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

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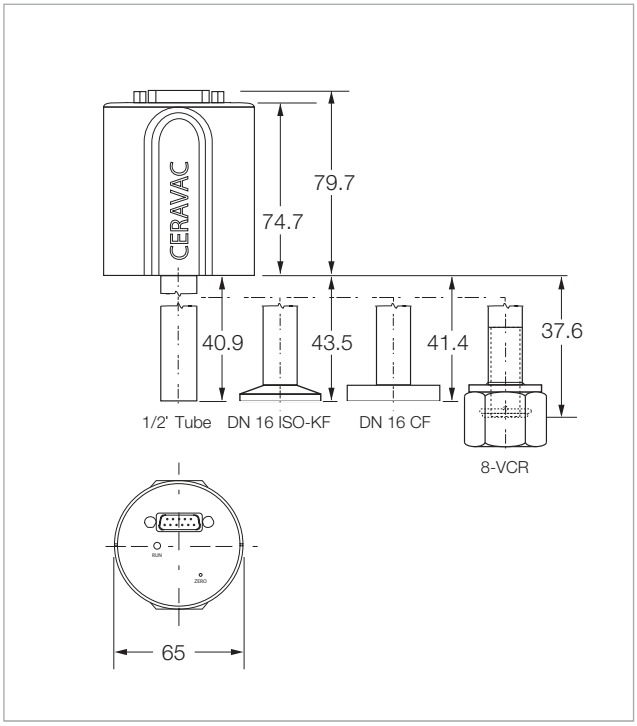
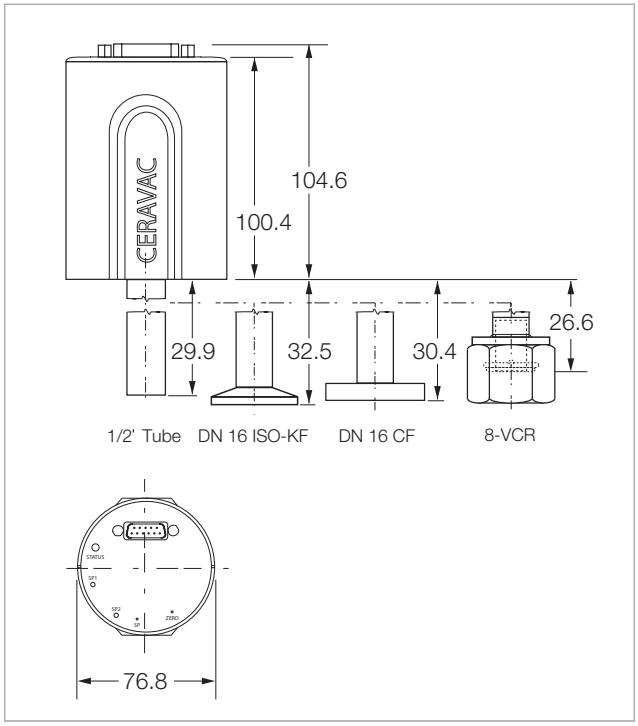
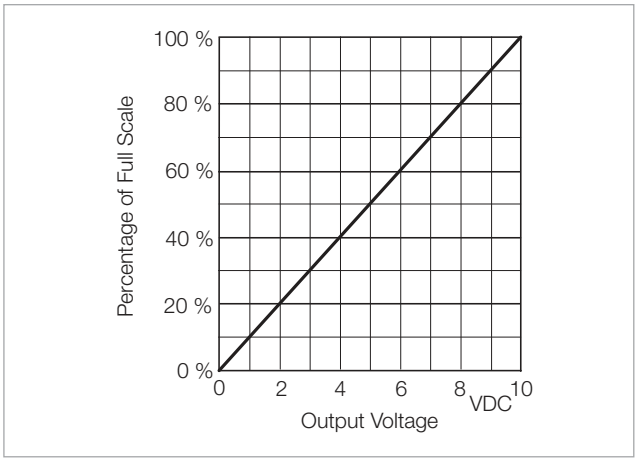


Dimensional drawing for the CERAVAC Transmitter CTR 100 N (mm)



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 x 10^{-5} – 0,1 Torr 1 Torr / 1 x 10^{-4} – 1 Torr 10 Torr / 1 x 10^{-3} – 10 Torr 20 Torr / 2 x 10^{-3} – 20 Torr 100 Torr / 0,01 – 100 Torr 1000 Torr / 0,1 – 1000 Torr	0,1 Torr / 1 x 10^{-5} – 0,1 Torr 1 Torr / 1 x 10^{-4} – 1 Torr 10 Torr / 1 x 10^{-3} – 10 Torr – 100 Torr / 0,01 – 100 Torr 1000 Torr / 0,1 – 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	
Supply voltage	**V DC**	+14 to +30	
Power consumption	**W**	≤ 1	≤ 11 (at operating temperature ≤ 8)
Electrical connection		15-pol. Sub-D	
Analog output measurement range	**V**	0 to 10	
Interface		RS 232	
Setpoints		0	2
Status indicators		LED	
Max. cable length	**m**	30	
Max. overrange pressure	**bar (hPa)**	3.1 (3100)	
Operating temperature range	**°C (°F)**	+15 to +50	+15 to +40
Storage temperature range	**°C (°F)**	-20 to +80	
Max. bakeout temperature	**°C (°F)**	Not bakeable	
Max. rel. humidity	**% n.c.**	25 to 95	
Installation orientation		Any	
Wetted part material		INCONEL®, Stainless steel 316	
Dead volume, approx.	**cm^3**	6.29	
Weight	**g (lbs)**	513 (0.11)	669 (0.15)
Protection class	**IP**	40	
CE certification		EMC Directive 2014/30/EEC	
Controller type		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)	

Ordering Information

	CERAVAC Transmitter	
	CTR 100 N	CTR 101 N
	Part No.	Part No.
DN 16 ISO-KF		
1000 Torr	230300V02	230320V02
100 Torr	230301V02	230321V02
20 Torr	230340V02	–
10 Torr	230302V02	230322V02
1 Torr	230303V02	230323V02
0.1 Torr	230304V02	230324V02
DN 16 CF-R		
1000 Torr	230305V02	230325V02
100 Torr	230306V02	230326V02
10 Torr	230307V02	230327V02
1 Torr	230308V02	230328V02
0.1 Torr	230309V02	230329V02
Cajon 8-VCR		
1000 Torr	230310V02	230330V02
100 Torr	230311V02	230331V02
10 Torr	230312V02	230332V02
1 Torr	230313V02	230333V02
0.1 Torr	230314V02	230334V02
1/2" Tube		
1000 Torr	230315V02	230335V02
100 Torr	230316V02	230336V02
10 Torr	230317V02	230337V02
1 Torr	230318V02	230338V02
0.1 Torr	230319V02	230339V02
Calibration	See Section “Miscellaneous”, paragraph “Leybold calibration service”	
Operating Units		
GRAPHIX ONE	230680V01	
GRAPHIX TWO	230681V01	
GRAPHIX THREE	230682V01	
Connection cable, Sub-D 15-way female to Sub-D 15-way male, shielded	Type C	
5 m	124 55	
10 m	230 022	
15 m	124 56	
20 m	124 57	
30 m	124 58	