

CT-100 Active Rough Vacuum Gauge

Varian's new rough vacuum gauge delivers Pirani gauge performance, at lower cost, in a simple, durable design.



- **Rapid Response**

Pirani-like **response time of 0.2 seconds** makes the CT-100 ideal for high productivity applications where process steps are critically time-dependent. Rapid response time enables fast-acting valves to protect turbo pumps from sudden inrush of gas.

Applications

- **Analytical Instrumentation Applications**
The CT-100 is ideal for mass spectrometers and surface analysis equipment. Two set points on a single gauge saves system cost and space.
- **Industrial Applications**
The CT-100's robust sensing element withstands high gas loads and its durable design is ideal for industrial applications including e-beam welding, vacuum furnaces, evaporating systems and degassing ovens.
- **Loadlocks**
CT-100's rapid 0.2 second response time and excellent repeatability make it the ideal choice for loadlock applications.
- **Other general-purpose applications, requiring pressure control or pressure sequencing in the rough vacuum range.**

- **Versatile**

Two user-defined set points per gauge allow the triggering of multiple process steps, alarms, or other pressure-related conditions.

Selectable pressure range offers accurate and repeatable readings precisely where it is most critical to the user.

Operates over the full rough pressure spectrum, (1×10^{-4} Torr up to 100 Torr; 1.33×10^{-4} to 133 mbar; 1.33×10^{-2} Pa to 1.33×10^{-4} Pa), up to sensitivity to Atmosphere.

- **Robust**

The long-life sensing element is designed three times thicker than typical gauges which minimizes sensitivity to process vibration, shock, and all condensables found in vacuum.

- **Cost Effective**

The robust sensing element results in **longer life** and higher repeatability making the CT-100 a more economical choice than traditional Pirani gauges.

Single point **calibration feature** maintains gauge accuracy over time, unlike other gauges where more frequent replacement is required.

Features

- Selectable pressure range
- 0.2 second response time
- Two setpoints per gauge
- Thick sensing element
- Single point calibration
- Status LEDs

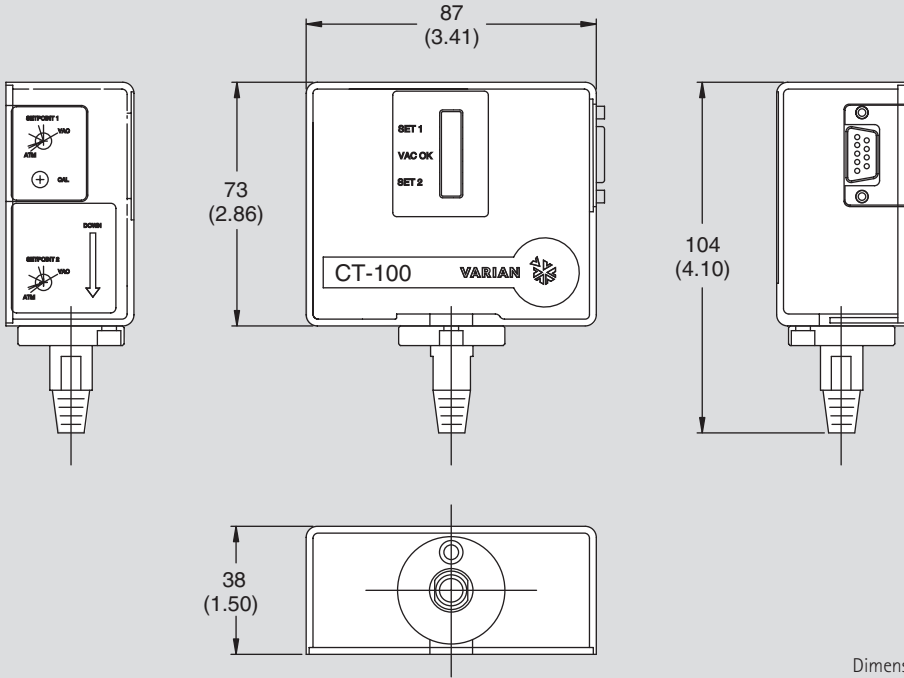
Benefits

- Provides accurate and repeatable readings
- Improves productivity and performance
- Enables cost and space savings
- Durable and reliable design
- Maintains gauge accuracy over time offset
- Quick visual indicator of vacuum status



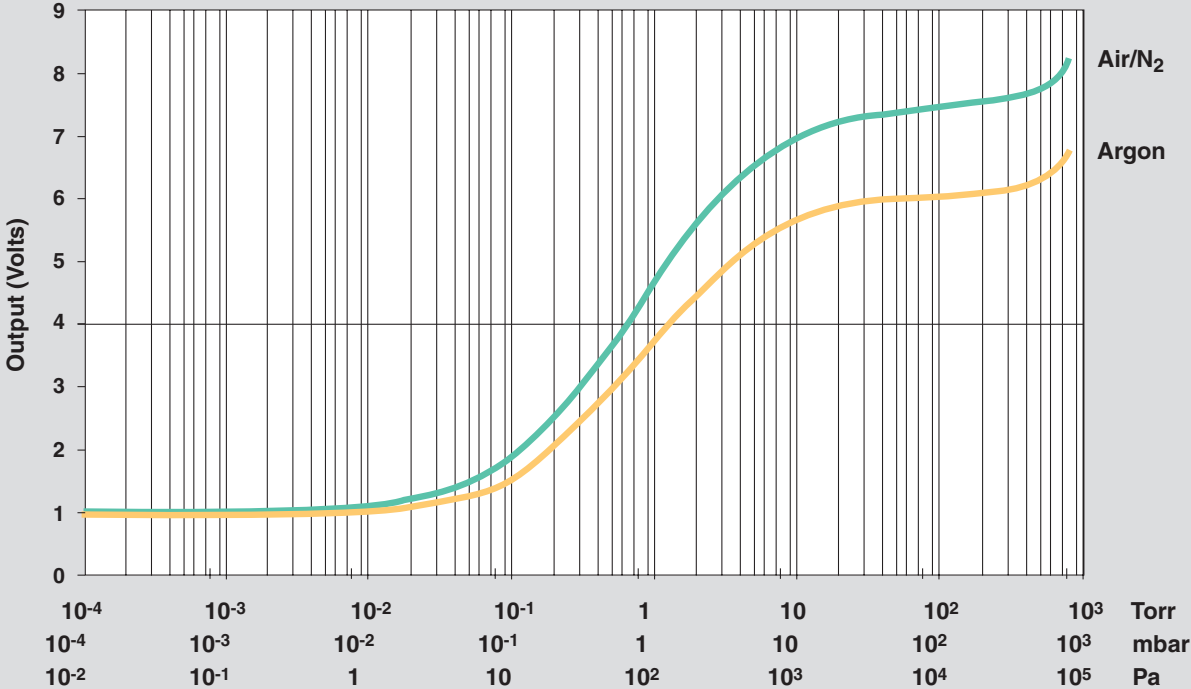
CT-100 Active Rough Vacuum Gauge

Outline Drawing



Dimensions: millimeters (inches)

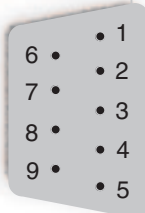
CT-100 Calibration Curve



Technical Specifications

Pressure range N ₂ /Air	Factory setting (1.000 V @ $\leq 1 \times 10^{-5}$ Torr): 1 x 10 ⁻⁴ to 100 Torr, sensitive to ATM (1.33 x 10 ⁻⁴ to 133 mbar, sensitive to ATM) (1.33 x 10 ⁻² to 1.33 x 10 ⁻⁴ Pa, sensitive to ATM) Optional User Setting (8.255 V @ ATM): 20 mTorr to ATM (2.6 x 10 ⁻² to 1000 mbar) (2.6 to 10 ⁻⁵ Pa)
Response time	0.2 second
Relay response time	<1 msec
Setpoint adjustment range	Greater than gauge pressure range
Operating temperature	15°C to 50°C, 90% relative humidity non-condensing
Storage temperature	-15°C to 85°C
Mounting orientation	Vacuum port pointing down for best results above 1 Torr (1.33 mbar, 133 Pa)
Weight with NPT Fitting	113 grams (1/4 lb)
Interface	
Two setpoints	Two user defined pressure setpoints for process steps, alarms, high vacuum gauge trigger, or other pressure-induced events
Setpoint	Dual, non-isolated, open collector output
"Contact" Rating	0.3 VDC @ 100mA (on) 30 VDC Max (off)
Adjustment	Trim pot, panel calibration, fixed hysteresis Analog voltage proportional to threshold available at connector (0 VDC – 12 VDC referred to analog output), output impedance 100 kohms
Input voltage/power	13 to 30 VDC @ 0.125 AMP, protected against reversals
Output signal (analog)	Non-linear, 1 to 9 VDC, nominal
Fault	<0.5 VDC or >9 VDC (for N ₂)
Output impedance	100 ohms
Displays	
Setpoint indicators	Red LEDs – Verify an operation is underway and the appropriate vacuum has been achieved
Vacuum indicator	Green LED – Indicates <100 mTorr vacuum is achieved
Materials of construction	
Materials exposed to vacuum	Nickel-plated mild steel, glass, nickel alloy
Casing	Flame retardant ABS (Acrylonitrile-butadiene-styrene)
Sensor element	Platinel
Sensor internal volume	5.4 mL
Connections	
Electrical	9-pin D-Sub
Hardware	1/8" NPT
Certification	
CE	UL Recognized, cUL Recognized EMC: EU 89/336, EN55011, EN61326 Safety: 73/23/EEC, Low Voltage Directive EN61010

Pin #	Function
1	Relay #2 N.O
2	Relay #1 N.O
3	Power Input (+24 VDC)
4	Power Ground
5	Analog Output
6	Relay Common
7	Setpoint #1 Output
8	Signal Ground
9	Setpoint #2 Output
Shell	Chassis ground, connect to power supply return and ground at power supply



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Ordering Information

Description		Part Number		Description		Part Number	
CT-100 Active Rough Gauge				Mating Connector			
CT-100		L7426301		9-Pin D-sub connector kit with metal backshell		L7440301	
Replacement Tube, CT-100, 1/8" NPT		L7426601		Adapter Kit			
Accessories				RJ45 Adapter for Edwards ATC/APG		L7439301	
Vacuum Connections				Power Supply/Breakout Box*			
CT-100 to KF	Stainless Steel	KF16	KAFP160125S	(provides 24 VDC power and test points for signal access)		670077101	
		KF25	KAFP250125S				
	Aluminum	KF16	KAFP160125A	<i>*Not UL, cUL, CE certified</i>			
		KF25	KAFP250125A	Calibration Service			
Interface Cable				Factory calibration		CALCNTC-1	
9-Pin D-sub to flying leads, shielded		R0907XXX XXX = length in feet up to 100 ft.		Certification supplied, NIST traceable			

Compatible Varian Products

Varian CT-100 Rough Vacuum Gauge is compatible with the following Varian products. For configurations and part numbers, call Varian Vacuum Technologies.

High/Ultra High Vacuum

Diffusion Pumps



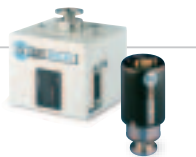
Turbomolecular Pumps



Ion Pumps

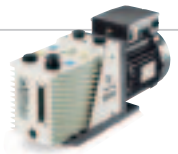


High Vacuum Gauges



Primary Pumps

Rotary Vane Pumps



Dry Scroll Pumps



Vacuum Valves



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United States
 Varian Vacuum Technologies
 121 Hartwell Avenue
 Lexington, MA 02421
 USA
 Tel: (781) 861 7200
 Fax: (781) 860 5437
 Toll Free 1 (800) 882 7426

Europe
 Varian Vacuum Technologies
 Via F.lli Varian 54
 10040 Leini, (Torino)
 Italy
 Tel: (39) 011 997 9 111
 Fax: (39) 011 997 9 350
 Toll Free 00 800 234 234 00



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