

# Active Sensors

## CERAVAC Transmitters

### CTR 100 N and CTR 101 N



CERAVAC Transmitter CTR 100 N (left) und CERAVAC Transmitter CTR 101 N (right)

The CERAVAC transmitters with an advanced all-welded INCONEL® and stainless steel sensor and microprocessor-based electronics offer excellent accuracy and reproducibility. The CTR 100 N and CTR 101 N allow gas type independent pressure measurements and are able to tolerate bursts of pressure without suffering physical damage or calibration shifts. The robust sensor is suited for the most corrosive processes as the sensor is highly resistant to corrosion from common process chemicals. The sensor of the CTR 101 N is internally heated and regulated to 45 °C to offer full-scale pressure ranges from 1000 to 0.1 Torr.

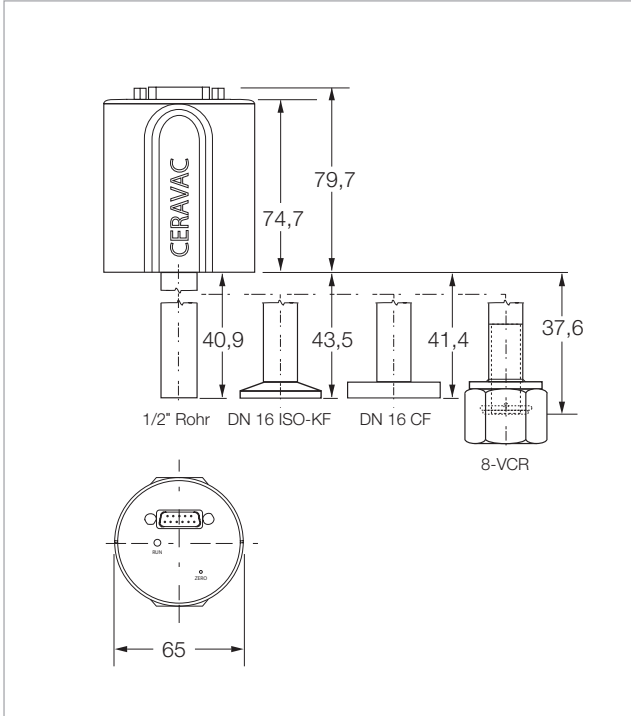
#### Advantages to the User

- Excellent accuracy and long-term stability
- Very good temperature compensation regardless of ambient conditions
- Highly resistant against corrosion and aggressive gases
- Fast and accurate response to pressure changes
- Improved reliability by high overpressure rating
- Serial Interface (RS 232 protocol)
- Zero adjust push button
- Optional heated (45 °C) version offers 2x better accuracy

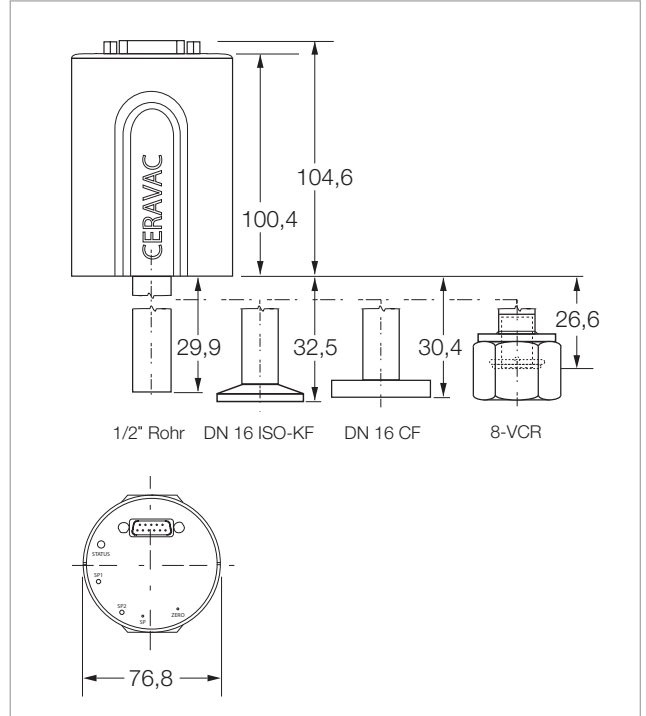
#### Typical Applications

- General vacuum measurement and control with very low measurement uncertainty
- Fore and medium vacuum pressure measurement
- Research & Development
- System process control
- Chemical and Semiconductor processes
- LED and solar cell manufacturing
- Physical Vapor Deposition (PVD)
- Reference sensor for calibration systems

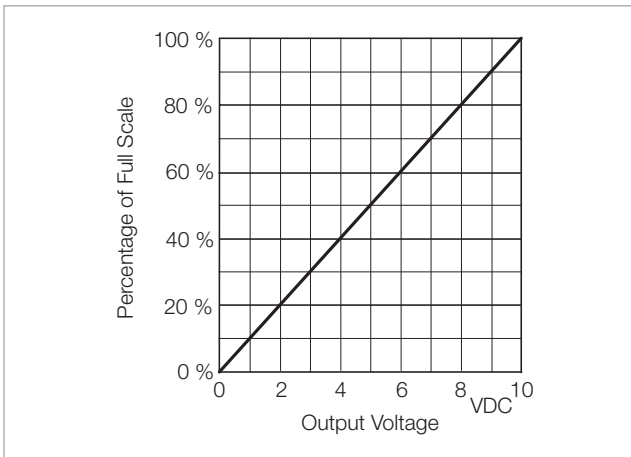
INCONEL® is a registered trademark of Inco Alloys International, Inc.



Dimensional drawing for the CERAVAC Transmitter CTR 100 N (mm)



Dimensional drawing for the CERAVAC Transmitter CTR 101 N (mm)



Characteristic of the CERAVAC Transmitter CTR 100 N and CTR 101 N

## Technical Data

## CERAVAC Transmitter

### CTR 100 N (Temperature Compensated)

### CTR 101 N (45 °C heated)

Full scale (FS) / Measurement range		0.1 Torr / $1 \times 10^{-5}$ to 0.1 Torr 1 Torr / $1 \times 10^{-4}$ to 1 Torr 10 Torr / $1 \times 10^{-3}$ to 10 Torr 20 Torr / $2 \times 10^{-3}$ to 20 Torr 100 Torr / 0.01 to 100 Torr 1000 Torr / 0.1 to 1000 Torr	0.1 Torr / $1 \times 10^{-5}$ to 0.1 Torr 1 Torr / $1 \times 10^{-4}$ to 1 Torr 10 Torr / $1 \times 10^{-3}$ to 10 Torr – 100 Torr / 0.01 to 100 Torr 1000 Torr / 0.1 to 1000 Torr
Measurement uncertainty		0.2% ± temperature effect 0.5% ± temperature effect (0.1 Torr)	0.12% ± temperature effect 0.15% ± temperature effect (0.1 Torr)
Sensor Measurement principle		INCONEL® membrane Capacitance diaphragm gauge	INCONEL® membrane Capacitance diaphragm gauge
Supply voltage	V DC	+14 to +30	+14 to +30
Power consumption	W	≤ 1	≤ 11 (at operating temperature ≤ 8)
Electrical connection		D-Sub 15 PIN	D-Sub 15 PIN
Analog output Measurement range	V	0 – 10	0 – 10
Interface		RS 232	RS 232
Setpoints		0	2
Status indicators		LED	LED
Max. cable length	m	30	30
Max. overrange pressure	bar (hPa)	3.1 (3100)	3.1 (3100)
Operating temperature range	°C (°F)	+15 to +50	+15 to +40
Storage temperature range	°C (°F)	-20 to +80	-20 to +80
Max. bakeout temperature	°C (°F)	Not bakeable	Not bakeable
Max. rel. humidity	% n.c.	25 to 95	25 to 95
Installation orientation		Any	Any
Wetted part material		INCONEL®, Stainless steel 316	INCONEL®, Stainless steel 316
Dead volume, approx.	cm <sup>3</sup>	6.29	6.29
Weight	g (lbs)	513 (0.11)	669 (0.15)
Protection class	IP	40	40
CE certification		EMC Directive 2014/30/EEC	EMC Directive 2014/30/EEC
Controller type		GRAPHIX ONE / TWO / THREE	GRAPHIX ONE / TWO / THREE
Temperature effects Zero of FS	% / °C	0.005 (1000/100/20/10 Torr) 0.015 (1 Torr) 0.02 (0.1 Torr)	0.0025 (1000/100/10/1 Torr) 0.005 (0.1 Torr)
Span of reading	% / °C	0.01 (1000/100/20/10/1 Torr) 0.03 (0.1 Torr)	0.01 (1000/100/10/1 Torr) 0.03 (0.1 Torr)
Response time (10% to 90% FS)	ms	40 / 80 (1 Torr) / 120 (0.1 Torr)	40 / 80 (1 Torr) / 120 (0.1 Torr)

## Ordering Information

## CERAVAC Transmitter

### CTR 100 N

### CTR 101 N

	Part No.	Part No.
DN 16 ISO-KF		
1000 Torr	<b>230300V02</b>	<b>230320V02</b>
100 Torr	<b>230301V02</b>	<b>230321V02</b>
20 Torr	<b>230340V02</b>	-
10 Torr	<b>230302V02</b>	<b>230322V02</b>
1 Torr	<b>230303V02</b>	<b>230323V02</b>
0.1 Torr	<b>230304V02</b>	<b>230324V02</b>
DN 16 CF-R		
1000 Torr	<b>230305V02</b>	<b>230325V02</b>
100 Torr	<b>230306V02</b>	<b>230326V02</b>
10 Torr	<b>230307V02</b>	<b>230327V02</b>
1 Torr	<b>230308V02</b>	<b>230328V02</b>
0.1 Torr	<b>230309V02</b>	<b>230329V02</b>
Cajon 8-VCR		
1000 Torr	<b>230310V02</b>	<b>230330V02</b>
100 Torr	<b>230311V02</b>	<b>230331V02</b>
10 Torr	<b>230312V02</b>	<b>230332V02</b>
1 Torr	<b>230313V02</b>	<b>230333V02</b>
0.1 Torr	<b>230314V02</b>	<b>230334V02</b>
1/2" Tube		
1000 Torr	<b>230315V02</b>	<b>230335V02</b>
100 Torr	<b>230316V02</b>	<b>230336V02</b>
10 Torr	<b>230317V02</b>	<b>230337V02</b>
1 Torr	<b>230318V02</b>	<b>230338V02</b>
0.1 Torr	<b>230319V02</b>	<b>230339V02</b>
Calibration	See Section "Miscellaneous", paragraph "Leybold calibration service"	See Section "Miscellaneous", paragraph "Leybold calibration service"
Operating Units		
GRAPHIX ONE	<b>230680V01</b>	<b>230680V01</b>
GRAPHIX TWO	<b>230681V01</b>	<b>230681V01</b>
GRAPHIX THREE	<b>230682V01</b>	<b>230682V01</b>
Connection cable, Sub-D 15-way female to Sub-D 15-way male, shielded		
5 m	<b>Type C</b> <b>124 55</b>	<b>Type C</b> <b>124 55</b>
10 m	<b>230 022</b>	<b>230 022</b>
15 m	<b>124 56</b>	<b>124 56</b>
20 m	<b>124 57</b>	<b>124 57</b>
30 m	<b>124 58</b>	<b>124 58</b>