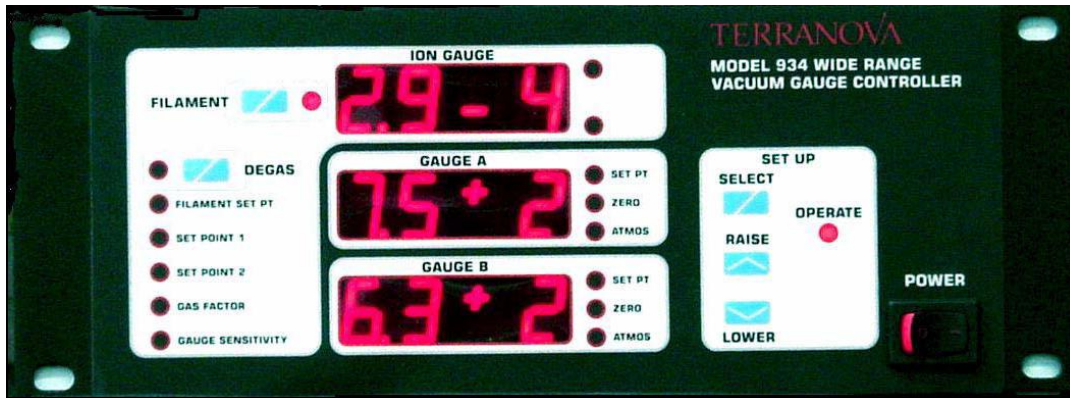


Terranova Models 934 & 934-UHV

Wide Range Vacuum Gauge Controller

Standard Half-19 Inch EIA Rack

Controls One Ionization Gauge and Two Low Vacuum Gauges



Model 934 displays pressure from one 563-type Bayard-Alpert ion gauge (for high- and ultra-high vacuum environments) and two low-vacuum gauges (either 531-type thermocouple gauges or convection gauges, depending on the 934 configuration that was purchased). Model 934-UHV displays pressure from either a Bayard-Alpert ion gauge or a UHV-24 nude ion gauge and two low vacuum gauges.

Features of the gauge controller include:

Wide range:

- ion gauge: 2×10^{-10} Torr to 10^{-2} Torr (Model 934)
- ion gauge: 2×10^{-11} Torr to 10^{-2} Torr (Model 934-UHV)
- low-vacuum gauges: 10^{-3} Torr to 990 Torr (thermocouple)
- low-vacuum gauges: 10^{-3} Torr to 1200 Torr (convection)

Controls and displays:

- easy-to-use, intuitive front panel
- large, bright, digital displays for ion gauge and low-vacuum gauges

Degassing:

- resistance heating of the grid (Model 934)
- electron bombardment (Model 934-UHV)

Relay control:

- set points for four relays; each relay has independent normally-open and normally-closed contacts



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Detailed Specifications

Displays: Large, bright red, digital LED displays -- one for ion gauge and two for low-vacuum gauges.

Gas Factor: A multiplier that allows you to compensate the display for gases other than air or nitrogen. The range of the gas factor is from 0.50 to 1.50, and can be set from the front panel.-

Ion gauge ranges:: air, nitrogen, argon: 2×10^{-10} Torr to 10^{-2} Torr (Model 934)
air, nitrogen, argon: 2×10^{-11} Torr to 10^{-2} Torr (Model 934-UHV)

Thermocouple gauge: 10^{-3} Torr to 990 Torr

Convection gauge: 10^{-3} Torr to 1200 Torr

Set Points; Models 934 and 934-UHV store five set points in nonvolatile memory. One set point controls the ion gauge filament; the other four set points control relays, as follows: one set point for automatic turn-on of ion gauge filament, two set points for ion gauge, two low-vacuum-gauge set points (one for each thermocouple or convection gauge) Relays activate when system pressure is below set point pressure. LED on front panel indicates that relay is activated All four relays have independent sets of normally-open and normally closed contacts. All relay contacts are rated for:6 A at 250 Vac or 4 A at 30 Vdc

Analog Output: Analog output is pseudo-logarithmic at 0.5 volts per decade. For pressure display in the form: x.y E-z Analog output in volts is approximately: $(5.00 / 4095) * ((410 * (10 - z)) + (40 * x.y))$

Computer Interface: RS-232 port on back panel provides computer interface for front panel controls and indicators..

Measurement Electronics

Ion Gauge: Grid-voltage modulated, +140 Vdc to +180 Vdc; emission current regulated to <2%; emission current limited to 3 mA at higher pressures for maximum filament life. Emission current is limited to 1 mA at high vacuum to minimize outgassing due to high gauge temperatures.

Ion Current Detection: Ultra-low bias current electrometer with lock-in amplifier for noise rejection.

Range Selection: Automatic ion gauge ranging over 7 decades, depending on emission current, within the ranges:
 10^{-10} Torr to 10^{-2} Torr for Model 934
 10^{-11} Torr to 10^{-2} Torr for Model 934-UHV.

Filament Control: Front panel control or RS-232 computer control. Automatic filament shutoff at pressures > than 9.9×10^{-3} Torr for air.

Degassing: Resistance heating of grid at approximately 30 watts (Model 934) or electron bombardment, 50 mA at 700 eV (Model 934-UHV).

Power Requirements: 100, 120, 220, or 240 Vac (10%), 50-60 Hz; 100 VA. Input voltage is user-selectable from back panel.

Dimensional Data: Standard Half-EIA 19-inch rack mount:

width: 9.5 in (242 mm). **height:** 3.5 in (89 mm), **depth:** 15 in (381 mm),
weight: 9 lb (4.1 kg)