



THE HASTINGS ABSOLUTE PRESSURE INDICATOR

MODEL SP-1

OPERATING PROCEDURE

DEPARTMENT OF
INSTRUMENTATION

Characteristics

Range: 0.1 - 20 Millimeters of Mercury.
Vacuum Coupling: Standard 1/8" IPS Male Thread, O-ring Coupling or Rubber Tubing.
Power: 10 Watt; 90-135 Volts, a-c, 60 Cycles.

Principle of Operation

The operation of the Hastings Absolute Pressure Indicator is based upon the changes in thermal conductivity of residual gases in a vacuum. Hot thermocouples are cooled an amount varying with the pressure of these gases and their output is measured on the 10 mv meter.

Exceptionally rapid response is obtained by the type of thermopile construction and the compactness of the gauge tube. The Hastings Absolute Pressure Indicator is unique in that heating current need not be reset each time the pressure changes. The change in resistance of the thermopile element in the gauge tube is so slight compared to the resistance of the entire circuit that it is negligible at the low current involved. As this instrument is equipped with a constant voltage regulating transformer, the current set needs to be checked only when the accuracy of readings is questioned. Procedure for checking calibration is found in the paragraph under "Calibration." Calibration is not affected by the use of extension cables up to 25 feet long between the indicator and the gauge tube, thus allowing remote indicating and recording.

Operating Instructions

The gauge tube should preferably be mounted vertically with the open end down to prevent accumulation of foreign particles on or near the sensing thermopile. After the gauge tube is installed in a vacuum system, a small amount of an approved vacuum sealing compound should be applied around the stem to prevent leakage around the threads. The stem of the gauge tube has a smooth section above the threads for use in making a connection with rubber tubing or O-ring fittings.