

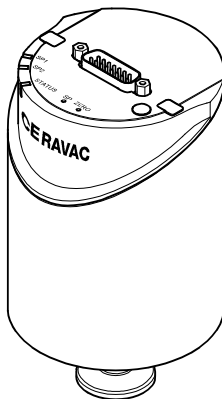
CERAVAC Transmitter

CTR 101

Operating Manual 130002066_002_A2

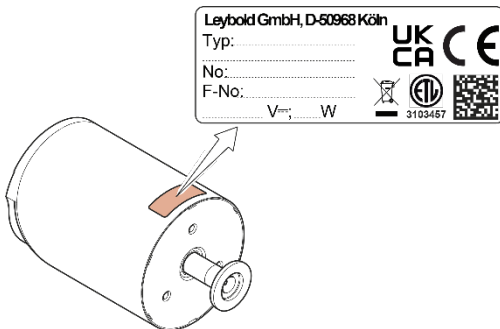
Part Numbers

230 320 V01	230 325 V01	230 330 V01	230 335 V01
230 321 V01	230 326 V01	230 331 V01	230 336 V01
230 322 V01	230 327 V01	230 332 V01	230 337 V01
230 323 V01	230 328 V01	230 333 V01	230 338 V01
230 324 V01	230 329 V01	230 334 V01	230 339 V01



Product Identification

In all communications with Leybold, please specify the information given on the product nameplate. For convenient reference copy that information into the space provided below.



Validity

This document applies to products with the following part numbers:

Part number	Flange	Measurement range, Full Scale (F.S.)		
		Torr	Pascal	mbar
230 320 V01	DN 16 ISO-KF	10^{-1}	1.33×10^1	1.33×10^{-1}
		...	...	...
		1000 (F.S.)	133'322 (F.S.)	1333 (F.S.)
230 321 V01	DN 16 ISO-KF	10^{-2}	1.33×10^0	10^{-2}
		...	...	...
		100 (F.S.)	13'332.2 (F.S.)	133 (F.S.)
230 322 V01	DN 16 ISO-KF	10^{-3}	1.33×10^{-1}	10^{-3}
		...	...	...
		10 (F.S.)	1'333.22 (F.S.)	13.3 (F.S.)
230 323 V01	DN 16 ISO-KF	10^{-4}	1.33×10^{-2}	10^{-4}
		...	...	...
		1 (F.S.)	133.322 (F.S.)	1.3 (F.S.)
230 324 V01	DN 16 ISO-KF	10^{-5}	1.33×10^{-3}	10^{-5}
		...	...	...
		0.1 (F.S.)	13.3322 (F.S.)	0.13 (F.S.)
230 325 V01	DN 16 CF-R	10^{-1}	1.33×10^1	1.33×10^{-1}
		...	...	...
		1000 (F.S.)	133'322 (F.S.)	1333 (F.S.)
230 326 V01	DN 16 CF-R	10^{-2}	1.33×10^0	10^{-2}
		...	...	...
		100 (F.S.)	13'332.2 (F.S.)	133 (F.S.)
230 327 V01	DN 16 CF-R	10^{-3}	1.33×10^{-1}	10^{-3}
		...	...	...
		10 (F.S.)	1'333.22 (F.S.)	13.3 (F.S.)
230 328 V01	DN 16 CF-R	10^{-4}	1.33×10^{-2}	10^{-4}
		...	...	...
		1 (F.S.)	133.322 (F.S.)	1.3 (F.S.)
230 329 V01	DN 16 CF-R	10^{-5}	1.33×10^{-3}	10^{-5}
		...	...	...
		0.1 (F.S.)	13.3322 (F.S.)	0.13 (F.S.)
230 330 V01	8 VCR®	10^{-1}	1.33×10^1	1.33×10^{-1}
		...	...	...
		1000 (F.S.)	133'322 (F.S.)	1333 (F.S.)

(continued)

(concluded)

Part number	Flange	Torr	Pascal	mbar
230 331 V01	8 VCR®	10 ⁻²	1.33×100	10 ⁻²
		... 100 (F.S.)	... 13'332.2 (F.S.)	... 133 (F.S.)
230 332 V01	8 VCR®	10 ⁻³	1.33×10 ⁻¹	10 ⁻³
		... 10 (F.S.)	... 1'333.22 (F.S.)	... 13.3 (F.S.)
230 333 V01	8 VCR®	10 ⁻⁴	1.33×10 ⁻²	10 ⁻⁴
		... 1 (F.S.)	... 133.322 (F.S.)	... 1.3 (F.S.)
230 334 V01	8 VCR®	10 ⁻⁵	1.33×10 ⁻³	10 ⁻⁵
		... 0.1 (F.S.)	... 13.3322 (F.S.)	... 0.13 (F.S.)
230 335 V01	½" tube	10 ⁻¹	1.33×10 ¹	1.33×10 ⁻¹
		... 1000 (F.S.)	... 133'322 (F.S.)	... 1333 (F.S.)
230 336 V01	½" tube	10 ⁻²	1.33×10 ⁰	10 ⁻²
		... 100 (F.S.)	... 13'332.2 (F.S.)	... 133 (F.S.)
230 337 V01	½" tube	10 ⁻³	1.33×10 ⁻¹	10 ⁻³
		... 10 (F.S.)	... 1'333.22 (F.S.)	... 13.3 (F.S.)
230 338 V01	½" tube	10 ⁻⁴	1.33×10 ⁻²	10 ⁻⁴
		... 1 (F.S.)	... 133.322 (F.S.)	... 1.3 (F.S.)
230 339 V01	½" tube	10 ⁻⁵	1.33×10 ⁻³	10 ⁻⁵
		... 0.1 (F.S.)	... 13.3322 (F.S.)	... 0.13 (F.S.)

The part number (No) can be taken from the product nameplate.
If not indicated otherwise in the legends, the illustrations in this document correspond to CTR 101 transmitter with the DN 16 ISO-KF vacuum connection. They apply to other vacuum connections by analogy.

Intended Use

The temperature controlled CERAVAC Transmitters of the CTR 101 series are intended for absolute pressure measurement of gases in their respective pressure ranges (→  3).

The transmitters can be operated in connection with a Leybold Controller or another appropriate measuring unit.

Function

A ceramic diaphragm is deflected by pressure. The deflection is measured capacitively and converted into an analog linear output signal by the digital electronics.

The output signal is independent of the gas type.

Very accurate pressure measurement is achieved by heating the sensor to a constant temperature of 45°C which results in a compensation of changes in the ambient conditions and a reduced deposition of process products and by-products in process applications.

Scope of Delivery

- 1× transmitter CTR 101 in clean room packaging
- 1× pin for adjusting settings via buttons
- 1× Calibration Test Report
- 1× Operating Manual German
- 1× Operating Manual English

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For cross-references within this document, the symbol (→  XY) is used, for cross-references to further documents, listed under literature, the symbol (→  [Z]).

1 Safety

1.1 Symbols Used



DANGER

Information on preventing any kind of physical injury.



WARNING

Information on preventing extensive equipment and environmental damage.



Caution

Information on correct handling or use. Disregard can lead to malfunctions or minor equipment damage.



Notice



Labeling

1.2 Personnel Qualifications



Skilled personnel

All work described in this document may only be carried out by persons who have suitable technical training and the necessary experience or who have been instructed by the end-user of the product.

1.3 General Safety Instructions

- Adhere to the applicable regulations and take the necessary precautions for the process media used.
Consider possible reactions with the product materials.
- Adhere to the applicable regulations and take the necessary precautions for all work you are going to do and consider the safety instructions in this document.
- Before beginning to work, find out whether any vacuum components are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.

Communicate the safety instructions to all other users.

1.4 Liability and Warranty

Leybold assumes no liability and the warranty becomes null and void if the end-user or third parties

- disregard the information in this document
- use the product in a non-conforming manner
- make any kind of interventions (modifications, alterations etc.) on the product
- use the product with accessories not listed in the product documentation.

The end-user assumes the responsibility in conjunction with the process media used.

Transmitter failures due to contamination are not covered by the warranty.

2 Technical Data

Measurement range	→ "Validity"
Accuracy ¹⁾	0.15% of reading
Temperature effect on zero	
0.1 F.S.	0.0050% F.S./ °C
1 ... 1100 F.S.	0.0025% F.S./ °C
Temperature effect on span	0.01% of reading / °C
Resolution	0.003% F.S.
Gas type dependence	none
Output signal analog (measurement signal)	
Measurement range	0 ... +10 V
Voltage range	-5 ... +10.24 V (limited to +10.24 V)
Relationship voltage-pressure	linear
Output impedance	0 Ω (short-circuit proof)
Loaded impedance	>10 kΩ
Response time ²⁾	
0.1 F.S.	130 ms
1 ... 1100 F.S.	30 ms
Identification	
Resistance R _{Ident}	13.2 kΩ referenced to supply common
Voltage	≤5 V
Remote Zero Adjust	digital input for zero adjust- ment with (→ 22) external switching contact
External switching contact	30 V (dc) / <5 mA (dc)
Pulse	>1 s ... <5 s

¹⁾ Non-linearity, hysteresis, repeatability at 25 °C ambient operating temperature without temperature effects after operation of 2 h.

²⁾ Increase 10 ... 90 % F.S.R.

Switching functions	SP1, SP2
Setting range	0 ... 99% F.S. (0 ... 9.9 V)
Hysteresis	1% F.S.
Relay contact	30 V (dc) / ≤0.5 A (dc) floating (NO)
closed	$p \leq p_{SP}$ (LED lit solid)
open	$p \geq p_{SP}$ (LED off)
Switching time	≤50 ms
Status relay	
Relay contact	30 V (dc) / ≤0.5 A (dc) connected to supply com- mon (pin 5)
closed	measurement mode warning
open	no supply voltage warming up error
RS232C interface	
Transmission rate	9600 baud
Data format	binary 8 data bits one stop bit no parity bit no handshake → "Power Connection"
For further information on the RS232C interface →  [3].	

Supply



DANGER

The transmitter may only be connected to power supplies, instruments or control devices that conform to the requirements of a grounded protective extra-low voltage (PELV) and limited power source (LPS), Class 2. The connection to the transmitter has to be fused.

Supply voltage at the transmitter	Class 2 / LPS +14 ... +30 V (dc) or ±15 V (±5%)
--------------------------------------	---

Ripple	≤1 V _{pp}
--------	--------------------

Power consumption while being heated	≤12 W
at operating temperature	≤8 W

The transmitter is protected against reverse polarity of the supply voltage and overload.

Electrical connection	15-pin D-sub, male
Sensor cable	15-pin plus shielding
Cable length	
Supply voltage 15 V	≤ 8 m (0.14 mm ² /conductor) ≤15 m (0.25 mm ² /conductor)
Supply voltage 24 V	≤43 m (0.14 mm ² /conductor) ≤75 m (0.25 mm ² /conductor)
Supply voltage 30 V	≤88 m (0.14 mm ² /conductor) ≤135 m (0.25 mm ² /conductor)

For longer cables, larger conductor cross-sections are required ($R_{\text{cable}} \leq 1.0 \Omega$).

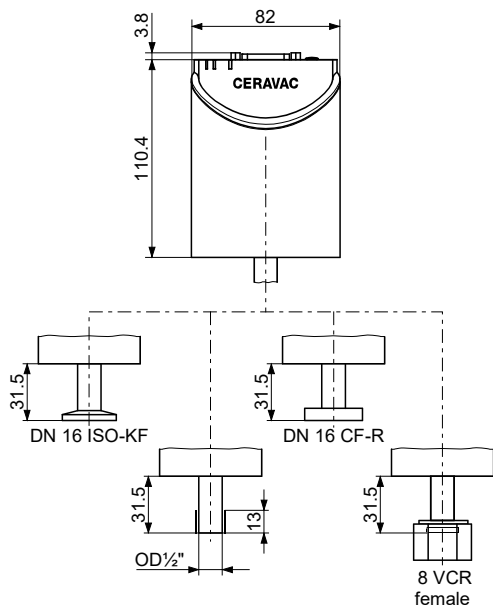
Grounding concept	→ "Power Connection"
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Materials exposed to vacuum	ceramics ($\text{Al}_2\text{O}_3 \geq 99.5\%$), stainless steel AISI 316L
-----------------------------	--

Internal volume	≤4.2 cm ³
-----------------	----------------------

Admissible pressure (absolute)	
1000 F.S.	4 bar
1 / 10 / 100 F.S.	2.6 bar
0.1 F.S.	1.3 bar
Bursting pressure (absolute)	6 bar
Admissible temperatures	
Storage	−40 °C ... +65 °C
Operation	+10 °C ... +40 °C
Bakeout	≤110 °C at the flange
Relative humidity	≤80% at temperatures ≤+31 °C, decreasing to 50% at +40°C
Use	indoors only, altitude up to 2000 m NN
Pollution degree	2
Degree of protection	IP 40

Dimensions [mm]

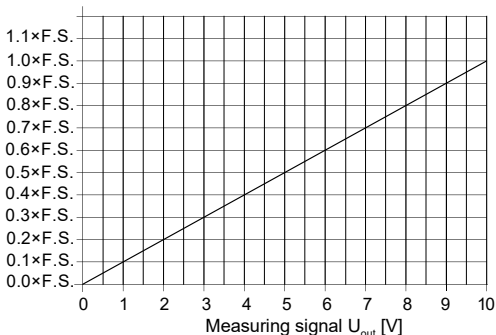


Weight

837 ... 897 g

Analog Measuring Signal vs. Pressure

Pressure p



$$p = (U_{\text{out}} / 10 \text{ V}) \times p(\text{F.S.})$$

Conversion Torr $\leftrightarrow$ Pascal

	Torr	mbar ³⁾	Pa ³⁾
c	1.00	$1013.25 / 760 = 1.3332\dots$	$101325 / 760 = 133.3224\dots$

Example: Transmitter with 10 Torr F.S.
Measuring signal $U_{\text{out}} = 6 \text{ V}$

$$\begin{aligned} p &= (6 \text{ V} / 10 \text{ V}) \times 10 \text{ Torr} \\ &= 0.6 \times 10 \text{ Torr} = \mathbf{6 \text{ Torr}} \end{aligned}$$

³⁾ Source: NPL (National Physical Laboratory)
Guide to the Measurement of Pressure and Vacuum,
ISBN 0904457x / 1998

3 Installation



WARNING



Fragile components

The ceramic sensor may be damaged by impacts. Do not drop the product and prevent shocks and impacts.



DANGER



Leaking process media

High-intensity mechanical, chemical or thermal impacts can cause leaks in the measuring sensor. Process media can thus leak and possibly cause hazards, if overpressure is in the vacuum system.

- Avoid high-intensity mechanical, chemical or thermal impacts and overpressure in the vacuum system.
- Take appropriate measures (e.g. shut off gas supply, extraction, leak test) to avoid hazards or damage due to leaking process media.

3.1 Vacuum Connection



DANGER



Overpressure in the vacuum system >1 bar
Injury caused by released parts and harm caused by escaping process gases can result if clamps are opened while the vacuum system is pressurized.
Do not open any clamps while the vacuum system is pressurized. Use the type clamps which are suited to overpressure.



DANGER



Overpressure in the vacuum system >2.5 bar
KF flange connections with elastomer seals (e.g. O-rings) cannot withstand such pressures. Process media can thus leak and possibly damage your health.
Use O-rings provided with an outer centering ring.



DANGER



Protective ground

Products that are not correctly connected to ground can be extremely hazardous in the event of a fault. Electrically connect the transmitter to the grounded vacuum chamber. This connection must conform to the requirements of a protective connection according to EN 61010:

- CF and VCR flanges fulfill this requirement.
- For transmitters with a KF flange, use a conductive metallic clamping ring.
- For transmitters with a $\frac{1}{2}$ " tube, take appropriate measures to fulfill this requirement.



Caution



Caution: vacuum component

Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.



Caution



Caution: dirt sensitive area

Touching the product or parts thereof with bare hands increases the desorption rate.

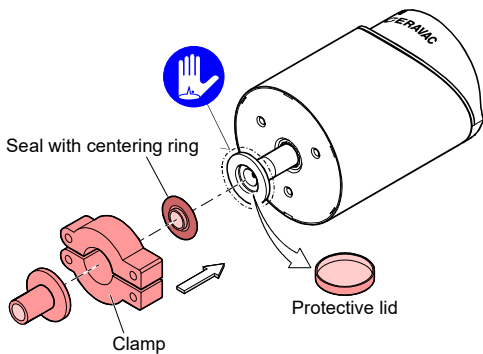
Always wear clean, lint-free gloves and use clean tools when working in this area.



Mount the transmitter so that no vibrations occur. The transmitter may be mounted in any orientation. To keep condensates and particles from getting into the measuring chamber preferably choose a horizontal to upright position.

If adjustment should be possible after the transmitter has been installed, be sure to install it so that the buttons can be accessed with a pin.

Remove the protective lid and connect the product to the vacuum system.



Keep the protective lid.

3.2 Power Connection



Make sure the vacuum connection is properly made (→ 15).



DANGER



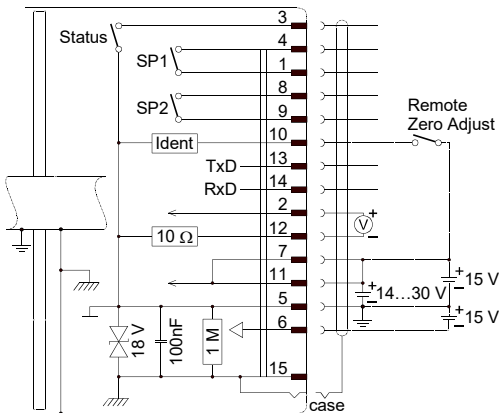
The transmitter may only be connected to power supplies, instruments or control devices that conform to the requirements of a grounded protective extra-low voltage (PELV) and limited power source (LPS), Class 2. The connection to the transmitter has to be fused.



Ground loops, differences of potential, or EMC problems may affect the measurement signal. For optimum signal quality, please do observe the following notes:

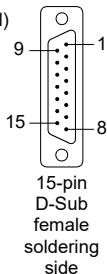
- Use an overall metal braided shielded cable. The connector must have a metal case.
- Connect the cable shield to ground at one side via the connector case. Make sure the connector case has direct contact to the cable's shield on its whole circumference. Do not connect the other side of the shield.
- Connect the supply common with protective ground directly at the power.
- Use differential measurement input (signal common and supply common conducted separately).
- Potential difference between supply common and housing ≤ 18 V (overvoltage protection).

If no sensor cable is available, make one according to the following diagram. Connect the sensor cable (cable length and conductor cross-sections → 11).



Electrical connection

- Pin 1, 4 Relay SP1, closing contact
- Pin 2 Signal output (measurement signal) or thresholds SP1/2
- Pin 3 Status
- Pin 5 Supply common
- Pin 6 Supply (-15 V)
- Pin 7, 11 Supply (+14 ... +30 V or +15 V)
- Pin 8, 9 Relay SP2, closing contact
- Pin 10 Transmitter identification or Remote Zero Adjust
- Pin 12 Signal common
- Pin 13 RS232, TxD
- Pin 14 RS232, RxD
- Pin 15 Housing (Chassis Ground)
- case Connector case



4 Operation

Put the transmitter into operation. If you are using a Leybold controller, define the measurement range.

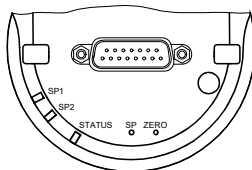
A warm-up time of at least ½ hour should be allowed; for precise pressure measurements a warm-up time of at least 2 hours is required.



If the gauge is used for fast downstream pressure control we recommend setting its signal filter to "fast".

The filter can be set via the RS232C interface (→ [1]).

4.1 Status Indication



LED	LED status	Meaning
<STATUS>	off	no supply voltage
	lit solid green	measurement mode
	blinking green	warning, over/underrange warning up
	short blinks	
	long blinks	
<SP1>	lit solid red	error
	lit green green	$p \leq \text{setpoint 1}$
	blinking green	waiting for setpoint 1 input
<SP2>	off	$p > \text{setpoint 1}$
	lit solid green	$p \leq \text{setpoint 2}$
	blinking green	waiting for setpoint 2 input
	off	$p > \text{setpoint 2}$

4.2 Zeroing the Transmitter

The transmitter is factory calibrated while "standing upright" (→ "Calibration Test Report").



We recommend performing a zero adjustment, when the transmitter is operated for the first time.

Due to long time operation or contamination, a zero drift could occur and zero adjustment may become necessary.

For adjusting the zero, operate the transmitter under the same constant ambient conditions and in the same mounting orientation as normally.

The output signal (measuring signal) is depending on the mounting orientation. The signal difference between the vertical and horizontal mounting orientation is:

F.S.	$\Delta U / 90^\circ$
1000 Torr/mbar	$\approx 2 \text{ mV}$
100 Torr/mbar	$\approx 10 \text{ mV}$
10 Torr/mbar	$\approx 50 \text{ mV}$
1 Torr/mbar	$\approx 300 \text{ mV}$
0.1 Torr/mbar	$\approx 1.8 \text{ V}$



If the transmitter is operated via a controller, the zero of the whole measuring system has to be adjusted on the controller: first, adjust the zero of the transmitter and then, the zero of the controller.

4.2.1 <ZERO> Adjustment



The zero can be adjusted via

- the <ZERO> button on the transmitter,
- the digital input "Remote Zero": Briefly apply the supply voltage to pin 10 (pulse →  9),
- the RS232C interface (→  [1]),



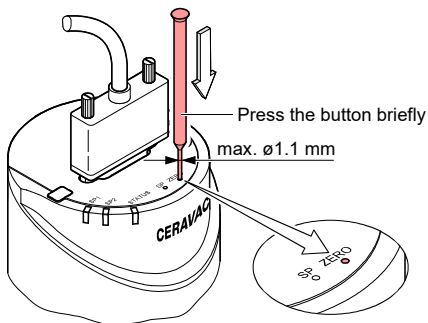
While the transmitter is being heated and/or under atmospheric pressure, the zeroing function is locked in order for operating errors to be prevented.

- 1 Evacuate the transmitter to a pressure according to the table below:

F.S.		Recommended final pressure for zero adjustment		
1000	Torr/mbar	$<5 \times 10^{-2}$ Torr	$<6.65 \times 10^0$ Pa	$<5 \times 10^{-2}$ mbar
100	Torr/mbar	$<5 \times 10^{-3}$ Torr	$<6.65 \times 10^{-1}$ Pa	$<5 \times 10^{-3}$ mbar
10	Torr/mbar	$<5 \times 10^{-4}$ Torr	$<6.65 \times 10^{-2}$ Pa	$<5 \times 10^{-4}$ mbar
1	Torr/mbar	$<5 \times 10^{-5}$ Torr	$<6.65 \times 10^{-3}$ Pa	$<5 \times 10^{-5}$ mbar
0.1	Torr/mbar	$<5 \times 10^{-6}$ Torr	$<6.65 \times 10^{-4}$ Pa	$<5 \times 10^{-6}$ mbar

If the final pressure is too high for zero adjustment ($>25\%$ of the F.S.), the zero cannot be reached and the **<STATUS>** LED blinks green. If this is the case, activate the factory setting and adjust the zero again ($\rightarrow$ 29).

- 2 Operate the transmitter for at least 1 hour (until the signal is stable).
- 3 Briefly press the **<ZERO>** button with a pin (max. $\varnothing 1.1$ mm). The zero adjustment runs automatically. The **<STATUS>** LED blinks until the adjustment (duration ≤ 8 s) is completed.





After zero adjustment, the transmitter automatically returns to the measurement mode. The <RUN> LED lit solid green.

The <STATUS> LED blinks green if

- the signal output is negative ($< -20 \text{ mV}$) when the final pressure has been attained
- the zero adjustment has failed.

4.2.2 <ZERO> Adjustment with Ramp Function

The ramp function allows to adjust the zero at a known reference pressure within the measurement range of the transmitter.

It also permits to adjust an offset of the characteristic curve in order to

- compensate for the offset of the measuring system or
- obtain a slightly positive zero for a $0 \dots 10 \text{ V}$ AD converter.

The offset should not exceed 2% of the F.S. ($+200 \text{ mV}$). At a higher positive offset, the upper limit of the measurement range is exceeded.



Zero adjustment using the ramp function can be performed via

- the <ZERO> button on the transmitter,
- the RS232C interface ($\rightarrow$ [1]).



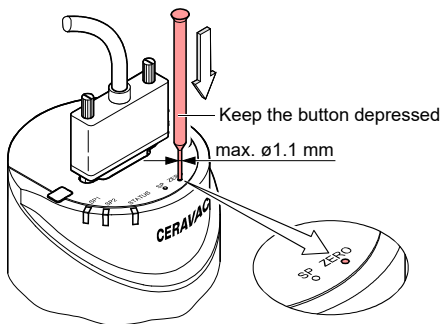
Recommended procedure for adjusting the offset of a measuring system: $\rightarrow$ Notice 22.

1

Operate the transmitter for at least 1 hour (until the signal is stable).

2

Push the <ZERO> button with a pin (max. $\varnothing 1.1 \text{ mm}$) and keep it depressed. The <STATUS> LED starts blinking. After 5 s, the zero adjustment value, starting at the current output value, keeps continually changing (ramp) until the button is released or until the setting limit (max. 25% F.S.) is reached. The corresponding output signal is delayed by about 1 s.



3 Push the <ZERO> button again:

Fine adjustment within 0...3 s:	the zero adjustment value changes by one unit (push <ZERO> button in intervals of 1 s)
Change of direction within 3...5 s:	the zero adjustment changes its direction (the flashing frequency of the <RUN> LED changes briefly)



If the <ZERO> button is released for more than 5 s, the transmitter returns to the measurement mode.

The <STATUS> LED blinks green if the signal output is negative (< -20 mV).

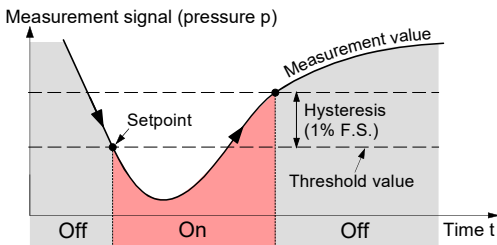
4.3 Switching Functions

The two switching functions can be set to any pressure within the measurement range of the transmitter (→ 14).

The current setpoint setting

- is output at the D-Sub connector instead of the measurement signal and can be measured with a voltmeter after the <SP> button is pressed, or
- can be read/written via the RS232C interface.

If the pressure is lower than the setpoint, the corresponding LED (<SP1> or <SP2>) is lit solid and the corresponding relay is energized.



4.3.1 Adjusting the Setpoints



The setpoints can be adjusted via

- the buttons on the transmitter,
- the RS232C interface (→ [1]).



DANGER



Malfunction

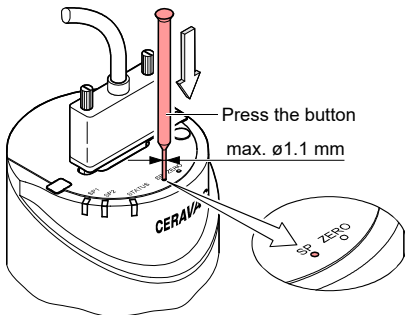
If processes are controlled via the signal output, keep in mind that by pushing the <SP> button the measurement signal is suppressed and the corresponding threshold value is output instead. This can cause malfunctions.

Push the <SP> button only if you are sure that no damages can arise from a malfunction.

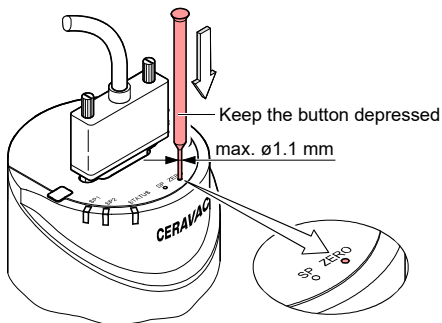
Adjusting Setpoint <1>

1

Push the <SP> button with a pin (max. $\varnothing 1.1$ mm). The transmitter changes to the switching function mode and outputs the current threshold value at the measurement value output for about 10 s (LED <1> blinks).



- 2** For changing the threshold value, push the <ZERO> button and keep it depressed. The threshold keeps changing from the current value (ramp) until the button is released or until the limit of the setting range is reached.



- 3** Push the <ZERO> button again:

Fine adjustment within 0...3 s:	the zero adjustment value changes by one unit
Change of direction within 3...5 s:	the zero adjustment changes its direction (the blinking frequency of the <STATUS> LED changes briefly)



If the <ZERO> button is released for more than 5 s, the transmitter returns the measurement mode.



The upper threshold is automatically set 1% F.S. above the lower one (hysteresis).

Adjusting Setpoint <2>

Push the <SP> button twice (the LED <2> blinks). The adjustment procedure is the same as for setpoint <1>.

4.4 Activating the Factory Setting (Factory Reset)

All user defined parameters (e.g. zero, filter) are restored to their default values.

Loading the default parameters:

- 1 Put the transmitter out of operation.
- 2 Keep the <ZERO> button depressed for at least 5 s while the transmitter is being put into operation (Power ON).

5 Deinstallation



WARNING



Fragile components

The ceramic sensor may be damaged by impacts. Do not drop the product and prevent shocks and impacts.



DANGER



Contaminated parts

Contaminated parts can be detrimental to health and environment.

Before beginning to work, find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.



Caution



Vacuum component

Dirt and damages impair the function of the vacuum component.

When handling vacuum components, take appropriate measures to ensure cleanliness and prevent damages.



Caution



Dirt sensitive area

Touching the product or parts thereof with bare hands increases the desorption rate.

Always wear clean, lint-free gloves and use clean tools when working in this area.

- 1 Vent the vacuum system.
- 2 Put the transmitter out of operation.
- 3 Unfasten the lock screws and disconnect the sensor cable.
- 4 Remove the transmitter from the vacuum system and install the protective lid.

6 Maintenance, Repair

Under clean operating conditions, the product requires no maintenance.



Transmitter failures due to contamination are not covered by the warranty.
We recommend checking the zero at regular intervals (→  22).

Leybold assumes no liability and the warranty becomes null and void if any repair work is carried out by the end-user or third parties.

7 Returning the Product



WARNING



Forwarding contaminated products

Contaminated products (e.g. radioactive, toxic, caustic or microbiological hazard) can be detrimental to health and environment.

Products returned to Leybold should preferably be free of harmful substances. Adhere to the forwarding regulations of all involved countries and forwarding companies and enclose a duly completed declaration of contamination ^{*)}.

^{*)} Form under www.leybold.com

Components contaminated by microbiological, explosive or radioactive products will not be accepted without written evidence of decontamination.

Products that are not clearly declared as "free of harmful substances" are decontaminated at the expense of the customer.

Products not accompanied by a duly completed declaration of contamination are returned to the sender at his own expense.

8 Disposal



DANGER



Contaminated parts

Contaminated parts can be detrimental to health and environment.

Before beginning to work, find out whether any parts are contaminated. Adhere to the relevant regulations and take the necessary precautions when handling contaminated parts.



WARNING



Substances detrimental to the environment

Products or parts thereof (mechanical and electric components, operating fluids etc.) can be detrimental to the environment.

Dispose of such substances in accordance with the relevant local regulations.

Separating the components

After disassembling the product, separate its components according to the following criteria:

- Contaminated components

Contaminated components (radioactive, toxic, caustic or biological hazard etc.) must be decontaminated in accordance with the relevant national regulations, separated according to their materials, and disposed of.

- Other components

Such components must be separated according to their materials and recycled.

9 Literature

-  [1] www.leybold.com
Interface Manual
Interface RS232C
17200961_001_00 (German)
17200961_002_00 (English)
Leybold GmbH, D-50968 Köln, Deutschland

ETL Certification



ETL LISTED

The product CTR 101

- conforms to the UL Standard
UL 61010-1
- is certified to the CSA Standard
CSA C22.2 # 61010-1

EU Declaration of Conformity



EU Declaration of Conformity



This declaration of conformity is issued under the sole responsibility of the manufacturer:

Leybold GmbH
Bonner Strasse 498
D-50968 Köln
Germany

Documentation Officer
T: +49(0) 221 347 0
documentation@leybold.com

- *Vacuum Gauge*
- *CERAVAC Transmitters*
- *CTR 100 / CTR 101 Family*

Is in conformity with the relevant Union harmonisation legislation:

- | | |
|------------|---|
| 2014/30/EU | Electromagnetic compatibility (EMC) directive
Class B Emissions, Industrial Immunity |
| 2011/65/EU | Restriction of certain hazardous substances (RoHS) directive
as amended by Delegated Directive (EU) 2015/863 |

Based on the requirements of relevant harmonised standards and technical documentation:

- | | |
|----------------------------|--|
| EN 61010-1:2010 +A1:2019 | Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements |
| EN 61326-1:2013 | Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements |
| EN 61000-6-2:2005 | Electromagnetic Compatibility (EMC) - Part 6-2: Generic Industrial Immunity Standard |
| EN 61000-6-3:2007 +A1:2011 | Electromagnetic Compatibility (EMC) - Part 6-3: Generic Residential Emission Standard |
| EN IEC 63000:2018 | Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances |

This declaration, based on the requirements of the listed Directives and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: 2022-06-15

You must retain the signed legal declaration for future reference

This declaration becomes invalid if modifications are made to the product without prior agreement.

*Ian Keech – VP Engineering, Scientific Vacuum Division
Burgess Hill*

*Axel Guddas – General Manager
Product Company Cologne*

UKCA Declaration of Conformity



Declaration of Conformity

Leybold GmbH
Bonner Strasse 498
D-50968 Köln
Germany

Documentation Officer
Innovation Drive
Burgess Hill
West Sussex
RH15 9TW
documentation@leybold.com

This declaration of conformity is issued under the sole responsibility of the manufacturer.

- *Vacuum Gauge*
- *CERAVAC Transmitters*
- *CTR 100 / CTR 101 Family*

The object of the declaration described above is in conformity with relevant statutory requirements:

Supply of Machinery (Safety) Regulations 2008
The objectives of the Electrical Equipment (Safety) Regulations 2016 are governed by Annex 1 1.5.1 of this regulation.
Electrical Equipment (Safety) Regulations 2016
Electromagnetic Compatibility Regulations 2016
Class B Emissions, Industrial Immunity
Batteries and Accumulators (Placing on the Market) Regulations 2008
Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Relevant designated standards or technical specifications are as follows:

EN 61010-1:2010 +A1:2019	Safety requirements for electrical equipment for measurement, control and laboratory use. General requirements
EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements
EN 61000-6-2:2005	Electromagnetic Compatibility (EMC) - Part 6-2: Generic Industrial Immunity Standard
EN 61000-6-3:2007 +A1:2011	Electromagnetic Compatibility (EMC) - Part 6-3: Generic Residential Emission Standard
EN IEC 63000:2018	Technical documentation for the assessment of electrical and electronic products with respect to the restriction of hazardous substances

This declaration, based on the requirements of the listed Statutory Instruments and EN ISO/IEC 17050-1, covers all product serial numbers from this date on: 2022-06-15

You must retain the signed legal declaration for future reference

This declaration becomes invalid if modifications are made to the product without prior agreement.

Signed for and on behalf of Leybold GmbH

Ian Keech
Ian Keech – VP Engineering, Scientific Vacuum Division
Burgess Hill

Axel Guddas
Axel Guddas – General Manager
Product Company Cologne



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