VACUUBRAND®

LIQUID LEVEL SENSOR

Instructions for use

Original instructions EN

OI no.: 20901100

Contents

After sales service:
Contact your local dealer or call +49 9342 808-5500.

Electronic components must not be disposed of in the domestic waste at the end of their service life. Used electronic devices contain harmful substances that can cause damage to the environment or human health. End users are legally obliged to take used electric and electronic devices to a licensed collection point.

Safety information!

Use the level sensors 20699908 with a VACUU·BUS compatible vacuum controller, e.g., VACUU·SELECT, CVC 3000, or VNC 2.

Remove all packing material, remove the product from its packing-box and inspect the equipment. **Do not use the equipment if it is damaged.**
Use the components only for the **intended use**, i.e. to monitor the fluid level inside a VACUUBRAND catchpot from outside:

- Level sensor 20699908 for catchpot 500 ml (cat. no.: 20638497)

Do not immerse the level sensor into liquid.
This product may only be used indoors in a non-explosive atmosphere, and in a dry environment.

Comply with all relevant **safety requirements** (regulations and guidelines) and adopt suitable **safety measures**. Comply with all applicable **national safety regulations.**
Pay attention to the maximal permitted ambient temperature.

Use only **genuine spare parts and accessories.** Otherwise safety and performance of the equipment might be reduced. Ensure that maintenance is done only by suitable trained and supervised technicians.

Clean polluted surface with a clean, slightly moistened cloth. To moisten the cloth we recommend water or mild soap.
As laid down in the statutory regulations (occupational, health and safety regulations and regulations for environmental protection), equipment returned to the manufacturer can be repaired only under certain conditions.

Use and operation

The level sensor is intended to be assembled at the bottleneck of a VACUUBRAND catchpot 500 ml (cat. no.: 20638497) recommended at the catchpot of an exhaust waste vapour condenser.

Important: Assemble the sensor as close as possible to the catchpot.

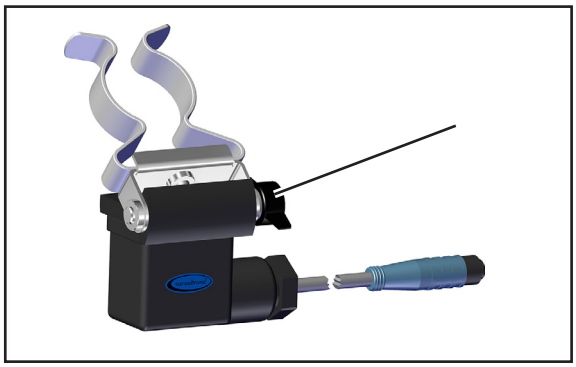
When coming near hands or objects the release of an unintentional message is possible.
Avoid moisture on the entire sensor surface.
The sensitivity of the sensor is adjusted at the factory in a way to detect also nonpolar solvents.

Note: Strong electromagnetic fields may influence the alarm level of the capacitive measurement element.

Assembling the level sensor at the catchpot 500 ml

- Assemble the level sensor to the neck of the catchpot.
- Loosen the wing nut (1) at the sensor.
- Adjust the sensor as close as possible to the catchpot:

- Fasten wing nut.



Disassembling the level sensor from the mounting plate
(e. g., to facilitate draining of the catchpot)

Remove clip with sensor from the bottleneck.
When reassembling ensure that the sensor is positioned as close as possible to the catchpot:
Loosen wing nut (1) - adjust the sensor - fasten wing nut.

- After the assembly of the level sensor, perform a functional test and an adjustment of the level sensor on an empty catchpot, see section „Functional test and adjustment“ of the respective controller.

Technical data

Type	20699908
Measuring principle	capacitive sensor with digital evaluation
Adjustment	at the factory on a coated VACUUBRAND catchpot 500 ml (cat.-no.: 20638497)
Sensitivity	adjusted to liquids with a dielectric coefficient $\varepsilon_r > 1.8$
Integration time until release	10 s
Reset time	2.5 s
Power supply	8 V DC to 30 V DC, typical 24 V DC
Current draw	< 5 mA
Output signal	VACUU·BUS
Max. permitted ambient temperature at operation / storage	+10 °C to +40 °C / -10 °C to +60 °C
Max. permitted relative atmospheric moisture during operation	30 to 85%, no condensation
Degree of protection according to IEC 60529	IP 20
Connection cable	approx. 2 m, VACUU•BUS
Dimensions housing L x W x H (without cable, clip, mounting plate)	50 mm x 50 mm x 30 mm
Weight approx.	0.1 kg
Materials	PA / PP / TPE / PE coated spring steel

We reserve the right for technical modification without prior note!

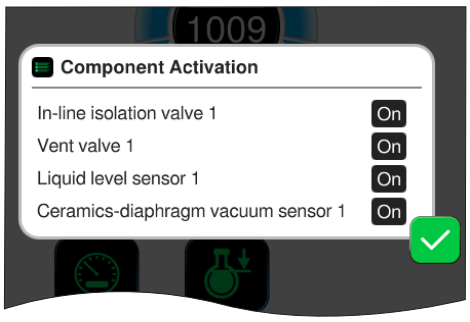
Connection to a controller VACUU·SELECT

Operation of the vacuum controller VACUU·SELECT and its functions are described in the VACUU·SELECT manual.
Plug in the connection cable of the level sensor at the vacuum controller; use Y adapter VACUU·BUS (VACUUBRAND cat. no: 20636656), if necessary.

Connection possibility 1: Connect the level sensor to a switched-off controller. When the controller is switched on, the level sensor is automatically detected.

Connection possibility 2: Connect the level sensor to a switched-on controller. Then perform a **component detection** at the controller (menu: „Settings/Administration/VACUU·BUS/ Component detection“).

The level sensor is listed in the context menu „**Component activation**“:



Using **component activation**, a connected level sensor can be individually activated or deactivated, i.e., the level sensor can remain connected but is switched on or off at the controller as required for the ongoing process.
Once a component detection has been performed, a connected level sensor will always be listed as activated, even if it was deactivated prior to the component detection.

Disconnecting the sensor plug from the controller causes an error message, in case also when switching the controller on again:

The **error indication** must be acknowledged after the error has been remedied.
Therefore plug in the level sensor again at the controller or deactivate the level sensor in the component activation context menu.
Another component detection with disconnected level sensor will also result in the error indication being deleted.

Level sensor alarm

The level sensor becomes activated if the liquid level in the catchpot reaches the position of the sensor. The output of an acoustic signal depends on the settings at the controller. Menu: „Settings/Sounds/Volume error tone“. If activated: three beeps.
An error indication (yellow, Warning) is displayed at the controller:

The triggering of the level sensor does not cause a process stop at once. The process continues to run until the **delay time** (adjustable at the controller) has elapsed.

Drain the full catchpot during the delay time (obey regulations for disposal).

The **error indication (warning)** must be acknowledged after the error has been remedied. The running process will not be interrupted.

If the full catchpot has not been drained before the delay time has elapsed, the controller triggers another error indication (red, Error):

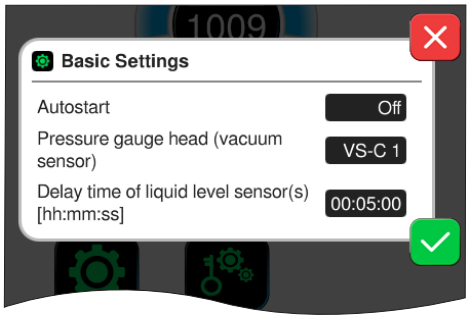
The delay time has elapsed. The process is stopped. Risk of overflowing catchpot.

If a process stop may lead to a dangerous situation take appropriate safety measures.

Drain the full catchpot (obey regulations for disposal).

The **error indication (error)** must be acknowledged after the error has been remedied.

The **delay time** is the time between the triggering of the level sensor and the process stop caused thereby. The delay time allows the user to drain a full catchpot and to acknowledge the warning or to finish a running process before the process is stopped.



The **delay time** can be adjusted in the menu „Settings/Basic Settings”.
Adjustment range (hh:mm:ss): 00:00:00 (Off) - 23:59:59
Default value: 5 minutes

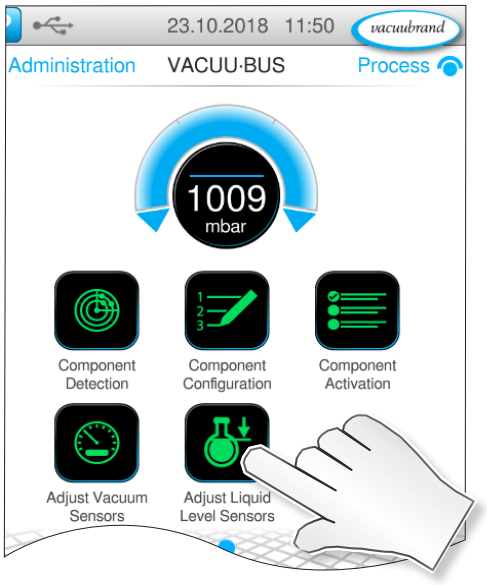
If the delay time has been extended, it is the user’s responsibility to avoid overflowing of the catchpot during the delay time.

The delay time has to be set prior to process start. During a running process the delay time can not be changed. Only one common delay time can be set for all connected level sensors.

Functional test and adjustment

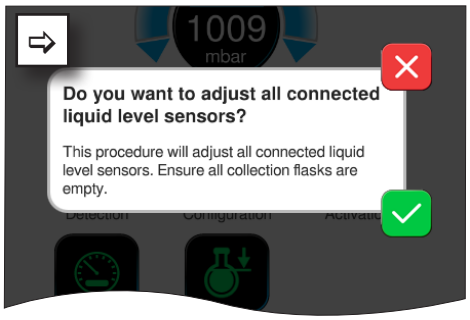
The level sensor has been adjusted at the factory on a coated VACUUBRAND 500 ml catchpot. A readjustment of the level sensor with empty catchpot is required after each reassembly of the level sensor to a catchpot. Readjustment is also recommended after each draining of the catchpot

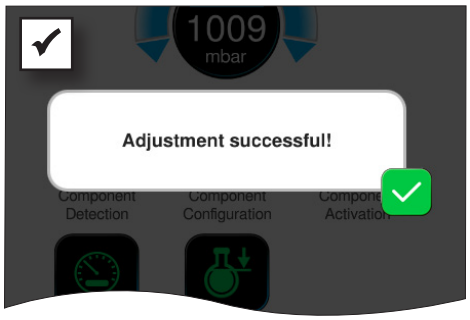
Check the function of the level sensor after first assembly and afterwards regularly (depending on operating conditions): Fill the catchpot with liquid, the level sensor must trigger the alarm. The release time is 10 seconds.
In case of false alarm (empty catchpot) it might be necessary to adjust the sensor using the individual empty catchpot.



Adjustment:
Fix the sensor as close as possible on an empty catchpot.

To perform the adjustment, select the menu item „Settings/ Administration/VACUU·BUS/Adjust Liquid Level Sensors“.





Connection to a controller CVC 3000

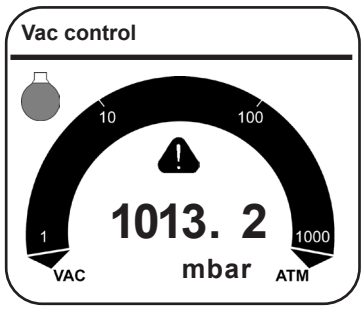
Plug in the connection cable of the level sensor at a switched-off VACUUBRAND vacuum controller CVC 3000; use Y adapter VACUU·BUS (VACUUBRAND cat. no: 20636656), if necessary. When switching on the controller the level sensor is detected automatically.

Disconnecting the sensor plug from the controller causes an error message, in case also when switching the controller on again:

Level sensor alarm

The level sensor becomes activated if the liquid level in the catchpot reaches the position of the sensor. An acoustic signal is given only if ”Sound On” is selected at the controller.
Display: flashing catchpot and warning triangle and flashing display (10 blips).

Display



Process stop:
If the sensor alarms a controller CVC 3000 with software version 2.12 or lower, an active process is stopped at once to avoid an overflow of the catchpot. A CVC 3000 with software version 2.13 stops an active process after 30 minutes. A CVC 3000 with software version 2.14 or higher stops an active process after 5 minutes.
If a process stop may lead to a dangerous situation take appropriate safety measures.

The error message in case of a full catchpot has to be quit by pressing the START/STOP key at the controller (pay attention to reset time). After draining the catchpot (obey regulations for disposal) the process may be restarted by pressing the ”START” key.

Attention: A reset of the error message caused by removing or unplugging the level sensor is only possible by selecting the factory set configuration.

Functional test and adjustment

The level sensor has been adjusted at the factory on a coated VACUUBRAND catchpot 500 ml. A readjustment of the level sensor with empty catchpot is required after each reassembly of the level sensor to a catchpot. Readjustment is also recommended after each draining of the catchpot

Check the function of the level sensor after first assembly and afterwards regularly (depending on operating conditions): Fill the catchpot with liquid, the level sensor must trigger the alarm. The release time is 10 seconds. In case of false alarm (empty catchpot) it might be necessary to adjust the sensor using the individual empty catchpot.

Adjustment:
Fix the sensor as close as possible on an empty (VACUUBRAND) catchpot.
Select ”Defaults On” in the controller menu. The sensor is thereby readjusted automatically.
Attention: When selecting the factory set configuration all individual settings at the controller are reset to factory set values.

Connection to a controller VNC 2

Plug in the connection cable of the level sensor at a switched-off VACUUBRAND vacuum controller VNC 2; use Y adapter VACUU·BUS (VACUUBRAND cat. no: 20636656), if necessary. When switching on the controller the level sensor is detected automatically.

Disconnecting the sensor plug from the controller causes an error message, in case also when switching the controller on again:

Level sensor alarm

The level sensor becomes activated if the liquid level in the catchpot reaches the position of the sensor. An acoustic signal is given only if ”Sound On” is selected at the controller.
Display: ”Ext. Err.” and flashing display (9 blips).

Process stop:
If the sensor alarms the controller VNC 2, an active process is stopped at once to avoid an overflow of the catchpot.
If a process stop may lead to a dangerous situation take appropriate safety measures.

The error message in case of a full catchpot disappears automatically once the catchpot has been drained. After draining the catchpot (obey regulations for disposal) the process may be restarted by pressing the ”Enter” key.

Attention: A reset of the error message caused by removing or unplugging the level sensor is only possible by selecting a factory set configuration.

Functional test and adjustment

The level sensor has been adjusted at the factory on a coated VACUUBRAND 500 ml catchpot. A readjustment of the level sensor with empty catchpot is required after each reassembly of the level sensor to a catchpot. Readjustment is also recommended after each draining of the catchpot

Check the function of the level sensor after first assembly and afterwards regularly (depending on operating conditions): Fill the catchpot with liquid, the level sensor must trigger the alarm. The release time is 10 seconds.
In case of false alarm (empty catchpot) it might be necessary to adjust the sensor using the individual empty catchpot.

Adjustment:
Fix the sensor as close as possible on an empty (VACUUBRAND) catchpot.
Keep the ”Esc” key pressed while switching on the controller and then select a factory set configuration. Confirm with the ”Enter” key. The sensor is thereby readjusted automatically.
Attention: When selecting a factory set configuration all individual settings at the controller are reset to factory set values.

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DECLARATION OF CONFORMITY – China RoHS 2

VACUUBRAND GMBH + CO KG has made reasonable efforts to ensure that hazardous materials and substances may not be used in its products.
In order to determine the concentration of hazardous substances in all homogeneous materials of the subassemblies, a “Product Conformity Assessment” (PCA) procedure was performed. As defined in GB/T 26572 the “Maximum Concentration Value” limits (MCV) apply to these restricted substances:

- Lead (Pb): 0.1%
- Mercury (Hg): 0.1%
- Cadmium (Cd): 0.01%
- Hexavalent chromium (Cr(+VI)): 0.1%
- Polybrominated biphenlys (PBB): 0.1%
- Polybrominated diphenyl ether (PBDE): 0.1%

Environmentally Friendly Use Period (EFUP)

EFUP defines the period in years during which the hazardous substances contained in electrical and electronic products will not leak or mutate under normal operating conditions. During normal use by the user such electrical and electronic products will not result in serious environmental pollution, cause serious bodily injury or damage to the user’s assets.
The Environmentally Friendly Use Period for VACUUBRAND products is 40 years.

MATERIAL CONTENT DECLARATION FOR VACUUBRAND PRODUCTS						
	有毒有害物质或元素 Hazardous substances					
部件名称	铅	汞	镉	六价铬	多溴联苯	多溴二苯醚
Part name	Pb	Hg	Cd	Cr(+VI)	PBB	PBDE
包装 Packaging	O	O	O	O	O	O
塑料外壳 / 组件 Plastic housing / parts	O	O	O	O	O	O
真空油 Vacuum oil	O	O	O	O	O	O
电池 Battery	O	O	O	O	O	O
玻璃 Glass	X	O	O	O	O	O
电子电气组件 Electrical and electronic parts	X	O	O	O	O	O
控制器 / 测量设备 Controller / measuring device	X	O	O	O	O	O
金属外壳 / 组件 Metal housing / parts	X	O	O	O	O	O
电机 Motor	X	O	O	O	O	O
配件 Accessories	X	O	O	O	O	O
此表格是按照SJ/T 11364-2014中规定所制定的。 This table is created according to SJ/T 11364-2014.						

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O: 表示该有毒有害物质在该部件所有均质材料中的含量均在GB/T 26572规定的限量要求以下。 O: Indicates that the above mentioned hazardous substance contained in all homogeneous materials of the part is below the required limit as defined in GB/T 26572. X: 表示该有毒有害物质至少在该部件某一均质材料中的含量超出GB/T 26572规定的限量要求。 X: Indicates that the above mentioned hazardous substance contained in at least one of the homogeneous materials of this part is above the required limit as defined in GB/T 26572.
电池、玻璃器皿和配件可能不属于所附设备所包含的内容，它们可能有各自单独的EFUP标记和/或可能正在维护其部件EFUP标记的更新。 Batteries, glassware and accessories might not be content of the enclosed device and may have its own EFUP-marking and/or might be maintaining parts with changing EFUP-marking.

除上表所示信息外，还需声明的是，这些部件并非是有意用铅（Pb）、 汞 （Hg）、铬（Cd）、六价铬 （Cr(+VI)）、多溴联苯（PBB）或多溴二苯醚（PBDE）来制造的。
Apart from the disclosures in the above table, the subassemblies are not intentionally manufactured or formulated with lead (Pb), mercury (Hg), cadmium (Cd), hexavalent chromium (Cr+VI), polybrominated biphenyls (PBB), and polybrominated diphenyl ethers (PBDE).

Products manufactured by VACUUBRAND may enter into further devices (e.g., rotary evaporator) or can be used together with other appliances (e.g., usage as booster pumps).
With these products and appliances in particular, please note the EFUP labeled on these products.
VACUUBRAND will not take responsibility for the EFUP of those products and appliances.

Place, date: Wertheim, 06 September 2022

(Dr. Constantin Schöler)
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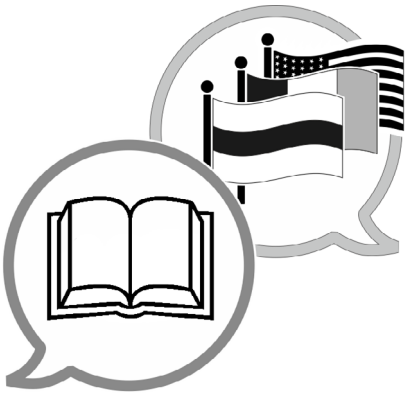

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