

# 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, ( $1 \times 10^{-4}$  Torr up to 100 Torr;  $1.33 \times 10^{-4}$  to 133 mbar;  $1.33 \times 10^{-2}$  Pa to  $1.33 \times 10^{-4}$  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.

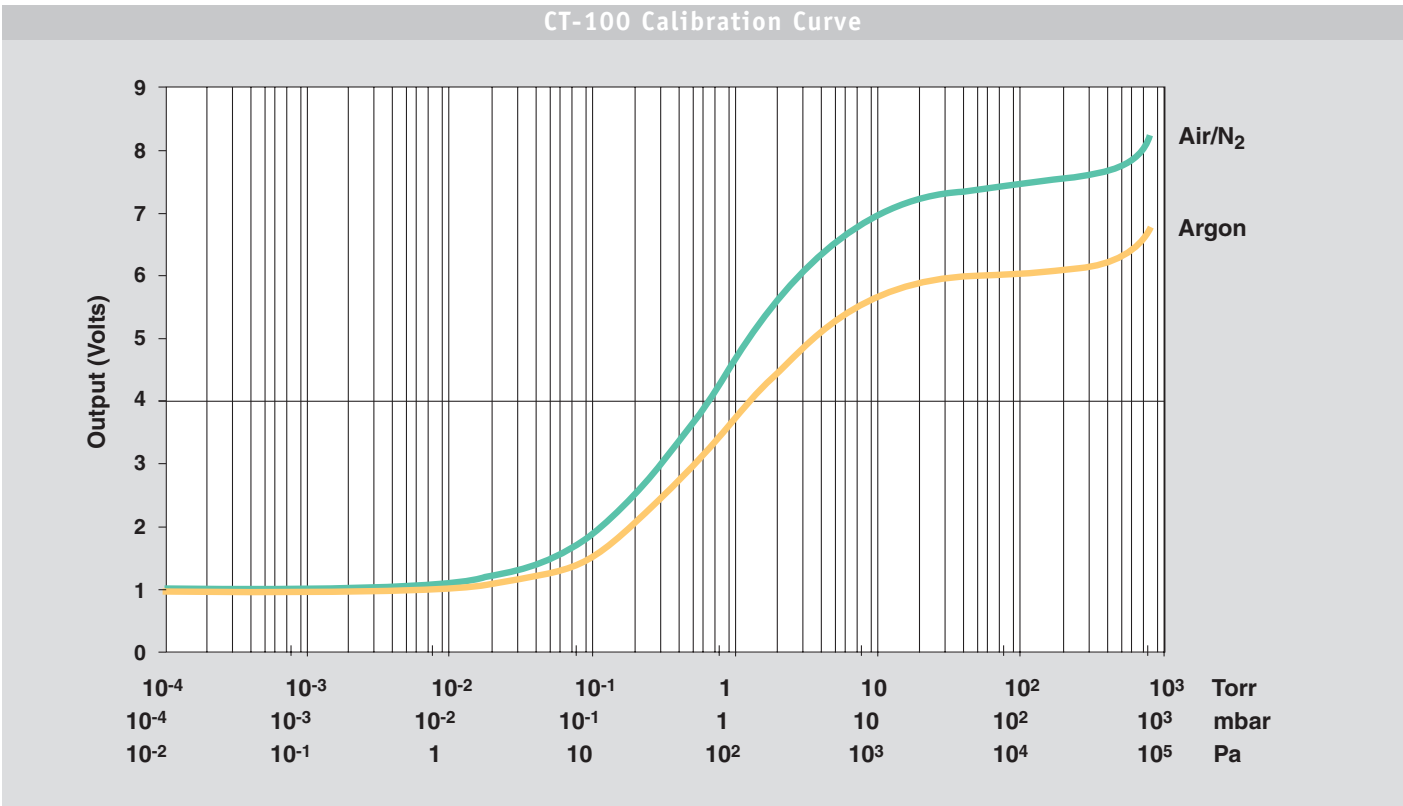
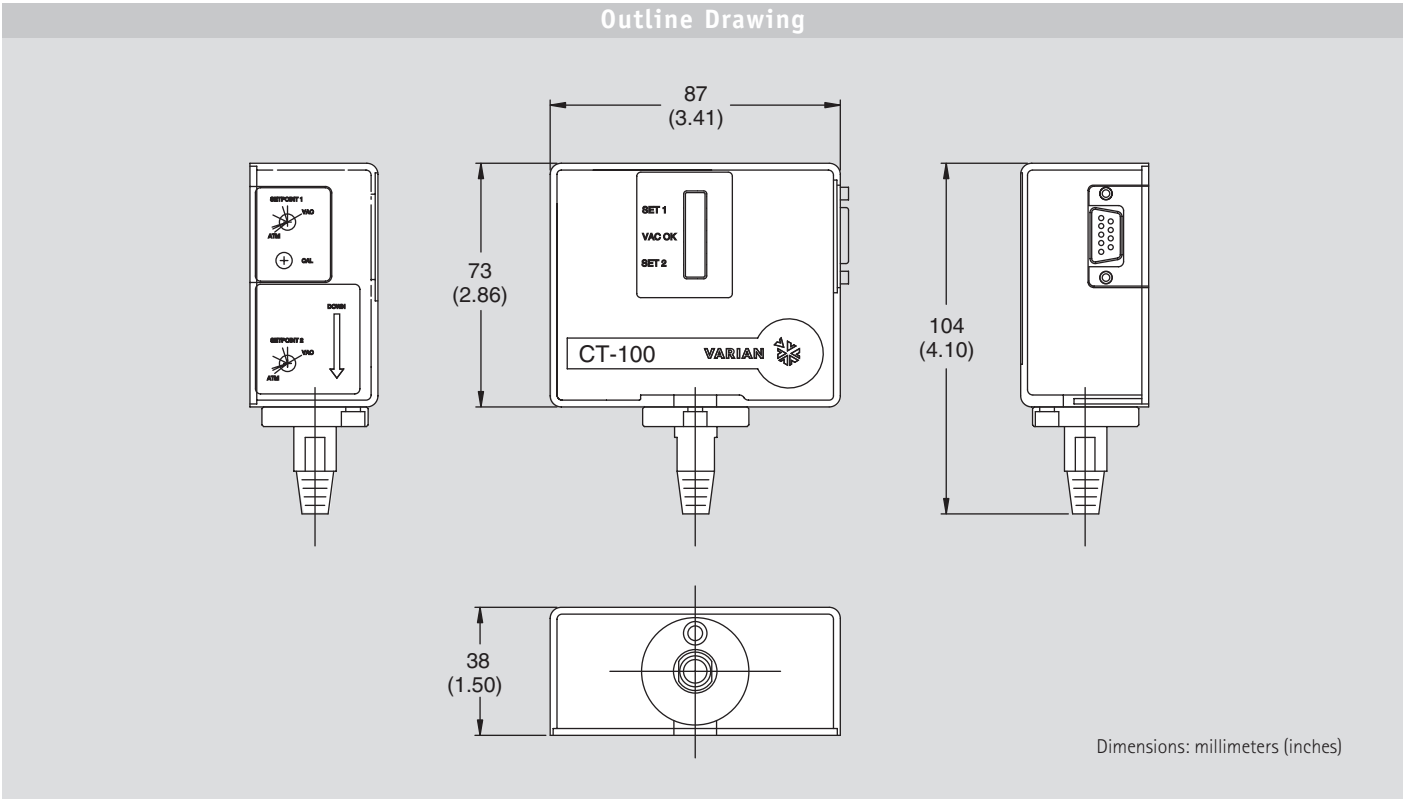
## Features

## Benefits

- |                                   |   |
|-----------------------------------|---|
| • Selectable pressure range       | • Provides accurate and repeatable readings |
| • 0.2 second response time        | • Improves productivity and performance     |
| • Two setpoints per gauge         | • Enables cost and space savings            |
| • Thick sensing element           | • Durable and reliable design               |
| • Single point calibration offset | • Maintains gauge accuracy over time        |
| • Status LEDs                     | • Quick visual indicator of vacuum status   |



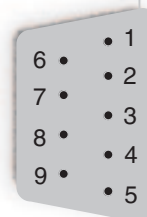
# CT-100 Active Rough Vacuum Gauge



## Technical Specifications

Pressure range N <sub>2</sub> /Air	Factory setting (1.000 V @ $\leq 1 \times 10^{-5}$ Torr): 1 x 10 <sup>-4</sup> to 100 Torr, sensitive to ATM (1.33 x 10 <sup>-4</sup> to 133 mbar, sensitive to ATM) (1.33 x 10 <sup>-2</sup> to 1.33 x 10 <sup>-4</sup> Pa, sensitive to ATM) Optional User Setting (8.255 V @ ATM): 20 mTorr to ATM (2.6 x 10 <sup>-2</sup> to 1000 mbar) (2.6 to 10 <sup>-5</sup> 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)
<b>Interface</b>	
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 <sub>2</sub> )
Output impedance	100 ohms
<b>Displays</b>	
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
<b>Materials of construction</b>	
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
<b>Connections</b>	
Electrical	9-pin D-Sub
Hardware	1/8" NPT
<b>Certification</b>	
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



# CT-100 Active Rough Vacuum Gauge

Ordering Information			
Description		Part Number	
CT-100 Active Rough Gauge			
CT-100		L7426301	
Replacement Tube, CT-100, 1/8" NPT		L7426601	
Accessories			
Vacuum Connections			
CT-100 to KF	Stainless Steel	KF16	KAFP160125S
		KF25	KAFP250125S
	Aluminum	KF16	KAFP160125A
		KF25	KAFP250125A
Interface Cable			
9-Pin D-sub to flying leads, shielded		R0907XXX XXX = length in feet up to 100 ft.	

Description		Part Number
Mating Connector		
9-Pin D-sub connector kit with metal backshell		L7440301
Adapter Kit		
RJ45 Adapter for Edwards ATC/APG		L7439301
Power Supply/Breakout Box* (provides 24 VDC power and test points for signal access)		670077101
*Not UL, cUL, CE certified		
Calibration Service		
Factory calibration		CALCNTC-1
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.

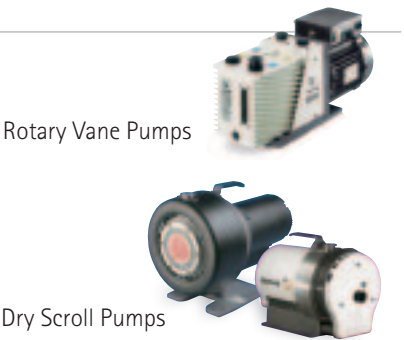
### High/Ultra High Vacuum



### High Vacuum Gauges



### Primary Pumps



### Vacuum Valves



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