

# Model 921

## Cold Cathode Gauge Controller

for use with HPS inverted magnetron gauges  
*1/8 DIN Vacuum Gauge Controller Covers  $10^{-10}$  to  $10^{-2}$  torr*

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- low cost
- CE marked
- for UHV or high vacuum
- 1/8 DIN size; smallest full-function controller available
- operates HPS 421 or I-Mag™ series inverted magnetron
- two process control set points with 2 amp relays
- serial input/output
- true logarithmic analog output

Cold cathode vacuum gauges are increasingly popular in a wide variety of applications. Their ease of use and durability are superior to that of hot cathode gauges. Cold cathode gauges offer a simple, rugged, reliable alternative to hot cathode ionization gauges. For applications such as semiconductor process monitoring, accelerator control and industrial process control, cold cathode gauges are the gauge of choice. Low power dissipation makes them ideal for cryogenic system monitoring and control.

The Model 921 is housed in a 1/8 DIN enclosure, allowing the user greater latitude in system design. For data acquisition, the 921 has a high-resolution digital-to-analog converter to give convenient logarithmic analog output. A serial interface port allows simple acquisition of digital data. Two process control relays with individual high and low set points give the user exceptional flexibility in setting control system hysteresis.

The Terranova Model 921 is designed to operate the inverted magnetron, I-Mag™ and series 421 gauges made by the HPS Division of MKS Instruments; these are the most versatile of the cold cathode gauges. These gauges employ an isolated collector to measure ion current in a low voltage lead; this minimizes susceptibility to leakage currents and gives improved repeatability of vacuum measurement. The 921 is CE marked for European applications

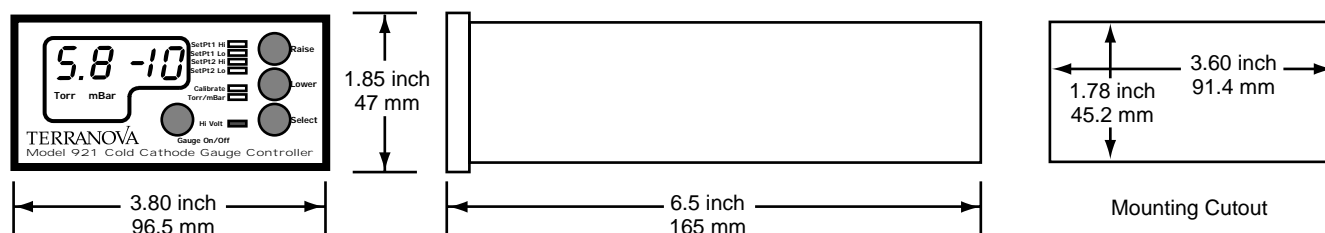
I-Mag is a registered trademark of HPS Division, MKS Instruments, Inc.

# TERRANOVA®

**Vacuum Instruments for Science and Industry**

## Specifications

Dimensions – standard 1/8 DIN enclosure



### Useful Measuring Range

$10^{-10}$  torr to  $10^{-2}$  torr, for air or nitrogen

### Display Range

$10^{-10}$  torr to  $10^{-2}$  torr

### Accuracy of Gauge Interface

Cold cathode gauges are not noted for their fundamental accuracy; however, the algorithms used in the 921 conform to the response of HPS gauges.

### Units of Measurement

torr or mBar; user selected

### Vacuum Gauge

HPS Series 421 or I-Mag Cold Cathode Gauges

### Operating Temperature Range

+2 to +50 deg Celsius

### Pressure Display

4-digit bright red LED, 10 mm high

### Display Indicators

bright red LED for single indicators; backlit LED for units of measurement

### CALIBRATE Adjust

allows calibration for electrometer over the range of 0.5 X to 2.0 X; selected by front panel pushbuttons

### Process Control Set Points and Relays

high and low limits for each set point allow user to set hysteresis; two relays, contacts rated 2 amp/240 VAC, 30 VDC

### Nonvolatile Memory

for CALIB, UNITS and SET POINTS

### Analog Output

true logarithmic, 0.500 volts/decade;  $10^{-10}$  torr = 0 volts;  $10^{-9}$  torr = 0.500 volts;  $10^{-8}$  torr = 1.000 volts; etc.

### Serial Input/Output Interface

easy to use protocol, e.g. send "p" (ASCII value 112), pressure is returned; e.g. 5.8 e-10; RS-232 is standard, 9600 baud, 8N1

### Operating Voltage

universal input, 85 - 265 VAC, 30 VA; industry standard IEC 320 instrument power input receptacle on rear panel

### Weight

1 lb. / 0.5 kg

### Mounting

Side clips are provided for panel mounting in standard 1/8 DIN cutout (see above).

### Environmental Considerations

not for use with explosive or corrosive gases

### Compliance Listing

CE marked

### Warranty

Terranova products are warranted to be free from defects in material and workmanship for one year from the date of shipment. Warranty details available on request.

### Terms

F.O.B. Mountain View, California; other terms quoted on request

### Ordering Information

#### Model 921 Cold Cathode Gauge Controller

Model 921 Controller

includes: AC power cable, 7 feet / 2.0 meters; panel mounting brackets; D15 accessory connector

#### Vacuum Gauge and Gauge Cable

Order cold cathode gauge and gauge cable from Duniway Stockroom, or:

HPS Division MKS Instruments, Inc.  
5330 Sterling Drive  
Boulder, CO 80301  
FAX 303.442.6880  
voice 303.449.9861 or 800.345.1967

Specifications subject to change without notice.

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