metal contacts of the wall power supply plug.
- 4. Slide the mains plug until it locks.

## Remove mains plug

Remove mains plug

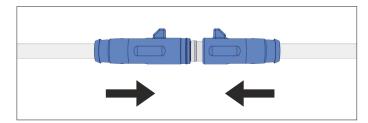
- 1. Press the locking knob on top of the wall power supply plug.
- **2.** Remove the mains plug.



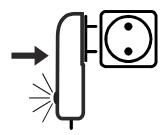
#### **Connect to mains**

#### **IMPORTANT!**

- ⇒ Please install the power supply line in such a way, that no damage can cause to the cable due to sharp edges, chemicals or hot surfaces.
- **1.** Connect the mains connector from the gauge to the female plug of the wall power supply.



- **2.** Plug the wall power supply into the mains socket.
  - ☑ Green LED at wall power supply plug glows.



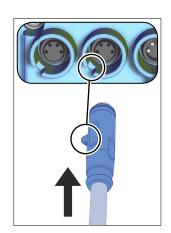


#### 4.1.4 DCP 3000, CVC 3000, VACUU-BUS®

Meaning

**VACUU·BUS**<sup>®</sup> is a communication system for peripheral accessories that are connected to **VACUUBRAND** controller or gauge.

**VACUU-BUS®** components will be automatically detected by CVC 3000/DCP 3000. By uniform connectors and Y adapter the bus-system can be extended with up to 32 peripherals.



## Connenct VACUU-VIEW as VACUU-BUS® component (client)

- ⇒ Plug the **VACUU-BUS**® connector of the sensor into the port on the rear side of DCP 3000 or CVC 3000.
  - ☑ Mains supply via CVC 3000 or DCP 3000.



Plug connectors of the newest series have a guide tongue for proper connection. Slide the connection into the guiding groove on the rear side of CVC 3000 or DCP 3000.

#### **Feature**

VACUU BUS Address assignment

When using the gauge as **VACUU-BUS®** component, e. g., when connected to a CVC 3000, the controller detects the gauge automatically as vacuum sensor.

#### **IMPORTANT!**

First perform address assignment at CVC or DCP, when working with several **VACUU-VIEW** gauges of the same type.

For detailed descriptions about address assignment → see online manual 999151 (CVC 3000).

## Address assignment

Vacuubus component	Address-N°	Abbreviations in CVC/DCP
VACUU-VIEW	1–4	VSK_
VACUU·VIEW extended	1–4	VSP_
Referenzsensor	1–4	Ref



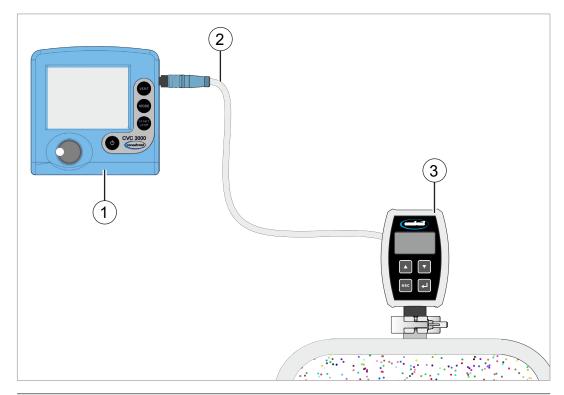
## Connection example VACUU·BUS® mit VACUU·VIEW

→ Example

VACUU·VIEW

as VACUU·BUS®

component (client)



- 1 CVC 3000\* (or DCP 3000\*)
- 2 Connection cable (power supply via VACUU·BUS)
- 3 **VACUU·VIEW** Rough vacuum measurement or

VACUU·VIEW extended – Rough- until fine vacuum measurement

#### \* Options with CVC 3000 or DCP 3000:

- ▶ using the RS 232 interface with an external application for reading the measuring data,
- ▶ with connection of several **VACUU·VIEW**s, address assignment and differential pressure measurement.

Y adapter





Up to 4 sensors VACUU-VIEW type and

- 4 sensors VACUU-VIEW extended type and
- 4 sensors **VACUU·VIEW** type -> reference sensor for differential pressure measurement
- ... can be connected to *CVC 3000* or *DCP 3000* by **VACUU·BUS**® Y adapters.
- → see also: Address assignment on page 19

Please regard the maximum total cable length of 30 m for **VACUU·BUS**<sup>®</sup>.



## 4.2 Operation

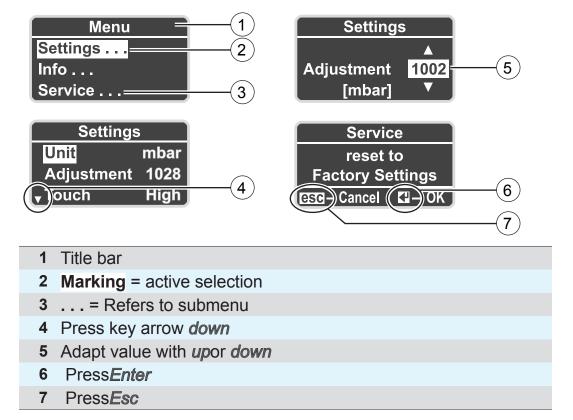
The operation is limited to the pre-settings about pressure unit and display settings, such as the sensitivity of the touch panel. Aside from that, version information can be displayed and factory settings or updates can be loaded. Operation of the gauge is unnecessary during the running measurement.

## 4.2.1 Display elements

Icons on the display show which key needs to be pressed to access a menu or submenu.

#### Meaning display and symbols

→ Examples
Icons and
illustrations on the
display





## 4.2.2 Operating elements

The front side of the gauge consists of a glass with a touch-sensitive control pad including 4 keys.

Operating elements touch keys

## Key Meaning Arrow up ▶ Menu selection Navigate upwards Increase value Arrow down Menu selection Navigate downwards Decrease value Enter Confirm entry Call up menu Confirm value Escape esc Abort action or exit menu ▶ Return to previous menu Return to pressure display

#### NOTICE

## Damage of the glass surface.

Pointed or edged objects could damage the glass surface of the gauge.

⇒ Operate the vacuum gauge only by a suitable touch stylus or finger.

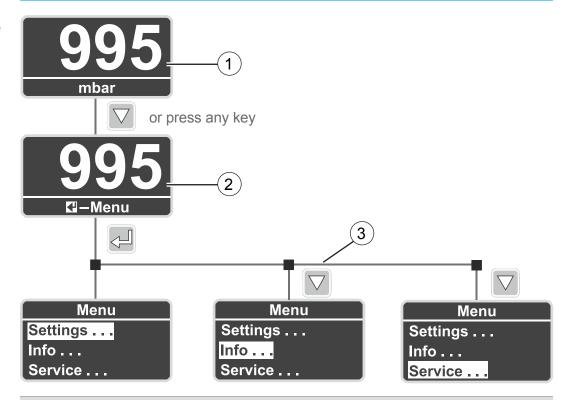


#### 4.2.3 Menu structure

The display with text **Menu** in the footer can be called up by any touch key. The menu language is English.

#### **VACUU-VIEW Menus**

Menu structure



- 1 Pressure reading
- 2 Call-up selection menus
- 3 Menus
  - Settings
  - ▶ Info
  - ▶ Service



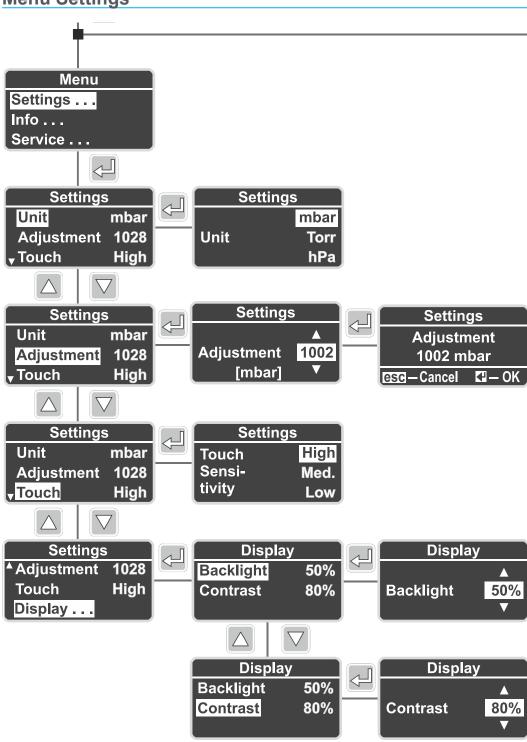
Without any action, the display returns automatically to pressure display.

- Menu → return to basic screen after approximately 5 seconds.
- Submenu→ return to basic screen after approximately 20 seconds.
- Submenu Diagnostics → return to basic screen after approximately 60 seconds.





Adjustment option for Settings



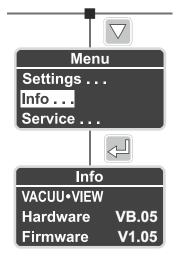
Menu Setting	js
Unit Default settings pressure unit	
	▶ mbar
	▶ hPa
	▶ Torr
Adjustment	Sensor adjustment
	▶ ATM (700-1080 mbar)
	▶ Vacuum (0 mbar)



Menu Settings		
Touch	Adjust sensivity of the touch panel  High  Media  Low	
Display	Adjust brightness and contrast  ▶ Backlight: 10% – 100 %  ▶ Contrast: 10% – 100 %	

#### Menu Info

# Call-up version information

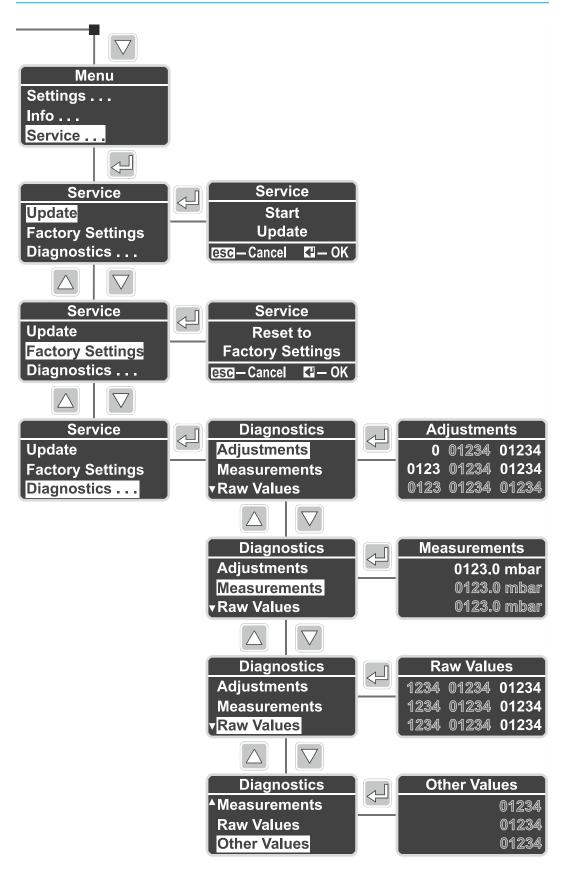


# Info Gauge type VACUU·VIEW VACUU·VIEW extended Gauge version (display example) Hardware: VB.xx Firmware: V1.xx



#### Service menu

Service menus





#### Service menus

Menu Service		
Update	To perform software updates  ▶ Start update	
Factory Settings	Reset to factory settings  reset to Factory Settings	
Diagnostics* from software version V1.04	Call-up diagnostics menu  Adjustments  Measurements  Raw Values	
from software version V1.05	▶ Other Values	

<sup>\*</sup> Menu for our Service department for error determination.



The display of diagnostics sub-menus for **VACUU-VIEW** and **VACUU-VIEW extended** do vary.



## 5 Operation

#### 5.1 Vacuum measurement

Directly after mains connection the gauge **VACUU·VIEW extended** starts measuring and displaying pressure reading.

Also when conneted to a **VACUU-BUS** $^{\otimes}$  system, pressure reading starts immediately. The measurement starts immediately after switching on *CVC 3000* or *DCP 3000* .

The gauge is intended for continuous operation.

#### Warm-up (warm-up times)

#### **IMPORTANT!**

⇒ Observe the warm-up times until full measurement precision is reached.

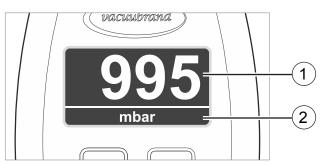
Warm-up times

VACUU-VIEW	Rough vacuum	▶ 3 minutes
VACUU-VIEW extended	Fine vacuum	▶ 15 minutes

## 5.2 Pressure reading

## Display with pressure reading

Pressure reading, basic display



1 Pressure reading (min./max.)

VACUU-VIEW

▶ 0.1–1100 [mbar/hPa]

▶ 0.1–825 [ Torr

VACUU-VIEW extended

▶ 0.001–1100 [mbar/hPa]

▶ 0.001–825 [Torr]

2 Pressure unit (mbar, hPa, Torr)



## 5.3 Adjustment

#### NOTICE

For pressure < 5 mbar the VACUU-VIEW extended measures the pressure-dependent thermal conductivity of gas.

The gauge is factory adjusted for air. For gases with higher mass, this may (<5 mbar) result in incorrect measurements.

- · light gases: Pressure reading increased
- heavy gases: Pressure reading decreased
- ⇒ If required perform the adjustment with the gas that is to measured. H₂, He, Ar, CO₂.

The adjustment is only possible after the warm-up time of the gauge has been completed.

⇒ Perform adjustment only when the gauge is ready for use.

## 5.3.1 Sensor adjustment, in general

Adjustment is not part of the everyday operation. Perform adjustment only when the measured values differ from reference normal or when irregularities in pressure reading emerge.

#### **IMPORTANT!**

Only **perform sensor adjustment during running operation** with a warmed-up sensor (consider warm-up time 15–20 minutes).

Precondition for a proper sensor adjustment is the connection to a reliable source of vacuum, e. g., adjustment of a **VACUU·VIEW extended** with a high vacuum pump and a precise reference gauge.

In case of a polluted vacuum system, e. g., with oil, particles or humidity could contaminate the sensor and cause mismeasurements and/or falsify sensor adjustment.

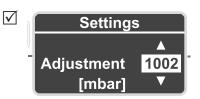
- ⇒ Clean polluted sensors before adjustment
  - → see chapter: 8 Cleaning.



## 5.3.2 Adjustment at atmospheric pressure

## Perform sensor adjustment at atmospheric pressure

Sensor adjustment at atmospheric pressure 1. Call up the *menu Settings/Adjustment* .



- **2.** If necessary, correct the value to the precise atmospheric pressure in accordance with the reference gauge by pressing the *arrow* keys.
- 3. Press *Enter* to confirm entry.
- **4.** Subsequently confirm safety prompt by pressing *Enter*.
  - ☑ The pressure value will be stored automatically after confirming the safety prompt.
  - ✓ **VACUU-VIEW (extended)** adjusted toatmospheric pressure.



**VACUU·VIEW** already displays the actual pressure. Normally, only corrections in the range of ± 5 are required.



## **5.3.3** Adjustment to reference pressure

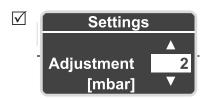
#### Adjustment VACUU-VIEW to reference pressure

Adjustment at reference pressure

**1.** Connect the gauge **VACUU·VIEW** to a vacuum pump which pumps to a precise vacuum, e. g., down to 2 mbar.

#### **IMPORTANT!**

- Check the accuracy of the ultimate vacuum with a calibrated reference vacuum gauge.
- 2. Call up the *menu Settings/Adjustment*. The value on the display should be 2 referring to the reached vacuum of the vacuum pump.
- **3.** If necessary, correct the value for reference pressure **2** by pressing the **arrow** keys.



- **4.** Press *Enter* to confirm entry.
- **5.** Subsequently confirm safety prompt by pressing *Enter*.
  - ☑ VACUU·VIEW adjusted to reference pressure.



The adjustment to a reference pressure should only be carried out when this pressure is accurately and reliably known.

We recommend the adjustment to 0 mbar by using a high vacuum pump (end vacuum < 0,1 mbar)

→ see also 5.3.4 Adjustment under vacuum



## 5.3.4 Adjustment under vacuum

## **NOTICE**

The adjustment at vacuum for VACUU·VIEW extended always occurs to the final measured value with 0 mbar.

An adjustment to a reference vacuum value is not possible.

⇒ Pump down to an ultimate vacuum as low as possible.

#### VACUU-VIEW (extended) adjusted under vacuum.

Adjustment under vacuum

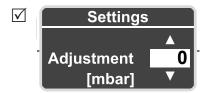
 Connect the gauge VACUU-VIEW extended to a high vacuum pump which pumps to a precise end vacuum lower than < 10<sup>-3</sup> mbar

or

connect the gauge **VACUU-VIEW** to a high vacuum pump which pumps to a precise vacuum lower than < 0,1 mbar.

#### **IMPORTANT!**

- ⇒ Check the accuracy of the ultimate vacuum with a calibrated reference vacuum gauge.
- 2. Please wait until the high vacuum pump has reached ultimate vacuum and until the gauge has completed warm-up.
- **3.** Call up the *menu Settings/Adjustment*. The value on the display should be *0* .



- 4. Press *Enter* to confirm entry.
- **5.** Subsequently confirm safety prompt by pressing *Enter*.
  - ✓ VACUU·VIEW (extended) adjusted under vacuum.



## 6 Service menues

## 6.1 Update

#### **NOTICE**

Damage to the gauge due to incorrect execution of updates.

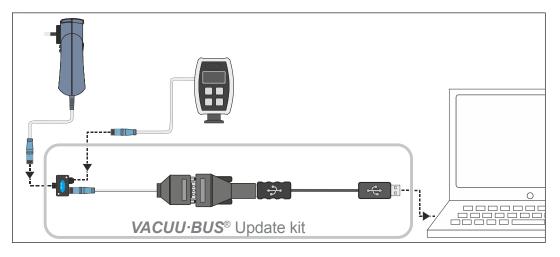
Gauges may be damaged by incorrect or unauthorized procedure.

- ⇒ Please note that you must have the necessary authorizations and basic knowledge for an update.
- ⇒ Always connect only one gauge to the VACUU·BUS® Update kit and run updates individually.

## 6.1.1 Preparation

#### Connect VACUU·BUS®-Update-Kit¹

Connect Update kit



- **1.** Disconnect **VACUU·BUS**® connector from gauge and wall power supply plug.
- **2.** Connect wall power supply plug, gauge and *VACUU·BUS*® Update kit one after the other to the Y adapter.
- 3. Connect the **VACUU·BUS**® Update kit to a PC or laptop (= end device).
  - ✓ With the first connection of the Update kit the operating system displays an information prompt, e. g., Hardware Wizard displays Found New Hardware.
- **4.** Plug the wall power supply into the mains socket.

<sup>1 →</sup> see chapter 9.2 Ordering information



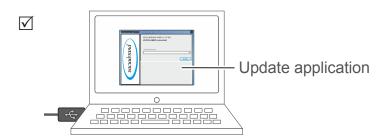
#### Download and start update software<sup>2</sup>

Download update file

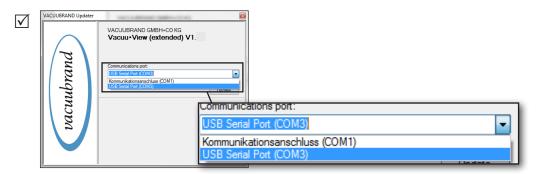
- 1. Download the <u>ZIP file</u> with updates for your device from **VACUUBRAND** homepage onto your computer.
- 2. Unzip the ZIP file:
  Right-click on the ZIP file ⇒ *Extract to...*.
- 3. Open the extracted folder.

Start application (exe)

**4.** Start the update application by double-click on the icon .



- **5.** Select the required COM port from the drop down list to which the *VACUU-BUS*® Update kit is connected: *USB Serial Port*.
- → Example





If no COM port is displayed for selection, you need to install the hardware driver for RS485/USB.

⇒ Ask the responsible staff member of your IT department to install the required hardware driver (CD-ROM is included to the update kit).



⇒ First, please read the description in chapter
6.1.2 Update gauge carefully before proceeding.

<sup>2</sup> Valid for both VACUU·VIEW as well as VACUU·VIEW extended.



## 6.1.2 Update gauge

#### **IMPORTANT!**



- ⇒ Please regard that at first you need to operate the gauge but then promptly you need to switch to the Updater window on your monitor.
- ⇒ Also note that the time window in which the updater application searches a connected device, takes **20 seconds**.

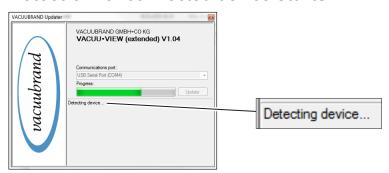
#### Perform software update

Perform software update

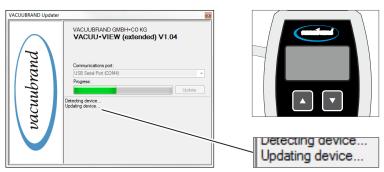
1. At your VACUU-VIEW gauge call-up the menu Service/Update.



- 2. Click on the button Update on your monitor.
  - Detection for connected device starts.



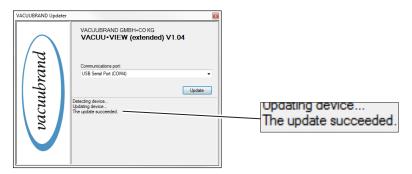
- **3.** Press *Enter* key on the gauge within the time the progress bar is displayed.
  - **☑** Update starts.
  - $\ensuremath{\square}$  Within the update progress the display is switched off.





Perform software update

- **4.** Wait until the update is completely loaded.
  - ☑ The following prompt appears in the update application:



- ☑ Update succeeded.
- ☑ The display of the gauge is switched on again.



**IMPORTANT!** 

⇒ Regard the warm-up time also after updating the gauge.

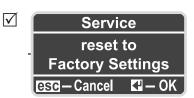


# **6.2 Factory Settings**

# **Reset to factory settings**

Factory settings

1. Call up menu Service/Factory Settings .



- 2. Press *Enter* to start Reset.
  - ☑ Factory settings loaded.



# **6.3 Submenu Diagnostics**

From *software version V1.04* a diagnostic menu is included for **VACUU-VIEW**® gauges.

## Call-up diagnostics menu

Diagnostics menu

⇒ Call up the *menu Settings/Diagnostics* ....



### Call-up sub-menus

- **1.** Press arrow key to select one of the sub-menus.
- **2.** Press *Enter*, to call up the selected sub-menu.

When contacting our Service Department the *Diagnostics* values might help to localize an error.

- ⇒ Please send us photos of the displayed values. As well measured under vacuum as at atmospheric pressure.
- ⇒ Mail the photos to: <a href="mailto:service@vacuubrand.com">service@vacuubrand.com</a>
- ⇒ Details about the product type and serial number from the rating plate are also required.



# 7 Resolving problems



## **CAUTION**

Malfunction because of incorrect repair by the customer.

The gauge is not intended for the customer's repair.

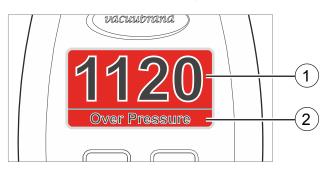
- ⇒ Never open the vacuum gauge.
- ⇒ If the gauge is defective, please send it to our Service Department or your local supplier.

# 7.1 Error display

For error indication the backlight of the display switches to red.

## **Example error display**

Error display (red)



- 1 Error display with red backlight
- 2 Error indication as clear text
  - Over Pressure pressure overload
  - ▶ Under Range measuring fallen below lowest range
  - ▶ Sensor Failure sensor error



# 7.2 Fault – Cause – Remedy

Resolving problems

Fault	▶ Possible cause	√Remedy
Over Pressure	<ul><li>Pressure too high.</li><li>Measuring range exceeded.</li></ul>	<ul> <li>✓ Vent the system or apparatus.</li> <li>✓ Reduce pressure.</li> <li>✓ Perform sensor adjustment.</li> <li>✓ Call-up diagnostics menu and inform our Service about the status.</li> </ul>
Under Range	Below measuring range (negative pres- sure reading).	<ul> <li>✓ Perform sensor adjustment.</li> <li>✓ Call-up diagnostics menu and inform our Service about the status.</li> </ul>
Sensor Failure	▶ Defective sensor.	<ul><li>✓ Call-up diagnostics menu and inform our Service about the status.</li><li>✓ Send in.</li></ul>
Front glass bro- ken	<ul><li>Incorrect cleaning agent used.</li><li>Mechanically damaged.</li></ul>	✓ Send in.
Readings de- viate from the reference stan- dard	<ul><li>Sensor measures incorrectly.</li><li>Reading of other gas than air.</li></ul>	<ul> <li>✓ Perform sensor adjustment.</li> <li>✓ Perform sensor adjustment with the gas to be measured.</li> <li>✓ Call-up diagnostics menu and inform our Service about the status.</li> </ul>
Adjustment	▶ A for sensor adjust- ment inadmissible pressure is reached (no adjustment possi- ble in between pres- sure range 20 – 700 mbar).	<ul> <li>✓ Wait approximately 5 –         10 minutes until the sensor is ready for use.</li> <li>✓ Perform adjustment at &gt; 700 mbar or &lt; 20 mbar.</li> <li>✓ For adjustment connect a vacuum pump with precise vacuum and then move pump down to the possible pressure range.</li> </ul>
Menu Settings/ Adjustment warm up	Sensor warm-up not completed.	<ul> <li>✓ Wait approximately 5 –</li> <li>10 minutes until the sensor is ready for use.</li> <li>✓ Subsequently perform sensor adjustment if necessary.</li> </ul>

Update kit ≒ End device.

✓ Check power supply, connect

wall power supply plug to a

needs to be updated → see also illustration in chapter

√ Connect the device that

6.1.1 Preparation.

socket.



Fault	▶ Possible cause	√Remedy
No display	No power, wall power supply plug defective or not connected.	Check power supply, connect wall power supply plug to a socket.
USB serial port not detected (No COM-port for selection listed)	<ul> <li>No driver installed for RS485/USB interface.</li> <li>Driver for RS485/USB interface not enabled.</li> </ul>	<ul> <li>✓ Install the driver for the RS485 / USB interface from the supplied CD-ROM or via Internet download.</li> <li>✓ Enable connection at the Device Manager.</li> </ul>
Display switched off,	Update running = no error.	√ Wait until the update is completed.
no device reaction	▶ Update failed.	<ul> <li>✓ Repeat Update:</li> <li>1. Remove VACUU·BUS® connector from Y adapter.</li> <li>2. Click on <i>Update</i> button in the update application.</li> <li>3. Reconnect VACUU·BUS® connector to Y adapter within detection for connected device (progress bar).</li> <li>✓ Send in the gauge, if the problem persists.</li> </ul>
Update failed	<ul><li>Update failed.</li><li>Connection: Device</li></ul>	✓ Connection: Do not interrupt connection: Device ≒

device, connection

▶ No power, wall power supply plug defective

or not connected.

No connected device

interrupted.

found.

□ Update kit □ End

Possible error during an update



# **Technical support**

⇒ To identify errors and potential remedies, please refer to the table for troubleshooting *Fault* – *Cause* – *Remedy* 

For technical help or in case of errors you need additional help for, please contact your local supplier or our <u>Service</u><sup>1</sup> department.

⇒ For practical help in contact with our Service department also use *6.3 Submenu Diagnostics on page 38* 

<sup>1 -&</sup>gt; Phone: +49 9342 808-5660, Fax: +49 9342 808-5555, service@vacuubrand.com



# 8 Cleaning

Clean the sensor to remove malfunctions that are caused by a polluted sensor. We recommend to clean the sensor before adjustment.

#### **IMPORTANT!**

This chapter does not contain descriptions for the decontamination of the product. This chapter describes only simple cleaning and care measures.

# 8.1 Housing surface

#### Clean surface

Clean surface

⇒ Clean polluted surface with a clean, slightly wetted cloth. To moisten the cloth we recommend water or mild soap.

### 8.2 Sensor

#### Clean sensor

#### Clean sensor

- **1.** Fill a small amount of solvent via flange into the gauge, e. g., cleaning solvent.
- **2.** Let the solvent react for a few minutes.
- **3.** Pour the solvent.
  - ☑ Dissolved substances or discolorations in the solvent are possible.
- **4.** Repeat this procedure until no more pollutants are in the solvent.
- **5.** Air or ventilate the gauge until the internal chamber has dried.
- **6.** Re-adjust the sensor.



# 9 Appendix

# 9.1 Technical information

Designs	
Vacuum gauge – Rough vacuum	VACUU-VIEW
Vacuum gauge – Fine vacuum	VACUU·VIEW extended

# 9.1.1 Technical data

Technical data

Ambient conditions		(US)
Working temperature	10–40 °C	50-104 °F
Transport- and storage temperature	-10–60 °C	14–140°F
Altitude, max.	3000 m above sea level	9840 ft above sea level
Relative humidity 30–85 %, non condensing		densing
Avoid condensation or contamination by dust, liquids or corrosive gases.		

Wall power supply plug		(US)
Input voltage	90-264 VAC	90-264 VAC
Frequency	50–60 Hz	50-60 Hz
Input current, max.	0,8 A	0.8 A
Output voltage, short-circuit-proof	24 VDC	24 VDC
Output current, max.	1,25 A	1.25 A
Cable length, approx.	2 m	79 in.
Dimension	108 mm x 58 mm x 34 mm 4.3 in. x 2.3 in. x 1.4 in.	
Weight	300 g	0.66 lb
Mains plug	AC, changeable: CEE/C	H/UK/US/AUS/CN

Electrical data gauge		(US)
Supply voltage, max.	24 VDC	24 VDC
Capacity, max.	1,3 W	1.3 W
Protection type	IP 54	
Interface	VACUU·BUS®	



## Technical data

Vacuum data		
<b>VACUU-VIEW</b>		(US)
Measuring range, absolute	1100–0,1 mbar	825–0.1 Torr
Accuracy of measurement	< ±1 mbar/hPa/Torr, ±1 (after adjustment, const	_
Measuring principle	Ceramic diaphragm (alugas independent, absolu	/ · · · · · · · · · · · · · · · · · · ·
Temperature coefficient	< ±0,07 mbar/K	< ±0.05 Torr/K
Sensor	internal	
Max. admissible pressure, absolute	1,5 bar	1125 Torr
Max. admissible media temperature (gas) non-explosive atmosphere:		
momentarily	80 °C	176°F
Continuous operation	40 °C	104°F
Max. admissible media temperature (gas) 🖾 atmosphere:		
momentarily	40 °C	104°F
Continuous operation	40 °C	104°F

VACUU-VIEW extended (	only deviant items)	
Measuring range, absolute	1100–1x 10 <sup>-3</sup> mbar	825–1x 10 <sup>-3</sup> Torr
Temperature coefficient	< ±0,2 mbar/K	< ±0.15 Torr/K
Pressure resolution	0.001 hPa 0.01 hPa 0.1 hPa 1 hPa	
Pressure ranges	0.001–0.1 hPa 0.1– hPa 1–10 hPa 10–1100 hPa	
Accuracy of measurement	t ±15% of indicated value in the range from 0.01–5 mbar/hPa/Torr, ±3 mbar for > 5 mbar	
Measuring principle	Ceramic diaphragm se + ceramic jacketed Pir	

Connections		
Cable (length)	2 m	79 in.
Plug connector	VACUU·BUS®	
Vacuum connection	Small flange KF DN 16	
	Hose nozzle DN 6/10	



#### Technical data

Display	
Туре	LC display (LCD)
Brightness control	yes
Pressure reading	switchable: mbar, Torr, hPa

Weight and dimensions*		(US)
Weight	190 g	0.4 lb
Dimension sheet	103 mm x 62 mm x 50 4 in. x 2.4 in. x 2 in.	) mm

<sup>\*</sup> without wall power supply

# 9.1.2 Wetted materials

#### Wetted materials

Component	Wetted materials
<b>VACUU·VIEW</b>	
Vacuum sensor	Aluminium oxide ceramics
Metering box + small flange	PP
Sealing ring at the sensor	chemically resistant fluorelastomer
Hose nozzle	PPS, glass fiber reinforced
O ring (KF 16)	FKM

VACUU-VIEW extended (only deviant items)	
Metering box + small flange	PPS, glass fiber reinforced
Sealing ring at the sensor	FFPM



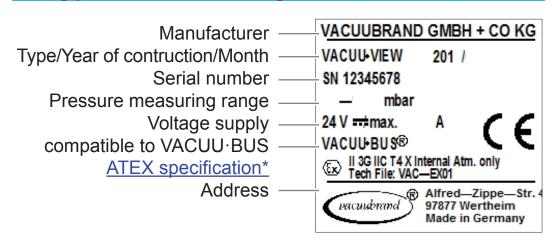
# 9.1.3 Rating plate



- ⇒ In case of malfunction, please note type and serial number on the rating plate.
- ⇒ When contacting our service department, name us product type and serial number. With this information we can offer selective support and advice for your product.

## Rating plate VACUU-VIEW, in general

Rating plate



<sup>\*</sup> Group and category, marking G (gas), type protection, explosion group, temperature class (additionally see: <u>Approval for ATEX equipment</u>).



# 9.2 Ordering information

Vacuum gauge	Order-N°
<b>VACUU-VIEW</b> , ready-for-use inclusive wall power supply plug	683220
<b>VACUU-VIEW</b> extended, ready-for-use inclusive wall power supply plug	683210

# Ordering information accessories

Accessories	Order-N°
Vacuum hose DN 6 mm (I = 1000 mm)	686000
Vacuum hose DN 10 mm (I = 1000 mm)	686002
PTFE hose KF DN 16 (I = 1000 mm)	686031
Stainless steel tubing KF DN 16 (I = 1000 mm)	673336
Fitting for PTFE tube 10/8 mm	
DAkkS calibration with first delivery	900214
DAkkS recalibration	900215
VACUU·BUS®/USB Update kit	683230

# Ordering information spare parts

Spare parts	Order-N°
VACUU·VIEW	635490
VACUU·VIEW extended	635489
Hose nozzle 10/6 G1/4" with O ring	642474
Wall power supply plug 30W 24V; with adapters	612090
Y adapter VACUU·BUS	636656
Extension cable VACUU·BUS®, 2m	612552
Wall duct VACUU·BUS	636153
Instructions for use	999293

## Source of supply

International sales offices and specialized trade

Purchase original accessories and spare parts from your specialized distributor or through international sales offices of **VACUUBRAND GMBH + CO KG**.



- ⇒ Information about the complete product range are available in the current <u>product catalog</u>.
- ⇒ For orders, questions about vacuum control and optimal accessories, please contact your specialized distributor or an <u>international sales office</u> of VACUUBRAND GMBH + CO KG.



### 9.3 Service

Service offer and service range

Take advantage of the comprehensive service range of **VACUUBRAND GMBH + CO KG**.

#### Service in detail



- product guidance and practical solutions,
- fast delivery of spare parts and accessories,
- professional maintenance,
- immediate repairs processing,
- service on the spot (on request),
- <u>calibration</u> (DAkkS accredited),
- return, disposal.
- ⇒ Find further information on our website: <u>www.vacuubrand.com</u>.

## Servicing handling

Meet the terms of service

- **1.** Contact your local supplier or our Service Department.
- **2.** Request a RMA number for your order.
- **3.** Clean the product thoroughly and if necessary decontaminate it professionally.
- **4.** Please fill in this form Health and Safety Clearance completely.

Return

- 5. Return your product including:
  - RMA-N°,
  - Repair- or service order,
  - Form Health and Safety Clearance,
  - Short error description.



- ⇒ Reduce downtime, speed up the service process. Please keep the required data and documents ready when contacting our Service Department.
  - ▶ Your order can be quickly and easily processed.
  - ▶ Hazards can be excluded.
  - ▶ A short description or photos may help for error location.

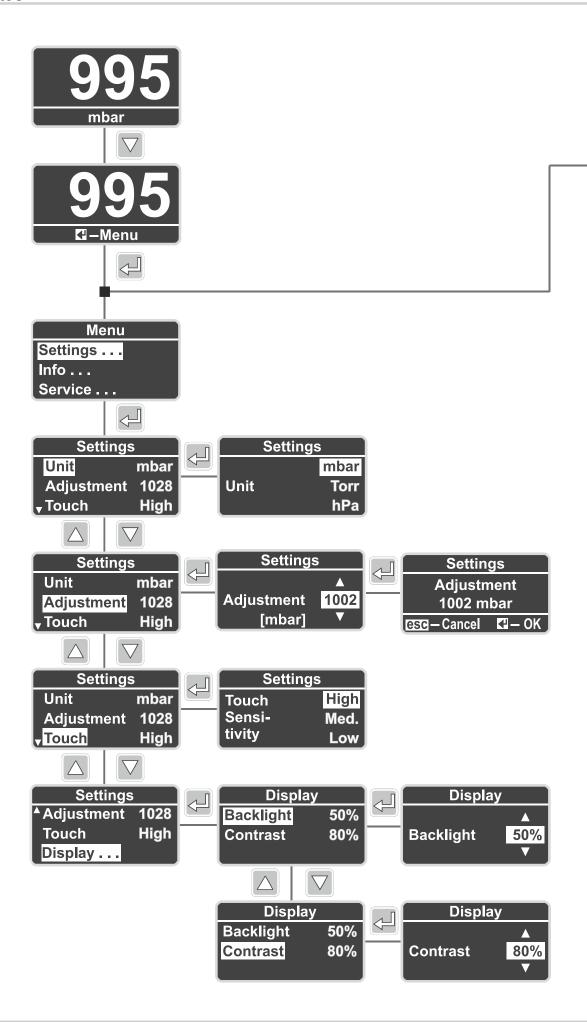


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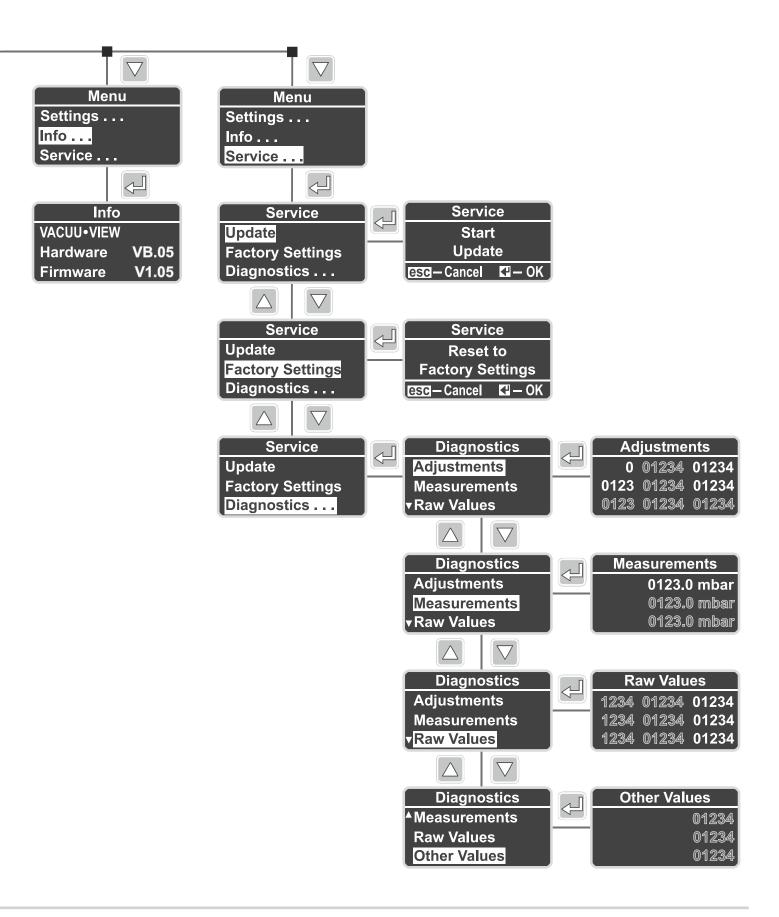


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# 9.5 Overview menu structure VACUU-VIEW (extended)





# 9.6 EC Declaration of Conformity

## EU-Konformitätserklärung EC Declaration of Conformity Déclaration CE de conformité



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, 2014/34/EU, 2011/65/EU – gültig ab / valid from / valable à partir du 20.04.2016.

Messgerät / Vacuum gauge / Vacuomètre

Typ / Type / Type: VACUU·VIEW / VACUU·VIEW extended

Artikelnummer / Order number / Numéro d'article: 683210, 683220, 635490, 635489 Seriennummer / Serial number / Numéro de série: Siehe Typenschild / See rating plate / Voir plaque signalétique

Angewandte harmonisierte Normen / Harmonized standards applied / Normes harmonisées utilisées: DIN EN 12100:2011, DIN EN 61010-1:2011, IEC 61010-1:2010 (Ed. 3), DIN EN 61326-1:2013, DIN EN 1127-1:2011, DIN EN 13463-1:2009, DIN EN 50581:2013

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

Ort, Datum / place, date / lieu, date: Wertheim, 06.09.2016

(Dr. F. Gitmans)

Geschäftsführer / Managing director /

Gérant

(Dr. J. Dirscherl)

Technischer Leiter / Technical Director / Directeur technique

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