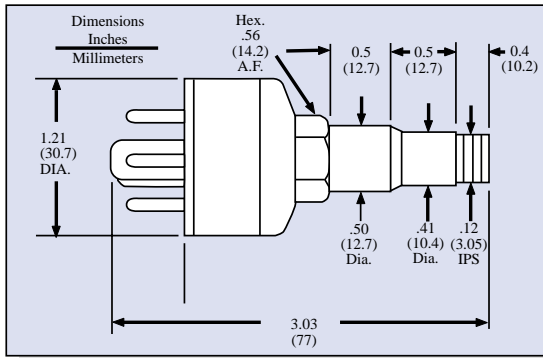


The Varian Thermocouple Vacuum Gauge Tube Model 531



Principles of Operation

Thermocouple gauges measure pressure in terms of the amount of heat that gas will conduct away from a hot wire. The sensing element is a combination heater and thermocouple. Cross-shaped, it is formed by joining two short resistance wires of different compositions, a method of construction which gives excellent shock resistance and yet provides the minimum mass required for fast response. With a fixed heater power, the temperature of the junction, which depends on the conductivity of the gas, is indicated by the voltage output of the thermocouple. As the pressure drops, the thermocouple gets hotter and its output increases. Readout is accomplished on a millivolt meter calibrated to indicate pressure.

Specifications

Filament Current	165 mA (gives 14 mV across the thermocouple at pressures below 10^{-3} Torr)
Response Time	3 sec. (10^{-3} to 1.0 Torr)
Range	1×10^{-3} to 2 Torr
Output	0 to 14mV
Heater Resistance	1.4 ohms (approx.)
Dimensions	1.21" O.D. x 3" long
Connections	May be soldered into a system, used with 1/2" 'O' ring compression seal or threaded on 1/8" IPS female thread.
Cable Connection	Octal Base (std.)
Casing	Nickel-plated mild steel
Pins	Nickel-iron alloy (Ni 48%, Fe 52%)
Volume / Weight	12 cc / 2 oz.

General Description

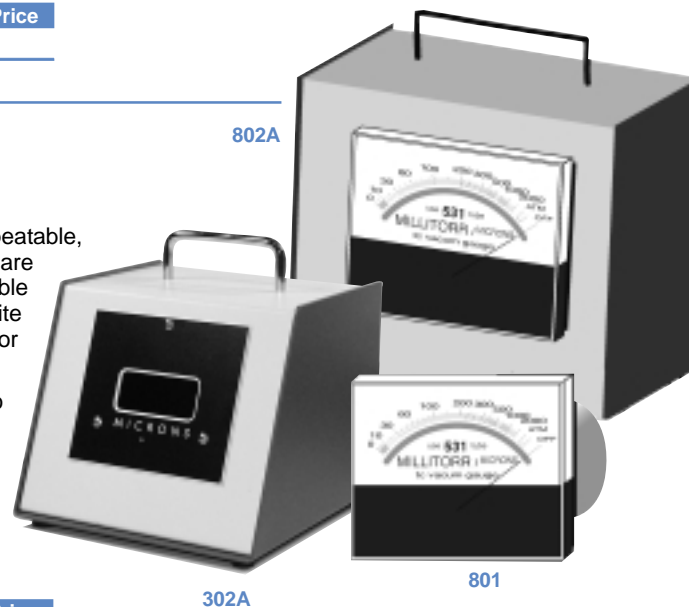
The Model 531 Thermocouple Vacuum Gauge provides continuous and accurate indication of total pressure from 1×10^{-3} to 2 Torr absolute. Developed to combine rugged dependability and outstanding performance, the 531 offers fast response and low power drain.

Part No.	Description	Price
F0472-301	Varian 531 Vacuum Gauge Tube	

The Varian 800 Series Thermocouple Vacuum Gauge Controls

The 800 Series Thermocouple Vacuum Gauge Controls are used for repeatable, stable pressure measurement in the 10^{-3} Torr to 2 Torr range. These controls are fully temperature compensated by use of a thermistor placed in the gauge cable socket. The thermal response of the thermistor is equal to, but in the opposite direction from the thermocouple characteristics, thereby compensating for ambient temperature changes.

The 801 Control is compact and lightweight, with three mounting studs to facilitate panel mounting in a minimum of space. The 802A is mounted in a portable enclosure. The 801 and 802A have easy-to-read meter scales, recorder output, and include a 10 ft. gauge cable and one 531 thermocouple gauge tube. It also includes a 6-ft. power cord. All necessary cables are included. The 302 models are the same except they have a digital readout. Also available in 220V.



Part No. *	Description	Price
801	Panel Mount Vacuum Gauge Control, ANALOG	
802A	Vacuum Gauge Controller, Mounted, ANALOG	
302	Panel Mount Vacuum; Gauge Control, DIGITAL	
302A	Vacuum Gauge Controller, Mounted, DIGITAL	

* For 220V Controls add "220" to each part number (i.e. - xxx-220)