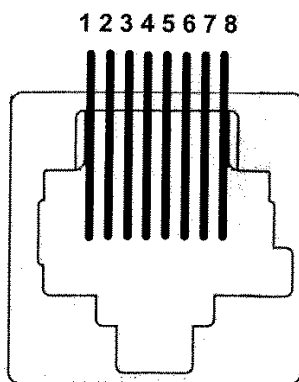


Operating Instructions

Pirani Gauge 1200 mTorr Integral Sensor

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. N.C.	4. BLUE
5. Voltage Output Common	5. WHITE BLUE
6. N.C.	6. GREEN
7. Current Loop Common	7. WHITE BROWN
8. 4 To 20 Ma Output	8. BROWN

**Connector****8P8C****8 Position****8 Contacts**

1200 mTorr Pirani Integral Sensor Assembly modified with (4 to 20 mA; 0 to 1, 5, 10 vdc) option circuit board.

Power input & signal outputs are all contained in the RJ-45 8 x 8 pin connector.

Power & Signal Connection

RJ-45 8x8 pin standard CAT-5 LAN cable

(ZERO) adjusts for zero voltage output and digital meter zero in one adjustment.

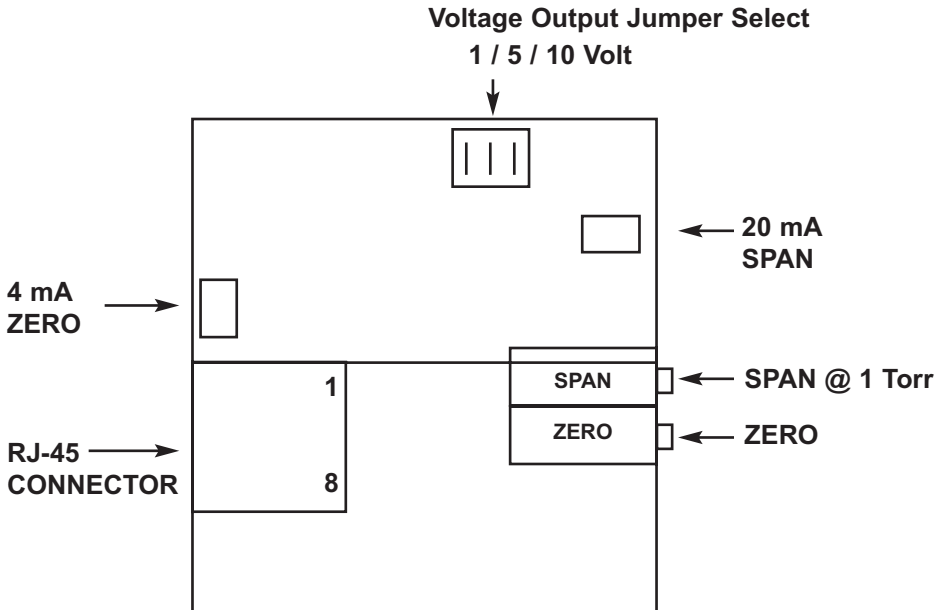
(SPAN) adjusts upscale voltage output for digital meter display and scalable analog voltage output. Either 1 volt, 5 volt, 10 volt full scale.

Typically scaled option board:

0 volts	=	0 millitorr
1 volt	=	1000 millitorr (1 Torr)
5 volts	=	1000 millitorr (1 Torr)
10 volts	=	1000 millitorr (1 Torr)

4 - 20 mA Current Loop Output:

4 mA	=	0 millitorr
8 mA	=	250 millitorr
12 mA	=	500 millitorr
16 mA	=	750 millitorr
20 mA	=	1000 millitorr



Adjusting Zero and Span

Adjusting Zero and Span for 1 to 1200 mTorr Pirani Gauge

This method requires a high vacuum system and a precision calibration “standard” such as a capacitance manometer.

NOTE: If a reference tube or precision calibration standard are 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 reading agree with other typical analog thermocouple or Pirani gauges upscale as this will result only in degraded performance of this gauge.

To set zero and span using a capacitance manometer for the 1200 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 zero adjustment until it reads 000 on the meter.

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 span adjustment pot to read the same pressure as the calibration standard. 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 1200 mTorr range.



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