

Operating Instructions

Active Pirani Gauge

1 to 2000 mTorr
.001 to 2.00 mbar
0.1 to 200.0 Pascal



Part No.: V795056
October 2009
\$5.00

Specifications For Active Pirani

Pressure Range: 1 to 2000 mTorr, .001 to 2.000 mbar, 0.1 to 200.0 Pa

Power & Output Connector: RJ-45 Female.

Power: 12 to 35 VDC, 65 mA with no meter; 100 mA with meter.

Analog Outputs: 0 to 10 V and 4 to 20 mA.

Accuracy: Better than 5% of value or ± 3 mTorr, whichever is larger.

Response Time: 0.3 second time constant.

Optional Display: 3 1/2 Digit LCD.

Connection to System: Standard gauge has a 1/8 NPT male thread or fit into quick connects sized for 1/8 inch pipe (0.405" dia.) NW, VCR and Mini Conflat® available.

Set Point Range: Full Scale, 1 to 2000 mTorr; Repeatability: ± 2 mTorr.

Temperature Effects: Changes in ambient temperature between 0 °C and 50 °C change the reading less than 0.2 mT per °C at 50 mT; less than 4 mT per °C at 900 mT.

Bakeout Temperature: Active Pirani tube can be baked to 50 °C (120 °F) in air or vacuum.

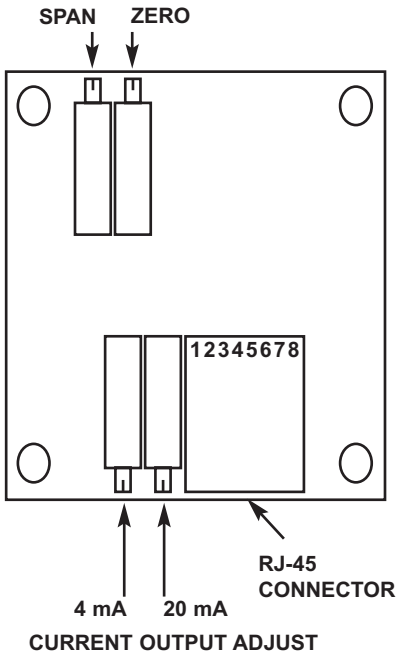
Mounting: Flange for system connection supports the gauge.

Net Weight: 6 Ounces (180 grams).

Shipping Weight: Approximately one pound (.45 kg).

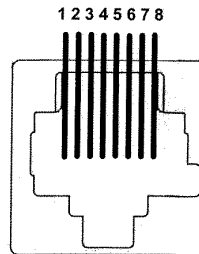
Wiring and Adjustment Details

VOLTAGE OUTPUT ADJUST



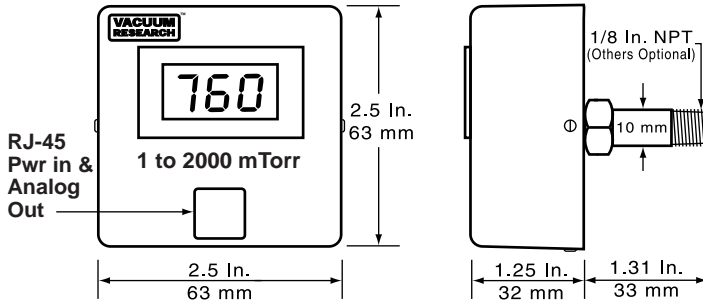
T-568 B STRAIGHT THRU CABLE TYPICAL COLOR CODE

1. +15 To +30 VDC Supply	1. WHITE ORANGE
2. Power Supply Common	2. ORANGE
3. Voltage Output	3. WHITE GREEN
4. Not Used	4. BLUE
5. Voltage Output Common	5. WHITE BLUE
6. Not Used	6. GREEN
7. Current Loop Common	7. WHITE BROWN
8. 4 to 20 mA Output	8. BROWN

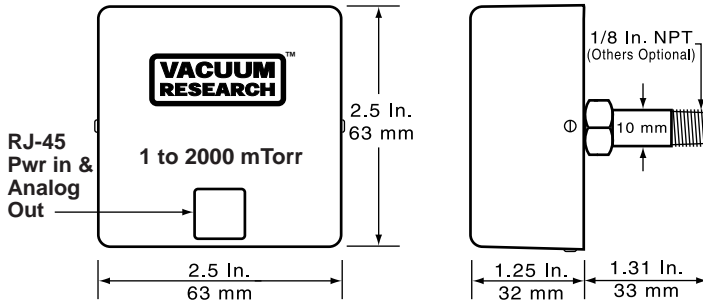


Connector

Dimensions



1 to 2000 mTorr Active Pirani with The Optional Digital Display
Also includes both 4-20 mA & 0-10 VDC outputs for PLC



Standard 1 to 2000 mTorr Active Pirani no display.
Includes Both 4-20 mA and 0 to 10 VDC Outputs for PLC

Calibration of Active Pirani

A high vacuum system and a precision calibration “standard” such as a capacitance manometer are required. The procedure below lists ranges and settings for a 2000 mTorr instrument.

To set zero and span using a capacitance manometer for the 2000 millitorr instrument requires a high vacuum system capable of pressures less than 1×10^{-4} Torr, and a precision calibration “standard” such as a capacitance manometer with a 1 Torr or 10 Torr head.

First, pump the tube to hard vacuum and hold it there for about 20-30 minutes to thoroughly outgass the tube. Adjust the voltage zero adjustment until it reads 000 on the meter and adjust the current output to 4 mA.

Calibration of Active Pirani (continued)

Second, raise the pressure to 900 mTorr (for instruments of other ranges choose a pressure near mid-scale), and hold that pressure constant. Adjust the voltage span adjustment pot to 4.5 volts. Adjust the current output to read 11.2 mA. The instrument is now calibrated. If the span adjustment was far off, repeat the procedure.

The span adjustment permits you to trim the instrument for precise indication at a critical pressure, increasing the absolute accuracy at that point, although possibly sacrificing tracking at other points on the scale. The 900 mTorr point is best for all-around average tracking throughout the 1 to 2000 mTorr range.

NOTE: If a precision calibration standard is not available, but you feel there is a need to calibrate the instrument, then pump to hard vacuum and set the zero only. Do not attempt to make the upscale reading agree with other thermocouple or Pirani gauges as this will result only in degraded performance of this gauge.

The active Pirani is fully calibrated and ready to operate as it is shipped from the factory. The procedure described here should only be used from time to time to verify performance.



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