# Leybold

## **CERAVAC<sup>®</sup>**

#### **Transmitter**

CTR 101 N Short form manual 300544677\_002\_C0

#### **Part numbers:**

320V02	230	330V02
321V02	230	331V02
322V02	230	332V02
323V02	230	333V02
324V02	230	334V02
325V02	230	335V02
326V02	230	336V02
327V02	230	337V02
328V02	230	338V02
329V02	230	339V02
	20V02 21V02 22V02 22V02 23V02 24V02 25V02 26V02 27V02 28202 28V02 29V02	320V02230321V02230322V02230323V02230324V02230325V02230326V02230327V02230328V02230329V02230

**RoHS** Compliant



#### Safety: Symbols used

STOP Critical

Failure to read message could result in damage to the equipment.

#### **Attention**

Calls attention to important procedures, practices, or conditions.

### **Caution**

Refer to manual. Failure to read message could result in personal injury or serious damage to the equipment or both.

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#### **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 or wear and tear are not covered by the warranty.

#### **Package Contents**

The CERAVAC<sup>®</sup> CTR 101 N transmitter package contains these items:

- 1 pc. CERAVAC<sup>®</sup> CTR 101 N transmitter
- 1 pc. Short form manual (P/N 300544677\_002\_C0)
- 1 pc. Calibration sheet
- 1 pc. Pin for adjusting settings via button

If any items are missing, contact Leybold.

This short form manual provides the basic information for simple use and setup. For system integration and advanced setup refer to the complete Operating Manual 300544660 and RS232C manual 300544665. These manuals can be found at the Leybold webpage www.leybold.com.

#### Description

The CERAVAC<sup>®</sup> CTR 101 N transmitter offers a 4-decade measuring range and is based on measurement of capacitance between a diaphragm and electrode. It provides:

- Insensitivity to gas composition same output for all gases and mixtures
- Analog voltage output plus RS232 digital signals
- Two (2) independently-adjusted trip relays.
- Standalone use or with Graphix controllers (P/N: 230680V01, 230681V01, 230682V01)

#### **Technical Data**

1000, 100, 10, 1, 0.1 Torr 45°C
1 - 1000 Torr ± 0.10% of reading; < 1 Torr 0.15%
+14 – 30 VDC; +24 VDC nominal
< 9.0 Watt
0 – 10 VDC linear
10 kΩ
16 Hz
0
Inconel <sup>®</sup> and Incoloy <sup>®</sup> nickel alloy. Fittings are
built from 300-series stainless steel.
6.83 cm <sup>3</sup> with NW16-KF fitting
Plated ABS plastic, 94V-0
550 g with NW16-KF fitting
10° to 40°C (50° to 104°F)
50°C (122°F), fitting only

(1) Accuracy specification includes non-linearity, hysteresis, and non-repeatability

#### **Calibration and Adjustment**

The CEREVAC® CTR 100 N transmitter is factory calibrated when delivered, but should be zeroed before operation. Refer to Instruction Manual for further details.

#### **Measurement Range**

Full Scale – Torr	Minimum Detectable Pressure – Torr
1000	1.00E-01
100	1.00E-02
20	2.00E-03
10	1.00E-03
2.0	2.00E-04
1.0	1.00E-04
0.1	1.00E-05

#### Installation

Install the CERAVAC<sup>®</sup> CTR 101 N transmitter away from pumps, gas sources, air streams, and where vibration is minimized to give the most representative and stable pressure measurement. The CERAVAC<sup>®</sup> CTR 101 N transmitter can be mounted in any orientation without compromising accuracy and performance, although mounting it vertically with its inlet port pointing up is not recommended due to the possibility of contamination. Refer to the complete Operating Manual 300544660 for installation specifications and recommendations.



#### **STOP** Critical

The CTR 101 N is not intended for continuous use in corrosive or explosive environments. Refer to materials exposed to vacuum for process compatibility.

#### **Electrical Connection**

Use a cable with a female 15 pin D-sub miniature connector with strain relief to ensure proper electrical connection and to reduce stress on the connectors.

To comply with EN61326-1 immunity requirements, use a braided, shielded cable. Connect the braid to the metal hoods at both ends of the cable with the end for power supply connected to earth ground.



#### **Attention**

Ensure a low impedance electrical connection between the CTR 101 N transmitter body and the grounded vacuum system to shield the sensor from external electromagnetic sources.

#### **Electrical Connector (15 pin male D-sub miniature)**



#### **PIN Description**

- 1 Trip relay 1 pin
- 2 Analog output signal (0 10 V)
- 3 Reserved
- 4 Trip relay 1 pin
- 5 Power return for +24VDC
- 6 Reserved
- 7 +24VDC input voltage
- 8 Trip relay 2 pin
- 9 Trip relay 2 pin
- 10 Transmitter identification
- 11 +24VDC input voltage (alt)
- 12 Output signal return
- 13 RS232, TxD
- 14 RS232, RxD
- 15 Chassis (earth) ground

#### **Analog Pressure Output**

The 0 – 10 VDC analog voltage output provides a linear output such that at 100% of the CERAVAC<sup>®</sup> CTR 101 N transmitter's measurement range, its output is 10.00 VDC. Connect the signal to a differential input.



#### Caution

Do not connect the negative side of the analog output to the power supply return or to any other ground. The voltage drop from supply current will produce errors in the analog output.

The graph below provides the relationship between percentage of the transmitter's fullscale measurement range and its analog output signal.



#### **Trip Relay Settings**

Trip relays 1 and 2 can be set for both value and direction. To adjust the setpoint value for TP1, push the SP button once to enter the setting mode. Then push the ZERO button to adjust the pressure setting by one unit for each push. When completed, stop pushing the ZERO button for 5 seconds. To adjust the TP2 setpoint, push the SP button twice to enter the setting mode, and follow the same process as described for TP1.

To change the direction of either trip point, push the ZERO button once and then again after 3 – 5 seconds.





# CE

#### **EC Declaration of Conformity**

The manufacturer:

Oerlikon Leybold Vacuum GmbH Bonner Strasse 498, D-50968 Cologne, Germany

herewith declares that the products specified and listed below which we have placed on the market, comply with the applicable EC Council Directives.

This declaration becomes invalid if modifications are made to the product.

Compliance with the EMC Directives requires that the components are installed within a system or machine in a manner adapted to EMC requirements.

Product designation:	CERAVAC Transmitter
Type designation:	CTR100N, CTR101N
Catalogue No:	230300V02, 230301V02, 230302V02, 230303V02, 230304V02, 230305V02, 230306V02, 230307V02, 230308V02, 230309V02, 230310V02, 230311V02, 230312V02, 230313V02, 230314V02, 230315V02, 230316V02, 230317V02, 230318V02, 230319V02, 230320V02, 230321V02, 230322V02, 230323V02, 230324V02, 230325V02, 230326V02, 230327V02, 230328V02, 230329V02, 230330V02, 230331V02, 230332V02, 230333V02, 230334V02, 230335V02, 230336V02, 230337V02, 230338V02, 230339V02, 230340V02

The products complies to the following European Council Directives:

Electromagnetic Compatibility (2004/108/EC)

#### The following harmonized standards have been applied:

•	EN 61326-1:2013	Electrical equipment for measurement, control and laboratory use EMC requirements – Part 1: General requirements Immunity: controlled EM enviroments
•	EN 55011:2009/A1:2010	Industrial, scientific and medical equipment Radio-frequency disturbance characteristics Limits and methods of measurement Group 1 Class B

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Cologne, dated 25.08.2015

ppa. Harald Udelhoven Head of Productline High Vacuum

Cologne, dated 25.08.2015

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ppa. Dr. Monika Mattern-Klosson Head of Quality Management

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